

APPENDIX C

TRAFFIC ANALYSIS AND METHODOLOGY REPORT



APPENDIX A

Traffic Analysis and Methodology Report

8-80104.00

KY 90 Corridor Study

Pulaski County, Kentucky

September 9, 2022

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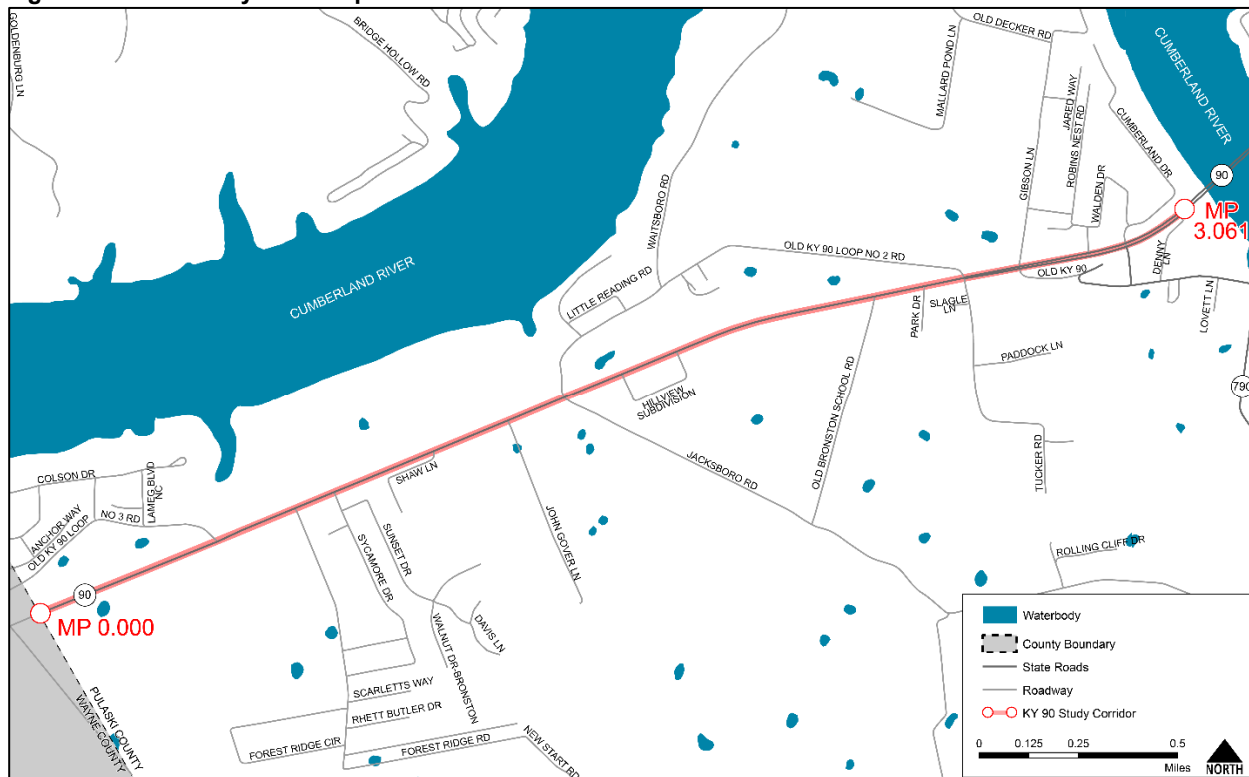
Introduction

The Kentucky Transportation Cabinet (KYTC) initiated a study to look at the KY 90 corridor in Pulaski County between MP 0.0 and 3.061 to identify and evaluate potential operational and safety solutions. The study identified and analyzed both short-term and long-term improvement strategies. The goal of this study was to evaluate the existing conditions and future conditions with regards to safety, traffic operations, and roadway geometrics. This appendix focuses on the traffic operations evaluation procedures and methodology used to accomplish this goal.

Project Study Area

The KY 36 study area is shown in **Figure 1**. It is located in Pulaski County and extends for approximately 3.1 miles from the Wayne County Line (MP 0.0) to the New Cumberland River Bridge (MP 3.061). KY 90 is a major east-west highway in south central Kentucky connecting the communities of Glasgow, Burkesville, Monticello, Somerset, and terminating near the city of Corbin. Just outside the study limits and beyond the Cumberland River a grade separated interchange with US 27 is present.

Figure 1: KY 90 Study Area Map



Existing Conditions

KY 90 is a two-lane roadway with 12-foot wide travel lanes in the study area from the Wayne County line to Gibson Lane where it starts transitioning to a 5 lane cross-section with two travel lanes in each direction and a Two-Way-Left-Turn (TWLT) lane in the middle. A small segment near the western edge of the study area (west of Forest Ridge Road) has passing lanes in each direction. At the KY 90 / Gibson Lane intersection, KY 90 has one travel lane in each direction and a TWLT. There are 10-foot paved shoulders along both directions of travel throughout the study area. KY 90 is classified as a rural minor arterial in the

section west of Jacksboro Road and an urban minor arterial highway to the east. It has a posted speed limit of 55 MPH.

Existing Traffic Operations

Traffic Data

Current and historical Average Annual Daily Traffic (AADT), K & D factors¹, and truck percentage information was obtained from KYTC along KY 90 at the following three count locations where they collect short-term hourly counts:

- Count Station 100558 – Halls Lane to Jacksboro Road (MP 0.00 to 1.377)
- Count Station 100355 – Jacksboro Road to KY 790 (MP 1.377 to 2.852)
- Count Station 100D04 – KY 790 to New Cumberland River Bridge (MP 2.852 to 3.061)

Table 1 provides a summary of the counts which were obtained between the years of 2017 to 2019. The *KY 90 Traffic Forecast Report* contains the raw traffic count data.

Table 1: KY 90 Study Area Historical Count Station Data

Count Station	County	Route	Begin MP	End MP	Count Year	AADT	K Factor	D Factor	% Single Truck**	% Combo Truck**	% Total Trucks**
100558	Pulaski	KY 90	0.00	1.377	2019	10,408	9.9	58	6.1	3.8	9.8
100355	Pulaski	KY 90	1.377	2.852	2017	10,719	7.3	56	6.1	3.8	9.8
100D04	Pulaski	KY 90	2.852	3.061	2019	15,279	8.6	57	6.1	3.8	9.8

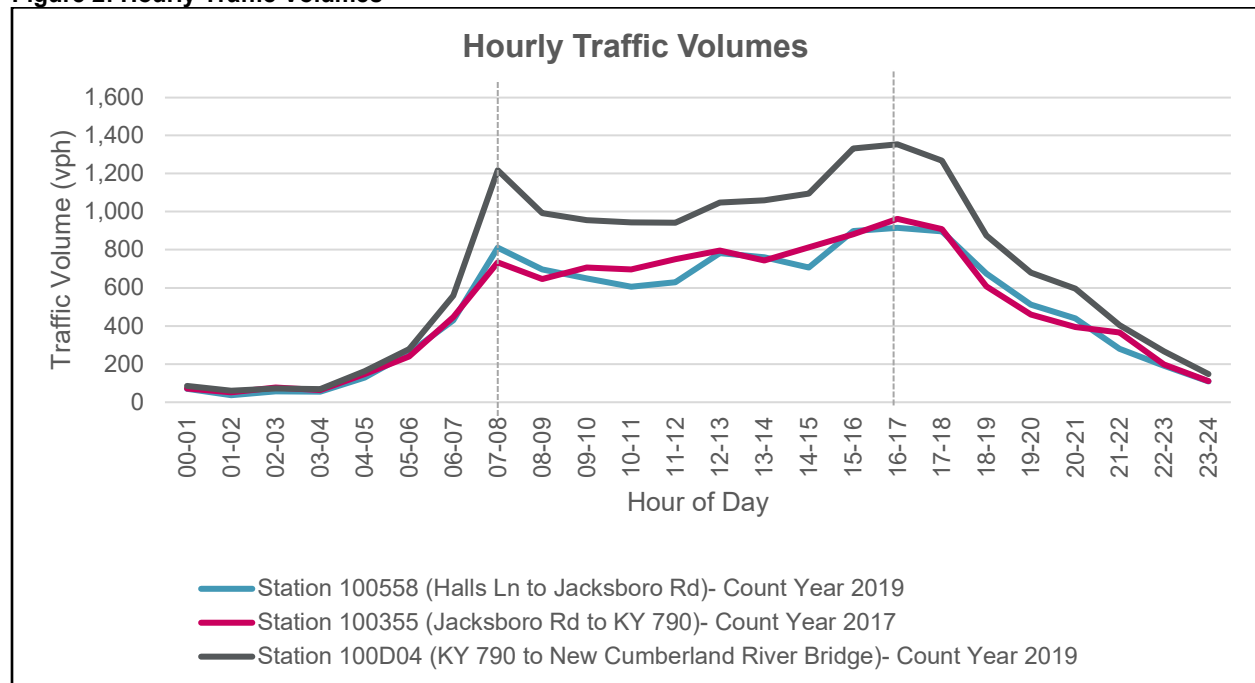
*SU = Single Unit Truck, Combo = multi-axle truck with trailer

**Rounded to nearest 0.1%

Hourly counts within the study area were analyzed to determine the AM and PM Peak periods along this segment of KY 90. The graph of the hourly count data from these three stations is presented in **Figure 2**. As can be seen, the AM peak hour occurred between 7 and 8 am and the PM peak hour occurred between 4 and 5 pm. Based on this information, AM and PM peak hour turning movement counts were collected at the seven study intersections.

¹ The K factor is the percentage of the AADT in both directions during the peak hour ($K = DHV/AADT$). The D factor is the percentage of traffic in the peak direction during the peak hour.

Figure 2: Hourly Traffic Volumes



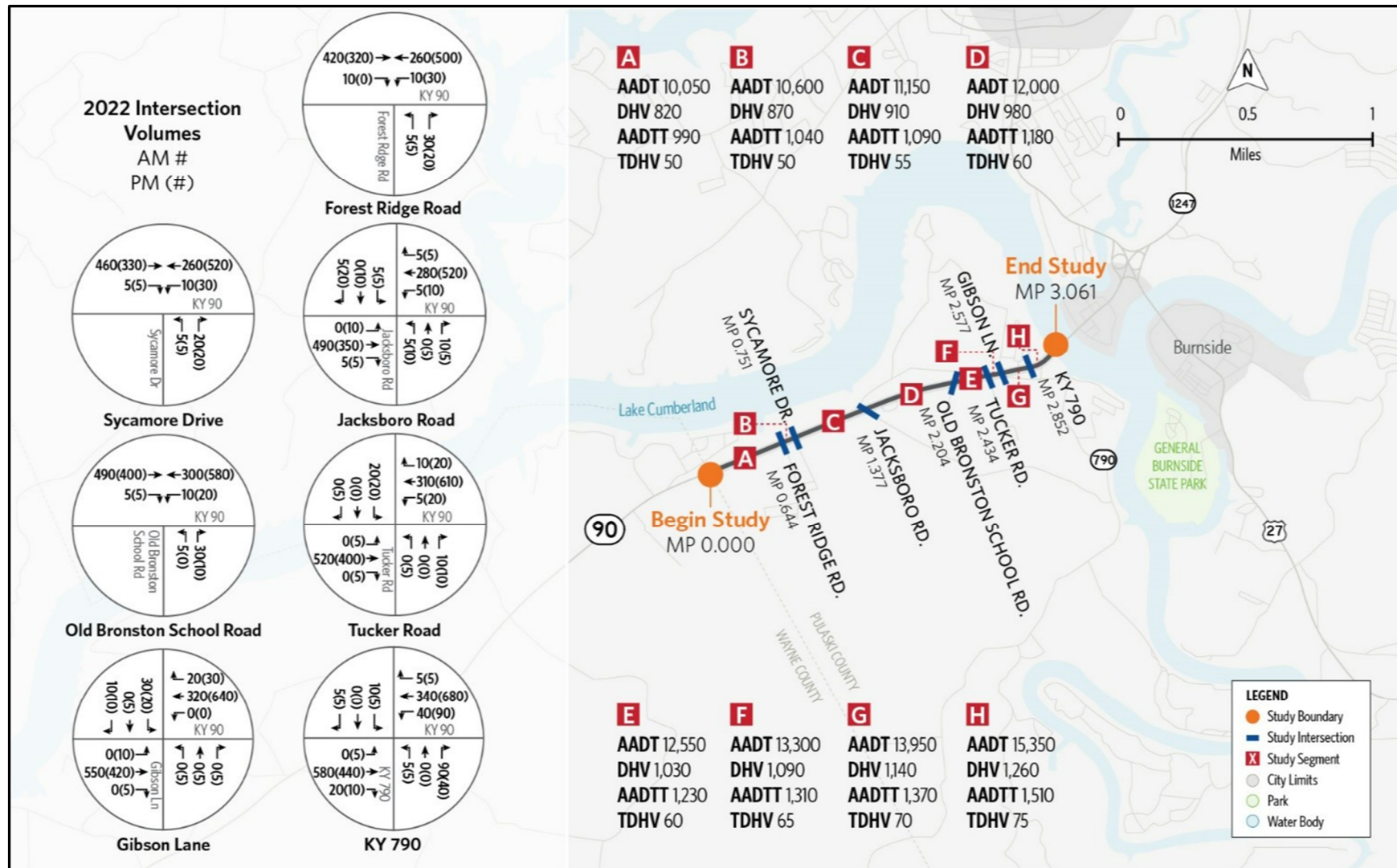
Analysis was conducted to determine if any counts done in 2022 would be consistent with pre-pandemic traffic patterns. 2017, 2019 and 2020 counts were obtained for stations 100355 and 100D04. A comparison was made between the 2020 counts and the previous years to determine if significant changes in travel patterns and volumes occurred during the COVID-19 pandemic. The 2020 AADT volume at station 100355 was 9% higher than the 2017 volume and the 2020 AADT volume at station 100D04 was 40% lower than the 2019 volume. This difference showed that travel pattern changes during the COVID-19 pandemic had a significant impact on traffic in the study area. A 24-hour volume count (AADT of 15,751 vehicles per day) was conducted at count station 100D04 in 2022 as part of this project to validate this volume discrepancy. It indicated that volumes post 2020 had increased back to pre-pandemic values.

Baseline Traffic Volumes (2022)

To evaluate intersection level traffic operations and to confirm the design hour volumes from the segment counts, turning movement counts were conducted at the seven study intersections. The peak hour when these counts would be conducted was based on the peak hours observed in **Figure 2**. The counts were conducted in late March 2022 during the AM Peak period (7am to 9am) and PM Peak period (4pm to 6pm) at the intersections listed below and presented in **Figure 3** (rounded to the nearest 10vph).

- KY 90 / Forest Ridge Road
- KY 90 / Sycamore Drive
- KY 90 / Jacksboro Road
- KY 90 / Old Bronston School Road
- KY 90 / Tucker Road
- KY 90 / Gibson Lane
- KY 90 / KY 790

Figure 3: 2022 Peak Hour Intersection Turning Movement Counts



These intersection turning movement counts were used to develop the 2022 design hour volumes for the intersection and segment traffic operations analysis.

Traffic Operations

Operational analysis was conducted at nine segments and seven intersections in the study area along KY 90 to determine AM and PM Peak hour traffic operations. Analysis was conducted using HCS7 and Synchro software, which report measures of effectiveness derived from techniques documented in the Highway Capacity Manual (HCM), 6th Edition. The results of this analysis are a Level of Service (LOS) rating. LOS is a qualitative measure that is used to describe the operating conditions of a roadway segment or intersection based on factors such as speed, travel time, maneuverability, delay and safety. LOS are described by a letter designation ranging from “A” to “F”, with LOS “A” representing essentially uninterrupted flow (the best operating condition), and LOS “F” representing a breakdown of traffic flow with excessive congestion and delay (the worst operating condition).

KY 90 is classified as a rural minor arterial for the section west of Jacksboro Road and an urban minor arterial highway to the east. The AASHTO Green Book guidelines suggest that rural arterials be designed to LOS C and urban arterials to LOS D. Since roughly half the corridor is classified as an urban minor arterial and there is anticipated future development growth along this entire corridor, the design team decided to use LOS D as the design value for the entire corridor.

Table 2 provides LOS criteria for the segment analysis.

Table 2: Segment LOS Range

LOS	2-Lane Highway*	Multi-Lane Highway
	Density (vehicles/mi/ln)	Density (pc/mi/ln)
A	≤ 2.0	≤ 11
B	>2.0 - 4.0	>11-18
C	>4.0 - 8.0	>18-26
D	>8.0 - 12.0	>26-35
E	>12.0	>35-45
F	Demand exceeds capacity	>45

pc/mi/ln: passenger cars per mile per lane

LOS D or better is acceptable

LOS is F when volume/capacity ≥ 1.0

**Two-lane follower density thresholds for facilities with posted speed limit ≥ 50mph*

At intersections, the LOS concept is a measure of average operating conditions during an hour. It is based on average delay per vehicle for a specified time period. Two-way, stop-controlled (TWSC) intersection LOS is defined in terms of the average vehicle delay of an individual movement(s). **Table 3** provides LOS criteria for unsignalized intersections.

Table 3: LOS Criteria for TWSC Intersections

LOS	Average Control Delay (sec/veh)	LOS Description
A	< 10	Little or no delay
B	> 10 and <15	Short traffic delays
C	> 15 and <25	Average traffic delays
D	> 25 and <35	Long traffic delays
E	> 35 and <50	Very long traffic delays
F	> 50	Severe congestion

Intersection Traffic Operations

All seven intersections in the study area are currently TWSC intersections on the minor street approaches. A network of the KY 90 corridor was created in Synchro and the TWSC HCM results were obtained. **Table 4** provides LOS and delay information for each intersection.

All movements along eastbound and westbound mainline KY 90 at the intersections currently operate at LOS A during peak hours. The minor street stop-controlled movements at all intersections operate at LOS D or better during both the AM and PM peak hours. Complete Synchro output data is available in **Appendix A** of this report.

Table 4: 2022 Intersection LOS and Delay

Intersection	AM Peak Hour								PM Peak Hour							
	EB LT		WB LT		NB Approach		SB Approach		EB LT		WB LT		NB Approach		SB Approach	
	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
Forest Ridge Rd.	-	-	8.5	A	12.5	B	-	-	-	-	8.1	A	12.2	B	-	-
Sycamore Dr.	-	-	8.7	A	13.5	B	-	-	-	-	8.2	A	12.8	B	-	-
Jacksboro Rd.	0.0	A	8.7	A	15.0	B	15.4	C	8.6	A	8.1	A	20.1	C	16.8	C
Old Bronston School Rd.	-	-	8.7	A	13.7	B	-	-	-	-	0.0	A	10.9	B	-	-
Tucker Rd.	0.0	A	8.9	A	12.9	B	26.0	D	9.1	A	8.4	A	17.3	C	28.9	D
Gibson Ln.	0.0	A	0.0	A	0.0	A	24.9	C	9.3	A	0.0	A	23.3	C	28.5	D
KY 790	0.0	A	9.5	A	13.2	B	20.0	C	9.7	A	8.8	A	12.7	B	26.9	D

EB=Eastbound, WB=Westbound, NB=Northbound, SB=Southbound

Note: Delay in seconds

Segment Traffic Operations

KY 90 within the study area boundary was broken into nine segments for analysis. Each segment was analyzed using the two-lane or multi-lane highway analysis methods from the Highway Capacity Manual (HCM) 6th Edition as implemented by the HCS7 software. The AM and PM peak hours in each direction were analyzed to determine the LOS, Density, and volume-to-capacity ratios (v/c). 2019 HERE speed data within the study area was available from KYTC and was used to determine free flow speed values inputted into HCS7.

Table 5 presents the results of the segment analysis. Under existing traffic conditions (2022), both directions of travel on all nine KY 90 study segments operate at LOS D or better during both the AM and PM peak hours. The volume to capacity ratio along the entire study corridor is below 0.5 during the peak hours of travel. Complete HCS7 output files are available in **Appendix B** of this report.

Table 5: 2022 Segment Level of Service

Segment	No. of Lanes	AM Peak Hour						PM Peak Hour					
		Eastbound			Westbound			Eastbound			Westbound		
		LOS	Density	V/C	LOS	Density	V/C	LOS	Density	V/C	LOS	Density	V/C
Beginning of Study to MP 0.15	4*	A	4.2	0.12	A	2.6	0.08	A	2.9	0.09	A	4.7	0.14
MP 0.15 to Forest Ridge Rd.	2	C	4.3	0.29	A	2.0	0.18	B	2.5	0.20	C	5.0	0.32
Forest Ridge Rd. to Sycamore Dr.	2	C	5.1	0.32	B	2.2	0.19	B	2.8	0.22	C	5.6	0.34
Sycamore Dr. to Jacksboro Rd.	2	C	5.6	0.34	B	2.4	0.20	B	3.1	0.23	C	5.8	0.35
Jacksboro Rd. to Old Bronston School Rd.	2	C	5.7	0.35	B	2.6	0.21	B	3.5	0.25	C	6.1	0.36
Old Bronston School Rd. to Tucker Rd.	2	C	6.6	0.37	B	3.0	0.22	B	3.9	0.26	C	7.2	0.39
Tucker Rd. to Gibson Ln.	2	C	7.4	0.40	B	3.5	0.24	C	4.4	0.28	D	8.1	0.42
Gibson Ln. to 0.1 Mile West of KY 790	2	D	8.3	0.43	B	3.7	0.25	C	4.6	0.29	D	8.4	0.44
0.1 Mile West of KY 790 to End of Study	5	A	7.4	0.21	A	4.2	0.12	A	4.6	0.13	A	7.4	0.21

Note: Density in pc/mi/ln *4 lane undivided passing lanes

Future Year Traffic Operations (2045)

The growth rate for the KY 90 corridor within the study area that was determined through the traffic forecasting effort was 1.2% per year. This growth rate was derived by reviewing historical traffic growth in the study area, county population growth data, and output from the KY Statewide Traffic Model. The growth rate was applied to the 2022 base year volumes to develop future design year (2045) traffic volumes which are presented in **Figure 4**. Details for the volume forecasting work are presented in the *KY 90 Traffic Forecast Report*.

Intersection Traffic Operations

The analysis methods outlined in the section above were used to evaluate intersection traffic operations in the future design year of 2045. The results are summarized in **Table 6**.

The intersections of KY 90/Forest Ridge Road, KY 90/Sycamore Drive and KY 90/Old Bronston School Road are expected to operate at LOS C or better with 17.1 seconds of delay per vehicle or less during both AM and PM peak hours in 2045. The left turn movements along the minor street approaches at KY 90/Jacksboro Road, KY 90/Tucker Road, KY 90/Gibson Lane, and KY 90/KY 790 are expected to experience delay and operate at LOS E or F during the peak hours. Vehicles along southbound Gibson Lane are expected to experience lengthy delays during the PM peak hour of 157 seconds per vehicle. It is, however, not uncommon for left turn movements along the minor street approach at stop-controlled intersections to experience higher delay during peak hours. Although a signal warrant analysis was not conducted at these intersections, a preliminary examination indicated that they are not expected to meet any signal warrants by 2045.

Table 6: 2045 Intersection LOS and Delay

Intersection	AM Peak Hour								PM Peak Hour							
	EB LT		WB LT		NB Approach		SB Approach		EB LT		WB LT		NB Approach		SB Approach	
	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
Forest Ridge Rd.	-	-	9.0	A	14.7	B	-	-	-	-	8.6	A	15.6	C	-	-
Sycamore Dr.	-	-	9.3	A	16.1	C	-	-	-	-	8.7	A	16.0	C	-	-
Jacksboro Rd.	0.0	A	9.4	A	19.5	C	20.3	C	9.6	A	8.6	A	41.0	E	26.8	D
Old Bronston School Rd.	-	-	9.4	A	17.1	C	-	-	-	-	8.9	A	12.6	B	-	-
Tucker Rd.	0.0	A	9.7	A	16.0	C	54.2	F	10.5	B	9.1	A	34.8	D	94.0	F
Gibson Ln.	0.0	A	0.0	A	0.0	A	68.0	F	10.9	B	0.0	A	57.2	F	157.6	F
KY 790	0.0	A	10.7	B	17.0	C	33.3	D	10.9	B	10.0	A	17.7	C	85.4	F

EB=Eastbound, WB=Westbound, NB=Northbound, SB=Southbound, LT = Left Turn

Note: Delay in seconds

Segment Traffic Operations

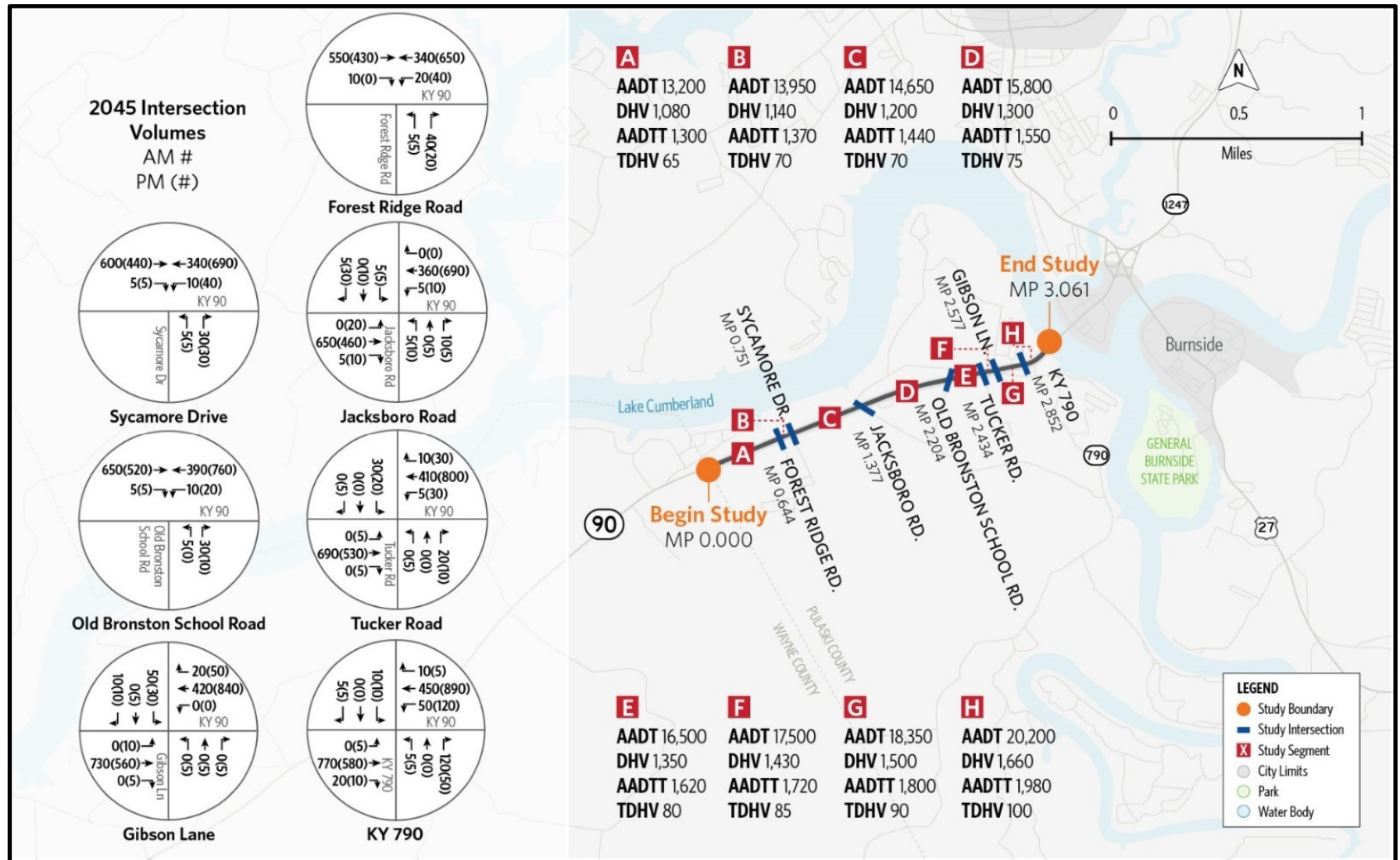
As can be seen in **Table 7**, all segments along the study section of KY 90 are expected to continue operating at LOS D or better in 2045 during both the AM and PM peak hours except for the small segment between Gibson Lane and KY 790 which is expected to operate at LOS E. The follower density for this section is expected to be approximately 12.3 vehicles/mile/lane which is only just slightly over the LOS D criteria of 12 vehicles/mile/lane. Due to the increase in volumes along the roadway, the v/c ratios are expected to increase but will still be well under the capacity of the roadway. The highest v/c ratio is expected to be 0.57 between Gibson Lane and KY 790 during the peak hours. All other segments along KY 90 are expected to have v/c ratios of under 0.5 during both peak hours. Thus, capacity along KY 90 in the study section is not anticipated to be an issue by 2045.

Table 7: 2045 Segment Level Of Service

Segment	No. of Lanes	AM Peak Hour						PM Peak Hour					
		Eastbound			Westbound			Eastbound			Westbound		
		LOS	Density	V/C	LOS	Density	V/C	LOS	Density	V/C	LOS	Density	V/C
Beginning of Study to MP 0.15	4*	A	5.5	0.16	A	3.4	0.10	A	4.0	0.12	A	6.1	0.18
MP 0.15 to Forest Ridge Rd.	2	C	6.5	0.38	B	3.0	0.23	B	3.9	0.27	C	7.4	0.41
Forest Ridge Rd. to Sycamore Dr.	2	C	7.5	0.42	B	3.5	0.25	C	4.4	0.29	D	8.3	0.45
Sycamore Dr. to Jacksboro Rd.	2	D	8.4	0.45	B	3.6	0.26	C	4.9	0.31	D	8.8	0.47
Jacksboro Rd. to Old Bronston School Rd.	2	D	8.6	0.45	B	3.9	0.27	C	5.2	0.33	D	9.1	0.47
Old Bronston School Rd. to Tucker Rd.	2	D	9.9	0.49	C	4.6	0.29	C	5.9	0.34	D	10.6	0.51
Tucker Rd. to Gibson Ln.	2	D	11.3	0.54	C	5.2	0.31	C	6.7	0.37	D	11.9	0.56
Gibson Ln. to 0.1 Mile West of KY 790	2	E	12.2	0.57	C	5.6	0.33	C	6.8	0.38	E	12.3	0.57
0.1 Mile West of KY 790 to End of Study	5	A	9.8	0.28	A	5.6	0.16	A	6.1	0.18	A	9.7	0.28

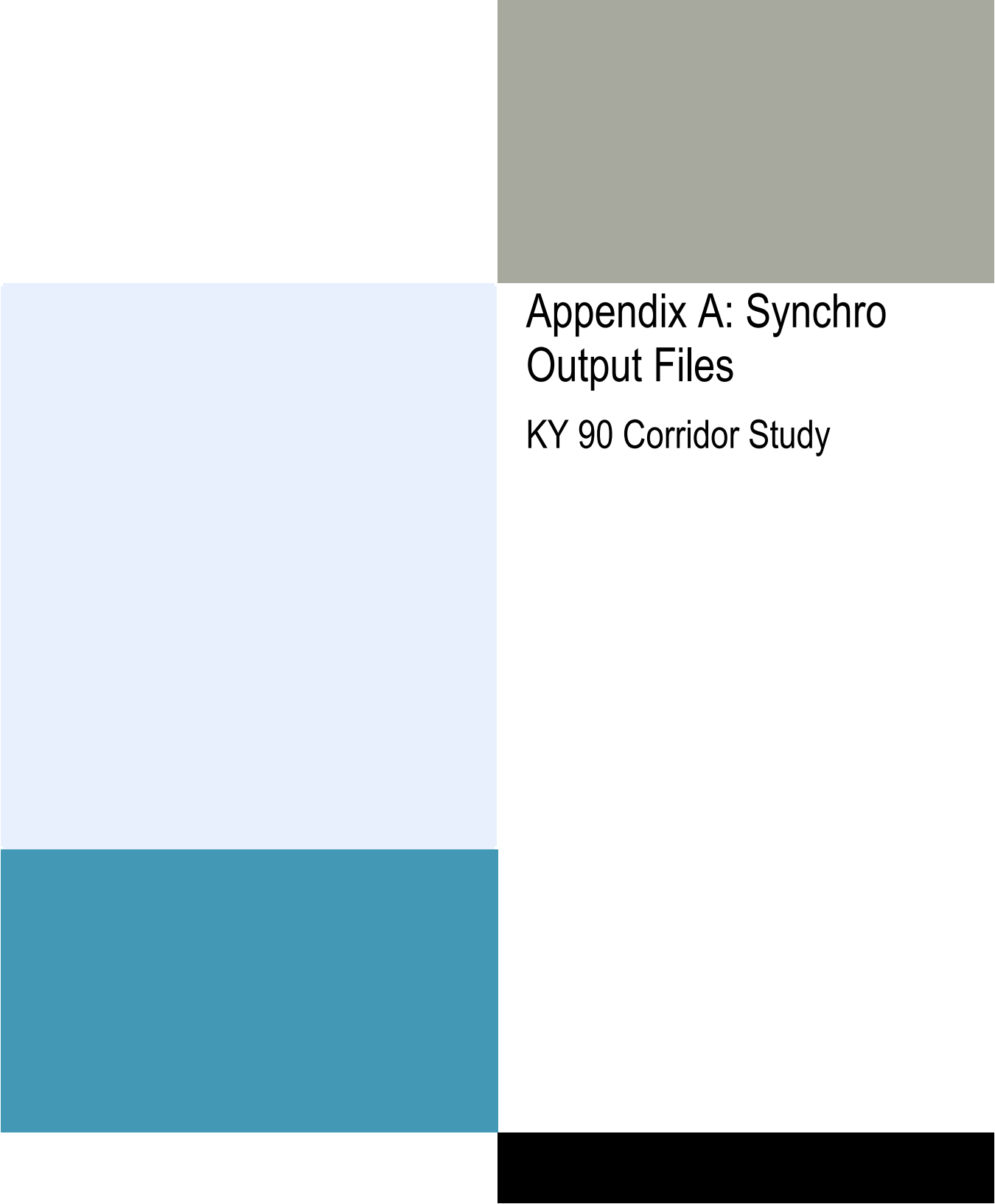
Note: Density in pc/mi/ln *4 lane undivided passing lanes

Figure 4: 2045 Peak Hour Intersection Turning Movement Counts



Conclusions

Traffic operations along KY 90 from MP 0.00 to MP 3.061 were examined for both existing conditions (year 2022) and Future conditions (year 2045) as part to the KYTC study to investigate operational and safety conditions along this roadway. Operations along nine segments and at seven intersections were analyzed during both the AM and PM peak hours. Under current conditions, all segments and intersections along KY 90 operate at LOS D or better during both peak hours. By 2045, all segments along KY 90 are expected to continue operating at LOS D or better during both the AM and PM peak hours with anticipated v/c ratios along the entire corridor of 0.57 or less with the exception of the small segment between Gibson Lane and KY 790 which is expected to operate at LOS E. In the future year 2045, minor street approaches along several study intersections are expected to experience longer delays and are expected to operate at LOS E or F. It is however not uncommon for minor street movements at stop-controlled intersections to experience longer delays during peak hours. A preliminary investigation of the projected volumes indicates that these intersections are not expected to meet signal warrants by 2045.



Appendix A: Synchro Output Files

KY 90 Corridor Study

Intersection

Int Delay, s/veh 0.7

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	420	10	10	260	5	30
Future Vol, veh/h	420	10	10	260	5	30
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	87	87	87	87	87	87
Heavy Vehicles, %	6	6	6	6	6	6
Mvmt Flow	483	11	11	299	6	34

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	494
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	4.16
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	2.254
Pot Cap-1 Maneuver	-	-	1049
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	1049
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.3	12.5
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	520	-	-	1049	-
HCM Lane V/C Ratio	0.077	-	-	0.011	-
HCM Control Delay (s)	12.5	-	-	8.5	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.3	-	-	0	-

Intersection

Int Delay, s/veh 0.6

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	460	5	10	260	5	20
Future Vol, veh/h	460	5	10	260	5	20
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	83	83	83	83	83	83
Heavy Vehicles, %	6	6	6	6	6	6
Mvmt Flow	554	6	12	313	6	24

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	560
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	4.16
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	2.254
Pot Cap-1 Maneuver	-	-	991
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	991
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.3	13.5
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	456	-	-	991	-
HCM Lane V/C Ratio	0.066	-	-	0.012	-
HCM Control Delay (s)	13.5	-	-	8.7	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.2	-	-	0	-

Intersection												
Int Delay, s/veh	0.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	490	5	5	280	5	5	0	10	5	0	5
Future Vol, veh/h	0	490	5	5	280	5	5	0	10	5	0	5
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	86	86	86	86	86	86	86	86	86	86	86	86
Heavy Vehicles, %	6	6	6	6	6	6	6	6	6	6	6	6
Mvmt Flow	0	570	6	6	326	6	6	0	12	6	0	6
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	332	0	0	576	0	0	917	917	573	920	917	329
Stage 1	-	-	-	-	-	-	573	573	-	341	341	-
Stage 2	-	-	-	-	-	-	344	344	-	579	576	-
Critical Hdwy	4.16	-	-	4.16	-	-	7.16	6.56	6.26	7.16	6.56	6.26
Critical Hdwy Stg 1	-	-	-	-	-	-	6.16	5.56	-	6.16	5.56	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.16	5.56	-	6.16	5.56	-
Follow-up Hdwy	2.254	-	-	2.254	-	-	3.554	4.054	3.354	3.554	4.054	3.354
Pot Cap-1 Maneuver	1205	-	-	978	-	-	249	268	511	247	268	703
Stage 1	-	-	-	-	-	-	498	497	-	666	632	-
Stage 2	-	-	-	-	-	-	663	630	-	494	496	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1205	-	-	978	-	-	246	266	511	240	266	703
Mov Cap-2 Maneuver	-	-	-	-	-	-	246	266	-	240	266	-
Stage 1	-	-	-	-	-	-	498	497	-	666	627	-
Stage 2	-	-	-	-	-	-	652	625	-	483	496	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0			0.2			15			15.4		
HCM LOS							C			C		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	376	1205	-	-	978	-	-	358				
HCM Lane V/C Ratio	0.046	-	-	-	0.006	-	-	0.032				
HCM Control Delay (s)	15	0	-	-	8.7	0	-	15.4				
HCM Lane LOS	C	A	-	-	A	A	-	C				
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	0.1				

Intersection

Int Delay, s/veh 0.7

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	490	5	10	300	5	30
Future Vol, veh/h	490	5	10	300	5	30
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	6	6	6	6	6	6
Mvmt Flow	576	6	12	353	6	35

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	582
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	4.16
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	2.254
Pot Cap-1 Maneuver	-	-	973
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	973
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.3	13.7
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	454	-	-	973	-
HCM Lane V/C Ratio	0.091	-	-	0.012	-
HCM Control Delay (s)	13.7	-	-	8.7	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.3	-	-	0	-

HCM 6th TWSC
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Intersection												
Int Delay, s/veh	0.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	520	0	5	310	10	0	0	10	20	0	0
Future Vol, veh/h	0	520	0	5	310	10	0	0	10	20	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	81	81	81	81	81	81	81	81	81	81	81	81
Heavy Vehicles, %	6	6	6	6	6	6	6	6	6	6	6	6
Mvmt Flow	0	642	0	6	383	12	0	0	12	25	0	0
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	395	0	0	642	0	0	1043	1049	642	1049	1043	389
Stage 1	-	-	-	-	-	-	642	642	-	401	401	-
Stage 2	-	-	-	-	-	-	401	407	-	648	642	-
Critical Hdwy	4.16	-	-	4.16	-	-	7.16	6.56	6.26	7.16	6.56	6.26
Critical Hdwy Stg 1	-	-	-	-	-	-	6.16	5.56	-	6.16	5.56	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.16	5.56	-	6.16	5.56	-
Follow-up Hdwy	2.254	-	-	2.254	-	-	3.554	4.054	3.354	3.554	4.054	3.354
Pot Cap-1 Maneuver	1142	-	-	924	-	-	204	224	467	202	226	651
Stage 1	-	-	-	-	-	-	456	463	-	618	594	-
Stage 2	-	-	-	-	-	-	618	590	-	452	463	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1142	-	-	924	-	-	203	222	467	196	224	651
Mov Cap-2 Maneuver	-	-	-	-	-	-	203	222	-	196	224	-
Stage 1	-	-	-	-	-	-	456	463	-	618	589	-
Stage 2	-	-	-	-	-	-	613	585	-	440	463	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0			0.1			12.9			26		
HCM LOS							B			D		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	467	1142	-	-	924	-	-	196				
HCM Lane V/C Ratio	0.026	-	-	-	0.007	-	-	0.126				
HCM Control Delay (s)	12.9	0	-	-	8.9	0	-	26				
HCM Lane LOS	B	A	-	-	A	A	-	D				
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	0.4				

Intersection												
Int Delay, s/veh	1.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	550	0	0	320	20	0	0	0	30	0	10
Future Vol, veh/h	0	550	0	0	320	20	0	0	0	30	0	10
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	81	81	81	81	81	81	81	81	81	81	81	81
Heavy Vehicles, %	6	6	6	6	6	6	6	6	6	6	6	6
Mvmt Flow	0	679	0	0	395	25	0	0	0	37	0	12
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	420	0	0	679	0	0	1093	1099	679	1087	1087	408
Stage 1	-	-	-	-	-	-	679	679	-	408	408	-
Stage 2	-	-	-	-	-	-	414	420	-	679	679	-
Critical Hdwy	4.16	-	-	4.16	-	-	7.16	6.56	6.26	7.16	6.56	6.26
Critical Hdwy Stg 1	-	-	-	-	-	-	6.16	5.56	-	6.16	5.56	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.16	5.56	-	6.16	5.56	-
Follow-up Hdwy	2.254	-	-	2.254	-	-	3.554	4.054	3.354	3.554	4.054	3.354
Pot Cap-1 Maneuver	1118	-	-	895	-	-	188	209	445	190	212	635
Stage 1	-	-	-	-	-	-	435	445	-	612	590	-
Stage 2	-	-	-	-	-	-	608	583	-	435	445	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1118	-	-	895	-	-	184	209	445	190	212	635
Mov Cap-2 Maneuver	-	-	-	-	-	-	184	209	-	190	212	-
Stage 1	-	-	-	-	-	-	435	445	-	612	590	-
Stage 2	-	-	-	-	-	-	596	583	-	435	445	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0			0			0			24.9		
HCM LOS							A			C		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	-	1118	-	-	895	-	-	230				
HCM Lane V/C Ratio	-	-	-	-	-	-	-	0.215				
HCM Control Delay (s)	0	0	-	-	0	-	-	24.9				
HCM Lane LOS	A	A	-	-	A	-	-	C				
HCM 95th %tile Q(veh)	-	0	-	-	0	-	-	0.8				

Intersection												
Int Delay, s/veh	1.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	580	20	40	340	5	5	0	90	10	0	5
Future Vol, veh/h	0	580	20	40	340	5	5	0	90	10	0	5
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	150	-	-	425	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	83	83	83	83	83	83	83	83	83	83	83	83
Heavy Vehicles, %	6	6	6	6	6	6	6	6	6	6	6	6
Mvmt Flow	0	699	24	48	410	6	6	0	108	12	0	6

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	416	0	0	723	0	0	1012	1223	362	859	1232	208
Stage 1	-	-	-	-	-	-	711	711	-	509	509	-
Stage 2	-	-	-	-	-	-	301	512	-	350	723	-
Critical Hdwy	4.22	-	-	4.22	-	-	7.62	6.62	7.02	7.62	6.62	7.02
Critical Hdwy Stg 1	-	-	-	-	-	-	6.62	5.62	-	6.62	5.62	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.62	5.62	-	6.62	5.62	-
Follow-up Hdwy	2.26	-	-	2.26	-	-	3.56	4.06	3.36	3.56	4.06	3.36
Pot Cap-1 Maneuver	1111	-	-	849	-	-	188	172	623	244	170	786
Stage 1	-	-	-	-	-	-	381	425	-	505	526	-
Stage 2	-	-	-	-	-	-	672	525	-	629	419	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1111	-	-	849	-	-	178	162	623	193	160	786
Mov Cap-2 Maneuver	-	-	-	-	-	-	178	162	-	193	160	-
Stage 1	-	-	-	-	-	-	381	425	-	505	496	-
Stage 2	-	-	-	-	-	-	629	495	-	520	419	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0			1			13.2			20		
HCM LOS							B			C		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	551	1111	-	-	849	-	-	258
HCM Lane V/C Ratio	0.208	-	-	-	0.057	-	-	0.07
HCM Control Delay (s)	13.2	0	-	-	9.5	-	-	20
HCM Lane LOS	B	A	-	-	A	-	-	C
HCM 95th %tile Q(veh)	0.8	0	-	-	0.2	-	-	0.2

Intersection

Int Delay, s/veh 0.7

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	320	0	30	500	5	20
Future Vol, veh/h	320	0	30	500	5	20
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	6	6	6	6	6	6
Mvmt Flow	344	0	32	538	5	22

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	344
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	4.16
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	2.254
Pot Cap-1 Maneuver	-	-	1193
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	1193
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.5	12.2
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	529	-	-	1193	-
HCM Lane V/C Ratio	0.051	-	-	0.027	-
HCM Control Delay (s)	12.2	-	-	8.1	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.2	-	-	0.1	-

Intersection						
Int Delay, s/veh	0.6					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	330	5	30	520	5	20
Future Vol, veh/h	330	5	30	520	5	20
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	6	6	6	6	6	6
Mvmt Flow	375	6	34	591	6	23
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	381	0	1037	378
Stage 1	-	-	-	-	378	-
Stage 2	-	-	-	-	659	-
Critical Hdwy	-	-	4.16	-	6.46	6.26
Critical Hdwy Stg 1	-	-	-	-	5.46	-
Critical Hdwy Stg 2	-	-	-	-	5.46	-
Follow-up Hdwy	-	-	2.254	-	3.554	3.354
Pot Cap-1 Maneuver	-	-	1156	-	252	660
Stage 1	-	-	-	-	684	-
Stage 2	-	-	-	-	507	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1156	-	241	660
Mov Cap-2 Maneuver	-	-	-	-	241	-
Stage 1	-	-	-	-	684	-
Stage 2	-	-	-	-	485	-
Approach	EB		WB		NB	
HCM Control Delay, s	0		0.4		12.8	
HCM LOS					B	
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	490	-	-	1156	-	
HCM Lane V/C Ratio	0.058	-	-	0.029	-	
HCM Control Delay (s)	12.8	-	-	8.2	0	
HCM Lane LOS	B	-	-	A	A	
HCM 95th %tile Q(veh)	0.2	-	-	0.1	-	

Intersection												
Int Delay, s/veh	1.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	10	350	5	10	520	5	10	5	5	5	10	20
Future Vol, veh/h	10	350	5	10	520	5	10	5	5	5	10	20
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	6	6	6	6	6	6	6	6	6	6	6	6
Mvmt Flow	11	368	5	11	547	5	11	5	5	5	11	21
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	552	0	0	373	0	0	981	967	371	970	967	550
Stage 1	-	-	-	-	-	-	393	393	-	572	572	-
Stage 2	-	-	-	-	-	-	588	574	-	398	395	-
Critical Hdwy	4.16	-	-	4.16	-	-	7.16	6.56	6.26	7.16	6.56	6.26
Critical Hdwy Stg 1	-	-	-	-	-	-	6.16	5.56	-	6.16	5.56	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.16	5.56	-	6.16	5.56	-
Follow-up Hdwy	2.254	-	-	2.254	-	-	3.554	4.054	3.354	3.554	4.054	3.354
Pot Cap-1 Maneuver	998	-	-	1164	-	-	225	250	666	229	250	527
Stage 1	-	-	-	-	-	-	624	599	-	498	498	-
Stage 2	-	-	-	-	-	-	488	497	-	620	598	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	998	-	-	1164	-	-	205	243	666	219	243	527
Mov Cap-2 Maneuver	-	-	-	-	-	-	205	243	-	219	243	-
Stage 1	-	-	-	-	-	-	615	591	-	491	491	-
Stage 2	-	-	-	-	-	-	452	490	-	601	590	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.2			0.2			20.1			16.8		
HCM LOS							C			C		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	260	998	-	-	1164	-	-	343				
HCM Lane V/C Ratio	0.081	0.011	-	-	0.009	-	-	0.107				
HCM Control Delay (s)	20.1	8.6	0	-	8.1	0	-	16.8				
HCM Lane LOS	C	A	A	-	A	A	-	C				
HCM 95th %tile Q(veh)	0.3	0	-	-	0	-	-	0.4				

Intersection						
Int Delay, s/veh	0.3					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	400	5	20	580	0	10
Future Vol, veh/h	400	5	20	580	0	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	6	6	6	6	6	6
Mvmt Flow	426	5	21	617	0	11
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	431	0	1088	429
Stage 1	-	-	-	-	429	-
Stage 2	-	-	-	-	659	-
Critical Hdwy	-	-	4.16	-	6.46	6.26
Critical Hdwy Stg 1	-	-	-	-	5.46	-
Critical Hdwy Stg 2	-	-	-	-	5.46	-
Follow-up Hdwy	-	-	2.254	-	3.554	3.354
Pot Cap-1 Maneuver	-	-	1107	-	235	618
Stage 1	-	-	-	-	648	-
Stage 2	-	-	-	-	507	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1107	-	228	618
Mov Cap-2 Maneuver	-	-	-	-	228	-
Stage 1	-	-	-	-	648	-
Stage 2	-	-	-	-	492	-
Approach	EB		WB		NB	
HCM Control Delay, s	0		0.3		10.9	
HCM LOS					B	
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	618	-	-	1107	-	
HCM Lane V/C Ratio	0.017	-	-	0.019	-	
HCM Control Delay (s)	10.9	-	-	8.3	0	
HCM Lane LOS	B	-	-	A	A	
HCM 95th %tile Q(veh)	0.1	-	-	0.1	-	

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Intersection												
Int Delay, s/veh	1.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	5	400	5	20	610	20	5	0	10	20	0	5
Future Vol, veh/h	5	400	5	20	610	20	5	0	10	20	0	5
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	91	91	91	91	91	91	91	91	91	91	91	91
Heavy Vehicles, %	6	6	6	6	6	6	6	6	6	6	6	6
Mvmt Flow	5	440	5	22	670	22	5	0	11	22	0	5
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	692	0	0	445	0	0	1181	1189	443	1183	1180	681
Stage 1	-	-	-	-	-	-	453	453	-	725	725	-
Stage 2	-	-	-	-	-	-	728	736	-	458	455	-
Critical Hdwy	4.16	-	-	4.16	-	-	7.16	6.56	6.26	7.16	6.56	6.26
Critical Hdwy Stg 1	-	-	-	-	-	-	6.16	5.56	-	6.16	5.56	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.16	5.56	-	6.16	5.56	-
Follow-up Hdwy	2.254	-	-	2.254	-	-	3.554	4.054	3.354	3.554	4.054	3.354
Pot Cap-1 Maneuver	885	-	-	1094	-	-	164	185	606	163	187	444
Stage 1	-	-	-	-	-	-	579	563	-	410	424	-
Stage 2	-	-	-	-	-	-	409	419	-	575	562	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	885	-	-	1094	-	-	157	177	606	155	179	444
Mov Cap-2 Maneuver	-	-	-	-	-	-	157	177	-	155	179	-
Stage 1	-	-	-	-	-	-	574	558	-	407	410	-
Stage 2	-	-	-	-	-	-	391	405	-	560	558	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.1			0.3			17.3			28.9		
HCM LOS							C			D		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	310	885	-	-	1094	-	-	178				
HCM Lane V/C Ratio	0.053	0.006	-	-	0.02	-	-	0.154				
HCM Control Delay (s)	17.3	9.1	0	-	8.4	0	-	28.9				
HCM Lane LOS	C	A	A	-	A	A	-	D				
HCM 95th %tile Q(veh)	0.2	0	-	-	0.1	-	-	0.5				

Intersection												
Int Delay, s/veh	1.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	10	420	5	0	640	30	5	5	5	20	5	10
Future Vol, veh/h	10	420	5	0	640	30	5	5	5	20	5	10
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	6	6	6	6	6	6	6	6	6	6	6	6
Mvmt Flow	11	457	5	0	696	33	5	5	5	22	5	11
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	729	0	0	462	0	0	1203	1211	460	1200	1197	713
Stage 1	-	-	-	-	-	-	482	482	-	713	713	-
Stage 2	-	-	-	-	-	-	721	729	-	487	484	-
Critical Hdwy	4.16	-	-	4.16	-	-	7.16	6.56	6.26	7.16	6.56	6.26
Critical Hdwy Stg 1	-	-	-	-	-	-	6.16	5.56	-	6.16	5.56	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.16	5.56	-	6.16	5.56	-
Follow-up Hdwy	2.254	-	-	2.254	-	-	3.554	4.054	3.354	3.554	4.054	3.354
Pot Cap-1 Maneuver	857	-	-	1078	-	-	158	179	593	159	183	425
Stage 1	-	-	-	-	-	-	558	547	-	417	429	-
Stage 2	-	-	-	-	-	-	412	422	-	555	545	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	857	-	-	1078	-	-	149	176	593	152	180	425
Mov Cap-2 Maneuver	-	-	-	-	-	-	149	176	-	152	180	-
Stage 1	-	-	-	-	-	-	549	538	-	410	429	-
Stage 2	-	-	-	-	-	-	396	422	-	535	536	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.2			0			23.3			28.5		
HCM LOS							C			D		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	213	857	-	-	1078	-	-	191				
HCM Lane V/C Ratio	0.077	0.013	-	-	-	-	-	0.199				
HCM Control Delay (s)	23.3	9.3	0	-	0	-	-	28.5				
HCM Lane LOS	C	A	A	-	A	-	-	D				
HCM 95th %tile Q(veh)	0.2	0	-	-	0	-	-	0.7				

Intersection												
Int Delay, s/veh	1.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	5	440	5	90	680	5	5	0	40	5	0	5
Future Vol, veh/h	5	440	5	90	680	5	5	0	40	5	0	5
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	150	-	-	425	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	83	83	83	95	95	95	95	95	95
Heavy Vehicles, %	6	6	6	6	6	6	6	6	6	6	6	6
Mvmt Flow	5	463	5	108	819	6	5	0	42	5	0	5
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	825	0	0	468	0	0	1102	1517	234	1280	1516	413
Stage 1	-	-	-	-	-	-	476	476	-	1038	1038	-
Stage 2	-	-	-	-	-	-	626	1041	-	242	478	-
Critical Hdwy	4.22	-	-	4.22	-	-	7.62	6.62	7.02	7.62	6.62	7.02
Critical Hdwy Stg 1	-	-	-	-	-	-	6.62	5.62	-	6.62	5.62	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.62	5.62	-	6.62	5.62	-
Follow-up Hdwy	2.26	-	-	2.26	-	-	3.56	4.06	3.36	3.56	4.06	3.36
Pot Cap-1 Maneuver	776	-	-	1062	-	-	161	114	756	119	114	577
Stage 1	-	-	-	-	-	-	528	545	-	240	298	-
Stage 2	-	-	-	-	-	-	429	297	-	729	544	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	776	-	-	1062	-	-	146	102	756	103	102	577
Mov Cap-2 Maneuver	-	-	-	-	-	-	146	102	-	103	102	-
Stage 1	-	-	-	-	-	-	525	542	-	239	268	-
Stage 2	-	-	-	-	-	-	382	267	-	684	541	-
Approach	EB		WB				NB			SB		
HCM Control Delay, s	0.1		1				12.7			26.9		
HCM LOS							B			D		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	516	776	-	-	1062	-	-	175				
HCM Lane V/C Ratio	0.092	0.007	-	-	0.102	-	-	0.06				
HCM Control Delay (s)	12.7	9.7	-	-	8.8	-	-	26.9				
HCM Lane LOS	B	A	-	-	A	-	-	D				
HCM 95th %tile Q(veh)	0.3	0	-	-	0.3	-	-	0.2				

Intersection						
Int Delay, s/veh	0.9					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	550	10	20	340	5	40
Future Vol, veh/h	550	10	20	340	5	40
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	87	87	87	87	87	87
Heavy Vehicles, %	6	6	6	6	6	6
Mvmt Flow	632	11	23	391	6	46

Major/Minor	Major1	Major2	Minor1			
Conflicting Flow All	0	0	643	0	1075	638
Stage 1	-	-	-	-	638	-
Stage 2	-	-	-	-	437	-
Critical Hdwy	-	-	4.16	-	6.46	6.26
Critical Hdwy Stg 1	-	-	-	-	5.46	-
Critical Hdwy Stg 2	-	-	-	-	5.46	-
Follow-up Hdwy	-	-	2.254	-	3.554	3.354
Pot Cap-1 Maneuver	-	-	923	-	239	469
Stage 1	-	-	-	-	519	-
Stage 2	-	-	-	-	643	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	923	-	231	469
Mov Cap-2 Maneuver	-	-	-	-	231	-
Stage 1	-	-	-	-	519	-
Stage 2	-	-	-	-	622	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.5	14.7
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	421	-	-	923	-
HCM Lane V/C Ratio	0.123	-	-	0.025	-
HCM Control Delay (s)	14.7	-	-	9	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.4	-	-	0.1	-

Intersection						
Int Delay, s/veh	0.7					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	600	5	10	340	5	30
Future Vol, veh/h	600	5	10	340	5	30
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	83	83	83	83	83	83
Heavy Vehicles, %	6	6	6	6	6	6
Mvmt Flow	723	6	12	410	6	36
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	729	0	1160	726
Stage 1	-	-	-	-	726	-
Stage 2	-	-	-	-	434	-
Critical Hdwy	-	-	4.16	-	6.46	6.26
Critical Hdwy Stg 1	-	-	-	-	5.46	-
Critical Hdwy Stg 2	-	-	-	-	5.46	-
Follow-up Hdwy	-	-	2.254	-	3.554	3.354
Pot Cap-1 Maneuver	-	-	857	-	212	418
Stage 1	-	-	-	-	472	-
Stage 2	-	-	-	-	645	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	857	-	208	418
Mov Cap-2 Maneuver	-	-	-	-	208	-
Stage 1	-	-	-	-	472	-
Stage 2	-	-	-	-	633	-
Approach	EB		WB		NB	
HCM Control Delay, s	0		0.3		16.1	
HCM LOS	C					
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	365	-	-	857	-	
HCM Lane V/C Ratio	0.116	-	-	0.014	-	
HCM Control Delay (s)	16.1	-	-	9.3	0	
HCM Lane LOS	C	-	-	A	A	
HCM 95th %tile Q(veh)	0.4	-	-	0	-	

Intersection												
Int Delay, s/veh	0.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	650	5	5	360	0	5	0	10	5	0	5
Future Vol, veh/h	0	650	5	5	360	0	5	0	10	5	0	5
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	86	86	86	86	86	86	86	86	86	86	86	86
Heavy Vehicles, %	6	6	6	6	6	6	6	6	6	6	6	6
Mvmt Flow	0	756	6	6	419	0	6	0	12	6	0	6

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	419	0	0	762	0	0	1193	1190	759	1196	1193	419
Stage 1	-	-	-	-	-	-	759	759	-	431	431	-
Stage 2	-	-	-	-	-	-	434	431	-	765	762	-
Critical Hdwy	4.16	-	-	4.16	-	-	7.16	6.56	6.26	7.16	6.56	6.26
Critical Hdwy Stg 1	-	-	-	-	-	-	6.16	5.56	-	6.16	5.56	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.16	5.56	-	6.16	5.56	-
Follow-up Hdwy	2.254	-	-	2.254	-	-	3.554	4.054	3.354	3.554	4.054	3.354
Pot Cap-1 Maneuver	1119	-	-	833	-	-	161	184	400	160	184	626
Stage 1	-	-	-	-	-	-	393	409	-	595	576	-
Stage 2	-	-	-	-	-	-	593	576	-	390	408	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1119	-	-	833	-	-	158	182	400	154	182	626
Mov Cap-2 Maneuver	-	-	-	-	-	-	158	182	-	154	182	-
Stage 1	-	-	-	-	-	-	393	409	-	595	571	-
Stage 2	-	-	-	-	-	-	582	571	-	379	408	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0.1	19.5	20.3
HCM LOS			C	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	265	1119	-	-	833	-	-	247
HCM Lane V/C Ratio	0.066	-	-	-	0.007	-	-	0.047
HCM Control Delay (s)	19.5	0	-	-	9.4	0	-	20.3
HCM Lane LOS	C	A	-	-	A	A	-	C
HCM 95th %tile Q(veh)	0.2	0	-	-	0	-	-	0.1

Intersection						
Int Delay, s/veh	0.6					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	650	5	10	390	5	30
Future Vol, veh/h	650	5	10	390	5	30
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	6	6	6	6	6	6
Mvmt Flow	765	6	12	459	6	35
Major/Minor	Major1	Major2		Minor1		
Conflicting Flow All	0	0	771	0	1251	768
Stage 1	-	-	-	-	768	-
Stage 2	-	-	-	-	483	-
Critical Hdwy	-	-	4.16	-	6.46	6.26
Critical Hdwy Stg 1	-	-	-	-	5.46	-
Critical Hdwy Stg 2	-	-	-	-	5.46	-
Follow-up Hdwy	-	-	2.254	-	3.554	3.354
Pot Cap-1 Maneuver	-	-	826	-	187	395
Stage 1	-	-	-	-	451	-
Stage 2	-	-	-	-	612	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	826	-	183	395
Mov Cap-2 Maneuver	-	-	-	-	183	-
Stage 1	-	-	-	-	451	-
Stage 2	-	-	-	-	600	-
Approach	EB	WB		NB		
HCM Control Delay, s	0	0.2		17.1		
HCM LOS	C					
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	339	-	-	826	-	
HCM Lane V/C Ratio	0.121	-	-	0.014	-	
HCM Control Delay (s)	17.1	-	-	9.4	0	
HCM Lane LOS	C	-	-	A	A	
HCM 95th %tile Q(veh)	0.4	-	-	0	-	

Intersection												
Int Delay, s/veh	1.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	690	0	5	410	10	0	0	20	30	0	0
Future Vol, veh/h	0	690	0	5	410	10	0	0	20	30	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	81	81	81	81	81	81	81	81	81	81	81	81
Heavy Vehicles, %	6	6	6	6	6	6	6	6	6	6	6	6
Mvmt Flow	0	852	0	6	506	12	0	0	25	37	0	0
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	518	0	0	852	0	0	1376	1382	852	1389	1376	512
Stage 1	-	-	-	-	-	-	852	852	-	524	524	-
Stage 2	-	-	-	-	-	-	524	530	-	865	852	-
Critical Hdwy	4.16	-	-	4.16	-	-	7.16	6.56	6.26	7.16	6.56	6.26
Critical Hdwy Stg 1	-	-	-	-	-	-	6.16	5.56	-	6.16	5.56	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.16	5.56	-	6.16	5.56	-
Follow-up Hdwy	2.254	-	-	2.254	-	-	3.554	4.054	3.354	3.554	4.054	3.354
Pot Cap-1 Maneuver	1028	-	-	770	-	-	120	141	353	118	142	554
Stage 1	-	-	-	-	-	-	349	370	-	529	523	-
Stage 2	-	-	-	-	-	-	529	520	-	343	370	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1028	-	-	770	-	-	119	139	353	109	140	554
Mov Cap-2 Maneuver	-	-	-	-	-	-	119	139	-	109	140	-
Stage 1	-	-	-	-	-	-	349	370	-	529	517	-
Stage 2	-	-	-	-	-	-	523	514	-	319	370	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0			0.1			16			54.2		
HCM LOS							C			F		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	353	1028	-	-	770	-	-	109				
HCM Lane V/C Ratio	0.07	-	-	-	0.008	-	-	0.34				
HCM Control Delay (s)	16	0	-	-	9.7	0	-	54.2				
HCM Lane LOS	C	A	-	-	A	A	-	F				
HCM 95th %tile Q(veh)	0.2	0	-	-	0	-	-	1.3				

Intersection												
Int Delay, s/veh	3.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	730	0	0	420	20	0	0	0	50	0	10
Future Vol, veh/h	0	730	0	0	420	20	0	0	0	50	0	10
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	81	81	81	81	81	81	81	81	81	81	81	81
Heavy Vehicles, %	6	6	6	6	6	6	6	6	6	6	6	6
Mvmt Flow	0	901	0	0	519	25	0	0	0	62	0	12
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	544	0	0	901	0	0	1439	1445	901	1433	1433	532
Stage 1	-	-	-	-	-	-	901	901	-	532	532	-
Stage 2	-	-	-	-	-	-	538	544	-	901	901	-
Critical Hdwy	4.16	-	-	4.16	-	-	7.16	6.56	6.26	7.16	6.56	6.26
Critical Hdwy Stg 1	-	-	-	-	-	-	6.16	5.56	-	6.16	5.56	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.16	5.56	-	6.16	5.56	-
Follow-up Hdwy	2.254	-	-	2.254	-	-	3.554	4.054	3.354	3.554	4.054	3.354
Pot Cap-1 Maneuver	1005	-	-	738	-	-	108	129	331	109	131	540
Stage 1	-	-	-	-	-	-	327	352	-	524	519	-
Stage 2	-	-	-	-	-	-	520	513	-	327	352	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1005	-	-	738	-	-	106	129	331	109	131	540
Mov Cap-2 Maneuver	-	-	-	-	-	-	106	129	-	109	131	-
Stage 1	-	-	-	-	-	-	327	352	-	524	519	-
Stage 2	-	-	-	-	-	-	508	513	-	327	352	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0			0			0			68		
HCM LOS							A			F		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	-	1005	-	-	738	-	-	126				
HCM Lane V/C Ratio	-	-	-	-	-	-	-	0.588				
HCM Control Delay (s)	0	0	-	-	0	-	-	68				
HCM Lane LOS	A	A	-	-	A	-	-	F				
HCM 95th %tile Q(veh)	-	0	-	-	0	-	-	2.9				

Intersection												
Int Delay, s/veh	2.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	770	20	50	450	10	5	0	120	10	0	5
Future Vol, veh/h	0	770	20	50	450	10	5	0	120	10	0	5
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	150	-	-	425	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	83	83	83	83	83	83	83	83	83	83	83	83
Heavy Vehicles, %	6	6	6	6	6	6	6	6	6	6	6	6
Mvmt Flow	0	928	24	60	542	12	6	0	145	12	0	6
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	554	0	0	952	0	0	1331	1614	476	1132	1620	277
Stage 1	-	-	-	-	-	-	940	940	-	668	668	-
Stage 2	-	-	-	-	-	-	391	674	-	464	952	-
Critical Hdwy	4.22	-	-	4.22	-	-	7.62	6.62	7.02	7.62	6.62	7.02
Critical Hdwy Stg 1	-	-	-	-	-	-	6.62	5.62	-	6.62	5.62	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.62	5.62	-	6.62	5.62	-
Follow-up Hdwy	2.26	-	-	2.26	-	-	3.56	4.06	3.36	3.56	4.06	3.36
Pot Cap-1 Maneuver	985	-	-	693	-	-	109	99	525	153	98	708
Stage 1	-	-	-	-	-	-	276	332	-	405	445	-
Stage 2	-	-	-	-	-	-	594	442	-	537	327	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	985	-	-	693	-	-	101	90	525	104	89	708
Mov Cap-2 Maneuver	-	-	-	-	-	-	101	90	-	104	89	-
Stage 1	-	-	-	-	-	-	276	332	-	405	406	-
Stage 2	-	-	-	-	-	-	538	404	-	389	327	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0			1			17			33.3		
HCM LOS							C			D		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	450	985	-	-	693	-	-	145				
HCM Lane V/C Ratio	0.335	-	-	-	0.087	-	-	0.125				
HCM Control Delay (s)	17	0	-	-	10.7	-	-	33.3				
HCM Lane LOS	C	A	-	-	B	-	-	D				
HCM 95th %tile Q(veh)	1.5	0	-	-	0.3	-	-	0.4				

Intersection						
Int Delay, s/veh	0.6					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	430	0	40	650	5	20
Future Vol, veh/h	430	0	40	650	5	20
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	87	87	87	87	87	87
Heavy Vehicles, %	6	6	6	6	6	6
Mvmt Flow	494	0	46	747	6	23

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	494	0	1333
Stage 1	-	-	-	-	494
Stage 2	-	-	-	-	839
Critical Hdwy	-	-	4.16	-	6.46
Critical Hdwy Stg 1	-	-	-	-	5.46
Critical Hdwy Stg 2	-	-	-	-	5.46
Follow-up Hdwy	-	-	2.254	-	3.554
Pot Cap-1 Maneuver	-	-	1049	-	167
Stage 1	-	-	-	-	605
Stage 2	-	-	-	-	417
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1049	-	154
Mov Cap-2 Maneuver	-	-	-	-	154
Stage 1	-	-	-	-	605
Stage 2	-	-	-	-	386

Approach	EB	WB	NB
HCM Control Delay, s	0	0.5	15.6
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	369	-	-	1049	-
HCM Lane V/C Ratio	0.078	-	-	0.044	-
HCM Control Delay (s)	15.6	-	-	8.6	0
HCM Lane LOS	C	-	-	A	A
HCM 95th %tile Q(veh)	0.3	-	-	0.1	-

Intersection						
Int Delay, s/veh	0.8					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	440	5	40	690	5	30
Future Vol, veh/h	440	5	40	690	5	30
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	83	83	83	83	83	83
Heavy Vehicles, %	6	6	6	6	6	6
Mvmt Flow	530	6	48	831	6	36
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	536	0	1460	533
Stage 1	-	-	-	-	533	-
Stage 2	-	-	-	-	927	-
Critical Hdwy	-	-	4.16	-	6.46	6.26
Critical Hdwy Stg 1	-	-	-	-	5.46	-
Critical Hdwy Stg 2	-	-	-	-	5.46	-
Follow-up Hdwy	-	-	2.254	-	3.554	3.354
Pot Cap-1 Maneuver	-	-	1012	-	139	539
Stage 1	-	-	-	-	580	-
Stage 2	-	-	-	-	379	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1012	-	127	539
Mov Cap-2 Maneuver	-	-	-	-	127	-
Stage 1	-	-	-	-	580	-
Stage 2	-	-	-	-	346	-
Approach	EB		WB		NB	
HCM Control Delay, s	0		0.5		16	
HCM LOS	C					
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	368	-	-	1012	-	
HCM Lane V/C Ratio	0.115	-	-	0.048	-	
HCM Control Delay (s)	16	-	-	8.7	0	
HCM Lane LOS	C	-	-	A	A	
HCM 95th %tile Q(veh)	0.4	-	-	0.1	-	

Intersection												
Int Delay, s/veh	1.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	20	460	10	10	690	0	10	5	5	5	10	30
Future Vol, veh/h	20	460	10	10	690	0	10	5	5	5	10	30
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	86	86	86	86	86	86	86	86	86	86	86	86
Heavy Vehicles, %	6	6	6	6	6	6	6	6	6	6	6	6
Mvmt Flow	23	535	12	12	802	0	12	6	6	6	12	35
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	802	0	0	547	0	0	1437	1413	541	1419	1419	802
Stage 1	-	-	-	-	-	-	587	587	-	826	826	-
Stage 2	-	-	-	-	-	-	850	826	-	593	593	-
Critical Hdwy	4.16	-	-	4.16	-	-	7.16	6.56	6.26	7.16	6.56	6.26
Critical Hdwy Stg 1	-	-	-	-	-	-	6.16	5.56	-	6.16	5.56	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.16	5.56	-	6.16	5.56	-
Follow-up Hdwy	2.254	-	-	2.254	-	-	3.554	4.054	3.354	3.554	4.054	3.354
Pot Cap-1 Maneuver	804	-	-	1003	-	-	109	135	533	112	134	378
Stage 1	-	-	-	-	-	-	489	490	-	360	381	-
Stage 2	-	-	-	-	-	-	350	381	-	485	487	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	804	-	-	1003	-	-	88	127	533	102	126	378
Mov Cap-2 Maneuver	-	-	-	-	-	-	88	127	-	102	126	-
Stage 1	-	-	-	-	-	-	469	470	-	345	373	-
Stage 2	-	-	-	-	-	-	301	373	-	454	467	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.4			0.1			41			26.8		
HCM LOS							E			D		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	123	804	-	-	1003	-	-	217				
HCM Lane V/C Ratio	0.189	0.029	-	-	0.012	-	-	0.241				
HCM Control Delay (s)	41	9.6	0	-	8.6	0	-	26.8				
HCM Lane LOS	E	A	A	-	A	A	-	D				
HCM 95th %tile Q(veh)	0.7	0.1	-	-	0	-	-	0.9				

Intersection						
Int Delay, s/veh	0.2					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	520	5	20	760	0	10
Future Vol, veh/h	520	5	20	760	0	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	6	6	6	6	6	6
Mvmt Flow	612	6	24	894	0	12
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	618	0	1557	615
Stage 1	-	-	-	-	615	-
Stage 2	-	-	-	-	942	-
Critical Hdwy	-	-	4.16	-	6.46	6.26
Critical Hdwy Stg 1	-	-	-	-	5.46	-
Critical Hdwy Stg 2	-	-	-	-	5.46	-
Follow-up Hdwy	-	-	2.254	-	3.554	3.354
Pot Cap-1 Maneuver	-	-	943	-	121	484
Stage 1	-	-	-	-	532	-
Stage 2	-	-	-	-	373	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	943	-	115	484
Mov Cap-2 Maneuver	-	-	-	-	115	-
Stage 1	-	-	-	-	532	-
Stage 2	-	-	-	-	354	-
Approach	EB		WB		NB	
HCM Control Delay, s	0		0.2		12.6	
HCM LOS	B					
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	484	-	-	943	-	
HCM Lane V/C Ratio	0.024	-	-	0.025	-	
HCM Control Delay (s)	12.6	-	-	8.9	0	
HCM Lane LOS	B	-	-	A	A	
HCM 95th %tile Q(veh)	0.1	-	-	0.1	-	

Intersection												
Int Delay, s/veh	2.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	5	530	5	30	800	30	5	0	10	20	0	5
Future Vol, veh/h	5	530	5	30	800	30	5	0	10	20	0	5
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	81	81	81	81	81	81	81	81	81	81	81	81
Heavy Vehicles, %	6	6	6	6	6	6	6	6	6	6	6	6
Mvmt Flow	6	654	6	37	988	37	6	0	12	25	0	6
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1025	0	0	660	0	0	1753	1768	657	1756	1753	1007
Stage 1	-	-	-	-	-	-	669	669	-	1081	1081	-
Stage 2	-	-	-	-	-	-	1084	1099	-	675	672	-
Critical Hdwy	4.16	-	-	4.16	-	-	7.16	6.56	6.26	7.16	6.56	6.26
Critical Hdwy Stg 1	-	-	-	-	-	-	6.16	5.56	-	6.16	5.56	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.16	5.56	-	6.16	5.56	-
Follow-up Hdwy	2.254	-	-	2.254	-	-	3.554	4.054	3.354	3.554	4.054	3.354
Pot Cap-1 Maneuver	662	-	-	909	-	-	65	82	458	65	83	287
Stage 1	-	-	-	-	-	-	441	450	-	259	289	-
Stage 2	-	-	-	-	-	-	258	284	-	437	448	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	662	-	-	909	-	-	58	73	458	58	74	287
Mov Cap-2 Maneuver	-	-	-	-	-	-	58	73	-	58	74	-
Stage 1	-	-	-	-	-	-	435	444	-	255	262	-
Stage 2	-	-	-	-	-	-	228	257	-	419	442	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.1			0.3			34.8			94		
HCM LOS							D			F		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	139	662	-	-	909	-	-	69				
HCM Lane V/C Ratio	0.133	0.009	-	-	0.041	-	-	0.447				
HCM Control Delay (s)	34.8	10.5	0	-	9.1	0	-	94				
HCM Lane LOS	D	B	A	-	A	A	-	F				
HCM 95th %tile Q(veh)	0.4	0	-	-	0.1	-	-	1.8				

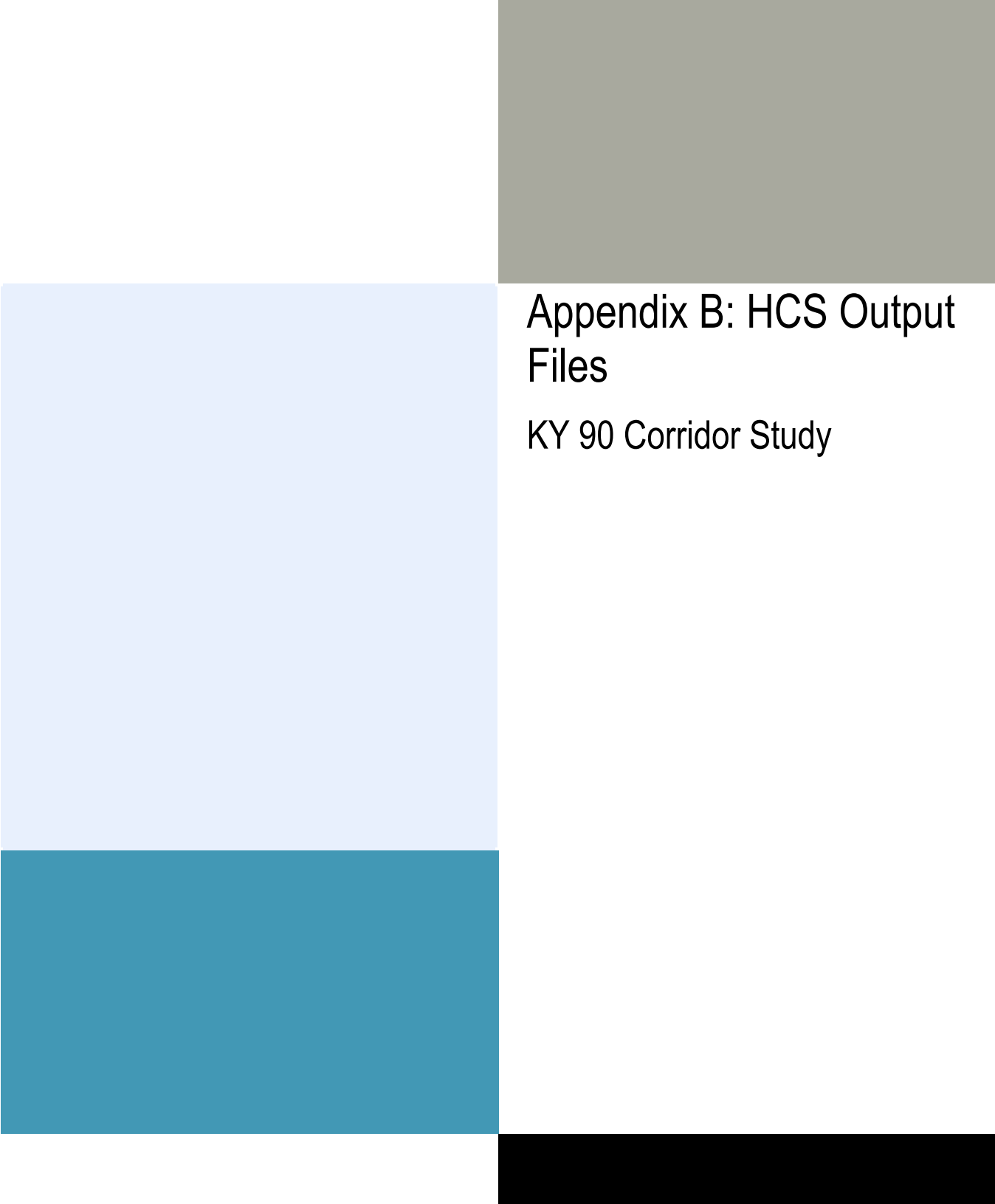
Intersection												
Int Delay, s/veh	5.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	10	560	5	0	840	50	5	5	5	30	5	10
Future Vol, veh/h	10	560	5	0	840	50	5	5	5	30	5	10
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	81	81	81	81	81	81	81	81	81	81	81	81
Heavy Vehicles, %	6	6	6	6	6	6	6	6	6	6	6	6
Mvmt Flow	12	691	6	0	1037	62	6	6	6	37	6	12

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1099	0	0	697	0	0	1795	1817	694	1792	1789	1068
Stage 1	-	-	-	-	-	-	718	718	-	1068	1068	-
Stage 2	-	-	-	-	-	-	1077	1099	-	724	721	-
Critical Hdwy	4.16	-	-	4.16	-	-	7.16	6.56	6.26	7.16	6.56	6.26
Critical Hdwy Stg 1	-	-	-	-	-	-	6.16	5.56	-	6.16	5.56	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.16	5.56	-	6.16	5.56	-
Follow-up Hdwy	2.254	-	-	2.254	-	-	3.554	4.054	3.354	3.554	4.054	3.354
Pot Cap-1 Maneuver	620	-	-	881	-	-	61	76	436	61	79	265
Stage 1	-	-	-	-	-	-	414	427	-	264	293	-
Stage 2	-	-	-	-	-	-	261	284	-	411	426	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	620	-	-	881	-	-	53	74	436	55	76	265
Mov Cap-2 Maneuver	-	-	-	-	-	-	53	74	-	55	76	-
Stage 1	-	-	-	-	-	-	401	413	-	256	293	-
Stage 2	-	-	-	-	-	-	244	284	-	386	412	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.2	0	57.2	157.6
HCM LOS			F	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	87	620	-	-	881	-	-	69
HCM Lane V/C Ratio	0.213	0.02	-	-	-	-	-	0.805
HCM Control Delay (s)	57.2	10.9	0	-	0	-	-	157.6
HCM Lane LOS	F	B	A	-	A	-	-	F
HCM 95th %tile Q(veh)	0.7	0.1	-	-	0	-	-	3.8

Intersection												
Int Delay, s/veh	2.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	5	580	10	120	890	5	5	0	50	10	0	5
Future Vol, veh/h	5	580	10	120	890	5	5	0	50	10	0	5
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	150	-	-	425	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	83	83	83	83	83	83	83	83	83	83	83	83
Heavy Vehicles, %	6	6	6	6	6	6	6	6	6	6	6	6
Mvmt Flow	6	699	12	145	1072	6	6	0	60	12	0	6
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1078	0	0	711	0	0	1543	2085	356	1727	2088	539
Stage 1	-	-	-	-	-	-	717	717	-	1365	1365	-
Stage 2	-	-	-	-	-	-	826	1368	-	362	723	-
Critical Hdwy	4.22	-	-	4.22	-	-	7.62	6.62	7.02	7.62	6.62	7.02
Critical Hdwy Stg 1	-	-	-	-	-	-	6.62	5.62	-	6.62	5.62	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.62	5.62	-	6.62	5.62	-
Follow-up Hdwy	2.26	-	-	2.26	-	-	3.56	4.06	3.36	3.56	4.06	3.36
Pot Cap-1 Maneuver	620	-	-	858	-	-	75	50	629	55	50	477
Stage 1	-	-	-	-	-	-	378	422	-	150	206	-
Stage 2	-	-	-	-	-	-	324	206	-	618	419	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	620	-	-	858	-	-	64	41	629	43	41	477
Mov Cap-2 Maneuver	-	-	-	-	-	-	64	41	-	43	41	-
Stage 1	-	-	-	-	-	-	374	418	-	149	171	-
Stage 2	-	-	-	-	-	-	266	171	-	553	415	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.1			1.2			17.7			85.4		
HCM LOS							C			F		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	349	620	-	-	858	-	-	62				
HCM Lane V/C Ratio	0.19	0.01	-	-	0.169	-	-	0.291				
HCM Control Delay (s)	17.7	10.9	-	-	10	-	-	85.4				
HCM Lane LOS	C	B	-	-	B	-	-	F				
HCM 95th %tile Q(veh)	0.7	0	-	-	0.6	-	-	1				



Appendix B: HCS Output Files

KY 90 Corridor Study

HCS Two-Lane Highway Report

Project Information

Analyst	Grace Fwelo	Date	4/15/2022
Agency	HDR	Analysis Year	2022
Jurisdiction		Time Analyzed	2022
Project Description	KY-90 Existing_AM EB	Units	U.S. Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	1505
Measured FFS	Measured	Free-Flow Speed, mi/h	65.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	494	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.87	Total Trucks, %	6.00
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.29

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	65.0
Speed Slope Coefficient (m)	4.57721	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.33632	PF Power Coefficient (p)	0.75139
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	4.3
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1505	-	-	61.9

Vehicle Results

Average Speed, mi/h	61.9	Percent Followers, %	54.5
Segment Travel Time, minutes	0.28	Follower Density (FD), followers/mi/ln	4.3
Vehicle LOS	C		

Segment 2

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	1580
Measured FFS	Measured	Free-Flow Speed, mi/h	65.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	494	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.87	Total Trucks, %	6.00
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.29

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	65.0
Speed Slope Coefficient (m)	4.57856	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.33265	PF Power Coefficient (p)	0.75272
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	4.3
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1580	-	-	61.9

Vehicle Results

Average Speed, mi/h	61.9	Percent Followers, %	54.3
Segment Travel Time, minutes	0.29	Follower Density (FD), followers/mi/ln	4.3
Vehicle LOS	C		

Segment 3

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	547
Measured FFS	Measured	Free-Flow Speed, mi/h	65.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	547	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.85	Total Trucks, %	6.00
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.32

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	65.0
Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.34699	PF Power Coefficient (p)	0.74766
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	5.1
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	547	-	-	61.7

Vehicle Results

Average Speed, mi/h	61.7	Percent Followers, %	57.6
Segment Travel Time, minutes	0.10	Follower Density (FD), followers/mi/ln	5.1
Vehicle LOS	C		

Segment 4

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	793
Measured FFS	Measured	Free-Flow Speed, mi/h	65.0

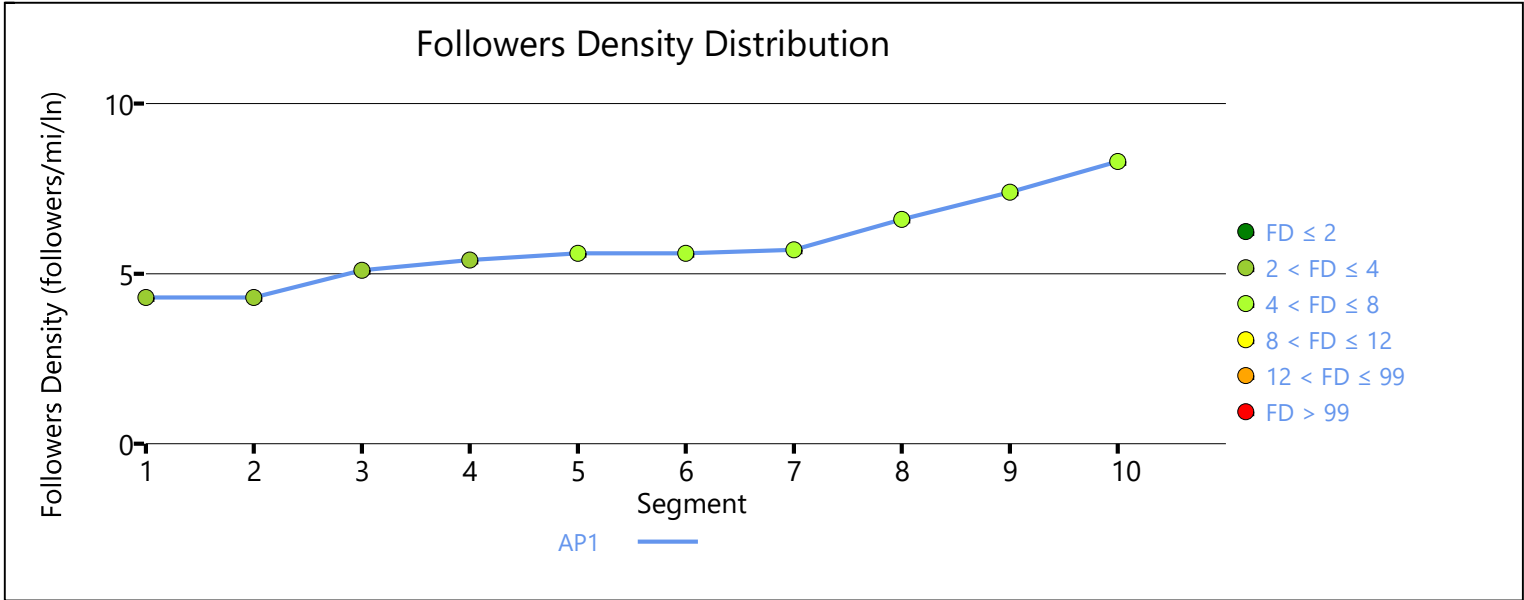
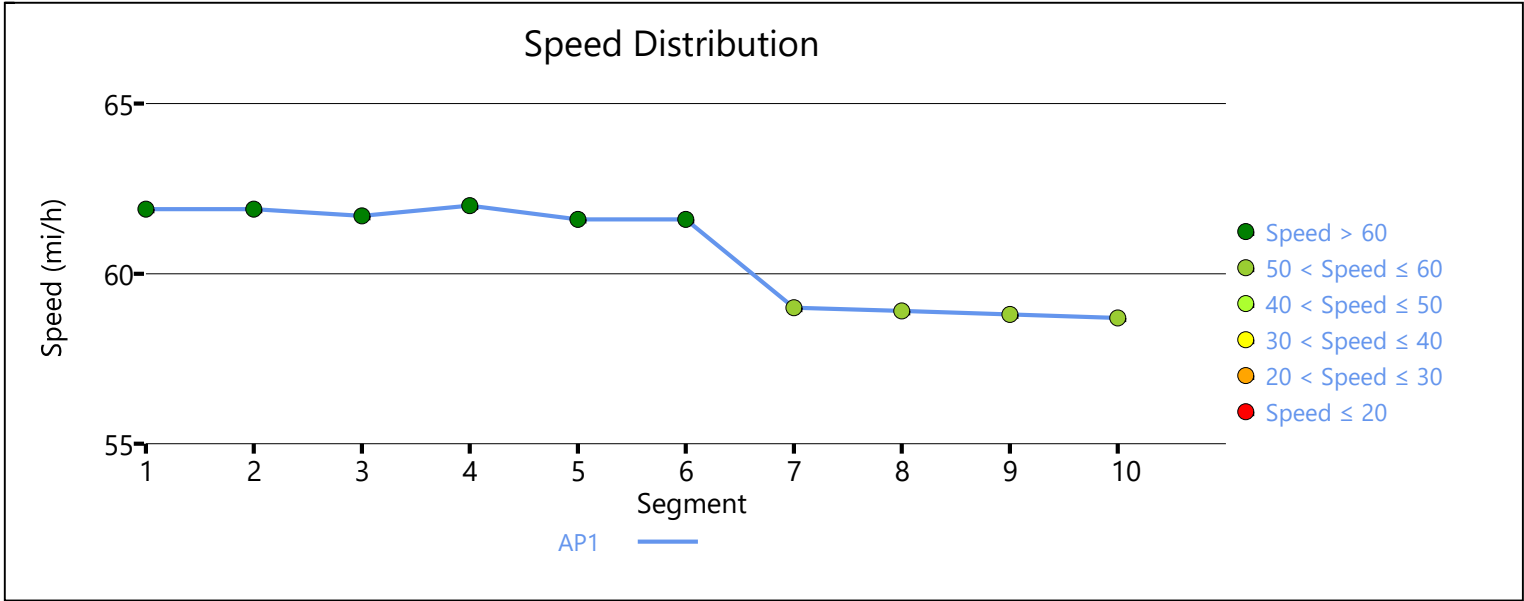
Demand and Capacity					
Directional Demand Flow Rate, veh/h		582	Opposing Demand Flow Rate, veh/h		341
Peak Hour Factor		0.85	Total Trucks, %		6.00
Segment Capacity, veh/h		1700	Demand/Capacity (D/C)		0.34
Intermediate Results					
Segment Vertical Class		1	Free-Flow Speed, mi/h		65.0
Speed Slope Coefficient (m)		4.36372	Speed Power Coefficient (p)		0.50710
PF Slope Coefficient (m)		-1.30043	PF Power Coefficient (p)		0.78664
In Passing Lane Effective Length?		No	Total Segment Density, veh/mi/ln		5.4
%Improvement to Percent Followers		0.0	%Improvement to Speed		0.0
Subsegment Data					
#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	793	-	-	62.0
Vehicle Results					
Average Speed, mi/h		62.0	Percent Followers, %		57.3
Segment Travel Time, minutes		0.15	Follower Density (FD), followers/mi/ln		5.4
Vehicle LOS		C			
Segment 5					
Vehicle Inputs					
Segment Type		Passing Constrained	Length, ft		990
Measured FFS		Measured	Free-Flow Speed, mi/h		65.0
Demand and Capacity					
Directional Demand Flow Rate, veh/h		582	Opposing Demand Flow Rate, veh/h		-
Peak Hour Factor		0.85	Total Trucks, %		6.00
Segment Capacity, veh/h		1700	Demand/Capacity (D/C)		0.34
Intermediate Results					
Segment Vertical Class		1	Free-Flow Speed, mi/h		65.0
Speed Slope Coefficient (m)		4.57372	Speed Power Coefficient (p)		0.41674
PF Slope Coefficient (m)		-1.34699	PF Power Coefficient (p)		0.74766
In Passing Lane Effective Length?		No	Total Segment Density, veh/mi/ln		5.6
%Improvement to Percent Followers		0.0	%Improvement to Speed		0.0
Subsegment Data					
#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	990	-	-	61.6
Vehicle Results					
Average Speed, mi/h		61.6	Percent Followers, %		59.3
Segment Travel Time, minutes		0.18	Follower Density (FD), followers/mi/ln		5.6

Vehicle LOS		C			
Segment 6					
Vehicle Inputs					
Segment Type		Passing Constrained		Length, ft	
Measured FFS		Measured		Free-Flow Speed, mi/h	
1533				65.0	
Demand and Capacity					
Directional Demand Flow Rate, veh/h		582		Opposing Demand Flow Rate, veh/h	
Peak Hour Factor		0.85		Total Trucks, %	
Segment Capacity, veh/h		1700		Demand/Capacity (D/C)	
0.34					
Intermediate Results					
Segment Vertical Class		1		Free-Flow Speed, mi/h	
Speed Slope Coefficient (m)		4.57772		Speed Power Coefficient (p)	
PF Slope Coefficient (m)		-1.33506		PF Power Coefficient (p)	
In Passing Lane Effective Length?		No		Total Segment Density, veh/mi/ln	
%Improvement to Percent Followers		0.0		%Improvement to Speed	
0.0					
Subsegment Data					
#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1533	-	-	61.6
Vehicle Results					
Average Speed, mi/h		61.6		Percent Followers, %	
Segment Travel Time, minutes		0.28		Follower Density (FD), followers/mi/ln	
Vehicle LOS		C			
Segment 7					
Vehicle Inputs					
Segment Type		Passing Constrained		Length, ft	
Measured FFS		Measured		Free-Flow Speed, mi/h	
4355				62.4	
Demand and Capacity					
Directional Demand Flow Rate, veh/h		587		Opposing Demand Flow Rate, veh/h	
Peak Hour Factor		0.86		Total Trucks, %	
Segment Capacity, veh/h		1700		Demand/Capacity (D/C)	
0.35					
Intermediate Results					
Segment Vertical Class		1		Free-Flow Speed, mi/h	
Speed Slope Coefficient (m)		4.61572		Speed Power Coefficient (p)	
PF Slope Coefficient (m)		-1.28444		PF Power Coefficient (p)	
In Passing Lane Effective Length?		No		Total Segment Density, veh/mi/ln	
%Improvement to Percent Followers		0.0		%Improvement to Speed	
0.0					

Subsegment Data					
#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	4355	-	-	59.0
Vehicle Results					
Average Speed, mi/h		59.0	Percent Followers, %		57.4
Segment Travel Time, minutes		0.84	Follower Density (FD), followers/mi/ln		5.7
Vehicle LOS		C			
Segment 8					
Vehicle Inputs					
Segment Type		Passing Constrained	Length, ft		1219
Measured FFS		Measured	Free-Flow Speed, mi/h		62.4
Demand and Capacity					
Directional Demand Flow Rate, veh/h		627	Opposing Demand Flow Rate, veh/h		-
Peak Hour Factor		0.83	Total Trucks, %		6.00
Segment Capacity, veh/h		1700	Demand/Capacity (D/C)		0.37
Intermediate Results					
Segment Vertical Class		1	Free-Flow Speed, mi/h		62.4
Speed Slope Coefficient (m)		4.57372	Speed Power Coefficient (p)		0.41674
PF Slope Coefficient (m)		-1.37303	PF Power Coefficient (p)		0.74218
In Passing Lane Effective Length?		No	Total Segment Density, veh/mi/ln		6.6
%Improvement to Percent Followers		0.0	%Improvement to Speed		0.0
Subsegment Data					
#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1219	-	-	58.9
Vehicle Results					
Average Speed, mi/h		58.9	Percent Followers, %		62.1
Segment Travel Time, minutes		0.24	Follower Density (FD), followers/mi/ln		6.6
Vehicle LOS		C			
Segment 9					
Vehicle Inputs					
Segment Type		Passing Constrained	Length, ft		752
Measured FFS		Measured	Free-Flow Speed, mi/h		62.4
Demand and Capacity					
Directional Demand Flow Rate, veh/h		679	Opposing Demand Flow Rate, veh/h		-
Peak Hour Factor		0.81	Total Trucks, %		6.00
Segment Capacity, veh/h		1700	Demand/Capacity (D/C)		0.40

Intermediate Results					
Segment Vertical Class		1	Free-Flow Speed, mi/h		62.4
Speed Slope Coefficient (m)		4.57372	Speed Power Coefficient (p)		0.41674
PF Slope Coefficient (m)		-1.37303	PF Power Coefficient (p)		0.74218
In Passing Lane Effective Length?		No	Total Segment Density, veh/mi/ln		7.4
%Improvement to Percent Followers		0.0	%Improvement to Speed		0.0
Subsegment Data					
#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	752	-	-	58.8
Vehicle Results					
Average Speed, mi/h		58.8	Percent Followers, %		64.3
Segment Travel Time, minutes		0.15	Follower Density (FD), followers/mi/ln		7.4
Vehicle LOS		C			
Segment 10					
Vehicle Inputs					
Segment Type		Passing Constrained	Length, ft		852
Measured FFS		Measured	Free-Flow Speed, mi/h		62.4
Demand and Capacity					
Directional Demand Flow Rate, veh/h		732	Opposing Demand Flow Rate, veh/h		-
Peak Hour Factor		0.82	Total Trucks, %		6.00
Segment Capacity, veh/h		1700	Demand/Capacity (D/C)		0.43
Intermediate Results					
Segment Vertical Class		1	Free-Flow Speed, mi/h		62.4
Speed Slope Coefficient (m)		4.57372	Speed Power Coefficient (p)		0.41674
PF Slope Coefficient (m)		-1.37303	PF Power Coefficient (p)		0.74218
In Passing Lane Effective Length?		No	Total Segment Density, veh/mi/ln		8.3
%Improvement to Percent Followers		0.0	%Improvement to Speed		0.0
Subsegment Data					
#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	852	-	-	58.7
Vehicle Results					
Average Speed, mi/h		58.7	Percent Followers, %		66.3
Segment Travel Time, minutes		0.17	Follower Density (FD), followers/mi/ln		8.3
Vehicle LOS		D			
Facility Results					
T	VMT veh-mi/p	VHD veh-h/p	Follower Density, followers/ mi/ln	LOS	

1	331	0.29	5.7	C
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HCS Two-Lane Highway Report

Project Information

Analyst	Grace Fwelo	Date	4/15/2022
Agency	HDR	Analysis Year	2022
Jurisdiction		Time Analyzed	2022
Project Description	KY-90_Existing_ AM WB	Units	U.S. Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	852
Measured FFS	Measured	Free-Flow Speed, mi/h	62.4

Demand and Capacity

Directional Demand Flow Rate, veh/h	427	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.82	Total Trucks, %	6.00
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.25

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	62.4
Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.37303	PF Power Coefficient (p)	0.74218
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	3.7
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	852	-	-	59.6

Vehicle Results

Average Speed, mi/h	59.6	Percent Followers, %	51.8
Segment Travel Time, minutes	0.16	Follower Density (FD), followers/mi/ln	3.7
Vehicle LOS	B		

Segment 2

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	752
Measured FFS	Measured	Free-Flow Speed, mi/h	62.4

Demand and Capacity

Directional Demand Flow Rate, veh/h	407	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.81	Total Trucks, %	6.00
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.24

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	62.4
Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.37303	PF Power Coefficient (p)	0.74218
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	3.5
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	752	-	-	59.6

Vehicle Results

Average Speed, mi/h	59.6	Percent Followers, %	50.6
Segment Travel Time, minutes	0.14	Follower Density (FD), followers/mi/ln	3.5
Vehicle LOS	B		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	3
Flow Rate Outside Lane, veh/h	407	Bicycle Effective Width, ft	23
Bicycle LOS Score	4.47	Bicycle Effective Speed Factor	4.79
Bicycle LOS	D		

Segment 3

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	1219
Measured FFS	Measured	Free-Flow Speed, mi/h	62.4

Demand and Capacity

Directional Demand Flow Rate, veh/h	373	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.83	Total Trucks, %	6.00
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.22

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	62.4
Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.37333	PF Power Coefficient (p)	0.74211
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	3.0
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1219	-	-	59.7

Vehicle Results

Average Speed, mi/h	59.7	Percent Followers, %	48.4
Segment Travel Time, minutes	0.23	Follower Density (FD), followers/mi/ln	3.0

Vehicle LOS		B			
Bicycle Results					
Percent Occupied Parking		0	Pavement Condition Rating		3
Flow Rate Outside Lane, veh/h		373	Bicycle Effective Width, ft		23
Bicycle LOS Score		4.42	Bicycle Effective Speed Factor		4.79
Bicycle LOS		D			
Segment 4					
Vehicle Inputs					
Segment Type		Passing Constrained	Length, ft		4355
Measured FFS		Measured	Free-Flow Speed, mi/h		62.4
Demand and Capacity					
Directional Demand Flow Rate, veh/h		355	Opposing Demand Flow Rate, veh/h		-
Peak Hour Factor		0.86	Total Trucks, %		6.00
Segment Capacity, veh/h		1700	Demand/Capacity (D/C)		0.21
Intermediate Results					
Segment Vertical Class		1	Free-Flow Speed, mi/h		62.4
Speed Slope Coefficient (m)		4.61572	Speed Power Coefficient (p)		0.41674
PF Slope Coefficient (m)		-1.28471	PF Power Coefficient (p)		0.76754
In Passing Lane Effective Length?		No	Total Segment Density, veh/mi/ln		2.6
%Improvement to Percent Followers		0.0	%Improvement to Speed		0.0
Subsegment Data					
#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	4355	-	-	59.8
Vehicle Results					
Average Speed, mi/h		59.8	Percent Followers, %		44.0
Segment Travel Time, minutes		0.83	Follower Density (FD), followers/mi/ln		2.6
Vehicle LOS		B			
Bicycle Results					
Percent Occupied Parking		0	Pavement Condition Rating		3
Flow Rate Outside Lane, veh/h		355	Bicycle Effective Width, ft		23
Bicycle LOS Score		4.40	Bicycle Effective Speed Factor		4.79
Bicycle LOS		D			
Segment 5					
Vehicle Inputs					
Segment Type		Passing Constrained	Length, ft		1533
Measured FFS		Measured	Free-Flow Speed, mi/h		65.0

Demand and Capacity					
Directional Demand Flow Rate, veh/h		341	Opposing Demand Flow Rate, veh/h		-
Peak Hour Factor		0.85	Total Trucks, %		6.00
Segment Capacity, veh/h		1700	Demand/Capacity (D/C)		0.20
Intermediate Results					
Segment Vertical Class		1	Free-Flow Speed, mi/h		65.0
Speed Slope Coefficient (m)		4.57772	Speed Power Coefficient (p)		0.41674
PF Slope Coefficient (m)		-1.33506	PF Power Coefficient (p)		0.75187
In Passing Lane Effective Length?		No	Total Segment Density, veh/mi/ln		2.4
%Improvement to Percent Followers		0.0	%Improvement to Speed		0.0
Subsegment Data					
#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1533	-	-	62.5
Vehicle Results					
Average Speed, mi/h		62.5	Percent Followers, %		44.8
Segment Travel Time, minutes		0.28	Follower Density (FD), followers/mi/ln		2.4
Vehicle LOS		B			
Bicycle Results					
Percent Occupied Parking		0	Pavement Condition Rating		3
Flow Rate Outside Lane, veh/h		341	Bicycle Effective Width, ft		23
Bicycle LOS Score		4.38	Bicycle Effective Speed Factor		4.79
Bicycle LOS		D			
Segment 6					
Vehicle Inputs					
Segment Type		Passing Zone	Length, ft		990
Measured FFS		Measured	Free-Flow Speed, mi/h		65.0
Demand and Capacity					
Directional Demand Flow Rate, veh/h		341	Opposing Demand Flow Rate, veh/h		582
Peak Hour Factor		0.85	Total Trucks, %		6.00
Segment Capacity, veh/h		1700	Demand/Capacity (D/C)		0.20
Intermediate Results					
Segment Vertical Class		1	Free-Flow Speed, mi/h		65.0
Speed Slope Coefficient (m)		4.42240	Speed Power Coefficient (p)		0.47189
PF Slope Coefficient (m)		-1.32740	PF Power Coefficient (p)		0.77591
In Passing Lane Effective Length?		No	Total Segment Density, veh/mi/ln		2.4
%Improvement to Percent Followers		0.0	%Improvement to Speed		0.0
Subsegment Data					

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	990	-	-	62.7

Vehicle Results

Average Speed, mi/h	62.7	Percent Followers, %	43.8
Segment Travel Time, minutes	0.18	Follower Density (FD), followers/mi/ln	2.4
Vehicle LOS	B		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	3
Flow Rate Outside Lane, veh/h	341	Bicycle Effective Width, ft	23
Bicycle LOS Score	4.38	Bicycle Effective Speed Factor	4.79
Bicycle LOS	D		

Segment 7

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	793
Measured FFS	Measured	Free-Flow Speed, mi/h	65.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	341	Opposing Demand Flow Rate, veh/h	582
Peak Hour Factor	0.85	Total Trucks, %	6.00
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.20

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	65.0
Speed Slope Coefficient (m)	4.42240	Speed Power Coefficient (p)	0.47189
PF Slope Coefficient (m)	-1.32740	PF Power Coefficient (p)	0.77591
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	2.4
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	793	-	-	62.7

Vehicle Results

Average Speed, mi/h	62.7	Percent Followers, %	43.8
Segment Travel Time, minutes	0.14	Follower Density (FD), followers/mi/ln	2.4
Vehicle LOS	B		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	3
Flow Rate Outside Lane, veh/h	341	Bicycle Effective Width, ft	23
Bicycle LOS Score	4.38	Bicycle Effective Speed Factor	4.79
Bicycle LOS	D		

Segment 8					
Vehicle Inputs					
Segment Type		Passing Constrained	Length, ft		547
Measured FFS		Measured	Free-Flow Speed, mi/h		65.0
Demand and Capacity					
Directional Demand Flow Rate, veh/h		318	Opposing Demand Flow Rate, veh/h		-
Peak Hour Factor		0.85	Total Trucks, %		6.00
Segment Capacity, veh/h		1700	Demand/Capacity (D/C)		0.19
Intermediate Results					
Segment Vertical Class		1	Free-Flow Speed, mi/h		65.0
Speed Slope Coefficient (m)		4.57372	Speed Power Coefficient (p)		0.41674
PF Slope Coefficient (m)		-1.34699	PF Power Coefficient (p)		0.74766
In Passing Lane Effective Length?		No	Total Segment Density, veh/mi/ln		2.2
%Improvement to Percent Followers		0.0	%Improvement to Speed		0.0
Subsegment Data					
#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	547	-	-	62.6
Vehicle Results					
Average Speed, mi/h		62.6	Percent Followers, %		43.5
Segment Travel Time, minutes		0.10	Follower Density (FD), followers/mi/ln		2.2
Vehicle LOS		B			
Bicycle Results					
Percent Occupied Parking		0	Pavement Condition Rating		3
Flow Rate Outside Lane, veh/h		318	Bicycle Effective Width, ft		23
Bicycle LOS Score		4.34	Bicycle Effective Speed Factor		4.79
Bicycle LOS		D			
Segment 9					
Vehicle Inputs					
Segment Type		Passing Constrained	Length, ft		1580
Measured FFS		Measured	Free-Flow Speed, mi/h		65.0
Demand and Capacity					
Directional Demand Flow Rate, veh/h		305	Opposing Demand Flow Rate, veh/h		-
Peak Hour Factor		0.87	Total Trucks, %		6.00
Segment Capacity, veh/h		1700	Demand/Capacity (D/C)		0.18
Intermediate Results					
Segment Vertical Class		1	Free-Flow Speed, mi/h		65.0

Speed Slope Coefficient (m)	4.57856	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.33265	PF Power Coefficient (p)	0.75272
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	2.0
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1580	-	-	62.6

Vehicle Results

Average Speed, mi/h	62.6	Percent Followers, %	42.0
Segment Travel Time, minutes	0.29	Follower Density (FD), followers/mi/ln	2.0
Vehicle LOS	B		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	3
Flow Rate Outside Lane, veh/h	305	Bicycle Effective Width, ft	23
Bicycle LOS Score	4.32	Bicycle Effective Speed Factor	4.79
Bicycle LOS	D		

Segment 10

Vehicle Inputs

Segment Type	Passing Lanes	Length, ft	1505
Measured FFS	Measured	Free-Flow Speed, mi/h	65.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	305	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.87	Total Trucks, %	6.00
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.18

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	65.0
Speed Slope Coefficient (m)	4.59503	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.29272	PF Power Coefficient (p)	0.76617
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	2.0
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1505	-	-	62.6

Vehicle Results

Average Speed, mi/h	62.6	Percent Followers, %	40.5
Segment Travel Time, minutes	0.27	Follower Density (FD), followers/mi/ln	2.0
Follower Density Mid-Point, followers/mi/ln	0.0	Vehicle LOS	A

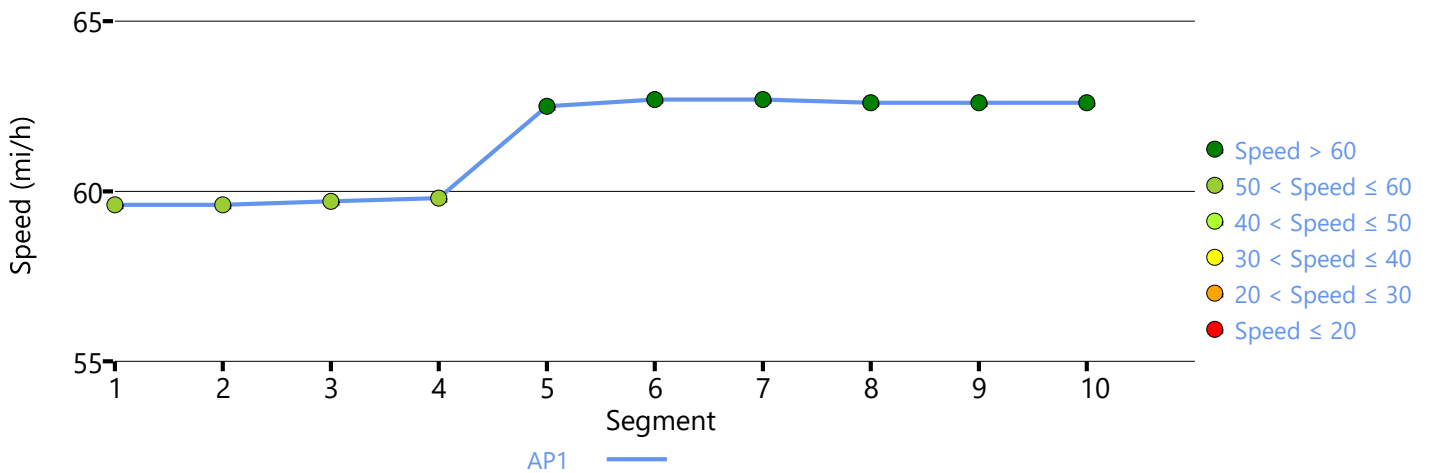
Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	3
Flow Rate Outside Lane, veh/h	152	Bicycle Effective Width, ft	23
Bicycle LOS Score	3.97	Bicycle Effective Speed Factor	4.79
Bicycle LOS	D		

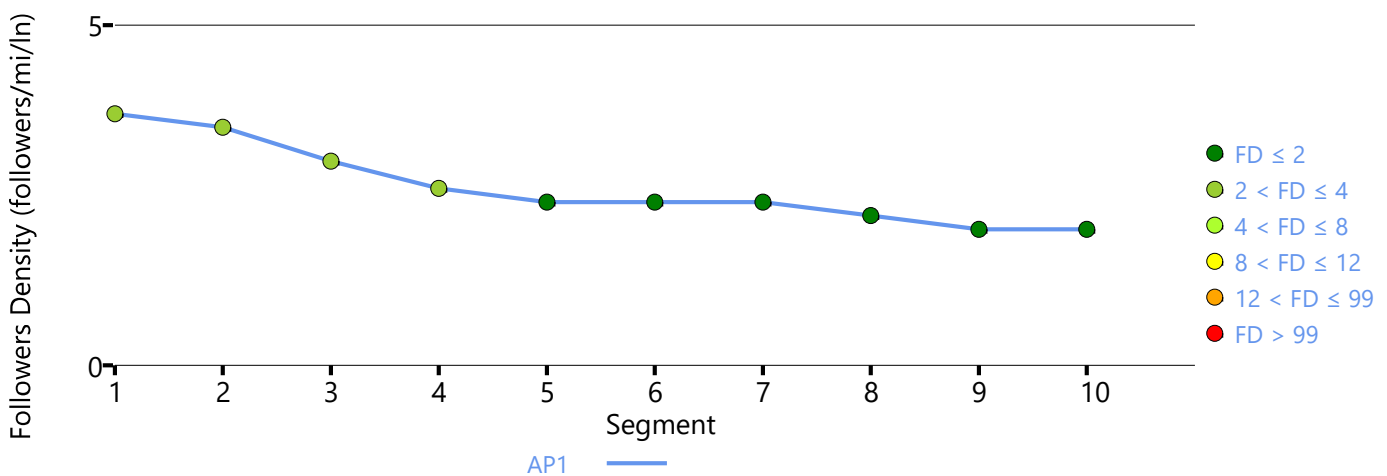
Facility Results

T	VMT veh-mi/p	VHD veh-h/p	Follower Density, followers/ mi/ln	LOS
1	198	0.13	2.6	B

Speed Distribution



Followers Density Distribution



HCS Multilane Highway Report

Project Information

Analyst	Grace Fwelo	Date	4/15/2022
Agency	HDR	Analysis Year	2022
Jurisdiction		Time Analyzed	2022
Project Description	KY-90 Existing_ AM Multilane Seg 1	Units	U.S. Customary

Direction 1 Geometric Data

Direction 1	Eastbound		
Number of Lanes (N), ln	2	Terrain Type	Level
Segment Length (L), ft	5280	Percent Grade, %	-
Measured or Base Free-Flow Speed	Measured	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	-	Access Point Density, pts/mi	-
Lane Width, ft	-	Left-Side Lateral Clearance (LCR), ft	-
Median Type	-	Total Lateral Clearance (TLC), ft	-
Free-Flow Speed (FFS), mi/h	65.0		

Direction 1 Adjustment Factors

Driver Population	Balanced Mix	Final Speed Adjustment Factor (SAF)	0.950
Driver Population SAF	0.950	Final Capacity Adjustment Factor (CAF)	0.939
Driver Population CAF	0.939		

Direction 1 Demand and Capacity

Volume (V) veh/h	430	Heavy Vehicle Adjustment Factor (fHV)	0.943
Peak Hour Factor	0.87	Flow Rate (Vp), pc/h/ln	262
Total Trucks, %	6.00	Capacity (c), pc/h/ln	2236
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (cadj), pc/h/ln	2100
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.12

Direction 1 Speed and Density

Lane Width Adjustment (fLW)	-	Average Speed (S), mi/h	61.8
Total Lateral Clearance Adj. (fLLC)	-	Density (D), pc/mi/ln	4.2
Median Type Adjustment (fM)	-	Level of Service (LOS)	A
Access Point Density Adjustment (fA)	-		

Direction 2 Geometric Data			
Direction 2	Westbound		
Number of Lanes (N), ln	2	Terrain Type	Level
Segment Length (L), ft	5280	Percent Grade, %	-
Measured or Base Free-Flow Speed	Measured	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	-	Access Point Density, pts/mi	-
Lane Width, ft	-	Left-Side Lateral Clearance (LCR), ft	-
Median Type	-	Total Lateral Clearance (TLC), ft	-
Free-Flow Speed (FFS), mi/h	65.0		
Direction 2 Adjustment Factors			
Driver Population	Balanced Mix	Final Speed Adjustment Factor (SAF)	0.950
Driver Population SAF	0.950	Final Capacity Adjustment Factor (CAF)	0.939
Driver Population CAF	0.939		
Direction 2 Demand and Capacity			
Volume (V) veh/h	265	Heavy Vehicle Adjustment Factor (fHV)	0.943
Peak Hour Factor	0.87	Flow Rate (Vp), pc/h/ln	162
Total Trucks, %	6.00	Capacity (c), pc/h/ln	2236
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (cadj), pc/h/ln	2100
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.08
Direction 2 Speed and Density			
Lane Width Adjustment (fLW)	-	Average Speed (S), mi/h	61.8
Total Lateral Clearance Adj. (fLLC)	-	Density (D), pc/mi/ln	2.6
Median Type Adjustment (fM)	-	Level of Service (LOS)	A
Access Point Density Adjustment (fA)	-		
Direction 2 Bicycle LOS			
Flow Rate in Outside Lane (vOL), veh/h	247	Effective Speed Factor (St)	4.79
Effective Width of Volume (Wv), ft	18	Bicycle LOS Score (BLOS)	-
Average Effective Width (We), ft	24	Bicycle Level of Service (LOS)	F

HCS Multilane Highway Report

Project Information

Analyst	Grace Fwelo	Date	4/15/2022
Agency	HDR	Analysis Year	2022
Jurisdiction		Time Analyzed	2022
Project Description	KY-90 Exisitng_ AM Multilane Seg 12	Units	U.S. Customary

Direction 1 Geometric Data

Direction 1	Eastbound		
Number of Lanes (N), ln	2	Terrain Type	Level
Segment Length (L), ft	5280	Percent Grade, %	-
Measured or Base Free-Flow Speed	Measured	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	-	Access Point Density, pts/mi	-
Lane Width, ft	-	Left-Side Lateral Clearance (LCR), ft	-
Median Type	-	Total Lateral Clearance (TLC), ft	-
Free-Flow Speed (FFS), mi/h	62.4		

Direction 1 Adjustment Factors

Driver Population	Balanced Mix	Final Speed Adjustment Factor (SAF)	0.950
Driver Population SAF	0.950	Final Capacity Adjustment Factor (CAF)	0.939
Driver Population CAF	0.939		

Direction 1 Demand and Capacity

Volume (V) veh/h	600	Heavy Vehicle Adjustment Factor (fHV)	0.943
Peak Hour Factor	0.82	Flow Rate (Vp), pc/h/ln	388
Total Trucks, %	6.00	Capacity (c), pc/h/ln	2186
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (cadj), pc/h/ln	2053
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.19

Direction 1 Speed and Density

Lane Width Adjustment (fLW)	-	Average Speed (S), mi/h	59.3
Total Lateral Clearance Adj. (fLLC)	-	Density (D), pc/mi/ln	6.5
Median Type Adjustment (fM)	-	Level of Service (LOS)	A
Access Point Density Adjustment (fA)	-		

Direction 2 Geometric Data			
Direction 2	Westbound		
Number of Lanes (N), ln	2	Terrain Type	Level
Segment Length (L), ft	5280	Percent Grade, %	-
Measured or Base Free-Flow Speed	Measured	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	-	Access Point Density, pts/mi	-
Lane Width, ft	-	Left-Side Lateral Clearance (LCR), ft	-
Median Type	-	Total Lateral Clearance (TLC), ft	-
Free-Flow Speed (FFS), mi/h	62.4		
Direction 2 Adjustment Factors			
Driver Population	Balanced Mix	Final Speed Adjustment Factor (SAF)	0.950
Driver Population SAF	0.950	Final Capacity Adjustment Factor (CAF)	0.939
Driver Population CAF	0.939		
Direction 2 Demand and Capacity			
Volume (V) veh/h	350	Heavy Vehicle Adjustment Factor (fHV)	0.943
Peak Hour Factor	0.82	Flow Rate (Vp), pc/h/ln	226
Total Trucks, %	6.00	Capacity (c), pc/h/ln	2186
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (cadj), pc/h/ln	2053
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.11
Direction 2 Speed and Density			
Lane Width Adjustment (fLW)	-	Average Speed (S), mi/h	59.3
Total Lateral Clearance Adj. (fLLC)	-	Density (D), pc/mi/ln	3.8
Median Type Adjustment (fM)	-	Level of Service (LOS)	A
Access Point Density Adjustment (fA)	-		
Direction 2 Bicycle LOS			
Flow Rate in Outside Lane (vOL), veh/h	366	Effective Speed Factor (St)	4.79
Effective Width of Volume (Wv), ft	18	Bicycle LOS Score (BLOS)	-
Average Effective Width (We), ft	24	Bicycle Level of Service (LOS)	F

HCS Multilane Highway Report

Project Information

Analyst	Grace Fwelo	Date	4/15/2022
Agency	HDR	Analysis Year	2022
Jurisdiction		Time Analyzed	2022
Project Description	KY-90 Exisitng_ AM Multilane Seg 13	Units	U.S. Customary

Direction 1 Geometric Data

Direction 1	Eastbound		
Number of Lanes (N), ln	2	Terrain Type	Level
Segment Length (L), ft	5280	Percent Grade, %	-
Measured or Base Free-Flow Speed	Measured	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	-	Access Point Density, pts/mi	-
Lane Width, ft	-	Left-Side Lateral Clearance (LCR), ft	-
Median Type	-	Total Lateral Clearance (TLC), ft	-
Free-Flow Speed (FFS), mi/h	61.6		

Direction 1 Adjustment Factors

Driver Population	Balanced Mix	Final Speed Adjustment Factor (SAF)	0.950
Driver Population SAF	0.950	Final Capacity Adjustment Factor (CAF)	0.939
Driver Population CAF	0.939		

Direction 1 Demand and Capacity

Volume (V) veh/h	680	Heavy Vehicle Adjustment Factor (fHV)	0.943
Peak Hour Factor	0.83	Flow Rate (Vp), pc/h/ln	434
Total Trucks, %	6.00	Capacity (c), pc/h/ln	2170
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (cadj), pc/h/ln	2038
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.21

Direction 1 Speed and Density

Lane Width Adjustment (fLW)	-	Average Speed (S), mi/h	58.5
Total Lateral Clearance Adj. (fLLC)	-	Density (D), pc/mi/ln	7.4
Median Type Adjustment (fM)	-	Level of Service (LOS)	A
Access Point Density Adjustment (fA)	-		

Direction 2 Geometric Data			
Direction 2	Westbound		
Number of Lanes (N), ln	2	Terrain Type	Level
Segment Length (L), ft	5280	Percent Grade, %	-
Measured or Base Free-Flow Speed	Measured	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	-	Access Point Density, pts/mi	-
Lane Width, ft	-	Left-Side Lateral Clearance (LCR), ft	-
Median Type	-	Total Lateral Clearance (TLC), ft	-
Free-Flow Speed (FFS), mi/h	61.6		
Direction 2 Adjustment Factors			
Driver Population	Balanced Mix	Final Speed Adjustment Factor (SAF)	0.950
Driver Population SAF	0.950	Final Capacity Adjustment Factor (CAF)	0.939
Driver Population CAF	0.939		
Direction 2 Demand and Capacity			
Volume (V) veh/h	385	Heavy Vehicle Adjustment Factor (fHV)	0.943
Peak Hour Factor	0.83	Flow Rate (Vp), pc/h/ln	246
Total Trucks, %	6.00	Capacity (c), pc/h/ln	2170
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (cadj), pc/h/ln	2038
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.12
Direction 2 Speed and Density			
Lane Width Adjustment (fLW)	-	Average Speed (S), mi/h	58.5
Total Lateral Clearance Adj. (fLLC)	-	Density (D), pc/mi/ln	4.2
Median Type Adjustment (fM)	-	Level of Service (LOS)	A
Access Point Density Adjustment (fA)	-		
Direction 2 Bicycle LOS			
Flow Rate in Outside Lane (vOL), veh/h	410	Effective Speed Factor (St)	4.79
Effective Width of Volume (Wv), ft	18	Bicycle LOS Score (BLOS)	-
Average Effective Width (We), ft	24	Bicycle Level of Service (LOS)	F

HCS Two-Lane Highway Report

Project Information

Analyst	Grace Fwelo	Date	4/15/2022
Agency	HDR	Analysis Year	2022
Jurisdiction		Time Analyzed	2022
Project Description	KY-90 Existing_PM EB	Units	U.S. Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	1505
Measured FFS	Measured	Free-Flow Speed, mi/h	65.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	344	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.93	Total Trucks, %	6.00
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.20

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	65.0
Speed Slope Coefficient (m)	4.57721	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.33632	PF Power Coefficient (p)	0.75139
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	2.5
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1505	-	-	62.5

Vehicle Results

Average Speed, mi/h	62.5	Percent Followers, %	45.1
Segment Travel Time, minutes	0.27	Follower Density (FD), followers/mi/ln	2.5
Vehicle LOS	B		

Segment 2

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	1580
Measured FFS	Measured	Free-Flow Speed, mi/h	65.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	344	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.93	Total Trucks, %	6.00
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.20

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	65.0
Speed Slope Coefficient (m)	4.57856	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.33265	PF Power Coefficient (p)	0.75272
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	2.5
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1580	-	-	62.5

Vehicle Results

Average Speed, mi/h	62.5	Percent Followers, %	45.0
Segment Travel Time, minutes	0.29	Follower Density (FD), followers/mi/ln	2.5
Vehicle LOS	B		

Segment 3

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	547
Measured FFS	Measured	Free-Flow Speed, mi/h	65.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	372	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.91	Total Trucks, %	6.00
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.22

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	65.0
Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.34699	PF Power Coefficient (p)	0.74766
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	2.8
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	547	-	-	62.3

Vehicle Results

Average Speed, mi/h	62.3	Percent Followers, %	47.4
Segment Travel Time, minutes	0.10	Follower Density (FD), followers/mi/ln	2.8
Vehicle LOS	B		

Segment 4

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	793
Measured FFS	Measured	Free-Flow Speed, mi/h	65.0

Demand and Capacity							
Directional Demand Flow Rate, veh/h		397		Opposing Demand Flow Rate, veh/h		598	
Peak Hour Factor		0.92		Total Trucks, %		6.00	
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)		4.42570		Speed Power Coefficient (p)		0.47013	
PF Slope Coefficient (m)		-1.32860		PF Power Coefficient (p)		0.77531	
In Passing Lane Effective Length?		No		Total Segment Density, veh/mi/ln		3.0	
%Improvement to Percent Followers		0.0		%Improvement to Speed		0.0	
Subsegment Data							
#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h		
1	Tangent	793	-	-	62.5		
Vehicle Results							
Average Speed, mi/h		62.5		Percent Followers, %		47.7	
Segment Travel Time, minutes		0.14		Follower Density (FD), followers/mi/ln		3.0	
Vehicle LOS		B					
Segment 5							
Vehicle Inputs							
Segment Type		Passing Constrained		Length, ft		990	
Measured FFS		Measured		Free-Flow Speed, mi/h		65.0	
Demand and Capacity							
Directional Demand Flow Rate, veh/h		397		Opposing Demand Flow Rate, veh/h		-	
Peak Hour Factor		0.92		Total Trucks, %		6.00	
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)		4.57372		Speed Power Coefficient (p)		0.41674	
PF Slope Coefficient (m)		-1.34699		PF Power Coefficient (p)		0.74766	
In Passing Lane Effective Length?		No		Total Segment Density, veh/mi/ln		3.1	
%Improvement to Percent Followers		0.0		%Improvement to Speed		0.0	
Subsegment Data							
#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h		
1	Tangent	990	-	-	62.2		
Vehicle Results							
Average Speed, mi/h		62.2		Percent Followers, %		49.1	
Segment Travel Time, minutes		0.18		Follower Density (FD), followers/mi/ln		3.1	

Vehicle LOS		B			
Segment 6					
Vehicle Inputs					
Segment Type		Passing Constrained		Length, ft	
Measured FFS		Measured		Free-Flow Speed, mi/h	
				1533	
				65.0	
Demand and Capacity					
Directional Demand Flow Rate, veh/h		397		Opposing Demand Flow Rate, veh/h	
				-	
Peak Hour Factor		0.92		Total Trucks, %	
				6.00	
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)		4.57772		Speed Power Coefficient (p)	
				0.41674	
PF Slope Coefficient (m)		-1.33506		PF Power Coefficient (p)	
				0.75187	
In Passing Lane Effective Length?		No		Total Segment Density, veh/mi/ln	
				3.1	
%Improvement to Percent Followers		0.0		%Improvement to Speed	
				0.0	
Subsegment Data					
#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1533	-	-	62.2
Vehicle Results					
Average Speed, mi/h		62.2		Percent Followers, %	
				48.6	
Segment Travel Time, minutes		0.28		Follower Density (FD), followers/mi/ln	
				3.1	
Vehicle LOS		B			
Segment 7					
Vehicle Inputs					
Segment Type		Passing Constrained		Length, ft	
				4355	
Measured FFS		Measured		Free-Flow Speed, mi/h	
				62.4	
Demand and Capacity					
Directional Demand Flow Rate, veh/h		426		Opposing Demand Flow Rate, veh/h	
				-	
Peak Hour Factor		0.95		Total Trucks, %	
				6.00	
Segment Capacity, veh/h		1700		Demand/Capacity (D/C)	
				0.25	
Intermediate Results					
Segment Vertical Class		1		Free-Flow Speed, mi/h	
				62.4	
Speed Slope Coefficient (m)		4.61572		Speed Power Coefficient (p)	
				0.41674	
PF Slope Coefficient (m)		-1.28444		PF Power Coefficient (p)	
				0.76762	
In Passing Lane Effective Length?		No		Total Segment Density, veh/mi/ln	
				3.5	
%Improvement to Percent Followers		0.0		%Improvement to Speed	
				0.0	

Subsegment Data					
#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	4355	-	-	59.5

Vehicle Results			
Average Speed, mi/h	59.5	Percent Followers, %	48.7
Segment Travel Time, minutes	0.83	Follower Density (FD), followers/mi/ln	3.5
Vehicle LOS	B		

Segment 8

Vehicle Inputs			
Segment Type	Passing Constrained	Length, ft	1219
Measured FFS	Measured	Free-Flow Speed, mi/h	62.4

Demand and Capacity			
Directional Demand Flow Rate, veh/h	441	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.93	Total Trucks, %	6.00
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.26

Intermediate Results			
Segment Vertical Class	1	Free-Flow Speed, mi/h	62.4
Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.37303	PF Power Coefficient (p)	0.74218
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	3.9
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data					
#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1219	-	-	59.5

Vehicle Results			
Average Speed, mi/h	59.5	Percent Followers, %	52.7
Segment Travel Time, minutes	0.23	Follower Density (FD), followers/mi/ln	3.9
Vehicle LOS	B		

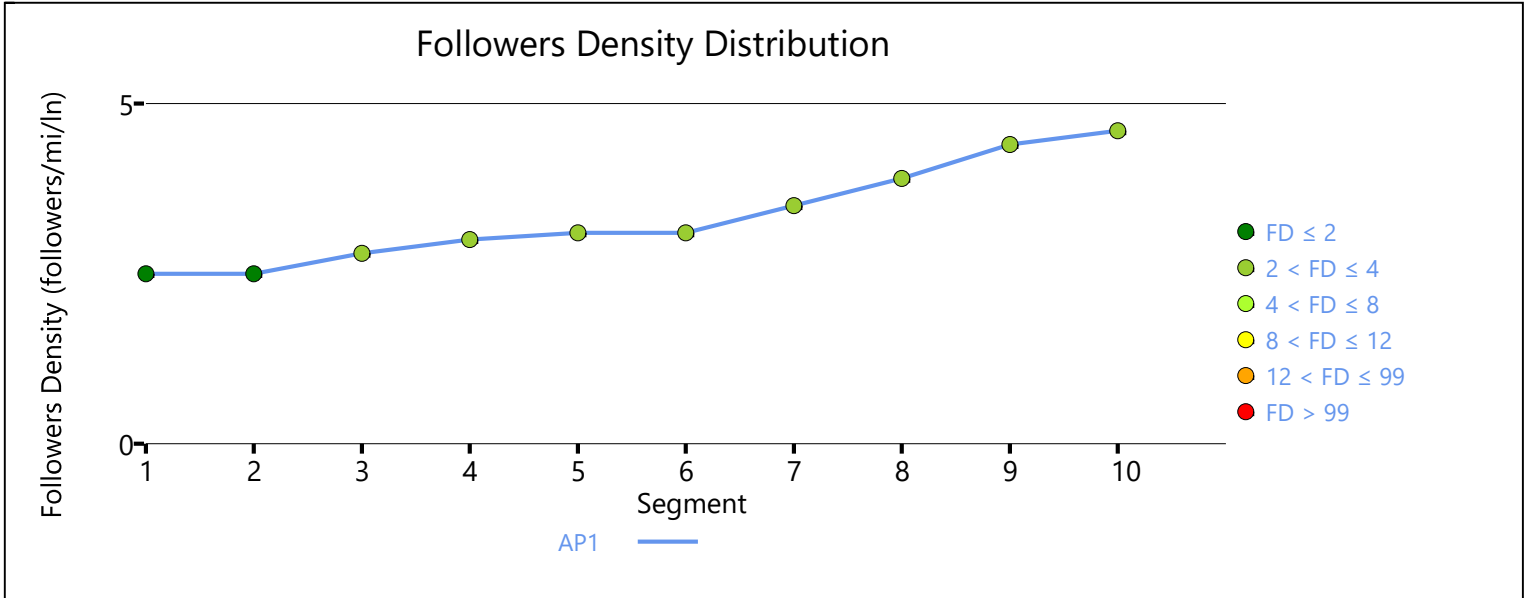
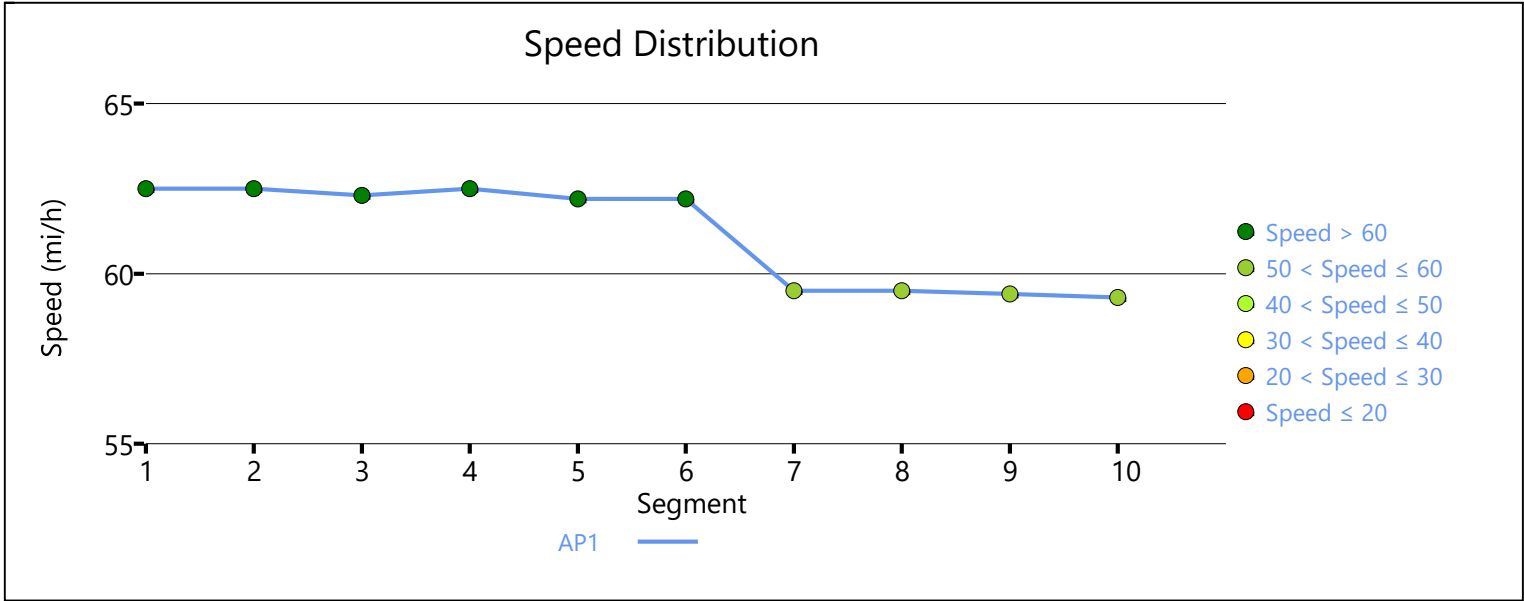
Segment 9

Vehicle Inputs			
Segment Type	Passing Constrained	Length, ft	752
Measured FFS	Measured	Free-Flow Speed, mi/h	62.4

Demand and Capacity			
Directional Demand Flow Rate, veh/h	478	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.91	Total Trucks, %	6.00
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.28

Intermediate Results					
Segment Vertical Class		1	Free-Flow Speed, mi/h		62.4
Speed Slope Coefficient (m)		4.57372	Speed Power Coefficient (p)		0.41674
PF Slope Coefficient (m)		-1.37303	PF Power Coefficient (p)		0.74218
In Passing Lane Effective Length?		No	Total Segment Density, veh/mi/ln		4.4
%Improvement to Percent Followers		0.0	%Improvement to Speed		0.0
Subsegment Data					
#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	752	-	-	59.4
Vehicle Results					
Average Speed, mi/h		59.4	Percent Followers, %		54.8
Segment Travel Time, minutes		0.14	Follower Density (FD), followers/mi/ln		4.4
Vehicle LOS		C			
Segment 10					
Vehicle Inputs					
Segment Type		Passing Constrained	Length, ft		852
Measured FFS		Measured	Free-Flow Speed, mi/h		62.4
Demand and Capacity					
Directional Demand Flow Rate, veh/h		489	Opposing Demand Flow Rate, veh/h		-
Peak Hour Factor		0.93	Total Trucks, %		6.00
Segment Capacity, veh/h		1700	Demand/Capacity (D/C)		0.29
Intermediate Results					
Segment Vertical Class		1	Free-Flow Speed, mi/h		62.4
Speed Slope Coefficient (m)		4.57372	Speed Power Coefficient (p)		0.41674
PF Slope Coefficient (m)		-1.37303	PF Power Coefficient (p)		0.74218
In Passing Lane Effective Length?		No	Total Segment Density, veh/mi/ln		4.6
%Improvement to Percent Followers		0.0	%Improvement to Speed		0.0
Subsegment Data					
#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	852	-	-	59.3
Vehicle Results					
Average Speed, mi/h		59.3	Percent Followers, %		55.4
Segment Travel Time, minutes		0.16	Follower Density (FD), followers/mi/ln		4.6
Vehicle LOS		C			
Facility Results					
T	VMT veh-mi/p	VHD veh-h/p	Follower Density, followers/ mi/ln	LOS	

1	254	0.18	3.3	B
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HCS Two-Lane Highway Report

Project Information

Analyst	Grace Fwelo	Date	4/15/2022
Agency	HDR	Analysis Year	2022
Jurisdiction		Time Analyzed	2022
Project Description	KY-90_Existing_ PM WB	Units	U.S. Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	852
Measured FFS	Measured	Free-Flow Speed, mi/h	62.4

Demand and Capacity

Directional Demand Flow Rate, veh/h	742	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.93	Total Trucks, %	6.00
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.44

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	62.4
Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.37303	PF Power Coefficient (p)	0.74218
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	8.4
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	852	-	-	58.6

Vehicle Results

Average Speed, mi/h	58.6	Percent Followers, %	66.7
Segment Travel Time, minutes	0.17	Follower Density (FD), followers/mi/ln	8.4
Vehicle LOS	D		

Segment 2

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	752
Measured FFS	Measured	Free-Flow Speed, mi/h	62.4

Demand and Capacity

Directional Demand Flow Rate, veh/h	720	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.91	Total Trucks, %	6.00
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.42

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	62.4
Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.37303	PF Power Coefficient (p)	0.74218
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	8.1
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	752	-	-	58.7

Vehicle Results

Average Speed, mi/h	58.7	Percent Followers, %	65.9
Segment Travel Time, minutes	0.15	Follower Density (FD), followers/mi/ln	8.1
Vehicle LOS	D		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	3
Flow Rate Outside Lane, veh/h	720	Bicycle Effective Width, ft	23
Bicycle LOS Score	4.76	Bicycle Effective Speed Factor	4.79
Bicycle LOS	E		

Segment 3

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	1219
Measured FFS	Measured	Free-Flow Speed, mi/h	62.4

Demand and Capacity

Directional Demand Flow Rate, veh/h	667	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.93	Total Trucks, %	6.00
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.39

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	62.4
Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.37333	PF Power Coefficient (p)	0.74211
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	7.2
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1219	-	-	58.8

Vehicle Results

Average Speed, mi/h	58.8	Percent Followers, %	63.8
Segment Travel Time, minutes	0.24	Follower Density (FD), followers/mi/ln	7.2

Vehicle LOS		C			
Bicycle Results					
Percent Occupied Parking		0	Pavement Condition Rating		3
Flow Rate Outside Lane, veh/h		667	Bicycle Effective Width, ft		23
Bicycle LOS Score		4.72	Bicycle Effective Speed Factor		4.79
Bicycle LOS		E			
Segment 4					
Vehicle Inputs					
Segment Type		Passing Constrained	Length, ft		4355
Measured FFS		Measured	Free-Flow Speed, mi/h		62.4
Demand and Capacity					
Directional Demand Flow Rate, veh/h		611	Opposing Demand Flow Rate, veh/h		-
Peak Hour Factor		0.95	Total Trucks, %		6.00
Segment Capacity, veh/h		1700	Demand/Capacity (D/C)		0.36
Intermediate Results					
Segment Vertical Class		1	Free-Flow Speed, mi/h		62.4
Speed Slope Coefficient (m)		4.61572	Speed Power Coefficient (p)		0.41674
PF Slope Coefficient (m)		-1.28471	PF Power Coefficient (p)		0.76754
In Passing Lane Effective Length?		No	Total Segment Density, veh/mi/ln		6.1
%Improvement to Percent Followers		0.0	%Improvement to Speed		0.0
Subsegment Data					
#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	4355	-	-	58.9
Vehicle Results					
Average Speed, mi/h		58.9	Percent Followers, %		58.5
Segment Travel Time, minutes		0.84	Follower Density (FD), followers/mi/ln		6.1
Vehicle LOS		C			
Bicycle Results					
Percent Occupied Parking		0	Pavement Condition Rating		3
Flow Rate Outside Lane, veh/h		611	Bicycle Effective Width, ft		23
Bicycle LOS Score		4.67	Bicycle Effective Speed Factor		4.79
Bicycle LOS		E			
Segment 5					
Vehicle Inputs					
Segment Type		Passing Constrained	Length, ft		1533
Measured FFS		Measured	Free-Flow Speed, mi/h		65.0

Demand and Capacity							
Directional Demand Flow Rate, veh/h		598		Opposing Demand Flow Rate, veh/h		-	
Peak Hour Factor		0.92		Total Trucks, %		6.00	
Segment Capacity, veh/h		1700		Demand/Capacity (D/C)		0.35	
Intermediate Results							
Segment Vertical Class		1		Free-Flow Speed, mi/h		65.0	
Speed Slope Coefficient (m)		4.57772		Speed Power Coefficient (p)		0.41674	
PF Slope Coefficient (m)		-1.33506		PF Power Coefficient (p)		0.75187	
In Passing Lane Effective Length?		No		Total Segment Density, veh/mi/ln		5.8	
%Improvement to Percent Followers		0.0		%Improvement to Speed		0.0	
Subsegment Data							
#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h		
1	Tangent	1533	-	-	61.6		
Vehicle Results							
Average Speed, mi/h		61.6		Percent Followers, %		59.6	
Segment Travel Time, minutes		0.28		Follower Density (FD), followers/mi/ln		5.8	
Vehicle LOS		C					
Bicycle Results							
Percent Occupied Parking		0		Pavement Condition Rating		3	
Flow Rate Outside Lane, veh/h		598		Bicycle Effective Width, ft		23	
Bicycle LOS Score		4.66		Bicycle Effective Speed Factor		4.79	
Bicycle LOS		E					
Segment 6							
Vehicle Inputs							
Segment Type		Passing Zone		Length, ft		990	
Measured FFS		Measured		Free-Flow Speed, mi/h		65.0	
Demand and Capacity							
Directional Demand Flow Rate, veh/h		598		Opposing Demand Flow Rate, veh/h		397	
Peak Hour Factor		0.92		Total Trucks, %		6.00	
Segment Capacity, veh/h		1700		Demand/Capacity (D/C)		0.35	
Intermediate Results							
Segment Vertical Class		1		Free-Flow Speed, mi/h		65.0	
Speed Slope Coefficient (m)		4.37872		Speed Power Coefficient (p)		0.49736	
PF Slope Coefficient (m)		-1.30829		PF Power Coefficient (p)		0.78388	
In Passing Lane Effective Length?		No		Total Segment Density, veh/mi/ln		5.6	
%Improvement to Percent Followers		0.0		%Improvement to Speed		0.0	
Subsegment Data							

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	990	-	-	61.9

Vehicle Results

Average Speed, mi/h	61.9	Percent Followers, %	58.3
Segment Travel Time, minutes	0.18	Follower Density (FD), followers/mi/ln	5.6
Vehicle LOS	C		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	3
Flow Rate Outside Lane, veh/h	598	Bicycle Effective Width, ft	23
Bicycle LOS Score	4.66	Bicycle Effective Speed Factor	4.79
Bicycle LOS	E		

Segment 7

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	793
Measured FFS	Measured	Free-Flow Speed, mi/h	65.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	598	Opposing Demand Flow Rate, veh/h	397
Peak Hour Factor	0.92	Total Trucks, %	6.00
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.35

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	65.0
Speed Slope Coefficient (m)	4.37872	Speed Power Coefficient (p)	0.49736
PF Slope Coefficient (m)	-1.30829	PF Power Coefficient (p)	0.78388
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	5.6
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	793	-	-	61.9

Vehicle Results

Average Speed, mi/h	61.9	Percent Followers, %	58.3
Segment Travel Time, minutes	0.15	Follower Density (FD), followers/mi/ln	5.6
Vehicle LOS	C		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	3
Flow Rate Outside Lane, veh/h	598	Bicycle Effective Width, ft	23
Bicycle LOS Score	4.66	Bicycle Effective Speed Factor	4.79
Bicycle LOS	E		

Segment 8					
Vehicle Inputs					
Segment Type		Passing Constrained	Length, ft		547
Measured FFS		Measured	Free-Flow Speed, mi/h		65.0
Demand and Capacity					
Directional Demand Flow Rate, veh/h		582	Opposing Demand Flow Rate, veh/h		-
Peak Hour Factor		0.91	Total Trucks, %		6.00
Segment Capacity, veh/h		1700	Demand/Capacity (D/C)		0.34
Intermediate Results					
Segment Vertical Class		1	Free-Flow Speed, mi/h		65.0
Speed Slope Coefficient (m)		4.57372	Speed Power Coefficient (p)		0.41674
PF Slope Coefficient (m)		-1.34699	PF Power Coefficient (p)		0.74766
In Passing Lane Effective Length?		No	Total Segment Density, veh/mi/ln		5.6
%Improvement to Percent Followers		0.0	%Improvement to Speed		0.0
Subsegment Data					
#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	547	-	-	61.6
Vehicle Results					
Average Speed, mi/h		61.6	Percent Followers, %		59.3
Segment Travel Time, minutes		0.10	Follower Density (FD), followers/mi/ln		5.6
Vehicle LOS		C			
Bicycle Results					
Percent Occupied Parking		0	Pavement Condition Rating		3
Flow Rate Outside Lane, veh/h		582	Bicycle Effective Width, ft		23
Bicycle LOS Score		4.65	Bicycle Effective Speed Factor		4.79
Bicycle LOS		E			
Segment 9					
Vehicle Inputs					
Segment Type		Passing Constrained	Length, ft		1580
Measured FFS		Measured	Free-Flow Speed, mi/h		65.0
Demand and Capacity					
Directional Demand Flow Rate, veh/h		543	Opposing Demand Flow Rate, veh/h		-
Peak Hour Factor		0.93	Total Trucks, %		6.00
Segment Capacity, veh/h		1700	Demand/Capacity (D/C)		0.32
Intermediate Results					
Segment Vertical Class		1	Free-Flow Speed, mi/h		65.0

Speed Slope Coefficient (m)	4.57856	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.33265	PF Power Coefficient (p)	0.75272
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	5.0
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1580	-	-	61.7

Vehicle Results

Average Speed, mi/h	61.7	Percent Followers, %	56.9
Segment Travel Time, minutes	0.29	Follower Density (FD), followers/mi/ln	5.0
Vehicle LOS	C		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	3
Flow Rate Outside Lane, veh/h	543	Bicycle Effective Width, ft	23
Bicycle LOS Score	4.61	Bicycle Effective Speed Factor	4.79
Bicycle LOS	E		

Segment 10

Vehicle Inputs

Segment Type	Passing Lanes	Length, ft	1505
Measured FFS	Measured	Free-Flow Speed, mi/h	65.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	543	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.93	Total Trucks, %	6.00
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.32

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	65.0
Speed Slope Coefficient (m)	4.59503	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.29272	PF Power Coefficient (p)	0.76617
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	4.9
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1505	-	-	61.7

Vehicle Results

Average Speed, mi/h	61.7	Percent Followers, %	55.5
Segment Travel Time, minutes	0.28	Follower Density (FD), followers/mi/ln	4.9
Follower Density Mid-Point, followers/mi/ln	0.0	Vehicle LOS	C

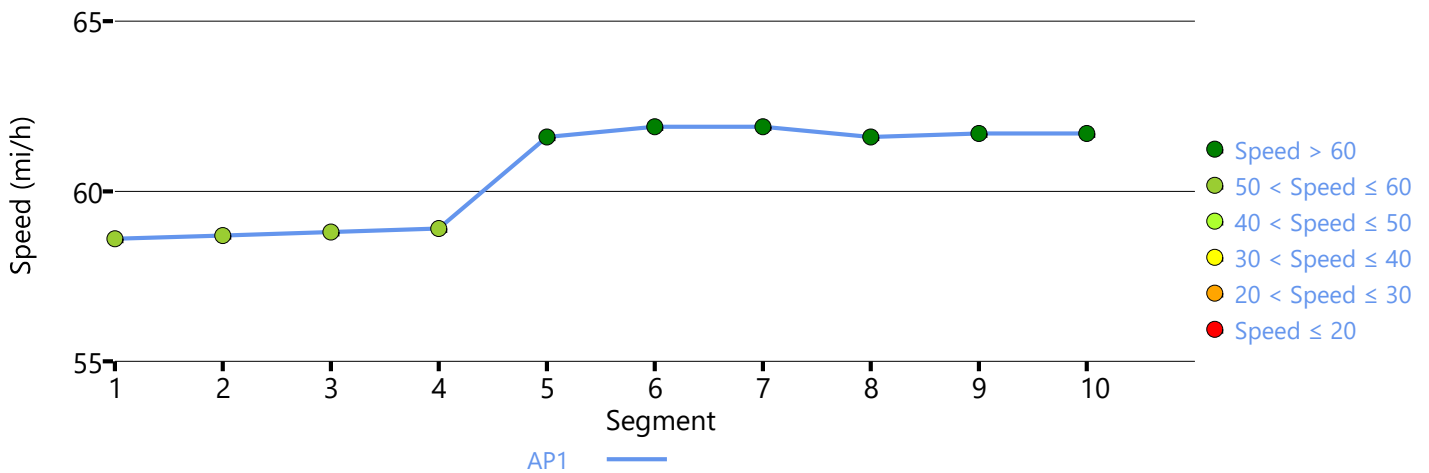
Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	3
Flow Rate Outside Lane, veh/h	272	Bicycle Effective Width, ft	23
Bicycle LOS Score	4.26	Bicycle Effective Speed Factor	4.79
Bicycle LOS	D		

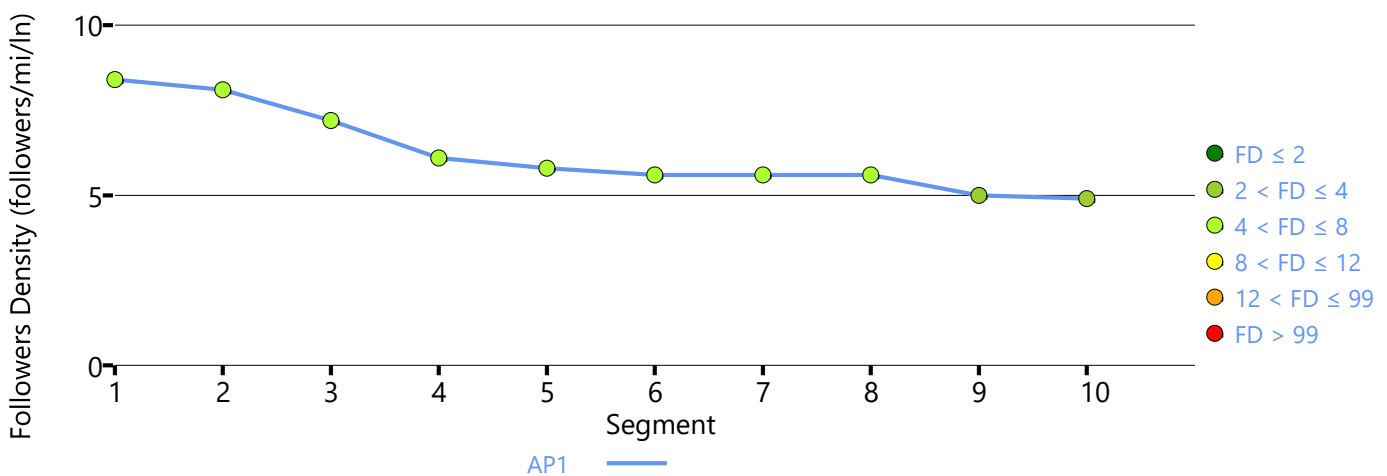
Facility Results

T	VMT veh-mi/p	VHD veh-h/p	Follower Density, followers/ mi/ln	LOS
1	380	0.34	6.1	C

Speed Distribution



Followers Density Distribution



HCS Multilane Highway Report

Project Information

Analyst	Grace Fwelo	Date	4/15/2022
Agency	HDR	Analysis Year	2022
Jurisdiction		Time Analyzed	2022
Project Description	KY-90 Existing_ PM Multilane Seg 1	Units	U.S. Customary

Direction 1 Geometric Data

Direction 1	Eastbound		
Number of Lanes (N), ln	2	Terrain Type	Level
Segment Length (L), ft	5280	Percent Grade, %	-
Measured or Base Free-Flow Speed	Measured	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	-	Access Point Density, pts/mi	-
Lane Width, ft	-	Left-Side Lateral Clearance (LCR), ft	-
Median Type	-	Total Lateral Clearance (TLC), ft	-
Free-Flow Speed (FFS), mi/h	65.0		

Direction 1 Adjustment Factors

Driver Population	Balanced Mix	Final Speed Adjustment Factor (SAF)	0.950
Driver Population SAF	0.950	Final Capacity Adjustment Factor (CAF)	0.939
Driver Population CAF	0.939		

Direction 1 Demand and Capacity

Volume (V) veh/h	320	Heavy Vehicle Adjustment Factor (fHV)	0.943
Peak Hour Factor	0.93	Flow Rate (Vp), pc/h/ln	182
Total Trucks, %	6.00	Capacity (c), pc/h/ln	2236
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (cadj), pc/h/ln	2100
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.09

Direction 1 Speed and Density

Lane Width Adjustment (fLW)	-	Average Speed (S), mi/h	61.8
Total Lateral Clearance Adj. (fLLC)	-	Density (D), pc/mi/ln	2.9
Median Type Adjustment (fM)	-	Level of Service (LOS)	A
Access Point Density Adjustment (fA)	-		

Direction 2 Geometric Data			
Direction 2	Westbound		
Number of Lanes (N), ln	2	Terrain Type	Level
Segment Length (L), ft	5280	Percent Grade, %	-
Measured or Base Free-Flow Speed	Measured	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	-	Access Point Density, pts/mi	-
Lane Width, ft	-	Left-Side Lateral Clearance (LCR), ft	-
Median Type	-	Total Lateral Clearance (TLC), ft	-
Free-Flow Speed (FFS), mi/h	65.0		
Direction 2 Adjustment Factors			
Driver Population	Balanced Mix	Final Speed Adjustment Factor (SAF)	0.950
Driver Population SAF	0.950	Final Capacity Adjustment Factor (CAF)	0.939
Driver Population CAF	0.939		
Direction 2 Demand and Capacity			
Volume (V) veh/h	505	Heavy Vehicle Adjustment Factor (fHV)	0.943
Peak Hour Factor	0.93	Flow Rate (Vp), pc/h/ln	288
Total Trucks, %	6.00	Capacity (c), pc/h/ln	2236
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (cadj), pc/h/ln	2100
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.14
Direction 2 Speed and Density			
Lane Width Adjustment (fLW)	-	Average Speed (S), mi/h	61.8
Total Lateral Clearance Adj. (fLLC)	-	Density (D), pc/mi/ln	4.7
Median Type Adjustment (fM)	-	Level of Service (LOS)	A
Access Point Density Adjustment (fA)	-		
Direction 2 Bicycle LOS			
Flow Rate in Outside Lane (vOL), veh/h	172	Effective Speed Factor (St)	4.79
Effective Width of Volume (Wv), ft	18	Bicycle LOS Score (BLOS)	-
Average Effective Width (We), ft	24	Bicycle Level of Service (LOS)	F

HCS Multilane Highway Report

Project Information

Analyst	Grace Fwelo	Date	4/15/2022
Agency	HDR	Analysis Year	2022
Jurisdiction		Time Analyzed	2022
Project Description	KY-90 Exisitng_ PM Multilane Seg 12	Units	U.S. Customary

Direction 1 Geometric Data

Direction 1	Eastbound		
Number of Lanes (N), ln	2	Terrain Type	Level
Segment Length (L), ft	5280	Percent Grade, %	-
Measured or Base Free-Flow Speed	Measured	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	-	Access Point Density, pts/mi	-
Lane Width, ft	-	Left-Side Lateral Clearance (LCR), ft	-
Median Type	-	Total Lateral Clearance (TLC), ft	-
Free-Flow Speed (FFS), mi/h	62.4		

Direction 1 Adjustment Factors

Driver Population	Balanced Mix	Final Speed Adjustment Factor (SAF)	0.950
Driver Population SAF	0.950	Final Capacity Adjustment Factor (CAF)	0.939
Driver Population CAF	0.939		

Direction 1 Demand and Capacity

Volume (V) veh/h	455	Heavy Vehicle Adjustment Factor (fHV)	0.943
Peak Hour Factor	0.93	Flow Rate (Vp), pc/h/ln	260
Total Trucks, %	6.00	Capacity (c), pc/h/ln	2186
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (cadj), pc/h/ln	2053
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.13

Direction 1 Speed and Density

Lane Width Adjustment (fLW)	-	Average Speed (S), mi/h	59.3
Total Lateral Clearance Adj. (fLLC)	-	Density (D), pc/mi/ln	4.4
Median Type Adjustment (fM)	-	Level of Service (LOS)	A
Access Point Density Adjustment (fA)	-		

Direction 2 Geometric Data			
Direction 2	Westbound		
Number of Lanes (N), ln	2	Terrain Type	Level
Segment Length (L), ft	5280	Percent Grade, %	-
Measured or Base Free-Flow Speed	Measured	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	-	Access Point Density, pts/mi	-
Lane Width, ft	-	Left-Side Lateral Clearance (LCR), ft	-
Median Type	-	Total Lateral Clearance (TLC), ft	-
Free-Flow Speed (FFS), mi/h	62.4		
Direction 2 Adjustment Factors			
Driver Population	Balanced Mix	Final Speed Adjustment Factor (SAF)	0.950
Driver Population SAF	0.950	Final Capacity Adjustment Factor (CAF)	0.939
Driver Population CAF	0.939		
Direction 2 Demand and Capacity			
Volume (V) veh/h	690	Heavy Vehicle Adjustment Factor (fHV)	0.943
Peak Hour Factor	0.93	Flow Rate (Vp), pc/h/ln	394
Total Trucks, %	6.00	Capacity (c), pc/h/ln	2186
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (cadj), pc/h/ln	2053
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.19
Direction 2 Speed and Density			
Lane Width Adjustment (fLW)	-	Average Speed (S), mi/h	59.3
Total Lateral Clearance Adj. (fLLC)	-	Density (D), pc/mi/ln	6.6
Median Type Adjustment (fM)	-	Level of Service (LOS)	A
Access Point Density Adjustment (fA)	-		
Direction 2 Bicycle LOS			
Flow Rate in Outside Lane (vOL), veh/h	245	Effective Speed Factor (St)	4.79
Effective Width of Volume (Wv), ft	18	Bicycle LOS Score (BLOS)	-
Average Effective Width (We), ft	24	Bicycle Level of Service (LOS)	F

HCS Multilane Highway Report

Project Information

Analyst	Grace Fwelo	Date	4/15/2022
Agency	HDR	Analysis Year	2022
Jurisdiction		Time Analyzed	2022
Project Description	KY-90 Exisitng_ PM Multilane Seg 13	Units	U.S. Customary

Direction 1 Geometric Data

Direction 1	Eastbound		
Number of Lanes (N), ln	2	Terrain Type	Level
Segment Length (L), ft	5280	Percent Grade, %	-
Measured or Base Free-Flow Speed	Measured	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	-	Access Point Density, pts/mi	-
Lane Width, ft	-	Left-Side Lateral Clearance (LCR), ft	-
Median Type	-	Total Lateral Clearance (TLC), ft	-
Free-Flow Speed (FFS), mi/h	61.6		

Direction 1 Adjustment Factors

Driver Population	Balanced Mix	Final Speed Adjustment Factor (SAF)	0.950
Driver Population SAF	0.950	Final Capacity Adjustment Factor (CAF)	0.939
Driver Population CAF	0.939		

Direction 1 Demand and Capacity

Volume (V) veh/h	485	Heavy Vehicle Adjustment Factor (fHV)	0.943
Peak Hour Factor	0.95	Flow Rate (Vp), pc/h/ln	270
Total Trucks, %	6.00	Capacity (c), pc/h/ln	2170
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (cadj), pc/h/ln	2038
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.13

Direction 1 Speed and Density

Lane Width Adjustment (fLW)	-	Average Speed (S), mi/h	58.5
Total Lateral Clearance Adj. (fLLC)	-	Density (D), pc/mi/ln	4.6
Median Type Adjustment (fM)	-	Level of Service (LOS)	A
Access Point Density Adjustment (fA)	-		

Direction 2 Geometric Data			
Direction 2	Westbound		
Number of Lanes (N), ln	2	Terrain Type	Level
Segment Length (L), ft	5280	Percent Grade, %	-
Measured or Base Free-Flow Speed	Measured	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	-	Access Point Density, pts/mi	-
Lane Width, ft	-	Left-Side Lateral Clearance (LCR), ft	-
Median Type	-	Total Lateral Clearance (TLC), ft	-
Free-Flow Speed (FFS), mi/h	61.6		
Direction 2 Adjustment Factors			
Driver Population	Balanced Mix	Final Speed Adjustment Factor (SAF)	0.950
Driver Population SAF	0.950	Final Capacity Adjustment Factor (CAF)	0.939
Driver Population CAF	0.939		
Direction 2 Demand and Capacity			
Volume (V) veh/h	775	Heavy Vehicle Adjustment Factor (fHV)	0.943
Peak Hour Factor	0.95	Flow Rate (Vp), pc/h/ln	432
Total Trucks, %	6.00	Capacity (c), pc/h/ln	2170
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (cadj), pc/h/ln	2038
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.21
Direction 2 Speed and Density			
Lane Width Adjustment (fLW)	-	Average Speed (S), mi/h	58.5
Total Lateral Clearance Adj. (fLLC)	-	Density (D), pc/mi/ln	7.4
Median Type Adjustment (fM)	-	Level of Service (LOS)	A
Access Point Density Adjustment (fA)	-		
Direction 2 Bicycle LOS			
Flow Rate in Outside Lane (vOL), veh/h	255	Effective Speed Factor (St)	4.79
Effective Width of Volume (Wv), ft	18	Bicycle LOS Score (BLOS)	-
Average Effective Width (We), ft	24	Bicycle Level of Service (LOS)	F