## **APPENDIX**

## TRAFFIC ANALYSIS OUTPUT FILES

## US 127 2023 Build HCS Output

	HCS Two-La	ne F	Highway Re	port	
Project Information					
Analyst	K. Luljak		Date		8/23/2023
Agency	HDR		Analysis Year		2023
Jurisdiction	КҮТС		Time Analyzed		2023 AM
Project Description	US 127 NB		Units		U.S. Customary
	S	egm	ent 1		
Vehicle Inputs					
Segment Type Passing Constrained Length, ft			2640		
Measured FFS	Measured		Free-Flow Speed,	mi/h	65.0
Demand and Capacity					
Directional Demand Flow Rate, veh/h	223		Opposing Deman	d Flow Rate, veh/h	-
Peak Hour Factor	1 5		13.00		
Segment Capacity, veh/h	1700		Demand/Capacity	(D/C)	0.13
Intermediate Results					
Segment Vertical Class 3			Free-Flow Speed,	mi/h	65.0
Speed Slope Coefficient (m)	12.43125		Speed Power Coe	fficient (p)	0.75892
PF Slope Coefficient (m)	-1.34725		PF Power Coefficie	ent (p)	0.77319
In Passing Lane Effective Length?	No		Total Segment De	nsity, veh/mi/ln	1.2
%Improvement to Percent Followers	0.0		%Improvement to	Speed	0.0
Subsegment Data					·
# Segment Type	Length, ft	Radi	ius, ft	Superelevation, %	Average Speed, mi/h
1 Tangent	2640	-		-	62.5
Vehicle Results					
Average Speed, mi/h	62.5		Percent Followers,	. %	34.5
Segment Travel Time, minutes	0.48		Follower Density (	FD), followers/mi/ln	1.2
Vehicle LOS	А				
	S	egm	ent 2		
Vehicle Inputs					
Segment Type	Passing Lanes		Length, ft		5808
Measured FFS	Measured		Free-Flow Speed,	mi/h	65.0
Demand and Capacity			<u> </u>		
Directional Demand Flow Rate, veh/h	223		Opposing Deman	d Flow Rate, veh/h	-
	0.94		Total Trucks, %		13.00
					0.16
Segment Capacity, veh/h	1400		Demand/Capacity	(D/C)	0.10

Segment Vertical Class 1					Free-Flow Speed,	mi/h		65.0
Spee	ed Slope Coefficient (m)	7.84	1057		Speed Power Coef	fficient (p)		0.92518
PF S	lope Coefficient (m)	-1.1	0232		PF Power Coefficient (p)			0.86403
In Passing Lane Effective Length? No Total			Total Segment De	nsity, veh/r	ni/ln	0.9		
%lm	provement to Percent Followers	0.0			%Improvement to	Speed		0.0
Suk	osegment Data							
#	Segment Type	Len	gth, ft	Rad	ius, ft	Superelev	ation, %	Average Speed, mi/h
1 Tangent 580			8	-		-		63.9
Pas	sing Lane Results							
			Faster Lane			Slow	er Lane	
Flow	Rate, veh/h		143			80		
Perc	entage of Heavy Vehicles (HV%), %		5.20			26.96	5	
Initia	al Average Speed (Sint), mi/h		76.4			76.1		
Average Speed at Midpoint (SPLmid), mi/h 78.1					74.4			
Percent Followers at Midpoint (PFPLmid), %			17.4			11.1		
Vel	nicle Results							
Average Speed, mi/h 63.9			)		Percent Followers, %			26.1
Segr	ment Travel Time, minutes	1.03	3		Follower Density (	FD), follow	ers/mi/ln	0.9
Follo	ower Density Mid-Point, followers/	0.2	Vehicle LOS					A
			Se	egn	nent 3			
Veł	nicle Inputs		Se	egn	nent 3			
	nicle Inputs ment Type	Pass	Sing Constrained	egn	Length, ft			11088
Segr	•			egn		mi/h		11088 65.0
Segr Mea	ment Type		sing Constrained	egm	Length, ft	mi/h		
Segr Mea <b>De</b> i	ment Type sured FFS		sing Constrained asured	egm	Length, ft		e, veh/h	
Segr Mea <b>Dei</b>	ment Type sured FFS mand and Capacity	Mea	sing Constrained	egm	Length, ft Free-Flow Speed,		e, veh/h	65.0
Segr Mea <b>Dei</b> Direc	ment Type sured FFS mand and Capacity ctional Demand Flow Rate, veh/h	Mea 255	sing Constrained asured	egm	Length, ft Free-Flow Speed, Opposing Demand	d Flow Rate	e, veh/h	65.0
Segr Mea <b>Dei</b> Direc Peak	ment Type sured FFS mand and Capacity ctional Demand Flow Rate, veh/h t Hour Factor	255 0.94	sing Constrained asured	egm	Length, ft Free-Flow Speed, Opposing Demand	d Flow Rate	e, veh/h	- 13.00
Segr Mea Der Direc Peak Segr	ment Type sured FFS mand and Capacity ctional Demand Flow Rate, veh/h t Hour Factor ment Capacity, veh/h	255 0.94	sing Constrained asured	egm	Length, ft Free-Flow Speed, Opposing Demand	d Flow Rate (D/C)	e, veh/h	- 13.00
Segri Mea Direc Peak Segri Into	ment Type sured FFS mand and Capacity ctional Demand Flow Rate, veh/h t Hour Factor ment Capacity, veh/h ermediate Results	255 0.94 170	sing Constrained asured	egm	Length, ft Free-Flow Speed, Opposing Demand Total Trucks, % Demand/Capacity	d Flow Rate (D/C) mi/h	e, veh/h	- 13.00 0.15
Der Director	ment Type sured FFS mand and Capacity ctional Demand Flow Rate, veh/h t Hour Factor ment Capacity, veh/h ermediate Results ment Vertical Class	255 0.94 170 4 23.3	sing Constrained asured	egm	Length, ft Free-Flow Speed, Opposing Demand Total Trucks, % Demand/Capacity Free-Flow Speed,	d Flow Rate (D/C) mi/h fficient (p)	e, veh/h	65.0 - 13.00 0.15
Segri Mea Der Direct Peak Segri Inte Segri Spee	ment Type sured FFS  mand and Capacity ctional Demand Flow Rate, veh/h t Hour Factor ment Capacity, veh/h ermediate Results ment Vertical Class ed Slope Coefficient (m)	255 0.94 170 4 23.3	sing Constrained asured  4 0	egm	Length, ft Free-Flow Speed, Opposing Demand Total Trucks, % Demand/Capacity Free-Flow Speed, Speed Power Coef	d Flow Rate (D/C) mi/h fficient (p)		65.0 - 13.00 0.15 65.0 0.51393
Segr Mea Der Direc Peak Segr Into Segr Spee PF S	ment Type sured FFS  mand and Capacity ctional Demand Flow Rate, veh/h thour Factor ment Capacity, veh/h ermediate Results ment Vertical Class ed Slope Coefficient (m) lope Coefficient (m)	255 0.94 170 4 23.3 -1.9	sing Constrained asured  0  32522 1200	egm	Length, ft Free-Flow Speed, Opposing Demand Total Trucks, % Demand/Capacity  Free-Flow Speed, Speed Power Coefficie	d Flow Rate (D/C) mi/h fficient (p) ent (p) nsity, veh/r		65.0 - 13.00 0.15 65.0 0.51393 0.76801
Segr Mea Direc Peak Segr Inte Segr Spee PF SI In Pa	ment Type sured FFS  mand and Capacity  ctional Demand Flow Rate, veh/h  t Hour Factor ment Capacity, veh/h  ermediate Results  ment Vertical Class ed Slope Coefficient (m)  lope Coefficient (m)  assing Lane Effective Length?	255 0.94 170 4 23.3 -1.9 Yes	sing Constrained asured  0  32522 1200	egm	Length, ft Free-Flow Speed, Opposing Demand Total Trucks, % Demand/Capacity Free-Flow Speed, Speed Power Coefficie Total Segment De	d Flow Rate (D/C) mi/h fficient (p) ent (p) nsity, veh/r		65.0 - 13.00 0.15 65.0 0.51393 0.76801 2.2
Segr Mea Direc Peak Segr Inte Segr Spee PF SI In Pa	ment Type sured FFS  mand and Capacity  ctional Demand Flow Rate, veh/h  t Hour Factor ment Capacity, veh/h  ermediate Results ment Vertical Class ed Slope Coefficient (m)  lope Coefficient (m)  assing Lane Effective Length? provement to Percent Followers	255 0.94 170 4 23.3 -1.9 Yes 15.1	sing Constrained asured  0  32522 1200		Length, ft Free-Flow Speed, Opposing Demand Total Trucks, % Demand/Capacity Free-Flow Speed, Speed Power Coefficie Total Segment De	d Flow Rate (D/C) mi/h fficient (p) ent (p) nsity, veh/r	ni/ln	65.0 - 13.00 0.15 65.0 0.51393 0.76801 2.2

Aver	age Speed, mi/h	56.3		Percent Followers,	%	48.8
Segn	nent Travel Time, minutes	2.24		Follower Density (	FD), followers/mi/ln	1.9
Vehic	cle LOS	А				
		S	Segm	nent 4		
Veh	icle Inputs					
Segn	nent Type	Passing Constrained		Length, ft		3696
Meas	sured FFS	Measured		Free-Flow Speed,	mi/h	65.0
Der	nand and Capacity					
Direc	tional Demand Flow Rate, veh/h	255		Opposing Deman	d Flow Rate, veh/h	-
Peak	Hour Factor	0.94		Total Trucks, %		13.00
Segn	nent Capacity, veh/h	1700		Demand/Capacity	(D/C)	0.15
Inte	ermediate Results					
Segn	nent Vertical Class	2		Free-Flow Speed,	mi/h	65.0
Spee	d Slope Coefficient (m)	8.56197		Speed Power Coef	fficient (p)	0.55823
PF SI	ope Coefficient (m)	-1.32097		PF Power Coefficient (p)		0.75965
In Passing Lane Effective Length?		Yes		Total Segment De	nsity, veh/mi/ln	1.5
%Improvement to Percent Followers		13.3		%Improvement to	Speed	0.0
Sub	segment Data					·
#	Segment Type	Length, ft	Radi	lius, ft Superelevation, %		Average Speed, mi/h
1		-		-		
1	Tangent	3696	-		-	62.0
	icle Results	3696	-		-	62.0
Veh		62.0	-	Percent Followers,		37.4
<b>Veh</b>	icle Results		-			
<b>Veh</b> Avera	icle Results age Speed, mi/h	62.0	-		%	37.4
<b>Veh</b> Avera	icle Results age Speed, mi/h nent Travel Time, minutes	62.0 0.68 A			%	37.4
Veh Avera Segn Vehic	icle Results age Speed, mi/h nent Travel Time, minutes	62.0 0.68 A		Follower Density (	%	37.4
Vehice Vehice	icle Results  age Speed, mi/h  ment Travel Time, minutes  cle LOS	62.0 0.68 A		Follower Density (	%	37.4
Vehice Vehice Segni	icle Results age Speed, mi/h ment Travel Time, minutes cle LOS	62.0 0.68 A		Follower Density (	% FD), followers/mi/ln	37.4 1.3
Vehice Segnitive Vehice Vehice Segnitive Measure Measure Vehice Segnitive Measure Measure New Years New Ye	icle Results  age Speed, mi/h  ment Travel Time, minutes  cle LOS  sicle Inputs  ment Type	62.0 0.68 A  Passing Constrained		Follower Density (  nent 5  Length, ft	% FD), followers/mi/ln	37.4 1.3 20069
Vehice Segn Vehice Vehice Segn Meas	age Speed, mi/h ment Travel Time, minutes cle LOS  sicle Inputs ment Type sured FFS	62.0 0.68 A  Passing Constrained		Follower Density (  nent 5  Length, ft  Free-Flow Speed,	% FD), followers/mi/ln	37.4 1.3 20069
Vehice Segni Vehice Vehice Vehice Derivative Directors of the Average Segni Measure Segni Measure Directors of the Average Segni Measure Seg	nicle Results  age Speed, mi/h  ment Travel Time, minutes  cle LOS  nicle Inputs  ment Type  sured FFS  mand and Capacity	62.0 0.68 A Passing Constrained Measured		Follower Density (  nent 5  Length, ft  Free-Flow Speed,	% FD), followers/mi/ln mi/h	37.4 1.3 20069 70.0
Vehice Segnate Meast Der Direct Peak	sicle Results  age Speed, mi/h  ment Travel Time, minutes  cle LOS  sicle Inputs  ment Type  sured FFS  mand and Capacity  ctional Demand Flow Rate, veh/h	62.0 0.68 A S Passing Constrained Measured		Follower Density (  nent 5  Length, ft Free-Flow Speed,  Opposing Demand	% FD), followers/mi/ln mi/h d Flow Rate, veh/h	37.4   1.3   20069   70.0
Vehice Segni Meast Der Direct Peak Segni	sicle Results  age Speed, mi/h  ment Travel Time, minutes  cle LOS  sicle Inputs  ment Type  sured FFS  mand and Capacity  ctional Demand Flow Rate, veh/h  Hour Factor	Passing Constrained Measured  255 0.94		Follower Density (  nent 5  Length, ft Free-Flow Speed,  Opposing Demand Total Trucks, %	% FD), followers/mi/ln mi/h d Flow Rate, veh/h	37.4 1.3 20069 70.0
Vehice Segnition Vehice Vehice Vehice Vehice Segnition Der Direct Segnition Interest Segnition Interest Segnition Vehice Segn	sicle Results  age Speed, mi/h  ment Travel Time, minutes  cle LOS  sicle Inputs  ment Type  sured FFS  mand and Capacity  ctional Demand Flow Rate, veh/h  Hour Factor  ment Capacity, veh/h	Passing Constrained Measured  255 0.94		Follower Density (  nent 5  Length, ft Free-Flow Speed,  Opposing Demand Total Trucks, %	%  FD), followers/mi/ln  mi/h  d Flow Rate, veh/h  (D/C)	37.4 1.3 20069 70.0
Vehice Segnal Near Direct Peak Segnal Segnal	sicle Results  age Speed, mi/h  ment Travel Time, minutes  cle LOS  sicle Inputs  ment Type  sured FFS  mand and Capacity  ctional Demand Flow Rate, veh/h  Hour Factor  ment Capacity, veh/h  crmediate Results	62.0 0.68 A  Passing Constrained Measured  255 0.94 1700		Follower Density (  nent 5  Length, ft  Free-Flow Speed,  Opposing Demand Total Trucks, %  Demand/Capacity	%  FD), followers/mi/ln  mi/h  d Flow Rate, veh/h  (D/C)	37.4 1.3 20069 70.0
Vehice Segnet Meast Der Direct Peak Segnet Segnet Speed	sicle Results  age Speed, mi/h  ment Travel Time, minutes  cle LOS  sicle Inputs  ment Type  sured FFS  mand and Capacity  ctional Demand Flow Rate, veh/h  Hour Factor  ment Capacity, veh/h  ermediate Results  ment Vertical Class	62.0 0.68 A S Passing Constrained Measured  255 0.94 1700		Follower Density (  Pent 5  Length, ft  Free-Flow Speed,  Opposing Demand  Total Trucks, %  Demand/Capacity  Free-Flow Speed,	%  FD), followers/mi/ln  mi/h  d Flow Rate, veh/h  (D/C)  mi/h  fficient (p)	37.4 1.3 20069 70.0 - 13.00 0.15

%Improvement to Percent Followers 7.4		7.4	4 %Impr		%Improvement	6Improvement to Speed		0.0
Sub	segment Data							
#	Segment Type	Leng	gth, ft	Rad	ius, ft	Sup	erelevation, %	Average Speed, mi/h
1	Tangent	2006	59	1-	-		65.9	
Veh	icle Results							
Avera	nge Speed, mi/h	65.9	5.9		Percent Followers, %		40.4	
Segment Travel Time, minutes 3.		3.46			Follower Densit	y (FD),	followers/mi/ln	1.5
Vehic	le LOS	А						
			S	egn	nent 6			
Veh	icle Inputs							
Segn	nent Type	Pass	ing Lanes		Length, ft			10560
Meas	ured FFS	Mea	sured		Free-Flow Spee	d, mi/h		70.0
Den	nand and Capacity							
Direc	tional Demand Flow Rate, veh/h	250			Opposing Demand Flow Rate, veh/h		-	
Peak	Hour Factor	0.94			Total Trucks, %		13.00	
Segn	nent Capacity, veh/h	1400	Demand/Capacity (		ity (D/C	<u> </u>	0.18	
Inte	rmediate Results							
Segn	nent Vertical Class	2			Free-Flow Spee	d, mi/h		70.0
Spee	d Slope Coefficient (m)	8.84	84480		Speed Power Co	oefficie	nt (p)	1.34187
PF SI	ope Coefficient (m)	-0.8	87977		PF Power Coefficient (p)		0.97547	
In Pa	ssing Lane Effective Length?	No	0		Total Segment Density, veh/mi/ln		0.7	
%lmp	provement to Percent Followers	0.0			%Improvement	to Spe	ed	0.0
Sub	segment Data							
#	Segment Type	Leng	gth, ft	Rad	ius, ft	Sup	erelevation, %	Average Speed, mi/h
1	Tangent	1056	50	-		-		69.3
Pas	sing Lane Results							
			Faster Lane				Slower Lane	
Flow	Rate, veh/h		159				91	
Perce	ntage of Heavy Vehicles (HV%), %		5.20				26.56	
nitia	Average Speed (Sint), mi/h		75.8				71.9	
Avera	age Speed at Midpoint (SPLmid), mi/	′h	77.5				70.2	
Perce	nt Followers at Midpoint (PFPLmid),	%	13.5				5.5	
Veh	icle Results							
Avera	age Speed, mi/h	69.3			Percent Followe	ers, %		20.4
Segn	nent Travel Time, minutes	1.73			Follower Densit	ry (FD), followers/mi/ln		0.7
Follo mi/ln	wer Density Mid-Point, followers/	0.2			Vehicle LOS		А	

			Seg	ment 7		
Vel	hicle Inputs					
Segi	ment Type	Passing Constrained		Length, ft		1584
Mea	sured FFS	Measured		Free-Flow Speed, mi/h		70.0
De	mand and Capacity					·
Dire	ctional Demand Flow Rate, veh/h	250		Opposing Demand	d Flow Rate, veh/h	-
Peak	k Hour Factor	0.94		Total Trucks, %		13.00
Segi	ment Capacity, veh/h	1700		Demand/Capacity	(D/C)	0.15
Int	ermediate Results					·
Segi	ment Vertical Class	1		Free-Flow Speed, 1	mi/h	70.0
Spe	ed Slope Coefficient (m)	4.57863		Speed Power Coef	ficient (p)	0.41674
PF S	Slope Coefficient (m)	-1.27849		PF Power Coefficie	nt (p)	0.76483
In Pa	assing Lane Effective Length?	Yes		Total Segment Der	nsity, veh/mi/ln	1.3
%lm	provement to Percent Followers	20.7		%Improvement to	Speed	2.5
Sul	bsegment Data					
#	Segment Type	Length, ft	Ra	adius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1584	-		-	67.9
Vel	hicle Results		Ė			
Avei	rage Speed, mi/h	69.6		Percent Followers,	<u> </u>	35.8
	ment Travel Time, minutes	0.26		Follower Density (I	FD), followers/mi/ln	1.0
Vehi	icle LOS	А				
			Seg	ment 8		
Vel	hicle Inputs					
	ment Type	Passing Constrained		Length, ft		5808
_	asured FFS	Measured		Free-Flow Speed, 1	mi/h	70.0
	mand and Capacity	IN Casar Ca		Tree from speed, i	,	76.0
	ectional Demand Flow Rate, veh/h	250		Opposing Demand	1 Flow Rate veh/h	-
	K Hour Factor	0.94		Total Trucks, %	Trow Rate, verifit	13.00
	ment Capacity, veh/h	1700		Demand/Capacity	(D/C)	0.15
	ermediate Results	1700		Demand, Capacity	(6/0)	0.13
	ment Vertical Class	3		Free-Flow Speed, 1	mi/h	70.0
				Speed Power Coef		0.79311
Speed Slope Coefficient (m) 14.85552		-1.31329		PF Power Coefficie	·	0.77908
DEC	Slope Coefficient (m)				<u> </u>	
	In Passing Lane Effective Length? Yes			Total Segment Do	asity ven/mi/in	113
In Pa	assing Lane Effective Length?	Yes 17.3		Total Segment Der		1.3

#	Segment Type	Length, ft	Rad	dius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	5808	-		-	66.7
Vel	nicle Results					
Aver	age Speed, mi/h	67.7		Percent Followers	, %	36.0
Segment Travel Time, minutes 0.97		0.97		Follower Density	(FD), followers/mi/ln	1.1
Vehic	cle LOS	Α				
			Segr	ment 9		
Veh	nicle Inputs					
Segn	nent Type	Passing Constrained		Length, ft		3168
Meas	sured FFS	Measured		Free-Flow Speed,	mi/h	65.0
Der	mand and Capacity					
Direc	ctional Demand Flow Rate, veh/h	330		Opposing Deman	d Flow Rate, veh/h	-
Peak	Hour Factor	0.94	0.94			8.00
Segn	nent Capacity, veh/h	1700		Demand/Capacity	/ (D/C)	0.19
Inte	ermediate Results					
Segment Vertical Class 3		Free-Flow Speed,	mi/h	65.0		
Spee	ed Slope Coefficient (m)	10.85846		Speed Power Coe	fficient (p)	0.73915
PF SI	ope Coefficient (m)	-1.34530		PF Power Coeffici	ent (p)	0.76678
In Pa	ssing Lane Effective Length?	Yes		Total Segment De	ensity, veh/mi/ln	2.4
%lm	provement to Percent Followers	15.0		%Improvement to Speed		0.7
Suk	segment Data					
#	Segment Type	Length, ft	Rad	lius, ft Superelevation, %		Average Speed, mi/h
1	Tangent	3168	-		-	61.3
Veh	nicle Results					
Aver	age Speed, mi/h	61.8		Percent Followers	, %	43.7
Segn	nent Travel Time, minutes	0.58		Follower Density	(FD), followers/mi/ln	2.0
Vehic	cle LOS	Α				
			Segn	nent 10		
Veh	nicle Inputs					
Segn	nent Type	Passing Lanes		Length, ft		3168
Meas	sured FFS	Measured		Free-Flow Speed,	mi/h	70.0
Der	mand and Capacity					
Direc	ctional Demand Flow Rate, veh/h	372		Opposing Deman	d Flow Rate, veh/h	-
Peak	Hour Factor	0.94		Total Trucks, %		8.00
Segn	nent Capacity, veh/h	1500		Demand/Capacity	/ (D/C)	0.25

Segment Vertical Class	3			Free-Flow Speed,	mi/h		70.0
Speed Slope Coefficient (m)		5430		Speed Power Coef			0.90074
PF Slope Coefficient (m)		1166		PF Power Coefficie		- ( -7	0.78834
In Passing Lane Effective Length?	No			Total Segment Density, veh/mi/ln			2.2
%Improvement to Percent Followers	0.0			%Improvement to			0.0
Subsegment Data	1						
# Segment Type	Len	gth, ft	Rad	ius, ft	Supe	relevation, %	Average Speed, mi/h
1 Tangent	316		-		-		67.2
Passing Lane Results							
		Faster Lane				Slower Lane	
Flow Rate, veh/h	229				143		
Percentage of Heavy Vehicles (HV%), %		3.20			$\neg$	15.69	
Initial Average Speed (Sint), mi/h		74.8				72.4	
Average Speed at Midpoint (SPLmid), mi/h 76.4						70.8	
Percent Followers at Midpoint (PFPLmid	), %	34.4				21.9	
Vehicle Results							
Average Speed, mi/h 67.2				Percent Followers, %			40.0
Segment Travel Time, minutes	0.54	1		Follower Density (	FD), fo	llowers/mi/ln	2.2
Follower Density Mid-Point, followers/mi/ln	0.7			Vehicle LOS			А
		Se	gm	ent 11			
Vehicle Inputs							
Segment Type	Pass	sing Zone		Length, ft			6864
Measured FFS	Mea	asured		Free-Flow Speed, mi/h		65.0	
Demand and Capacity							
Directional Demand Flow Rate, veh/h	468			Opposing Demand Flow Rate, veh/h			255
Peak Hour Factor	0.94	1		Total Trucks, %		8.00	
Segment Capacity, veh/h	170	0		Demand/Capacity	(D/C)		0.28
Intermediate Results							
				Free-Flow Speed, mi/h			65.0
Segment Vertical Class				Speed Power Coefficient (p)			0.53500
Segment Vertical Class Speed Slope Coefficient (m)	_	)376		Speed Power Coef	meren	0.52506	
	4.40	9376 8947		PF Power Coefficie		. (ρ)	0.81679
Speed Slope Coefficient (m)	4.40			,	ent (p)		
Speed Slope Coefficient (m)  PF Slope Coefficient (m)	4.40	8947		PF Power Coefficie	ent (p) nsity, v	/eh/mi/ln	0.81679
Speed Slope Coefficient (m)  PF Slope Coefficient (m)  In Passing Lane Effective Length?	4.40 -1.1 Yes	8947		PF Power Coefficie Total Segment De	ent (p) nsity, v	/eh/mi/ln	0.81679
Speed Slope Coefficient (m)  PF Slope Coefficient (m)  In Passing Lane Effective Length?  %Improvement to Percent Followers	4.40 -1.1 Yes 16.3	8947	Rad	PF Power Coefficie Total Segment De	ent (p) nsity, v	/eh/mi/ln	0.81679
Speed Slope Coefficient (m)  PF Slope Coefficient (m)  In Passing Lane Effective Length?  %Improvement to Percent Followers  Subsegment Data	4.40 -1.1 Yes 16.3	8947 3 gth, ft	Rad	PF Power Coefficie Total Segment De %Improvement to	ent (p) nsity, v	veh/mi/ln	0.81679 3.5 1.0

Average Speed, mi/h	63.0	)		Percent Followers	, %		47.3	
Segment Travel Time, minutes	1.24	4		Follower Density	(FD),	followers/mi/ln	2.9	
Vehicle LOS	В							
		Se	gm	ent 12				
Vehicle Inputs								
Segment Type	Pas	sing Lanes		Length, ft			4752	
Measured FFS	_	asured		Free-Flow Speed,	mi/h		65.0	
Demand and Capacity								
Directional Demand Flow Rate, veh/h	468	}		Opposing Deman	ıd Flo	w Rate, veh/h	-	
Peak Hour Factor	Hour Factor 0.94		Total Trucks, %			8.00		
Segment Capacity, veh/h	150	00		Demand/Capacity	/ (D/C	<u> </u>	0.31	
Intermediate Results								
Segment Vertical Class	1			Free-Flow Speed,	mi/h		65.0	
Speed Slope Coefficient (m)	7.16	5123		Speed Power Coefficient (p)		0.85065		
PF Slope Coefficient (m)	-1.1	4890		PF Power Coefficient (p)		0.85274		
In Passing Lane Effective Length?	No	No		Total Segment Density, veh/mi/ln		, veh/mi/ln	3.4	
%Improvement to Percent Followers		0.0		%Improvement to	Spe	ed	0.0	
Subsegment Data								
# Segment Type	Len	gth, ft	Rac	lius, ft	Sup	perelevation, %	Average Speed, mi/h	
1 Tangent	475	2	-		-		61.9	
Passing Lane Results								
		Faster Lane		Slower Lane		Slower Lane		
Flow Rate, veh/h		282				186		
Percentage of Heavy Vehicles (HV%), %		3.20			15.25			
Initial Average Speed (Sint), mi/h		75.3				75.5		
Average Speed at Midpoint (SPLmid), m	i/h	76.9				73.8		
Percent Followers at Midpoint (PFPLmid	), %	31.7				23.7		
Vehicle Results								
Average Speed, mi/h	61.9	9		Percent Followers	, %		45.2	
Segment Travel Time, minutes	0.87	7		Follower Density (FD), followers/mi/ln		followers/mi/ln	3.4	
Follower Density Mid-Point, followers/mi/ln	0.9			Vehicle LOS			A	
		Se	gm	ent 13				
Vehicle Inputs								
Segment Type	Pas	sing Constrained		Length, ft			528	
Measured FFS	_	asured		Free-Flow Speed,	mi/h		65.0	
Demand and Capacity								

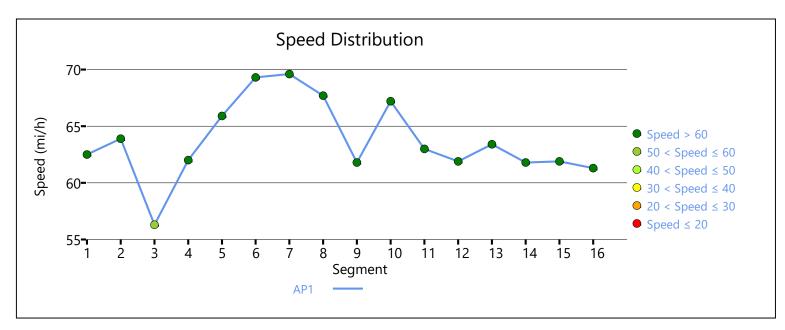
168		Opposing Doman	d Flow Pata vah/h	_
			u Flow Rate, veri/11	8.00
			(D/C)	0.28
1700	1700		(D/C)	0.20
1	1			65.0
4.57372		<u> </u>	·	0.41674
-1.34675		PF Power Coefficie	ent (p)	0.74795
Yes		Total Segment De	nsity, veh/mi/ln	4.0
23.7		%Improvement to	Speed	2.3
Length, ft	Rac	dius, ft	Superelevation, %	Average Speed, mi/h
528	528 -		-	62.0
63.4		Percent Followers,	, %	53.4
0.09		Follower Density (	FD), followers/mi/ln	3.0
В	-			
•	Segm	ent 14		
Passing Constra	ined	Length, ft		6336
Measured	easured Fre		mi/h	65.0
·		<u>'</u>		
622		Opposing Deman	d Flow Rate, veh/h	-
0.94		Total Trucks, %		8.00
1700		Demand/Capacity (D/C)		0.37
1		Free-Flow Speed,	mi/h	65.0
4.63499		<u> </u>		0.41674
-1.24695		PF Power Coefficie	ent (p)	0.77221
Yes		Total Segment De	nsity, veh/mi/ln	5.9
15.2		%Improvement to	Speed	0.5
,				
Length, ft	Rac	dius, ft	Superelevation, %	Average Speed, mi/h
	3			
6336	-		-	61.5
6336	-		-	61.5
6336	-	Percent Followers.	.%	57.9
	-	Percent Followers,	, % FD), followers/mi/ln	
	0.94 1700  1 4.57372 -1.34675 Yes 23.7  Length, ft 528  63.4 0.09 B  Passing Constra Measured  622 0.94 1700  1 4.63499 -1.24695 Yes	0.94 1700  1 4.57372 -1.34675 Yes 23.7  Length, ft Rac 528 -  63.4 0.09  B  Segm  Passing Constrained Measured  Measured  1 4.63499 -1.24695 Yes	0.94 Total Trucks, % 1700 Demand/Capacity  1 Free-Flow Speed, 4.57372 Speed Power Coe -1.34675 PF Power Coefficie Yes Total Segment De 23.7 %Improvement to  Length, ft Radius, ft 528 -  63.4 Percent Followers, 0.09 Follower Density (  B  Segment 14  Passing Constrained Length, ft Measured Free-Flow Speed,  622 Opposing Deman 0.94 Total Trucks, % 1700 Demand/Capacity  1 Free-Flow Speed, 4.63499 Speed Power Coe -1.24695 PF Power Coefficie Yes Total Segment De	0.94 Total Trucks, % 1700 Demand/Capacity (D/C)  1 Free-Flow Speed, mi/h 4.57372 Speed Power Coefficient (p) -1.34675 PF Power Coefficient (p) Yes Total Segment Density, veh/mi/ln 23.7 %Improvement to Speed  Length, ft Radius, ft Superelevation, % 528  63.4 Percent Followers, % 0.09 Follower Density (FD), followers/mi/ln B  Segment 14  Passing Constrained Length, ft Measured Free-Flow Speed, mi/h  622 Opposing Demand Flow Rate, veh/h 1700 Demand/Capacity (D/C)  1 Free-Flow Speed, mi/h 4.63499 Speed Power Coefficient (p) -1.24695 PF Power Coefficient (p) Yes Total Segment Density, veh/mi/ln

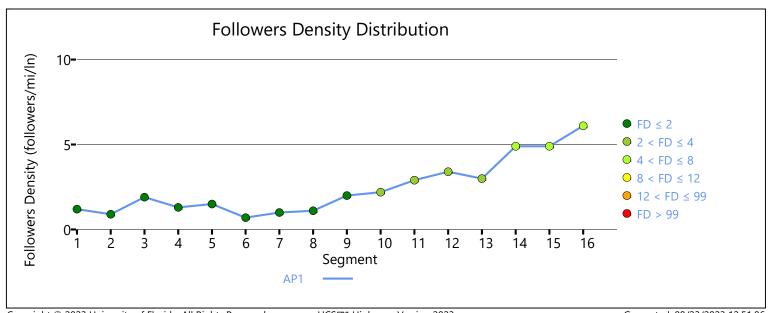
		S	egr	ment 15		
Vel	nicle Inputs					
Segr	ment Type	Passing Zone		Length, ft		4863
Mea	sured FFS	Measured		Free-Flow Speed, 1	mi/h	65.0
Dei	mand and Capacity					
Dire	ctional Demand Flow Rate, veh/h	622	622		d Flow Rate, veh/h	229
Peak	Hour Factor	0.94		Total Trucks, %		8.00
Segr	ment Capacity, veh/h	1700		Demand/Capacity	(D/C)	0.37
Int	ermediate Results					
Segr	ment Vertical Class	1		Free-Flow Speed, 1	mi/h	65.0
Spee	ed Slope Coefficient (m)	4.37632		Speed Power Coef	ficient (p)	0.53156
	lope Coefficient (m)	-1.19294		PF Power Coefficie	·	0.82301
In Pa	assing Lane Effective Length?	Yes		Total Segment Der	nsity, veh/mi/ln	5.6
%lm	provement to Percent Followers	12.2		%Improvement to	Speed	0.0
Sul	osegment Data					•
#	Segment Type	Length, ft	Rá	adius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	4863	1-		-	61.9
Vel	nicle Results	<u> </u>				<u>'</u>
Aver	rage Speed, mi/h	61.9		Percent Followers,	%	55.4
	ment Travel Time, minutes	0.89		Follower Density (I	FD), followers/mi/ln	4.9
Vehi	cle LOS	С				
		9	egr	ment 16		
Vel	nicle Inputs					
	ment Type	Passing Constrained		Length, ft		8812
_	sured FFS	Measured		Free-Flow Speed, i	mi/h	65.0
	mand and Capacity	Medsared		Tree from speed, i	,	05.0
	ctional Demand Flow Rate, veh/h	670		Opposing Demand	d Flow Rate, veh/h	-
	Hour Factor	0.94		Total Trucks, %	Trow Rate, veriffi	8.00
	ment Capacity, veh/h	1700		Demand/Capacity	(D/C)	0.39
	ermediate Results	1700		Demand, capacity	(6/ 6)	0.55
	ment Vertical Class	1		Free-Flow Speed, 1	mi/h	65.0
	ed Slope Coefficient (m)	4.65521		Speed Power Coef		0.41674
	lope Coefficient (m)	-1.24954		PF Power Coefficie	·	0.75957
113	assing Lane Effective Length?	-1.24954 Yes			<u> </u>	6.6
In D			Total Segment Density, veh/mi/ln		1 0.0	
	provement to Percent Followers	7.9		%Improvement to		0.0

#	Segment Type	Length, ft	Radius	s, ft	Superelevation, %	Average Speed, mi/h			
1	Tangent	8812	-		-	61.3			
Vehicle Results									
Average Speed, mi/h 61.3			P	ercent Followers,	%	60.2			
Segm	nent Travel Time, minutes	1.63	F	ollower Density (	6.1				
Vehic	le LOS	С							
Facility Results									
Т	VMT veh-mi/AP	VHI veh-l	_		ensity, followers/ mi/ln	LOS			

1.32

2.1





1605

В

	HCS Two-La	ne	Highway Re	port	
Project Information		_			
Analyst	K. Luljak		Date		8/23/2023
Agency	HDR		Analysis Year		2023
Jurisdiction	КҮТС		Time Analyzed		2023 PM
Project Description	US 127 NB		Units		U.S. Customary
	S	egn	nent 1		
Vehicle Inputs					
Segment Type Passing Constrained Length, ft			2640		
Measured FFS	Measured		Free-Flow Speed,	mi/h	65.0
Demand and Capacity	<u>'</u>				
Directional Demand Flow Rate, veh/h	223		Opposing Deman	d Flow Rate, veh/h	-
Peak Hour Factor	1		13.00		
Segment Capacity, veh/h	1700		Demand/Capacity	(D/C)	0.13
Intermediate Results					
Segment Vertical Class 3			Free-Flow Speed,	mi/h	65.0
Speed Slope Coefficient (m)	12.43125		Speed Power Coe	fficient (p)	0.75892
PF Slope Coefficient (m)	-1.34725		PF Power Coefficie	ent (p)	0.77319
In Passing Lane Effective Length?	No		Total Segment De	nsity, veh/mi/ln	1.2
%Improvement to Percent Followers	0.0		%Improvement to	Speed	0.0
Subsegment Data					·
# Segment Type	Length, ft	Rad	lius, ft	Superelevation, %	Average Speed, mi/h
1 Tangent	2640	-		-	62.5
Vehicle Results	•				
Average Speed, mi/h	62.5		Percent Followers	, %	34.5
Segment Travel Time, minutes	0.48		Follower Density (	FD), followers/mi/ln	1.2
Vehicle LOS	А				
	S	egn	nent 2		
Vehicle Inputs					
Segment Type	Passing Lanes		Length, ft		5808
Measured FFS	Measured		Free-Flow Speed,	mi/h	65.0
Demand and Capacity					
Directional Demand Flow Rate, veh/h	223		Opposing Deman	d Flow Rate, veh/h	T-
Peak Hour Factor	0.94		Total Trucks, %		13.00
Segment Capacity, veh/h	1400		Demand/Capacity	(D/C)	0.16
Intermediate Results	,				

	ment Vertical Class	1			Free-Flow Speed,	65.0	
Spee	ed Slope Coefficient (m)	7.84	1057		Speed Power Coef	ficient (p)	0.92518
PF S	lope Coefficient (m)	-1.1	0232		PF Power Coefficie	0.86403	
In Pa	assing Lane Effective Length?	No			Total Segment De	nsity, veh/mi/ln	0.9
%lm	provement to Percent Followers	0.0			%Improvement to	Speed	0.0
Suk	osegment Data						
#	Segment Type	Len	ngth, ft Radi		ius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	580	8	-		-	63.9
Pas	ssing Lane Results						
			Faster Lane			Slower Lane	
Flow	/ Rate, veh/h		143			80	
Percentage of Heavy Vehicles (HV%), %			5.20			26.96	
Initial Average Speed (Sint), mi/h			76.4			76.1	
Aver	rage Speed at Midpoint (SPLmid), mi	/h	78.1			74.4	
Perc	ent Followers at Midpoint (PFPLmid)	, %	17.4			11.1	
Veł	nicle Results						
Aver	rage Speed, mi/h	63.9	)		Percent Followers,	%	26.1
Segr	ment Travel Time, minutes	1.03	3		Follower Density (	FD), followers/mi/ln	0.9
Follo mi/lr	ower Density Mid-Point, followers/ n	0.2	2 Vehicle LOS				A
			Se	egm	ent 3		·
				_			
Veł	nicle Inputs						
	nicle Inputs	Pass	sing Constrained		Length, ft		11088
Segr	•	_	sing Constrained			mi/h	11088
Segr Mea	ment Type	_			Length, ft	mi/h	
Segr Mea <b>De</b> i	ment Type sured FFS	_	asured		Length, ft		
Segr Mea <b>Dei</b>	ment Type sured FFS mand and Capacity	Mea	asured		Length, ft Free-Flow Speed,		65.0
Segr Mea <b>Dei</b> Direc	ment Type sured FFS mand and Capacity ctional Demand Flow Rate, veh/h	Mea	asured		Length, ft Free-Flow Speed, Opposing Demand	d Flow Rate, veh/h	65.0
Segr Mea <b>Dei</b> Direc Peak	ment Type sured FFS mand and Capacity ctional Demand Flow Rate, veh/h t Hour Factor	223 0.94	asured		Length, ft Free-Flow Speed, Opposing Demand Total Trucks, %	d Flow Rate, veh/h	- 13.00
Segr Mea Der Direc Peak Segr	ment Type sured FFS mand and Capacity ctional Demand Flow Rate, veh/h thour Factor ment Capacity, veh/h	223 0.94	asured		Length, ft Free-Flow Speed, Opposing Demand Total Trucks, %	d Flow Rate, veh/h (D/C)	- 13.00
Segri Mea Direc Peak Segri Into	ment Type sured FFS mand and Capacity ctional Demand Flow Rate, veh/h a Hour Factor ment Capacity, veh/h ermediate Results	223 0.94 170	asured		Length, ft Free-Flow Speed, Opposing Demand Total Trucks, % Demand/Capacity	d Flow Rate, veh/h (D/C) mi/h	- 13.00 0.13
Der Director	ment Type sured FFS  mand and Capacity  ctional Demand Flow Rate, veh/h  a Hour Factor ment Capacity, veh/h  ermediate Results  ment Vertical Class	223 0.94 170 4 23.3	asured  4 0		Length, ft Free-Flow Speed, Opposing Demand Total Trucks, % Demand/Capacity Free-Flow Speed,	d Flow Rate, veh/h (D/C) mi/h fficient (p)	65.0 - 13.00 0.13
Segri Mea Der Direct Peak Segri Inte Segri Spee	ment Type sured FFS  mand and Capacity ctional Demand Flow Rate, veh/h c Hour Factor ment Capacity, veh/h ermediate Results ment Vertical Class ed Slope Coefficient (m)	223 0.94 170 4 23.3	asured 4 0		Length, ft Free-Flow Speed, Opposing Demand Total Trucks, % Demand/Capacity Free-Flow Speed, Speed Power Coef	d Flow Rate, veh/h (D/C) mi/h fficient (p)	65.0 - 13.00 0.13 65.0 0.51393
Segr Mea Der Direc Peak Segr Into Segr Spee PF S	ment Type sured FFS  mand and Capacity ctional Demand Flow Rate, veh/h c Hour Factor ment Capacity, veh/h ermediate Results ment Vertical Class ed Slope Coefficient (m) lope Coefficient (m)	223 0.94 170 4 23.3 -1.9	asured 4 0 32522 1200		Length, ft  Free-Flow Speed,  Opposing Demand  Total Trucks, %  Demand/Capacity  Free-Flow Speed,  Speed Power Coefficie	d Flow Rate, veh/h  (D/C)  mi/h  ficient (p)  ent (p)  nsity, veh/mi/ln	65.0 - 13.00 0.13 65.0 0.51393 0.76801
Segr Mea Direc Peak Segr Inte Segr Spee PF SI In Pa	ment Type sured FFS  mand and Capacity ctional Demand Flow Rate, veh/h c Hour Factor ment Capacity, veh/h ermediate Results ment Vertical Class ed Slope Coefficient (m) lope Coefficient (m) assing Lane Effective Length?	223 0.94 170 4 23.3 -1.9 Yes	asured 4 0 32522 1200		Length, ft  Free-Flow Speed,  Opposing Demand  Total Trucks, %  Demand/Capacity  Free-Flow Speed,  Speed Power Coefficie  Total Segment Demand	d Flow Rate, veh/h  (D/C)  mi/h  ficient (p)  ent (p)  nsity, veh/mi/ln	65.0 - 13.00 0.13 65.0 0.51393 0.76801 1.8
Segr Mea Direct Peak Segr Inte Segr Spee PF Si In Pa	ment Type sured FFS  mand and Capacity ctional Demand Flow Rate, veh/h c Hour Factor ment Capacity, veh/h ermediate Results ment Vertical Class ed Slope Coefficient (m) lope Coefficient (m) assing Lane Effective Length? provement to Percent Followers	223 0.94 170 4 23.3 -1.9 Yes 15.4	asured 4 0 32522 1200	Radi	Length, ft  Free-Flow Speed,  Opposing Demand  Total Trucks, %  Demand/Capacity  Free-Flow Speed,  Speed Power Coefficie  Total Segment Demand	d Flow Rate, veh/h  (D/C)  mi/h  ficient (p)  ent (p)  nsity, veh/mi/ln	65.0 - 13.00 0.13 65.0 0.51393 0.76801 1.8

	6 1 14	F7.4	-		0/	45.4
	age Speed, mi/h	57.4		Percent Followers,		45.4
	nent Travel Time, minutes	2.20	F	ollower Density (I	D), followers/mi/ln	1.5
Vehic	cle LOS	А				
		S	egme	ent 4		
Veh	icle Inputs					
Segn	nent Type	Passing Constrained	Le	ength, ft		3696
Meas	sured FFS	Measured	Fi	ree-Flow Speed, 1	mi/h	65.0
Der	mand and Capacity					
Direc	ctional Demand Flow Rate, veh/h	213	0	Opposing Demand	d Flow Rate, veh/h	-
Peak	Hour Factor	0.94	To	otal Trucks, %		13.00
Segn	nent Capacity, veh/h	1700	D	Demand/Capacity	(D/C)	0.13
Inte	ermediate Results					
Segn	nent Vertical Class	2	Fi	ree-Flow Speed, 1	mi/h	65.0
Spee	ed Slope Coefficient (m)	8.56197	S	speed Power Coef	ficient (p)	0.55823
PF SI	ope Coefficient (m)	-1.32097	Р	PF Power Coefficie	nt (p)	0.75965
In Passing Lane Effective Length?		Yes		otal Segment Der	nsity, veh/mi/ln	1.1
%Improvement to Percent Followers		13.7	%	6Improvement to	Speed	0.1
Suk	segment Data					
#	Segment Type	Length, ft	Radius	s, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	3696	-		-	62.5
Veh	nicle Results					
Aver	age Speed, mi/h	62.5	Po	ercent Followers,	%	33.5
Segn	nent Travel Time, minutes	0.67	F	Follower Density (FD), followers/mi/ln		1.0
Vehic	cle LOS	А				
		S	egme	ent 5		
Veh	icle Inputs	Se	egme	ent 5		
	nicle Inputs	Passing Constrained		ent 5		20069
Segn	•		L		mi/h	20069
Segn	nent Type	Passing Constrained	L	ength, ft	mi/h	
Segn Meas <b>Der</b>	nent Type sured FFS	Passing Constrained	Le Fr	ength, ft ree-Flow Speed, 1	mi/h d Flow Rate, veh/h	
Segn Meas <b>Der</b>	nent Type sured FFS mand and Capacity	Passing Constrained Measured	Le Fr	ength, ft ree-Flow Speed, 1		70.0
Segn Meas <b>Der</b> Direc	nent Type sured FFS mand and Capacity ctional Demand Flow Rate, veh/h	Passing Constrained Measured  213	Lo Fi	ength, ft ree-Flow Speed, i Opposing Demand	d Flow Rate, veh/h	70.0
Segn Meas Der Direc Peak Segn	nent Type sured FFS  mand and Capacity  ctional Demand Flow Rate, veh/h Hour Factor	Passing Constrained Measured  213 0.94	Lo Fi	ength, ft free-Flow Speed, i Opposing Demand Total Trucks, %	d Flow Rate, veh/h	70.0
Segn Meas Der Direc Peak Segn	nent Type sured FFS  mand and Capacity  ctional Demand Flow Rate, veh/h  Hour Factor  nent Capacity, veh/h	Passing Constrained Measured  213 0.94	Le Fr	ength, ft free-Flow Speed, i Opposing Demand Total Trucks, %	d Flow Rate, veh/h (D/C)	70.0
Segn Meas Der Direc Peak Segn Inte	nent Type sured FFS  mand and Capacity  ctional Demand Flow Rate, veh/h Hour Factor nent Capacity, veh/h  ermediate Results	Passing Constrained Measured  213 0.94 1700	Le Fi	ength, ft free-Flow Speed, i Opposing Demand Total Trucks, % Demand/Capacity	d Flow Rate, veh/h (D/C) mi/h	70.0 - 13.00 0.13
Segn Meas Der Direct Peak Segn Inte Segn Spee	nent Type sured FFS  mand and Capacity  ctional Demand Flow Rate, veh/h  Hour Factor nent Capacity, veh/h  ermediate Results nent Vertical Class	Passing Constrained Measured  213 0.94 1700	Lo Fi	ength, ft free-Flow Speed, i Dpposing Demand Otal Trucks, % Demand/Capacity free-Flow Speed, i	d Flow Rate, veh/h (D/C) mi/h ficient (p)	70.0 - 13.00 0.13

%lm	provement to Percent Followers	7.8	3 %		%Improvement to Speed		0.0	
Sub	segment Data							
#	Segment Type	Leng	gth, ft	Rad	ius, ft	Sup	erelevation, %	Average Speed, mi/h
1	Tangent	2006	59	1-		-		66.6
Veh	nicle Results							
Aver	age Speed, mi/h	66.6	5.6		Percent Followe	rs, %		36.6
Segn	nent Travel Time, minutes	3.42	.2		Follower Density	/ (FD),	followers/mi/ln	1.1
Vehic	cle LOS	А						
			S	egn	nent 6			
Veh	icle Inputs							
Segn	nent Type	Pass	ing Lanes		Length, ft			10560
<u> </u>			sured		Free-Flow Speed	d, mi/h		70.0
Der	mand and Capacity							
Direc	ctional Demand Flow Rate, veh/h	191			Opposing Dema	nd Flo	w Rate, veh/h	-
Peak	Hour Factor	0.94			Total Trucks, %			13.00
Segn	nent Capacity, veh/h	1400	00		Demand/Capacity (D/C)		0.14	
Inte	ermediate Results							
Segn	nent Vertical Class	2	Free-Flow Speed, mi/			d, mi/h		70.0
Spee	d Slope Coefficient (m)	8.84	.84480		Speed Power Co	efficie	nt (p)	1.34187
PF SI	ope Coefficient (m)	-0.8	).87977		PF Power Coefficient (p)			0.97547
In Pa	ssing Lane Effective Length?	No	lo		Total Segment D	ensity	, veh/mi/ln	0.4
%lm	provement to Percent Followers	0.0			%Improvement	to Spe	ed	0.0
Sub	segment Data							
#	Segment Type	Leng	gth, ft	Rad	us, ft Superelevation, %		erelevation, %	Average Speed, mi/h
1	Tangent	1056	50	-	-			69.6
Pas	sing Lane Results							
			Faster Lane				Slower Lane	
Flow	Rate, veh/h		125				67	
Perce	entage of Heavy Vehicles (HV%), %		5.20				27.52	
Initia	l Average Speed (Sint), mi/h		76.0				71.7	
Avera	age Speed at Midpoint (SPLmid), mi/	'n	77.6				70.1	
Perce	ent Followers at Midpoint (PFPLmid),	%	10.8				3.8	
Veh	icle Results							
Aver	age Speed, mi/h	69.6			Percent Followe	owers, %		16.1
Segn	nent Travel Time, minutes	1.72			Follower Density	/ (FD),	followers/mi/ln	0.4
Follo mi/lr	wer Density Mid-Point, followers/	0.1			Vehicle LOS			А

	S	egı	ment 7		
Vehicle Inputs					
Segment Type	Passing Constrained		Length, ft		1584
Measured FFS	Measured		Free-Flow Speed,	mi/h	70.0
Demand and Capacity					
Directional Demand Flow Rate, veh/h	191		Opposing Demand	d Flow Rate, veh/h	-
Peak Hour Factor 0.94		Total Trucks, %		13.00	
Segment Capacity, veh/h	1700		Demand/Capacity	(D/C)	0.11
Intermediate Results					·
Segment Vertical Class	1		Free-Flow Speed,	mi/h	70.0
Speed Slope Coefficient (m)	4.57863		Speed Power Coef	ficient (p)	0.41674
PF Slope Coefficient (m)	-1.27849		PF Power Coefficie	ent (p)	0.76483
In Passing Lane Effective Length?	Yes		Total Segment Der	nsity, veh/mi/ln	0.8
%Improvement to Percent Followers	20.9		%Improvement to	Speed	2.4
Subsegment Data					•
# Segment Type	Length, ft	Ra	ndius, ft	Superelevation, %	Average Speed, mi/h
1 Tangent	1584	1-		-	68.3
Vehicle Results					
Average Speed, mi/h	69.9		Percent Followers,	%	30.3
Segment Travel Time, minutes	0.26		Follower Density (	FD), followers/mi/ln	0.7
Vehicle LOS	A				
	S	egı	ment 8		,
Vehicle Inputs					
Segment Type	Passing Constrained		Length, ft		5808
Measured FFS	Measured		Free-Flow Speed,	mi/h	70.0
Demand and Capacity			Tree trees speed,	,	7.515
Directional Demand Flow Rate, veh/h	191		Opposing Demand	d Flow Rate, veh/h	T-
Peak Hour Factor	0.94		Total Trucks, %		13.00
Segment Capacity, veh/h	1700		Demand/Capacity	(D/C)	0.11
Intermediate Results			, ,		
Segment Vertical Class	3		Free-Flow Speed,	mi/h	70.0
Speed Slope Coefficient (m)	14.85552		Speed Power Coef		0.79311
PF Slope Coefficient (m)	-1.31329		PF Power Coefficie	•	0.77908
In Passing Lane Effective Length?	Yes		Total Segment Dei	<u> </u>	0.9
%Improvement to Percent Followers	17.5		%Improvement to		1.5
Subsegment Data					

#	Segment Type	Length, ft	Rad	dius, ft	Superelevation, %	Average Speed, mi/h	
1	Tangent	5808	-		-	67.8	
Ve	hicle Results						
Ave	rage Speed, mi/h	68.8		Percent Followers,	, %	30.4	
Seg	ment Travel Time, minutes	0.96		Follower Density (	(FD), followers/mi/ln	0.7	
Veh	icle LOS	A					
			Segr	nent 9			
Ve	hicle Inputs						
Segment Type		Passing Constrain	ned	Length, ft		3168	
Measured FFS		Measured		Free-Flow Speed,	mi/h	65.0	
De	mand and Capacity						
Dire	ectional Demand Flow Rate, veh/h	234		Opposing Deman	d Flow Rate, veh/h	-	
Peal	k Hour Factor	0.94		Total Trucks, %		8.00	
Seg	ment Capacity, veh/h	1700		Demand/Capacity	γ (D/C)	0.14	
Int	ermediate Results						
Seg	ment Vertical Class	3		Free-Flow Speed,	65.0		
Spe	ed Slope Coefficient (m)	10.85846		Speed Power Coe	0.73915		
PF S	Slope Coefficient (m)	-1.34530		PF Power Coefficie	PF Power Coefficient (p)		
In P	assing Lane Effective Length?	Yes		Total Segment De	nsity, veh/mi/ln	1.3	
%ln	provement to Percent Followers	15.6		%Improvement to	Speed	0.8	
Su	bsegment Data						
#	Segment Type	Length, ft	Rad	dius, ft Superelevation, %		Average Speed, mi/h	
1	Tangent	3168	-		-	62.5	
Ve	hicle Results						
Ave	rage Speed, mi/h	63.0		Percent Followers,	35.7		
Seg	ment Travel Time, minutes	0.57		Follower Density (	(FD), followers/mi/ln	1.1	
Veh	icle LOS	A					
			Segm	ent 10		•	
Ve	hicle Inputs						
Seg	ment Type	Passing Lanes		Length, ft		3168	
	asured FFS	Measured		Free-Flow Speed,	mi/h	70.0	
<b>D</b> <sub>0</sub>	mand and Capacity						
De	ectional Demand Flow Rate, veh/h	255		Opposing Deman	d Flow Rate, veh/h	-	
				8.00			
Dire	k Hour Factor	0.94		Total Trucks, %	Demand/Capacity (D/C)		

Segment Vertical Class	3			Free-Flow Speed,	mi/h		70.0	
Speed Slope Coefficient (m)	+	5430		Speed Power Coef		(n)	0.90074	
PF Slope Coefficient (m)	+	1166		PF Power Coefficie		(P)	0.78834	
In Passing Lane Effective Length?	No	1100		Total Segment Density, veh/mi/ln			1.2	
%Improvement to Percent Followers	0.0			%Improvement to			0.0	
Subsegment Data	10.0			73	эросс		0.0	
# Segment Type	Len	gth, ft	Rad	lius, ft Supe		relevation, %	Average Speed, mi/h	
1 Tangent	316		-	143, 11	-		68.3	
Passing Lane Results								
		Faster Lane				Slower Lane		
Flow Rate, veh/h		163			9	93		
Percentage of Heavy Vehicles (HV%), %		3.20				16.44		
Initial Average Speed (Sint), mi/h		75.4			-	72.7		
Average Speed at Midpoint (SPLmid), mi	/h	77.0				71.1		
Percent Followers at Midpoint (PFPLmid)	, %	27.5			•	16.5		
Vehicle Results								
Average Speed, mi/h	68.3	3 Percent Followers, %				31.5		
Segment Travel Time, minutes	0.53	Follower Density (FD),			FD), fo	llowers/mi/ln	1.2	
Follower Density Mid-Point, followers/mi/ln	0.4	4 Vehicle LOS					A	
		Se	gm	ent 11				
Vehicle Inputs								
Segment Type	Pass	sing Zone Length, ft					6864	
Measured FFS	Mea	1easured Free-Flow Speed, mi			mi/h		65.0	
Demand and Capacity								
Directional Demand Flow Rate, veh/h	319			Opposing Demand Flow Rate, veh/h			532	
Peak Hour Factor	0.94	ļ		Total Trucks, %			8.00	
Segment Capacity, veh/h	170	0		Demand/Capacity (D/C)			0.19	
Intermediate Results								
	1			Free-Flow Speed,	mi/h		65.0	
Segment Vertical Class		Speed Power Coef	fficient	(p)	0.47794			
Speed Slope Coefficient (m)	4.47	720				PF Power Coefficient (p)		
	+			PF Power Coefficie	ent (p)	·	0.80145	
Speed Slope Coefficient (m)	+			PF Power Coefficient Total Segment De		reh/mi/ln	0.80145	
Speed Slope Coefficient (m)  PF Slope Coefficient (m)	-1.2	2380			nsity, v			
Speed Slope Coefficient (m)  PF Slope Coefficient (m)  In Passing Lane Effective Length?	-1.2 Yes	2380		Total Segment De	nsity, v		2.0	
Speed Slope Coefficient (m)  PF Slope Coefficient (m)  In Passing Lane Effective Length?  %Improvement to Percent Followers	-1.2 Yes 17.0	2380	Rad	Total Segment De	nsity, v		2.0	
Speed Slope Coefficient (m)  PF Slope Coefficient (m)  In Passing Lane Effective Length?  %Improvement to Percent Followers  Subsegment Data	-1.2 Yes 17.0	2380 ) gth, ft	Rad	Total Segment Del %Improvement to	nsity, v	1	2.0	

Average Speed, mi/h	63.4	4		Percent Followers	5, %		38.7
Segment Travel Time, minutes	1.23	3		Follower Density	(FD),	followers/mi/ln	1.6
Vehicle LOS	А						
		Se	gm	ent 12			
Vehicle Inputs							
Segment Type	Pas	sing Lanes	Length, ft			4752	
Measured FFS	Me	asured		Free-Flow Speed,	mi/h		65.0
Demand and Capacity							
Directional Demand Flow Rate, veh/h	319	)		Opposing Demar	nd Flo	w Rate, veh/h	-
Peak Hour Factor		4		Total Trucks, %			8.00
Segment Capacity, veh/h	150	00		Demand/Capacity	/ (D/0	<u> </u>	0.21
Intermediate Results							
Segment Vertical Class	1			Free-Flow Speed,	mi/h		65.0
Speed Slope Coefficient (m)	7.16	6123		Speed Power Coe	fficie	nt (p)	0.85065
PF Slope Coefficient (m)	-1.1	14890		PF Power Coefficient (p)		0.85274	
In Passing Lane Effective Length?	Yes	Yes		Total Segment De	Total Segment Density, veh/mi/ln		1.8
%Improvement to Percent Followers	16.8	16.8		%Improvement to Speed		1.8	
Subsegment Data							
# Segment Type	Len	gth, ft	Rac	dius, ft	Sup	perelevation, %	Average Speed, mi/h
1 Tangent	475	4752 -			-		63.0
Passing Lane Results							
		Faster Lane				Slower Lane	
Flow Rate, veh/h		199		120			
Percentage of Heavy Vehicles (HV%), %		3.20				15.99	
Initial Average Speed (Sint), mi/h		75.9		76.2			
Average Speed at Midpoint (SPLmid), m	i/h	77.5		74.6		74.6	
Percent Followers at Midpoint (PFPLmic	), %	24.6				16.7	
Vehicle Results							
Average Speed, mi/h	63.0	0		Percent Followers	5, %		35.2
Segment Travel Time, minutes	0.86	6		Follower Density	(FD),	followers/mi/ln	1.8
Follower Density Mid-Point, followers/mi/ln	0.5			Vehicle LOS			A
		Se	gm	ent 13			
Vehicle Inputs							
Segment Type	Pas	sing Constrained		Length, ft			528
Measured FFS	_	asured		Free-Flow Speed,	mi/h		65.0
Demand and Capacity							

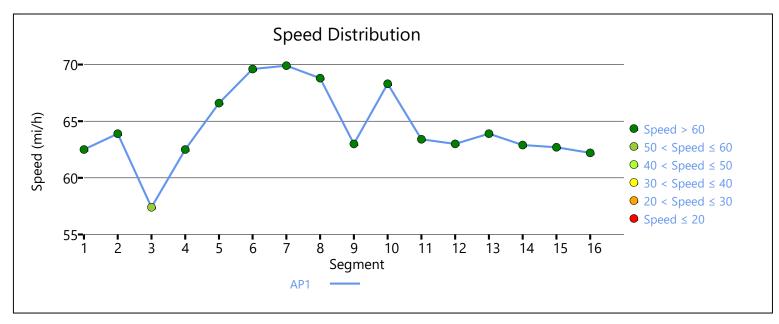
Dire	ctional Demand Flow Rate, veh/h	319		Opposing Deman	d Flow Rate, veh/h	
	Hour Factor	0.94		Total Trucks, %	u How Rate, verijii	8.00
	ment Capacity, veh/h	1700		Demand/Capacity	(D/C)	0.19
	ermediate Results	1700		Demand, capacity	(2)(2)	0.13
		1		1		1
	ment Vertical Class	1		Free-Flow Speed,		65.0
	ed Slope Coefficient (m)			Speed Power Coe	·	0.41674
	lope Coefficient (m)	-1.34675		PF Power Coefficie	<u> </u>	0.74795
In Pa	assing Lane Effective Length?	Yes		Total Segment De	nsity, veh/mi/ln	2.2
%lm	provement to Percent Followers	24.3		%Improvement to	Speed	2.2
Suk	osegment Data					
# Segment Type		Length, ft	Rac	lius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	528	-		-	62.6
Vel	nicle Results					
Aver	rage Speed, mi/h	63.9		Percent Followers,	, %	43.6
Segr	ment Travel Time, minutes	0.09		Follower Density (	FD), followers/mi/ln	1.6
Vehi	cle LOS	A				
		·	Segm	ent 14		
Vel	nicle Inputs					
Segr	ment Type	Passing Constrain	ned	Length, ft		6336
Mea	sured FFS	Measured		Free-Flow Speed,	mi/h	65.0
Dei	mand and Capacity					
Dire	ctional Demand Flow Rate, veh/h	372		Opposing Demand Flow Rate, veh/h		-
Peak	Hour Factor	0.94	Total Trucks, %			8.00
Segr	ment Capacity, veh/h	1700		Demand/Capacity	(D/C)	0.22
Into	ermediate Results					
Segr	ment Vertical Class	1		Free-Flow Speed,	mi/h	65.0
Spee	ed Slope Coefficient (m)	4.63499		Speed Power Coe	fficient (p)	0.41674
PF S	lope Coefficient (m)	-1.24695		PF Power Coefficie	ent (p)	0.77221
In Dr	assing Lane Effective Length?	Yes		Total Segment De	nsity, veh/mi/ln	2.6
III Pa				%Improvement to	Speed	0.9
	provement to Percent Followers	16.9				
%lm	provement to Percent Followers  psegment Data	16.9				
%lm		Length, ft	Rac	lius, ft	Superelevation, %	Average Speed, mi/h
%lm	osegment Data		Rac	lius, ft	Superelevation, %	Average Speed, mi/h 62.3
%lm <b>Suk</b> #	Segment Type	Length, ft	Rac -	lius, ft	Superelevation, %	
%Im Suk # 1 Veh	Segment Type Tangent	Length, ft	Rac -	lius, ft Percent Followers,	-	
%Im Suk # 1 Veh Aver	Segment Data Segment Type Tangent nicle Results	Length, ft 6336	Rac -	Percent Followers,	-	62.3

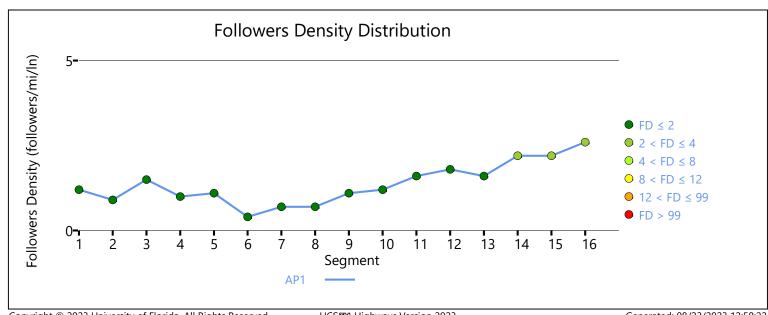
		S	egn	nent 15		
Vel	nicle Inputs					
Segr	ment Type	Passing Zone		Length, ft		4863
Mea	sured FFS	Measured		Free-Flow Speed, 1	mi/h	65.0
De	Demand and Capacity					·
Dire	ctional Demand Flow Rate, veh/h	372		Opposing Demand	d Flow Rate, veh/h	686
Peak	Hour Factor	0.94		Total Trucks, %		8.00
Segr	ment Capacity, veh/h	1700		Demand/Capacity	(D/C)	0.22
Int	ermediate Results					·
Segr	ment Vertical Class	1		Free-Flow Speed, 1	mi/h	65.0
Spe	ed Slope Coefficient (m)	4.49109		Speed Power Coef	ficient (p)	0.46098
	lope Coefficient (m)	-1.24333		PF Power Coefficie	<u> </u>	0.79950
In Pa	assing Lane Effective Length?	Yes		Total Segment Der	nsity, veh/mi/ln	2.6
%lm	provement to Percent Followers	13.8		%Improvement to	Speed	0.2
Sul	osegment Data	•				•
#	Segment Type	Length, ft	Ra	adius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	4863	1-		-	62.5
Vel	nicle Results					
Aver	rage Speed, mi/h	62.7		Percent Followers,	%	43.1
	ment Travel Time, minutes	0.88		Follower Density (I	FD), followers/mi/ln	2.2
Vehi	cle LOS	В		·		
		S	egn	nent 16		,
Vel	nicle Inputs					
	ment Type	Passing Constrained		Length, ft		8812
	sured FFS	Measured		Free-Flow Speed, 1	mi/h	65.0
	mand and Capacity	Medsarea		Tree How Speed, I	,	05.0
	ctional Demand Flow Rate, veh/h	394		Opposing Demand	1 Flow Rate, veh/h	-
	Hour Factor	0.94		Total Trucks, %	Triow Rate, veriffi	8.00
	ment Capacity, veh/h	1700		Demand/Capacity	(D/C)	0.23
	ermediate Results	1700		Demand, Capacity	(6/0)	0.23
	ment Vertical Class	1		Free-Flow Speed, 1	mi/h	65.0
	ed Slope Coefficient (m)	4.65521		Speed Power Coef		0.41674
	lope Coefficient (m)	-1.24954		PF Power Coefficie	·	0.75957
113	assing Lane Effective Length?	Yes		Total Segment Der	<u> </u>	2.9
In D	ASSING EATIC ENECTIVE LENGTH:	103		Total Segment Del	isicy, veri/iiii/iii	L.J
	provement to Percent Followers	9.9		%Improvement to	Speed	0.0

#	Segment Type	Length, ft	Radi	ius, ft	Superelevation, %	Average Speed, mi/h			
1	Tangent	8812	-		-	62.2			
Veh	Pehicle Results								
Avera	age Speed, mi/h	62.2	62.2		, %	46.0			
Segn	nent Travel Time, minutes	1.61	Follower Density (FD), followers/mi/ln			2.6			
Vehic	cle LOS	В							
Facility Results									
Т	VMT veh-mi/AP	VH veh-			ensity, followers/	LOS			

0.74

1.2





1154

Α

	HCS Two-La	ne F	Highway Re	port	
Project Information					
Analyst	K. Luljak		Date		8/23/2023
Agency	HDR		Analysis Year		2023
Jurisdiction	КҮТС		Time Analyzed		2023 AM
Project Description	US 127 SB		Units		U.S. Customary
	S	egm	ent 1		
Vehicle Inputs					
Segment Type	Passing Constrained		Length, ft		8812
Measured FFS	Measured		Free-Flow Speed,	mi/h	65.0
Demand and Capacity					
Directional Demand Flow Rate, veh/h	181		Opposing Deman	d Flow Rate, veh/h	-
Peak Hour Factor	0.94		Total Trucks, %		8.00
Segment Capacity, veh/h	1700		Demand/Capacity	(D/C)	0.11
Intermediate Results					
Segment Vertical Class 1			Free-Flow Speed,	mi/h	65.0
Speed Slope Coefficient (m)	4.65521		Speed Power Coe	fficient (p)	0.41674
PF Slope Coefficient (m)	-1.24954		PF Power Coefficie	ent (p)	0.75957
In Passing Lane Effective Length?	No		Total Segment De	nsity, veh/mi/ln	0.8
%Improvement to Percent Followers	0.0		%Improvement to	Speed	0.0
Subsegment Data					·
# Segment Type	Length, ft	Radi	us, ft	Superelevation, %	Average Speed, mi/h
1 Tangent	8812	1-		-	63.4
Vehicle Results					
Average Speed, mi/h	63.4		Percent Followers,	, %	28.9
Segment Travel Time, minutes	1.58		Follower Density (	FD), followers/mi/ln	0.8
Vehicle LOS	А				
	S	egm	ent 2		
Vehicle Inputs					
Segment Type	Passing Zone		Length, ft		4863
Measured FFS	Measured		Free-Flow Speed,	mi/h	65.0
Demand and Capacity			·		
Directional Demand Flow Rate, veh/h	229		Opposing Deman	d Flow Rate, veh/h	622
Peak Hour Factor	0.94		Total Trucks, %		8.00
Segment Capacity, veh/h	1700		Demand/Capacity	, (D/C)	0.13
segment capacity, venin					

Sear	ment Vertical Class	1			Free-Flow Speed,	mi/h		65.0
	ed Slope Coefficient (m)				Speed Power Coe		nt (a)	0.46745
	lope Coefficient (m)		3946		PF Power Coefficie		·	0.80204
	assing Lane Effective Length?	No			Total Segment Density, veh/mi/ln			1.1
	provement to Percent Followers	0.0			%Improvement to			0.0
		0.0			70111provement to	, эрс		0.0
	osegment Data							
#	Segment Type	_	gth, ft	Rac	lius, ft	Sup	erelevation, %	Average Speed, mi/h
1	Tangent	486	3		-		63.3	
Veł	nicle Results							
Aver	rage Speed, mi/h	63.3	3		Percent Followers,	, %		31.6
Segment Travel Time, minutes			7		Follower Density (	(FD), 1	followers/mi/ln	1.1
Vehi	cle LOS	А						
			Se	egn	nent 3			
Vel	nicle Inputs							
Segment Type Pa			sing Lanes		Length, ft			6336
Mea	sured FFS	Mea	easured		Free-Flow Speed, mi/h			65.0
Dei	mand and Capacity							
Dire	ctional Demand Flow Rate, veh/h	229			Opposing Deman	d Flo	w Rate, veh/h	-
	Hour Factor	0.94					<u> </u>	8.00
Segr	ment Capacity, veh/h	150	00		Demand/Capacity	(D/C	<u> </u>	0.15
Inte	ermediate Results				, ,			
	ment Vertical Class	1			Free-Flow Speed,	mi/h		65.0
	ed Slope Coefficient (m)	7.24	24124		Speed Power Coefficient (p)			0.95118
	lope Coefficient (m)		09010		PF Power Coefficient (p)			0.88259
	assing Lane Effective Length?	No			Total Segment Density, veh/mi/ln		0.9	
	provement to Percent Followers	0.0			%Improvement to Speed			0.0
	osegment Data	0.0			70111provement to	Уэрс		0.0
#	Segment Type	Lon	gth, ft	Pac	lius, ft	Cun	erelevation, %	Average Speed, mi/h
1	Tangent	633		Nac	iius, it	- -	erelevation, 70	64.0
_	1 -	033	0	<u> -</u>				04.0
Pas	ssing Lane Results		F. de de de				Cla a class	
FI.	Data da da		Faster Lane				Slower Lane	
	r Rate, veh/h		147				16.66	
	entage of Heavy Vehicles (HV%), %		3.20				16.66	
	al Average Speed (Sint), mi/h	-: /I-	76.5				76.4	
	rage Speed at Midpoint (SPLmid), n		78.1				74.9	
Percent Followers at Midpoint (PFPLmid), %			17.6			10.6		

Avera	age Speed, mi/h	64.0		Percent Followers	, %	25.7
	nent Travel Time, minutes	1.13			FD), followers/mi/ln	0.9
Follo mi/lr	wer Density Mid-Point, followers/	0.2		Vehicle LOS		A
		Sc	egn	nent 4		
Veh	nicle Inputs					
Segn	nent Type	Passing Constrained		Length, ft		528
Meas	sured FFS	Measured		Free-Flow Speed,	mi/h	65.0
Der	nand and Capacity					
Direc	ctional Demand Flow Rate, veh/h	255		Opposing Deman	d Flow Rate, veh/h	-
Peak	Hour Factor	0.94		Total Trucks, %		8.00
Segn	nent Capacity, veh/h	1700		Demand/Capacity	(D/C)	0.15
Inte	ermediate Results					
Segn	nent Vertical Class	1		Free-Flow Speed,	mi/h	65.0
Spee	d Slope Coefficient (m)	4.57372		Speed Power Coe	fficient (p)	0.41674
PF SI	ope Coefficient (m)	-1.34675		PF Power Coefficient (p)		0.74795
In Passing Lane Effective Length?		Yes		Total Segment Density, veh/mi/ln		1.6
%Improvement to Percent Followers		22.9		%Improvement to	Speed	1.7
Sub	segment Data					
#	Segment Type	Length, ft	Rad	dius, ft Superelevation, %		Average Speed, mi/h
1	Tangent	528	-		-	62.9
Veh	nicle Results					
Avera	age Speed, mi/h	64.0		Percent Followers, %		38.4
Segn	nent Travel Time, minutes	0.09		Follower Density (	FD), followers/mi/ln	1.2
Vehic	cle LOS	А				
		Se	egn	nent 5		
Veh	nicle Inputs					
Segn	nent Type	Passing Constrained		Length, ft		4752
Meas	sured FFS	Measured		Free-Flow Speed,	mi/h	65.0
Der	mand and Capacity					
Directional Demand Flow Rate, veh/h 255		255		Opposing Deman	d Flow Rate, veh/h	-
Peak Hour Factor 0.9		0.94				8.00
Segn	nent Capacity, veh/h	1700		Demand/Capacity	(D/C)	0.15
Inte	ermediate Results					
Segn	nent Vertical Class	1		Free-Flow Speed,	mi/h	65.0
Spee	ed Slope Coefficient (m)	4.61989		Speed Power Coe	fficient (p)	0.41674
PF Slope Coefficient (m)		4.61989 -1.25608				

In Pa	assing Lane Effective Length?	Yes	Yes		ensity, veh/mi/ln	1.4
%lm	provement to Percent Followers	18.3	18.3		to Speed	1.0
Sul	osegment Data					
#	Segment Type	Length, ft	Ra	dius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	4752	-		-	62.9
Vel	nicle Results					
Ave	rage Speed, mi/h	63.5		Percent Followe	rs, %	35.3
Seg	ment Travel Time, minutes	0.85		Follower Density	(FD), followers/mi/ln	1.2
Vehi	cle LOS	А				
			Segi	ment 6		
Vel	nicle Inputs					
Seg	ment Type	Passing Zone		Length, ft		6864
Mea	sured FFS	Measured		Free-Flow Speed	d, mi/h	65.0
De	mand and Capacity					
Dire	ctional Demand Flow Rate, veh/h	255		Opposing Dema	nd Flow Rate, veh/h	468
Peal	Hour Factor	0.94		Total Trucks, %		8.00
Seg	ment Capacity, veh/h	1700		Demand/Capaci	ty (D/C)	0.15
Int	ermediate Results					
Segment Vertical Class 1		1	1		d, mi/h	65.0
Spe	ed Slope Coefficient (m)	4.46239	4.46239		efficient (p)	0.48646
PF S	lope Coefficient (m)	-1.21803		PF Power Coefficient (p)		0.80444
In Pa	assing Lane Effective Length?	Yes		Total Segment D	ensity, veh/mi/ln	1.3
%lm	provement to Percent Followers	14.3		%Improvement	to Speed	0.0
Sul	bsegment Data					
#	Segment Type	Length, ft	Ra	dius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	6864	-		-	63.2
Vel	nicle Results		·			
Ave	rage Speed, mi/h	63.2		Percent Followers, %		33.4
Seg	ment Travel Time, minutes	1.23		Follower Density	(FD), followers/mi/ln	1.2
Vehi	cle LOS	А				
			Segi	ment 7		
Vel	nicle Inputs					
Seg	ment Type	Passing Constrain	ned	Length, ft		3168
	sured FFS	Measured		Free-Flow Speed	d, mi/h	70.0
De	mand and Capacity					
	ctional Demand Flow Rate, veh/h	234		Opposing Dema	and Flow Rate, veh/h	-
				Topposing Beine		

Peak Hour Factor	0.94	0.94			8.00
		Demand/Capacity	y (D/C)	0.14	
Intermediate Results					<u>'</u>
Segment Vertical Class 3 F			Free-Flow Speed,	mi/h	70.0
Speed Slope Coefficient (m)	10.85846		Speed Power Coe	efficient (p)	0.73915
PF Slope Coefficient (m)	-1.32850		PF Power Coeffici	ent (p)	0.77991
In Passing Lane Effective Length?	Yes		Total Segment De	ensity, veh/mi/ln	1.2
%Improvement to Percent Followers	13.1		%Improvement to	Speed	0.0
Subsegment Data					
# Segment Type	Length, ft	Ra	adius, ft	Superelevation, %	Average Speed, mi/h
1 Tangent	3168	-		-	67.5
Vehicle Results					
Average Speed, mi/h	67.5		Percent Followers	;, %	34.8
Segment Travel Time, minutes	0.53		Follower Density	(FD), followers/mi/ln	1.0
Vehicle LOS	А	А			
		Seg	ment 8		
Vehicle Inputs					
Segment Type	Passing Constrain	ned	Length, ft		3168
Measured FFS	Measured		Free-Flow Speed,	mi/h	65.0
Demand and Capacity					
Directional Demand Flow Rate, veh/h	149		Opposing Demar	nd Flow Rate, veh/h	-
Peak Hour Factor	0.94		Total Trucks, %		8.00
Segment Capacity, veh/h	1700		Demand/Capacity	/ (D/C)	0.09
Intermediate Results					
Segment Vertical Class	3	3		mi/h	65.0
Speed Slope Coefficient (m)	10.85846	10.85846		efficient (p)	0.73915
PF Slope Coefficient (m)	-1.34530		PF Power Coefficient (p)		0.76678
In Passing Lane Effective Length?	Yes		Total Segment Density, veh/mi/ln		0.6
%Improvement to Percent Followers	12.8		%Improvement to	o Speed	0.0
Subsegment Data					
# Segment Type	Length, ft	Ra	adius, ft	Superelevation, %	Average Speed, mi/h
1 Tangent	3168	-		-	63.8
Vehicle Results					
Average Speed, mi/h	63.8		Percent Followers	5, %	26.8
Segment Travel Time, minutes	0.56	0.56		(FD), followers/mi/ln	0.5
Vehicle LOS	А				
		Seg	ment 9		

Vehicle Inputs							
Segment Type	Pass	-		Length, ft		5808	
Measured FFS Measured			Free-Flow Speed,	Free-Flow Speed, mi/h 70.0			
Demand and Capacity							
Directional Demand Flow Rate, veh/h	144			Opposing Deman	d Flo	w Rate, veh/h	-
Peak Hour Factor	0.94	l.		Total Trucks, %			13.00
Segment Capacity, veh/h	140	0		Demand/Capacity	, (D/C	<u>.</u>	0.10
Intermediate Results							
Segment Vertical Class	3			Free-Flow Speed,	mi/h		70.0
Speed Slope Coefficient (m)	10.6	6380		Speed Power Coe	fficie	nt (p)	1.16305
PF Slope Coefficient (m)	-0.9	3134		PF Power Coefficie	ent (p	p)	0.80987
In Passing Lane Effective Length?	No			Total Segment De	nsity	, veh/mi/ln	0.4
%Improvement to Percent Followers	0.0			%Improvement to	Spe	ed	0.0
Subsegment Data							
# Segment Type	Leng	gth, ft	Rad	lius, ft	Sup	erelevation, %	Average Speed, mi/h
1 Tangent	5808	3	-		-		69.7
Passing Lane Results							
		Faster Lane		Slower Lane			
Flow Rate, veh/h	96					48	
Percentage of Heavy Vehicles (HV%), %	5.20					28.61	
Initial Average Speed (Sint), mi/h	75.6					69.5	
Average Speed at Midpoint (SPLmid), mi/	h 77.3				67.9		
Percent Followers at Midpoint (PFPLmid),	% 14.4			7.5		7.5	
Vehicle Results							
Average Speed, mi/h	69.7	69.7		Percent Followers, %			17.6
Segment Travel Time, minutes	0.95			Follower Density (FD), followers/mi/ln		0.4	
Follower Density Mid-Point, followers/ mi/ln	0.1			Vehicle LOS		A	
		Se	gm	ent 10			
Vehicle Inputs							
Segment Type	Pass	sing Constrained		Length, ft			1584
Measured FFS Measured				Free-Flow Speed, mi/h			70.0
Demand and Capacity							
Directional Demand Flow Rate, veh/h	144			Opposing Demand Flow Rate, veh/h			-
Peak Hour Factor	0.94			Total Trucks, %			13.00
Segment Capacity, veh/h	170	0		Demand/Capacity	(D/C	<u>-</u>	0.08
Intermediate Results							

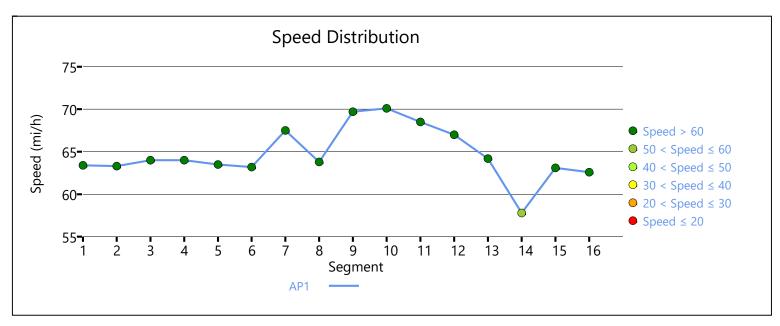
Coa	ment Vertical Class	1		Free-Flow Speed,	mi/b	70.0	
	ed Slope Coefficient (m)	4.57863				0.41674	
	<u> </u>			Speed Power Coefficient (p)  PF Power Coefficient (p)		0.76483	
	lope Coefficient (m)						
	assing Lane Effective Length?	Yes		Total Segment De		0.5	
%Im	provement to Percent Followers	23.0		%Improvement to	Speed	2.0	
Sul	bsegment Data						
#	Segment Type	Length, ft	Rac	dius, ft	Superelevation, %	Average Speed, mi/h	
1	Tangent	1584	<u> </u> -		-	68.8	
Vel	nicle Results						
Avei	rage Speed, mi/h	70.1		Percent Followers,	%	25.2	
Segi	ment Travel Time, minutes	0.26		Follower Density (	FD), followers/mi/ln	0.4	
Vehi	cle LOS	A					
		Se	egm	ent 11			
Vel	nicle Inputs						
Segi	ment Type	Passing Constrained	Passing Constrained			10560	
Mea	sured FFS	Measured	Measured		mi/h	70.0	
De	mand and Capacity						
Dire	ctional Demand Flow Rate, veh/h	144	Opposing Demar		d Flow Rate, veh/h	-	
Peak Hour Factor 0.94		0.94	0.94			13.00	
Segi	ment Capacity, veh/h	1700		Demand/Capacity	(D/C)	0.08	
Int	ermediate Results						
Segi	ment Vertical Class	2		Free-Flow Speed,	mi/h	70.0	
Spe	ed Slope Coefficient (m)	11.18487		Speed Power Coe	fficient (p)	0.58463	
PF S	lope Coefficient (m)	-1.26753		PF Power Coefficie	ent (p)	0.75322	
In Pa	assing Lane Effective Length?	Yes		Total Segment De	nsity, veh/mi/ln	0.5	
%lm	provement to Percent Followers	15.2		%Improvement to Speed		0.4	
Sul	bsegment Data						
#	Segment Type	Length, ft	Rac	dius, ft	Superelevation, %	Average Speed, mi/h	
1	Tangent	10560	-		-	68.2	
Vel	nicle Results						
Avei	rage Speed, mi/h	68.5		Percent Followers,	%	25.5	
Segment Travel Time, minutes		1.75		Follower Density (	FD), followers/mi/ln	0.5	
Vehicle LOS A							
		Se	egm	ent 12			
Vel	nicle Inputs						
Segi	ment Type	Passing Constrained		Length, ft	20069		
Mea	sured FFS	Measured		Free-Flow Speed,	70.0		

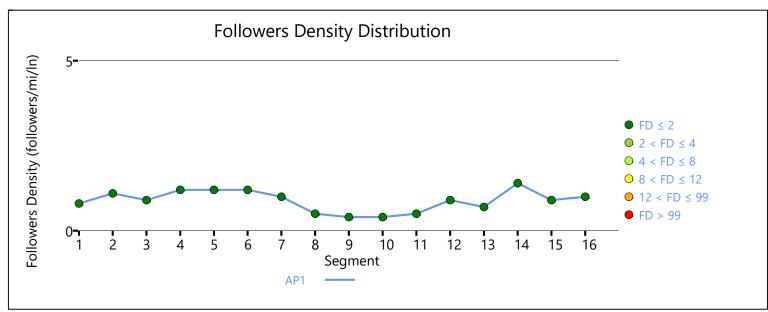
Der	mand and Capacity							
	ctional Demand Flow Rate, veh/h	191			Opposing Demar	nd Flo	ow Rate, veh/h	T-
			Total Trucks, %			13.00		
	nent Capacity, veh/h	1700			Demand/Capacity	y (D/0	C)	0.11
	ermediate Results							
Segn	ment Vertical Class	2			Free-Flow Speed,	mi/h	<u> </u>	70.0
Spee	ed Slope Coefficient (m)	12.6	2830		Speed Power Coe	efficie	nt (p)	0.60494
PF SI	lope Coefficient (m)	-1.3	6292		PF Power Coeffici	ent (	o)	0.70869
In Pa	ssing Lane Effective Length?	Yes			Total Segment De	ensity	, veh/mi/ln	1.0
%lm	provement to Percent Followers	8.1			%Improvement to	o Spe	ed	0.0
Suk	osegment Data							
#	Segment Type	Leng	gth, ft	Rad	lius, ft	Sup	perelevation, %	Average Speed, mi/h
1	Tangent	2006	59	-		1-		67.0
Veh	nicle Results							
Aver	age Speed, mi/h	67.0			Percent Followers	5, %		34.5
Segn	ment Travel Time, minutes	3.40	3.40		Follower Density (FD), followers/mi/ln		0.9	
Vehic	cle LOS	А	А					
			Se	gm	ent 13			<u> </u>
Veh	nicle Inputs							
Segn	ment Type	Pass	sing Lanes Length, ft			3696		
Mea	sured FFS	Mea	sured		Free-Flow Speed,	mi/h		65.0
Der	mand and Capacity							
Dire	ctional Demand Flow Rate, veh/h	191	191		Opposing Demar	nd Flo	w Rate, veh/h	-
Peak	Hour Factor	0.94	0.94		Total Trucks, %			13.00
Segn	ment Capacity, veh/h	1400	1400		Demand/Capacity (D/C)		0.14	
Inte	ermediate Results							
Segn	ment Vertical Class	2	2		Free-Flow Speed, mi/h		<u> </u>	65.0
Spee	ed Slope Coefficient (m)	8.26	8.26253		Speed Power Coefficient (p)		0.95385	
PF SI	lope Coefficient (m)	-1.1	0603		PF Power Coefficient (p)		0.82389	
In Pa	ssing Lane Effective Length?	No			Total Segment Density, veh/mi/ln			0.7
%lm	provement to Percent Followers	0.0			%Improvement to	o Spe	ed	0.0
Suk	segment Data							
# Segment Type		Leng	Length, ft Rac		lius, ft	Sup	perelevation, %	Average Speed, mi/h
1	Tangent	3696	5	-		-		64.2
Pas	sing Lane Results							
			Faster Lane				Slower Lane	
Flow Rate, veh/h			125		67			

		1				
ercentage of Heavy Vehicles (HV%), % 5.20				27.52		
Initial Average Speed (Sint), mi/h	75.9			72.3	72.3	
Average Speed at Midpoint (SPLmid), m	77.6			70.6		
Percent Followers at Midpoint (PFPLmic	), %	16.2			8.3	
Vehicle Results						
Average Speed, mi/h	64.2	2		Percent Followers,	%	24.7
Segment Travel Time, minutes	0.65	5		Follower Density (	FD), followers/mi/ln	0.7
Follower Density Mid-Point, followers/mi/ln	0.2			Vehicle LOS		A
		Se	gm	ent 14		
Vehicle Inputs						
Segment Type	Pas	sing Constrained		Length, ft		11088
Measured FFS	Mea	asured		Free-Flow Speed,	mi/h	65.0
Demand and Capacity						
Directional Demand Flow Rate, veh/h	213			Opposing Demand	d Flow Rate, veh/h	-
Peak Hour Factor	0.94	0.94		Total Trucks, %		13.00
Segment Capacity, veh/h	170	0		Demand/Capacity (D/C)		0.13
Intermediate Results						
Segment Vertical Class	4			Free-Flow Speed,	mi/h	65.0
Speed Slope Coefficient (m)		32522		Speed Power Coef	ficient (p)	0.51393
PF Slope Coefficient (m)	-1.9	1.91200		PF Power Coefficie	ent (p)	0.76801
In Passing Lane Effective Length?	Yes	S		Total Segment De	nsity, veh/mi/ln	1.6
%Improvement to Percent Followers	15.1	1		%Improvement to Speed		0.7
Subsegment Data						
# Segment Type	Len	gth, ft	Rac	lius, ft	Superelevation, %	Average Speed, mi/h
1 Tangent	110	88	-		-	57.4
Vehicle Results						
Average Speed, mi/h	57.8	 B		Percent Followers, %		44.2
Segment Travel Time, minutes	2.18	3		Follower Density (FD), followers/mi/ln		1.4
Vehicle LOS						
		Se	gm	ent 15		
Vehicle Inputs						
		ssing Constrained		Length, ft		5808
Measured FFS	Mea	asured		Free-Flow Speed, mi/h		65.0
Demand and Capacity						
Directional Demand Flow Rate, veh/h	213			Opposing Demand	d Flow Rate, veh/h	-
Peak Hour Factor	0.94	4		Total Trucks, %		13.00
				<u> </u>		

Segment Capacity, veh/h	1700	1700 D		/ (D/C)	0.13
Intermediate Results					
Segment Vertical Class	1		Free-Flow Speed,	mi/h	65.0
Speed Slope Coefficient (m)	4.63019		Speed Power Coe		0.41674
PF Slope Coefficient (m)	-1.24824		PF Power Coefficie	ent (p)	0.77439
In Passing Lane Effective Length?	Yes		Total Segment De	nsity, veh/mi/ln	1.1
%Improvement to Percent Followers	12.2		%Improvement to	Speed	0.0
Subsegment Data					
# Segment Type	Length, ft	Rac	dius, ft	Superelevation, %	Average Speed, mi/h
1 Tangent	5808	<u> </u>		-	63.1
Vehicle Results					
Average Speed, mi/h	63.1		Percent Followers	, %	31.4
Segment Travel Time, minutes	1.05		Follower Density (	(FD), followers/mi/ln	0.9
Vehicle LOS	А				
		Segm	ent 16		
Vehicle Inputs					
Segment Type	Passing Constrained	Passing Constrained			2640
Measured FFS	Measured	Measured		mi/h	65.0
Demand and Capacity					
Directional Demand Flow Rate, veh/h	213		Opposing Deman	-	
Peak Hour Factor	0.94		Total Trucks, %		13.00
Segment Capacity, veh/h	1700	1700		γ (D/C)	0.13
Intermediate Results					
Segment Vertical Class	3		Free-Flow Speed,	mi/h	65.0
Speed Slope Coefficient (m)	12.43125	12.43125		fficient (p)	0.75892
PF Slope Coefficient (m)	-1.34725		PF Power Coefficie	ent (p)	0.77319
In Passing Lane Effective Length?	Yes		Total Segment De	nsity, veh/mi/ln	1.1
%Improvement to Percent Followers	11.1	11.1		Speed	0.0
Subsegment Data					
# Segment Type	Length, ft	Rac	lius, ft Superelevation, %		Average Speed, mi/h
1 Tangent	2640			-	62.6
Vehicle Results					
Average Speed, mi/h	62.6	62.6		, %	33.4
Segment Travel Time, minutes	0.48		Follower Density (	(FD), followers/mi/ln	1.0
Vehicle LOS	А				
Facility Results					
T VMT	VHD		Follower D	ensity, followers/	LOS

	veh-mi/AP	veh-h/p	mi/ln	
1	879	0.52	0.8	А





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	HCS Two-La	ne l	Highway Re	port		
Project Information						
alyst K. Luljak		П	Date		8/23/2023	
Agency	HDR		Analysis Year		2023	
Jurisdiction	КҮТС		Time Analyzed		2023 PM	
Project Description	US 127 SB		Units		U.S. Customary	
	S	egm	ent 1		·	
Vehicle Inputs						
Segment Type	Passing Constrained	T	Length, ft		8812	
Measured FFS	Measured		Free-Flow Speed,	mi/h	65.0	
Demand and Capacity		'			<u>'</u>	
Directional Demand Flow Rate, veh/h	734		Opposing Deman	d Flow Rate, veh/h	-	
Peak Hour Factor	0.94		Total Trucks, %		8.00	
Segment Capacity, veh/h	1700		Demand/Capacity	(D/C)	0.43	
Intermediate Results						
Segment Vertical Class	1		Free-Flow Speed, mi/h		65.0	
Speed Slope Coefficient (m)	4.65521		Speed Power Coe	fficient (p)	0.41674	
PF Slope Coefficient (m)	-1.24954		PF Power Coefficie	ent (p)	0.75957	
In Passing Lane Effective Length?	No	No Total S		nsity, veh/mi/ln	7.5	
%Improvement to Percent Followers	0.0		%Improvement to	Speed	0.0	
Subsegment Data						
# Segment Type	Length, ft	Radi	ius, ft	Superelevation, %	Average Speed, mi/h	
1 Tangent	8812	-		-	61.1	
Vehicle Results	<u>'</u>	<u> </u>				
Average Speed, mi/h	61.1		Percent Followers,	. %	62.8	
Segment Travel Time, minutes	1.64		Follower Density (FD), followers/mi/ln		7.5	
Vehicle LOS	С					
	S	egm	ent 2			
Vehicle Inputs						
Segment Type	Passing Zone		Length, ft		4863	
Measured FFS Measured			Free-Flow Speed,	mi/h	65.0	
Demand and Capacity						
Directional Demand Flow Rate, veh/h	686		Opposing Deman	d Flow Rate, veh/h	372	
Peak Hour Factor	0.94		Total Trucks, %		8.00	
Segment Capacity, veh/h	1700		Demand/Capacity	0.40		
egee capacity, ve,						

Sear	ment Vertical Class	1			Free-Flow Speed,	mi/h		65.0	
	ed Slope Coefficient (m)	4.4	1958		Speed Power Coe		nt (p)	0.50149	
	lope Coefficient (m)	-1.2	1608		PF Power Coefficie		•	0.81382	
In Pa	assing Lane Effective Length?	No			Total Segment De			6.6	
%lm	provement to Percent Followers	0.0			%Improvement to	Spe	 ed	0.0	
Suk	bsegment Data				·				
#	Segment Type	Len	gth, ft	Rad	us, ft Supe		erelevation, %	Average Speed, mi/h	
1	Tangent	486		-		-		61.6	
Vel	nicle Results							•	
Aver	rage Speed, mi/h	61.6	5		Percent Followers,	, %		59.1	
	ment Travel Time, minutes	0.90	)		Follower Density (	(FD), 1	followers/mi/ln	6.6	
Vehi	cle LOS	С							
			Se	egn	nent 3				
Vel	nicle Inputs								
	ment Type	Pas	sing Lanes		Length, ft			6336	
	sured FFS		easured		Free-Flow Speed, mi/h			65.0	
Dei	mand and Capacity				'	<u> </u>			
	ctional Demand Flow Rate, veh/h	686			Opposing Deman	d Flo	w Rate veh/h	1-	
	Hour Factor	0.94			Total Trucks, %	<u> </u>	w Rate, verijii	8.00	
	ment Capacity, veh/h	150			Demand/Capacity	, (D/C		0.46	
	ermediate Results	1.53				(- / -	-,		
	ment Vertical Class	1			Free-Flow Speed,	mi/h		65.0	
	ed Slope Coefficient (m)		24124		Speed Power Coefficient (p)			0.95118	
	lope Coefficient (m)		09010		PF Power Coefficient (p)			0.88259	
	assing Lane Effective Length?	No			Total Segment Density, veh/mi/ln			6.1	
	provement to Percent Followers	0.0			%Improvement to Speed			0.0	
	bsegment Data	0.0			70111Proventent to	УБРС		0.0	
#	Segment Type	Lan	gth, ft	Rad	lius, ft	Sun	erelevation, %	Average Speed, mi/h	
1	Tangent	633		_	1103, 11	- -	ererevation, 70	60.6	
	ssing Lane Results	033	<u> </u>					00.0	
ı us	sing Lane Results		Faster Lane				Slower Lane		
Flow	/ Rate, veh/h		396				290		
	entage of Heavy Vehicles (HV%), %		3.20			14.56			
	al Average Speed (Sint), mi/h		74.7			74.8			
Average Speed at Midpoint (SPLmid), mi/h			76.4			73.1			
	ent Followers at Midpoint (PFPLmic		37.7			28.4			

Avera	age Speed, mi/h	60.6		Percent Followers	. %	54.2		
	nent Travel Time, minutes	1.19			FD), followers/mi/ln	6.1		
	wer Density Mid-Point, followers/	1.5		Vehicle LOS		A		
		Sc	egn	nent 4				
Veh	nicle Inputs							
Segment Type Passing Constrained			Length, ft		528			
Meas	sured FFS	ed FFS Measured			mi/h	65.0		
Der	mand and Capacity							
Direc	ctional Demand Flow Rate, veh/h	r Rate, veh/h 532			d Flow Rate, veh/h	-		
Peak	Hour Factor	0.94		Total Trucks, %		8.00		
Segn	nent Capacity, veh/h	1700		Demand/Capacity	(D/C)	0.31		
Inte	ermediate Results							
Segn	nent Vertical Class	1		Free-Flow Speed,	mi/h	65.0		
Spee	ed Slope Coefficient (m)	4.57372		Speed Power Coe	fficient (p)	0.41674		
PF SI	ope Coefficient (m)	-1.34675		PF Power Coefficie	ent (p)	0.74795		
In Pa	ssing Lane Effective Length?	Yes	Yes		nsity, veh/mi/ln	4.9		
%lm	provement to Percent Followers	22.9		%Improvement to	Speed	3.1		
Sub	osegment Data							
#	Segment Type	Length, ft	Rad	lius, ft Superelevation, %		Average Speed, mi/h		
1	Tangent	528	-		-	61.8		
Veh	nicle Results							
Avera	age Speed, mi/h	63.7		Percent Followers	%	56.8		
Segn	nent Travel Time, minutes	0.09		Follower Density (	FD), followers/mi/ln	3.7		
Vehic	cle LOS	В						
		So	egn	nent 5				
Veh	nicle Inputs							
Segn	ment Type	Passing Constrained		Length, ft		4752		
Meas	sured FFS	Measured		Free-Flow Speed,	mi/h	65.0		
Der	mand and Capacity							
Directional Demand Flow Rate, veh/h 532				Opposing Deman	d Flow Rate, veh/h	-		
		0.94				8.00		
Segn	nent Capacity, veh/h	1700		Total Trucks, % 8.00  Demand/Capacity (D/C) 0.31				
Inte	ermediate Results							
Segn	nent Vertical Class	1		Free-Flow Speed,	mi/h	65.0		
Spee	ed Slope Coefficient (m)	4.61989		Speed Power Coe	fficient (p)	0.41674		
	ope Coefficient (m)	-1.25608		PF Power Coefficie		0.77475		

In Pa	assing Lane Effective Length?	Yes		Total Segment D	Density, veh/mi/ln	4.6
%lm	provement to Percent Followers	18.3	18.3		to Speed	2.4
Sul	bsegment Data					
#	Segment Type	Length, ft	Ra	dius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	4752	-		-	61.7
Vel	hicle Results					
Ave	rage Speed, mi/h	63.2		Percent Followe	rs, %	53.7
Seg	ment Travel Time, minutes	0.85		Follower Density	y (FD), followers/mi/ln	3.7
Vehi	icle LOS	В				
			Segi	ment 6		
Vel	hicle Inputs					
Seg	ment Type	Passing Zone		Length, ft		6864
Mea	sured FFS	Measured		Free-Flow Speed	d, mi/h	65.0
De	mand and Capacity					
Dire	ctional Demand Flow Rate, veh/h	532		Opposing Dema	and Flow Rate, veh/h	319
Peal	K Hour Factor	0.94		Total Trucks, %		8.00
Seg	ment Capacity, veh/h	1700		Demand/Capaci	ty (D/C)	0.31
Int	ermediate Results					
Segment Vertical Class 1		1		Free-Flow Speed	d, mi/h	65.0
Spe	ed Slope Coefficient (m)	4.42331		Speed Power Co	pefficient (p)	0.51133
PF S	lope Coefficient (m)	-1.19998		PF Power Coeffi	cient (p)	0.81257
In Pa	assing Lane Effective Length?	Yes		Total Segment [	Density, veh/mi/ln	4.4
%lm	provement to Percent Followers	14.3		%Improvement	to Speed	1.4
Sul	bsegment Data					
#	Segment Type	Length, ft	Ra	dius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	6864	-		-	62.1
Vel	hicle Results					
Ave	rage Speed, mi/h	63.0		Percent Followe	rs, %	51.2
Seg	ment Travel Time, minutes	1.24		Follower Density	y (FD), followers/mi/ln	3.7
Vehi	icle LOS	В				
			Segi	ment 7		
Vel	hicle Inputs					
Seg	ment Type	Passing Constrain	ned	Length, ft		3168
	sured FFS	Measured			d, mi/h	70.0
De	mand and Capacity					
	ctional Demand Flow Rate, veh/h	436		Opposing Dema	and Flow Rate, veh/h	-
	The Demand Flow Rate, veriff			Topposing Demic		

Peak Hour Factor 0.94			Total Trucks, %		8.00
Segment Capacity, veh/h	1700		Demand/Capacity	/ (D/C)	0.26
Intermediate Results					
Segment Vertical Class	3		Free-Flow Speed,	mi/h	70.0
Speed Slope Coefficient (m)	10.85846		Speed Power Coe	fficient (p)	0.73915
PF Slope Coefficient (m)	-1.32850		PF Power Coeffici	ent (p)	0.77991
In Passing Lane Effective Length?	Yes		Total Segment De	ensity, veh/mi/ln	3.4
%Improvement to Percent Followers	13.8		%Improvement to	Speed	1.4
Subsegment Data					
# Segment Type	Length, ft	Ra	dius, ft	Superelevation, %	Average Speed, mi/h
1 Tangent	3168 -			-	65.1
Vehicle Results	·				
Average Speed, mi/h	66.0		Percent Followers	, %	50.1
Segment Travel Time, minutes	0.55		Follower Density	(FD), followers/mi/ln	2.9
Vehicle LOS	В				
		Segr	ment 8		
Vehicle Inputs					
Segment Type Passing Constraine			Length, ft		3168
Measured FFS	Measured		Free-Flow Speed,	mi/h	65.0
Demand and Capacity					
Directional Demand Flow Rate, veh/h	372		Opposing Deman	d Flow Rate, veh/h	-
Peak Hour Factor	0.94		Total Trucks, %		8.00
Segment Capacity, veh/h	1700		Demand/Capacity	/ (D/C)	0.22
Intermediate Results					
Segment Vertical Class	3		Free-Flow Speed,	mi/h	65.0
Speed Slope Coefficient (m)	10.85846		Speed Power Coe	fficient (p)	0.73915
PF Slope Coefficient (m)	-1.34530		PF Power Coeffici	ent (p)	0.76678
In Passing Lane Effective Length?	Yes		Total Segment De	nsity, veh/mi/ln	2.9
%Improvement to Percent Followers	13.3		%Improvement to	Speed	1.2
Subsegment Data					
# Segment Type	Length, ft	Ra	dius, ft	Superelevation, %	Average Speed, mi/h
1 Tangent	3168	-	-		60.8
Vehicle Results					
Average Speed, mi/h	61.6		Percent Followers	, %	46.8
Segment Travel Time, minutes	0.58		Follower Density	(FD), followers/mi/ln	2.5
Vehicle LOS	В				
			ment 9		

Vehicle Inputs							
Segment Type	Pass	ing Lanes		Length, ft			5808
Measured FFS	Mea	sured		Free-Flow Speed,	mi/h		70.0
Demand and Capacity							
Directional Demand Flow Rate, veh/h	314			Opposing Deman	d Flo	w Rate, veh/h	-
Peak Hour Factor	0.94			Total Trucks, %			13.00
Segment Capacity, veh/h	1400	0		Demand/Capacity	(D/C	<u>.</u>	0.22
Intermediate Results							
Segment Vertical Class	3			Free-Flow Speed,	mi/h		70.0
Speed Slope Coefficient (m)	10.6	6380		Speed Power Coe	fficie	nt (p)	1.16305
PF Slope Coefficient (m)	-0.9	3134		PF Power Coefficie	ent (p	))	0.80987
In Passing Lane Effective Length?	No			Total Segment De	nsity,	veh/mi/ln	1.4
%Improvement to Percent Followers	0.0			%Improvement to	Spe	ed	0.0
Subsegment Data							
# Segment Type	Leng	Length, ft		lius, ft	Superelevation, %		Average Speed, mi/h
1 Tangent	5808	8 -			-		68.2
Passing Lane Results							
		Faster Lane				Slower Lane	
Flow Rate, veh/h	195					119	
Percentage of Heavy Vehicles (HV%), %		5.20			25.77		
Initial Average Speed (Sint), mi/h	75.1					70.1	
Average Speed at Midpoint (SPLmid), mi/	h 76.8					68.4	
Percent Followers at Midpoint (PFPLmid),	%	24.8	14.7				
Vehicle Results							
Average Speed, mi/h	68.2			Percent Followers, %			30.5
Segment Travel Time, minutes	0.97			Follower Density (	(FD), 1	followers/mi/ln	1.4
Follower Density Mid-Point, followers/ mi/ln	0.4			Vehicle LOS			A
		Se	gm	ent 10			
Vehicle Inputs							
Segment Type	Pass	ing Constrained		Length, ft			1584
Measured FFS	Mea	sured		Free-Flow Speed,	mi/h		70.0
Demand and Capacity							
Directional Demand Flow Rate, veh/h	314			Opposing Demand Flow Rate, veh/h			-
Peak Hour Factor	0.94			Total Trucks, %			13.00
Segment Capacity, veh/h	1700	0		Demand/Capacity	(D/C	E)	0.18
Intermediate Results							

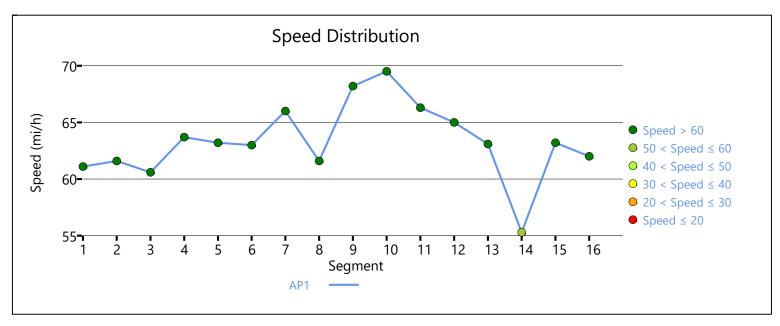
C	on and Markinal Class	1		Free Flam Canad	: /l-	70.0				
	ment Vertical Class	4.57863		Free-Flow Speed,		0.41674				
	ed Slope Coefficient (m)			Speed Power Coefficient	·					
	lope Coefficient (m)					0.76483				
	assing Lane Effective Length?		Yes		nsity, veh/mi/ln	1.9				
%lm	provement to Percent Followers	22.9		%Improvement to	%Improvement to Speed 2.8					
Sul	osegment Data									
#	Segment Type	Length, ft	Rac	dius, ft	Superelevation, %	Average Speed, mi/h				
1	Tangent	1584	-		-	67.6				
Vel	nicle Results									
Avei	rage Speed, mi/h	69.5		Percent Followers,	%	41.0				
Segi	ment Travel Time, minutes	0.26		Follower Density (	FD), followers/mi/ln	1.4				
Vehi	cle LOS	A								
		Se	egm	ent 11						
Vel	nicle Inputs									
Segi	ment Type	Passing Constrained		Length, ft		10560				
Mea	sured FFS	Measured		Free-Flow Speed,	mi/h	70.0				
De	mand and Capacity			<u>'</u>						
Dire	ctional Demand Flow Rate, veh/h	314		Opposing Deman	d Flow Rate, veh/h	-				
Peak	Hour Factor	0.94		Total Trucks, %		13.00				
Segi	ment Capacity, veh/h	1700		Demand/Capacity	(D/C)	0.18				
Int	ermediate Results									
Segi	ment Vertical Class	2	2		mi/h	70.0				
Spe	ed Slope Coefficient (m)	11.18487		Speed Power Coe	fficient (p)	0.58463				
PF S	lope Coefficient (m)	-1.26753		PF Power Coefficie	ent (p)	0.75322				
In Pa	assing Lane Effective Length?	Yes	Yes		nsity, veh/mi/ln	2.0				
%lm	provement to Percent Followers	15.2		%Improvement to	Speed	1.2				
Sul	osegment Data									
#	Segment Type	Length, ft	Rac	dius, ft	Superelevation, %	Average Speed, mi/h				
1	Tangent	10560	-		-	65.5				
Vel	nicle Results									
Avei	rage Speed, mi/h	66.3		Percent Followers,	%	41.1				
Segment Travel Time, minutes		1.81	1.81		FD), followers/mi/ln	1.7				
Vehi	cle LOS	A								
		Se	egm	ent 12						
Vel	nicle Inputs									
Segi	ment Type		Length, ft		20069					
Mea	sured FFS	Measured		Free-Flow Speed,	mi/h	70.0				

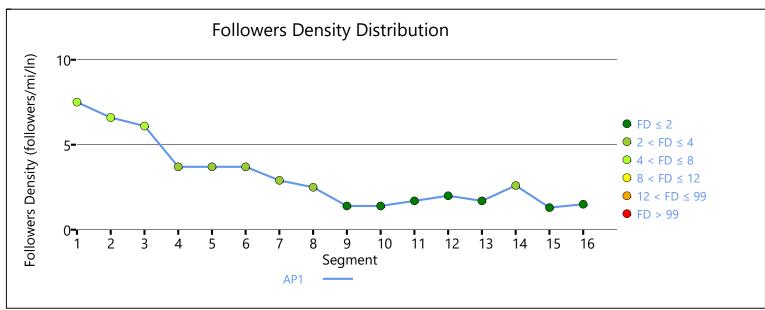
Der	mand and Capacity							
	ctional Demand Flow Rate, veh/h	319			Opposing Demar	nd Flo	w Rate, veh/h	T-
	Hour Factor	0.94			Total Trucks, %			13.00
	nent Capacity, veh/h	1700			Demand/Capacity	y (D/0	C)	0.19
Intermediate Results								
Segn	ment Vertical Class	2			Free-Flow Speed,	mi/h		70.0
Spee	ed Slope Coefficient (m)	12.62	2830		Speed Power Coe	efficie	nt (p)	0.60494
PF SI	lope Coefficient (m)	-1.36	5292		PF Power Coeffici	ent (¡	o)	0.70869
In Pa	ssing Lane Effective Length?	Yes			Total Segment De	ensity	, veh/mi/ln	2.2
%lm	provement to Percent Followers	8.5			%Improvement to	o Spe	ed	0.0
Suk	osegment Data							
#	Segment Type	Leng	Length, ft Rad		lius, ft	Sup	perelevation, %	Average Speed, mi/h
1	Tangent	2006	9	-		1-		65.0
Veh	nicle Results							
Aver	age Speed, mi/h	65.0			Percent Followers	5, %		45.5
Segn	ment Travel Time, minutes	3.51	3.51		Follower Density (FD), followers/mi/ln			2.0
Vehic	cle LOS	В	В					
			Se	gm	ent 13			
Veh	nicle Inputs							
Segn	ment Type	Passi	ng Lanes	Length, ft			3696	
Mea	sured FFS	Meas	sured		Free-Flow Speed,	mi/h		65.0
Der	mand and Capacity							
Dire	ctional Demand Flow Rate, veh/h	309	Opposing Demand Flow Rate,			w Rate, veh/h	-	
Peak	Hour Factor	0.94	0.94		Total Trucks, %			13.00
Segn	ment Capacity, veh/h	1400	1400		Demand/Capacity (D/C)			0.22
Inte	ermediate Results							
Segn	ment Vertical Class	2			Free-Flow Speed, mi/h			65.0
Spee	ed Slope Coefficient (m)	8.262	253		Speed Power Coefficient (		nt (p)	0.95385
PF SI	lope Coefficient (m)	-1.10	0603		PF Power Coeffici	ent (	o)	0.82389
In Pa	ssing Lane Effective Length?	No			Total Segment De	ensity	, veh/mi/ln	1.7
%lm	provement to Percent Followers	0.0			%Improvement to	o Spe	ed	0.0
Suk	segment Data							
# Segment Type		Leng	Length, ft Rac		lius, ft	Sup	perelevation, %	Average Speed, mi/h
1	Tangent	3696		-		-		63.1
Pas	sing Lane Results							
		Faster Lane			Slower Lane			
Flow Rate, veh/h			192			117		

Percentage of Heavy Vehicles (HV%), %		5.20		2	25.83		
Initial Average Speed (Sint), mi/h		75.3			7	72.4	
Average Speed at Midpoint (SPLmid), m	i/h	77.0			7	70.7	
Percent Followers at Midpoint (PFPLmid	), %	22.7		13.7			
Vehicle Results							
Average Speed, mi/h	63.1	1		Percent Followers,	, %		34.3
Segment Travel Time, minutes	0.67	7	Follower Density (	(FD), fol	llowers/mi/ln	1.7	
Follower Density Mid-Point, followers/mi/ln	0.4			Vehicle LOS			A
		Se	gm	ent 14			
Vehicle Inputs							
Segment Type	Pas	sing Constrained		Length, ft			11088
Measured FFS	Mea	asured		Free-Flow Speed,	mi/h		65.0
Demand and Capacity				<u>'</u>			
Directional Demand Flow Rate, veh/h	309	)		Opposing Demand Flow Rate, veh/h			-
Peak Hour Factor	0.94	4	Total Trucks, %			13.00	
Segment Capacity, veh/h	170	00		Demand/Capacity	/ (D/C)		0.18
Intermediate Results							•
Segment Vertical Class	4			Free-Flow Speed,	mi/h		65.0
Speed Slope Coefficient (m)	23.3	32522		Speed Power Coef	fficient	(p)	0.51393
PF Slope Coefficient (m)	-1.9	91200		PF Power Coefficie	ent (p)		0.76801
In Passing Lane Effective Length?	Yes			Total Segment De	nsity, v	eh/mi/ln	3.0
%Improvement to Percent Followers	15.2	5.2		%Improvement to Speed			1.3
Subsegment Data							
# Segment Type	Len	gth, ft	Rac	lius, ft	Super	elevation, %	Average Speed, mi/h
1 Tangent	110	188	-		-		54.6
Vehicle Results							
Average Speed, mi/h	55.3	 3		Percent Followers, %		53.9	
Segment Travel Time, minutes	2.28	 8		Follower Density (FD), followers/mi/ln		2.6	
Vehicle LOS	В						
		Se	gm	ent 15			
Vehicle Inputs							
Segment Type	Pas	sing Constrained		Length, ft			5808
Measured FFS	Mea	asured		Free-Flow Speed,	mi/h		65.0
Demand and Capacity							
Directional Demand Flow Rate, veh/h	266	266		Opposing Demand Flow Rate, veh/h		-	
Peak Hour Factor	0.94	4		Total Trucks, %			13.00
							-

Segment Capacity, veh/h	1700	1700 D		(D/C)	0.16					
Intermediate Results										
Segment Vertical Class	1		Free-Flow Speed,	mi/h	65.0					
Speed Slope Coefficient (m)	4.63019		Speed Power Coe	fficient (p)	0.41674					
PF Slope Coefficient (m)	-1.24824		PF Power Coefficie	ent (p)	0.77439					
In Passing Lane Effective Length?	Yes		Total Segment De	nsity, veh/mi/ln	1.5					
%Improvement to Percent Followers	12.7		%Improvement to	Speed	0.6					
Subsegment Data	•									
# Segment Type	Length, ft	Rad	ius, ft	Superelevation, %	Average Speed, mi/h					
1 Tangent	5808	1-		-	62.8					
Vehicle Results	•			•						
Average Speed, mi/h	63.2		Percent Followers,	, %	36.1					
Segment Travel Time, minutes	1.04		Follower Density (	FD), followers/mi/ln	1.3					
Vehicle LOS	А									
Segment 16										
Vehicle Inputs										
Segment Type	Passing Constrained	d k	Length, ft		2640					
Measured FFS	Measured		Free-Flow Speed,	mi/h	65.0					
Demand and Capacity										
Directional Demand Flow Rate, veh/h	266		Opposing Deman	d Flow Rate, veh/h	-					
Peak Hour Factor	0.94		Total Trucks, %		13.00					
Segment Capacity, veh/h	1700		Demand/Capacity	(D/C)	0.16					
Intermediate Results	·									
Segment Vertical Class	3	Fre		mi/h	65.0					
Speed Slope Coefficient (m)	12.43125		Speed Power Coe	fficient (p)	0.75892					
PF Slope Coefficient (m)	-1.34725		PF Power Coefficie	ent (p)	0.77319					
In Passing Lane Effective Length?	Yes		Total Segment De	nsity, veh/mi/ln	1.7					
%Improvement to Percent Followers	11.7		%Improvement to	Speed	0.2					
Subsegment Data										
# Segment Type	Length, ft	Rad	ius, ft	Superelevation, %	Average Speed, mi/h					
1 Tangent	2640			-	61.8					
Vehicle Results										
Average Speed, mi/h	62.0		Percent Followers	, %	38.4					
Segment Travel Time, minutes	0.48		Follower Density (	FD), followers/mi/ln	1.5					
Vehicle LOS	А	Α								
Facility Results										
T VMT	VHD		Follower Do	ensity, followers/	LOS					

	veh-mi/AP	veh-h/p	mi/ln	
1	1870	1.81	2.8	В





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HCSTM Highways Version 2023 HCS\_US127\_SB\_2023\_PM.xuf

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## US 127 2045 Build HCS Output

		HCS Two-	-Lane	Highway Re	port	
Pro	ject Information					
Analy	yst	K. Luljak		Date		8/23/2023
Agen	ncy	HDR		Analysis Year		2045
Juriso	diction	KYTC		Time Analyzed		2045 AM
Proje	ect Description	US 127 NB		Units		U.S. Customary
			Segn	nent 1		
Veh	nicle Inputs					
Segn	nent Type	Passing Constrain	ed	Length, ft		2640
Meas	sured FFS	Measured		Free-Flow Speed,	mi/h	65.0
Den	mand and Capacity	<u>'</u>				
Direc	ctional Demand Flow Rate, veh/h	266		Opposing Deman	d Flow Rate, veh/h	-
Peak	Hour Factor	0.94		Total Trucks, %		13.00
Segn	nent Capacity, veh/h	1700		Demand/Capacity	' (D/C)	0.16
Inte	ermediate Results	_				
Segn	nent Vertical Class	3		Free-Flow Speed,	mi/h	65.0
Spee	d Slope Coefficient (m)	12.43125		Speed Power Coe	fficient (p)	0.75892
PF Slope Coefficient (m)		-1.34725		PF Power Coeffici	ent (p)	0.77319
In Passing Lane Effective Length?		No		Total Segment De	nsity, veh/mi/ln	1.7
%Improvement to Percent Followers		0.0		%Improvement to	Speed	0.0
Sub	segment Data					
#	Segment Type	Length, ft	Rac	dius, ft Superelevation, %		Average Speed, mi/h
1	Tangent	2640	-		-	61.8
Veh	icle Results					<u>'</u>
Avera	age Speed, mi/h	61.8		Percent Followers	, %	38.4
Segn	nent Travel Time, minutes	0.49		Follower Density	(FD), followers/mi/ln	1.7
Vehic	cle LOS	А				
		<u>'</u>	Segn	nent 2		
Veh	nicle Inputs					
	nent Type	Passing Lanes		Length, ft		5808
Measured FFS Measured			Free-Flow Speed,	mi/h	65.0	
	mand and Capacity					
	ctional Demand Flow Rate, veh/h	266		Opposing Deman	d Flow Rate, veh/h	-
	Hour Factor	0.94		Total Trucks, %	,,	13.00
	nent Capacity, veh/h	1400		Demand/Capacity	0.19	
	ermediate Results					

Segment Vertical Class	1			Free-Flow Speed, mi/h			65.0
Speed Slope Coefficient (m)	7.840	)57		Speed Power Coefficient (p)			0.92518
PF Slope Coefficient (m)	-1.10	-1.10232		PF Power Coefficient (p)			0.86403
In Passing Lane Effective Length?	No	No		Total Segment Density, veh/mi/ln			1.2
%Improvement to Percent Followers	0.0			%Improvement to	Spe	ed	0.0
Subsegment Data							
# Segment Type	Leng	th, ft	Rad	ius, ft	Sup	erelevation, %	Average Speed, mi/h
1 Tangent	5808		-		-		63.5
Passing Lane Results							
		Faster Lane				Slower Lane	
Flow Rate, veh/h		168				98	
Percentage of Heavy Vehicles (HV%), %		5.20				26.34	
Initial Average Speed (Sint), mi/h		76.2				76.1	
Average Speed at Midpoint (SPLmid), mi/	h	77.9				74.4	
Percent Followers at Midpoint (PFPLmid),	%	19.8				13.3	
Vehicle Results							
Average Speed, mi/h	63.5	.5 Percent Followers, %			%		29.6
Segment Travel Time, minutes	1.04			Follower Density (	FD), f	ollowers/mi/ln	1.2
Follower Density Mid-Point, followers/ mi/ln	0.3	Vehicle LOS					A
		Se	gn	nent 3			
Vehicle Inputs							
Segment Type	Passi	ssing Constrained Length, ft					11088
Measured FFS	Meas	sured Free-Flow Speed, mi/h			mi/h		65.0
Demand and Capacity							
Directional Demand Flow Rate, veh/h	309			Opposing Demand	d Flov	w Rate, veh/h	-
Peak Hour Factor	0.94			Total Trucks, %			13.00
Segment Capacity, veh/h	1700			Demand/Capacity	(D/C	:)	0.18
Intermediate Results							
Segment Vertical Class	4			Free-Flow Speed,	mi/h		65.0
Speed Slope Coefficient (m)	23.32	2522		Speed Power Coef	fficier	nt (p)	0.51393
PF Slope Coefficient (m)	-1.91	200		PF Power Coefficie	ent (p	)	0.76801
In Passing Lane Effective Length?	Yes			Total Segment De	nsity,	veh/mi/ln	3.0
%Improvement to Percent Followers	14.9			%Improvement to	Spe	ed	0.6
Subsegment Data							
# Segment Type	Leng	th, ft	Rad	ius, ft	Sup	erelevation, %	Average Speed, mi/h
1 Tangent	1108	8	-		-		54.6
Vehicle Results							

Aver	age Speed, mi/h	54.9		Percent Followers,	. %	53.9
	nent Travel Time, minutes	2.30		Follower Density (	FD), followers/mi/ln	2.6
Vehic	ele LOS	В		•		
		S	egm	ent 4		
Veh	icle Inputs					
Segn	nent Type	Passing Constrained	П	Length, ft		3696
Meas	sured FFS	Measured		Free-Flow Speed,	mi/h	65.0
Der	mand and Capacity					
Direc	tional Demand Flow Rate, veh/h	309		Opposing Demand	d Flow Rate, veh/h	-
Peak	Hour Factor	0.94		Total Trucks, %		13.00
Segn	nent Capacity, veh/h	1700		Demand/Capacity	(D/C)	0.18
Inte	ermediate Results					
Segn	nent Vertical Class	2		Free-Flow Speed,	mi/h	65.0
Spee	d Slope Coefficient (m)	8.56197		Speed Power Coef	fficient (p)	0.55823
PF SI	ope Coefficient (m)	-1.32097		PF Power Coefficie	ent (p)	0.75965
In Pa	ssing Lane Effective Length?	Yes		Total Segment Density, veh/mi/ln		2.1
%lm <sub>l</sub>	provement to Percent Followers	13.2		%Improvement to Speed		0.0
Sub	segment Data					
#	Segment Type	Length, ft	Radi	us, ft	Superelevation, %	Average Speed, mi/h
		-		-		
1	Tangent	3696	-		-	61.4
	Tangent icle Results	3696	-		-	61.4
Veh		3696 61.4	-	Percent Followers,		61.4
<b>Veh</b>	icle Results		-			
<b>Veh</b> Avera	icle Results age Speed, mi/h	61.4	-		%	41.8
<b>Veh</b> Avera	icle Results age Speed, mi/h nent Travel Time, minutes	61.4 0.68 A			%	41.8
Veh Avera Segn Vehic	icle Results age Speed, mi/h nent Travel Time, minutes	61.4 0.68 A		Follower Density (	%	41.8
Vehice Vehice	age Speed, mi/h ment Travel Time, minutes	61.4 0.68 A		Follower Density (	%	41.8
Vehice Vehice Segni	icle Results age Speed, mi/h ment Travel Time, minutes cle LOS	61.4 0.68 A		Follower Density (	% FD), followers/mi/ln	41.8
Vehice Segnitive Vehice Vehice Segnitive Measure Measure Vehice Segnitive Measure Measure Vehice Segnitive Measure Measure New Years New	icle Results  age Speed, mi/h  ment Travel Time, minutes  cle LOS  sicle Inputs  ment Type	61.4 0.68 A S Passing Constrained		Follower Density (  nent 5  Length, ft	% FD), followers/mi/ln	41.8 1.8 20069
Vehice Segn Vehice Vehice Segn Meas	age Speed, mi/h ment Travel Time, minutes cle LOS  sicle Inputs ment Type sured FFS	61.4 0.68 A S Passing Constrained		Follower Density (  Tent 5  Length, ft  Free-Flow Speed,	% FD), followers/mi/ln	41.8 1.8 20069
Vehice Segni Vehice Vehice Vehice Derivative Directors of the Average Segni Measure Segni Measure Directors of the Average Segni Measure Seg	nicle Results  age Speed, mi/h  ment Travel Time, minutes  cle LOS  nicle Inputs  ment Type  sured FFS  mand and Capacity	61.4 0.68 A S Passing Constrained Measured	egm	Follower Density (  Tent 5  Length, ft  Free-Flow Speed,	% FD), followers/mi/ln mi/h	41.8 1.8 20069 70.0
Vehice Segni Meast Der Direct Peak	sicle Results  age Speed, mi/h  ment Travel Time, minutes  cle LOS  sicle Inputs  ment Type  sured FFS  mand and Capacity  ctional Demand Flow Rate, veh/h	61.4 0.68 A S Passing Constrained Measured	egm	Follower Density (  Tent 5  Length, ft Free-Flow Speed,  Opposing Demand	% FD), followers/mi/ln mi/h d Flow Rate, veh/h	20069 70.0
Vehice Segni Meast Der Direct Peak Segni	sicle Results  age Speed, mi/h  ment Travel Time, minutes  cle LOS  sicle Inputs  ment Type  sured FFS  mand and Capacity  ctional Demand Flow Rate, veh/h  Hour Factor	61.4 0.68 A S Passing Constrained Measured 298 0.94	egm	Follower Density (  Tent 5  Length, ft Free-Flow Speed,  Opposing Demand	% FD), followers/mi/ln mi/h d Flow Rate, veh/h	41.8 1.8 20069 70.0
Vehice Segnition Vehice Vehice Vehice Vehice Segnition Der Direct Segnition Interest Segnition Interest Segnition Vehice Segn	sicle Results  age Speed, mi/h  ment Travel Time, minutes  cle LOS  sicle Inputs  ment Type  sured FFS  mand and Capacity  ctional Demand Flow Rate, veh/h  Hour Factor  ment Capacity, veh/h	61.4 0.68 A S Passing Constrained Measured 298 0.94	egm	Follower Density (  Tent 5  Length, ft Free-Flow Speed,  Opposing Demand	%  FD), followers/mi/ln  mi/h  d Flow Rate, veh/h	41.8 1.8 20069 70.0
Vehice Segnal Near Direct Peak Segnal Segnal	sicle Results  age Speed, mi/h  ment Travel Time, minutes  cle LOS  sicle Inputs  ment Type  sured FFS  mand and Capacity  ctional Demand Flow Rate, veh/h  Hour Factor  ment Capacity, veh/h  crmediate Results	Passing Constrained Measured  298 0.94 1700	egm	Follower Density (  Tent 5  Length, ft  Free-Flow Speed,  Opposing Demand  Total Trucks, %  Demand/Capacity	% FD), followers/mi/ln mi/h d Flow Rate, veh/h (D/C)	41.8 1.8 20069 70.0 - 13.00 0.18
Vehice Segnet Meast Der Direct Peak Segnet Segnet Speed	sicle Results  age Speed, mi/h  ment Travel Time, minutes  cle LOS  sicle Inputs  ment Type  sured FFS  mand and Capacity  ctional Demand Flow Rate, veh/h  Hour Factor  ment Capacity, veh/h  ermediate Results  ment Vertical Class	61.4 0.68 A S Passing Constrained Measured  298 0.94 1700	egm	Follower Density (  Tent 5  Length, ft  Free-Flow Speed,  Opposing Demand  Total Trucks, %  Demand/Capacity  Free-Flow Speed,	%  FD), followers/mi/ln  mi/h  d Flow Rate, veh/h  (D/C)  mi/h  fficient (p)	41.8 1.8 20069 70.0 - 13.00 0.18

%lmp	provement to Percent Followers	7.3			%Improvemer	nt to Spe	ed	0.0
Sub	segment Data							
#	Segment Type	Leng	gth, ft	Rad	ius, ft	Sup	erelevation, %	Average Speed, mi/h
1	Tangent	2006	69	1-		-		65.3
Veh	icle Results							·
Avera	age Speed, mi/h	65.3			Percent Follow	vers, %		43.9
Segn	nent Travel Time, minutes	3.49	1		Follower Dens	ity (FD),	followers/mi/ln	1.9
Vehic	ile LOS	А						
				Segn	nent 6			
Veh	icle Inputs							
Segn	nent Type	Pass	sing Lanes		Length, ft			10560
Meas	sured FFS	Mea	asured		Free-Flow Spe	ed, mi/h		70.0
Den	nand and Capacity							
Direc	tional Demand Flow Rate, veh/h	298			Opposing Der	nand Flo	w Rate, veh/h	-
Peak	Hour Factor	0.94			Total Trucks, %		13.00	
Segn	nent Capacity, veh/h	1400	0		Demand/Capacity (D/C)		0.21	
Inte	ermediate Results							
Segn	nent Vertical Class	2	Free-Flow Speed, mi,			ed, mi/h		70.0
Spee	d Slope Coefficient (m)	8.84	480 Speed Pov		Speed Power (	eed Power Coefficient (p)		1.34187
PF SI	ope Coefficient (m)	-0.8	7977		PF Power Coef	fficient (រុ	D)	0.97547
In Pa	ssing Lane Effective Length?	No			Total Segment Density, veh/mi/ln		1.0	
%lmp	provement to Percent Followers	0.0			%Improvemer	nt to Spe	ed	0.0
Sub	segment Data							
#	Segment Type	Leng	gth, ft	Rad	ius, ft	Sup	erelevation, %	Average Speed, mi/h
1	Tangent	1056	60	-		-		69.0
Pas	sing Lane Results							
			Faster Lane				Slower Lane	
Flow	Rate, veh/h		186				112	
Perce	entage of Heavy Vehicles (HV%), %		5.20				25.95	
Initia	l Average Speed (Sint), mi/h		75.7				72.0	
Avera	age Speed at Midpoint (SPLmid), mi/	′h	77.4				70.3	
Perce	ent Followers at Midpoint (PFPLmid),	%	15.6				7.0	
Veh	icle Results							
Avera	age Speed, mi/h	69.0			Percent Follow	vers, %		23.7
Segn	nent Travel Time, minutes	1.74			Follower Dens	ity (FD),	followers/mi/ln	1.0
Follo	wer Density Mid-Point, followers/	0.2			Vehicle LOS		А	

	S	egı	ment 7		
Vehicle Inputs					
Segment Type	Passing Constrained		Length, ft		1584
Measured FFS	Measured		Free-Flow Speed,	mi/h	70.0
Demand and Capacity					·
Directional Demand Flow Rate, veh/h	298		Opposing Demand	d Flow Rate, veh/h	-
Peak Hour Factor	0.94		Total Trucks, %		13.00
Segment Capacity, veh/h	Segment Capacity, veh/h 1700				0.18
Intermediate Results					
Segment Vertical Class	1		Free-Flow Speed,	mi/h	70.0
Speed Slope Coefficient (m)	4.57863		Speed Power Coef	ficient (p)	0.41674
PF Slope Coefficient (m)	-1.27849		PF Power Coefficie	·	0.76483
In Passing Lane Effective Length?	Yes		Total Segment De	nsity, veh/mi/ln	1.7
%Improvement to Percent Followers	20.5		%Improvement to	Speed	2.6
Subsegment Data					•
# Segment Type	Length, ft	Ra	idius, ft	Superelevation, %	Average Speed, mi/h
1 Tangent	1584	†-		-	67.7
Vehicle Results					
Average Speed, mi/h	69.4		Percent Followers,	%	39.7
Segment Travel Time, minutes	0.26		Follower Density (FD), followers/mi/ln		1.4
Vehicle LOS	A				
	S	egi	ment 8		•
Vehicle Inputs					
Segment Type	Passing Constrained		Length, ft		5808
Measured FFS	Measured		Free-Flow Speed,	mi/h	70.0
	Medsarea		Tree now speed,		70.0
Demand and Capacity	Jaco		Ta		1
Directional Demand Flow Rate, veh/h	298		Opposing Demand	d Flow Rate, veh/h	-
Peak Hour Factor	0.94		Total Trucks, %		13.00
Segment Capacity, veh/h	1700		Demand/Capacity	(D/C)	0.18
Intermediate Results			_		_
Segment Vertical Class	3		Free-Flow Speed,	mi/h	70.0
Speed Slope Coefficient (m)	14.85552		Speed Power Coef	ficient (p)	0.79311
PF Slope Coefficient (m)	-1.31329		PF Power Coefficie	ent (p)	0.77908
In Passing Lane Effective Length?	Yes		Total Segment De	nsity, veh/mi/ln	1.8
%Improvement to Percent Followers	17.1		%Improvement to	Speed	1.7
Subsegment Data					

#	Segment Type	Length, ft	Rad	dius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	5808	-		-	65.9
Ve	hicle Results					
Ave	rage Speed, mi/h	67.0		Percent Followers	, %	40.0
Seg	ment Travel Time, minutes	0.99		Follower Density (FD), followers/mi/ln		1.5
Veh	icle LOS	А				
			Segn	nent 9		
Ve	hicle Inputs					
Seg	ment Type	nt Type Passing Constrained		Length, ft		3168
Mea	asured FFS	Measured		Free-Flow Speed,	mi/h	65.0
De	mand and Capacity					-
Dire	ectional Demand Flow Rate, veh/h	394		Opposing Deman	d Flow Rate, veh/h	-
Peal	k Hour Factor	0.94		Total Trucks, %		8.00
Seg	ment Capacity, veh/h	1700		Demand/Capacity	/ (D/C)	0.23
Int	ermediate Results					
Seg	ment Vertical Class	3		Free-Flow Speed,	mi/h	65.0
Spe	ed Slope Coefficient (m)	10.85846	10.85846		Speed Power Coefficient (p)	
PF S	Slope Coefficient (m)	-1.34530	-1.34530		PF Power Coefficient (p)	
In P	assing Lane Effective Length?	Yes		Total Segment Density, veh/mi/ln		3.1
%ln	provement to Percent Followers	14.7		%Improvement to	Speed	0.7
Su	bsegment Data					
#	Segment Type	Length, ft	Rad	dius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	3168	-		-	60.6
Ve	hicle Results					
Ave	rage Speed, mi/h	61.0		Percent Followers	, %	48.2
Seg	ment Travel Time, minutes	0.59		Follower Density (	(FD), followers/mi/ln	2.7
Veh	icle LOS	В				
			Segm	ent 10		
Ve	hicle Inputs					
Seg	ment Type	Passing Lanes		Length, ft		3168
Mea	asured FFS	Measured		Free-Flow Speed,	mi/h	70.0
	mand and Capacity	,				
De		436		Opposing Deman	d Flow Rate, veh/h	-
	Directional Demand Flow Rate, veh/h 436					
Dire	ectional Demand Flow Rate, veh/h	0.94		Total Trucks, %		8.00

Segment Vertical Class	3			Free-Flow Speed,	mi/h		70.0
Speed Slope Coefficient (m)	_	5430		Speed Power Coef		(p)	0.90074
PF Slope Coefficient (m)	-1.1	1166		PF Power Coefficie		47	0.78834
In Passing Lane Effective Length?	No			Total Segment De		eh/mi/ln	2.9
%Improvement to Percent Followers	0.0			%Improvement to Speed			0.0
Subsegment Data				<u>'</u>	•		
# Segment Type	Len	 gth, ft	Rad	ius, ft	Super	elevation, %	Average Speed, mi/h
1 Tangent	316		-		-		66.6
Passing Lane Results			,				
		Faster Lane			9	Slower Lane	
Flow Rate, veh/h		264			1	172	
Percentage of Heavy Vehicles (HV%), %		3.20			1	5.39	
Initial Average Speed (Sint), mi/h		74.5			7	<sup>7</sup> 2.1	
Average Speed at Midpoint (SPLmid), m	i/h	76.2			7	70.5	
Percent Followers at Midpoint (PFPLmid	), %	37.6			2	24.7	
Vehicle Results							
Average Speed, mi/h	66.6	5		Percent Followers,	%		43.9
Segment Travel Time, minutes	0.54	1	Follower Density (FD), followers/mi/ln			2.9	
Follower Density Mid-Point, followers/mi/ln	1.0			Vehicle LOS			A
		Se	gm	ent 11			
Vehicle Inputs							
Segment Type	Pas	sing Zone		Length, ft			6864
Measured FFS	Mea	asured		Free-Flow Speed, mi/h		65.0	
Demand and Capacity							
Directional Demand Flow Rate, veh/h	553			Opposing Demand	d Flow	Rate, veh/h	298
Peak Hour Factor	0.94	1		Total Trucks, %			8.00
Segment Capacity, veh/h	170	0		Demand/Capacity	(D/C)		0.33
Intermediate Results							
				Free-Flow Speed,	mi/h		65.0
Segment Vertical Class	1						
Segment Vertical Class Speed Slope Coefficient (m)	_	1703		Speed Power Coef	fficient	(p)	0.51565
	4.4	9671		Speed Power Coefficients		(p)	0.51565 0.81392
Speed Slope Coefficient (m)	4.4			,	ent (p)		
Speed Slope Coefficient (m)  PF Slope Coefficient (m)	4.4	9671		PF Power Coefficie	ent (p) nsity, v	eh/mi/ln	0.81392
Speed Slope Coefficient (m)  PF Slope Coefficient (m)  In Passing Lane Effective Length?	4.4 <sup>2</sup> -1.1 Yes	9671		PF Power Coefficie Total Segment De	ent (p) nsity, v	eh/mi/ln	0.81392 4.7
Speed Slope Coefficient (m)  PF Slope Coefficient (m)  In Passing Lane Effective Length?  %Improvement to Percent Followers	4.41 -1.1 Yes 15.9	9671	Rad	PF Power Coefficie Total Segment De	ent (p) nsity, v Speed	eh/mi/ln	0.81392 4.7
Speed Slope Coefficient (m)  PF Slope Coefficient (m)  In Passing Lane Effective Length?  %Improvement to Percent Followers  Subsegment Data	4.41 -1.1 Yes 15.9	9671 ) gth, ft	Rad	PF Power Coefficie Total Segment De %Improvement to	ent (p) nsity, v Speed	eh/mi/ln	0.81392 4.7 1.0

Average Speed, mi/h	62.7			Percent Followers,	%		52.2
Segment Travel Time, minutes	1.24			Follower Density (F	FD), fo	ollowers/mi/ln	3.9
Vehicle LOS	В						
		Seg	gm	ent 12			<u> </u>
Vehicle Inputs							
Segment Type	Passi	ing Lanes		Length, ft			4752
Measured FFS	Mea	sured		Free-Flow Speed, r	mi/h		65.0
Demand and Capacity							
Directional Demand Flow Rate, veh/h	553		Opposing Demand	d Flow	v Rate, veh/h	-	
Peak Hour Factor	0.94			Total Trucks, %			8.00
Segment Capacity, veh/h	1500	)		Demand/Capacity	(D/C)		0.37
Intermediate Results							
Segment Vertical Class	1			Free-Flow Speed, r	mi/h		65.0
Speed Slope Coefficient (m)	7.16 <sup>-</sup>	123		Speed Power Coef	ficien	t (p)	0.85065
PF Slope Coefficient (m)	-1.14	1890		PF Power Coefficient (p)			0.85274
In Passing Lane Effective Length?	Yes			Total Segment Density, veh/mi/ln		4.5	
%Improvement to Percent Followers	12.5	12.5		%Improvement to Speed		0.3	
Subsegment Data							
# Segment Type	Leng	ıth, ft	Rad	ius, ft	Supe	erelevation, %	Average Speed, mi/h
1 Tangent	4752	2	-		-		61.3
Passing Lane Results							
		Faster Lane			П	Slower Lane	
Flow Rate, veh/h		327				226	
Percentage of Heavy Vehicles (HV%), %		3.20			$\neg$	14.95	
Initial Average Speed (Sint), mi/h		74.9				75.1	
Average Speed at Midpoint (SPLmid), mi/l	h	76.6				73.4	
Percent Followers at Midpoint (PFPLmid),	%	35.3				25.5	
Vehicle Results							
Vehicle Results  Average Speed, mi/h	61.3			Percent Followers,	%		50.0
	61.3			Percent Followers, Follower Density (F		ollowers/mi/ln	50.0
Average Speed, mi/h	-					ollowers/mi/ln	
Average Speed, mi/h Segment Travel Time, minutes Follower Density Mid-Point, followers/	0.88		gm	Follower Density (F		ollowers/mi/ln	4.5
Average Speed, mi/h Segment Travel Time, minutes Follower Density Mid-Point, followers/	0.88		gm	Follower Density (Follower Den		ollowers/mi/ln	4.5
Average Speed, mi/h  Segment Travel Time, minutes  Follower Density Mid-Point, followers/ mi/In	0.88		gm	Follower Density (Follower Den		ollowers/mi/ln	4.5
Average Speed, mi/h Segment Travel Time, minutes Follower Density Mid-Point, followers/mi/ln  Vehicle Inputs	0.88 1.1 Passi	Seç	gm	Follower Density (Follower Den	FD), fo	ollowers/mi/ln	4.5 A

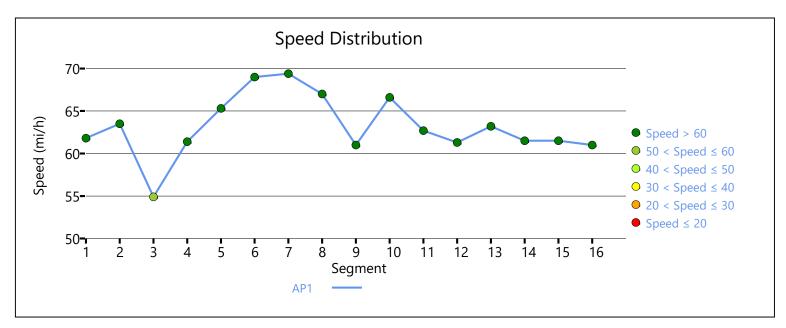
Dira	ctional Demand Flow Rate, veh/h	553		Opposing Doman	d Flow Rate, veh/h	_
	Hour Factor	0.94		Total Trucks, %	u Flow Rate, ven/n	8.00
		1700			(D(C)	0.33
	ment Capacity, veh/h	1700		Demand/Capacity	(D/C)	0.55
Inte	ermediate Results					
Segr	ment Vertical Class	1		Free-Flow Speed,	mi/h	65.0
Spee	ed Slope Coefficient (m)	4.57372		Speed Power Coe	fficient (p)	0.41674
PF SI	lope Coefficient (m)	-1.34675		PF Power Coefficie	ent (p)	0.74795
In Pa	assing Lane Effective Length?	Yes		Total Segment De	nsity, veh/mi/ln	5.2
%lm	provement to Percent Followers	23.3		%Improvement to	Speed	2.3
Suk	osegment Data					
#	Segment Type	Length, ft	Rac	dius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	528	-		-	61.7
Vel	nicle Results					
Aver	rage Speed, mi/h	63.2		Percent Followers,	%	57.9
Segr	ment Travel Time, minutes	0.10		Follower Density (	FD), followers/mi/ln	3.9
Vehi	cle LOS	В				
			Segm	ent 14		
Vel	nicle Inputs					
Segr	ment Type	Passing Constrai	ned	Length, ft		6336
Mea	sured FFS	Measured		Free-Flow Speed,	mi/h	65.0
Dei	mand and Capacity					
Dire	ctional Demand Flow Rate, veh/h	734		Opposing Deman	d Flow Rate, veh/h	-
Peak	Hour Factor	0.94		Total Trucks, %		8.00
Segr	ment Capacity, veh/h	1700		Demand/Capacity	(D/C)	0.43
les 4						
INT	ermediate Results					
	ermediate Results ment Vertical Class	1		Free-Flow Speed,	mi/h	65.0
Segr		1 4.63499		Free-Flow Speed, Speed Power Coe		65.0 0.41674
Segr Spee	ment Vertical Class			·	fficient (p)	
Segr Spee PF SI	ment Vertical Class ed Slope Coefficient (m)	4.63499		Speed Power Coe	fficient (p) ent (p)	0.41674
Segr Spee PF SI In Pa	ment Vertical Class ed Slope Coefficient (m) lope Coefficient (m)	4.63499 -1.24695		Speed Power Coefficie	fficient (p) ent (p) nsity, veh/mi/ln	0.41674 0.77221
Segr Spee PF SI In Pa	ment Vertical Class ed Slope Coefficient (m) lope Coefficient (m) assing Lane Effective Length?	4.63499 -1.24695 Yes		Speed Power Coefficient Total Segment De	fficient (p) ent (p) nsity, veh/mi/ln	0.41674 0.77221 7.5
Segr Spee PF SI In Pa	ment Vertical Class  ed Slope Coefficient (m)  lope Coefficient (m)  assing Lane Effective Length?  provement to Percent Followers	4.63499 -1.24695 Yes	Rac	Speed Power Coefficient Total Segment De	fficient (p) ent (p) nsity, veh/mi/ln	0.41674 0.77221 7.5
Segr Spee PF SI In Pa %Im	ment Vertical Class ed Slope Coefficient (m) lope Coefficient (m) assing Lane Effective Length? provement to Percent Followers  psegment Data	4.63499 -1.24695 Yes 14.6	Rac -	Speed Power Coefficient Total Segment De %Improvement to	ent (p) ent (p) nsity, veh/mi/ln Speed	0.41674 0.77221 7.5 0.5
Segr Spee PF SI In Pa %Im <b>Suk</b> #	ment Vertical Class ed Slope Coefficient (m) lope Coefficient (m) assing Lane Effective Length? provement to Percent Followers  psegment Data  Segment Type	4.63499 -1.24695 Yes 14.6 Length, ft	Rac -	Speed Power Coefficient Total Segment De %Improvement to	ent (p) ent (p) nsity, veh/mi/ln Speed	0.41674 0.77221 7.5 0.5
Segr Spee PF SI In Pa %Im Suk # 1	ment Vertical Class  ed Slope Coefficient (m)  lope Coefficient (m)  assing Lane Effective Length?  provement to Percent Followers  psegment Data  Segment Type  Tangent	4.63499 -1.24695 Yes 14.6 Length, ft	Rac -	Speed Power Coefficient Total Segment De %Improvement to	fficient (p) ent (p) nsity, veh/mi/ln Speed  Superelevation, % -	0.41674 0.77221 7.5 0.5
Segr Spee PF SI In Pa %Im Suk # 1	ment Vertical Class ed Slope Coefficient (m) lope Coefficient (m) assing Lane Effective Length? provement to Percent Followers  psegment Data  Segment Type Tangent  nicle Results	4.63499 -1.24695 Yes 14.6 Length, ft 6336	Rac -	Speed Power Coe PF Power Coefficie Total Segment De %Improvement to	fficient (p) ent (p) nsity, veh/mi/ln Speed  Superelevation, % -	0.41674 0.77221 7.5 0.5 Average Speed, mi/h 61.2

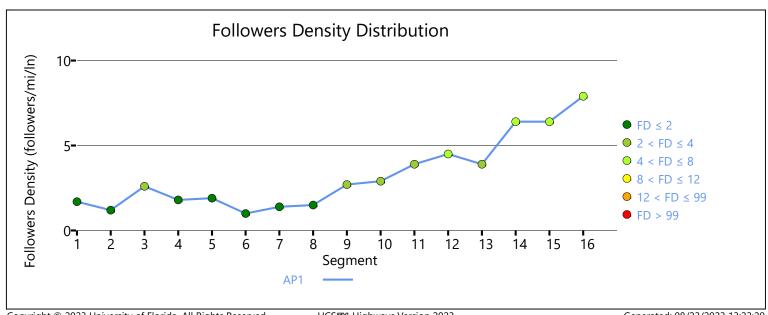
	Se	gn	nent 15		
Vehicle Inputs					
Segment Type	Passing Zone		Length, ft		4863
Measured FFS	Measured		Free-Flow Speed,	mi/h	65.0
Demand and Capacity					
Directional Demand Flow Rate, veh/h	734		Opposing Demand	d Flow Rate, veh/h	298
Peak Hour Factor	0.94		Total Trucks, %		8.00
Segment Capacity, veh/h	1700		Demand/Capacity	(D/C)	0.43
Intermediate Results					
Segment Vertical Class	1		Free-Flow Speed,	mi/h	65.0
Speed Slope Coefficient (m)	4.39846		Speed Power Coef	fficient (p)	0.51565
PF Slope Coefficient (m)	-1.20538		PF Power Coefficie	ent (p)	0.81824
In Passing Lane Effective Length?	Yes		Total Segment De	nsity, veh/mi/ln	7.3
%Improvement to Percent Followers	11.6		%Improvement to	Speed	0.0
Subsegment Data					
# Segment Type	Length, ft	Rad	dius, ft	Superelevation, %	Average Speed, mi/h
1 Tangent	4863	1-		-	61.5
Vehicle Results					
Average Speed, mi/h	61.5		Percent Followers,	. %	60.8
Segment Travel Time, minutes	0.90		Follower Density (	FD), followers/mi/ln	6.4
Vehicle LOS	С				
	Se	gn	nent 16		
Vehicle Inputs					
Segment Type	Passing Constrained		Length, ft		8812
Measured FFS	Measured		Free-Flow Speed,	mi/h	65.0
Demand and Capacity					
Directional Demand Flow Rate, veh/h	798		Opposing Demand	d Flow Rate, veh/h	-
Peak Hour Factor	0.94		Total Trucks, %		8.00
Segment Capacity, veh/h	1700		Demand/Capacity	(D/C)	0.47
Intermediate Results					
Segment Vertical Class	1		Free-Flow Speed,	mi/h	65.0
Speed Slope Coefficient (m)	4.65521		Speed Power Coef	fficient (p)	0.41674
PF Slope Coefficient (m)	-1.24954		PF Power Coefficie	ent (p)	0.75957
In Passing Lane Effective Length?	Yes		Total Segment De	nsity, veh/mi/ln	8.5
%Improvement to Percent Followers	7.2		%Improvement to	Speed	0.0
Subsegment Data					

#	Segment Type	Length, ft	Radius, f	t	Superelevation, %	Average Speed, mi/h
1	Tangent	8812	-		-	61.0
Veh	icle Results					
Avera	age Speed, mi/h	61.0	Perd	ent Followers,	%	65.1
Segm	nent Travel Time, minutes	1.64	Foll	ower Density (	FD), followers/mi/ln	7.9
Vehic	le LOS	С				
Faci	lity Results					
Т	VMT veh-mi/AP	VHD veh-h/p			ensity, followers/ mi/ln	LOS

1.83

2.8





1902

В

	HCS Two-La	ne l	Highway Re	port	
Project Information		_			
Analyst	K. Luljak		Date		8/23/2023
Agency	HDR		Analysis Year		2045
Jurisdiction	КҮТС		Time Analyzed		2045 PM
Project Description	US 127 NB		Units		U.S. Customary
	S	egn	nent 1		·
Vehicle Inputs					
Segment Type	Passing Constrained		Length, ft		2640
Measured FFS	Measured		Free-Flow Speed,	mi/h	65.0
Demand and Capacity	<u>'</u>				,
Directional Demand Flow Rate, veh/h	266		Opposing Deman	d Flow Rate, veh/h	-
Peak Hour Factor	0.94		Total Trucks, %		13.00
Segment Capacity, veh/h	1700		Demand/Capacity	(D/C)	0.16
Intermediate Results					
Segment Vertical Class	3		Free-Flow Speed,	mi/h	65.0
Speed Slope Coefficient (m)	12.43125		Speed Power Coe	fficient (p)	0.75892
PF Slope Coefficient (m)	-1.34725		PF Power Coefficie	ent (p)	0.77319
In Passing Lane Effective Length?	No		Total Segment De	nsity, veh/mi/ln	1.7
%Improvement to Percent Followers	0.0		%Improvement to	Speed	0.0
Subsegment Data					
# Segment Type	Length, ft	Rad	ius, ft	Superelevation, %	Average Speed, mi/h
1 Tangent	2640	1-		-	61.8
Vehicle Results	<u>'</u>	•			
Average Speed, mi/h	61.8		Percent Followers	, %	38.4
Segment Travel Time, minutes	0.49		Follower Density (	FD), followers/mi/ln	1.7
Vehicle LOS	А				
	S	egn	nent 2		
Vehicle Inputs					
Segment Type	Passing Lanes		Length, ft		5808
Measured FFS	Measured		Free-Flow Speed,	mi/h	65.0
Demand and Capacity					
Directional Demand Flow Rate, veh/h	266		Opposing Deman	d Flow Rate, veh/h	-
Peak Hour Factor	0.94		Total Trucks, %		13.00
Segment Capacity, veh/h	1400		Demand/Capacity	, (D/C)	0.19
Intermediate Results					

	ment Vertical Class	1			Free-Flow Speed,	mi/h		65.0
Spee	ed Slope Coefficient (m)	7.84	1057		Speed Power Coef	ficient (p)		0.92518
PF S	lope Coefficient (m)	-1.1	0232		PF Power Coefficie	nt (p)		0.86403
In Pa	assing Lane Effective Length?	No			Total Segment De	nsity, veh/mi/lr	1	1.2
%lm	provement to Percent Followers	0.0			%Improvement to	Speed		0.0
Suk	osegment Data							
#	Segment Type	Len	gth, ft	Rad	ius, ft	Superelevatio	n, %	Average Speed, mi/h
1	Tangent	580	8	-		-		63.5
Pas	sing Lane Results							
			Faster Lane			Slower L	ane	
Flow Rate, veh/h			168			98		
Perc	entage of Heavy Vehicles (HV%), %		5.20			26.34		
Initia	al Average Speed (Sint), mi/h		76.2			76.1		
Aver	rage Speed at Midpoint (SPLmid), mi	/h	77.9			74.4		
Perc	ent Followers at Midpoint (PFPLmid)	, %	19.8			13.3		
Vel	nicle Results							
Aver	rage Speed, mi/h	63.5	)		Percent Followers,	%		29.6
Segr	ment Travel Time, minutes	1.04	04 Follower Density (F			FD), followers/mi/ln 1.2		1.2
Follo	ower Density Mid-Point, followers/	0.3			Vehicle LOS			A
			Se	gn	nent 3			
Veł	nicle Inputs		Se	egm	nent 3			
	nicle Inputs	Pass	Sessing Constrained	egm	Length, ft			11088
Segr	•			egm		mi/h		11088 65.0
Segr Mea	ment Type		sing Constrained	egm	Length, ft	mi/h		
Segr Mea <b>De</b> i	ment Type sured FFS		sing Constrained asured	egm	Length, ft		h/h	
Segr Mea <b>Dei</b>	ment Type sured FFS mand and Capacity	Mea	sing Constrained asured	egm	Length, ft Free-Flow Speed,		h/h	65.0
Segr Mea <b>Dei</b> Direc	ment Type sured FFS mand and Capacity ctional Demand Flow Rate, veh/h	Mea 266	sing Constrained asured	egm	Length, ft Free-Flow Speed, Opposing Demand	d Flow Rate, ve	h/h	65.0
Segr Mea <b>Dei</b> Direc Peak	ment Type sured FFS mand and Capacity ctional Demand Flow Rate, veh/h t Hour Factor	266 0.94	sing Constrained asured	egm	Length, ft Free-Flow Speed, Opposing Demand Total Trucks, %	d Flow Rate, ve	h/h	- 13.00
Segr Mea Der Direc Peak Segr	ment Type sured FFS mand and Capacity ctional Demand Flow Rate, veh/h t Hour Factor ment Capacity, veh/h	266 0.94	sing Constrained asured	egm	Length, ft Free-Flow Speed, Opposing Demand Total Trucks, %	d Flow Rate, ve (D/C)	h/h	- 13.00
Segri Mea Direc Peak Segri Into	ment Type sured FFS mand and Capacity ctional Demand Flow Rate, veh/h t Hour Factor ment Capacity, veh/h ermediate Results	266 0.94 170	sing Constrained asured	egm	Length, ft Free-Flow Speed, Opposing Demand Total Trucks, % Demand/Capacity	d Flow Rate, ve (D/C) mi/h	h/h	- 13.00 0.16
Der Director	ment Type sured FFS mand and Capacity ctional Demand Flow Rate, veh/h t Hour Factor ment Capacity, veh/h ermediate Results ment Vertical Class	266 0.94 170 4 23.3	sing Constrained asured	egm	Length, ft Free-Flow Speed, Opposing Demand Total Trucks, % Demand/Capacity Free-Flow Speed,	d Flow Rate, ve (D/C) mi/h ficient (p)	h/h	65.0 - 13.00 0.16
Segri Mea Der Direct Peak Segri Inte Segri Spee	ment Type sured FFS  mand and Capacity ctional Demand Flow Rate, veh/h t Hour Factor ment Capacity, veh/h ermediate Results ment Vertical Class ed Slope Coefficient (m)	266 0.94 170 4 23.3	sing Constrained asured  4 0	egm	Length, ft Free-Flow Speed, Opposing Demand Total Trucks, % Demand/Capacity  Free-Flow Speed, Speed Power Coef	d Flow Rate, ve  (D/C)  mi/h  ficient (p)		65.0 - 13.00 0.16 65.0 0.51393
Segr Mea Der Direc Peak Segr Into Segr Spee PF S	ment Type sured FFS  mand and Capacity ctional Demand Flow Rate, veh/h thour Factor ment Capacity, veh/h ermediate Results ment Vertical Class ed Slope Coefficient (m) lope Coefficient (m)	266 0.94 170 4 23.3 -1.9	sing Constrained asured  0  32522 1200	egm	Length, ft Free-Flow Speed, Opposing Demand Total Trucks, % Demand/Capacity  Free-Flow Speed, Speed Power Coef	d Flow Rate, ve (D/C)  mi/h ficient (p)  ent (p)  nsity, veh/mi/lr		65.0 - 13.00 0.16 65.0 0.51393 0.76801
Segr Mea Direc Peak Segr Inte Segr Spee PF SI In Pa	ment Type sured FFS  mand and Capacity  ctional Demand Flow Rate, veh/h  t Hour Factor ment Capacity, veh/h  ermediate Results  ment Vertical Class ed Slope Coefficient (m)  lope Coefficient (m)  assing Lane Effective Length?	266 0.94 170 4 23.3 -1.9 Yes	sing Constrained asured  0  32522 1200	egm	Length, ft Free-Flow Speed, Opposing Demand Total Trucks, % Demand/Capacity Free-Flow Speed, Speed Power Coefficie Total Segment De	d Flow Rate, ve (D/C)  mi/h ficient (p)  ent (p)  nsity, veh/mi/lr		65.0 - 13.00 0.16 65.0 0.51393 0.76801 2.4
Segr Mea Direc Peak Segr Inte Segr Spee PF SI In Pa	ment Type sured FFS  mand and Capacity  ctional Demand Flow Rate, veh/h  t Hour Factor ment Capacity, veh/h  ermediate Results ment Vertical Class ed Slope Coefficient (m)  lope Coefficient (m)  assing Lane Effective Length? provement to Percent Followers	266 0.94 170 4 23.3 -1.9 Yes 15.3	sing Constrained asured  0  32522 1200		Length, ft Free-Flow Speed, Opposing Demand Total Trucks, % Demand/Capacity Free-Flow Speed, Speed Power Coefficie Total Segment De	d Flow Rate, ve (D/C)  mi/h ficient (p)  ent (p)  nsity, veh/mi/lr	1	65.0 - 13.00 0.16 65.0 0.51393 0.76801 2.4

Avera	age Speed, mi/h	56.2		Percent Followers,	%	49.9
Segn	nent Travel Time, minutes	2.24		Follower Density (	FD), followers/mi/ln	2.0
Vehic	cle LOS	В				
		S	Segm	nent 4		
Veh	icle Inputs					
Segn	nent Type	Passing Constrained		Length, ft		3696
Meas	sured FFS	Measured		Free-Flow Speed,	mi/h	65.0
Der	nand and Capacity					
Direc	tional Demand Flow Rate, veh/h	245		Opposing Demand	d Flow Rate, veh/h	-
Peak	Hour Factor	0.94		Total Trucks, %		13.00
Segn	nent Capacity, veh/h	1700		Demand/Capacity	(D/C)	0.14
Inte	ermediate Results					
Segn	nent Vertical Class	2		Free-Flow Speed,	mi/h	65.0
Spee	d Slope Coefficient (m)	8.56197		Speed Power Coef	fficient (p)	0.55823
PF SI	ope Coefficient (m)	-1.32097		PF Power Coefficie	ent (p)	0.75965
In Pa	ssing Lane Effective Length?	Yes		Total Segment Density, veh/mi/ln		1.4
%lm <sub>l</sub>	provement to Percent Followers	13.8		%Improvement to Speed		0.3
Sub	segment Data					
#	Segment Type	Length, ft	Rad	ius, ft	Superelevation, %	Average Speed, mi/h
		<del>                                     </del>		-		
1	Tangent	3696	-		-	62.1
	icle Results	3696	-		-	62.1
Veh		62.3	-	Percent Followers,		36.5
<b>Veh</b>	icle Results		-			
<b>Veh</b> Avera	icle Results age Speed, mi/h	62.3	-		%	36.5
<b>Veh</b> Avera	icle Results age Speed, mi/h nent Travel Time, minutes	62.3 0.67 A			%	36.5
Veh Avera Segn Vehic	icle Results age Speed, mi/h nent Travel Time, minutes	62.3 0.67 A		Follower Density (	%	36.5
Veh Avera Segm Vehic	age Speed, mi/h ment Travel Time, minutes	62.3 0.67 A		Follower Density (	%	36.5
Veh Avera Segm Vehic	icle Results age Speed, mi/h ment Travel Time, minutes cle LOS	62.3 0.67 A		Follower Density (	% FD), followers/mi/ln	36.5
Vehice Segment Vehice Vehice Segment Meas	icle Results  age Speed, mi/h  ment Travel Time, minutes  cle LOS  sicle Inputs  ment Type	62.3 0.67 A  Passing Constrained		Follower Density (  nent 5  Length, ft	% FD), followers/mi/ln	36.5 1.2 20069
Vehice Segm Vehice Vehice Segm Meas	age Speed, mi/h ment Travel Time, minutes cle LOS  sicle Inputs ment Type sured FFS	62.3 0.67 A  Passing Constrained		Follower Density (  nent 5  Length, ft  Free-Flow Speed,	% FD), followers/mi/ln	36.5 1.2 20069
Vehice Segni Vehice Vehice Segni Meass Derived	nicle Results  age Speed, mi/h  ment Travel Time, minutes  cle LOS  nicle Inputs  ment Type  sured FFS  mand and Capacity	62.3 0.67 A  Passing Constrained Measured		Follower Density (  nent 5  Length, ft  Free-Flow Speed,	% FD), followers/mi/ln mi/h	36.5 1.2 20069 70.0
Veh Avera Segn Vehic  Veh Segn Meas Der Direc	sicle Results  age Speed, mi/h  ment Travel Time, minutes  cle LOS  sicle Inputs  ment Type  sured FFS  mand and Capacity  ctional Demand Flow Rate, veh/h	62.3 0.67 A  Passing Constrained Measured		Follower Density (  nent 5  Length, ft  Free-Flow Speed,  Opposing Demand	% FD), followers/mi/ln mi/h d Flow Rate, veh/h	36.5 1.2 20069 70.0
Vehice Segni Vehice Vehice Vehice Derivation Derivation Derivation Peak Segni	sicle Results  age Speed, mi/h  ment Travel Time, minutes  cle LOS  sicle Inputs  ment Type  sured FFS  mand and Capacity  ctional Demand Flow Rate, veh/h  Hour Factor	Passing Constrained Measured  234 0.94		Follower Density (  nent 5  Length, ft Free-Flow Speed,  Opposing Demand Total Trucks, %	% FD), followers/mi/ln mi/h d Flow Rate, veh/h	36.5 1.2 20069 70.0
Vehice Segni Meass Der Direct Peak Segni Inter	sicle Results  age Speed, mi/h  ment Travel Time, minutes  cle LOS  sicle Inputs  ment Type  sured FFS  mand and Capacity  ctional Demand Flow Rate, veh/h  Hour Factor  ment Capacity, veh/h	Passing Constrained Measured  234 0.94		Follower Density (  nent 5  Length, ft Free-Flow Speed,  Opposing Demand Total Trucks, %	%  FD), followers/mi/ln  mi/h  d Flow Rate, veh/h  (D/C)	36.5 1.2 20069 70.0
Vehice Segnet Near Segnet Peak Segnet	sicle Results  age Speed, mi/h  ment Travel Time, minutes  cle LOS  sicle Inputs  ment Type  sured FFS  mand and Capacity  ctional Demand Flow Rate, veh/h  Hour Factor  ment Capacity, veh/h  crmediate Results	62.3 0.67 A  Passing Constrained Measured  234 0.94 1700		Follower Density (  nent 5  Length, ft  Free-Flow Speed,  Opposing Demand Total Trucks, %  Demand/Capacity	%  FD), followers/mi/ln  mi/h  d Flow Rate, veh/h  (D/C)	36.5 1.2 20069 70.0
Vehice Segment Near Segment Near Segment Near Segment Near Segment Segment Segment Speed Near Segment Near Se	sicle Results  age Speed, mi/h  ment Travel Time, minutes  cle LOS  sicle Inputs  ment Type  sured FFS  mand and Capacity  ctional Demand Flow Rate, veh/h  Hour Factor  ment Capacity, veh/h  ermediate Results  ment Vertical Class	62.3 0.67 A  Passing Constrained Measured  234 0.94 1700		Follower Density (  Pent 5  Length, ft  Free-Flow Speed,  Opposing Demand  Total Trucks, %  Demand/Capacity  Free-Flow Speed,	%  FD), followers/mi/ln  mi/h  d Flow Rate, veh/h  (D/C)  mi/h  fficient (p)	36.5 1.2 20069 70.0 - 13.00 0.14

%lm	provement to Percent Followers	8.0	8.0		%Improvement to Speed		0.0	
Sub	segment Data							
#	Segment Type	Leng	gth, ft	Rad	lius, ft Sup		erelevation, %	Average Speed, mi/h
1	Tangent	2006	69	-	-		66.3	
Veh	nicle Results							
Aver	age Speed, mi/h	66.3			Percent Followe	rs, %		38.6
Segment Travel Time, minutes 3.		3.44	l		Follower Density	/ (FD), 1	followers/mi/ln	1.3
Vehic	cle LOS	А						
			S	egn	nent 6			
Veh	icle Inputs							
Segn	nent Type	Pass	sing Lanes		Length, ft			10560
Meas	sured FFS	Mea	asured		Free-Flow Speed	d, mi/h		70.0
Der	mand and Capacity							
Direc	ctional Demand Flow Rate, veh/h	223			Opposing Demand Flow Rate, veh/h		w Rate, veh/h	-
			0.94		Total Trucks, %		13.00	
Segment Capacity, veh/h			400		Demand/Capacity (D/C)		0.16	
Inte	ermediate Results							
Segn	nent Vertical Class	2			Free-Flow Speed	d, mi/h		70.0
Spee	d Slope Coefficient (m)	8.84	.84480		Speed Power Co	efficie	nt (p)	1.34187
PF SI	ope Coefficient (m)	-0.8	87977		PF Power Coeffic	cient (p	))	0.97547
In Pa	ssing Lane Effective Length?	No	No		Total Segment D	ensity,	veh/mi/ln	0.6
%lm	provement to Percent Followers	0.0			%Improvement	to Spe	ed	0.0
Sub	segment Data							
#	Segment Type	Leng	gth, ft	Rad	ius, ft	Superelevation, %		Average Speed, mi/h
1	Tangent	1056	60	-		-		69.5
Pas	sing Lane Results							
			Faster Lane			Slower Lane		
Flow	Rate, veh/h		143				80	
Perce	entage of Heavy Vehicles (HV%), %		5.20				26.96	
Initia	l Average Speed (Sint), mi/h		75.9				71.9	
Average Speed at Midpoint (SPLmid), mi/h			77.6				70.2	
Percent Followers at Midpoint (PFPLmid), % 12.3			12.3				4.7	
Veh	icle Results							
Aver	age Speed, mi/h	69.5	5 Percent Follo		Percent Follower	ollowers, %		18.4
Segn	nent Travel Time, minutes	1.73			Follower Density	/ (FD), 1	followers/mi/ln	0.6
Follower Density Mid-Point, followers/ 0.1 mi/ln					Vehicle LOS		A	

		S	egn	ment 7		
Vel	hicle Inputs					
Segi	ment Type	Passing Constrained		Length, ft		1584
Mea	sured FFS	Measured		Free-Flow Speed, 1	mi/h	70.0
De	mand and Capacity	·				·
Dire	ctional Demand Flow Rate, veh/h	veh/h 223		Opposing Demand	d Flow Rate, veh/h	-
Peak	k Hour Factor	0.94		Total Trucks, %		13.00
Segi	Segment Capacity, veh/h 1700		Demand/Capacity	(D/C)	0.13	
Int	ermediate Results					
Segi	ment Vertical Class	1		Free-Flow Speed, i	mi/h	70.0
Spe	ed Slope Coefficient (m)	4.57863		Speed Power Coef	ficient (p)	0.41674
PF S	lope Coefficient (m)	-1.27849		PF Power Coefficie	ent (p)	0.76483
In Pa	assing Lane Effective Length?	Yes		Total Segment Der	nsity, veh/mi/ln	1.1
%Improvement to Percent Followers		20.8		%Improvement to	Speed	2.4
Sul	bsegment Data					
#	Segment Type	Length, ft	Rad	dius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1584	1-		-	68.1
Vel	hicle Results					
Avei	rage Speed, mi/h	69.7		Percent Followers,	<u> </u>	33.4
	ment Travel Time, minutes	0.26		Follower Density (I	FD), followers/mi/ln	0.8
_	icle LOS	А		,	<u> </u>	
		S	egn	ment 8		
Vel	hicle Inputs					
	ment Type	Passing Constrained		Length, ft		5808
	sured FFS	Measured		Free-Flow Speed, I	mi/h	70.0
	mand and Capacity	Wedsared		Tree riew speed, i	,	76.0
	ctional Demand Flow Rate, veh/h	223		Opposing Demand	1 Flow Rate, veh/h	-
	K Hour Factor	0.94		Total Trucks, %	Triow Rate, veriffi	13.00
	ment Capacity, veh/h	1700		Demand/Capacity	(D/C)	0.13
	ermediate Results	1700		Demand/Capacity	(6/0)	0.13
				Free Flances	: /l-	70.0
segi	ment Vertical Class	3		Free-Flow Speed, I		70.0
Cna	Speed Slope Coefficient (m) 14.85552			Speed Power Coefficie	·	0.79311
	PF Slope Coefficient (m) -1.31329		TELEPOWER COEMICIE	πι ( <b>þ</b> )	0.77300	
PF S	<u> </u>				acity, yeah /mi /l-	1 1
PF S	assing Lane Effective Length?	Yes 17.3		Total Segment Der		1.1

	Segment Type	Length, ft	Rad	dius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	5808	-		-	
Vel	hicle Results					
Avei	rage Speed, mi/h	68.2		Percent Followers	, %	33.5
Segi	ment Travel Time, minutes	0.97		Follower Density	(FD), followers/mi/ln	0.9
Vehi	icle LOS	А				
			Segr	ment 9		
Vel	hicle Inputs					
Segi	ment Type	Passing Constrain	ned	Length, ft		3168
Mea	sured FFS	Measured		Free-Flow Speed,	mi/h	65.0
De	mand and Capacity					
Directional Demand Flow Rate, veh/h 277			Opposing Deman	d Flow Rate, veh/h	-	
Peal	k Hour Factor 0.94		Total Trucks, %		8.00	
Segment Capacity, veh/h		1700		Demand/Capacity	(D/C)	0.16
Int	ermediate Results					
Segi	ment Vertical Class	3	3		mi/h	65.0
Speed Slope Coefficient (m)		10.85846		Speed Power Coe	fficient (p)	0.73915
PF Slope Coefficient (m) -1.345		-1.34530	-1.34530		ent (p)	0.76678
In Pa	assing Lane Effective Length?	Yes		Total Segment De	nsity, veh/mi/ln	1.8
%lm	provement to Percent Followers	15.4		%Improvement to	Speed	0.8
Sul	bsegment Data					
#	Segment Type	Length, ft	Rad	dius, ft Superelevation, %		Average Speed, mi/h
1	Tangent	3168	-	-		62.0
Vel	hicle Results					
Avei	rage Speed, mi/h	62.5		Percent Followers	, %	39.5
Segment Travel Time, minutes		0.58		Follower Density (FD), followers/mi/ln		1.5
Segi		A				
	icle LOS					
	icle LOS		Segn	nent 10		
Vehi	hicle Inputs		Segn	nent 10		
Vehi		Passing Lanes	Segm	nent 10		3168
Vehi Vel	hicle Inputs		Segm		mi/h	3168 70.0
Vehi Vel Segi Mea	hicle Inputs ment Type	Passing Lanes	Segm	Length, ft	mi/h	
Vehi Vel Segi Mea	hicle Inputs ment Type asured FFS	Passing Lanes	Segm	Length, ft Free-Flow Speed,	mi/h d Flow Rate, veh/h	
Vehin Veli Segu Mea	hicle Inputs ment Type asured FFS mand and Capacity	Passing Lanes Measured	Segm	Length, ft Free-Flow Speed,		70.0

Segment Vertical Class	3			Free-Flow Speed,	mi/h		70.0
Speed Slope Coefficient (m)	9.064	30		Speed Power Coefficient (p)			0.90074
PF Slope Coefficient (m)	-1.11°	166		PF Power Coefficient (p)			0.78834
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln			veh/mi/ln	1.6	
%Improvement to Percent Followers	0.0			%Improvement to	Spe	ed	0.0
Subsegment Data							_
# Segment Type	Lengt	th, ft	Rad	ius, ft	Sup	erelevation, %	Average Speed, mi/h
1 Tangent	3168		-		-		67.8
Passing Lane Results							
	F	Faster Lane				Slower Lane	
Flow Rate, veh/h		193				115	
Percentage of Heavy Vehicles (HV%), %	3	3.20				16.05	
Initial Average Speed (Sint), mi/h	7	75.1				72.6	
Average Speed at Midpoint (SPLmid), mi/	h 7	76.8				71.0	
Percent Followers at Midpoint (PFPLmid),	% 3	30.8				19.0	
Vehicle Results							
Average Speed, mi/h	67.8		Percent Followers, %			35.6	
Segment Travel Time, minutes	0.53			Follower Density (	FD), f	ollowers/mi/ln	1.6
Follower Density Mid-Point, followers/ mi/ln	0.5	Vehicle LOS					A
		Se	gm	ent 11			
Vehicle Inputs							
Segment Type	Passir	ng Zone		Length, ft			6864
Measured FFS	Meas	ured Free-Flow Speed, mi/h				65.0	
Demand and Capacity							
Directional Demand Flow Rate, veh/h	383			Opposing Demand Flow Rate, veh/h			628
Peak Hour Factor	0.94			Total Trucks, %			8.00
Segment Capacity, veh/h	1700			Demand/Capacity	(D/C	)	0.23
Intermediate Results							
Segment Vertical Class	1			Free-Flow Speed,	mi/h		65.0
Speed Slope Coefficient (m)	4.497	82		Speed Power Coef	fficier	nt (p)	0.46689
PF Slope Coefficient (m)	-1.230	082		PF Power Coefficie	ent (p	)	0.79733
In Passing Lane Effective Length?	Yes			Total Segment De	nsity,	veh/mi/ln	2.7
%Improvement to Percent Followers	16.7			%Improvement to Speed			1.0
Subsegment Data							
# Segment Type	Lengt	th, ft	Rad	ius, ft	Sup	erelevation, %	Average Speed, mi/h
1 Tangent	6864		-		-		62.5
Vehicle Results							•

Average Speed, mi/h	63.1		Percent Followers	, %		43.6
Segment Travel Time, minutes	1.24		Follower Density (	-	llowers/mi/ln	2.2
Vehicle LOS	В			· /·		
	Se	eam	ent 12			
Vehicle Inputs						
Segment Type	Passing Lanes		Length, ft			4752
Measured FFS	Measured		Free-Flow Speed,	mi/h		65.0
Demand and Capacity	Wedsured		Tree flow speed,	1111/11		03.0
	202		0	d Flo	Data ala/la	I
Directional Demand Flow Rate, veh/h	0.94		Opposing Deman	ia Flow	Rate, ven/n	-
		Total Trucks, %	(D (C)		8.00	
Segment Capacity, veh/h	1500		Demand/Capacity	/ (D/C)		0.26
Intermediate Results						
Segment Vertical Class	1		Free-Flow Speed,	mi/h		65.0
Speed Slope Coefficient (m)	7.16123		Speed Power Coefficient (p)		0.85065	
PF Slope Coefficient (m)	-1.14890		PF Power Coefficient (p)		0.85274	
In Passing Lane Effective Length?	No		Total Segment De	ensity, v	reh/mi/ln	2.4
%Improvement to Percent Followers	0.0		%Improvement to	Speed	l	0.0
Subsegment Data						
# Segment Type	Length, ft	Rad	lius, ft	Super	relevation, %	Average Speed, mi/h
1 Tangent	4752	-	-			62.6
Passing Lane Results						
	Faster Lane					
				9	Slower Lane	
Flow Rate, veh/h	235				Slower Lane 148	
Flow Rate, veh/h Percentage of Heavy Vehicles (HV%), %	235 3.20					
					148	
Percentage of Heavy Vehicles (HV%), %	3.20 75.6			-	148	
Percentage of Heavy Vehicles (HV%), % Initial Average Speed (Sint), mi/h	3.20 75.6 h 77.2			-	148 15.63 75.9	
Percentage of Heavy Vehicles (HV%), % Initial Average Speed (Sint), mi/h Average Speed at Midpoint (SPLmid), mi/h	3.20 75.6 h 77.2			-	148 15.63 75.9 74.2	
Percentage of Heavy Vehicles (HV%), % Initial Average Speed (Sint), mi/h Average Speed at Midpoint (SPLmid), mi/l Percent Followers at Midpoint (PFPLmid),	3.20 75.6 h 77.2		Percent Followers	7	148 15.63 75.9 74.2	39.8
Percentage of Heavy Vehicles (HV%), % Initial Average Speed (Sint), mi/h Average Speed at Midpoint (SPLmid), mi/l Percent Followers at Midpoint (PFPLmid),  Vehicle Results	3.20 75.6 h 77.2 % 27.8		Percent Followers Follower Density (		148 15.63 75.9 74.2 19.8	39.8 2.4
Percentage of Heavy Vehicles (HV%), % Initial Average Speed (Sint), mi/h Average Speed at Midpoint (SPLmid), mi/h Percent Followers at Midpoint (PFPLmid),  Vehicle Results  Average Speed, mi/h	3.20 75.6 h 77.2 % 27.8				148 15.63 75.9 74.2 19.8	
Percentage of Heavy Vehicles (HV%), % Initial Average Speed (Sint), mi/h Average Speed at Midpoint (SPLmid), mi/h Percent Followers at Midpoint (PFPLmid),  Vehicle Results  Average Speed, mi/h Segment Travel Time, minutes  Follower Density Mid-Point, followers/	3.20 75.6 h 77.2 % 27.8 62.6 0.86 0.6	egm	Follower Density (		148 15.63 75.9 74.2 19.8	2.4
Percentage of Heavy Vehicles (HV%), % Initial Average Speed (Sint), mi/h Average Speed at Midpoint (SPLmid), mi/h Percent Followers at Midpoint (PFPLmid),  Vehicle Results  Average Speed, mi/h Segment Travel Time, minutes  Follower Density Mid-Point, followers/	3.20 75.6 h 77.2 % 27.8 62.6 0.86 0.6	egm	Follower Density ( Vehicle LOS		148 15.63 75.9 74.2 19.8	2.4
Percentage of Heavy Vehicles (HV%), % Initial Average Speed (Sint), mi/h Average Speed at Midpoint (SPLmid), mi/h Percent Followers at Midpoint (PFPLmid),  Vehicle Results  Average Speed, mi/h Segment Travel Time, minutes  Follower Density Mid-Point, followers/mi/ln	3.20 75.6 h 77.2 % 27.8 62.6 0.86 0.6	egm	Follower Density ( Vehicle LOS		148 15.63 75.9 74.2 19.8	2.4
Percentage of Heavy Vehicles (HV%), % Initial Average Speed (Sint), mi/h Average Speed at Midpoint (SPLmid), mi/h Percent Followers at Midpoint (PFPLmid),  Vehicle Results  Average Speed, mi/h Segment Travel Time, minutes  Follower Density Mid-Point, followers/mi/ln  Vehicle Inputs	3.20 75.6 h 77.2 % 27.8 62.6 0.86 0.6	egm	Follower Density ( Vehicle LOS  ent 13	; % (FD), fo	148 15.63 75.9 74.2 19.8	2.4 A

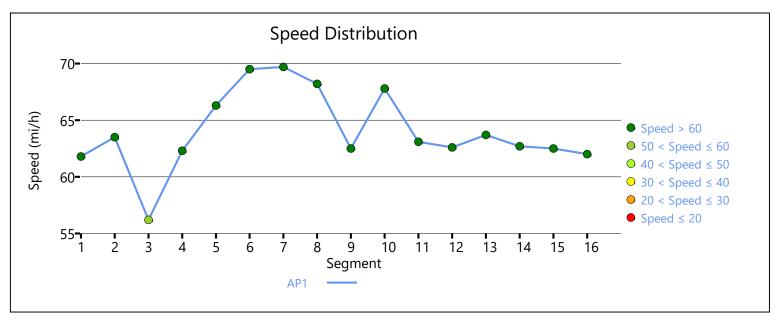
Dire	ctional Demand Flow Rate, veh/h	383		Onnosing Deman	d Flow Rate, veh/h	1_
	Hour Factor	0.94		Total Trucks, %	a rrow rate, verijir	8.00
	ment Capacity, veh/h	1700		Demand/Capacity	, (D/C)	0.23
	ermediate Results	17.00		Demand, capacity		0.23
		I.		T =	• a	c= 0
	ment Vertical Class	1		Free-Flow Speed,		65.0
			Speed Power Coe	•	0.41674	
	ope Coefficient (m)	-1.34675		PF Power Coefficie	·	0.74795
	In Passing Lane Effective Length?  Yes		Total Segment De		3.0	
%lm	provement to Percent Followers	24.2		%Improvement to	Speed	2.3
Suk	osegment Data					
#	Segment Type	Length, ft	Rac	dius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	528 -			-	62.3
Vel	nicle Results					
Aver	age Speed, mi/h	63.7		Percent Followers,	, %	48.2
Segr	nent Travel Time, minutes	0.09		Follower Density (	(FD), followers/mi/ln	2.2
Vehi	cle LOS	В				
			Segm	nent 14		
Vel	nicle Inputs					
Segment Type Pa		Passing Constraine	d	Length, ft		6336
Mea	sured FFS	Measured		Free-Flow Speed,	mi/h	65.0
Dei	mand and Capacity					·
Dire	ctional Demand Flow Rate, veh/h	436		Opposing Deman	d Flow Rate, veh/h	-
Peak	Hour Factor	0.94		Total Trucks, %		8.00
Segr	nent Capacity, veh/h	1700		Demand/Capacity	' (D/C)	0.26
Into	ermediate Results					
Segr	ment Vertical Class	1		Free-Flow Speed,	mi/h	65.0
Spee	ed Slope Coefficient (m)	4.63499		Speed Power Coe	fficient (p)	0.41674
PF SI	lope Coefficient (m)	-1.24695		PF Power Coefficie	ent (p)	0.77221
In Pa	ssing Lane Effective Length?	Yes		Total Segment De	nsity, veh/mi/ln	3.4
%lm	provement to Percent Followers	16.7		%Improvement to	Speed	1.1
Suk	osegment Data					
			Rac	dius, ft	Superelevation, %	Average Speed, mi/h
	Segment Type			-		
#	Segment Type Tangent		-		-	62.1
#			-		-	62.1
# 1 <b>Veh</b>	Tangent		-	Percent Followers,	, %	48.2
# 1 Veh	Tangent nicle Results	6336	-		, % (FD), followers/mi/ln	

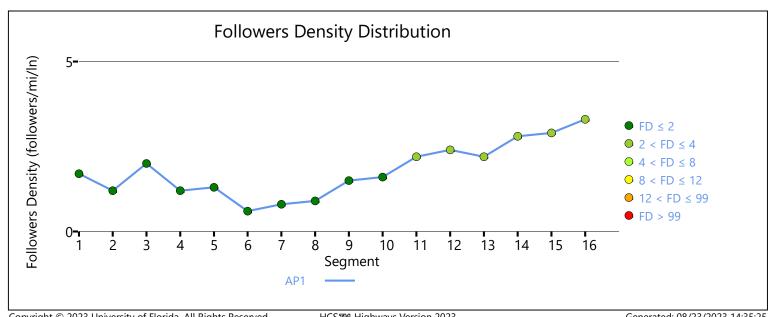
	Se	gn	nent 15		
Vehicle Inputs					
Segment Type	Passing Zone		Length, ft		4863
Measured FFS	Measured		Free-Flow Speed, mi/h		65.0
Demand and Capacity					
Directional Demand Flow Rate, veh/h	436		Opposing Demand	d Flow Rate, veh/h	809
Peak Hour Factor	or 0.94		Total Trucks, %		8.00
Segment Capacity, veh/h 1700		Demand/Capacity	(D/C)	0.26	
Intermediate Results					
Segment Vertical Class	1		Free-Flow Speed,	mi/h	65.0
Speed Slope Coefficient (m)	4.51430		Speed Power Coef	fficient (p)	0.45029
PF Slope Coefficient (m)	-1.24906		PF Power Coefficie	ent (p)	0.79500
In Passing Lane Effective Length?	Yes		Total Segment De	nsity, veh/mi/ln	3.3
%Improvement to Percent Followers	13.7		%Improvement to	Speed	0.4
Subsegment Data					
# Segment Type	Length, ft	Ra	dius, ft	Superelevation, %	Average Speed, mi/h
1 Tangent	4863	1-		-	62.2
Vehicle Results					
Average Speed, mi/h	62.5		Percent Followers,	%	47.6
Segment Travel Time, minutes	0.88		Follower Density (	FD), followers/mi/ln	2.9
Vehicle LOS	В				
	Se	gn	nent 16		
Vehicle Inputs					
Segment Type	Passing Constrained		Length, ft		8812
Measured FFS	Measured		Free-Flow Speed,	mi/h	65.0
Demand and Capacity					
Directional Demand Flow Rate, veh/h	457		Opposing Demand	d Flow Rate, veh/h	-
Peak Hour Factor	0.94		Total Trucks, %		8.00
Segment Capacity, veh/h	1700		Demand/Capacity	(D/C)	0.27
Intermediate Results					
Segment Vertical Class	1		Free-Flow Speed,	mi/h	65.0
Speed Slope Coefficient (m)	4.65521		Speed Power Coef	fficient (p)	0.41674
PF Slope Coefficient (m)	-1.24954		PF Power Coefficie	ent (p)	0.75957
In Passing Lane Effective Length?	Yes		Total Segment De	nsity, veh/mi/ln	3.7
%Improvement to Percent Followers	9.7		%Improvement to	Speed	0.0
Subsegment Data					

Т	VMT veh-mi/AP	VHI veh-			ensity, followers/	LOS		
Facility Results								
Vehicle LOS B								
Segm	nent Travel Time, minutes	1.62		Follower Density (	FD), followers/mi/ln	3.3		
Average Speed, mi/h 62.0				Percent Followers,	, %	49.8		
Vehicle Results								
1	Tangent	8812	8812 -		-	62.0		
#	Segment Type	Length, ft	Length, ft Radiu		Superelevation, %	Average Speed, mi/h		

1.5

1.01





1345

Α

	HCS Two-La	ne l	Highway Re	port	
Project Information		_			
Analyst	K. Luljak		Date		8/23/2023
Agency	HDR		Analysis Year		2045
Jurisdiction	КҮТС		Time Analyzed		2045 AM
Project Description	US 127 SB		Units		U.S. Customary
	S	egn	nent 1		·
Vehicle Inputs					
Segment Type	Passing Constrained	ssing Constrained Length, ft		8812	
Measured FFS	Measured		Free-Flow Speed,	mi/h	65.0
Demand and Capacity					<u>'</u>
Directional Demand Flow Rate, veh/h	223		Opposing Deman	d Flow Rate, veh/h	-
Peak Hour Factor	0.94		Total Trucks, %		8.00
Segment Capacity, veh/h	1700		Demand/Capacity	(D/C)	0.13
Intermediate Results	<u>'</u>				
Segment Vertical Class 1			Free-Flow Speed,	mi/h	65.0
Speed Slope Coefficient (m) 4.65521			Speed Power Coe	fficient (p)	0.41674
PF Slope Coefficient (m)	-1.24954		PF Power Coefficie	ent (p)	0.75957
In Passing Lane Effective Length?	No		Total Segment De	nsity, veh/mi/ln	1.2
%Improvement to Percent Followers	0.0		%Improvement to	Speed	0.0
Subsegment Data					
# Segment Type	Length, ft	Rad	ius, ft	Superelevation, %	Average Speed, mi/h
1 Tangent	8812	-		-	63.1
Vehicle Results					
Average Speed, mi/h	63.1		Percent Followers	, %	33.0
Segment Travel Time, minutes	1.59		Follower Density (	FD), followers/mi/ln	1.2
Vehicle LOS	А		7. 7.		
	S	egn	nent 2		,
Vehicle Inputs					
Segment Type	Passing Zone		Length, ft		4863
Measured FFS Measured			Free-Flow Speed,	mi/h	65.0
Demand and Capacity					
Directional Demand Flow Rate, veh/h	298		Opposing Deman	d Flow Rate, veh/h	734
Peak Hour Factor	0.94		Total Trucks, %		8.00
Segment Capacity, veh/h	1700		Demand/Capacity	, (D/C)	0.18
Intermediate Results					

Sear	ment Vertical Class	1			Free-Flow Speed,	mi/h		65.0
	ed Slope Coefficient (m)	4.50	0040		Speed Power Coe		nt (p)	0.45654
	lope Coefficient (m)	-1.2	4582			PF Power Coefficient (p)		0.79769
In Pa	assing Lane Effective Length?	No				Total Segment Density, veh/mi/ln		1.8
%lm	provement to Percent Followers	0.0			%Improvement to	Spe	 ed	0.0
Sul	osegment Data				·			
#	Segment Type	Len	gth, ft	Rac	lius, ft	us, ft Superelevation, %		Average Speed, mi/h
1	Tangent	486		-		-		62.9
Vel	nicle Results							<u>'</u>
Average Speed, mi/h 62			)		Percent Followers	, %		37.8
Segment Travel Time, minutes (		0.88			Follower Density (		followers/mi/ln	1.8
-		A			,	. ,.		
			So	egn	nent 3			
 Veł	nicle Inputs							
•			sing Lanes		Length, ft			6336
			Measured		Free-Flow Speed, mi/h			65.0
		IVIC			Tree flow speed,	,		03.0
Dei	mand and Capacity							
Dire	ctional Demand Flow Rate, veh/h	298	11 3			d Flo	w Rate, veh/h	-
	Hour Factor	0.94	1		Total Trucks, %			8.00
Segr	ment Capacity, veh/h	150	0	Demand/Capacity (D/C)			0.20	
Int	ermediate Results							
Segr	ment Vertical Class	1			Free-Flow Speed, mi/h			65.0
Spee	ed Slope Coefficient (m)	7.24	24124		Speed Power Coe	fficie	nt (p)	0.95118
PF S	lope Coefficient (m)	-1.0	1.09010		PF Power Coefficient (p)		))	0.88259
In Pa	assing Lane Effective Length?	No			Total Segment Density, veh/mi/ln		1.5	
%lm	provement to Percent Followers	0.0			%Improvement to Speed			0.0
Sul	osegment Data							
#	Segment Type	Len	gth, ft	Rac	lius, ft	Sup	erelevation, %	Average Speed, mi/h
1	Tangent	633	6	-		-		63.4
Pas	ssing Lane Results							•
			Faster Lane				Slower Lane	
Flow	/ Rate, veh/h		187				111	
Perc	entage of Heavy Vehicles (HV%), %		3.20				16.12	
Initia	al Average Speed (Sint), mi/h		76.2			76.4		
Aver	rage Speed at Midpoint (SPLmid), m	ni/h	77.8				74.7	
Percent Followers at Midpoint (PFPLmid), %			21.4			13.9		

Aver	age Speed, mi/h	63.4		Percent Followers,	, %	31.2
	nent Travel Time, minutes	1.13			(FD), followers/mi/ln	1.5
Follo mi/lr	wer Density Mid-Point, followers/	0.4		Vehicle LOS		A
		Sc	egn	nent 4		
Veh	nicle Inputs					
Segn	ment Type	Passing Constrained		Length, ft		528
Meas	sured FFS	Measured		Free-Flow Speed,	mi/h	65.0
Der	mand and Capacity					
Directional Demand Flow Rate, veh/h 298		298		Opposing Deman	d Flow Rate, veh/h	-
Peak	Hour Factor	0.94		Total Trucks, %		8.00
Segn	Segment Capacity, veh/h 1700		Demand/Capacity	/ (D/C)	0.18	
Inte	ermediate Results					
Segn	nent Vertical Class	1		Free-Flow Speed,	mi/h	65.0
Spee	ed Slope Coefficient (m)	4.57372		Speed Power Coe	fficient (p)	0.41674
PF Slope Coefficient (m)		-1.34675		PF Power Coefficie	ent (p)	0.74795
In Passing Lane Effective Length?		Yes		Total Segment De	nsity, veh/mi/ln	2.0
%Improvement to Percent Followers		23.1		%Improvement to	Speed	2.1
Sub	segment Data					
#	Segment Type	Length, ft	Rad	ius, ft Superelevation, %		Average Speed, mi/h
1	Tangent	528	-	-		62.7
Veh	nicle Results					
Aver	age Speed, mi/h	64.0		Percent Followers, %		42.0
Segn	nent Travel Time, minutes	0.09		Follower Density (	(FD), followers/mi/ln	1.5
Vehic	cle LOS	А				
		Se	egn	nent 5		
Veh	nicle Inputs					
Segn	nent Type	Passing Constrained		Length, ft		4752
Meas	sured FFS	Measured		Free-Flow Speed,	mi/h	65.0
Der	mand and Capacity					
Direc	ctional Demand Flow Rate, veh/h	298		Opposing Deman	d Flow Rate, veh/h	-
Peak	Hour Factor	0.94		Total Trucks, %		8.00
Segn	nent Capacity, veh/h	1700		Demand/Capacity	/ (D/C)	0.18
Inte	ermediate Results					
		1		E 51 C 1	mi/h	65.0
Segn	nent Vertical Class	1			1111/11	03.0
_	nent Vertical Class ed Slope Coefficient (m)	4.61989		Free-Flow Speed, Speed Power Coe		0.41674

In Pa	assing Lane Effective Length?	Yes	Yes Total Segment		Density, veh/mi/ln	1.8
%Improvement to Percent Followers 18.5				%Improvemen	t to Speed	1.4
Sul	bsegment Data					
#	Segment Type	Length, ft	Ra	ndius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	4752	-		-	62.6
Vel	hicle Results					
Ave	rage Speed, mi/h	63.5		Percent Follow	ers, %	38.8
Seg	ment Travel Time, minutes	0.85		Follower Densi	ty (FD), followers/mi/ln	1.5
Vehi	icle LOS	А				
			Seg	ment 6		
Vel	hicle Inputs					
Seg	ment Type	Passing Zone		Length, ft		6864
Mea	sured FFS	Measured		Free-Flow Spee	ed, mi/h	65.0
De	mand and Capacity					
Dire	ctional Demand Flow Rate, veh/h	298		Opposing Dem	and Flow Rate, veh/h	553
Peal	K Hour Factor	0.94	0.94			8.00
Seg	ment Capacity, veh/h	1700		Demand/Capa	city (D/C)	0.18
Int	ermediate Results					
Seg	ment Vertical Class	1		Free-Flow Spee	ed, mi/h	65.0
Spe	ed Slope Coefficient (m)	4.48193	4.48193		oefficient (p)	0.47532
PF S	lope Coefficient (m)	-1.22551		PF Power Coeff	icient (p)	0.80050
In Pa	assing Lane Effective Length?	Yes		Total Segment	Density, veh/mi/ln	1.8
%lm	provement to Percent Followers	14.5		%Improvemen	t to Speed	0.4
Sul	bsegment Data					
#	Segment Type	Length, ft	Ra	idius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	6864	-		-	62.9
Vel	hicle Results					
Ave	rage Speed, mi/h	63.2		Percent Follow	ers, %	37.2
Seg	ment Travel Time, minutes	1.23		Follower Densi	ty (FD), followers/mi/ln	1.5
Vehi	icle LOS	A				
			Seg	ment 7		
Vel	hicle Inputs					
Seg	ment Type	Passing Constrai	ned	Length, ft		3168
	sured FFS	Measured		Free-Flow Spee	ed, mi/h	70.0
De	mand and Capacity					
	ctional Demand Flow Rate, veh/h	277		Opposing Dem	and Flow Rate, veh/h	
	and the state of t			1 - F P 5519 D 611		

	8.00
acity (D/C)	0.16
eed, mi/h	70.0
Coefficient (p)	0.73915
efficient (p)	0.77991
nt Density, veh/mi/ln	1.6
nt to Speed	0.0
Superelevation, %	Average Speed, mi/h
-	67.0
wers, %	38.6
sity (FD), followers/mi/ln	1.4
	3168
eed, mi/h	65.0
mand Flow Rate, veh/h	-
%	8.00
acity (D/C)	0.10
eed, mi/h	65.0
	0.73915
Coefficient (p)	0.76678
Coefficient (p) efficient (p)	0.8
<u> </u>	0.1
efficient (p)	
efficient (p) at Density, veh/mi/ln	Average Speed, mi/h
efficient (p) at Density, veh/mi/ln	63.5
efficient (p)  It Density, veh/mi/ln  Int to Speed	
efficient (p)  It Density, veh/mi/ln  Int to Speed	
efficient (p)  It Density, veh/mi/ln  Int to Speed  Superelevation, %  -	29.3
efficient (p)  It Density, veh/mi/ln  Int to Speed  Superelevation, %  -	29.3
ner	llowers, %

Vehicle Inputs				ı				
Segment Type	Pass	sing Lanes		Length, ft			5808	
Measured FFS	Mea	asured	Free-Flow Speed,	mi/h		70.0		
Demand and Capacity								
Directional Demand Flow Rate, veh/h	170			Opposing Deman	d Flo	w Rate, veh/h	-	
Peak Hour Factor	0.94	ļ		Total Trucks, %			13.00	
Segment Capacity, veh/h	140	0		Demand/Capacity	(D/C	<u>-</u>	0.12	
Intermediate Results								
Segment Vertical Class	3			Free-Flow Speed,	mi/h		70.0	
Speed Slope Coefficient (m)	10.6	66380		Speed Power Coe	fficie	nt (p)	1.16305	
PF Slope Coefficient (m)	-0.9	3134		PF Power Coefficie	ent (p	p)	0.80987	
In Passing Lane Effective Length?	No			Total Segment De	nsity	, veh/mi/ln	0.5	
%Improvement to Percent Followers	0.0			%Improvement to	Spe	ed	0.0	
Subsegment Data								
# Segment Type	e Length, ft R		Rad	lius, ft	Sup	erelevation, %	Average Speed, mi/h	
1 Tangent	580	8	-		-		69.5	
Passing Lane Results								
		Faster Lane				Slower Lane		
Flow Rate, veh/h	112					58		
Percentage of Heavy Vehicles (HV%), %		5.20			27.95			
Initial Average Speed (Sint), mi/h		75.6			69.7			
Average Speed at Midpoint (SPLmid), mi/	'h	77.3			68.0			
Percent Followers at Midpoint (PFPLmid),	%	16.2				8.7		
Vehicle Results								
Average Speed, mi/h	69.5	·		Percent Followers, %			19.9	
Segment Travel Time, minutes	0.95	,		Follower Density (	(FD),	followers/mi/ln	0.5	
Follower Density Mid-Point, followers/mi/ln	0.2			Vehicle LOS			A	
		Se	gm	ent 10				
Vehicle Inputs								
Segment Type	Pass	sing Constrained		Length, ft			1584	
Measured FFS	Mea	asured		Free-Flow Speed,	mi/h		70.0	
Demand and Capacity								
Directional Demand Flow Rate, veh/h	170			Opposing Deman	d Flo	w Rate, veh/h	-	
Peak Hour Factor	0.94			Total Trucks, %			13.00	
Segment Capacity, veh/h	170	0		Demand/Capacity (D/C) 0.10			0.10	
Intermediate Results								

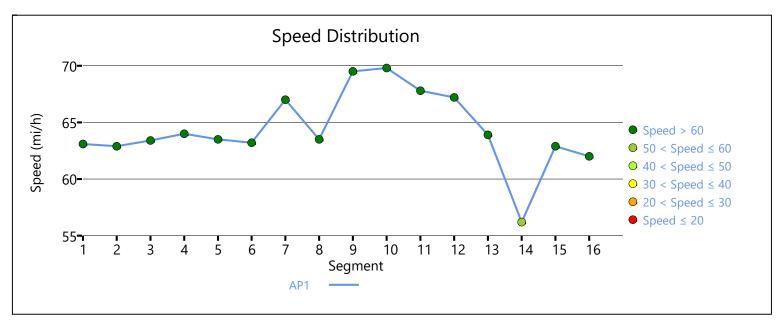
Soc	ment Vertical Class	1		Froe Flow Speed	mi/h	70.0
		4.57863		Free-Flow Speed,		0.41674
	ed Slope Coefficient (m)			Speed Power Coefficient (p)  PF Power Coefficient (p)		
PF Slope Coefficient (m)			-1.27849		· ·	0.76483
	assing Lane Effective Length?	Yes		Total Segment De		0.7
%lm	provement to Percent Followers	22.7		%Improvement to	Speed	1.9
Sul	osegment Data					
#	Segment Type	Length, ft	Rac	dius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1584	-		-	68.5
Vel	nicle Results					
Avei	rage Speed, mi/h	69.8		Percent Followers,	, %	28.1
Segi	ment Travel Time, minutes	0.26		Follower Density (	FD), followers/mi/ln	0.5
Vehi	cle LOS	А				
		Se	egm	ent 11		
Vel	nicle Inputs					
Segi	ment Type	Passing Constrained		Length, ft		10560
Mea	sured FFS	Measured		Free-Flow Speed,	mi/h	70.0
De	mand and Capacity			<u>'</u>		
Directional Demand Flow Rate, veh/h		170		Opposing Deman	d Flow Rate, veh/h	-
Peak Hour Factor		0.94		Total Trucks, %		13.00
Segi	ment Capacity, veh/h	1700		Demand/Capacity	(D/C)	0.10
Int	ermediate Results					
Segi	ment Vertical Class	2		Free-Flow Speed,	mi/h	70.0
Spe	ed Slope Coefficient (m)	11.18487		Speed Power Coe	fficient (p)	0.58463
PF S	lope Coefficient (m)	-1.26753	-1.26753		ent (p)	0.75322
In Pa	assing Lane Effective Length?	Yes	Yes		nsity, veh/mi/ln	0.7
%lm	provement to Percent Followers	14.9		%Improvement to	Speed	0.3
Sul	osegment Data					
#	Segment Type	Length, ft	Rac	dius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	10560	-		-	67.6
Vel	nicle Results					
Avei	rage Speed, mi/h	67.8		Percent Followers,	, %	28.4
Segi	ment Travel Time, minutes	1.77		Follower Density (	FD), followers/mi/ln	0.6
Vehi	cle LOS	A				
		Se	egm	ent 12		
Vel	nicle Inputs					
Segi	ment Type	Passing Constrained		Length, ft		20069
Mea	sured FFS	Measured		Free-Flow Speed,	mi/h	70.0

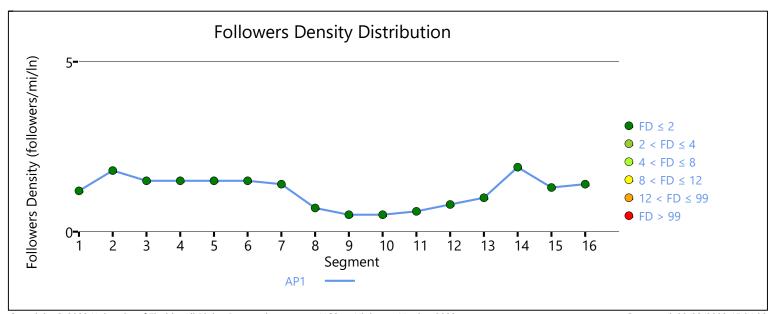
Der	mand and Capacity							
	ctional Demand Flow Rate, veh/h	181			Opposing Demar	nd Flo	w Rate. veh/h	T-
	Hour Factor	0.94			Total Trucks, %			13.00
Segment Capacity, veh/h		_	1700		Demand/Capacity	/ (D/0		0.11
	ermediate Results							
Segr	ment Vertical Class	2			Free-Flow Speed,	mi/h		70.0
Spee	ed Slope Coefficient (m)	12.6	2830		Speed Power Coe	fficie	nt (p)	0.60494
PF SI	lope Coefficient (m)	-1.36	5292		PF Power Coeffici	ent (p	D)	0.70869
In Pa	ssing Lane Effective Length?	Yes			Total Segment De	ensity	, veh/mi/ln	0.9
%lm	provement to Percent Followers	8.3			%Improvement to	Spe	ed	0.0
Suk	osegment Data							
#	Segment Type	Leng	ıth, ft	Rad	lius, ft	Sup	erelevation, %	Average Speed, mi/h
1	Tangent	2006	59	-		-		67.2
Vel	nicle Results							
Aver	age Speed, mi/h	67.2			Percent Followers, %		33.3	
Segr	ment Travel Time, minutes	3.39	3.39		Follower Density (FD), followers/mi/ln			0.8
Vehi	cle LOS	А	А					
			Se	gm	ent 13			
Vel	nicle Inputs							
Segr	ment Type	Pass	ing Lanes		Length, ft			3696
Mea	sured FFS	Mea	sured		Free-Flow Speed,	mi/h		65.0
Dei	mand and Capacity							
Dire	ctional Demand Flow Rate, veh/h	223			Opposing Demand Flow Rate, veh/h			-
Peak	Hour Factor	0.94	0.94		Total Trucks, %			13.00
Segr	ment Capacity, veh/h	1400	)		Demand/Capacity (D/C)			0.16
Inte	ermediate Results							
Segr	ment Vertical Class	2			Free-Flow Speed, mi/h			65.0
Spee	ed Slope Coefficient (m)	8.26	253		Speed Power Coefficient (p)		0.95385	
PF SI	lope Coefficient (m)	-1.10	0603		PF Power Coeffici	ent (	p)	0.82389
In Pa	ssing Lane Effective Length?	No			Total Segment De	ensity	, veh/mi/ln	1.0
%lm	provement to Percent Followers	0.0			%Improvement to	Spe	ed	0.0
Suk	segment Data							
#	Segment Type	Leng	Length, ft Rad		lius, ft	Sup	perelevation, %	Average Speed, mi/h
1	Tangent	3696	)	-		-		63.9
Pas	sing Lane Results							
			Faster Lane				Slower Lane	
Flow Rate, veh/h 143					80			

		I				I	
Percentage of Heavy Vehicles (HV%), %		5.20				26.96	
Initial Average Speed (Sint), mi/h						72.4	
Average Speed at Midpoint (SPLmid), mi/h 77.4					70.7		
Percent Followers at Midpoint (PFPLmid), % 18.1					9.8		
Vehicle Results							
Average Speed, mi/h	63.9	)		Percent Followers,	, %		27.5
Segment Travel Time, minutes	0.66	5		Follower Density (	(FD),	followers/mi/ln	1.0
Follower Density Mid-Point, followers/mi/ln	0.2			Vehicle LOS			A
		Se	gm	ent 14			
Vehicle Inputs							
Segment Type	Pass	sing Constrained		Length, ft			11088
Measured FFS	Mea	asured		Free-Flow Speed,	mi/h		65.0
Demand and Capacity							
Directional Demand Flow Rate, veh/h	255			Opposing Demand	d Flo	w Rate, veh/h	-
Peak Hour Factor	0.94	).94		Total Trucks, %			13.00
Segment Capacity, veh/h	170	0		Demand/Capacity	, (D/C	<u> </u>	0.15
Intermediate Results							
Segment Vertical Class				Free-Flow Speed,	mi/h		65.0
Speed Slope Coefficient (m)	23.3	32522		Speed Power Coef	fficie	nt (p)	0.51393
PF Slope Coefficient (m)	-1.9	1200		PF Power Coefficie	ent (p	p)	0.76801
In Passing Lane Effective Length?	Yes			Total Segment De	nsity	, veh/mi/ln	2.2
%Improvement to Percent Followers	14.5	%Improvement to Speed			0.3		
Subsegment Data							
# Segment Type	Len	gth, ft	Rad	lius, ft	Sup	erelevation, %	Average Speed, mi/h
1 Tangent	110	88	-		-		56.0
Vehicle Results							
Average Speed, mi/h	56.2	2		Percent Followers,	, %		48.8
Segment Travel Time, minutes	2.24	1		Follower Density (	(FD),	followers/mi/ln	1.9
Vehicle LOS	Α			., , , , , , , , , , , , , , , , , , ,			
		Se	gm	ent 15			
Vehicle Inputs							
Segment Type	Pass	sing Constrained		Length, ft			5808
Measured FFS	Mea	asured		Free-Flow Speed,	mi/h		65.0
Demand and Capacity							
Directional Demand Flow Rate, veh/h	255			Opposing Demand	d Flo	w Rate, veh/h	-
Peak Hour Factor	0.94	1		Total Trucks, %		13.00	
Directional Demand Flow Rate, veh/h	+			-	d Flo	w Rate, veh/h	

Segment Capacity, veh/h	1700 E		Demand/Capacity (D/C)		0.15
Intermediate Results					
Segment Vertical Class	1	1		mi/h	65.0
Speed Slope Coefficient (m)	4.63019	4.63019		fficient (p)	0.41674
PF Slope Coefficient (m)	-1.24824		PF Power Coefficie	ent (p)	0.77439
In Passing Lane Effective Length?	Yes		Total Segment De	nsity, veh/mi/ln	1.4
%Improvement to Percent Followers	11.6		%Improvement to	Speed	0.0
Subsegment Data					
# Segment Type	Length, ft	Rad	ius, ft	Superelevation, %	Average Speed, mi/h
1 Tangent	5808	T-		-	62.9
Vehicle Results					
Average Speed, mi/h	62.9		Percent Followers	, %	35.2
Segment Travel Time, minutes	1.05		Follower Density (	FD), followers/mi/ln	1.3
Vehicle LOS	А				
	9	Segm	ent 16		
Vehicle Inputs					
Segment Type	Passing Constrained	d t	Length, ft		2640
Measured FFS	Measured		Free-Flow Speed,	mi/h	65.0
Demand and Capacity					
Directional Demand Flow Rate, veh/h	255		Opposing Deman	d Flow Rate, veh/h	-
Peak Hour Factor	0.94		Total Trucks, %		13.00
Segment Capacity, veh/h	1700	1700		(D/C)	0.15
Intermediate Results					
Segment Vertical Class	3		Free-Flow Speed,	mi/h	65.0
Speed Slope Coefficient (m)	12.43125		Speed Power Coe	fficient (p)	0.75892
PF Slope Coefficient (m)	-1.34725		PF Power Coefficie	ent (p)	0.77319
In Passing Lane Effective Length?	Yes		Total Segment De	nsity, veh/mi/ln	1.5
%Improvement to Percent Followers	10.6		%Improvement to	Speed	0.0
Subsegment Data					
# Segment Type	Length, ft	Rad	ius, ft	Superelevation, %	Average Speed, mi/h
1 Tangent	2640			-	62.0
Vehicle Results					
Average Speed, mi/h	62.0		Percent Followers	, %	37.4
Segment Travel Time, minutes	0.48		Follower Density (	FD), followers/mi/ln	1.4
Vehicle LOS	А				
Facility Results					
T VMT	VHD		Follower Do	ensity, followers/	LOS

	veh-mi/AP	veh-h/p	mi/ln	
1	1016	0.71	1.0	A





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	HCS Two	-Lane	Highway Re	port		
Project Information						
Analyst	K. Luljak		Date		8/23/2023	
Agency	HDR		Analysis Year		2045	
Jurisdiction	KYTC		Time Analyzed		2045 PM	
Project Description	US 127 SB		Units		U.S. Customary	
		Segn	nent 1		·	
Vehicle Inputs						
Segment Type	Passing Constrain	ned	Length, ft		8812	
Measured FFS	Measured		Free-Flow Speed,	mi/h	65.0	
Demand and Capacity					<u>'</u>	
Directional Demand Flow Rate, veh,	/h 872		Opposing Deman	d Flow Rate, veh/h	-	
Peak Hour Factor	0.94		Total Trucks, %		8.00	
Segment Capacity, veh/h	1700		Demand/Capacity	/ (D/C)	0.51	
Intermediate Results					<u>'</u>	
Segment Vertical Class	1		Free-Flow Speed,	mi/h	65.0	
Speed Slope Coefficient (m)	4.65521		Speed Power Coe	fficient (p)	0.41674	
PF Slope Coefficient (m)	-1.24954		PF Power Coeffici	ent (p)	0.75957	
In Passing Lane Effective Length?	No		Total Segment De	ensity, veh/mi/ln	9.7	
%Improvement to Percent Follower	s 0.0		%Improvement to	Speed	0.0	
Subsegment Data						
# Segment Type	Length, ft	Rac	dius, ft	Superelevation, %	Average Speed, mi/h	
1 Tangent	8812	-		-	60.8	
Vehicle Results						
Average Speed, mi/h	60.8		Percent Followers	, %	67.6	
Segment Travel Time, minutes	1.65		Follower Density	(FD), followers/mi/ln	9.7	
Vehicle LOS	D					
		Segn	nent 2		•	
Vehicle Inputs						
Segment Type	Passing Zone		Length, ft		4863	
Measured FFS Measured		Free-Flow Speed,	mi/h	65.0		
Demand and Capacity						
Directional Demand Flow Rate, veh,	/h 809		Opposing Deman	d Flow Rate, veh/h	436	
Peak Hour Factor	0.94		Total Trucks, %		8.00	
Segment Capacity, veh/h	1700		Demand/Capacity (D/C) 0.48			
Intermediate Results						

Sear	ment Vertical Class	1			Free-Flow Speed,	mi/h		65.0
	ed Slope Coefficient (m)	4.43	3604		· ·	Speed Power Coefficient (p)		0.49114
	lope Coefficient (m)	-1.2	2361		PF Power Coefficient (p)		0.81044	
In Pa	assing Lane Effective Length?	No			Total Segment De			8.5
%lm	provement to Percent Followers	0.0			%Improvement to	Spe	 ed	0.0
Sul	bsegment Data							
#	Segment Type	Len	th, ft Radiu		lius, ft	Sup	erelevation, %	Average Speed, mi/h
1	Tangent	4863 -			-		61.3	
Vel	hicle Results							•
Aver	rage Speed, mi/h	61.3	3		Percent Followers,	, %		64.3
	ment Travel Time, minutes	0.90	)		Follower Density (	(FD), 1	followers/mi/ln	8.5
Vehi	icle LOS	D						
			Se	egn	nent 3			
Vel	hicle Inputs							
Segr	ment Type	Pas	sing Lanes		Length, ft			6336
	sured FFS		easured		Free-Flow Speed, mi/h			65.0
De	mand and Capacity							
Dire	ctional Demand Flow Rate, veh/h	809			Opposing Deman	d Flo	w Rate, veh/h	-
Peak	K Hour Factor	0.94	1		Total Trucks, %			8.00
Segr	ment Capacity, veh/h	150	0	Demand/Capacity (D/C)				0.54
Int	ermediate Results							
Segr	ment Vertical Class	1	Free-Flow Speed, mi,		mi/h		65.0	
Spe	ed Slope Coefficient (m)	7.24	4124		Speed Power Coefficient (p)			0.95118
PF S	lope Coefficient (m)	-1.0	09010 PF Power Coefficie		ent (p)		0.88259	
In Pa	assing Lane Effective Length?	No			Total Segment De	nsity,	veh/mi/ln	8.0
%lm	provement to Percent Followers	0.0			%Improvement to	%Improvement to Speed		0.0
Sul	bsegment Data							
#	Segment Type	Len	gth, ft	Rac	lius, ft	Sup	erelevation, %	Average Speed, mi/h
1	Tangent	633	6	-		-		59.8
Pas	ssing Lane Results							
			Faster Lane				Slower Lane	
Flow	v Rate, veh/h		458				351	
Perc	entage of Heavy Vehicles (HV%), %		3.20				14.26	
Initia	al Average Speed (Sint), mi/h		74.3			74.3		
Aver	rage Speed at Midpoint (SPLmid), n	ni/h	76.0				72.6	
Perc	ent Followers at Midpoint (PFPLmid	41.7			32.9			

Aver	age Speed, mi/h	59.8		Percent Followers,		59.5
	nent Travel Time, minutes	1.20			(FD), followers/mi/ln	8.0
Follo mi/lr	wer Density Mid-Point, followers/	2.0		Vehicle LOS		В
		Sc	egn	nent 4		
Veh	nicle Inputs					
Segn	nent Type	Passing Constrained	Passing Constrained			528
Meas	sured FFS	Measured		Free-Flow Speed,	mi/h	65.0
Der	mand and Capacity					
Direc	ctional Demand Flow Rate, veh/h	628		Opposing Demand	d Flow Rate, veh/h	-
Peak	Hour Factor	0.94		Total Trucks, %		8.00
Segn	nent Capacity, veh/h	1700		Demand/Capacity	' (D/C)	0.37
Inte	ermediate Results					
Segn	nent Vertical Class	1		Free-Flow Speed,	mi/h	65.0
Spee	d Slope Coefficient (m)	4.57372		Speed Power Coef	fficient (p)	0.41674
PF SI	ope Coefficient (m)	-1.34675		PF Power Coefficie	ent (p)	0.74795
In Passing Lane Effective Length?		Yes		Total Segment De	nsity, veh/mi/ln	6.3
%lm <sub>l</sub>	provement to Percent Followers	22.5		%Improvement to	Speed	3.2
Sub	segment Data					
#	Segment Type	Length, ft	Rad	lius, ft Superelevation, %		Average Speed, mi/h
1	Tangent	528	1-	-		61.5
Veh	nicle Results					·
Aver	age Speed, mi/h	63.4		Percent Followers, %		61.3
Segn	nent Travel Time, minutes	0.09		Follower Density (	(FD), followers/mi/ln	4.7
Vehic	cle LOS	С				
		Se	egn	nent 5		
Veh	icle Inputs					
Segn	nent Type	Passing Constrained		Length, ft		4752
Meas	sured FFS	Measured		Free-Flow Speed,	mi/h	65.0
Der	mand and Capacity					
Direc	ctional Demand Flow Rate, veh/h	628		Opposing Demand	d Flow Rate, veh/h	-
		0.94		Total Trucks, %		8.00
Segn	nent Capacity, veh/h	1700		Demand/Capacity	(D/C)	0.37
1.1.	ermediate Results					
Inte						1
	nent Vertical Class	1		Free-Flow Speed,	mi/h	65.0
Segn	nent Vertical Class d Slope Coefficient (m)	1 4.61989		Free-Flow Speed, Speed Power Coe		0.41674

In P	assing Lane Effective Length?	Yes		Total Segment De	ensity, veh/mi/ln	6.0
%In	nprovement to Percent Followers	17.9		%Improvement to	o Speed	2.4
Su	bsegment Data					
#	Segment Type	Length, ft	Ra	dius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	4752	4752 -		-	61.5
Ve	hicle Results					
Ave	rage Speed, mi/h	63.0		Percent Followers	5, %	58.3
Seg	ment Travel Time, minutes	0.86		Follower Density	(FD), followers/mi/ln	4.8
Veh	icle LOS	С				
			Segi	ment 6		
Ve	hicle Inputs					
Seg	ment Type	Passing Zone		Length, ft		6864
Mea	asured FFS	Measured		Free-Flow Speed,	mi/h	65.0
De	mand and Capacity	·		·		
Dire	ectional Demand Flow Rate, veh/h	628		Opposing Demar	nd Flow Rate, veh/h	383
Pea	k Hour Factor	0.94		Total Trucks, %		8.00
Seg	ment Capacity, veh/h	1700		Demand/Capacit	y (D/C)	0.37
Int	ermediate Results					
Seg	ment Vertical Class	1		Free-Flow Speed,	mi/h	65.0
Spe	ed Slope Coefficient (m)	4.44098		Speed Power Coe	efficient (p)	0.49966
PF S	Slope Coefficient (m)	-1.20864		PF Power Coeffic	ient (p)	0.80885
In P	assing Lane Effective Length?	Yes	Yes		ensity, veh/mi/ln	5.7
%In	nprovement to Percent Followers	13.8		%Improvement to	o Speed	1.4
Su	bsegment Data					
#	Segment Type	Length, ft	Ra	dius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	6864	-		-	61.8
Ve	hicle Results					
Ave	rage Speed, mi/h	62.6		Percent Followers	5, %	56.4
Seg	ment Travel Time, minutes	1.25		Follower Density	(FD), followers/mi/ln	4.9
Veh	icle LOS	С				
			Segi	ment 7		
Ve	hicle Inputs					
Seg	ment Type	Passing Constrain	ned	Length, ft		3168
	asured FFS	Measured		Free-Flow Speed,	mi/h	70.0
De	mand and Capacity					
	ectional Demand Flow Rate, veh/h	511		Opposing Demar	nd Flow Rate, veh/h	-
				1 11 22 3 2 2	,,	

Peak	Peak Hour Factor 0.94 Total Trucks, %		Total Trucks, %		8.00	
Segn	nent Capacity, veh/h	1700		Demand/Capacit	y (D/C)	0.30
Inte	ermediate Results					
Segn	nent Vertical Class	3		Free-Flow Speed	, mi/h	70.0
Spee	d Slope Coefficient (m)	10.85846		Speed Power Co	efficient (p)	0.73915
PF SI	ope Coefficient (m)	-1.32850		PF Power Coeffic	ient (p)	0.77991
In Pa	ssing Lane Effective Length?	Yes		Total Segment D	ensity, veh/mi/ln	4.3
%lm <sub>l</sub>	provement to Percent Followers	13.6		%Improvement t	o Speed	1.5
Sub	segment Data					
#	Segment Type	Length, ft	R	adius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	3168	-		-	64.4
Veh	icle Results					
Avera	age Speed, mi/h	65.3		Percent Follower	s, %	54.5
Segn	nent Travel Time, minutes	0.55		Follower Density	(FD), followers/mi/ln	3.7
Vehic	cle LOS	В				
			Seg	ment 8		
Veh	icle Inputs					
Segment Type Passing Constrained			Length, ft		3168	
Meas	sured FFS	Measured		Free-Flow Speed	, mi/h	65.0
Der	nand and Capacity					
Direc	tional Demand Flow Rate, veh/h	436		Opposing Demai	nd Flow Rate, veh/h	-
Peak	Hour Factor	0.94		Total Trucks, %		8.00
Segn	nent Capacity, veh/h	1700		Demand/Capacity (D/C)		0.26
Inte	ermediate Results					
Segn	nent Vertical Class	3		Free-Flow Speed	, mi/h	65.0
Spee	d Slope Coefficient (m)	10.85846		Speed Power Co	efficient (p)	0.73915
PF SI	ope Coefficient (m)	-1.34530		PF Power Coeffic	ient (p)	0.76678
In Pa	ssing Lane Effective Length?	Yes		Total Segment D	ensity, veh/mi/ln	3.7
%lm	provement to Percent Followers	13.2		%Improvement t	o Speed	1.4
Sub	segment Data					
#	Segment Type	Length, ft	R	adius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	3168	-		-	60.1
Veh	icle Results					
Avera	age Speed, mi/h	61.0		Percent Follower	s, %	50.9
Segn	nent Travel Time, minutes	0.59		Follower Density	(FD), followers/mi/ln	3.2
Vehic	cle LOS	В				
			Seg	ment 9		

Vehicle Inputs							
Segment Type	Pass	ing Lanes		Length, ft			5808
Measured FFS	Mea	sured		Free-Flow Speed, mi/h			70.0
Demand and Capacity							
Directional Demand Flow Rate, veh/h	nd Flow Rate, veh/h 372		Opposing Deman	d Flo	w Rate, veh/h	-	
Peak Hour Factor	0.94			Total Trucks, %			13.00
Segment Capacity, veh/h	1400	0		Demand/Capacity	, (D/C	<u>.</u>	0.27
Intermediate Results							
Segment Vertical Class	3			Free-Flow Speed,	mi/h		70.0
Speed Slope Coefficient (m)	10.6	6380		Speed Power Coe	fficie	nt (p)	1.16305
PF Slope Coefficient (m)	-0.9	3134		PF Power Coefficie	ent (p	))	0.80987
In Passing Lane Effective Length?	No			Total Segment De	nsity,	veh/mi/ln	1.9
%Improvement to Percent Followers	0.0			%Improvement to	Spe	ed	0.0
Subsegment Data							
# Segment Type	Leng	gth, ft	Rad	lius, ft	Sup	erelevation, %	Average Speed, mi/h
1 Tangent	5808	3	-	-			67.7
Passing Lane Results							
		Faster Lane				Slower Lane	
Flow Rate, veh/h		227			145		
Percentage of Heavy Vehicles (HV%), %		5.20		25.20			
Initial Average Speed (Sint), mi/h		74.9			70.1		
Average Speed at Midpoint (SPLmid), mi/	⁄h	76.6				68.3	
Percent Followers at Midpoint (PFPLmid),	%	27.7			17.0	7.0	
Vehicle Results							
Average Speed, mi/h	67.7			Percent Followers, %			34.2
Segment Travel Time, minutes	0.98			Follower Density (	(FD), f	followers/mi/ln	1.9
Follower Density Mid-Point, followers/ mi/ln	0.6			Vehicle LOS			A
		Se	gm	ent 10			
Vehicle Inputs							
Segment Type	Pass	ing Constrained		Length, ft			1584
Measured FFS	Mea	sured		Free-Flow Speed, mi/h			70.0
Demand and Capacity							
Directional Demand Flow Rate, veh/h	372			Opposing Deman	d Flo	w Rate, veh/h	-
Peak Hour Factor	0.94			Total Trucks, %			13.00
Segment Capacity, veh/h	1700	0		Demand/Capacity	(D/C	<u>:</u> )	0.22
Intermediate Results							

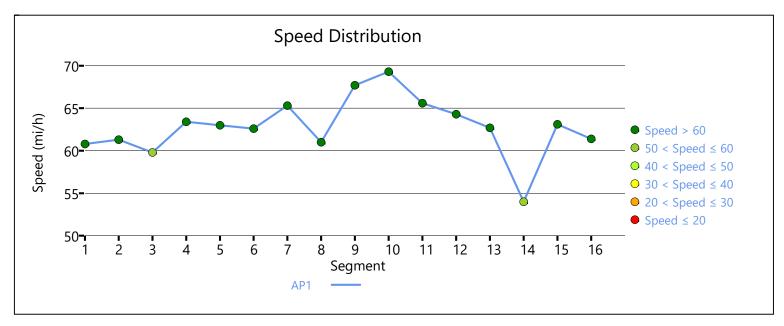
C	ment Vertical Class	1		Free-Flow Speed,	: /l-	70.0
		4.57863				0.41674
	ed Slope Coefficient (m)			Speed Power Coefficient (p)  PF Power Coefficient (p)		
	lope Coefficient (m)	-1.27849			· · ·	0.76483
	assing Lane Effective Length?	Yes		Total Segment De	-	2.5
%lm	provement to Percent Followers	22.8		%Improvement to	Speed	2.9
Sul	osegment Data					
#	Segment Type	Length, ft	Rac	dius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1584	-		-	67.3
Vel	nicle Results					
Avei	rage Speed, mi/h	69.3		Percent Followers,	, %	45.1
Segi	ment Travel Time, minutes	0.26		Follower Density (	FD), followers/mi/ln	1.9
Vehi	cle LOS	A				
		Se	egm	ent 11		
Vel	nicle Inputs					
Segi	ment Type	Passing Constrained		Length, ft		10560
Mea	sured FFS	Measured		Free-Flow Speed,	mi/h	70.0
De	mand and Capacity			<u>'</u>		
Directional Demand Flow Rate, veh/h 372		Opposing Deman	d Flow Rate, veh/h	-		
Peak	Peak Hour Factor 0.94		Total Trucks, %		13.00	
Segi	ment Capacity, veh/h	1700		Demand/Capacity	(D/C)	0.22
Int	ermediate Results					
Segi	ment Vertical Class	2		Free-Flow Speed,	mi/h	70.0
Spe	ed Slope Coefficient (m)	11.18487		Speed Power Coefficient (p)		0.58463
PF S	lope Coefficient (m)	-1.26753		PF Power Coefficient (p)		0.75322
In Pa	assing Lane Effective Length?	Yes		Total Segment Density, veh/mi/ln		2.6
%lm	provement to Percent Followers	15.0		%Improvement to	Speed	1.3
Sul	osegment Data					
#	Segment Type	Length, ft	Rac	dius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	10560	1-		-	64.8
Vel	nicle Results					
Avei	rage Speed, mi/h	65.6		Percent Followers,	, %	45.2
Segment Travel Time, minutes 1.83			Follower Density (	2.2		
Vehi	cle LOS	В				
		Se	egm	ent 12		
Vel	nicle Inputs					
Segi	ment Type	Passing Constrained		Length, ft		20069
Mea	sured FFS	Measured		Free-Flow Speed,	70.0	

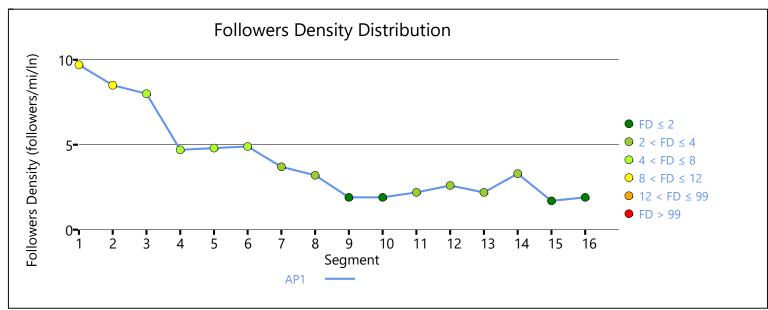
Der	mand and Capacity							
	ctional Demand Flow Rate, veh/h	372			Opposing Demar	nd Flo	ow Rate, veh/h	T-
	Hour Factor	0.94			Total Trucks, %			13.00
	nent Capacity, veh/h	1700			Demand/Capacity	y (D/0	C)	0.22
	ermediate Results							
Segn	nent Vertical Class	2			Free-Flow Speed,	mi/h	<u> </u>	70.0
Spee	ed Slope Coefficient (m)	12.6	2830		Speed Power Coe	efficie	nt (p)	0.60494
PF SI	ope Coefficient (m)	-1.36	5292		PF Power Coeffici	ent (¡	0)	0.70869
In Pa	ssing Lane Effective Length?	Yes			Total Segment De	ensity	, veh/mi/ln	2.8
%lm	provement to Percent Followers	8.4			%Improvement to	o Spe	ed	0.0
Suk	osegment Data							
#	Segment Type	Leng	jth, ft	Rad	ius, ft	Sup	perelevation, %	Average Speed, mi/h
1	Tangent	2006	59	-		-		64.3
Veh	nicle Results							
Aver	age Speed, mi/h	64.3			Percent Followers	5, %		49.2
Segn	nent Travel Time, minutes	3.55	3.55		Follower Density (FD), followers/mi/ln			2.6
Vehic	cle LOS	В	В					
			Se	gm	ent 13			
Veh	nicle Inputs							
Segn	nent Type	Pass	ing Lanes		Length, ft			3696
Mea	sured FFS	Mea	sured		Free-Flow Speed,	mi/h	l	65.0
Der	nand and Capacity							
Direc	ctional Demand Flow Rate, veh/h	362			Opposing Demand Flow Rate, veh/h			-
Peak	Hour Factor	0.94			Total Trucks, %		13.00	
Segn	nent Capacity, veh/h	1400	)		Demand/Capacity (D/C)			0.26
Inte	ermediate Results							
Segn	nent Vertical Class	2			Free-Flow Speed, mi/h		<u> </u>	65.0
Spee	ed Slope Coefficient (m)	8.26	253		Speed Power Coefficient (p)		0.95385	
PF SI	ope Coefficient (m)	-1.10	0603		PF Power Coeffici	ent (	0)	0.82389
In Pa	ssing Lane Effective Length?	No			Total Segment De	ensity	, veh/mi/ln	2.2
%lm	provement to Percent Followers	0.0			%Improvement to	o Spe	ed	0.0
Suk	osegment Data							
#	Segment Type	Leng	Length, ft Rad		ius, ft	Sup	perelevation, %	Average Speed, mi/h
1	Tangent	3696	5	-		-		62.7
Pas	sing Lane Results							
			Faster Lane				Slower Lane	
Flow Rate, veh/h 221							140	

Percentage of Heavy Vehicles (HV%), %		5.20			25.30	
Initial Average Speed (Sint), mi/h		75.1			72.3	
Average Speed at Midpoint (SPLmid), n	i/h	76.8			70.6	
Percent Followers at Midpoint (PFPLmid), % 25.3				16.2		
Vehicle Results						
Average Speed, mi/h	62.7	7		Percent Followers,	%	38.0
Segment Travel Time, minutes	0.67	7		Follower Density (	D), followers/mi/ln	2.2
Follower Density Mid-Point, followers/mi/ln	0.5			Vehicle LOS		A
		Se	gm	ent 14		
Vehicle Inputs						
Segment Type	Pas	sing Constrained		Length, ft		11088
Measured FFS	Mea	asured		Free-Flow Speed,	mi/h	65.0
Demand and Capacity						
Directional Demand Flow Rate, veh/h	362	362		Opposing Demand Flow Rate, veh/h		-
Peak Hour Factor	0.94	0.94		Total Trucks, %		13.00
Segment Capacity, veh/h	170	00		Demand/Capacity	(D/C)	0.21
Intermediate Results						
Segment Vertical Class 4		Free-Flow Speed,	mi/h	65.0		
Speed Slope Coefficient (m)	23.3	32522		Speed Power Coef	ficient (p)	0.51393
PF Slope Coefficient (m)	-1.9	91200		PF Power Coefficie	nt (p)	0.76801
In Passing Lane Effective Length?	Yes			Total Segment Density, veh/mi/ln		4.0
%Improvement to Percent Followers	15.0	)		%Improvement to	Speed	1.4
Subsegment Data						
# Segment Type	Len	gth, ft	Rac	lius, ft	Superelevation, %	Average Speed, mi/h
1 Tangent	110	88	-		-	53.3
Vehicle Results						
Average Speed, mi/h	54.0	 )		Percent Followers,	%	58.3
Segment Travel Time, minutes	2.33	3		Follower Density (	D), followers/mi/ln	3.3
Vehicle LOS	В					
		Se	gm	ent 15		
Vehicle Inputs						
Segment Type	Pas	sing Constrained		Length, ft		5808
Measured FFS	Mea	asured		Free-Flow Speed,	mi/h	65.0
Demand and Capacity						
Directional Demand Flow Rate, veh/h	309	)		Opposing Demand	d Flow Rate, veh/h	-
Peak Hour Factor	0.94	4		Total Trucks, %		13.00
		'		, , , , , , , , , , , , , , , , , , ,		

Segment Capacity, veh/h	1700		Demand/Capacity	0.18	
Intermediate Results					
Segment Vertical Class	1		Free-Flow Speed, mi/h		65.0
Speed Slope Coefficient (m)	4.63019	4.63019		fficient (p)	0.41674
PF Slope Coefficient (m)	-1.24824		PF Power Coefficie	ent (p)	0.77439
In Passing Lane Effective Length?	Yes		Total Segment De	nsity, veh/mi/ln	1.9
%Improvement to Percent Followers	12.7		%Improvement to	Speed	0.8
Subsegment Data					
# Segment Type	Length, ft	Rad	ius, ft	Superelevation, %	Average Speed, mi/h
1 Tangent	5808	<u> </u>		-	62.6
Vehicle Results	•				
Average Speed, mi/h	63.1		Percent Followers	, %	39.5
Segment Travel Time, minutes	1.05		Follower Density (	(FD), followers/mi/ln	1.7
Vehicle LOS	А				
	9	Segm	ent 16		
Vehicle Inputs					
Segment Type Passing Constrained		d	Length, ft		2640
Measured FFS	Measured		Free-Flow Speed,	mi/h	65.0
Demand and Capacity					
Directional Demand Flow Rate, veh/h	309		Opposing Deman	d Flow Rate, veh/h	-
Peak Hour Factor	0.94		Total Trucks, %		13.00
Segment Capacity, veh/h	1700		Demand/Capacity	, (D/C)	0.18
Intermediate Results					
Segment Vertical Class	3		Free-Flow Speed,	mi/h	65.0
Speed Slope Coefficient (m)	12.43125		Speed Power Coefficient (p)		0.75892
PF Slope Coefficient (m)	-1.34725		PF Power Coefficie	ent (p)	0.77319
In Passing Lane Effective Length?	Yes		Total Segment De	nsity, veh/mi/ln	2.1
%Improvement to Percent Followers	11.6		%Improvement to Speed		0.4
Subsegment Data					
# Segment Type	Length, ft	Rad	ius, ft	Superelevation, %	Average Speed, mi/h
1 Tangent	2640	-		-	61.2
Vehicle Results					
Average Speed, mi/h	61.4		Percent Followers	, %	41.9
Segment Travel Time, minutes	0.49		Follower Density (	(FD), followers/mi/ln	1.9
Vehicle LOS	А				
Facility Results					
T VMT	VHD		Follower De	ensity, followers/	LOS

	veh-mi/AP	veh-h/p	mi/ln	
1	2202	2.46	3.6	В





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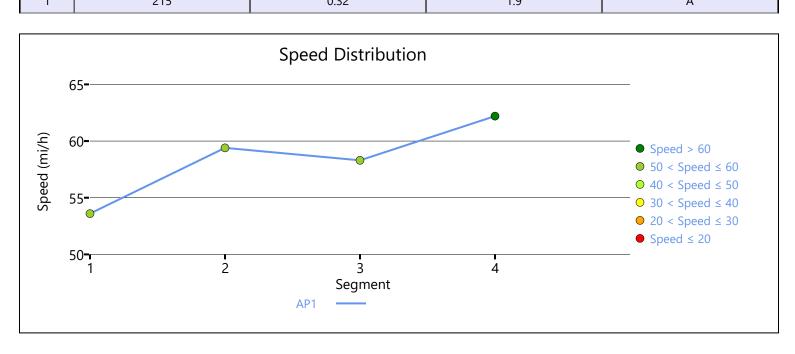
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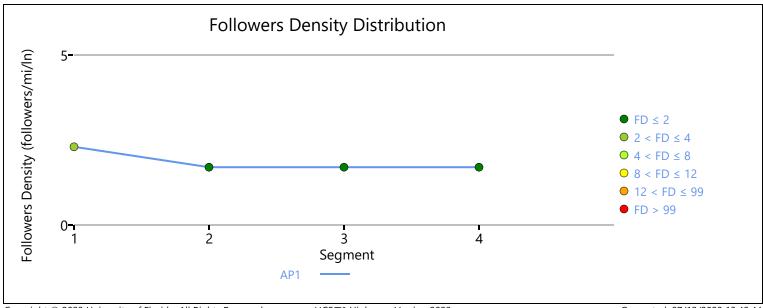
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	HCS Two-	Lane	Highway Re	eport	
Project Information					
Analyst	Cameron Manley		Date		7/11/2023
Agency	WSP		Analysis Year		2045
Jurisdiction	KYTC District 8		Time Analyzed		AM Peak
Project Description	US 127 2+1 Study		Units		U.S. Customary
		Segn	nent 1		
Vehicle Inputs					
Segment Type	Passing Constraine	ed	Length, ft		5870
Measured FFS	Measured		Free-Flow Speed,	mi/h	60.0
Demand and Capacity					<u>'</u>
Directional Demand Flow Rate, veh/h	266		Opposing Deman	nd Flow Rate, veh/h	-
Peak Hour Factor	0.94		Total Trucks, %		13.00
Segment Capacity, veh/h	1700		Demand/Capacity	y (D/C)	0.16
Intermediate Results					
Segment Vertical Class	: Vertical Class 4		Free-Flow Speed,	mi/h	60.0
Speed Slope Coefficient (m)	20.40067	20.40067		efficient (p)	0.64277
PF Slope Coefficient (m)	-1.68820	-1.68820		ent (p)	0.77140
In Passing Lane Effective Length?	No	No		Total Segment Density, veh/mi/ln	
%Improvement to Percent Followers	0.0		%Improvement to	o Speed	0.0
Subsegment Data					
# Segment Type	Length, ft	Rac	lius, ft	Superelevation, %	Average Speed, mi/h
1 Tangent	5870	-		-	53.6
Vehicle Results				<u>'</u>	
Average Speed, mi/h	53.6		Percent Followers	45.5	
Segment Travel Time, minutes	1.25		Follower Density	(FD), followers/mi/ln	2.3
Vehicle LOS	В				
		Segn	nent 2		
Vehicle Inputs					
Segment Type	Passing Zone		Length, ft		9105
Measured FFS Measured			Free-Flow Speed,	mi/h	65.0
Demand and Capacity					
	266		Opposing Deman	nd Flow Rate, veh/h	255
Demand and Capacity	266		Opposing Deman	nd Flow Rate, veh/h	255

Sear	ment Vertical Class	4		Free-Flow Speed,	mi/h	65.0
	ed Slope Coefficient (m)	21.00478		Speed Power Coe		0.73560
•	lope Coefficient (m)				ent (p)	0.85031
	assing Lane Effective Length?	No		Total Segment De	47	1.7
	provement to Percent Followers	0.0		%Improvement to	•	0.0
	osegment Data					
		Learning for	In.	J 0	C	A C
#	Segment Type	Length, ft	Ra	dius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	9105	-		-	59.4
Veł	nicle Results					
Aver	age Speed, mi/h	59.4		Percent Followers	, %	37.4
Segr	ment Travel Time, minutes	1.74		Follower Density	(FD), followers/mi/ln	1.7
Vehi	cle LOS	А				
			Segr	ment 3		
Vel	nicle Inputs					
Segr	ment Type	Passing Zone		Length, ft		1155
Mea	Measured FFS Measured		Free-Flow Speed,	mi/h	60.0	
Dei	mand and Capacity					
Dire	ctional Demand Flow Rate, veh/h	veh/h 266		Opposing Deman	d Flow Rate, veh/h	255
Peak	Hour Factor	0.94	0.94			13.00
Segr	ment Capacity, veh/h	1700	1700		/ (D/C)	0.16
Into	ermediate Results					·
Segr	ment Vertical Class	1		Free-Flow Speed,	mi/h	60.0
Spee	ed Slope Coefficient (m)	4.33788		Speed Power Coe	fficient (p)	0.52506
PF S	lope Coefficient (m)	-1.31478		PF Power Coeffici	ent (p)	0.78009
In Pa	assing Lane Effective Length?	No		Total Segment Density, veh/mi/ln		1.7
%lm	provement to Percent Followers	0.0		%Improvement to	Speed	0.0
Suk	segment Data					
#	Segment Type	Length, ft	Ra	dius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1155	_  -		-	58.3
Veł	nicle Results					
Aver	age Speed, mi/h	58.3		Percent Followers	, %	37.4
Segr	ment Travel Time, minutes	0.23		Follower Density	(FD), followers/mi/ln	1.7
Vehi	cle LOS	А				
			Segr	ment 4		
Veł	nicle Inputs					
Segr	ment Type	Passing Constraine	ed	Length, ft		2065
Mea	sured FFS	Measured		Free-Flow Speed,	65.0	

Den	nand and Capacity							
Direc	tional Demand Flow Rate, veh/h	266		Орр	osing Deman	d Flow Rate, veh/h	-	
Peak	Hour Factor	0.94	0.94 T		l Trucks, %		13.00	
Segm	nent Capacity, veh/h	1700		Dem	nand/Capacity	(D/C)	0.16	
Inte	rmediate Results							
Segm	nent Vertical Class	2		Free	-Flow Speed,	mi/h	65.0	
Speed	d Slope Coefficient (m)	7.60245		Spee	ed Power Coef	fficient (p)	0.55196	
PF Slo	ope Coefficient (m)	-1.38515		PF P	ower Coefficie	ent (p)	0.74786	
In Pas	ssing Lane Effective Length?	No	No		Total Segment Density, veh/mi/ln		1.7	
%Improvement to Percent Followers 0.0			%Improvement to Speed			0.0		
Sub	segment Data							
#	Segment Type	Length, ft	Rad	ius, ft		Superelevation, %	Average Speed, m	ni/h
1	Tangent	2065	-	-		62.2		
Veh	icle Results						·	
Avera	nge Speed, mi/h	62.2		Perc	ent Followers,	%	40.2	
Segm	nent Travel Time, minutes	0.38		Follo	ower Density (	FD), followers/mi/In	1.7	
Vehic	le LOS	А						
Faci	lity Results							
Т	VMT veh-mi/AP	VHD veh-h				ensity, followers/ mi/ln	LOS	
1	215	0.32	)			1.9	А	





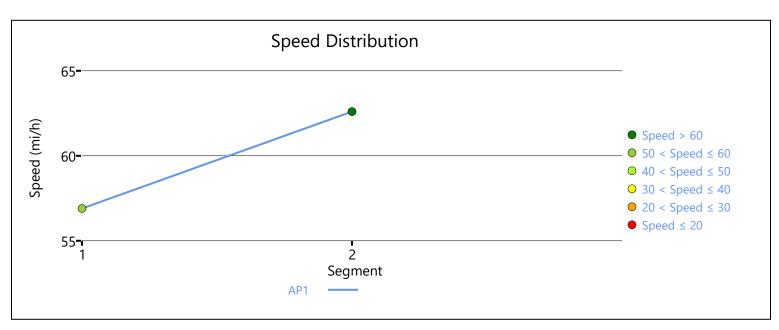
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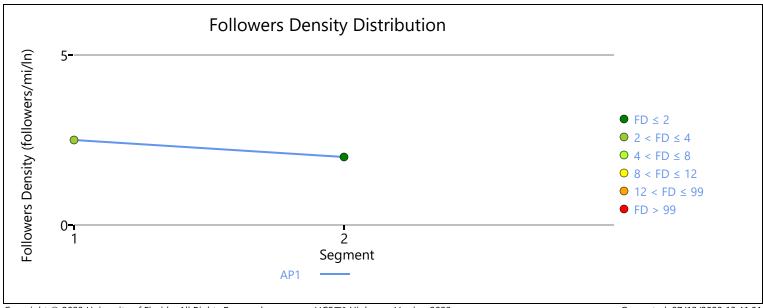
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	HCS Two	-Lane	Highway Re	port	
Project Information					
Analyst	Cameron Manley	•	Date		7/11/2023
Agency	WSP		Analysis Year		2045
Jurisdiction	KYTC District 8		Time Analyzed		AM Peak
Project Description	US 127 2+1 Stud	у	Units		U.S. Customary
		Segn	nent 1		·
Vehicle Inputs					
Segment Type	Passing Constrair	ned	Length, ft		1800
Measured FFS	Measured		Free-Flow Speed,	mi/h	60.0
Demand and Capacity					<b>'</b>
Directional Demand Flow Rate, veh/	h 309		Opposing Deman	d Flow Rate, veh/h	-
Peak Hour Factor	0.94		Total Trucks, %		13.00
Segment Capacity, veh/h	1700		Demand/Capacity	/ (D/C)	0.18
Intermediate Results					<u>'</u>
Segment Vertical Class 2			Free-Flow Speed,	mi/h	60.0
Speed Slope Coefficient (m)	5		Speed Power Coe	fficient (p)	0.55094
PF Slope Coefficient (m)	-1.44941	-1.44941		ent (p)	0.73363
In Passing Lane Effective Length?	No		Total Segment De	nsity, veh/mi/ln	2.5
%Improvement to Percent Followers	5 0.0		%Improvement to	Speed	0.0
Subsegment Data					
# Segment Type	Length, ft	Rac	lius, ft	Superelevation, %	Average Speed, mi/h
1 Tangent	1800	-		-	56.9
Vehicle Results	<u> </u>				<u> </u>
Average Speed, mi/h	56.9		Percent Followers	, %	45.8
Segment Travel Time, minutes	0.36		Follower Density (	(FD), followers/mi/ln	2.5
Vehicle LOS	В				
		Segn	nent 2		<u>'</u>
Vehicle Inputs					
Segment Type	Passing Constrain	ned	Length, ft		4320
Measured FFS	Measured		Free-Flow Speed,	mi/h	65.0
Demand and Capacity					
Directional Demand Flow Rate, veh/	'h 309		Opposing Deman	d Flow Rate, veh/h	-
Peak Hour Factor	0.94		Total Trucks, %	,	13.00
Segment Capacity, veh/h	1700		Demand/Capacity	/ (D/C)	0.18
Intermediate Results			,,		

Segn	ment Vertical Class	1		e-Flow Speed,	mi/h	65.0			
Spee	ed Slope Coefficient (m)	4.61535	Spe	eed Power Coe	fficient (p)	0.41674			
PF SI	lope Coefficient (m)	-1.26013	PF	Power Coefficie	ent (p)	0.77511			
In Pa	assing Lane Effective Length?	No	Tot	al Segment De	nsity, veh/mi/ln	2.0			
%lmp	provement to Percent Followers	0.0	%lr	nprovement to	Speed	0.0			
Sub	Subsegment Data								
#	Segment Type	Length, ft	Radius,	ft	Superelevation, %	Average Speed, mi/h			
1	Tangent	4320	320 -		-	62.6			
Veh	nicle Results								
Avera	age Speed, mi/h	62.6	Per	cent Followers,	, %	39.7			
Segn	ment Travel Time, minutes	0.78	Fol	ollower Density (FD), followers/mi/ln		2.0			
Vehic	cle LOS	A							
Faci	ility Results								
т	VMT veh-mi/AP	VHD veh-h/p			ensity, followers/ mi/ln	LOS			
1	84	0.06	0.06		2.1	А			





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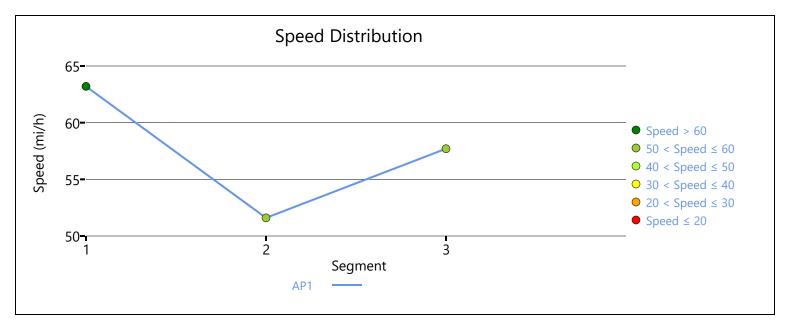
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Project	Information						
Analyst		Cameron Manley		Date		7/11/2023	
Agency		WSP	Д	Analysis Year		2045	
Jurisdictio	n	KYTC District 8	Т	ime Analyzed		AM Peak	
Project De	escription	US 127 2+1 Study	L	Jnits		U.S. Customary	
		S	egme	ent 1			
Vehicle	Inputs						
Segment <sup>-</sup>	Туре	Passing Constrained	L	ength, ft		8660	
Measured	FFS	Measured	F	ree-Flow Speed,	mi/h	65.0	
Deman	d and Capacity						
Directiona	al Demand Flow Rate, veh/h	287	C	Opposing Demand	d Flow Rate, veh/h	-	
Peak Hou	r Factor	0.94		otal Trucks, %	13.00		
Segment Capacity, veh/h		1700		Demand/Capacity (D/C)		0.17	
Interm	ediate Results	<u>'</u>					
Segment Vertical Class		2		ree-Flow Speed,	mi/h	65.0	
Speed Slo	pe Coefficient (m)	10.57846		Speed Power Coef	fficient (p)	0.57732	
PF Slope (	Coefficient (m)	-1.29399		PF Power Coefficie	ent (p)	0.75228	
In Passing	Lane Effective Length?	No		otal Segment De	nsity, veh/mi/ln	1.9	
%Improve	ement to Percent Followers	0.0		6lmprovement to	Speed	0.0	
Subseg	ment Data						
# Seg	ment Type	Length, ft	Radius	s, ft	Superelevation, %	Average Speed, mi/h	
1 Tang	gent	8660	-	-		61.0	
Vehicle	Results					·	
Average S	speed, mi/h	61.0	Р	Percent Followers, %		39.7	
	Travel Time, minutes	1.61	F	Follower Density (FD), followers/mi/ln		1.9	
Vehicle LC	DS .	A					
Facility	Results	,					
т	VMT veh-mi/AP	VHD veh-h/p			ensity, followers/ mi/ln	LOS	
1	111	0.11			1.9	A	

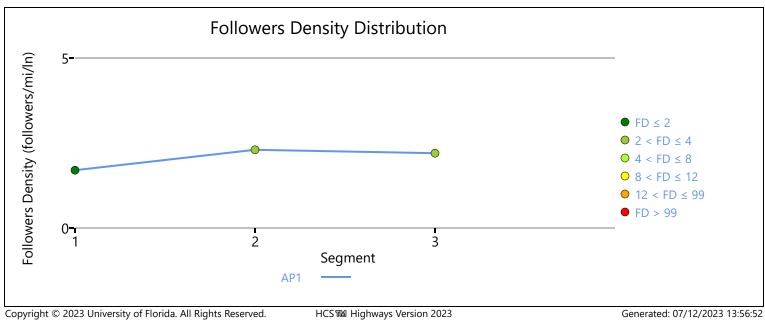
	HCS Two-Lar	ne Hig	ghway Re	port	
Project Information					
Analyst	Cameron Manley	Dat	te		7/11/2023
Agency	WSP	Ana	alysis Year		2045
Jurisdiction	KYTC District 8	Tim	ne Analyzed		AM Peak
Project Description	US 127 2+1 Study	Uni	its		U.S. Customary
	Se	gmen	nt 1		
Vehicle Inputs					
Segment Type	Passing Constrained	Len	ngth, ft		5655
Measured FFS	Measured	Fre	e-Flow Speed,	mi/h	65.0
Demand and Capacity					
Directional Demand Flow Rate, veh/h	298		posing Demand	d Flow Rate, veh/h	-
Peak Hour Factor	0.94		al Trucks, %		13.00
Segment Capacity, veh/h	1700		mand/Capacity	(D/C)	0.18
Intermediate Results					
Segment Vertical Class	2	Fre	e-Flow Speed,	mi/h	65.0
Speed Slope Coefficient (m)	9.46227		eed Power Coef	ficient (p)	0.56577
PF Slope Coefficient (m)	-1.29188		Power Coefficie	ent (p)	0.76223
In Passing Lane Effective Length?	No		al Segment Dei	nsity, veh/mi/ln	2.0
%Improvement to Percent Followers	0.0		nprovement to	Speed	0.0
Subsegment Data					
# Segment Type	Length, ft	Radius, f	ft	Superelevation, %	Average Speed, mi/h
1 Tangent	5655	-	-		61.2
Vehicle Results					
Average Speed, mi/h	61.2		Percent Followers, %		40.1
Segment Travel Time, minutes	1.05		Follower Density (FD), followers/mi/ln		2.0
Vehicle LOS	A				
Facility Results					
T VMT veh-mi/AP	VHD veh-h/p			ensity, followers/ mi/ln	LOS
1 75	0.07			2.0	А

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	HCS Two-L	ane	Highway Re	eport		
Project Information						
Analyst	Cameron Manley		Date		7/11/2045	
Agency	WSP		Analysis Year		2045	
Jurisdiction	KYTC District 8		Time Analyzed		AM Peak	
Project Description	US 127 2+1 Study		Units		U.S. Customary	
	:	Segn	nent 1			
Vehicle Inputs						
Segment Type	Passing Zone		Length, ft		4745	
Measured FFS	Measured		Free-Flow Speed,	mi/h	65.0	
Demand and Capacity						
Directional Demand Flow Rate, veh/h	298		Opposing Deman	nd Flow Rate, veh/h	170	
Peak Hour Factor	0.94		Total Trucks, %		13.00	
Segment Capacity, veh/h	1700	1700		Demand/Capacity (D/C)		
Intermediate Results						
Segment Vertical Class	1	1		Free-Flow Speed, mi/h		
Speed Slope Coefficient (m)	4.35359	4.35359		efficient (p)	0.54810	
PF Slope Coefficient (m)	-1.18016		PF Power Coeffici	ent (p)	0.82853	
In Passing Lane Effective Length?	No	No		ensity, veh/mi/ln	1.7	
%Improvement to Percent Followers	0.0		%Improvement to	o Speed	0.0	
Subsegment Data						
# Segment Type	Length, ft	Rad	lius, ft	Superelevation, %	Average Speed, mi/h	
1 Tangent	4745	T-		-	63.2	
Vehicle Results						
Average Speed, mi/h	63.2		Percent Followers	5, %	35.1	
Segment Travel Time, minutes	0.85	0.85		Follower Density (FD), followers/mi/ln		
Vehicle LOS	А					
		Segn	nent 2		·	
Vehicle Inputs						
Segment Type	Passing Zone		Length, ft		17145	
Measured FFS Measured			Free-Flow Speed,	65.0		
					'	
Demand and Capacity						
<b>Demand and Capacity</b> Directional Demand Flow Rate, veh/h	298		Opposing Deman	nd Flow Rate, veh/h	170	
	298		Opposing Deman	nd Flow Rate, veh/h	170	

VMT veh-mi/AP	veh-h/	р					
1	VHD		Follower Density, followers/ mi/In		LOS		
y Results							
OS	В						
Travel Time, minutes	0.20		Follower Density (FD), followers/mi/ln			2.2	
Speed, mi/h	57.7		Percent Followers, %			43.5	
e Results							
ngent	1165	-	-		57.7		
gment Type	Length, ft	Rad	Radius, ft		Superelevation, %	Average Speed	, mi/h
gment Data							
	0.0		%improvement to Speed 0.0				
3			,				
			<u> </u>				
ope Coefficient (m)			<u> </u>		·		
Vertical Class	1			· ·		60.0	
nediate Results							
· ·	1700		Dema	and/Capacity	(D/C)	0.18	
			5			-	
	Medadied		1166-	ow speed,	/11	00.0	
	-		-				
-	Dancin v Canatusin o		1	.l. fr		1005	
o Inputs							
		Segn	nent	3			
OS	В						
Travel Time, minutes	3.78		Follo	wer Density (	FD), followers/mi/ln	2.3	
Speed, mi/h	51.6		Perce	ent Followers,	%	39.1	
e Results							
ngent	16980	-			-	51.6	
gment Type	Length, ft	Rad	lius, ft		Superelevation, %	Average Speed	, mi/h
gment Data							
rement to Percent Followers	0.0		%lmp	provement to	Speed	0.0	
In Passing Lane Effective Length? No T		Total	Segment De	nsity, veh/mi/ln	2.3		
Coefficient (m)	-1.47545 F		PF Pc	wer Coefficie	ent (p)	0.89904	
ope Coefficient (m)	33.97834		Spee	d Power Coef	ficient (p)	0.57207	
	cope Coefficient (m) Coefficient (m) G Lane Effective Length? ement to Percent Followers  gment Data gment Type Igent E Results  Speed, mi/h Travel Time, minutes  OS  E Inputs  Type Id FFS Ind and Capacity Id FFS Ind and Flow Rate, veh/h Id Factor  Capacity, veh/h Id Fesults  Vertical Class Inputs  Ope Coefficient (m) Coefficient (m) Coefficient (m) Coefficient (m) If Lane Effective Length? If Ement to Percent Followers  Igment Data Igment Type Ingent I	cope Coefficient (m)  Coefficient (m)  Coefficient (m)  Guane Effective Length?  In the property of the proper	pope Coefficient (m)  Coefficient (m)  Coefficient (m)  Glane Effective Length?  Perment to Percent Followers  Coefficient (m)  Coefficient (m	pope Coefficient (m) Coefficie	ope Coefficient (m)  Coefficient (m)  Jane Effective Length?  No  Total Segment Determent to Percent Followers  Green Type  Results  Speed, mi/h  Travel Time, minutes  Type  Passing Constrained  Free-Flow Speed, mirator  And Add Capacity  al Demand Flow Rate, veh/h  Tractor  Capacity, veh/h  Teactor  Capacity, veh/h  Demand/Capacity  al Demand Flow Rate, veh/h  Capacity, veh/h  Teactor  Capacity, veh/h  Demand/Capacity  Percent Followers  1 Free-Flow Speed, mirator  Type  Passing Constrained  Length, ft  Measured  Free-Flow Speed, mirator  Type  Passing Constrained  Length, ft  Travel Time, minutes  Type  Passing Constrained  Length, ft  Free-Flow Speed,  Total Trucks, %  Demand/Capacity  Total Trucks, %  Demand/Capacity  Total Trucks, %  Demand/Capacity  Percent Followers  Demand Flow Speed,  Total Segment Determent to Percent Followers  Demand Flow Speed,  Total Segment Determent to Percent Followers  Demand Flow Speed,  Total Segment Determent to Percent Followers  Demand Flow Speed,  Total Segment Determent to Percent Followers  Demand Flow Speed,  Total Segment Determent to Percent Followers  Demand Flow Speed,  Total Segment Determent to Percent Followers  Demand Flow Speed,  Total Segment Determent to Percent Followers  Demand Flow Speed,  Total Segment Determent Type  Length, ft  Radius, ft  Percent Followers  Percent Fo	speed Power Coefficient (p)  33.97834 Speed Power Coefficient (p)  1-4.7545 PF Power Coefficient (p)  1-545 PF Power Coefficient (p)  1-54	Speed Coefficient (m)   33,97834   Speed Power Coefficient (p)   0.57207

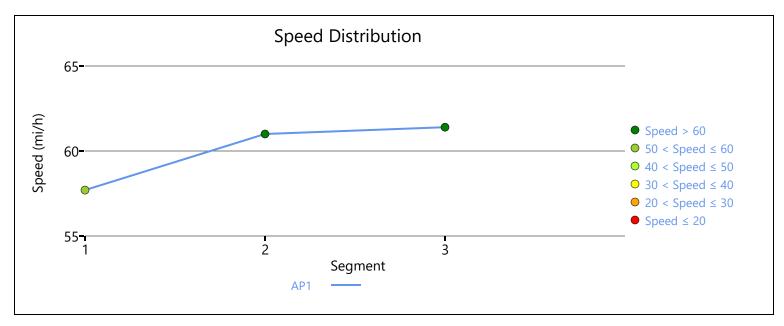


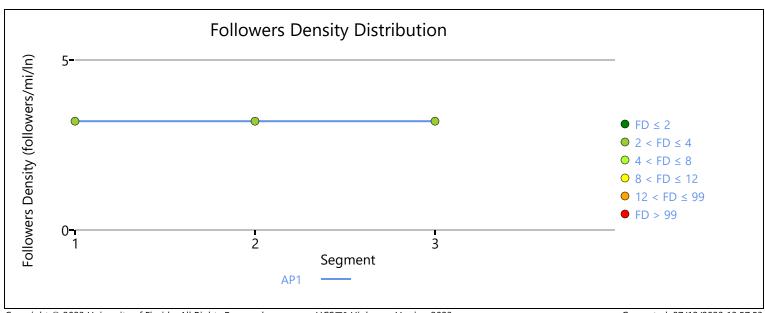


Section 5 NB AM No Build.xuf

		HCS Two-L	ane	Highway Re	port	
Pro	ject Information					
Anal	 lyst	Cameron Manley		Date		7/11/2023
Age	ncy	WSP		Analysis Year		2045
Juris	diction	KYTC District 8		Time Analyzed		AM Peak
Proj	ect Description	US 127 2+1 Study		Units		U.S. Customary
			Segn	nent 1		
Vel	nicle Inputs					
Segi	ment Type	Passing Zone		Length, ft		1230
Mea	sured FFS	Measured		Free-Flow Speed,	mi/h	60.0
De	mand and Capacity	<u>'</u>				
Dire	ctional Demand Flow Rate, veh/h	394		Opposing Demand	d Flow Rate, veh/h	170
Peak	Hour Factor	0.94		Total Trucks, %		8.00
Segi	ment Capacity, veh/h	1700		Demand/Capacity (D/C)		0.23
Int	ermediate Results	<u>'</u>				
Segi	ment Vertical Class	2		Free-Flow Speed, mi/h		60.0
Spe	ed Slope Coefficient (m)	5.52754		Speed Power Coef	fficient (p)	0.69824
PF Slope Coefficient (m)		-1.30103		PF Power Coefficie	ent (p)	0.77848
In Pa	assing Lane Effective Length?	No		Total Segment De	nsity, veh/mi/ln	3.2
%lm	provement to Percent Followers	0.0		%Improvement to	Speed	0.0
Sul	osegment Data					
#	Segment Type	Length, ft	Rad	lius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1230	-		-	57.7
Vel	nicle Results				•	
Aver	rage Speed, mi/h	57.7		Percent Followers,	, %	46.7
Segi	ment Travel Time, minutes	0.24		Follower Density (FD), followers/mi/ln		3.2
Vehi	cle LOS	В				
			Segn	nent 2		
Vel	nicle Inputs					
Segi	ment Type	Passing Constrained		Length, ft		2005
Mea	sured FFS	Measured		Free-Flow Speed,	65.0	
De	mand and Capacity					
Dire	ctional Demand Flow Rate, veh/h	394		Opposing Deman	d Flow Rate, veh/h	-
	Hour Factor	0.94		Total Trucks, %		8.00
Peak		1		a contract of the contract of		

Segmen	t Vertical Class	3	3		Free-Flow Speed, mi/h			65.0
Speed S	lope Coefficient (m)	9.73487		Spee	Speed Power Coefficient (p)			0.72660
PF Slope	e Coefficient (m)	-1.38882		PF P	PF Power Coefficient (p)			0.76267
In Passing Lane Effective Length?		No		Tota	Segment De	nsity, veh/mi/ln		3.2
%Improv	vement to Percent Followers	0.0		%lm	provement to	Speed		0.0
Subse	gment Data							
# Se	egment Type	Length, ft	Rac	dius, ft		Superelevation, %		Average Speed, mi/h
1 Ta	ngent	2005	-			-		61.0
Vehicl	e Results							
Average	Speed, mi/h	61.0		Perc	ent Followers,	%		49.4
Segmen	t Travel Time, minutes	0.37		Follo	wer Density (	FD), followers/mi/ln	1	3.2
Vehicle L	LOS	В						
			Segn	nent	: 3			
Vehicl	le Inputs							
Segmen	t Type	Passing Lanes		Leng	th, ft			810
Measure	ed FFS	Measured		Free-Flow Speed, mi/h				65.0
Dema	nd and Capacity							
Direction	nal Demand Flow Rate, veh/h	394		Opposing Demand Flow Rate, veh/h				-
Peak Ho	ur Factor	0.94		Total Trucks, %				8.00
Segmen	t Capacity, veh/h	1700		Demand/Capacity (D/C)				0.23
Intern	nediate Results							
Segmen	t Vertical Class	2		Free	-Flow Speed,	mi/h		65.0
Speed S	lope Coefficient (m)	7.06943		Spee	ed Power Coef	fficient (p)		0.54600
PF Slope	e Coefficient (m)	-1.36072		PF P	ower Coefficie	ent (p)		0.74990
In Passin	ng Lane Effective Length?	No		Tota	Segment De	nsity, veh/mi/ln		3.2
%Improv	vement to Percent Followers	0.0		%Improvement to Speed				0.0
Subse	gment Data							
# Se	egment Type	Length, ft	Rac	adius, ft		Superelevation, %		Average Speed, mi/h
1 Ta	ngent	810	-			-		61.4
Vehicl	e Results							
Average	Speed, mi/h	61.4		Perce	ent Followers,	%		49.1
Segmen	t Travel Time, minutes	0.15		Follower Density (FD), followers/mi/ln			1	3.2
Follower mi/In	Density Mid-Point, followers/	0.0		Vehicle LOS				В
	y Results							
Т	VMT veh-mi/AP	VHD veh-h/	'p			ensity, followers/ mi/ln		LOS
1	71	0.06	•			3.2		В





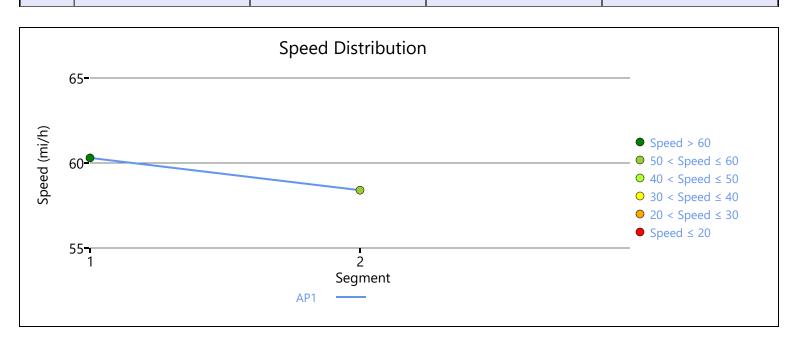
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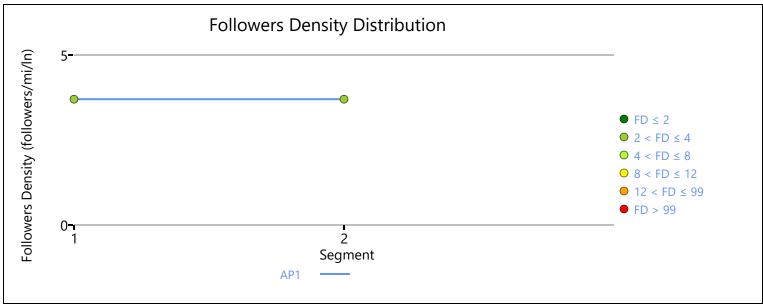
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		HCS Two-La	ne	Highway Re	port	
Pro	oject Information					
Ana	lyst	Cameron Manley		Date		2/20/2023
Age	ncy	WSP		Analysis Year		2023
Juris	sdiction	KYTC District 8		Time Analyzed		AM Peak
Proj	ect Description	US 127 2+1 Study		Units		U.S. Customary
		Se	egn	nent 1		
Ve	hicle Inputs					
Seg	ment Type	Passing Lanes		Length, ft		2255
Mea	asured FFS	Measured		Free-Flow Speed,	mi/h	65.0
De	mand and Capacity					
Dire	ectional Demand Flow Rate, veh/h	436		Opposing Deman	d Flow Rate, veh/h	-
Peal	k Hour Factor	0.94		Total Trucks, %		8.00
Seg	ment Capacity, veh/h	1700		Demand/Capacity	(D/C)	0.26
Int	ermediate Results					
Seg	ment Vertical Class	3		Free-Flow Speed, mi/h		65.0
Spe	ed Slope Coefficient (m)	10.37964		Speed Power Coe	fficient (p)	0.73345
PF Slope Coefficient (m)		-1.35989		PF Power Coefficie	ent (p)	0.76573
In P	assing Lane Effective Length?	No		Total Segment De	nsity, veh/mi/ln	3.7
%ln	nprovement to Percent Followers	0.0		%Improvement to	Speed	0.0
Su	bsegment Data					
#	Segment Type	Length, ft	Rad	lius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	2255	-		-	60.3
Ve	hicle Results	<u> </u>				
Ave	rage Speed, mi/h	60.3		Percent Followers	, %	51.3
Seg	ment Travel Time, minutes	0.42		Follower Density (FD), followers/mi/ln		3.7
Follomi/l	ower Density Mid-Point, followers/ n	0.0		Vehicle LOS		В
		Se	egn	nent 2		
Ve	hicle Inputs					
	ment Type	Passing Zone		Length, ft		5880
_	asured FFS	Measured		Free-Flow Speed,	mi/h	65.0
	mand and Capacity					
	ectional Demand Flow Rate, veh/h	436		Opposing Deman	d Flow Rate, veh/h	277
	k Hour Factor	0.94		Total Trucks, %		8.00
	ment Capacity, veh/h	1700		Demand/Capacity	(D/C)	0.26

Inte	ermediate Results					
Segment Vertical Class 4			Free-Flow Speed,	mi/h	65.0	
Speed	ed Slope Coefficient (m)	15.61923		Speed Power Coe	fficient (p)	0.78694
PF Slo	lope Coefficient (m)	-1.36403		PF Power Coeffici	ent (p)	0.85271
In Pas	ssing Lane Effective Length?	No		Total Segment De	nsity, veh/mi/ln	3.7
%lmp	provement to Percent Followers	0.0		%Improvement to	Speed	0.0
Sub	osegment Data					
#	Segment Type	Length, ft	Length, ft Radio		Superelevation, %	Average Speed, mi/h
1	Tangent	5880	-	-		58.4
Veh	nicle Results					
Avera	age Speed, mi/h	58.4		Percent Followers	, %	48.9
Segm	ment Travel Time, minutes	1.14		Follower Density	(FD), followers/mi/ln	3.7
Vehic	cle LOS	В				
Faci	ility Results	·				
т	VMT veh-mi/AP	VHD veh-h/p		Follower D	ensity, followers/ mi/ln	LOS
1	158	0.25			3.7	В





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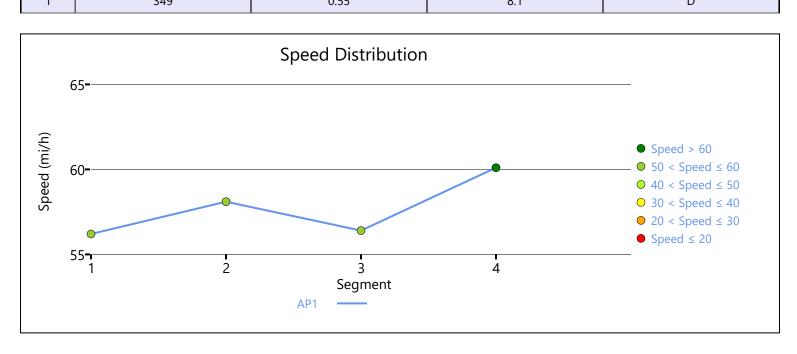
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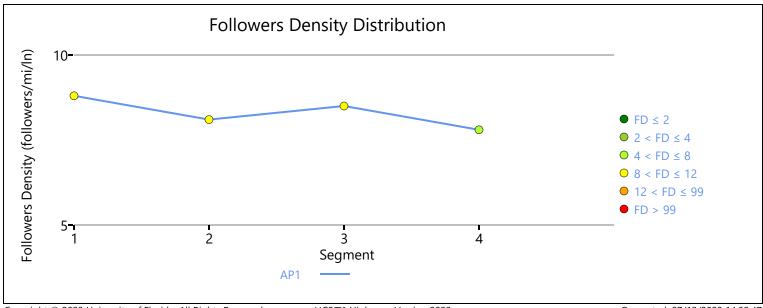
		HCS Two-La	ne Hi	ighway Re	port	
Project	t Information					
Analyst		Cameron Manley	D	ate		7/11/2023
Agency		WSP	А	nalysis Year		2045
Jurisdictio	on	KYTC District 8	Ti	ime Analyzed		AM Peak
Project De	escription	US 127 2+1 Study	U	nits		U.S. Customary
		Se	egme	nt 1		
Vehicle	e Inputs					
Segment <sup>1</sup>	Туре	Passing Constrained	Le	ength, ft		6310
Measured	I FFS	Measured	Fı	ree-Flow Speed,	mi/h	60.0
Deman	nd and Capacity					
Directiona	ectional Demand Flow Rate, veh/h 553		0	Opposing Demand Flow Rate, veh/h		-
Peak Hour Factor		0.94	To	Total Trucks, %		8.00
Segment Capacity, veh/h		1700	D	emand/Capacity	(D/C)	0.33
Interm	ediate Results	<u>'</u>				
Segment Vertical Class		2	Fi	ree-Flow Speed,	mi/h	60.0
Speed Slo	ppe Coefficient (m)	8.82281	S	peed Power Coef	fficient (p)	0.56011
PF Slope (	Coefficient (m)	-1.33530	Р	F Power Coefficie	ent (p)	0.74431
In Passing	Lane Effective Length?	No		otal Segment De	nsity, veh/mi/ln	5.9
%Improve	ement to Percent Followers	0.0	%Improvement to Speed		0.0	
Subseg	ment Data					·
# Seg	ment Type	Length, ft	Radius	, ft	Superelevation, %	Average Speed, mi/h
1 Tang	gent	6310	-		-	54.3
Vehicle	Results					·
Average S	Speed, mi/h	54.3	Pe	ercent Followers,	%	57.7
	Travel Time, minutes	1.32	F	ollower Density (	FD), followers/mi/ln	5.9
Vehicle LC	OS	С				
Facility	Results	,				<u>'</u>
т	VMT veh-mi/AP	VHD veh-h/p			ensity, followers/ mi/ln	LOS
1	155	0.27			5.9	С

	HCS Two	-Lane	Highway Re	eport	
Project Information					
Analyst	Cameron Manley	,	Date		7/11/2023
Agency	WSP		Analysis Year		2045
Jurisdiction	KYTC District 8		Time Analyzed		AM Peak
Project Description	US 127 2+1 Stud	у	Units		U.S. Customary
		Segn	nent 1		
Vehicle Inputs					
Segment Type	Passing Constrair	ned	Length, ft		325
Measured FFS	Measured		Free-Flow Speed,	mi/h	60.0
Demand and Capacity					<u>'</u>
Directional Demand Flow Rate, veh/h	734		Opposing Demar	nd Flow Rate, veh/h	-
Peak Hour Factor	0.94		Total Trucks, %		8.00
Segment Capacity, veh/h	nt Capacity, veh/h 1700		Demand/Capacity	0.43	
Intermediate Results					
Segment Vertical Class 1			Free-Flow Speed,	mi/h	60.0
Speed Slope Coefficient (m)	4.57372		Speed Power Coe	efficient (p)	0.41674
PF Slope Coefficient (m)	-1.39609		PF Power Coeffici	ent (p)	0.73717
In Passing Lane Effective Length?	No	No		ensity, veh/mi/ln	8.8
%Improvement to Percent Followers	0.0		%Improvement to	o Speed	0.0
Subsegment Data	·				
# Segment Type	Length, ft	Rac	lius, ft	Superelevation, %	Average Speed, mi/h
1 Tangent	325	-		-	56.2
Vehicle Results		<u>'</u>		<u>'</u>	
Average Speed, mi/h	56.2		Percent Followers, %		67.1
Segment Travel Time, minutes	0.07		Follower Density (FD), followers/mi/ln		8.8
Vehicle LOS	D				
		Segn	nent 2		
Vehicle Inputs					
Segment Type	Passing Constrain	ned	Length, ft	6595	
Measured FFS	Measured		Free-Flow Speed,	mi/h	65.0
ivicasureu i i s					
Demand and Capacity					
	734		Opposing Demar	nd Flow Rate, veh/h	-
Demand and Capacity	734 0.94		Opposing Demar	nd Flow Rate, veh/h	8.00

Spar	ment Vertical Class	2		Free-Flow Speed,	mi/h	65.0
	ed Slope Coefficient (m)	8.93369		Speed Power Coe		0.56121
•	lope Coefficient (m)	-1.29247		PF Power Coefficient (p)		0.75694
	assing Lane Effective Length?	No		Total Segment De		8.1
	provement to Percent Followers	0.0		%Improvement to		0.0
	osegment Data	0.0		70111provement to	, speed	0.0
		16		1. 6.	C 1 .: 0/	A C 1 :4
#	Segment Type	Length, ft	Rac	dius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	6595	-		-	58.1
Veł	nicle Results					
Aver	age Speed, mi/h	58.1		Percent Followers	, %	64.0
Segr	ment Travel Time, minutes	1.29		Follower Density (	(FD), followers/mi/ln	8.1
Vehi	cle LOS	D				
			Segn	nent 3		
Vel	nicle Inputs					
Segr	ment Type	Passing Zone		Length, ft		1510
Mea	sured FFS	Measured		Free-Flow Speed,	mi/h	60.0
Dei	mand and Capacity					
Dire	ctional Demand Flow Rate, veh/h	734		Opposing Deman	d Flow Rate, veh/h	574
Peak	: Hour Factor	0.94		Total Trucks, %		8.00
Segr	ment Capacity, veh/h	1700		Demand/Capacity	(D/C)	0.43
Into	ermediate Results			<u> </u>		
Segr	ment Vertical Class	1		Free-Flow Speed,	mi/h	60.0
Spee	ed Slope Coefficient (m)	4.42428		Speed Power Coefficient (p)		0.47280
PF S	lope Coefficient (m)	-1.35141		PF Power Coefficient (p)		0.76858
In Pa	assing Lane Effective Length?	No		Total Segment Density, veh/mi/ln		8.5
%lm	provement to Percent Followers	0.0		%Improvement to	Speed	0.0
Suk	osegment Data					
#	Segment Type	Length, ft	Rac	dius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1510	-		-	56.4
Veł	nicle Results					
Aver	age Speed, mi/h	56.4		Percent Followers	, %	65.5
Segr	ment Travel Time, minutes	0.30		Follower Density (	(FD), followers/mi/ln	8.5
Vehi	cle LOS	D				
			Segn	nent 4		
Veł	nicle Inputs					
Segr	ment Type	Passing Zone		Length, ft		2250
Mea	sured FFS	Measured		Free-Flow Speed,	mi/h	65.0

Den	nand and Capacity							
Direc	tional Demand Flow Rate, veh/h	734		Орр	Opposing Demand Flow Rate, veh/h		П	574
Peak	Hour Factor	0.94	0.94		l Trucks, %			8.00
Segm	nent Capacity, veh/h	1700		Dem	nand/Capacity	(D/C)		0.43
Inte	ermediate Results							
Segm	nent Vertical Class	2		Free	-Flow Speed,	mi/h	П	65.0
Spee	d Slope Coefficient (m)	6.47714		Spee	ed Power Coef	fficient (p)		0.61088
PF Slope Coefficient (m) -1.29646			PF P	ower Coefficie	ent (p)		0.78421	
In Pas	sing Lane Effective Length? No		Total Segment Density, veh/mi/ln			7.8		
%lmp	6/6/6/6/6/6/6/6/6/6/6/6/6/6/6/6/6/6/6/		%lm	provement to	Speed		0.0	
Sub	segment Data							
#	Segment Type	Length, ft	Rad	ius, ft		Superelevation, %		Average Speed, mi/h
1	Tangent	2250	-	-			60.1	
Veh	icle Results							
Avera	age Speed, mi/h	60.1		Percent Followers, %			63.8	
Segm	nent Travel Time, minutes	0.43		Follo	ower Density (	FD), followers/mi/In	$\neg$	7.8
Vehic	le LOS	С						
Faci	lity Results							
Т	VMT veh-mi/AP	VHC veh-h				ensity, followers/ mi/ln		LOS
1	349	0.55	 5			8.1		D





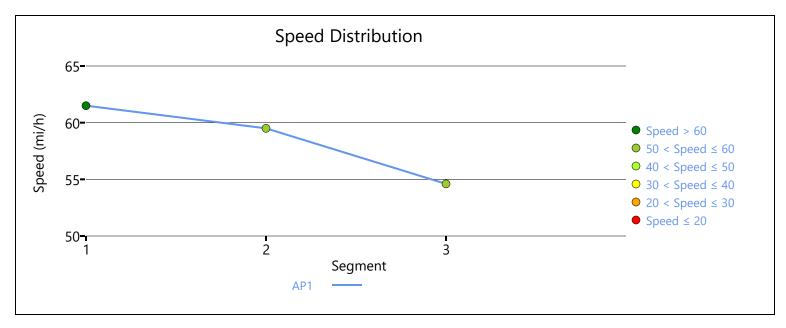
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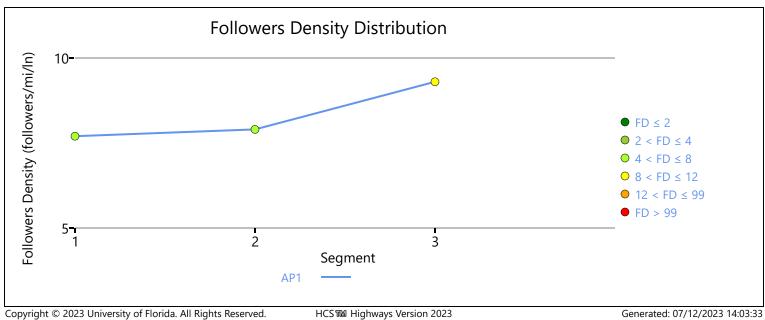
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	HCS Two-L	.ane	Highway Re	eport	
Project Information					
Analyst	Cameron Manley		Date		7/11/2023
Agency	WSP		Analysis Year		2045
Jurisdiction	KYTC District 8		Time Analyzed		AM Peak
Project Description	US 127 2+1 Study		Units		U.S. Customary
		Segn	nent 1		
Vehicle Inputs					
Segment Type	Passing Zone		Length, ft		3420
Measured FFS	Measured		Free-Flow Speed,	mi/h	65.0
Demand and Capacity			•		
Directional Demand Flow Rate, veh/h	766		Opposing Demar	nd Flow Rate, veh/h	223
Peak Hour Factor	0.94		Total Trucks, %		8.00
Segment Capacity, veh/h	egment Capacity, veh/h 1700		Demand/Capacity	0.45	
Intermediate Results			•		
Segment Vertical Class 1			Free-Flow Speed,	mi/h	65.0
Speed Slope Coefficient (m)	pe Coefficient (m) 4.35855		Speed Power Coe	efficient (p)	0.53293
PF Slope Coefficient (m)	F Slope Coefficient (m) -1.21020		PF Power Coeffici	ent (p)	0.81968
In Passing Lane Effective Length?	Passing Lane Effective Length? No		Total Segment De	ensity, veh/mi/ln	7.7
%Improvement to Percent Followers	0.0		%Improvement to	o Speed	0.0
Subsegment Data					
# Segment Type	Length, ft	Rad	lius, ft	Superelevation, %	Average Speed, mi/h
1 Tangent	3420	-		-	61.5
Vehicle Results	·				
Average Speed, mi/h	61.5		Percent Followers, %		62.2
Segment Travel Time, minutes	0.63		Follower Density	7.7	
Vehicle LOS	С				
	•	Segn	nent 2		
Vehicle Inputs					
Segment Type	Passing Zone		Length, ft		4080
Measured FFS	Measured		Free-Flow Speed,	mi/h	65.0
Demand and Capacity					
<b>Demand and Capacity</b> Directional Demand Flow Rate, veh/h	766		Opposing Demar	nd Flow Rate, veh/h	223
	766		Opposing Demar	nd Flow Rate, veh/h	223 8.00

1	376	0.50			8.3	D
Т	VMT veh-mi/AP	VHD veh-h/p		Follower D	ensity, followers/ mi/ln	LOS
Facility	y Results					
Vehicle L	OS	D				
Segment	t Travel Time, minutes	0.71		Follower Density	(FD), followers/mi/ln	9.3
Average	Speed, mi/h	54.6		Percent Followers	, %	63.6
Vehicle	e Results					
1 Tar	ngent	3390	-		-	54.6
# Seg	gment Type	Length, ft	Radiu	ıs, ft	Superelevation, %	Average Speed, mi/h
Subse	gment Data					
%Improv	vement to Percent Followers	0.0		%Improvement to Speed		0.0
	g Lane Effective Length?	No		Total Segment Density, veh/mi/ln		9.3
PF Slope	Coefficient (m)	-1.21178		PF Power Coefficient (p)		0.80292
Speed Slo	ope Coefficient (m)	6.92317		Speed Power Coefficient (p)		0.69475
Segment	t Vertical Class	2		Free-Flow Speed,	mi/h	60.0
Interm	nediate Results					
Segment	t Capacity, veh/h	1700		Demand/Capacity	/ (D/C)	0.47
	ur Factor	0.94		Total Trucks, %		8.00
Directional Demand Flow Rate, veh/h 798			(	Opposing Deman	d Flow Rate, veh/h	202
Demai	nd and Capacity					
Measured FFS Measured				Free-Flow Speed,	mi/h	60.0
	egment Type Passing Zone			Length, ft		3390
	e Inputs	1				
			Segmo	ent 3		
Vehicle L	OS	С				
 Segment	t Travel Time, minutes	0.78		Follower Density	(FD), followers/mi/ln	7.9
Average	Speed, mi/h	59.5	T <sub>1</sub>	Percent Followers	5, %	61.1
Vehicle	e Results					
1 Tar	ngent	4080	-		-	59.5
# Seg	gment Type	Length, ft	Radiu	ıs, ft	Superelevation, %	Average Speed, mi/h
Subse	gment Data					
%Improv	rement to Percent Followers	0.0		%Improvement to	Speed	0.0
In Passin	g Lane Effective Length?	No	-	Total Segment De	ensity, veh/mi/ln	7.9
PF Slope	Coefficient (m)	-1.17390	ı	PF Power Coefficient (p)		0.82145
	ope Coefficient (m)	7.29344		Speed Power Coe	meleni (p)	0.69048



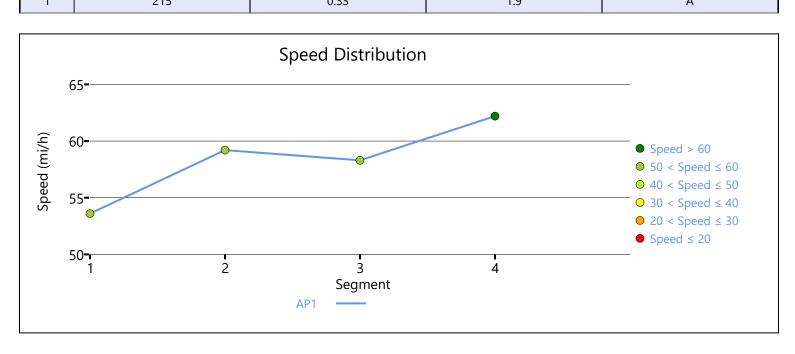


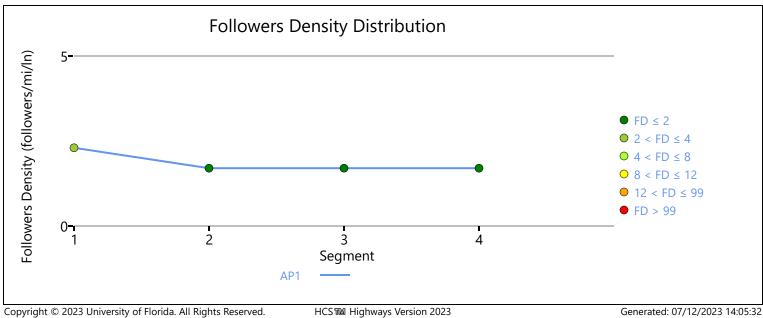
Section 10 NB AM No Build.xuf

	HCS Two-l	_ane	Highway Re	eport	
Project Information					
Analyst	Cameron Manley		Date		7/11/2023
Agency	WSP		Analysis Year		2045
Jurisdiction	KYTC District 8		Time Analyzed		PM Peak
Project Description	US 127 2+1 Study		Units		U.S. Customary
		Segn	nent 1		
Vehicle Inputs					
Segment Type	Passing Constrained	d	Length, ft		5870
Measured FFS	Measured		Free-Flow Speed,	mi/h	60.0
Demand and Capacity					<u>'</u>
Directional Demand Flow Rate, veh/h	266		Opposing Deman	nd Flow Rate, veh/h	-
Peak Hour Factor	0.94		Total Trucks, %		13.00
Segment Capacity, veh/h	nent Capacity, veh/h 1700		Demand/Capacity	0.16	
Intermediate Results					•
Segment Vertical Class 4			Free-Flow Speed,	mi/h	60.0
Speed Slope Coefficient (m)	20.40067		Speed Power Coe	efficient (p)	0.64277
PF Slope Coefficient (m)	-1.68820		PF Power Coeffici	ent (p)	0.77140
In Passing Lane Effective Length?	No	No		ensity, veh/mi/ln	2.3
%Improvement to Percent Followers	0.0		%Improvement to	o Speed	0.0
Subsegment Data					
# Segment Type	Length, ft	Rac	lius, ft	Superelevation, %	Average Speed, mi/h
1 Tangent	5870	-		-	53.6
Vehicle Results				<u>'</u>	•
Average Speed, mi/h	53.6		Percent Followers, %		45.5
Segment Travel Time, minutes	1.25		Follower Density (FD), followers/mi/ln		2.3
Vehicle LOS	В				
		Segn	nent 2		·
Vehicle Inputs					
Segment Type	Passing Zone		Length, ft		9105
Measured FFS	Measured		Free-Flow Speed, mi/h		65.0
Demand and Capacity					
	266		Opposing Deman	nd Flow Rate, veh/h	309
Demand and Capacity	266		Opposing Deman	nd Flow Rate, veh/h	309 13.00

Soar	ment Vertical Class	- 4		Free-Flow Speed,	mi/h	65.0
	ed Slope Coefficient (m)	21.09630		<u> </u>		0.71494
-	<u> </u>			Speed Power Coefficient (p)  PF Power Coefficient (p)		
	lope Coefficient (m) assing Lane Effective Length?	-1.46906 No		Total Segment De		0.84571
	provement to Percent Followers	0.0			•	0.0
		0.0		%Improvement to	o speed	0.0
Sul	osegment Data					
#	Segment Type	Length, ft	Rad	dius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	9105	-		-	59.2
Vel	nicle Results					
Aver	rage Speed, mi/h	59.2		Percent Followers	, %	38.1
Segr	ment Travel Time, minutes	1.75		Follower Density	(FD), followers/mi/ln	1.7
Vehi	cle LOS	А				
			Segr	nent 3		
Vel	nicle Inputs					
Segr	ment Type	Passing Zone		Length, ft		1155
Mea	Measured FFS Measured			Free-Flow Speed,	mi/h	60.0
De	mand and Capacity			•		
Dire	ctional Demand Flow Rate, veh/h	266		Opposing Deman	d Flow Rate, veh/h	309
Peak	Hour Factor	0.94		Total Trucks, %		13.00
Segr	ment Capacity, veh/h	1700	1700		' (D/C)	0.16
Int	ermediate Results					
Segr	ment Vertical Class	1		Free-Flow Speed,	mi/h	60.0
Spe	ed Slope Coefficient (m)	4.35432		Speed Power Coefficient (p)		0.51346
PF S	lope Coefficient (m)	-1.32554		PF Power Coefficie	ent (p)	0.77717
In Pa	assing Lane Effective Length?	No		Total Segment Density, veh/mi/ln		1.7
%lm	provement to Percent Followers	0.0		%Improvement to	Speed	0.0
Sul	osegment Data					
#	Segment Type	Length, ft	Rad	dius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1155	-		-	58.3
Vel	nicle Results					
Aver	rage Speed, mi/h	58.3		Percent Followers	, %	37.7
Segr	ment Travel Time, minutes	0.23		Follower Density	(FD), followers/mi/ln	1.7
Vehi	cle LOS	A				
			Segr	nent 4		
Vel	nicle Inputs					
Segr	ment Type	Passing Constrained		Length, ft		2065
Mea	sured FFS	Measured		Free-Flow Speed,	mi/h	65.0

Den	nand and Capacity						
Direc	tional Demand Flow Rate, veh/h	266		Opposing Demand Flow Rate, veh/h		d Flow Rate, veh/h	-
Peak	Hour Factor	0.94		Total	l Trucks, %		13.00
Segm	nent Capacity, veh/h	1700		Dem	and/Capacity	(D/C)	0.16
Inte	rmediate Results						
Segm	nent Vertical Class	2		Free	-Flow Speed,	mi/h	65.0
Speed	d Slope Coefficient (m)	7.60245		Spee	ed Power Coef	fficient (p)	0.55196
PF Slo	ope Coefficient (m)	-1.38515		PF Po	ower Coefficie	ent (p)	0.74786
In Passing Lane Effective Length?		No		Total Segment Density, veh/mi/ln		nsity, veh/mi/ln	1.7
%Improvement to Percent Followers		0.0	0.0		%Improvement to Speed		0.0
Sub	segment Data						
#	Segment Type	Length, ft	Radi	ius, ft		Superelevation, %	Average Speed, mi/h
1	Tangent	2065	-	-		-	62.2
Veh	icle Results						
Avera	age Speed, mi/h	62.2		Percent Followers, %		%	40.2
Segm	nent Travel Time, minutes	0.38		Follower Density (FD), followers/mi/ln		FD), followers/mi/ln	1.7
Vehic	le LOS	А					
Faci	lity Results						
Т	VMT veh-mi/AP	VHI veh-l				ensity, followers/ mi/ln	LOS
1	215	0.3	33			1.9	А





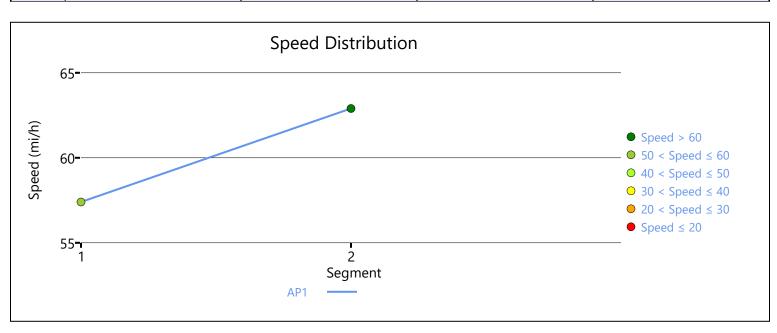
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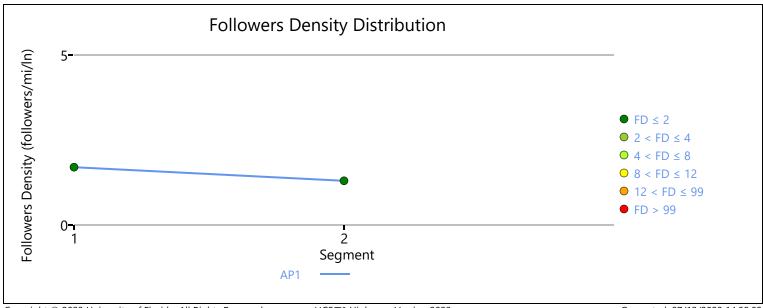
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	HCS Two	-Lane	Highway Re	port	
Project Information					
Analyst	Cameron Manley	,	Date		7/11/2023
Agency	WSP		Analysis Year		2045
Jurisdiction	KYTC District 8		Time Analyzed		PM Peak
Project Description	US 127 2+1 Stud	у	Units		U.S. Customary
		Segn	nent 1		
Vehicle Inputs					
Segment Type	Passing Constrain	ned	Length, ft		1800
Measured FFS	Measured		Free-Flow Speed,	mi/h	60.0
Demand and Capacity			·		
Directional Demand Flow Rate, veh/	h 245		Opposing Deman	d Flow Rate, veh/h	-
Peak Hour Factor	0.94		Total Trucks, %		13.00
Segment Capacity, veh/h	Segment Capacity, veh/h 1700		Demand/Capacity	/ (D/C)	0.14
Intermediate Results			•		
Segment Vertical Class 2			Free-Flow Speed,	mi/h	60.0
Speed Slope Coefficient (m) 7.41397		Speed Power Coe	fficient (p)	0.55094	
PF Slope Coefficient (m) -1.44941		PF Power Coeffici	ent (p)	0.73363	
In Passing Lane Effective Length?	In Passing Lane Effective Length? No		Total Segment De	nsity, veh/mi/ln	1.7
%Improvement to Percent Followers	0.0		%Improvement to	Speed	0.0
Subsegment Data					
# Segment Type	Length, ft	Rac	lius, ft	Superelevation, %	Average Speed, mi/h
1 Tangent	1800	-		-	57.4
Vehicle Results					
Average Speed, mi/h	57.4		Percent Followers, %		40.3
Segment Travel Time, minutes	0.36		Follower Density	(FD), followers/mi/ln	1.7
Vehicle LOS	А				
		Segn	nent 2		
Vehicle Inputs					
Segment Type	Passing Constrain	ned	Length, ft		4320
Measured FFS	Measured		Free-Flow Speed,	mi/h	65.0
Demand and Capacity					
Directional Demand Flow Rate, veh/	h 245		Opposing Deman	d Flow Rate, veh/h	-
Peak Hour Factor	0.94		Total Trucks, %		13.00
Segment Capacity, veh/h	1700		Demand/Capacity	/ (D/C)	0.14
Intermediate Results					

Segm	nent Vertical Class	1		e-Flow Speed,	mi/h	65.0		
Spee	ed Slope Coefficient (m)	4.61535	Spe	eed Power Coet	fficient (p)	0.41674		
PF Slo	ope Coefficient (m)	-1.26013	PF	Power Coefficie	ent (p)	0.77511		
In Pa	ssing Lane Effective Length?	No	Tot	al Segment De	nsity, veh/mi/ln	1.3		
%lmp	provement to Percent Followers	0.0	%lr	mprovement to	Speed	0.0		
Sub	Subsegment Data							
#	Segment Type	Length, ft	Radius,	t Superelevation, %		Average Speed, mi/h		
1	Tangent	4320	-	-		62.9		
Veh	nicle Results							
Avera	age Speed, mi/h	62.9	Per	cent Followers,	%	34.5		
Segn	nent Travel Time, minutes	0.78	Fol	lower Density (	FD), followers/mi/ln	1.3		
Vehic	cle LOS	А						
Faci	Facility Results							
Т	VMT veh-mi/AP	VHD veh-h/p			ensity, followers/ mi/ln	LOS		
1	67	0.04	·		1.5	А		





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	HCS Two-Lar	ne Hig	ghway Re	port	
Project Information					
Analyst	Cameron Manley	Dat	Date		7/11/2023
Agency	WSP	Ana	alysis Year		2045
Jurisdiction	KYTC District 8	Tin	ne Analyzed		PM Peak
Project Description	US 127 2+1 Study	Un	its		U.S. Customary
	Se	egmen	nt 1		
Vehicle Inputs					
Segment Type	Passing Constrained	Ler	ngth, ft		8660
Measured FFS	Measured	Fre	e-Flow Speed, i	mi/h	65.0
Demand and Capacity					
Directional Demand Flow Rate, veh/h 223		Ор	posing Demand	d Flow Rate, veh/h	-
Peak Hour Factor 0.94		Tot	al Trucks, %		13.00
Segment Capacity, veh/h 1700		De	mand/Capacity	(D/C)	0.13
Intermediate Results					·
Segment Vertical Class 2		Fre	e-Flow Speed, i	mi/h	65.0
Speed Slope Coefficient (m)	10.57846	Spe	eed Power Coef	ficient (p)	0.57732
PF Slope Coefficient (m)	-1.29399	PF	Power Coefficie	ent (p)	0.75228
In Passing Lane Effective Length?	No	Tot	al Segment Der	nsity, veh/mi/ln	1.2
%Improvement to Percent Followers	0.0	%Ir	mprovement to	Speed	0.0
Subsegment Data					
# Segment Type	Length, ft	Radius,	ft	Superelevation, %	Average Speed, mi/h
1 Tangent	8660	-		-	61.8
Vehicle Results					
Average Speed, mi/h	61.8	Per	cent Followers,	%	34.2
Segment Travel Time, minutes	1.59	Fol	lower Density (I	FD), followers/mi/ln	1.2
Vehicle LOS	А				
Facility Results					
T VMT veh-mi/AP	VHD veh-h/p			ensity, followers/ mi/ln	LOS
1 86	0.07			1.2	A

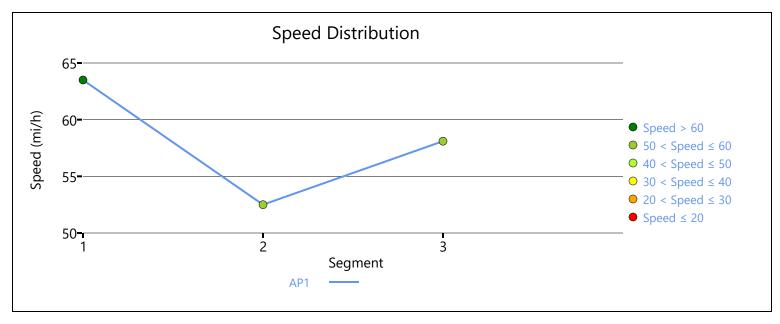
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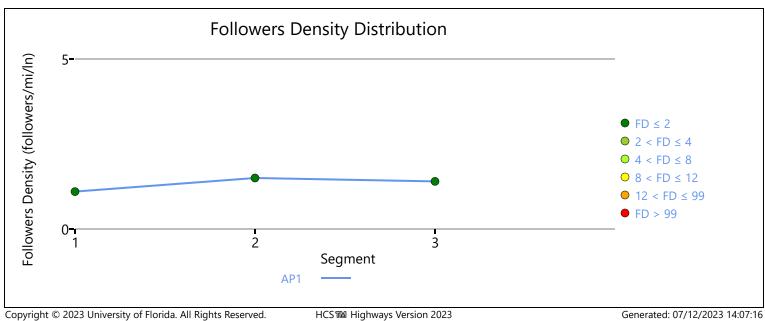
	HCS Two-Lai	ne Hig	jhway Re	port	
Project Information					
Analyst	Cameron Manley	Dat	:e		7/11/2023
Agency	WSP	Ana	alysis Year		2045
Jurisdiction	KYTC District 8	Tim	Time Analyzed		PM Peak
Project Description	ct Description US 127 2+1 Study		ts		U.S. Customary
	Se	egmen	nt 1		
Vehicle Inputs					
Segment Type	Passing Constrained	Len	gth, ft		5655
Measured FFS Measured		Fre	e-Flow Speed,	mi/h	65.0
Demand and Capacity					
Directional Demand Flow Rate, veh/h 234		Ор	posing Demand	d Flow Rate, veh/h	-
Peak Hour Factor 0.94		Tot	al Trucks, %		13.00
Segment Capacity, veh/h 1700		Demand/Capacity (D/C)			0.14
Intermediate Results					
Segment Vertical Class	2	Fre	e-Flow Speed,	mi/h	65.0
Speed Slope Coefficient (m)	9.46227	Spe	eed Power Coef	ficient (p)	0.56577
PF Slope Coefficient (m)	-1.29188	PF	Power Coefficie	ent (p)	0.76223
In Passing Lane Effective Length?	No	Tot	al Segment Dei	nsity, veh/mi/ln	1.3
%Improvement to Percent Followers	0.0	%lr	nprovement to	Speed	0.0
Subsegment Data					
# Segment Type	Length, ft	Radius, 1	ft	Superelevation, %	Average Speed, mi/h
1 Tangent	5655	-		-	62.0
Vehicle Results					
Average Speed, mi/h	62.0	Per	cent Followers,	%	34.8
Segment Travel Time, minutes	1.04	Fol	lower Density (	FD), followers/mi/ln	1.3
Vehicle LOS	А				
Facility Results	•	·			
T VMT veh-mi/AP	VHD veh-h/p			ensity, followers/ mi/ln	LOS
1 59	0.04			1.3	A

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		HCS Two-L	.ane	Highway Re	eport	
Pro	ject Information					
Anal	lyst	Cameron Manley		Date		7/11/2023
Age	ncy	WSP		Analysis Year		2045
Juris	diction	KYTC District 8		Time Analyzed		PM Peak
Proj	ect Description	US 127 2+1 Study		Units		U.S. Customary
			Segn	nent 1		
Vel	nicle Inputs					
Segi	ment Type	Passing Zone		Length, ft		4745
Mea	sured FFS	Measured		Free-Flow Speed,	mi/h	65.0
De	mand and Capacity	<u> </u>				<u>'</u>
Dire	ctional Demand Flow Rate, veh/h	te, veh/h 223		Opposing Deman	nd Flow Rate, veh/h	372
Peak	Hour Factor	0.94	0.94			13.00
Segi	ment Capacity, veh/h	1700		Demand/Capacity (D/C)		0.13
Int	ermediate Results	<u>'</u>				<u>'</u>
Segment Vertical Class 1			Free-Flow Speed,	mi/h	65.0	
Spe	ed Slope Coefficient (m)	4.41837		Speed Power Coe	efficient (p)	0.50149
PF S	lope Coefficient (m)	-1.21659		PF Power Coeffici	ent (p)	0.81454
In Pa	assing Lane Effective Length?	No		Total Segment De	ensity, veh/mi/ln	1.1
%lm	provement to Percent Followers	0.0		%Improvement to	o Speed	0.0
Sul	bsegment Data					·
#	Segment Type	Length, ft	Rad	dius, ft Superelevation, %		Average Speed, mi/h
1	Tangent	4745	-		-	63.5
Vel	nicle Results	•			•	•
Aver	rage Speed, mi/h	63.5		Percent Followers	30.2	
Segi	ment Travel Time, minutes	0.85		Follower Density (FD), followers/mi/ln		1.1
Vehi	cle LOS	А				
			Segn	nent 2		·
Vel	nicle Inputs					
Segi	ment Type	Passing Zone		Length, ft		17145
	sured FFS			Free-Flow Speed, mi/h		65.0
De	mand and Capacity					
	ctional Demand Flow Rate, veh/h	223		Opposing Deman	nd Flow Rate, veh/h	372
Dire		0.94		Total Trucks, %		13.00
	K Hour Factor	0.94		lotal frucks, %		13.00

1	228	0.65			1.4	А
Т	VMT veh-mi/AP	VHD veh-h/ <sub>l</sub>	p	Follower Density, followers/		LOS
Facility	y Results					
Vehicle L	OS	А				
Segment	t Travel Time, minutes	0.20		Follower Density	(FD), followers/mi/ln	1.4
Average	Speed, mi/h	58.1		Percent Follower	-s, %	37.0
Vehicle	e Results					
1 Tar	ngent	1165	-	-		58.1
# Seg	gment Type	Length, ft	Radi	us, ft	Superelevation, %	Average Speed, mi/h
Subse	gment Data					
%Improv	vement to Percent Followers	0.0		%Improvement	to Speed	0.0
	g Lane Effective Length?	No			ensity, veh/mi/ln	1.4
<u> </u>	Coefficient (m)	-1.39545		PF Power Coeffic	·	0.73788
•	ope Coefficient (m)	4.57372		Speed Power Co	0.41674	
Segment	t Vertical Class	1		Free-Flow Speed	l, mi/h	60.0
Interm	nediate Results					
Segment	t Capacity, veh/h	1700		Demand/Capaci	ty (D/C)	0.13
Peak Hou		0.94		Total Trucks, %		13.00
Directional Demand Flow Rate, veh/h 223		,, ,	nd Flow Rate, veh/h	-		
Demai	nd and Capacity					
		Measured		Free-Flow Speed	ı, mı/n	60.0
Segment Type Passing Constrained  Measured FFS Measured			Length, ft	l mi/h	1005	
	e Inputs		. 1			1,000
Valai al	a lawata					
			Segm	ent 3		
Vehicle L	OS	А				
Segment	t Travel Time, minutes	3.71	3.71 I		(FD), followers/mi/ln	1.5
Average	Speed, mi/h	52.5		Percent Follower	rs, %	34.9
Vehicle	e Results					
1 Tar	ngent	16980	-		-	52.5
# Seg	gment Type	Length, ft	Radi	us, ft	Superelevation, %	Average Speed, mi/h
Subse	gment Data					
%Improv	vement to Percent Followers	0.0		%Improvement	to Speed	0.0
In Passin	g Lane Effective Length?	No		Total Segment D	ensity, veh/mi/ln	1.5
PF Slope	Coefficient (m)	-1.60402		PF Power Coefficient (p)		0.88014
	ope Coefficient (m)	34.50515			efficient (p)	0.48301

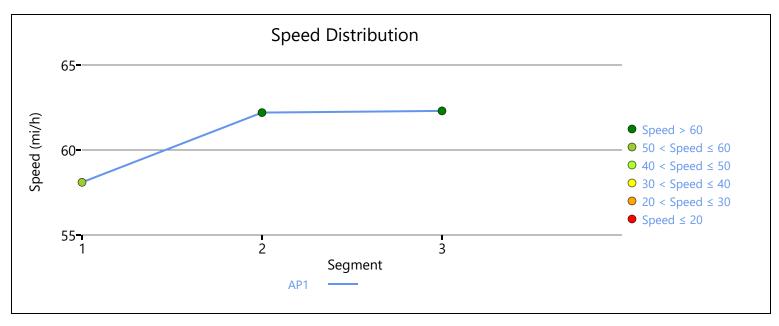


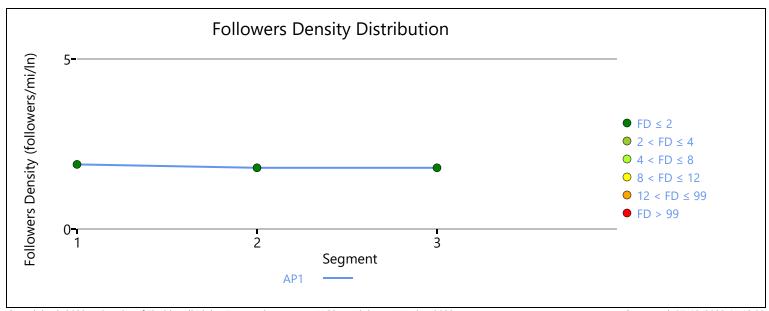


Section 5 NB No-Build.xuf

		HCS Two-L	ane	Highway Re	port	
Pro	ject Information					
Ana	lyst	Cameron Manley		Date		7/11/2023
Age	ncy	WSP		Analysis Year		2045
Juris	diction	KYTC District 8		Time Analyzed		PM Peak
Proj	ect Description	US 127 2+1 Study		Units		U.S. Customary
			Segn	nent 1		
Vel	hicle Inputs					
Segi	ment Type	Passing Zone		Length, ft		1230
Mea	sured FFS	Measured		Free-Flow Speed,	mi/h	60.0
De	mand and Capacity					•
Directional Demand Flow Rate, veh/h 277		Opposing Deman	d Flow Rate, veh/h	436		
Peak	k Hour Factor	0.94		Total Trucks, %		8.00
Segment Capacity, veh/h 1700		Demand/Capacity	(D/C)	0.16		
Int	ermediate Results	<u>'</u>				
Segment Vertical Class 2			Free-Flow Speed,	mi/h	60.0	
Spe	ed Slope Coefficient (m)			Speed Power Coef	fficient (p)	0.62937
PF S	lope Coefficient (m)	-1.37079		PF Power Coefficie	ent (p)	0.76263
In Pa	assing Lane Effective Length?	No		Total Segment De	nsity, veh/mi/ln	1.9
%lm	provement to Percent Followers	0.0		%Improvement to	Speed	0.0
Sul	bsegment Data					
#	Segment Type	Length, ft	Rad	lius, ft Superelevation, %		Average Speed, mi/h
1	Tangent	1230	1-		-	58.1
Vel	hicle Results					
Avei	rage Speed, mi/h	58.1		Percent Followers,	40.2	
Segi	ment Travel Time, minutes	0.24		Follower Density (	1.9	
Vehi	icle LOS	А				
		· .	Segn	nent 2		•
Vel	hicle Inputs					
Segi	ment Type	Passing Constrained		Length, ft		2005
	sured FFS	Measured		Free-Flow Speed, mi/h		65.0
De	mand and Capacity					
Dire	ctional Demand Flow Rate, veh/h	277		Opposing Deman	d Flow Rate, veh/h	-
	K Hour Factor	0.94		Total Trucks, %		8.00
Peak				Demand/Capacity (D/C)		i i

Segment	Vertical Class	3		Free	-Flow Speed,	mi/h	6	5.0
Speed Slo	ope Coefficient (m)	9.73487		Spee	Speed Power Coefficient (p)			.72660
PF Slope	Coefficient (m)	-1.38882		PF P	PF Power Coefficient (p)		0.	.76267
In Passing	g Lane Effective Length?	No		Tota	l Segment De	nsity, veh/mi/ln	1.	.8
%Improv	ement to Percent Followers	0.0	0.0		provement to	Speed	0.	.0
Subse	gment Data							
# Seg	gment Type	Length, ft	Rac	dius, ft		Superelevation, %	А	verage Speed, mi/h
1 Tan	ngent	2005	2005 -			-	6	2.2
Vehicle	e Results							
Average Speed, mi/h 62.2		Perc	ent Followers,	%	40	0.6		
Segment	Travel Time, minutes	0.37	0.37		ower Density (	FD), followers/mi/ln	1.	.8
Vehicle Lo	OS	А						
			Segn	nen	t 3			
Vehicle	e Inputs							
Segment	Туре	Passing Lanes		Leng	Length, ft			10
Measured	d FFS	Measured	Measured		-Flow Speed,	mi/h	6	5.0
Demar	nd and Capacity							
Direction	al Demand Flow Rate, veh/h	277		Орр	osing Deman	d Flow Rate, veh/h	-	
Peak Hou	ur Factor	0.94		Tota	l Trucks, %		8.	.00
Segment	Capacity, veh/h	1700		Dem	nand/Capacity	(D/C)	0.	.16
Interm	nediate Results							
Segment	Vertical Class	2		Free	-Flow Speed,	mi/h	6	5.0
Speed Slo	ope Coefficient (m)	7.06943		Speed Power Coefficient (p)			0.	.54600
PF Slope	Coefficient (m)	-1.36072		PF Power Coefficient (p)			0.	.74990
In Passing	g Lane Effective Length?	No		Total Segment Density, veh/mi/ln			1.	.8
%Improv	ement to Percent Followers	0.0		%lm	%Improvement to Speed		0.	.0
Subse	gment Data							
# Seg	gment Type	Length, ft	Rac	dius, ft		Superelevation, %	А	verage Speed, mi/h
1 Tan	ngent	810	-			-	6	2.3
Vehicle	e Results							
Average :	Speed, mi/h	62.3		Perc	ent Followers,	%	40	0.5
Segment	Travel Time, minutes	0.15		Follower Density (FD), followers/mi/ln			1.	.8
Follower mi/ln	Density Mid-Point, followers/	0.0		Vehicle LOS			А	,
Facility	y Results							
Т	VMT veh-mi/AP	VHI veh-l				ensity, followers/ mi/ln		LOS
1	50	0.03	 3			1.8		A





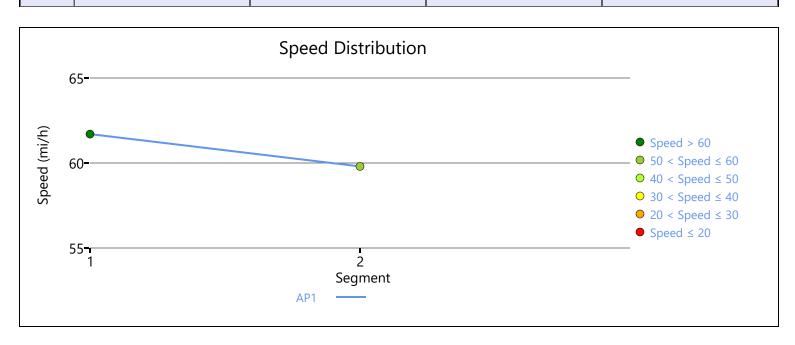
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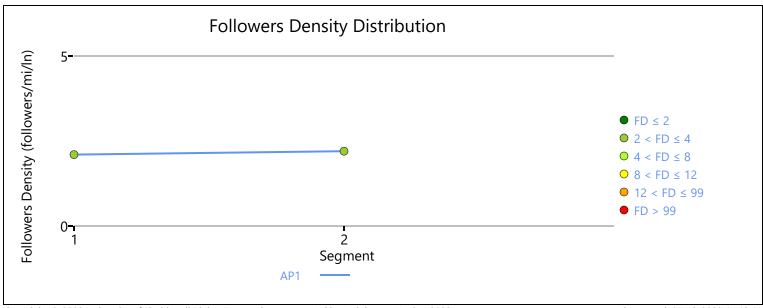
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		HCS Two-La	ne l	Highway Re	port	
Pr	oject Information					
Ana	alyst	Cameron Manley		Date		7/11/2045
Age	ency	WSP		Analysis Year		2045
Juri	isdiction	KYTC District 8		Time Analyzed		PM Peak
Pro	ject Description	US 127 2+1 Study		Units		U.S. Customary
		Se	egn	nent 1		
Ve	hicle Inputs					
Seg	gment Type	Passing Lanes	Passing Lanes L			2255
Me	asured FFS	Measured		Free-Flow Speed,	mi/h	65.0
De	emand and Capacity					
Dire	ectional Demand Flow Rate, veh/h	309	309		d Flow Rate, veh/h	T-
Pea	ık Hour Factor	0.94	0.94 To			8.00
Seg	gment Capacity, veh/h	1700		Demand/Capacity	(D/C)	0.18
Int	termediate Results					<u>'</u>
Segment Vertical Class 3			Free-Flow Speed,	mi/h	65.0	
Spe	eed Slope Coefficient (m)			Speed Power Coe	fficient (p)	0.73345
PF :	Slope Coefficient (m)	-1.35989		PF Power Coefficie	ent (p)	0.76573
In F	Passing Lane Effective Length?	No		Total Segment De	nsity, veh/mi/ln	2.1
%lr	mprovement to Percent Followers	0.0		%Improvement to	Speed	0.0
Su	bsegment Data					·
#	Segment Type	Length, ft	Rad	lius, ft Superelevation, %		Average Speed, mi/h
1	Tangent	2255	-		-	61.7
Ve	hicle Results					•
Ave	erage Speed, mi/h	61.7		Percent Followers,	, %	42.5
Seg	gment Travel Time, minutes	0.42		Follower Density (	FD), followers/mi/ln	2.1
Foll	lower Density Mid-Point, followers/ In	0.0		Vehicle LOS		В
		Se	egn	nent 2		
Ve	hicle Inputs					
	gment Type	Passing Zone		Length, ft		5880
	asured FFS	Measured		Free-Flow Speed, mi/h		65.0
De	emand and Capacity					
	ectional Demand Flow Rate, veh/h	309		Opposing Deman	d Flow Rate, veh/h	511
	ık Hour Factor	0.94		Total Trucks, %		8.00
Sec	gment Capacity, veh/h	1700		Demand/Capacity	(D/C)	0.18

Inte	erm	ediate Results							
Segn	nent	Vertical Class	4		Free-Flow S	Speed,	mi/h	65.0	
Spee	d Slc	ope Coefficient (m)	15.96358 S		Speed Pow	er Coet	fficient (p)	0.71792	
PF Slo	ope	Coefficient (m)	-1.44862	1.44862 PF		oefficie	ent (p)	0.83120	
In Pa	ssing	g Lane Effective Length?	No	No To		ent De	nsity, veh/mi/ln	2.2	
%lmp	orove	ement to Percent Followers	0.0		%Improven	nent to	Speed	0.0	
Sub	seg	gment Data							
#	Seg	gment Type	Length, ft	ength, ft Radiu			Superelevation, %	Average Speed, mi/h	1
1	Tan	gent	8135	-		-		59.8	
Veh	icle	Results							
Avera	age S	Speed, mi/h	59.8		Percent Followers, %			42.0	
Segn	nent	Travel Time, minutes	1.12		Follower Density (FD), followers/mi/ln			2.2	
Vehicle LOS B		OS	В						
Faci	ility	/ Results							
т		VMT veh-mi/AP	VHD veh-h/p		Follo		ensity, followers/ mi/ln	LOS	
1		112	0.13				2.2	В	





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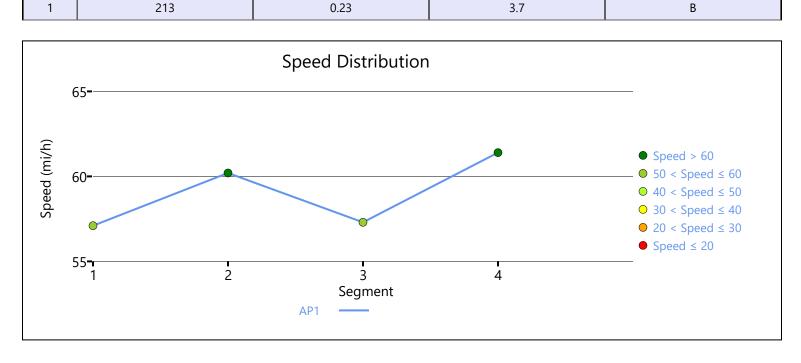
		HCS Two-Lar	ne Hig	Jhway Re	port		
Projec	t Information						
Analyst		Cameron Manley	Dat	e		7/11/2023	
Agency		WSP	Ana	alysis Year		2045	
Jurisdicti	on	KYTC District 8	Tim	e Analyzed		PM Peak	
Project D	escription	US 127 2+1 Study	Uni	ts		U.S. Customary	
		Se	gmen	t 1			
Vehicle	e Inputs						
Segment	Туре	Passing Constrained	Len	gth, ft		6310	
Measured FFS Measured		Free	e-Flow Speed,	mi/h	60.0		
Demai	nd and Capacity						
Directional Demand Flow Rate, veh/h		383		posing Demand	d Flow Rate, veh/h	-	
Peak Hour Factor 0.94		0.94	Total Truci			8.00	
Segment Capacity, veh/h		1700	Der	mand/Capacity	(D/C)	0.23	
Interm	nediate Results						
Segment	Vertical Class	2	Free	e-Flow Speed,	mi/h	60.0	
Speed Slo	ope Coefficient (m)	8.82281	Spe	ed Power Coef	ficient (p)	0.56011	
PF Slope	Coefficient (m)	-1.33530	PF I	Power Coefficie	ent (p)	0.74431	
In Passin	g Lane Effective Length?	No	Tota	al Segment De	nsity, veh/mi/ln	3.3	
%Improv	ement to Percent Followers	0.0	%In	nprovement to	Speed	0.0	
Subse	gment Data						
# Seg	gment Type	Length, ft	Radius, f	it	Superelevation, %	Average Speed, mi/h	
1 Tar	ngent	6310	-		-	55.6	
Vehicle	e Results						
Average	Speed, mi/h	55.6	Per	cent Followers,	%	48.0	
Segment	Travel Time, minutes	1.29	Foll	ower Density (	FD), followers/mi/ln	3.3	
Vehicle L	OS	В					
Facility	y Results						
Т	VMT veh-mi/AP	VHD veh-h/p			ensity, followers/ mi/In	LOS	
1	108	0.14			3.3	В	

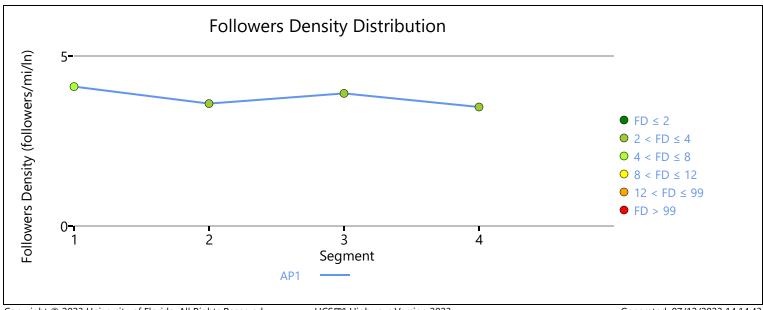
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	HCS Two	-Lane	Highway Re	eport	
Project Information					
Analyst	Cameron Manley	/	Date		7/11/2045
Agency	WSP		Analysis Year		2045
Jurisdiction	KYTC District 8		Time Analyzed		PM Peak
Project Description	US 127 2+1 Stud	ly	Units		U.S. Customary
		Segn	nent 1		
Vehicle Inputs					
Segment Type	Passing Constrain	ned	Length, ft		325
Measured FFS	Measured		Free-Flow Speed	, mi/h	60.0
Demand and Capacity					<u>'</u>
Directional Demand Flow Rate, veh/h	436		Opposing Demai	nd Flow Rate, veh/h	-
Peak Hour Factor	0.94	0.94			8.00
Segment Capacity, veh/h	1700		Demand/Capacity (D/C)		0.26
Intermediate Results			·		
Segment Vertical Class	1		Free-Flow Speed	, mi/h	60.0
Speed Slope Coefficient (m)	4.57372			efficient (p)	0.41674
PF Slope Coefficient (m)	-1.39609		PF Power Coeffic	ient (p)	0.73717
In Passing Lane Effective Length?	No		Total Segment D	ensity, veh/mi/ln	4.1
%Improvement to Percent Followers	0.0		%Improvement t	o Speed	0.0
Subsegment Data	·		•		
# Segment Type	Length, ft	Rac	lius, ft Superelevation, %		Average Speed, mi/h
1 Tangent	325	-		-	57.1
Vehicle Results					
Average Speed, mi/h	57.1		Percent Followers	53.1	
Segment Travel Time, minutes	0.06		Follower Density (FD), followers/mi/ln		4.1
Vehicle LOS	С				
		Segn	nent 2		<u>'</u>
Vehicle Inputs					
Segment Type	Passing Constrain	ned	Length, ft		6595
Measured FFS	Measured		Free-Flow Speed, mi/h		65.0
Micasarca 113					
Demand and Capacity					
	436		Opposing Demai	nd Flow Rate, veh/h	-
Demand and Capacity	436		Opposing Demai	nd Flow Rate, veh/h	8.00

Spar	ment Vertical Class	2		Free-Flow Speed,	mi/h	65.0
	ed Slope Coefficient (m)	8.93369		Speed Power Coe		0.56121
•	lope Coefficient (m)	-1,29247		PF Power Coefficie	<u> </u>	0.75694
	ussing Lane Effective Length?	No		Total Segment De		3.6
	provement to Percent Followers				Speed	0.0
	osegment Data	0.0		75miprovement to	, speed	0.0
		6		1. 6.	C 1 .: 0/	A C 1 '4
#	Segment Type	Length, ft	Rac	dius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	6595	1-		-	60.2
Veł	nicle Results					
Aver	age Speed, mi/h	60.2		Percent Followers	, %	49.8
Segr	ment Travel Time, minutes	1.25		Follower Density (	(FD), followers/mi/ln	3.6
Vehi	cle LOS	В				
		9	Segn	nent 3		
Vel	nicle Inputs					
Segr	ment Type	Passing Zone		Length, ft		1510
Mea	sured FFS	Measured		Free-Flow Speed,	mi/h	60.0
Dei	mand and Capacity			•		
Dire	ctional Demand Flow Rate, veh/h	436		Opposing Deman	d Flow Rate, veh/h	809
Peak	Hour Factor	0.94		Total Trucks, %		8.00
Segr	ment Capacity, veh/h	1700	1700		(D/C)	0.26
Inte	ermediate Results					
Segr	ment Vertical Class	1		Free-Flow Speed,	mi/h	60.0
Spee	ed Slope Coefficient (m)	4.47058		Speed Power Coefficient (p)		0.45029
PF S	lope Coefficient (m)	-1.36902		PF Power Coefficient (p)		0.76040
In Pa	ssing Lane Effective Length?	No		Total Segment Density, veh/mi/ln		3.9
%lm	provement to Percent Followers	0.0		%Improvement to	Speed	0.0
Suk	segment Data					
#	Segment Type	Length, ft	Rac	dius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1720	-		-	57.3
Vel	nicle Results					
Aver	age Speed, mi/h	57.3		Percent Followers	, %	51.7
Segr	ment Travel Time, minutes	0.30		Follower Density (	(FD), followers/mi/ln	3.9
Vehi	cle LOS	В				
		9	Segn	nent 4		
Veł	nicle Inputs					
Segr	ment Type	Passing Zone		Length, ft		2550
Mea	sured FFS	Measured		Free-Flow Speed,	mi/h	65.0

Den	nand and Capacity							
Direc	tional Demand Flow Rate, veh/h	436		Орр	osing Deman	d Flow Rate, veh/h	809	
Peak	Hour Factor	0.94		Tota	l Trucks, %		8.00	
Segm	nent Capacity, veh/h	1700	1700 D		nand/Capacity	(D/C)	0.26	
Inte	rmediate Results							
Segment Vertical Class		2		Free	-Flow Speed,	mi/h	65.0	
Speed	d Slope Coefficient (m)	6.77316	6.77316 Sp		ed Power Coef	fficient (p)	0.58509	
PF Slo	ope Coefficient (m)	-1.31155	-1.31155 P		ower Coefficie	ent (p)	0.77632	
In Pas	ssing Lane Effective Length?	No	No 1		Total Segment Density, veh/mi/ln		3.5	
%lmp	provement to Percent Followers	nt Followers 0.0		%lm	provement to	Speed	0.0	
Sub	segment Data							
#	Segment Type	Length, ft	Rad	lius, ft	:	Superelevation, %	Average Speed, mi/l	h
1	Tangent	2340	-	-		61.4		
Veh	icle Results							
Avera	ge Speed, mi/h	61.4		Percent Followers, %		49.8		
Segm	nent Travel Time, minutes	0.47		Follo	Follower Density (FD), followers/mi/ln		3.5	
Vehic	le LOS	В						
Faci	lity Results						·	
Т	VMT veh-mi/AP	VHD veh-h				ensity, followers/ mi/ln	LOS	
1	213	0.23				3 7	R	





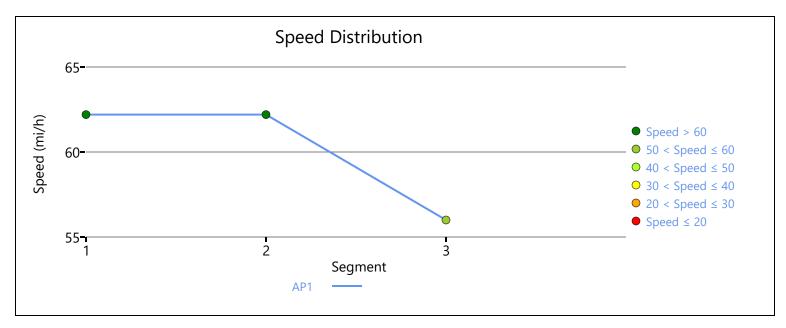
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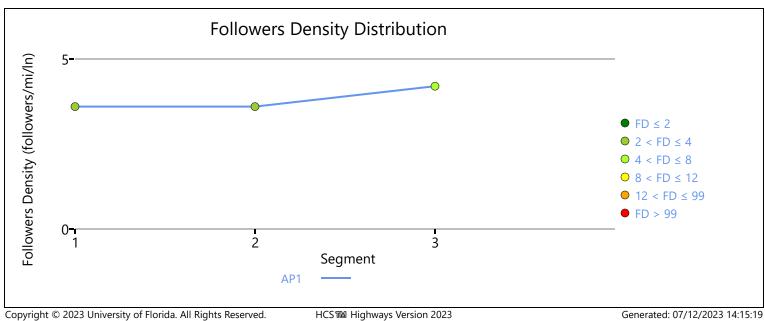
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	HCS Two-L	ane	Highway Re	eport	
Project Information					
Analyst	Cameron Manley		Date		7/11/2045
Agency	WSP		Analysis Year		2045
Jurisdiction	KYTC District 8		Time Analyzed		PM Peak
Project Description	US 127 2+1 Study		Units		U.S. Customary
		Segn	nent 1		
Vehicle Inputs					
Segment Type	Passing Zone		Length, ft		3420
Measured FFS	Measured		Free-Flow Speed,	mi/h	65.0
Demand and Capacity					
Directional Demand Flow Rate, veh/h	ow Rate, veh/h 457		Opposing Demar	nd Flow Rate, veh/h	830
Peak Hour Factor	0.94		Total Trucks, %		8.00
Segment Capacity, veh/h	1700		Demand/Capacity (D/C)		0.27
Intermediate Results					, 
Segment Vertical Class 1			Free-Flow Speed,	mi/h	65.0
Speed Slope Coefficient (m)	4.50222			efficient (p)	0.44864
PF Slope Coefficient (m)	-1.26926		PF Power Coeffici	ent (p)	0.79111
In Passing Lane Effective Length?	No		Total Segment De	ensity, veh/mi/ln	3.6
%Improvement to Percent Followers	0.0		%Improvement to	o Speed	0.0
Subsegment Data	<u>.</u>				
# Segment Type	Length, ft	Rad	lius, ft	Superelevation, %	Average Speed, mi/h
1 Tangent	3420	-		-	62.2
Vehicle Results					
Average Speed, mi/h	62.2		Percent Followers	49.5	
Segment Travel Time, minutes	0.63		Follower Density	3.6	
Vehicle LOS	В				
		Segn	nent 2		
Vehicle Inputs					
Segment Type	Passing Zone		Length, ft		4030
NA LEEC			Free-Flow Speed, mi/h		65.0
Measured FFS					
Demand and Capacity					
	457		Opposing Demar	nd Flow Rate, veh/h	830
Demand and Capacity	457 0.94		Opposing Demar	nd Flow Rate, veh/h	830 8.00

221	0.19			3.8	В	
VMT veh-mi/AP	VHD veh-h/p		Follower Density, followers/ mi/ln		LOS	
y Results						
OS	С					
Travel Time, minutes	0.69		Follower Density (FD), followers/mi/ln		4.2	
Speed, mi/h	56.0		Percent Followers, %		51.7	
e Results						
ngent	4260	-		-	56.0	
gment Type	Length, ft	Radiu	us, ft	Superelevation, %	Average Speed, mi/h	
gment Data						
ement to Percent Followers	0.0		%Improvement to Speed		0.0	
g Lane Effective Length?	No		Total Segment Density, veh/mi/ln		4.2	
Coefficient (m)	-1.32575		PF Power Coefficient (p)		0.76559	
ope Coefficient (m)	7.28182		Speed Power Coefficient (p)		0.58259	
Vertical Class	2		Free-Flow Speed, mi/h		60.0	
nediate Results						
Capacity, veh/h	1700		Demand/Capacity (D/C)		0.27	
eak Hour Factor 0.94		_	Total Trucks, %		8.00	
al Demand Flow Rate, veh/h	457		Opposing Demand Flow Rate, veh/h		872	
nd and Capacity						
	Measured		Free-Flow Speed, mi/h		60.0	
	-	Length, ft			3390	
•						
		Seam	ent 3			
OS	В					
Travel Time, minutes	0.74		Follower Density (FD), followers/mi/ln		3.6	
Speed, mi/h	62.2		Percent Followers, %		49.2	
e Results						
ngent	4030 -			-	62.2	
gment Type	Length, ft Ra		us, ft	Superelevation, %	Average Speed, mi/h	
gment Data						
SImprovement to Percent Followers 0.0			%Improvement to Speed		0.0	
g Lane Effective Length?	No		Total Segment Density, veh/mi/ln		3.6	
Coefficient (m)	-1.25929		PF Power Coefficient (p)		0.79329	
	4.50930		•	efficient (p)		
	g Lane Effective Length? ement to Percent Followers gment Data gment Type gent e Results Speed, mi/h Travel Time, minutes OS  e Inputs Type d FFS Ind and Capacity al Demand Flow Rate, veh/h In Factor Capacity, veh/h Interest Class Ope Coefficient (m) Coefficient (m) G Lane Effective Length? ement to Percent Followers Inputs Input	g Lane Effective Length? No ement to Percent Followers 0.0  gment Data gment Type	g Lane Effective Length? ement to Percent Followers  gment Data gment Type  gent 4030  e Results  Speed, mi/h  GS  B  Segm  e Inputs  Type  Passing Zone  Measured  Measured  A57  Measure	guent Data gment Type	guent Data gment Data gment Data gment Data gment Type gent gent gent gent gent gent gent gen	

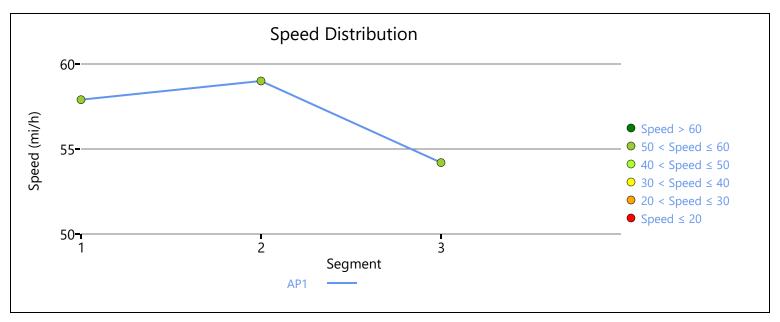


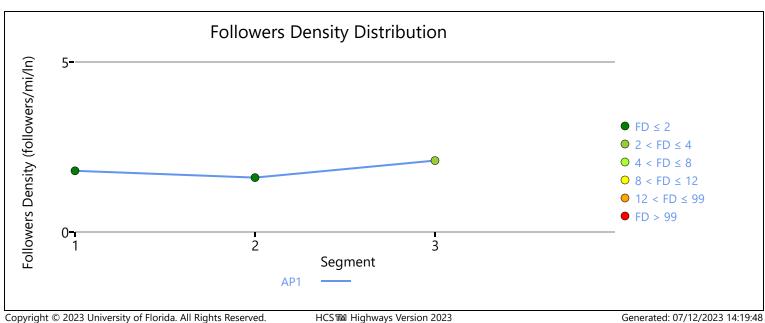


Section 10 NB No-Build.xuf

		HCS Two-L	ane	Highway Re	port	
Pro	oject Information					
Ana	lyst	Cameron Manley		Date		7/11/2023
Age	ncy	WSP		Analysis Year		2045
Juris	sdiction	District 8		Time Analyzed		AM Peak
Proj	ect Description	otion US 127 2+1 Study Units			U.S. Customary	
			Segn	nent 1		
Ve	hicle Inputs					
Seg	ment Type	Passing Constrained		Length, ft		670
Mea	asured FFS	Measured		Free-Flow Speed, mi/h		60.0
De	mand and Capacity	<u>'</u>		·		
Dire	ectional Demand Flow Rate, veh/h	255		Opposing Demand Flow Rate, veh/h		-
Peal	k Hour Factor	0.94		Total Trucks, %		13.00
Seg	ment Capacity, veh/h	1700		Demand/Capacity (D/C)		0.15
Int	ermediate Results	<u>'</u>				
Seg	ment Vertical Class 1		Free-Flow Speed, mi/h		60.0	
Spe	ed Slope Coefficient (m) 4.57372			Speed Power Coefficient (p)		0.41674
PF S	F Slope Coefficient (m) -1.39545			PF Power Coefficient (p)		0.73788
In Passing Lane Effective Length? No		No			Total Segment Density, veh/mi/ln	
%ln	%Improvement to Percent Followers 0.0		%Improvement to Speed		0.0	
Su	bsegment Data					
#	Segment Type	Length, ft	Rac	dius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	670	-	-		57.9
Ve	hicle Results					
Ave	erage Speed, mi/h 57.9		Percent Followers, %		39.9	
Segment Travel Time, minutes 0.13		0.13	0.13		Follower Density (FD), followers/mi/ln	
Vehicle LOS		A				
		<u>'</u>	Segn	nent 2		
Ve	hicle Inputs					
Segment Type Passing Zone			Length, ft		12335	
Measured FFS Measured			Free-Flow Speed, mi/h		65.0	
De	mand and Capacity					
	ctional Demand Flow Rate, veh/h 255			Opposing Deman	266	
	k Hour Factor			Total Trucks, %		13.00
	Segment Capacity, veh/h 1700		Demand/Capacity (D/C)		0.15	
	ermediate Results					

207	0.33			1.8	A	
VMT veh-mi/AP	VHD veh-h/p	o	Followe	r Density, followers/ mi/ln	LOS	
y Results						
OS	В					
t Travel Time, minutes	1.09		Follower Dens	ity (FD), followers/mi/lr	2.1	
Speed, mi/h	54.2		Percent Follow	vers, %	44.3	
e Results						
ngent	5190	-		-	54.2	
gment Type	Length, ft	Radi	us, ft	Superelevation, %	Average Speed, mi/h	
gment Data						
vement to Percent Followers	0.0		%Improvement to Speed 0.0			
g Lane Effective Length?	No			-	2.1	
Coefficient (m)	-1.66085			·	0.76516	
ope Coefficient (m)	19.93428		•	·	0.65956	
t Vertical Class	4		Free-Flow Spe	ed, mi/h	60.0	
nediate Results						
t Capacity, veh/h	1700		Demand/Capa	city (D/C)	0.15	
ur Factor	0.94				13.00	
Directional Demand Flow Rate, veh/h 255			Opposing Der	nand Flow Rate, veh/h	-	
nd and Capacity						
	Measured Free-Flow		rree-Flow Spe	ea, mi/n	60.0	
	-			ad milh	5190	
•			1 2 6		5400	
a lumiita						
		Segm	ent 3			
OS	А					
t Travel Time, minutes	2.37		Follower Dens	ity (FD), followers/mi/lr	1.6	
Speed, mi/h	59.0		Percent Follow	vers, %	38.1	
e Results						
ngent	12335	-		-	59.0	
gment Type	Length, ft	Radi	us, ft	Superelevation, %	Average Speed, mi/h	
gment Data						
vement to Percent Followers	0.0		%Improvemer	nt to Speed	0.0	
g Lane Effective Length?	No		Total Segment	: Density, veh/mi/ln	1.6	
Coefficient (m)	-1.49830	-1.49830 I		ficient (p)	0.83371	
ope Coefficient (m)	21.77233	21.77235		Coefficient (p)	0.69527	
	g Lane Effective Length? ement to Percent Followers gment Data gment Type gent e Results Speed, mi/h Travel Time, minutes OS  e Inputs Type d FFS Ind and Capacity al Demand Flow Rate, veh/h our Factor Capacity, veh/h Interest Class Ope Coefficient (m) Coefficient (m) G Lane Effective Length? ement to Percent Followers gment Data gment Type Ingent Ing	g Lane Effective Length? ement to Percent Followers  gment Data gment Type  Igent  Ige	g Lane Effective Length? ement to Percent Followers  gment Data gment Type  gent 12335 -  e Results  Speed, mi/h 59.0  Travel Time, minutes 2.37  OS A  Segmand A  Graph Brown	glane Effective Length? No Total Segment gement to Percent Followers 0.0 %Improvemer gement Type	guene Effective Length? No Total Segment Density, veh/mi/ln ement to Percent Followers 0.0 %Improvement to Speed  gment Type	





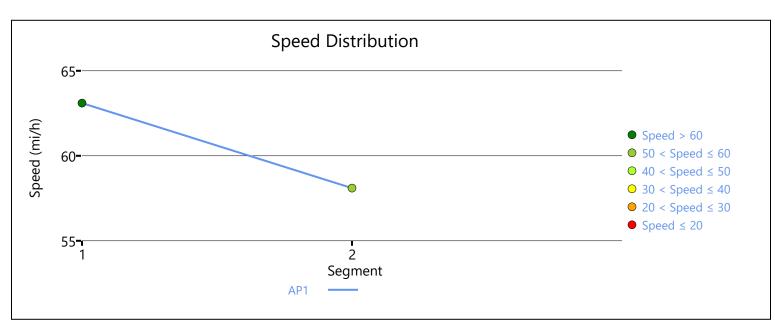
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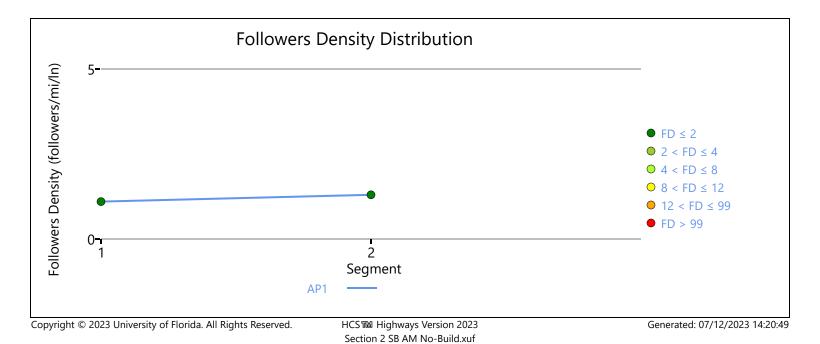
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		HCS Two-La	ane	Highway Re	port	
Pro	oject Information					
Ana	lyst	Cameron Manley		Date		7/11/2023
Age	ncy	WSP		Analysis Year		2045
Juris	sdiction	District 8		Time Analyzed		AM Peak
Proj	ect Description	US 127 2+1 Study		Units		U.S. Customary
		9	Segn	nent 1		
Vel	hicle Inputs					
Segi	ment Type	Passing Zone		Length, ft		3485
Mea	asured FFS	Measured		Free-Flow Speed,	mi/h	65.0
De	mand and Capacity	<u>'</u>				<u>'</u>
Dire	ctional Demand Flow Rate, veh/h	223		Opposing Deman	d Flow Rate, veh/h	309
Peak	k Hour Factor	0.94		Total Trucks, %		13.00
Segi	ment Capacity, veh/h	1700		Demand/Capacity	(D/C)	0.13
Int	ermediate Results					
Segi	ment Vertical Class	2		Free-Flow Speed,	mi/h	65.0
Spe	ed Slope Coefficient (m)	ient (m) 7.95636 Speed Power Coefficient (p)		0.67280		
PF S	ilope Coefficient (m)	nt (m) -1.20216 PF Power Coefficient (p)		0.81518		
In Pa	assing Lane Effective Length?	tive Length? No Total Segment Density, veh/mi/ln		1.1		
%lm	provement to Percent Followers	0.0		%Improvement to	Speed	0.0
Sul	bsegment Data					
#	Segment Type	Length, ft	Rad	lius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	3485	T-		-	63.1
Vel	hicle Results					
Avei	rage Speed, mi/h	63.1		Percent Followers,	, %	29.8
Segi	ment Travel Time, minutes	0.63		Follower Density (	FD), followers/mi/ln	1.1
Vehi	icle LOS	А				
		9	Segn	nent 2		
Vel	hicle Inputs					
Segi	ment Type	Passing Constrained		Length, ft		2635
	asured FFS	Measured		Free-Flow Speed,	mi/h	60.0
De	mand and Capacity					
Dire	ctional Demand Flow Rate, veh/h	223		Opposing Deman	d Flow Rate, veh/h	-
	K Hour Factor	0.94		Total Trucks, %		13.00
	C I loui Tuctoi			Total Hacks, 70		

Segn	ment Vertical Class	1	Fre	Free-Flow Speed, mi/h		60.0
Spee	ed Slope Coefficient (m)	4.59496	Sp	eed Power Coet	fficient (p)	0.41674
PF Slo	lope Coefficient (m)	-1.33880	PF	Power Coefficie	ent (p)	0.75516
In Pa	ssing Lane Effective Length?	No	Tot	tal Segment De	nsity, veh/mi/ln	1.3
%lmp	provement to Percent Followers	0.0	%lı	mprovement to	Speed	0.0
Sub	osegment Data					
#	Segment Type	Length, ft	Radius,	ft	Superelevation, %	Average Speed, mi/h
1	Tangent	2635	-		-	58.1
Veh	nicle Results					
Avera	age Speed, mi/h	58.1	Pei	Percent Followers, %		35.1
Segn	nent Travel Time, minutes	0.52	Fol	Follower Density (FD), followers/mi/ln		1.3
Vehic	cle LOS	А				
Faci	ility Results					
т	VMT veh-mi/AP	VHD veh-h/p			ensity, followers/ mi/ln	LOS
1	61	0.03			1.2	А





Project Information  Analyst Cameron Manley Date 7/11/2023 Agency WSP Analysis Year 2045 Jurisdiction District 8 Time Analyzed AM Peak Project Description US 127 2+1 Study Units U.S. Custon  Segment 1  Vehicle Inputs  Segment Type Passing Constrained Length, ft 8660 Measured FFS Measured Free-Flow Speed, mi/h 65.0  Demand and Capacity  Directional Demand Flow Rate, veh/h 181 Opposing Demand Flow Rate, veh/h -	
Agency WSP Analysis Year 2045  Jurisdiction District 8 Time Analyzed AM Peak  Project Description US 127 2+1 Study Units U.S. Custon  Segment 1  Vehicle Inputs  Segment Type Passing Constrained Length, ft 8660  Measured FFS Measured Free-Flow Speed, mi/h 65.0  Demand and Capacity	
Jurisdiction District 8 Time Analyzed AM Peak Project Description US 127 2+1 Study Units U.S. Custon  Segment 1  Vehicle Inputs  Segment Type Passing Constrained Length, ft 8660  Measured FFS Measured Free-Flow Speed, mi/h 65.0  Demand and Capacity	
Project Description  US 127 2+1 Study  Units  U.S. Custon  Segment 1  Vehicle Inputs  Segment Type  Passing Constrained  Length, ft  8660  Measured FFS  Measured  Free-Flow Speed, mi/h  65.0  Demand and Capacity	
Segment 1  Vehicle Inputs  Segment Type Passing Constrained Length, ft 8660 Measured FFS Measured Free-Flow Speed, mi/h 65.0  Demand and Capacity	
Vehicle Inputs         Segment Type       Passing Constrained       Length, ft       8660         Measured FFS       Measured       Free-Flow Speed, mi/h       65.0         Demand and Capacity	nary
Segment Type Passing Constrained Length, ft 8660  Measured FFS Measured Free-Flow Speed, mi/h 65.0  Demand and Capacity	
Measured FFS Measured Free-Flow Speed, mi/h 65.0  Demand and Capacity	
Demand and Capacity	
Directional Demand Flow Rate, veh/h 181 Opposing Demand Flow Rate, veh/h -	
Peak Hour Factor 0.94 Total Trucks, % 13.00	
Segment Capacity, veh/h 1700 Demand/Capacity (D/C) 0.11	
Intermediate Results	
Segment Vertical Class 2 Free-Flow Speed, mi/h 65.0	
Speed Slope Coefficient (m) 10.57846 Speed Power Coefficient (p) 0.57732	
PF Slope Coefficient (m) -1.29399 PF Power Coefficient (p) 0.75228	
In Passing Lane Effective Length? No Total Segment Density, veh/mi/ln 0.9	
%Improvement to Percent Followers 0.0 %Improvement to Speed 0.0	
Subsegment Data	
# Segment Type Length, ft Radius, ft Superelevation, % Average Sp	eed, mi/h
1 Tangent 8660 62.5	
Vehicle Results	
Average Speed, mi/h 62.5 Percent Followers, % 30.1	
Segment Travel Time, minutes 1.57 Follower Density (FD), followers/mi/ln 0.9	
Vehicle LOS A	
Facility Results	
T VMT VHD Follower Density, followers/ LC veh-mi/AP veh-h/p mi/ln	os
1 70 0.04 0.9	Ą

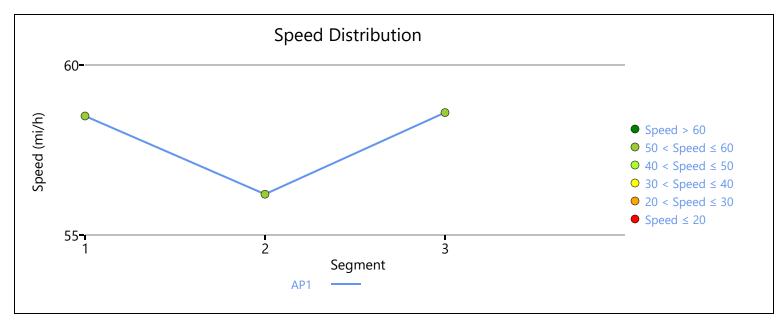
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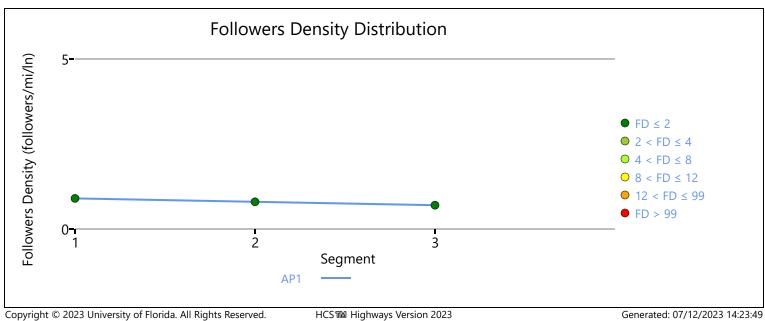
		HCS Two-Lar	ne Hig	ghway Re	port	
Projec	t Information					
Analyst		Cameron Manley	Dat	te		7/11/2023
Agency		WSP	Ana	alysis Year		2045
Jurisdictio	on	District 8	Tim	ne Analyzed		AM Peak
Project D	escription	US 127 2+1 Study	Uni	its		U.S. Customary
		Se	egmen	nt 1		
Vehicle	e Inputs					
Segment	Туре	Passing Constrained	Ler	ngth, ft		5655
Measured	d FFS	Measured	Fre	e-Flow Speed, ı	mi/h	65.0
Demar	nd and Capacity					
Direction	al Demand Flow Rate, veh/h	181	Ор	posing Demand	d Flow Rate, veh/h	-
Peak Hou	ır Factor	0.94 Total Trucks, %			13.00	
Segment Capacity, veh/h		1700		Demand/Capacity (D/C)		0.11
Interm	ediate Results					
Segment	Vertical Class	2	Fre	e-Flow Speed, i	mi/h	65.0
Speed Slo	ope Coefficient (m)	9.46227	Spe	eed Power Coef	ficient (p)	0.56577
PF Slope	Coefficient (m)	-1.29188	PF	Power Coefficie	ent (p)	0.76223
In Passing	g Lane Effective Length?	No	Tot	al Segment Der	nsity, veh/mi/ln	0.9
%Improv	ement to Percent Followers	0.0	%lr	mprovement to	Speed	0.0
Subse	gment Data					
# Seg	gment Type	Length, ft	Radius,	ft	Superelevation, %	Average Speed, mi/h
1 Tan	ngent	5655	-		-	62.7
Vehicle	e Results					
Average S	Speed, mi/h	62.7	Per	cent Followers,	%	29.6
Segment	Travel Time, minutes	1.02	Fol	lower Density (I	FD), followers/mi/ln	0.9
Vehicle LO	OS	А				
Facility			•			
	y Results					
Т	VMT veh-mi/AP	VHD veh-h/p			ensity, followers/ mi/ln	LOS

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	HCS Two-l	_ane	Highway Re	eport	
Project Information					
Analyst	Cameron Manley		Date		7/11/2023
Agency	WSP		Analysis Year		2045
Jurisdiction	District 8		Time Analyzed		AM Peak
Project Description	US 127 2+1 Study		Units		U.S. Customary
	<u>'</u>	Segn	nent 1		<u>'</u>
Vehicle Inputs					
Segment Type	Passing Constrained	d	Length, ft		2175
Measured FFS	Measured		Free-Flow Speed,	mi/h	60.0
Demand and Capacity					<u> </u>
Directional Demand Flow Rate, veh/h	170		Opposing Demar	nd Flow Rate, veh/h	-
Peak Hour Factor	0.94		Total Trucks, %		13.00
Segment Capacity, veh/h	1700		Demand/Capacity (D/C)		0.10
Intermediate Results					<u> </u>
Segment Vertical Class	1		Free-Flow Speed,	mi/h	60.0
Speed Slope Coefficient (m)	4.58831			efficient (p)	0.41674
PF Slope Coefficient (m)	-1.35401	-1.35401 PF Power Coefficient (p)		ent (p)	0.75077
In Passing Lane Effective Length?	No	No Total Segment Density, veh/mi/ln		0.9	
%Improvement to Percent Followers	0.0		%Improvement to	o Speed	0.0
Subsegment Data	•		•		
# Segment Type	Length, ft	Rac	dius, ft	Superelevation, %	Average Speed, mi/h
1 Tangent	2175	1-		-	58.5
Vehicle Results	_			<u>'</u>	
Average Speed, mi/h	58.5		Percent Followers	5, %	30.1
Segment Travel Time, minutes	0.42		Follower Density	(FD), followers/mi/ln	0.9
Vehicle LOS	A		İ		
		Segn	nent 2		<u>'</u>
Vehicle Inputs					
Segment Type	Passing Zone		Length, ft		15970
	Measured		Free-Flow Speed,	mi/h	65.0
Measured FFS					
Demand and Capacity					
Demand and Capacity	170		Opposing Demar	nd Flow Rate, veh/h	298
	170		Opposing Demar	nd Flow Rate, veh/h	298

ment Type gent  Results  peed, mi/h Travel Time, minutes  Results  VMT veh-mi/AP	Length, ft 4745  58.6 0.92 A  VHD veh-h/p		rcent Followers, ollower Density (	Superelevation, %  -  %  FD), followers/mi/ln  ensity, followers/ mi/ln	25.2 0.7
ment Type gent  Results  peed, mi/h  Travel Time, minutes	58.6 0.92	- Pe	rcent Followers,	%	58.6 25.2
ment Type gent  Results peed, mi/h Travel Time, minutes	58.6 0.92	- Pe	rcent Followers,	%	58.6 25.2
ment Type gent  Results peed, mi/h	4745 58.6	- Pe	rcent Followers,	%	58.6 25.2
ment Type gent • <b>Results</b>	4745	-		-	58.6
ment Type gent	-	Radius,	ft	Superelevation, %	
ment Type	-	Radius,	ft	Superelevation, %	
ment Type	-	Radius,	ft	Superelevation, %	
ment Data					
	0.0	%	Improvement to	Speed	0.0
					0.7
	+			·	0.80436
pe Coefficient (m)	8.56483		•		0.68029
Vertical Class	2		· ·		60.0
ediate Results					
Capacity, veh/h	1700	De	emand/Capacity	(D/C)	0.10
	+				13.00
al Demand Flow Rate, veh/h	170			d Flow Rate, veh/h	298
	Ivicasuleu	171	ce now speed,	1111/11	00.0
	-			mi/h	4745 60.0
-	Dessire 7 and	l.			4745
Innute					
	S	egme	nt 3		
)S	А				
Travel Time, minutes	3.23	Fc	llower Density (	FD), followers/mi/ln	0.8
peed, mi/h	56.2	Pe	rcent Followers,	. %	27.8
Results					
gent	15970	-		-	56.2
ment Type	Length, ft	Radius,	ft	Superelevation, %	Average Speed, mi/h
ment Data					
ement to Percent Followers	0.0	%	Improvement to	Speed	0.0
Lane Effective Length?	No	То	tal Segment De	nsity, veh/mi/ln	0.8
Coefficient (m)	-1.56089		Power Coefficie	ent (p)	0.88609
pe Coefficient (m)	34.23774		eed Power Coe	fficient (p)	0.51043
	Coefficient (m)  Lane Effective Length?  ment to Percent Followers  ment Data  ment Type  gent  Results  peed, mi/h  Travel Time, minutes  S  Inputs  Type  FFS  d and Capacity  I Demand Flow Rate, veh/h  Factor  Capacity, veh/h  ediate Results  //ertical Class  pe Coefficient (m)  Coefficient (m)  Lane Effective Length?  ment to Percent Followers	pe Coefficient (m) 34.23774 Coefficient (m) -1.56089 Lane Effective Length? No ment to Percent Followers 0.0  ment Type	pe Coefficient (m) 34.23774 Sp. Coefficient (m) -1.56089 PF. Lane Effective Length? No To ment to Percent Followers 0.0 %  ment Type	pe Coefficient (m) 34.23774 Speed Power Coefficient (m) -1.56089 PF Power Coefficient (m) -1.56089 PF Power Coefficient (m) Total Segment Dement to Percent Followers  ment Data  ment Type Length, ft Percent Followers  Results  peed, mi/h Fravel Time, minutes Segment 3  Inputs  Type Passing Zone Length, ft Free-Flow Speed, Measured Free-Flow Speed, Measur	per Coefficient (m)  34.23774  Speed Power Coefficient (p)  1.56089  PF Power Coefficient (p)  Total Segment Density, veh/mi/In  ment to Percent Followers  ment Type  Length, ft  15970  Results  peed, mi/h  fravel Time, minutes  3.23  Follower Density (FD), followers/mi/In  Segment 3  Inputs  Inputs  Inputs  I Demand Flow Rate, veh/h  Factor  0.94  Demand/Capacity (D/C)  Percent Follow Rate, veh/h  1700  Demand/Capacity (D/C)  Percent Followers (Machael Capacity)  I Demand Flow Rate, veh/h  1700  Demand/Capacity (D/C)  Percent Followers (Machael Capacity)  I Demand Flow Rate, veh/h  1700  Demand/Capacity (D/C)  Percent Followers (D/C)  Percent Followers (Machael Capacity)  I Demand Flow Rate, veh/h  1700  Demand/Capacity (D/C)  Percent Followers (Machael Capacity)  I Demand Flow Rate, veh/h  1700  Demand/Capacity (D/C)  Percent Followers (Machael Capacity)  Percent Followers (Machael Capacity)  I Demand Flow Rate, veh/h  1700  Demand/Capacity (D/C)  Percent Followers (Machael Capacity)  Percent Followers

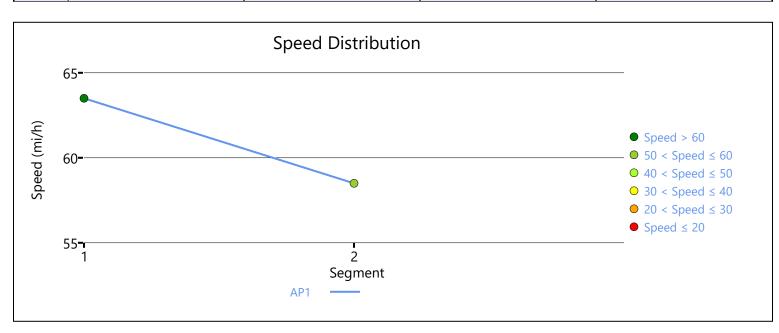


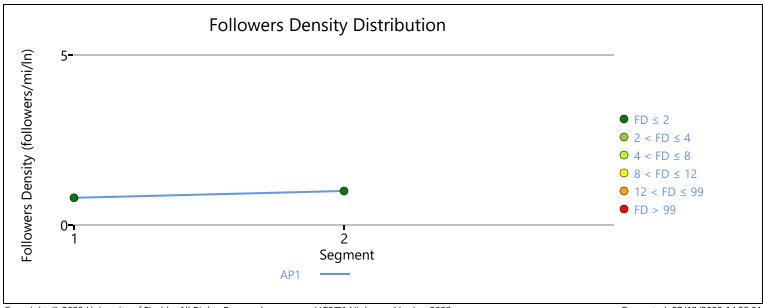


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	HCS Two	-Lane	Highway Re	port	
Project Information					
Analyst	Cameron Manley	<i>'</i>	Date		7/11/2023
Agency	WSP		Analysis Year		2045
Jurisdiction	District 8		Time Analyzed		AM Peak
Project Description	US 127 2+1 Stud	у	Units		U.S. Customary
		Segn	nent 1		
Vehicle Inputs					
Segment Type	Passing Constrain	ned	Length, ft		2455
Measured FFS	Measured		Free-Flow Speed,	mi/h	65.0
Demand and Capacity					
Directional Demand Flow Rate, veh/l	n 170		Opposing Deman	d Flow Rate, veh/h	-
Peak Hour Factor	0.94		Total Trucks, %		8.00
Segment Capacity, veh/h	1700		Demand/Capacity (D/C)		0.10
Intermediate Results					
Segment Vertical Class	3		Free-Flow Speed,	mi/h	65.0
Speed Slope Coefficient (m)	10.20067		Speed Power Coe	fficient (p)	0.73145
PF Slope Coefficient (m)	-1.36682	-1.36682 PF Power Coe		ent (p)	0.76506
In Passing Lane Effective Length?	No	No Total Segment Density, veh/mi/ln		0.8	
%Improvement to Percent Followers	0.0		%Improvement to	Speed	0.0
Subsegment Data					
# Segment Type	Length, ft	Rac	lius, ft	Superelevation, %	Average Speed, mi/h
1 Tangent	2455	-		-	63.5
Vehicle Results					
Average Speed, mi/h	63.5		Percent Followers	, %	29.7
Segment Travel Time, minutes	0.44		Follower Density	(FD), followers/mi/ln	0.8
Vehicle LOS	А				
		Segn	nent 2		·
Vehicle Inputs					
Segment Type	Passing Constrain	ned	Length, ft		1590
Measured FFS	Measured		Free-Flow Speed,	mi/h	60.0
Demand and Capacity					
Directional Demand Flow Rate, veh/h	n 170		Opposing Deman	d Flow Rate, veh/h	-
Peak Hour Factor	0.94		Total Trucks, %		8.00
Segment Capacity, veh/h	1700		Demand/Capacity	' (D/C)	0.10
Intermediate Results					

Segm	nent Vertical Class	2	Free	Free-Flow Speed, mi/h		60.0
Speed	d Slope Coefficient (m)	6.35031	Spe	ed Power Coef	fficient (p)	0.54196
PF Slo	ope Coefficient (m)	-1.47120	PF I	Power Coefficie	ent (p)	0.72782
In Pas	ssing Lane Effective Length?	No	Tota	al Segment De	nsity, veh/mi/ln	1.0
%lmp	provement to Percent Followers	0.0	%In	nprovement to	Speed	0.0
Sub	segment Data					
#	Segment Type	Length, ft	Radius, f	t	Superelevation, %	Average Speed, mi/h
1	Tangent	1590	-	-		58.5
Veh	icle Results					
Avera	age Speed, mi/h	58.5	Per	Percent Followers, %		33.3
Segm	nent Travel Time, minutes	0.31	Foll	Follower Density (FD), followers/mi/ln		1.0
Vehic	ile LOS	А				
Faci	lity Results					
Т	VMT veh-mi/AP	VHD veh-h/p		1	ensity, followers/ mi/ln	LOS
1	31	0.01			0.9	A





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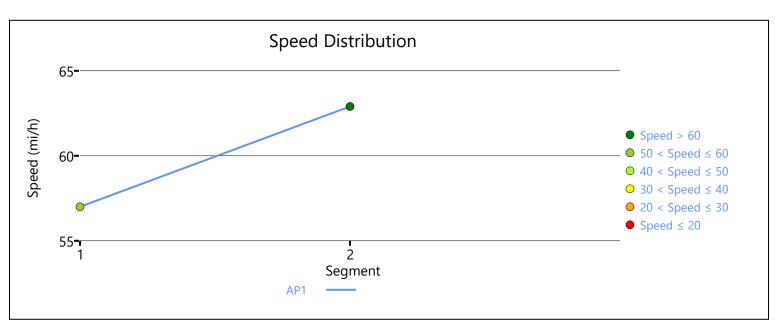
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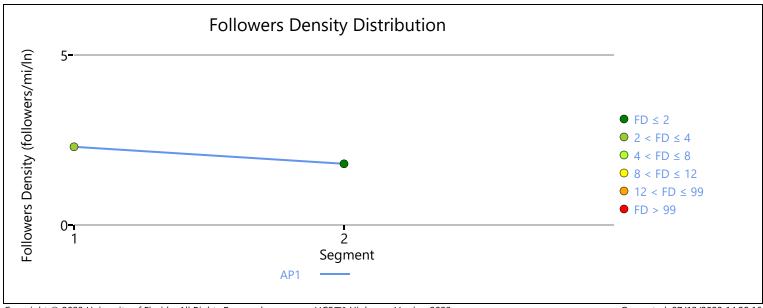
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		HCS Two-La	ne Hi	ghway Re	port	
Project	Information					
Analyst		Cameron Manley	D	ate		7/11/2023
Agency		WSP	Aı	nalysis Year		2045
Jurisdictio	n	District 8	Ti	me Analyzed		AM Peak
Project De	scription	US 127 2+1 Study	U	nits		U.S. Customary
		S	egme	nt 1		
Vehicle	Inputs					
Segment T	Гуре	Passing Zone	Le	ength, ft		8135
Measured	FFS	Measured	Fr	ee-Flow Speed,	mi/h	65.0
Deman	d and Capacity	•				
Directiona	l Demand Flow Rate, veh/h	277	0	pposing Deman	d Flow Rate, veh/h	436
Peak Hour	Factor	0.94	To	Total Trucks, %		8.00
Segment C	egment Capacity, veh/h 1700 Demand/Capacit		emand/Capacity	(D/C)	0.16	
Interme	ediate Results	<u>'</u>				
Segment \	/ertical Class	4	Fr	ee-Flow Speed,	mi/h	65.0
Speed Slo	pe Coefficient (m)	17.24251	Sp	peed Power Coe	fficient (p)	0.68018
PF Slope C	Coefficient (m)	-1.49736	PI	Power Coefficie	ent (p)	0.83402
In Passing	Lane Effective Length?	No	To	otal Segment De	nsity, veh/mi/ln	1.9
%Improve	ment to Percent Followers	0.0	%	Improvement to	Speed	0.0
Subseg	ment Data					
# Segr	ment Type	Length, ft	Radius	, ft	Superelevation, %	Average Speed, mi/h
1 Tang	gent	8135	-		-	59.7
Vehicle	Results		<u> </u>			
Average S <sub>l</sub>	peed, mi/h	59.7	Pe	ercent Followers,	, %	40.1
Segment T	Travel Time, minutes	1.55	Fo	ollower Density (	FD), followers/mi/ln	1.9
Vehicle LO	S	А				
Facility	Results	,				
Т	VMT veh-mi/AP	VHD veh-h/p			ensity, followers/ mi/ln	LOS
1	100	0.14		i	1.9	A

		HCS Two-La	ane	Highway Re	port	
Pro	ject Information					
Ana	lyst	Cameron Manley		Date		7/11/2023
Age	ncy	WSP		Analysis Year		2045
Juris	diction	District 8		Time Analyzed		AM Peak
Proj	ect Description	US 127 2+1 Study		Units		U.S. Customary
		9	Segn	nent 1		
Vel	nicle Inputs					
Seg	ment Type	Passing Constrained		Length, ft		2800
Mea	sured FFS	Measured		Free-Flow Speed,	mi/h	60.0
De	mand and Capacity	<u>'</u>		·		
Dire	ctional Demand Flow Rate, veh/h	298		Opposing Deman	d Flow Rate, veh/h	-
Peal	c Hour Factor	0.94		Total Trucks, %		8.00
Seg	ment Capacity, veh/h	1700		Demand/Capacity (D/C)		0.18
Int	ermediate Results	<u>'</u>				
Seg	ment Vertical Class	2		Free-Flow Speed,	mi/h	60.0
Spe	ed Slope Coefficient (m)	7.16531 Speed Power Coefficient (p		fficient (p)	0.54661	
PF S	lope Coefficient (m)	-1.39894 PF Power Coefficient (p)		ent (p)	0.73909	
In Pa	assing Lane Effective Length?	No Total Segment Density, veh/mi/ln		2.3		
%lm	provement to Percent Followers	0.0		%Improvement to	Speed	0.0
Sul	bsegment Data					
#	Segment Type	Length, ft	Rac	dius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	2800	-		-	57.0
Vel	nicle Results					
Ave	rage Speed, mi/h	57.0		Percent Followers	, %	43.5
Seg	ment Travel Time, minutes	0.56		Follower Density	(FD), followers/mi/ln	2.3
Vehi	cle LOS	В				
		9	Segn	nent 2		<u>'</u>
Vel	nicle Inputs					
Seg	ment Type	Passing Zone		Length, ft		3510
	sured FFS	Measured		Free-Flow Speed,	mi/h	65.0
	mand and Capacity					
	ctional Demand Flow Rate, veh/h	298		Opposing Deman	d Flow Rate, veh/h	553
	Hour Factor	0.94		Total Trucks, %	,	8.00
	ment Capacity, veh/h	1700		Demand/Capacity	/ (D/C)	0.18
	ermediate Results			,,,		

Segn	ment Vertical Class	1	Fre	Free-Flow Speed, mi/h		65.0
Spee	ed Slope Coefficient (m)	4.44851	Spe	eed Power Coe	fficient (p)	0.47532
PF SI	lope Coefficient (m)	-1.25195	PF	Power Coefficie	ent (p)	0.80209
In Pa	assing Lane Effective Length?	No	Tot	al Segment De	nsity, veh/mi/ln	1.8
%lmp	provement to Percent Followers	0.0	%lr	nprovement to	Speed	0.0
Sub	osegment Data					
#	Segment Type	Length, ft	Radius, f	ft	Superelevation, %	Average Speed, mi/h
1	Tangent	3510	-		-	62.9
Veh	nicle Results					
Avera	age Speed, mi/h	62.9	Per	Percent Followers, %		37.7
Segn	ment Travel Time, minutes	0.63	Foll	Follower Density (FD), followers/mi/ln		1.8
Vehic	cle LOS	A				
Faci	ility Results		-			
т	VMT veh-mi/AP	VHD veh-h/p			ensity, followers/ mi/ln	LOS
1	84	0.06		2.0		В





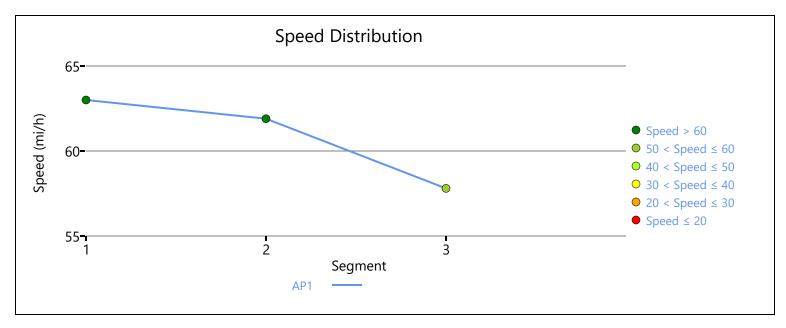
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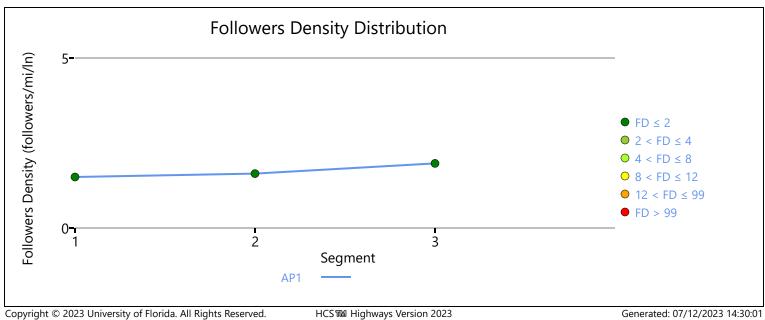
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		HCS Two-L	ane	Highway Re	port	
Pro	ject Information					
Ana	lyst	Cameron Manley		Date		7/11/2023
Age	ncy	WSP		Analysis Year		2045
Juris	diction	District 8		Time Analyzed		AM Peak
Proj	ect Description	US 127 2+1 Study		Units		U.S. Customary
			Segn	nent 1		
Vel	nicle Inputs					
Segi	ment Type	Passing Zone		Length, ft		4060
Mea	sured FFS	Measured		Free-Flow Speed,	mi/h	65.0
De	mand and Capacity	<u>'</u>				<u>'</u>
Dire	ctional Demand Flow Rate, veh/h	266		Opposing Deman	d Flow Rate, veh/h	734
Peak	K Hour Factor	0.94		Total Trucks, %		8.00
Segi	ment Capacity, veh/h	1700		Demand/Capacity (D/C)		0.16
Int	ermediate Results	<u>'</u>				
Segi	Segment Vertical Class 1		Free-Flow Speed,	mi/h	65.0	
Spe	ed Slope Coefficient (m)	4.49188		Speed Power Coef	fficient (p)	0.45654
PF S	lope Coefficient (m)	-1.25479		PF Power Coefficie	ent (p)	0.79678
In Pa	assing Lane Effective Length?	No		Total Segment De	nsity, veh/mi/ln	1.5
%lm	provement to Percent Followers	0.0		%Improvement to	Speed	0.0
Sul	bsegment Data					
#	Segment Type	Length, ft	Rad	lius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	4060	1-		-	63.0
Vel	nicle Results	·			•	
Aver	rage Speed, mi/h	63.0		Percent Followers, %		35.4
Segi	ment Travel Time, minutes	0.73		Follower Density (	FD), followers/mi/ln	1.5
Vehi	cle LOS	А				
			Segn	nent 2		
Vel	nicle Inputs					
Segi	ment Type	Passing Constrained		Length, ft		5605
Mea	sured FFS	Measured		Free-Flow Speed,	mi/h	65.0
De	mand and Capacity					
Dire	ctional Demand Flow Rate, veh/h	266		Opposing Deman	d Flow Rate, veh/h	-
	Hour Factor	0.94		Total Trucks, %		8.00
Peak		1	0.94 Total Trucks, % 1700 Demand/Capac			

1	130	0.08			1.6	A	
т	VMT veh-mi/AP	VHD veh-h/p	)	Follower D	ensity, followers/ mi/ln	LOS	
Facilit	y Results						
Vehicle L	LOS	А					
Segmen	t Travel Time, minutes	0.26		Follower Density	(FD), followers/mi/ln	1.9	
Average	Speed, mi/h	57.8		Percent Followers	5, %	40.9	
Vehicl	le Results						
1 Tai	ngent	1315	-		-	57.8	
# Se	egment Type	Length, ft	Radi	us, ft	Superelevation, %	Average Speed, mi/h	
Subse	gment Data						
%Impro\	vement to Percent Followers	0.0		%Improvement to Speed 0.0			
	ng Lane Effective Length?	No		Total Segment Density, veh/mi/ln		1.9	
	e Coefficient (m)	-1.39609		PF Power Coeffici	·	0.73717	
•	lope Coefficient (m)	4.57372		•	Speed Power Coefficient (p) 0.41674		
Segmen	t Vertical Class	1		Free-Flow Speed, mi/h 60.0		60.0	
Intern	nediate Results						
Segment	t Capacity, veh/h	1700		Demand/Capacity	y (D/C)	0.16	
	K Hour Factor 0.94			Total Trucks, %		8.00	
Direction	irectional Demand Flow Rate, veh/h 266			Opposing Demar	nd Flow Rate, veh/h	-	
Dema	nd and Capacity						
Measure		Measured Free-Flow Speed, mi/h			60.0		
	egment Type Passing Constrained			Length, ft		1315	
	le Inputs						
		·	Segm	ent 3			
Vehicle L	LOS	А					
 Segment	t Travel Time, minutes	1.03		Follower Density	(FD), followers/mi/In	1.6	
 Average	Speed, mi/h	61.9	П	Percent Followers	5, %	37.8	
Vehicl	le Results						
1 Tai	ngent	5605	-		-	61.9	
# Se	egment Type	Length, ft	Radi	us, ft	Superelevation, %	Average Speed, mi/h	
Subse	gment Data						
%Impro\	vement to Percent Followers	0.0		%Improvement to	o Speed	0.0	
In Passin	ng Lane Effective Length?	No	No		ensity, veh/mi/ln	1.6	
PF Slope	e Coefficient (m)	-1.29677		PF Power Coefficient (p)		0.75868	
peea Si	lope Coefficient (m)	8.53726		Speed Power Coefficient (p)		0.55740	

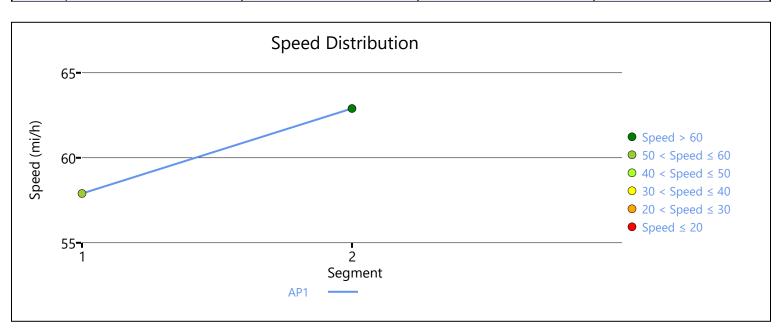


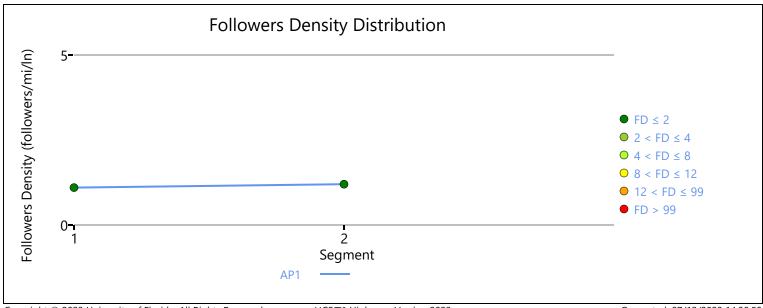


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		HCS Two-La	ane	Highway Re	port	
Pro	eject Information					
Ana	lyst	Cameron Manley		Date		7/11/2023
Age	ncy	WSP		Analysis Year		2045
Juris	diction	District 8		Time Analyzed		AM Peak
Proj	ect Description	US 127 2+1 Study		Units		U.S. Customary
		S	egn	nent 1		
Vel	hicle Inputs					
Segi	ment Type	Passing Zone		Length, ft		5330
Mea	sured FFS	Measured		Free-Flow Speed,	mi/h	60.0
De	mand and Capacity					<u>'</u>
Dire	ctional Demand Flow Rate, veh/h	202		Opposing Deman	d Flow Rate, veh/h	798
Peak	k Hour Factor	0.94		Total Trucks, %		8.00
Segi	ment Capacity, veh/h	1700		Demand/Capacity (D/C)		0.12
Int	ermediate Results	<u>'</u>				
Segi	Segment Vertical Class 2		Free-Flow Speed,	mi/h	60.0	
Spe	ed Slope Coefficient (m)	(m) 8.17558		Speed Power Coef	fficient (p)	0.59680
PF S	lope Coefficient (m)	-1.28299		PF Power Coefficie	ent (p)	0.77307
In Pa	assing Lane Effective Length?	No		Total Segment De	nsity, veh/mi/ln	1.1
%lm	provement to Percent Followers	0.0		%Improvement to	Speed	0.0
Sul	bsegment Data	·				
#	Segment Type	Length, ft	Rad	lius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	5330	-		-	57.9
Vel	hicle Results					
Avei	rage Speed, mi/h	57.9		Percent Followers, %		31.1
Segi	ment Travel Time, minutes	1.05		Follower Density (	FD), followers/mi/ln	1.1
Vehi	icle LOS	А				
		S	Segn	nent 2		<u> </u>
Vel	hicle Inputs					
Segi	ment Type	Passing Zone		Length, ft		3475
	sured FFS	Measured		Free-Flow Speed,	mi/h	65.0
De	mand and Capacity	,				
Dire	ctional Demand Flow Rate, veh/h	223		Opposing Deman	d Flow Rate, veh/h	766
	K Hour Factor	0.94		Total Trucks, %		8.00
Peak				Demand/Capacity (D/C) 0.13		

Segn	nent Vertical Class	2	Fre	Free-Flow Speed, mi/h		65.0
Spee	ed Slope Coefficient (m)	7.28362	Spe	eed Power Coet	fficient (p)	0.59280
PF SI	ope Coefficient (m)	-1.27532	PF	Power Coefficie	ent (p)	0.78506
In Pa	ssing Lane Effective Length?	No	Tot	al Segment De	nsity, veh/mi/ln	1.2
%lmp	provement to Percent Followers	0.0	%lr	mprovement to	Speed	0.0
Sub	osegment Data					
#	Segment Type	Length, ft	Radius,	ft	Superelevation, %	Average Speed, mi/h
1	Tangent	3475	-		-	62.9
Veh	nicle Results					
Avera	age Speed, mi/h	62.9	Per	Percent Followers, %		32.5
Segn	nent Travel Time, minutes	0.63	Fol	llower Density (FD), followers/mi/ln		1.2
Vehic	cle LOS	А				
Faci	ility Results					
т	VMT veh-mi/AP	VHD veh-h/p			ensity, followers/ mi/In	LOS
1	83	0.05			1.1	A



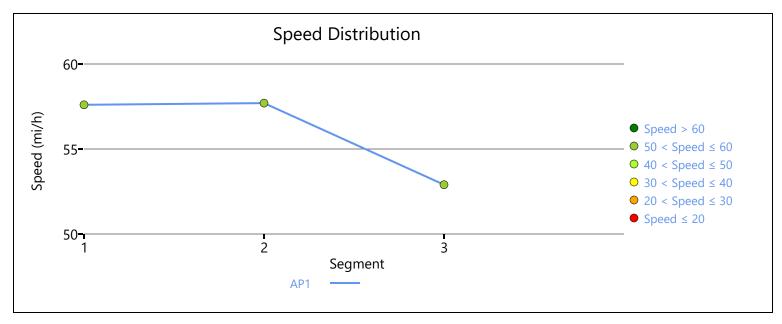


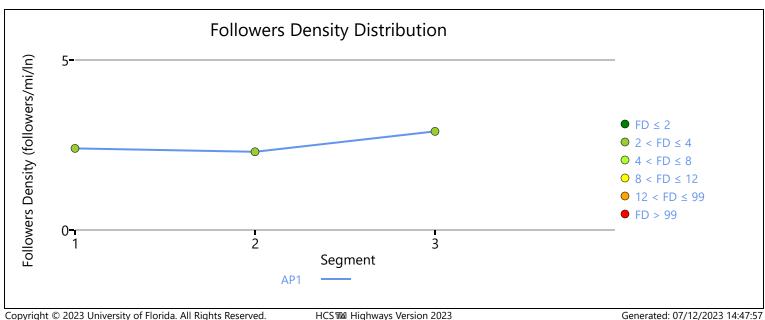
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	HCS Two-L	.ane	Highway Re	eport	
Project Information					
Analyst	Cameron Manley		Date		7/11/2023
Agency	WSP		Analysis Year		2045
Jurisdiction	District 8		Time Analyzed		PM Peak
Project Description	US 127 2+1 Study		Units		U.S. Customary
		Segn	nent 1		
Vehicle Inputs					
Segment Type	Passing Constrained		Length, ft		670
Measured FFS	Measured		Free-Flow Speed,	mi/h	60.0
Demand and Capacity					
Directional Demand Flow Rate, veh/h	309		Opposing Deman	nd Flow Rate, veh/h	-
Peak Hour Factor	0.94	0.94			13.00
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)		y (D/C)	0.18
Intermediate Results					
Segment Vertical Class	t Vertical Class 1		Free-Flow Speed,	mi/h	60.0
Speed Slope Coefficient (m)	4.57372		Speed Power Coe	efficient (p)	0.41674
PF Slope Coefficient (m)	-1.39545		PF Power Coeffici	ent (p)	0.73788
In Passing Lane Effective Length?	No		Total Segment De	ensity, veh/mi/ln	2.4
%Improvement to Percent Followers	0.0		%Improvement to	o Speed	0.0
Subsegment Data	·				
# Segment Type	Length, ft	Rac	dius, ft Superelevation, %		Average Speed, mi/h
1 Tangent	670	-		-	57.6
Vehicle Results				•	
Average Speed, mi/h	57.6		Percent Followers, %		44.3
Segment Travel Time, minutes	0.13		Follower Density (FD), followers/mi/ln		2.4
Vehicle LOS	В				
		Segn	nent 2		
Vehicle Inputs					
Segment Type	Passing Zone		Length, ft		12335
	Measured		Free-Flow Speed,	mi/h	65.0
Measured FFS					
Demand and Capacity					
Demand and Capacity	309		Opposing Deman	nd Flow Rate, veh/h	266
	309		Opposing Deman	nd Flow Rate, veh/h	266

VMT veh-mi/AP	VHD veh-h/				ensity, followers/ mi/ln	LOS
VMT VHD		Follower Density, followers/				
y Results						
OS	В					
Travel Time, minutes	1.11		Follo	wer Density (	FD), followers/mi/ln	2.9
Speed, mi/h	52.9		Perce	ent Followers,	%	49.1
e Results						
ngent	5190	-			-	52.9
gment Type	Length, ft	Ra	dius, ft		Superelevation, %	Average Speed, mi/h
gment Data						
ement to Percent Followers	0.0		%lm <sub>l</sub>	provement to	Speed	0.0
g Lane Effective Length?	No		+			2.9
Coefficient (m)	-1.66085		_	PF Power Coefficient (p) 0.76516		
ope Coefficient (m)	19.93428		Spee	d Power Coef	ficient (p)	0.65956
Vertical Class	4		Free	Free-Flow Speed, mi/h		60.0
nediate Results						
Capacity, veh/h	1700		Dem	and/Capacity	(D/C)	0.18
K Hour Factor 0.94		Total	Trucks, %		13.00	
rectional Demand Flow Rate, veh/h 309		Орро	osing Demand	d Flow Rate, veh/h	-	
nd and Capacity						
					60.0	
		_		mi /h	5190	
ehicle Inputs					5400	
- lawyte						
		Segr	nent	3		
OS	В					
Travel Time, minutes	2.43		Follo	wer Density (	FD), followers/mi/ln	2.3
Speed, mi/h	57.7		Perce	ent Followers,	%	43.0
e Results						
ngent	12335 -				-	57.7
gment Type	Length, ft	Ra	dius, ft		Superelevation, %	Average Speed, mi/h
gment Data						
ement to Percent Followers	0.0		%lm <sub>l</sub>	provement to	Speed	0.0
g Lane Effective Length?	No	No		Segment Der	nsity, veh/mi/ln	2.3
Coefficient (m)	-1.49830		PF Po	PF Power Coefficient (p)		0.83371
ope Coefficient (m)	21.77235		Spee	Speed Power Coefficient (p)		0.69527
	Coefficient (m) g Lane Effective Length? ement to Percent Followers gment Data gment Type gent e Results Speed, mi/h Travel Time, minutes DS e Inputs Type d FFS and and Capacity al Demand Flow Rate, veh/h ar Factor Capacity, veh/h sediate Results Vertical Class Spee Coefficient (m) Coefficient (m) G Lane Effective Length? ement to Percent Followers gment Data gment Type gent e Results Speed, mi/h Travel Time, minutes DS	cope Coefficient (m)  Coefficient (m)  Jane Effective Length?  Rement to Percent Followers  Comment Type  General Type  Results  Speed, mi/h  Travel Time, minutes  Type  And And Capacity  al Demand Flow Rate, veh/h  Tractor  Capacity, veh/h  Rediate Results  Vertical Class  Ope Coefficient (m)  Coefficient Type  Coefficient	pope Coefficient (m)  C	ppe Coefficient (m) Coefficien	spee Coefficient (m)  21.77235  Speed Power Coefficient (m)  1-1.49830  PF Power Coefficient (m)  PF Power Coefficient (m)  1-1.49830  PF Power Coefficient (m)  1-1.49830  PF Power Coefficient (m)  PF Power Coefficient (m)  Percent Followers,  Free-Flow Speed, manual Compacity  Precent Followers,  PF Power Coefficient (m)  19.93428  PF Power Coefficient (m)  PF Power Coefficient (m)  10.466085  PF Power Coefficient (m)  10.466085  PF Power Coefficient (m)  Precent Followers  PRECENT Fol	speed Power Coefficient (m) 21.77235 Speed Power Coefficient (p) Coefficient (m) -1.49830 PF Power Coefficient (p) Guane Effective Length? No Simprovement to Speed  Speed Spe



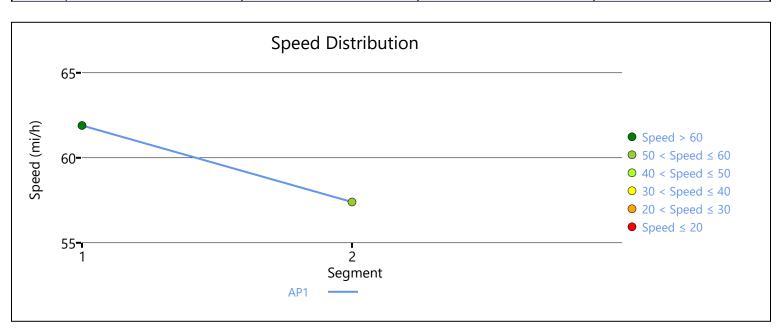


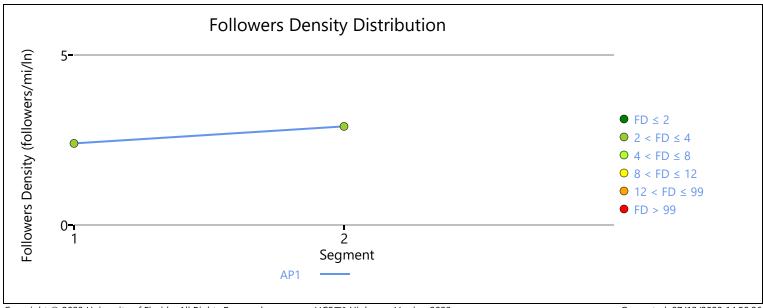
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	HCS Two-	Lane	Highway Re	eport	
Project Information					
Analyst	Cameron Manley		Date		7/11/2023
Agency	WSP		Analysis Year		2045
Jurisdiction	District 8		Time Analyzed		PM Peak
Project Description	US 127 2+1 Study		Units		U.S. Customary
	·	Segn	nent 1		
Vehicle Inputs					
Segment Type	Passing Zone		Length, ft		3485
Measured FFS	Measured		Free-Flow Speed,	mi/h	65.0
Demand and Capacity					
Directional Demand Flow Rate, veh/h	362		Opposing Demar	nd Flow Rate, veh/h	245
Peak Hour Factor	0.94		Total Trucks, %		13.00
Segment Capacity, veh/h	1700		Demand/Capacity (D/C)		0.21
Intermediate Results					
Segment Vertical Class	Vertical Class 2		Free-Flow Speed,	mi/h	65.0
Speed Slope Coefficient (m)	7.91136	7.91136		efficient (p)	0.68990
PF Slope Coefficient (m)	-1.18756		PF Power Coeffici	ent (p)	0.82026
In Passing Lane Effective Length?	No	No		ensity, veh/mi/ln	2.4
%Improvement to Percent Followers	0.0		%Improvement to	o Speed	0.0
Subsegment Data					
# Segment Type	Length, ft	Rac	lius, ft Superelevation, %		Average Speed, mi/h
1 Tangent	3485	-		-	61.9
Vehicle Results					
Average Speed, mi/h	61.9		Percent Followers, %		40.3
Segment Travel Time, minutes	0.64		Follower Density (FD), followers/mi/ln		2.4
Vehicle LOS	В				
		Segn	nent 2		
Vehicle Inputs					
Segment Type	Passing Constraine	ed	Length, ft		2635
	Measured		Free-Flow Speed,	mi/h	60.0
Measured FFS					
Measured FFS  Demand and Capacity					
Demand and Capacity	362		Opposing Demar	nd Flow Rate, veh/h	-
	362		Opposing Demar	nd Flow Rate, veh/h	13.00

Segn	nent Vertical Class	1	Fre	Free-Flow Speed, mi/h		60.0
Spee	ed Slope Coefficient (m)	4.59496	Spe	ed Power Coet	fficient (p)	0.41674
PF Slo	lope Coefficient (m)	-1.33880	PF I	Power Coefficie	ent (p)	0.75516
In Pa	ssing Lane Effective Length?	No	Tota	al Segment De	nsity, veh/mi/ln	2.9
%lmp	provement to Percent Followers	0.0	%lr	nprovement to	Speed	0.0
Sub	osegment Data					
#	Segment Type	Length, ft	Radius, f	t	Superelevation, %	Average Speed, mi/h
1	Tangent	2635	-		-	57.4
Veh	nicle Results					
Avera	age Speed, mi/h	57.4	Per	Percent Followers, %		46.3
Segn	nent Travel Time, minutes	0.52	Foll	ollower Density (FD), followers/mi/ln		2.9
Vehic	cle LOS	В				
Faci	ility Results					
Т	VMT veh-mi/AP	VHD veh-h/p			ensity, followers/ mi/ln	LOS
1	99	0.08			2.6	В





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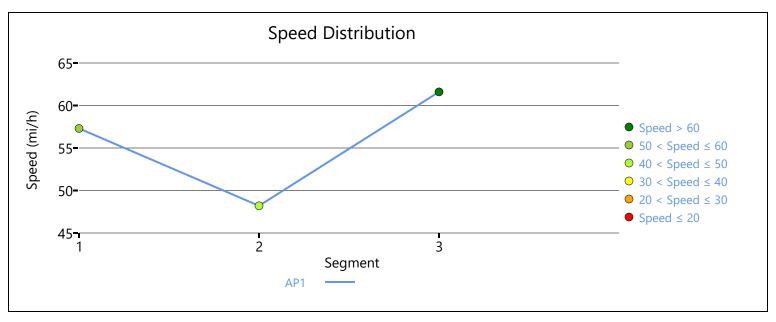
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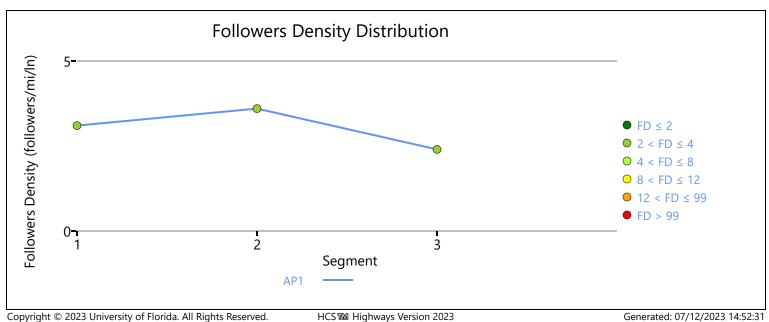
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Project	t Information					
Analyst		Cameron Manley	D	ate		7/11/2023
Agency		WSP	А	nalysis Year		2045
Jurisdictio	on	District 8	Т	ime Analyzed		PM Peak
Project De	escription	US 127 2+1 Study	U	Inits		U.S. Customary
		S	egme	ent 1		
Vehicle	e Inputs					
Segment	Туре	Passing Constrained	L	ength, ft		8660
Measured	I FFS	Measured	F	ree-Flow Speed,	mi/h	65.0
Deman	nd and Capacity					
Directiona	al Demand Flow Rate, veh/h	351	С	Opposing Demand Flow Rate, veh/h		-
Peak Hou	r Factor	0.94	To	Total Trucks, %		13.00
Segment	ment Capacity, veh/h 1700		D	emand/Capacity	(D/C)	0.21
Interm	ediate Results					·
Segment Vertical Class		2	F	ree-Flow Speed,	mi/h	65.0
Speed Slo	ppe Coefficient (m)	10.57846	S	peed Power Coef	fficient (p)	0.57732
PF Slope (	Coefficient (m)	-1.29399	Р	PF Power Coefficient (p)		0.75228
In Passing	Lane Effective Length?	No	To	Total Segment Density, veh/mi/ln		2.6
%Improve	ement to Percent Followers	0.0	%	6Improvement to	0.0	
Subseg	ment Data	·				
# Seg	ment Type	Length, ft	Radius	s, ft	Superelevation, %	Average Speed, mi/h
1 Tan	gent	8660	-		-	60.2
Vehicle	Results					·
Average S	Speed, mi/h	60.2	P	Percent Followers, %		44.5
	Travel Time, minutes	1.63	F	ollower Density (	FD), followers/mi/ln	2.6
Vehicle LC	OS	В				
Facility	Results	,				
т	VMT veh-mi/AP	VHD veh-h/p			ensity, followers/ mi/ln	LOS
1	135	0.16			2.6	В

		HCS Two-La	ne Hi	ghway Re	port	
Project	t Information					
Analyst		Cameron Manley	Da	ate		7/11/2023
Agency		WSP	Aı	nalysis Year		2045
Jurisdictio	on	District 8	Ti	me Analyzed		PM Peak
Project De	escription	US 127 2+1 Study	Uı	nits		U.S. Customary
		S	egme	nt 1		
Vehicle	e Inputs					
Segment	Туре	Passing Constrained		ength, ft		5655
Measured	I FFS	Measured	Fr	ee-Flow Speed,	mi/h	65.0
Deman	nd and Capacity					·
Directiona	al Demand Flow Rate, veh/h	372	0	pposing Deman	d Flow Rate, veh/h	-
Peak Hou	r Factor	0.94	To	Total Trucks, %		13.00
Segment	Capacity, veh/h	1700		emand/Capacity	(D/C)	0.22
Interm	ediate Results	<u>'</u>				
Segment Vertical Class		2	Fr	ee-Flow Speed,	mi/h	65.0
Speed Slo	ppe Coefficient (m)	9.46227	Sp	peed Power Coe	fficient (p)	0.56577
PF Slope (	Coefficient (m)	-1.29188	PF	PF Power Coefficient (p) 0.76223		0.76223
In Passing	Lane Effective Length?	No	To	Total Segment Density, veh/mi/ln		2.8
%Improve	ement to Percent Followers	0.0	%	Improvement to	0.0	
Subseg	ment Data	•				
# Seg	ment Type	Length, ft	Radius	, ft	Superelevation, %	Average Speed, mi/h
1 Tan	gent	5655	-		-	60.5
Vehicle	Results					
Average S	Speed, mi/h	60.5	Pe	Percent Followers, %		45.6
Segment	Travel Time, minutes	1.06	Fc	ollower Density (	FD), followers/mi/ln	2.8
Vehicle LC	OS .	В				
Facility	Results					
Т	VMT veh-mi/AP	VHD veh-h/p			ensity, followers/ mi/ln	LOS
1	94	0.11		i	2.8	В

	HCS Two-	Lane	Highway Re	eport	
Project Information					
Analyst	Cameron Manley		Date		7/11/2023
Agency	WSP		Analysis Year		2045
Jurisdiction	District 8		Time Analyzed		PM Peak
Project Description	US 127 2+1 Study		Units		U.S. Customary
		Segn	nent 1		
Vehicle Inputs					
Segment Type	Passing Constraine	ed	Length, ft		2175
Measured FFS	Measured	-		mi/h	60.0
Demand and Capacity			•		<u>'</u>
Directional Demand Flow Rate, veh/h	372	372		nd Flow Rate, veh/h	-
Peak Hour Factor	0.94	0.94			13.00
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)		y (D/C)	0.22
Intermediate Results			<u>'</u>		
Segment Vertical Class	nt Vertical Class 1		Free-Flow Speed,	mi/h	60.0
Speed Slope Coefficient (m)	4.58831	4.58831		efficient (p)	0.41674
PF Slope Coefficient (m)	-1.35401		PF Power Coeffici	ent (p)	0.75077
In Passing Lane Effective Length?	No	No		ensity, veh/mi/ln	3.1
%Improvement to Percent Followers	0.0		%Improvement to	o Speed	0.0
Subsegment Data					
# Segment Type	Length, ft	Rac	dius, ft Superelevation, %		Average Speed, mi/h
1 Tangent	2175	-		-	57.3
Vehicle Results					
Average Speed, mi/h	57.3		Percent Followers, %		47.5
Segment Travel Time, minutes	0.43		Follower Density (FD), followers/mi/ln		3.1
Vehicle LOS	В				
		Segn	nent 2		
Vehicle Inputs					
Segment Type	Passing Zone		Length, ft		15970
Measured FFS	Measured		Free-Flow Speed,	mi/h	65.0
Demand and Capacity					
<b>Demand and Capacity</b> Directional Demand Flow Rate, veh/h	372		Opposing Demar	nd Flow Rate, veh/h	223
	372 0.94		Opposing Demar	nd Flow Rate, veh/h	223

1	379	1.52			3.3	В
Т	VMT veh-mi/AP	VHD veh-h/p		Follower D	ensity, followers/ mi/ln	LOS
Facility	y Results					
Vehicle L	OS	В				
Segment	Travel Time, minutes	0.88	F	Follower Density	(FD), followers/mi/ln	2.4
Average	Speed, mi/h	61.6	F	Percent Followers	5, %	40.1
Vehicle	e Results					
1 Tar	ngent	4745	-		-	61.6
# Seg	gment Type	Length, ft	Radiu	ıs, ft	Superelevation, %	Average Speed, mi/h
Subse	gment Data					
%Improv	rement to Percent Followers	0.0	ç	%Improvement to	Speed	0.0
	g Lane Effective Length?	No		Total Segment De		2.4
PF Slope	Coefficient (m)	-1.16006	F	PF Power Coeffici	ent (p)	0.82737
Speed Slo	ope Coefficient (m)	8.51069	9	Speed Power Coe	efficient (p)	0.70121
Segment	Vertical Class	2	F	Free-Flow Speed, mi/h 65.0		65.0
Interm	nediate Results					
Segment	Capacity, veh/h	1700		Demand/Capacity	y (D/C)	0.22
	ak Hour Factor 0.94			Total Trucks, %		13.00
Direction	irectional Demand Flow Rate, veh/h 372		(	Opposing Demar	nd Flow Rate, veh/h	223
Demai	nd and Capacity					
Measure	ured FFS Measured Free-Flow Speed, mi/h			mi/h	65.0	
	egment Type Passing Zone			Length, ft	. a	4745
	e Inputs					
		S	Segme	ent 3		
Vehicle L	OS	В				
 Segment	Travel Time, minutes	3.77	F	Follower Density (FD), followers/mi/ln 3.6		3.6
Average	Speed, mi/h	48.2	F	Percent Followers	5, %	46.5
Vehicle	e Results					
1 Tar	ngent	15970	-		-	48.2
# Seg	gment Type	Length, ft	Radiu	ıs, ft	Superelevation, %	Average Speed, mi/h
Subse	gment Data					
%Improv	rement to Percent Followers	0.0	9	%Improvement to	o Speed	0.0
In Passin	g Lane Effective Length?	No	1	Total Segment De	ensity, veh/mi/ln	3.6
PF Slope	Coefficient (m)	-1.51339	F	PF Power Coefficient (p)		0.89309
	·	34.09535		Speed Power Coe	с.ст. (р)	0.54344



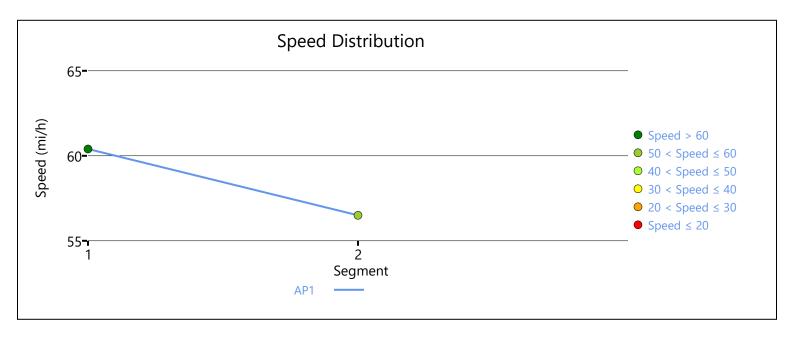


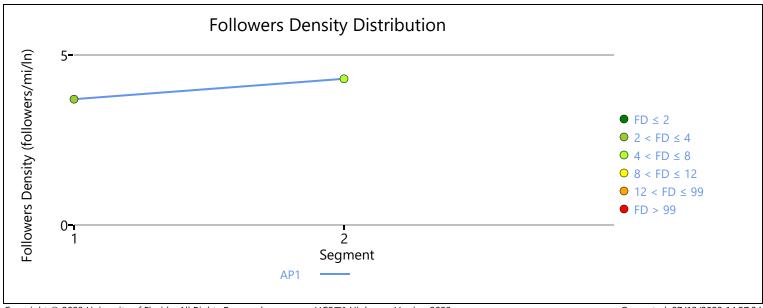
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		HCS Two-l	_ane	Highway Re	port	
Pro	ject Information					
Ana	lyst	Cameron Manley		Date		7/11/2023
Age	ncy	WSP		Analysis Year		2045
Juris	diction	District 8		Time Analyzed		PM Peak
Proj	ect Description	US 127 2+1 Study		Units		U.S. Customary
			Segn	nent 1		
Vel	nicle Inputs					
Segi	ment Type	Passing Constrained	d	Length, ft		2455
Mea	sured FFS	Measured		Free-Flow Speed,	mi/h	65.0
De	mand and Capacity					<u>'</u>
Dire	ctional Demand Flow Rate, veh/h	436		Opposing Deman	d Flow Rate, veh/h	-
Peak	Hour Factor	0.94		Total Trucks, %		8.00
Segi	ment Capacity, veh/h	1700		Demand/Capacity (D/C)		0.26
Int	ermediate Results	<u>'</u>				
Segi	ment Vertical Class	3		Free-Flow Speed, mi/h		65.0
Speed Slope Coefficient (m)		10.20067		Speed Power Coefficient (p)		0.73145
PF Slope Coefficient (m)		-1.36682		PF Power Coefficie	ent (p)	0.76506
In Pa	assing Lane Effective Length?	No		Total Segment De	nsity, veh/mi/ln	3.7
%lm	provement to Percent Followers	0.0		%Improvement to	Speed	0.0
Sul	bsegment Data					
#	Segment Type	Length, ft	Rad	lius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	2455	-		-	60.4
Vel	nicle Results	•				
Avei	rage Speed, mi/h	60.4		Percent Followers,	, %	51.5
Segi	ment Travel Time, minutes	0.46		Follower Density (FD), followers/mi/ln		3.7
Vehi	cle LOS	В	В			
			Segn	nent 2		·
Vel	nicle Inputs					
Segi	ment Type	Passing Constrained	d	Length, ft		1590
	sured FFS	Measured		Free-Flow Speed, mi/h		60.0
De	mand and Capacity					
Dire	ctional Demand Flow Rate, veh/h	436		Opposing Demand	-	
	Hour Factor	0.94		Total Trucks, %		8.00
Peak		ctor 0.94 Total Truc acity, veh/h 1700 Demand/				· ·

Segm	ment Vertical Class	2	Fre	Free-Flow Speed, mi/h		60.0			
Spee	ed Slope Coefficient (m)	6.35031	Spe	eed Power Coet	fficient (p)	0.54196			
PF Slo	lope Coefficient (m)	-1.47120	PF	Power Coefficie	ent (p)	0.72782			
In Pa	ssing Lane Effective Length?	No	Tot	al Segment De	nsity, veh/mi/ln	4.3			
%lmp	provement to Percent Followers	0.0	%Ir	nprovement to	Speed	0.0			
Sub	osegment Data								
#	Segment Type	Length, ft	Radius,	ft	Superelevation, %	Average Speed, mi/h			
1	Tangent	1590	-		-	56.5			
Veh	nicle Results								
Avera	age Speed, mi/h	56.5	Per	cent Followers,	%	55.3			
Segn	nent Travel Time, minutes	0.32	Fol	lower Density (	FD), followers/mi/ln	4.3			
Vehic	cle LOS	С							
Faci	Facility Results								
т	VMT veh-mi/AP	VHD veh-h/p			ensity, followers/ mi/ln	LOS			
1	79	0.09			3.9	В			





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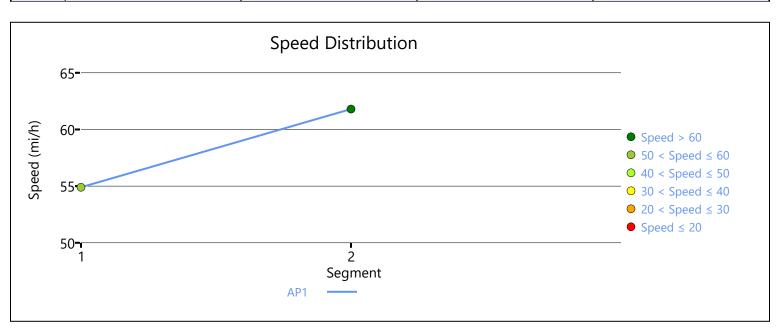
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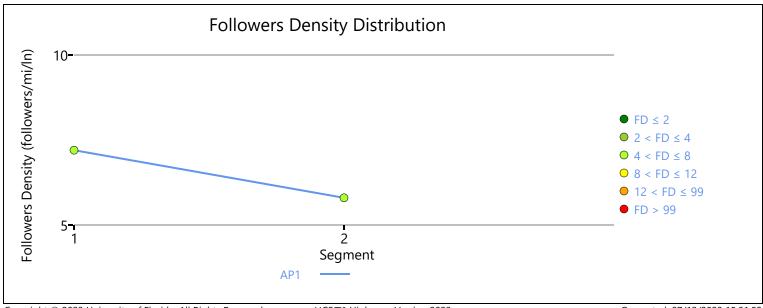
	HCS Two-Lar	ne Hi	ghway Re	port	
Project Information					
Analyst	Cameron Manley	Da	te		7/11/2023
Agency	WSP	An	alysis Year		2045
Jurisdiction	District 8	Tin	ne Analyzed		PM Peak
Project Description	US 127 2+1 Study	Un	its		U.S. Customary
	Se	egmer	nt 1		
Vehicle Inputs					
Segment Type	Passing Zone	Lei	ngth, ft		8135
Measured FFS	Measured	Fre	e-Flow Speed, i	mi/h	65.0
Demand and Capacity					·
Directional Demand Flow Rate, veh/h	511		posing Demand	d Flow Rate, veh/h	309
Peak Hour Factor	0.94		tal Trucks, %		8.00
Segment Capacity, veh/h	1700		Demand/Capacity (D/C)		0.30
Intermediate Results					·
Segment Vertical Class	4	Fre	e-Flow Speed, i	mi/h	65.0
Speed Slope Coefficient (m)	17.05088		eed Power Coef	ficient (p)	0.71926
PF Slope Coefficient (m)	-1.44663		Power Coefficie	ent (p)	0.84428
In Passing Lane Effective Length?	No		tal Segment Der	nsity, veh/mi/ln	5.1
%Improvement to Percent Followers	0.0	%I	mprovement to	Speed	0.0
Subsegment Data					
# Segment Type	Length, ft	Radius,	ft	Superelevation, %	Average Speed, mi/h
1 Tangent	8135	-		-	56.0
Vehicle Results					·
Average Speed, mi/h	56.0		Percent Followers, %		56.0
Segment Travel Time, minutes	1.65		Follower Density (FD), followers/mi/In		5.1
Vehicle LOS	С				
Facility Results					
T VMT veh-mi/AP	VHD veh-h/p		Follower Density, followers/ mi/In		LOS
1 185	0.46			5.1	С

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		HCS Two-L	.ane	Highway Re	port	
Pro	oject Information					
Ana	ılyst	Cameron Manley		Date		7/11/2023
Age	ency	WSP		Analysis Year		2045
Juri	sdiction	District 8		Time Analyzed		PM Peak
Proj	ject Description	US 127 2+1 Study		Units		U.S. Customary
			Segn	nent 1		
Ve	hicle Inputs					
Seg	ment Type	Passing Constrained	 I	Length, ft		2800
Mea	asured FFS	Measured		Free-Flow Speed,	mi/h	60.0
De	mand and Capacity					
Dire	ectional Demand Flow Rate, veh/h	628		Opposing Deman	d Flow Rate, veh/h	-
Pea	k Hour Factor	0.94		Total Trucks, %		8.00
Seg	ment Capacity, veh/h	1700		Demand/Capacity	, (D/C)	0.37
Int	termediate Results	<u> </u>				
Seg	ment Vertical Class	2		Free-Flow Speed, mi/h		60.0
Spe	ed Slope Coefficient (m)	7.16531		Speed Power Coefficient (p)		0.54661
PF Slope Coefficient (m)		-1.39894		PF Power Coeffici	PF Power Coefficient (p)	
In P	assing Lane Effective Length?	No		Total Segment De	nsity, veh/mi/ln	7.2
%In	nprovement to Percent Followers	0.0		%Improvement to	Speed	0.0
Su	bsegment Data					
#	Segment Type	Length, ft	Rac	lius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	2800	-		-	54.9
Ve	hicle Results					
Ave	rage Speed, mi/h	54.9		Percent Followers	, %	62.9
Seg	ment Travel Time, minutes	0.58		Follower Density	7.2	
Veh	icle LOS	С				
			Segn	nent 2		
Ve	hicle Inputs					
Seg	ment Type	Passing Zone		Length, ft		3510
Measured FFS Measured		Free-Flow Speed, mi/h		65.0		
De	mand and Capacity					
	ectional Demand Flow Rate, veh/h	628		Opposing Demand Flow Rate, veh/h		383
	k Hour Factor	0.94		Total Trucks, %		8.00
	ment Capacity, veh/h	1700		Demand/Capacity	0.37	
	termediate Results					

Segment Vertical Class		1	Free	Free-Flow Speed, mi/h		65.0		
Speed Slope Coefficient (m)		4.40756	Spe	ed Power Coet	fficient (p)	0.49966		
PF Slo	ope Coefficient (m)	-1.23463	PF I	Power Coefficie	ent (p)	0.81021		
In Pas	ssing Lane Effective Length?	No	Tota	al Segment De	nsity, veh/mi/ln	5.8		
%lmp	provement to Percent Followers	0.0	%In	nprovement to	Speed	0.0		
Sub	segment Data							
#	Segment Type	Length, ft	Radius, f	t	Superelevation, %	Average Speed, mi/h		
1	Tangent	3510	-		-	61.8		
Veh	icle Results							
Avera	ge Speed, mi/h	61.8	Per	cent Followers,	. %	57.1		
Segm	nent Travel Time, minutes	0.65	Foll	ower Density (	FD), followers/mi/ln	5.8		
Vehic	le LOS	С						
Facility Results								
Т	VMT veh-mi/AP	VHD veh-h/p			ensity, followers/ mi/ln	LOS		
1	176	0.20			6.4	С		



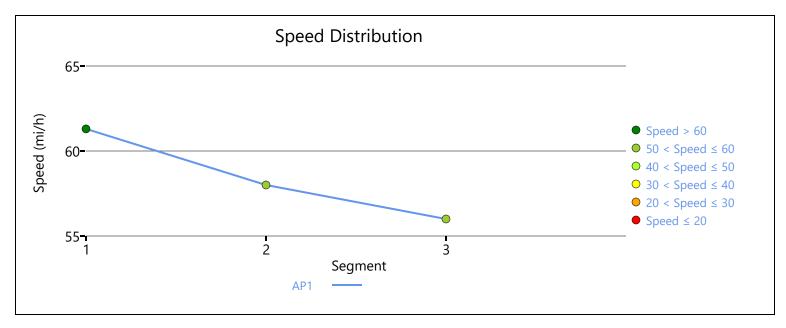


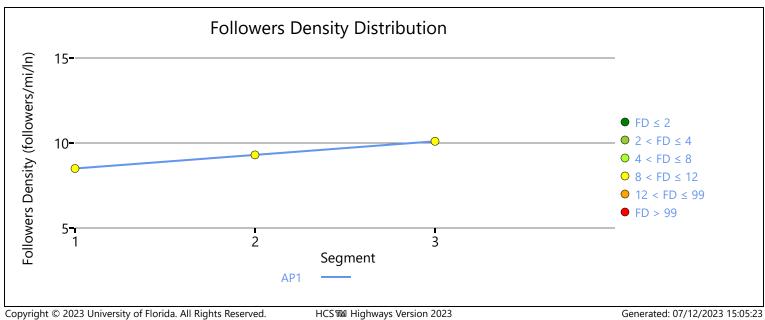
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		HCS Two-	-Lane	Highway Re	port	
Pro	oject Information					
Ana	ılyst	Cameron Manley		Date		7/11/2023
Age	ency	WSP		Analysis Year		2045
Juri	sdiction	District 8		Time Analyzed		PM Peak
Proj	ject Description	US 127 2+1 Study	/	Units		U.S. Customary
			Segn	nent 1		
Ve	hicle Inputs					
Seg	ment Type	Passing Zone		Length, ft		4060
Mea	asured FFS	Measured	Measured Fro		mi/h	65.0
De	mand and Capacity	<u>'</u>				
Dire	ectional Demand Flow Rate, veh/h	809		Opposing Deman	d Flow Rate, veh/h	436
Pea	k Hour Factor	0.94		Total Trucks, %		8.00
Seg	ment Capacity, veh/h	1700		Demand/Capacity	/ (D/C)	0.48
Int	termediate Results	<u> </u>		•		
Seg	ment Vertical Class	1		Free-Flow Speed, mi/h		65.0
Spe	ed Slope Coefficient (m)	4.42752		Speed Power Coefficient (p)		0.49114
PF Slope Coefficient (m)		-1.23240		PF Power Coeffici	ent (p)	0.80943
In P	assing Lane Effective Length?	No		Total Segment De	ensity, veh/mi/ln	8.5
%In	nprovement to Percent Followers	0.0		%Improvement to	0.0	
Su	bsegment Data					
#	Segment Type	Length, ft	Rac	lius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	4060	-		-	61.3
Ve	hicle Results					
Ave	rage Speed, mi/h	61.3		Percent Followers	i, %	64.6
Seg	ment Travel Time, minutes	0.75		Follower Density (FD), followers/mi/ln		8.5
Veh	icle LOS	D				
		·	Segn	nent 2		
Ve	hicle Inputs					
Seg	ment Type	Passing Constrain	ed	Length, ft		5605
	asured FFS	Measured		Free-Flow Speed, mi/h		65.0
De	mand and Capacity					
Dire	ectional Demand Flow Rate, veh/h	809		Opposing Deman	-	
	k Hour Factor	0.94		Total Trucks, %		8.00
	ment Capacity, veh/h	1700		Demand/Capacity	0.48	
_	termediate Results					

+	0.57			9.1	D
VMT veh-mi/AP	VHD veh-h/	р	Follower I	Density, followers/ mi/ln	LOS
y Results					
OS	D				
t Travel Time, minutes	0.27	0.27		(FD), followers/mi/ln	10.1
Speed, mi/h	56.0	56.0		rs, %	69.7
e Results					
ngent	1315	-	-		56.0
gment Type	Length, ft	Radi	ius, ft	Superelevation, %	Average Speed, mi/h
gment Data					
vement to Percent Followers	0.0		%Improvement	to Speed	0.0
g Lane Effective Length?	No		Total Segment Density, veh/mi/ln		10.1
Coefficient (m)	-1.39609		PF Power Coefficient (p)		0.73717
ope Coefficient (m)	4.57372		Speed Power Coefficient (p)		0.41674
t Vertical Class	1		Free-Flow Speed	l, mi/h	60.0
nediate Results					
t Capacity, veh/h	1700	1700		ty (D/C)	0.48
ur Factor	0.94		Total Trucks, %		8.00
nal Demand Flow Rate, veh/h	809		Opposing Demand Flow Rate, veh/h		-
nd and Capacity					
	Measured		Free-Flow Speed, mi/h		60.0
		d	-		1315
•	T	. 1			1
- It					
		Segm	ent 3		
OS	D				
t Travel Time, minutes	1.10		Follower Density	(FD), followers/mi/ln	9.3
Speed, mi/h	58.0		Percent Follower	rs, %	66.8
e Results					
ngent	5605	-		-	58.0
gment Type	Length, ft	Radi	ius, ft	Superelevation, %	Average Speed, mi/h
gment Data					
vement to Percent Followers	0.0		%Improvement	to Speed	0.0
g Lane Effective Length?	No		Total Segment D	ensity, veh/mi/ln	9.3
Coefficient (m)	-1.29677		PF Power Coefficient (p)		0.75868
ope Coefficient (m)	efficient (m) 8.53726		Speed Power Coefficient (p)		0.55740
	Coefficient (m) g Lane Effective Length? ement to Percent Followers gment Data gment Type gent e Results Speed, mi/h Travel Time, minutes OS  e Inputs Type d FFS Ind and Capacity al Demand Flow Rate, veh/h ar Factor Capacity, veh/h Inediate Results Vertical Class Ope Coefficient (m) G Lane Effective Length? ement to Percent Followers gment Data gment Type Ingent E Results Speed, mi/h Travel Time, minutes OS  y Results  VMT	Coefficient (m) -1.29677  g Lane Effective Length? No ement to Percent Followers 0.0  gment Data gment Type	Coefficient (m) -1.29677 g Lane Effective Length? No ement to Percent Followers 0.0  gment Data gment Type	Coefficient (m) -1.29677 PF Power Coefficient (m) g Lane Effective Length? No Total Segment D greent to Percent Followers 0.0 %Improvement of greent Type Length, ft Radius, ft segment Type Length, ft Radius, ft segment Type Segment Segmen	Coefficient (m)

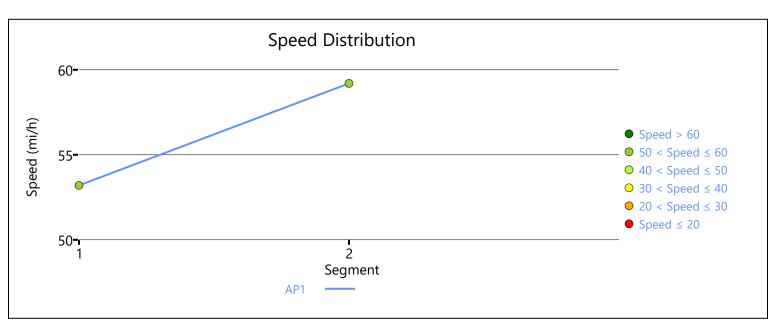


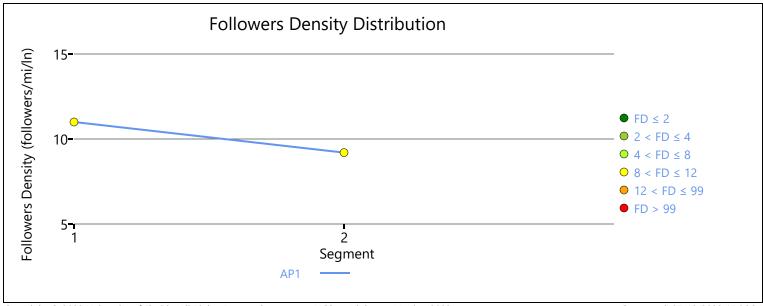


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		HCS Two-La	ane	Highway Re	port	
Pro	ject Information					
Anal	yst	Cameron Manley		Date		7/11/2023
Ager	ncy	WSP		Analysis Year		2045
Juris	diction	District 8		Time Analyzed		PM Peak
Proje	ect Description	US 127 2+1 Study		Units		U.S. Customary
		S	egn	nent 1		
Veł	nicle Inputs					
Segr	ment Type	Passing Zone		Length, ft		5330
Mea	sured FFS	Measured		Free-Flow Speed, mi/h		60.0
Dei	mand and Capacity					
Dire	ctional Demand Flow Rate, veh/h	872		Opposing Deman	d Flow Rate, veh/h	457
	Hour Factor	0.94		Total Trucks, %		8.00
Segr	ment Capacity, veh/h	1700		Demand/Capacity	/ (D/C)	0.51
Inte	ermediate Results					
Segr	ment Vertical Class	2		Free-Flow Speed, mi/h		60.0
Spee	ed Slope Coefficient (m)	8.01500		Speed Power Coefficient (p)		0.64100
PF Slope Coefficient (m)		-1.23600		PF Power Coeffici	ent (p)	0.79049
In Passing Lane Effective Length?		No		Total Segment De	ensity, veh/mi/ln	11.0
%lm	provement to Percent Followers	0.0		%Improvement to Speed		0.0
Suk	osegment Data					
#	Segment Type	Length, ft	Rac	lius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	5330	1-		-	53.2
Vel	nicle Results					
Aver	rage Speed, mi/h	53.2		Percent Followers	, %	67.0
Segr	ment Travel Time, minutes	1.14		Follower Density	11.0	
Vehi	cle LOS	D				
		S	Segn	nent 2		<u>'</u>
Veł	nicle Inputs					
	ment Type	Passing Zone		Length, ft		3475
	sured FFS	Measured		Free-Flow Speed, mi/h		65.0
	mand and Capacity					
	ctional Demand Flow Rate, veh/h	830		Opposing Deman	d Flow Rate, veh/h	457
	Hour Factor	0.94		Total Trucks, %	and the state of t	8.00
	ment Capacity, veh/h	1700		Demand/Capacity	0.49	
	ermediate Results			2 cmarta, capacity	(-1-5)	05

Segn	ment Vertical Class	2	Fre	ee-Flow Speed,	mi/h	65.0		
Speed Slope Coefficient (m)		7.13640	Sp	eed Power Coef	fficient (p)	0.63386		
PF SI	lope Coefficient (m)	-1.23431	PF	Power Coefficie	ent (p)	0.80139		
In Pa	assing Lane Effective Length?	No	То	tal Segment De	nsity, veh/mi/ln	9.2		
%lmp	provement to Percent Followers	0.0	%	Improvement to	Speed	0.0		
Sub	osegment Data							
#	Segment Type	Length, ft	Radius,	ft	Superelevation, %	Average Speed, mi/h		
1	Tangent	3475	-		-	59.2		
Veh	nicle Results							
Avera	age Speed, mi/h	59.2	Pe	rcent Followers,	%	65.5		
Segn	ment Travel Time, minutes	0.67	0.67 Fo		FD), followers/mi/ln	9.2		
Vehic	cle LOS	D						
Facility Results								
т	VMT veh-mi/AP	VHD veh-h/p			ensity, followers/ mi/ln	LOS		
1	335	0.64			10.3	D		





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