Bluebird Solar Farm Traffic Impact Study

Prepared for

BayWa r.e. Solar Projects LLC

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Palmer ENGINEERING

JACKSON GROUP

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INTRODUCTION

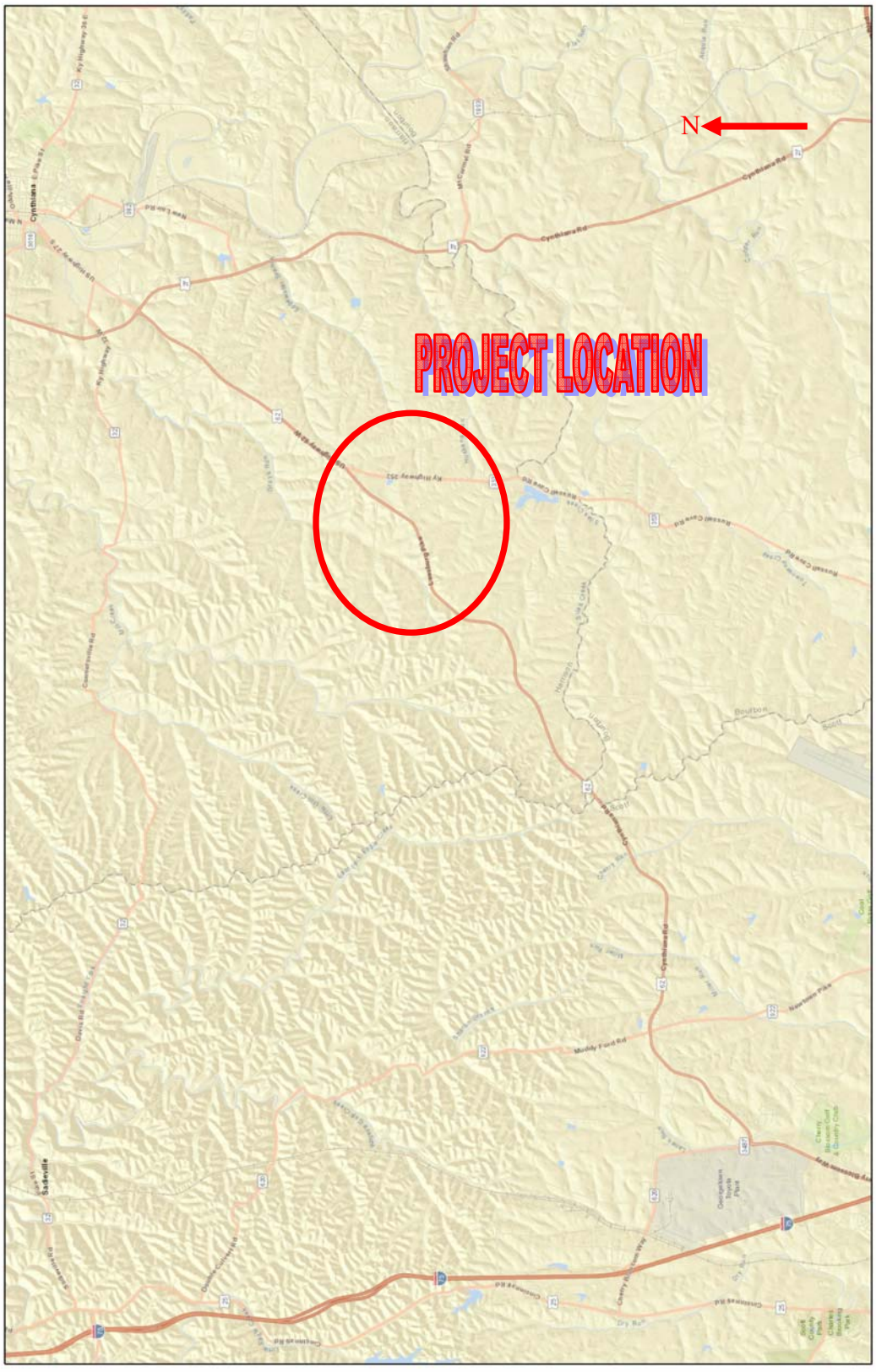
This traffic impact study has been completed for a proposed development in Harrison County, Kentucky, near the Cities of Leesburg and Cynthiana. The majority of the development will be located within the east side of Leesburg Pike (US 62), the west side of Russell Cave Road (KY 353) and the Northside of Silas Pike. An additional piece of development is located east of Russell Cave Road and along the north side of Townsend Valley Road. The vicinity map (Map 1) displays the location of the proposed development and study area.

The proposed development is a new solar farm to be built on existing farm/ agricultural land. A solar farm can be defined as an area of land in which a large number of solar panels are constructed with the intent of generating electricity using solar energy. This traffic impact study analyzes four roadways in the area that will be impacted by entrances to the solar farm or the trips generated by the development. These roadways include the following:

- Leesburg Pike (US 62)
- Russell Cave Road (KY 353)
- Silas Pike
- Allen Pike

In the vicinity of the proposed development, the surrounding area consist of farmland and single family housing.

Allen Pike near the Proposed Substation/Switchyard Entrance



Map 1. **Vicinity Map**

EXISTING CONDITIONS

Regional and Local Access

The proposed development can be accessed directly from KY 353 and Allen Pike. US 62 and KY 353 will provide regional access to the proposed development. A brief description of the surrounding roadways follows:

Leesburg Pike (US 62) – Leesburg Pike provides regional access to the project site and generally runs in a north-south direction in the study area. Lane widths measure approximately 12 feet. In the vicinity of the project site, this road consists of a single thru lane in each direction with a two foot paved shoulder. In the vicinity of the project the posted speed limit is 55 mph.

Leesburg Pike (US62)

Russell Cave Road (KY 353) – Russell Cave Road provides local and regional access to the project site and generally runs in a north-south direction in the study area. Lane widths measure approximately 11 feet. In the vicinity of the project site, this road consists of a single thru lane in each direction with a two foot paved shoulder. In the vicinity of the project the posted speed limit is 55 mph.

Russell Cave Road (KY 353)

Silas Pike – Silas Pike will not provide direct access to the site but may be impacted by the traffic generated by the site. The roadway measures approximately 17 feet wide without any striping. In the vicinity of the project site, this road runs in an east-west direction. The current speed limit along this roadway is unposted; per Kentucky law the speed limit defaults to 55 mph although the average speed was 27.4 mph during the days that data was collected.

Silas Pike

Allen Pike – Allen Pike will provide direct access to the site. The roadway measures approximately 12 feet wide without any striping. The current speed limit along this roadway is unposted; per Kentucky law the speed limit defaults to 55 mph although the average speed was 29.1 mph during the days that data was collected.

Allen Pike

LEVEL OF SERVICE AND DELAY

Level of Service (LOS) was used as the measure of effectiveness for each roadway. According to the Highway Capacity Manual, the level of service is defined in terms of average travel speed, percent time spent following and percent of free-flow speed for two lane highways (See Table 1). The average travel speed (ATS) reflects mobility on a two-way highway. The percent time spent following (PTSF) represents the maneuverability on the highway along with comfort and convenience of travel. The percent free-flow speed (PFFS) represents the ability of the vehicle to travel at or near the posted speed limit. A Level of Service C is desirable, and D is acceptable in an urban setting.

LOS	CLASS I HIGHWAYS		CLASS II HIGHWAYS	CLASS III HIGHWAYS
	AVG TRAVEL SPEED (MPH)	PERCENT TIME SPENT FOLLOWING (%)	PERCENT TIME SPENT FOLLOWING (%)	PERCENT FREE-FLOW SPEED (%)
A	>55	≤35	≤40	>91.7
B	>50-55	>35-50	>40-55	>83.3-91.7
C	>45-50	>50-65	>55-70	>75.0-83.3
D	>40-45	>65-80	>70-85	>66.7-75.0
E	≤40	>80	>85	≤66.7
F	Demand exceeds capacity			

Table 1. Two-Lane Highway Level of Service

Base Traffic Volumes (existing condition)

Manual traffic counts were taken using traffic tubes for four consecutive days (Thursday through Sunday) along the four roadways listed below. The traffic tubes were placed in sections of the roadways that will be affected by trips generated for the proposed development. The specific dates for the tube counts varied due to inclement weather during the counting time. All traffic volumes can be found in the Appendix.

- US 62 (Leesburg Pike)
- KY 353 (Russell Cave Road)
- Silas Pike
- Allen Pike

Background Traffic Volumes

The estimated completion date for the proposed development is by the end of 2023. Based on Kentucky Transportation Cabinet (KYTC) count stations along Leesburg Pike (049529) and Russell Cave Road (049500), the average annual daily traffic (AADT) has been decreasing over the past ten years along Russell Cave Road but has been increasing along Leesburg Pike. The KYTC traffic counts show that Leesburg Pike has been increasing by approximately three percent over the past ten years. KYTC did not have historical traffic data for Silas Road or Allen Pike.

Based on this data, this analysis assumes that the traffic along Russell Cave Road remains flat over the next ten years, that Leesburg Pike volumes increase by three percent over the next ten years, and that the local roads increase by half a percent over the next ten years. The KYTC count station data for stations 049529 and 049500 can be found in the Appendix.

METHODOLOGY

Level of Service, average speed, and travel time were measures of effectiveness analyzed using the highway capacity software (HCS7).

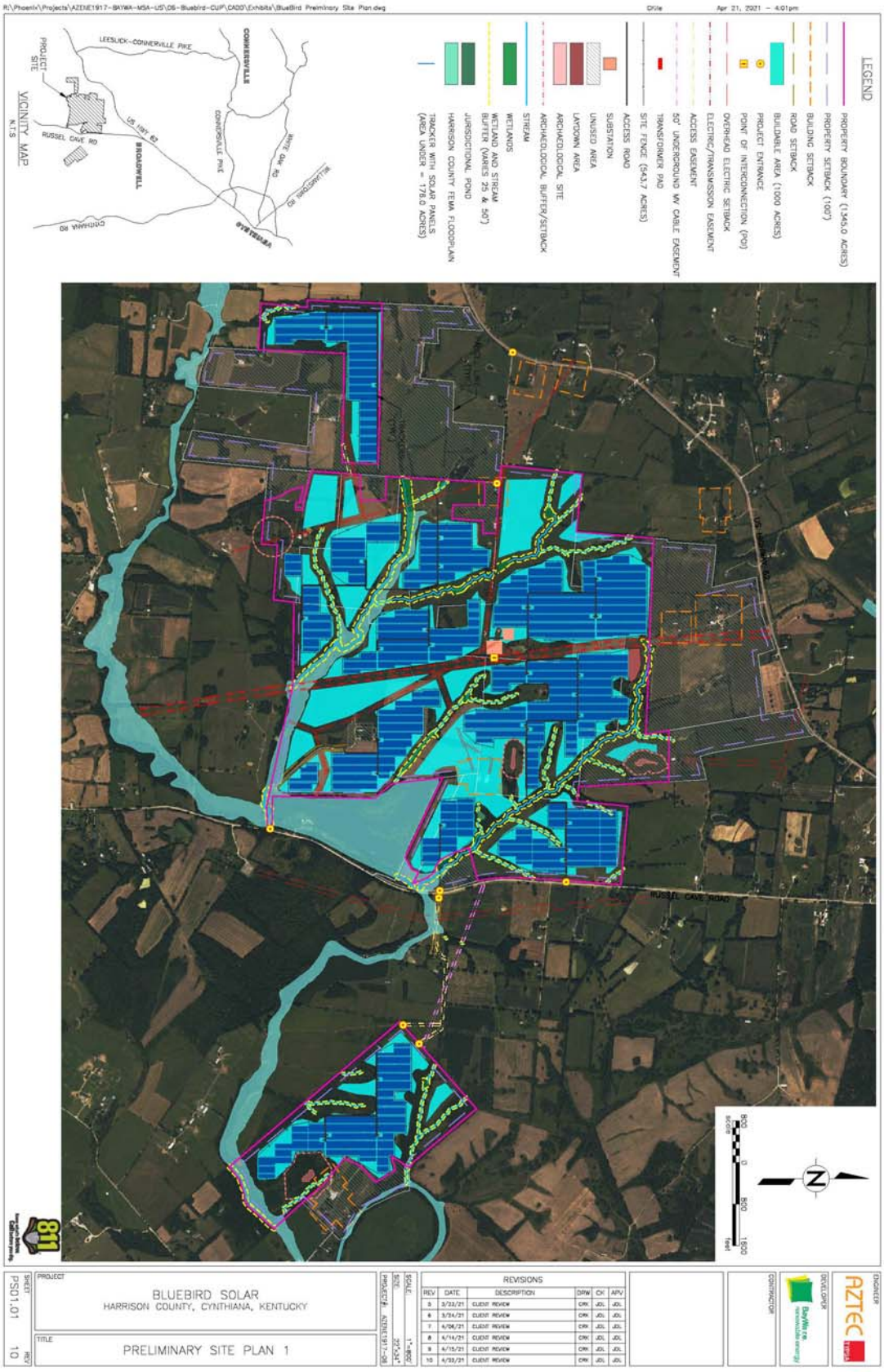
Trips were generated for the proposed development and then distributed to the roadway system based on the existing traffic patterns and engineering judgment. For the analysis, the study uses traffic volumes from the current year as background volumes grown to the completion year, 2023. The design year for this project was determined to be 2033, ten years after the completion year for the project. Based on KYTC traffic counts, traffic along Leesburg Pike has increased over the past ten years, but traffic along Russell Cave Road has remained flat. Historic traffic volumes were not available for Silas Pike or Allen Pike; therefore, traffic along Russell Cave Road was not increased for the design year (2033), but Leesburg Pike traffic was increased by three percent and the local roads were increased by a half percent to determine the background traffic for the design year. The assigned volumes from the proposed development and the background traffic volumes combined to produce the total proposed traffic volumes for existing and build out conditions. HCS7 was used to analyze the roadway network for existing and proposed conditions in both the current year and build out year (2033). The existing background volumes, level-of-service, and travel times can be found in the Appendix along with 2021 existing traffic (Fig 1), 2023 background traffic (Fig 1A), 2023 build (Fig 3), 2033 background (Fig 4), and 2033 build (Fig 5) traffic volumes.

TRIP GENERATION AND PROJECTED TRAFFIC VOLUMES

Solar Farms are not included in the *Trip Generation, 10th Edition,* a nationally recognized resource of trip generation rates published by the Institute of Transportation Engineers. Therefore, trip estimates were based on information provided by the client and engineering judgement.

SITE TRIP GENERATION

The proposed site will consist of a solar farm. A solar farm is an area of many solar panels constructed to generate electricity using solar energy. The proposed solar farm will require construction equipment and workers to travel to and from the site throughout the construction phases. The client provided information for each of the different construction phases, the one that generated the most trips was 19 vehicles. This accounted for the construction items necessary for that phase of the project. In order to account for trips into and out of the site by the employees this study assumes 30 vehicles (15 in each direction) are generated on each roadway during each peak hour. It is expected that this would be a conservative number of trips generated during the construction process and very conservative compared to the trips generated by the site after the construction is completed. Map 2 (Site Map) provides more detail on the areas under construction and the roadways adjacent to the proposed site.



Map 2. ***Site Map***

LEVEL OF SERVICE AND DELAY ANALYSIS

All roadway traffic volumes, average vehicle speeds, and level of service information can be found in the Appendix. With background traffic expected to increase as mentioned earlier, the 2033 base traffic volume information will be the focus upon comparisons between the projected background traffic and the proposed traffic volumes (full build out). The 2033 No-Build volumes would exist on the roadway system in the absence of the proposed development and the 2033 Build Volumes, are the volumes with the proposed development included.

The No-Build Scenario analysis assumes that no proposed improvements to the roadway system have been implemented. This would be the case assuming the proposed development was not built.

INTERSECTION ANALYSIS

2023 No Build Analysis

The HCS analysis reveals that all roadways operate with a level of service (LOS) "B" or better for both peak hours of the day. Travel times are between one and two minutes per mile of roadway and the average speed is at or above the speed limit of the road.

2023 Build Analysis

The HCS analysis shows that the build conditions are similar to the 2023 no build. All roadways continue to operate at a LOS "B" or better during both peak hours. The roadways continue to allow vehicles to travel near or above the speed limit and travel times remain within one or two minutes per mile travelled.

2033 No Build Analysis

The HCS analysis reveals that all roadways operate with a level of service (LOS) "C" or better for both peak hours of the day. Travel times are between one and two minutes per mile of roadway and the average speed is at or above the speed limit of the road. With the exception of Leesburg Pike that degrades to a LOS "C" all other roadways continue to operate at the same LOS as the existing conditions.

2033 Build Analysis

The HCS analysis shows that the build conditions are similar to the 2033 no build conditions. All roadways continue to operate at the same LOS as the no build conditions during both hours. The roadways continue to allow vehicles to travel at or above the speed limit and travel times remain within one or two minutes per mile travelled.

2023 NO BUILD					
AM PEAK	Average Speed mph	Percent Followers %	Travel Time to Travel 1 mile, min	Followers Density Foll/min/ln	Vehicle LOS
LEESBURG PIKE	57.3	42.7	1.05	2.4	B
RUSSEL CAVE RD	58.5	21.5	1.03	0.4	A
SILAS RD	55.9	8.3	1.07	0	A
ALLEN PIKE	55	4.6	1.09	0	A
PM PEAK	Average Speed mph	Percent Followers %	Travel Time to Travel 1 mile, min	Followers Density Foll/min/ln	Vehicle LOS
LEESBURG PIKE	57	48.1	1.05	3.4	B
RUSSEL CAVE RD	58.4	22.3	1.03	0.4	A
SILAS RD	55.9	8.1	1.07	0	A
ALLEN PIKE	55	4.9	1.09	0	A

Table 2. 2023 No Build Summary

2023 BUILD					
AM PEAK	Average Speed mph	Percent Followers %	Travel Time to Travel 1 mile, min	Followers Density Foll/min/ln	Vehicle LOS
LEESBURG PIKE	57.3	44	1.05	2.6	B
RUSSEL CAVE RD	58.1	24.1	1.03	0.5	A
SILAS RD	55.9	13	1.07	0.1	A
ALLEN PIKE	55	11.5	1.09	0.1	A
PM PEAK	Average Speed mph	Percent Followers %	Travel Time to Travel 1 mile, min	Followers Density Foll/min/ln	Vehicle LOS
LEESBURG PIKE	57	49.2	1.05	3.6	B
RUSSEL CAVE RD	58.1	24.8	1.03	0.6	A
SILAS RD	55.9	13	1.07	0.1	A
ALLEN PIKE	55	11.1	1.09	0.1	A

Table 3. 2023 Build Summary

2033 NO BUILD					
AM PEAK	Average Speed mph	Percent Followers %	Travel Time to Travel 1 mile, min	Followers Density Foll/min/ln	Vehicle LOS
LEESBURG PIKE	56.9	50.2	1.05	3.9	B
RUSSEL CAVE RD	58.5	21.5	1.03	0.4	A
SILAS RD	55.9	8.3	1.07	0	A
ALLEN PIKE	55	4.6	1.09	0	A
PM PEAK	Average Speed mph	Percent Followers %	Travel Time to Travel 1 mile, min	Followers Density Foll/min/ln	Vehicle LOS
LEESBURG PIKE	56.7	56	1.06	5.4	C
RUSSEL CAVE RD	58.4	22.3	1.03	0.4	A
SILAS RD	55.9	8.5	1.07	0	A
ALLEN PIKE	55	4.9	1.09	0	A

Table 4. 2033 No Build Summary

2033 BUILD					
AM PEAK	Average Speed mph	Percent Followers %	Travel Time to Travel 1 mile, min	Followers Density Foll/min/ln	Vehicle LOS
LEESBURG PIKE	56.9	51.2	1.05	4.1	C
RUSSEL CAVE RD	58.1	24.1	1.03	0.5	A
SILAS RD	55.9	13.3	1.07	0.1	A
ALLEN PIKE	55	11.5	1.09	0.1	A
PM PEAK	Average Speed mph	Percent Followers %	Travel Time to Travel 1 mile, min	Followers Density Foll/min/ln	Vehicle LOS
LEESBURG PIKE	56.6	56.8	1.06	5.6	C
RUSSEL CAVE RD	58.1	24.8	1.03	0.6	A
SILAS RD	55.9	13.3	1.07	0.1	A
ALLEN PIKE	55	11.1	1.09	0.1	A

Table 5. 2033 Build Summary

ADDITIONAL STUDY ITEMS

Turn Lane Analysis

Based on the volumes of the roadways none of the five analyzed roads warrant a left or right turn lane for vehicles entering the proposed development. The roadway volumes, entering trips, truck volumes, and speed limits were entered into the Kentucky Transportation Cabinet's "*Warrant Calcs Interactive*" spreadsheet to determine if any turn lanes are warranted along US 62, KY 353, Allen Pike, or Silas Road. The interactive spreadsheet determined that none of the roadways warrant a turn lane based on low background volumes and low turning volumes.

Sight Distance Analysis

The intersection of US 62 at Allen Pike and all proposed entrances to the development were compared to the AASHTO/KYTC standards for intersection sight distance. The analysis was performed using information gathered during site visits supplemented by LIDAR data. This analysis expected that the greatest number of trips generated by the development will occur during the construction phase; therefore, the sight distance calculations were performed assuming a truck will be entering the roadway from a proposed entrance. Based on the analysis the vehicles entering US 62 from Allen Pike and the proposed entrances along KY 353 and Allen Pike all meet the required sight distance standards. US 62, KY 353 and Allen Pike were compared with 55 mph requirements for intersection sight distance. Some clearing may be required within right of way to eliminate any obstructions caused by grass, shrubs, or trees at any of the proposed entrances. Figure 6 in the Appendix shows the existing sight distance provided at the proposed entrances to the development and at the intersection of US 62 at Allen Pike for vehicles entering US 62.

REQUIRED SIGHT DISTANCE		
ROADWAY	RIGHT TURNING INTERSECTION SIGHT DSITANCE	LEFT TURNING INTERSECTION SIGHT DSITANCE
KY 353	690 FT	770 FT
US 62	690 FT	770 FT
ALLEN PIKE	690 FT	770 FT

Table 6. Sight Distance Requirements

CONCLUSIONS AND RECOMMENDATIONS

When comparing the no build analysis to the build analysis it was determined that the roadways in the study area will continue to operate at a LOS similar to existing conditions. The analysis determined that existing and proposed conditions operated with a LOS "C" or better for all roadways in the study area and the average speed for all roadways are near or above the speed limit for all roadways. The turn lane analysis determined that no additional turn lanes are warranted for any roadways based on the traffic volumes on the road. The sight distance analysis determined that traffic entering US 62 at Allen Pike and the proposed entrances to KY 353 and Allen Pike meet all sight distance requirements. Some clearing along right of way may be required at these entrances to ensure proper sight distance is provided.

Based on the analyses performed, no changes to the roadway network are recommended within the study area in order for traffic conditions to operate within acceptable conditions.

APPENDIX

PROPOSED BLUEBIRD SOLAR FARM
HARRISON COUNTY, KENTUCKY

FIGURE 1
2021 EXISTING COUNTS
(AM) PM

PROPOSED BLUEBIRD SOLAR FARM
HARRISON COUNTY, KENTUCKY

FIGURE 1A
2023 EXISTING COUNTS
(AM) PM

PROPOSED BLUEBIRD SOLAR FARM
HARRISON COUNTY, KENTUCKY

FIGURE 2
TRIPS GENERATED
(AM) PM

PROPOSED BLUEBIRD SOLAR FARM
HARRISON COUNTY, KENTUCKY

FIGURE 3
2023 BUILD VOLUMES
(AM) PM

PROPOSED BLUEBIRD SOLAR FARM
HARRISON COUNTY, KENTUCKY

FIGURE 4
2033 NO BUILD VOLUMES
(AM) PM

PROPOSED BLUEBIRD SOLAR FARM
HARRISON COUNTY, KENTUCKY

FIGURE 5
2033 BUILD VOLUMES
(AM) PM

PROPOSED BLUEBIRD SOLAR
HARRISON COUNTY, KENTUCKY

FIGURE 6
PROPOSED ENTRANCES
AND SIGHT DISTANCE

Bluebird Solar Project
Harrison County, KY
Location 1:
Location 2:
Latitude: 0.000000
Longitude: 0.000000

File Name: Leesburg Pike Volumes
Start Date: 3/25/2021
End Date: 3/28/2021

3/22/2021	3/22/2021		3/23/2021		3/24/2021		3/25/2021		3/26/2021		Weekday Average		3/27/2021		3/28/2021	
Time	Southwest, Lane 1	Northeast, Lane 2	Southwest, Lane 1	Northeast, Lane 2	Southwest, Lane 1	Northeast, Lane 2	Southwest, Lane 1	Northeast, Lane 2	Southwest, Lane 1	Northeast, Lane 2	Southwest, Lane 1	Northeast, Lane 2	Southwest, Lane 1	Northeast, Lane 2	Southwest, Lane 1	Northeast, Lane 2
12:00 AM	*	*	*	*	*	*	20	7	48	4	34	6	36	25	22	16
1:00	*	*	*	*	*	*	41	7	20	3	30	5	25	16	35	8
2:00	*	*	*	*	*	*	152	6	56	5	104	6	44	7	15	11
3:00	*	*	*	*	*	*	36	18	21	8	28	13	15	12	9	9
4:00	*	*	*	*	*	*	28	72	24	38	26	55	15	30	10	7
5:00	*	*	*	*	*	*	35	271	28	131	32	201	10	44	5	30
6:00	*	*	*	*	*	*	77	187	85	109	81	148	30	59	8	41
7:00	*	*	*	*	*	*	186	182	167	144	176	163	39	61	25	19
8:00	*	*	*	*	*	*	125	141	139	136	132	138	74	87	36	35
9:00	*	*	*	*	*	*	125	108	137	93	131	100	105	117	59	97
10:00	*	*	*	*	*	*	174	79	137	77	156	78	121	144	101	85
11:00	*	*	*	*	*	*	146	57	153	63	150	60	144	112	133	66
12:00 PM	*	*	*	*	*	*	199	95	178	64	188	80	159	91	184	70
1:00	*	*	*	*	*	*	173	93	193	82	183	88	196	67	189	78
2:00	*	*	*	*	*	*	267	65	240	64	254	64	200	53	186	57
3:00	*	*	*	*	*	*	370	75	338	79	354	77	215	128	180	57
4:00	*	*	*	*	*	*	283	94	324	191	304	142	227	187	199	74
5:00	*	*	*	*	*	*	315	64	340	176	328	120	194	123	169	105
6:00	*	*	*	*	*	*	205	53	238	60	222	56	169	52	177	93
7:00	*	*	*	*	*	*	157	40	200	68	178	54	180	45	114	61
8:00	*	*	*	*	*	*	121	50	152	66	136	58	151	52	88	51
9:00	*	*	*	*	*	*	106	40	122	81	114	60	126	40	66	51
10:00	*	*	*	*	*	*	104	24	109	56	106	40	84	27	42	35
11:00	*	*	*	*	*	*	80	13	60	30	70	22	51	14	24	18
Day	0		0		0		5366		5337		5351		4203		3250	
AM Peak							12:00 PM	5:00	12:00 PM	7:00	12:00 PM	5:00	12:00 PM	10:00	12:00 PM	9:00
Volume	0	0	0	0	0	0	199	271	178	144	188	201	159	144	184	97
Total	0	0	0	0	0	0	3525	1841	3509	1828	3517	1834	2610	1593	2076	1174
PM Peak							3:00	12:00 PM	5:00	4:00	3:00	4:00	4:00	4:00	4:00	5:00
Volume	0	0	0	0	0	0	370	95	340	191	354	142	227	187	199	105
Comb Total	0		0		0		5366		5337		5351		4203		3250	
ADT	N/A															

Bluebird Solar Project
Harrison County, KY

Location 1:

Location 2:
Latitude: 0.000000
Longitude: 0.000000

File Name: Leesburg Pike Volumes
Start Date: 3/23/2021
End Date: 3/29/2021

Combined Lanes

Peak Analysis

Classes Excluded From Peaks: None

Date	AM Peak	Hour Volume	Highest Interval Time	Highest Interval Volume	Peak Hour Factor	Pm Peak	Hour Volume	Highest Interval Time	Highest Interval Volume	Peak Hour Factor
3/23/2021	No Volume					No Volume				
3/24/2021	No Volume					No Volume				
3/25/2021	7:10 AM	375	7:39 AM	106	0.88	2:56 PM	467	3:12 PM	134	0.87
3/26/2021	7:05 AM	324	7:39 AM	93	0.87	4:24 PM	596	4:45 PM	167	0.89
3/27/2021	10:50 AM	271	11:26 AM	76	0.89	3:52 PM	424	4:14 PM	124	0.85
3/28/2021	10:53 AM	215	10:53 AM	67	0.80	4:55 PM	292	5:26 PM	87	0.84
3/29/2021	No Volume					No Volume				

Classification Statistics

Unclassed	Motorcycles	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi
360	224	15774	1109	94	152	115	9	166	150	3	0	0	0
2.0%	1.2%	86.9%	6.1%	0.5%	0.8%	0.6%	0.0%	0.9%	0.8%	0.0%	0.0%	0.0%	0.0%

AADT

Date	Lane	Volume	x	User	x	Daily	=	ADT	x	Season	=	AADT
3/25/2021	Channel 1, A to B	3,525		1.00		1.00		3,525		1.00		3,525
3/25/2021	Channel 2, B to A	1,841		1.00		1.00		1,841		1.00		1,841
3/25/2021	Day Total	5,366						5,366				5,366
3/26/2021	Channel 1, A to B	3,509		1.00		1.00		3,509		1.00		3,509
3/26/2021	Channel 2, B to A	1,828		1.00		1.00		1,828		1.00		1,828
3/26/2021	Day Total	5,337						5,337				5,337
3/27/2021	Channel 1, A to B	2,610		1.00		1.00		2,610		1.00		2,610
3/27/2021	Channel 2, B to A	1,593		1.00		1.00		1,593		1.00		1,593
3/27/2021	Day Total	4,203						4,203				4,203
3/28/2021	Channel 1, A to B	2,076		1.00		1.00		2,076		1.00		2,076
3/28/2021	Channel 2, B to A	1,174		1.00		1.00		1,174		1.00		1,174
3/28/2021	Day Total	3,250						3,250				3,250
Total		18156						18156				18156
Average		4539						4539				4539

Historical Traffic Volume Summary

Station Details:

Sta ID:	049529
Sta Type:	Classification
Map:	MapIt
District:	6
County:	Harrison
Route:	049-US-0062 -000
Route Desc:	US-62 W

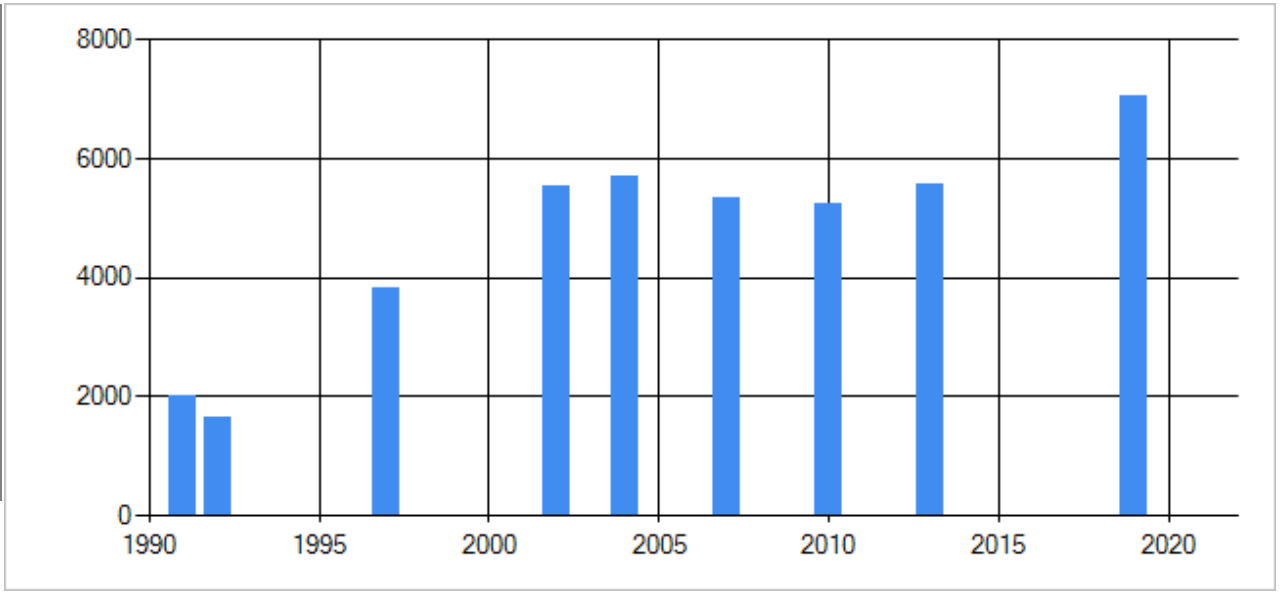
Begin MP:	0
Begin Desc:	BOURBON COUNTY LINE
End Mp:	5.60
End Desc:	KY 353 (RUSSELL CAVE ROAD)
Impact Year:	
Year Added:	

Newest Count:

AADT:	7061
Year:	2019
% Single:	7.9860
% Combo:	2.5620
K Factor:	10.90
D Factor:	56

Definitions:
Sta. ID - Three digit county number + station number
MP - milepoint
Impact Year – year of significant change to traffic pattern within station segment
AADT – Annual Average Daily Traffic – the annualized average 24-hour volume of vehicles on a segment of roadway
% Single – single unit truck volume as a percentage of the AADT
% Combo – combination truck volume as a percentage of the AADT
K Factor – peak hour volume as a percentage of the AADT
D Factor – percentage of peak hour volume flowing in the peak direction

Year	AADT	Year	AADT	Year	AADT
2021		2011		2001	
2020		2010	5250	2000	
2019	7061	2009		1999	
2018		2008		1998	
2017		2007	5330	1997	3830
2016		2006		1996	
2015		2005		1995	
2014		2004	5690	1994	
2013	5570	2003		1993	
2012		2002	5530	1992	1640



Bluebird Solar Project
Harrison County, KY
Location 1:
Location 2:
Latitude: 0.000000
Longitude: 0.000000

File Name: Russel Cave Volumes
Start Date: 3/25/2021
End Date: 3/28/2021

3/22/2021	3/22/2021		3/23/2021		3/24/2021		3/25/2021		3/26/2021		Weekday Average		3/27/2021		3/28/2021	
Time	South, Lane 1	North, Lane 2	South, Lane 1	North, Lane 2	South, Lane 1	North, Lane 2	South, Lane 1	North, Lane 2	South, Lane 1	North, Lane 2	South, Lane 1	North, Lane 2	South, Lane 1	North, Lane 2	South, Lane 1	North, Lane 2
12:00 AM	*	*	*	*	*	*	3	5	2	12	2	8	4	14	7	7
1:00	*	*	*	*	*	*	1	1	0	2	0	2	3	6	4	6
2:00	*	*	*	*	*	*	2	6	2	1	2	4	3	3	1	10
3:00	*	*	*	*	*	*	2	2	2	0	2	1	1	1	0	2
4:00	*	*	*	*	*	*	6	4	5	2	6	3	3	4	1	3
5:00	*	*	*	*	*	*	20	3	19	1	20	2	3	2	5	7
6:00	*	*	*	*	*	*	65	13	56	12	60	12	17	5	7	2
7:00	*	*	*	*	*	*	79	21	75	24	77	22	26	6	9	2
8:00	*	*	*	*	*	*	63	31	38	32	50	32	34	18	11	6
9:00	*	*	*	*	*	*	29	31	28	30	28	30	37	21	18	9
10:00	*	*	*	*	*	*	32	30	50	36	41	33	41	31	20	15
11:00	*	*	*	*	*	*	27	33	39	30	33	32	47	37	35	33
12:00 PM	*	*	*	*	*	*	34	33	57	26	46	30	45	36	37	23
1:00	*	*	*	*	*	*	32	42	39	45	36	44	49	30	55	40
2:00	*	*	*	*	*	*	30	40	30	51	30	46	37	48	39	37
3:00	*	*	*	*	*	*	32	52	42	61	37	56	34	45	22	27
4:00	*	*	*	*	*	*	38	65	47	75	42	70	43	49	26	44
5:00	*	*	*	*	*	*	40	91	53	87	46	89	27	51	36	36
6:00	*	*	*	*	*	*	29	33	46	40	38	36	46	35	23	29
7:00	*	*	*	*	*	*	14	26	33	33	24	30	28	42	17	20
8:00	*	*	*	*	*	*	13	24	18	29	16	26	16	28	15	22
9:00	*	*	*	*	*	*	4	13	16	33	10	23	11	25	30	11
10:00	*	*	*	*	*	*	7	11	16	21	12	16	7	14	9	6
11:00	*	*	*	*	*	*	2	10	8	14	5	12	10	12	2	7
Day	0		0		0		1224		1418		1322		1135		833	
AM Peak							7:00	11:00	7:00	10:00	7:00	10:00	11:00	11:00	12:00 PM	11:00
Volume	0	0	0	0	0	0	79	33	75	36	77	33	47	37	37	33
Total	0	0	0	0	0	0	604	620	721	697	663	659	572	563	429	404
PM Peak							5:00	5:00	12:00 PM	5:00	12:00 PM	5:00	1:00	5:00	1:00	4:00
Volume	0	0	0	0	0	0	40	91	57	87	46	89	49	51	55	44
Comb Total	0		0		0		1224		1418		1322		1135		833	
ADT	N/A															

Bluebird Solar Project
Harrison County, KY

Location 1:

Location 2:
Latitude: 0.000000
Longitude: 0.000000

File Name: Russel Cave Volumes
Start Date: 3/23/2021
End Date: 3/29/2021

Combined Lanes

Peak Analysis

Classes Excluded From Peaks: None

Date	AM Peak	Hour Volume	Highest Interval Time	Highest Interval Volume	Peak Hour Factor	Pm Peak	Hour Volume	Highest Interval Time	Highest Interval Volume	Peak Hour Factor
3/23/2021	No Volume					No Volume				
3/24/2021	No Volume					No Volume				
3/25/2021	7:24 AM	116	7:24 AM	40	0.73	4:54 PM	137	5:05 PM	41	0.84
3/26/2021	7:09 AM	107	7:20 AM	40	0.67	4:32 PM	151	5:09 PM	50	0.76
3/27/2021	10:27 AM	95	11:06 AM	30	0.79	3:54 PM	96	4:19 PM	29	0.83
3/28/2021	10:59 AM	70	11:31 AM	25	0.70	12:56 PM	99	1:02 PM	30	0.83
3/29/2021	No Volume					No Volume				

Classification Statistics

Unclassed	Motorcycles	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi
15	34	4043	460	6	14	12	1	24	1	0	0	0	0
0.3%	0.7%	87.7%	10.0%	0.1%	0.3%	0.3%	0.0%	0.5%	0.0%	0.0%	0.0%	0.0%	0.0%

AADT

Date	Lane	Volume	x	User	x	Daily	=	ADT	x	Season	=	AADT
3/25/2021	South, Lane 1	604		1.00		1.00		604		1.00		604
3/25/2021	North, Lane 2	620		1.00		1.00		620		1.00		620
3/25/2021	Day Total	1,224						1,224				1,224
3/26/2021	South, Lane 1	721		1.00		1.00		721		1.00		721
3/26/2021	North, Lane 2	697		1.00		1.00		697		1.00		697
3/26/2021	Day Total	1,418						1,418				1,418
3/27/2021	South, Lane 1	572		1.00		1.00		572		1.00		572
3/27/2021	North, Lane 2	563		1.00		1.00		563		1.00		563
3/27/2021	Day Total	1,135						1,135				1,135
3/28/2021	South, Lane 1	429		1.00		1.00		429		1.00		429
3/28/2021	North, Lane 2	404		1.00		1.00		404		1.00		404
3/28/2021	Day Total	833						833				833
Total		4610						4610				4610
Average		1153						1153				1153

Historical Traffic Volume Summary

Station Details:

Sta ID:	049500
Sta Type:	Classification
Map:	MapIt
District:	6
County:	Harrison
Route:	049-KY-0353 -000
Route Desc:	KY-353

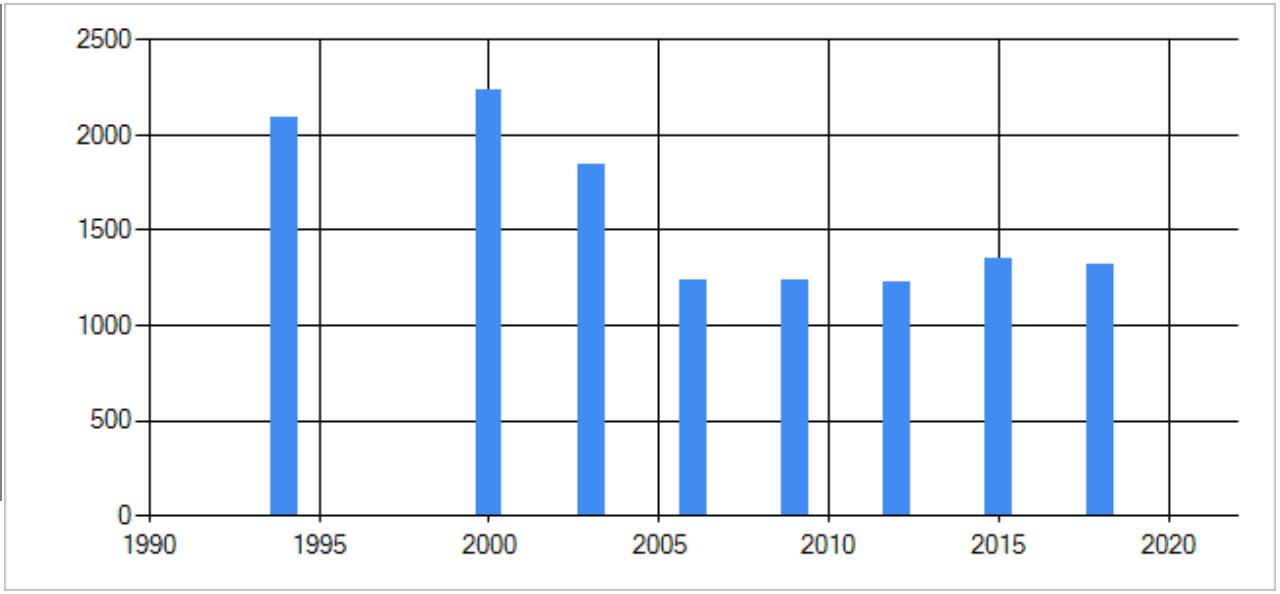
Begin MP:	0
Begin Desc:	BOURBON COUNTY LINE
End Mp:	2.3310
End Desc:	US 62
Impact Year:	
Year Added:	

Newest Count:

AADT:	1316
Year:	2018
% Single:	6.1860
% Combo:	1.1260
K Factor:	11.60
D Factor:	74

Definitions:
Sta. ID - Three digit county number + station number
MP - milepoint
Impact Year – year of significant change to traffic pattern within station segment
AADT – Annual Average Daily Traffic – the annualized average 24-hour volume of vehicles on a segment of roadway
% Single – single unit truck volume as a percentage of the AADT
% Combo – combination truck volume as a percentage of the AADT
K Factor – peak hour volume as a percentage of the AADT
D Factor – percentage of peak hour volume flowing in the peak direction

Year	AADT	Year	AADT	Year	AADT
2021		2011		2001	
2020		2010		2000	2240
2019		2009	1240	1999	
2018	1316	2008		1998	
2017		2007		1997	
2016		2006	1240	1996	
2015	1349	2005		1995	
2014		2004		1994	2090
2013		2003	1840	1993	
2012	1229	2002		1992	



Bluebird Solar Project
Harrison County, KY

Location 1: Silar Rd
Location 2:
Latitude: 38.277579
Longitude: -84.381999

File Name: Silas Road Volumes
Start Date: 1/7/2021
End Date: 1/10/2021

1/4/2021	1/4/2021		1/5/2021		1/6/2021		1/7/2021		1/8/2021		Weekday Average		1/9/2021		1/10/2021	
Time	Southbound, None Specified	Northbound, None Specified	Southbound, None Specified	Northbound, None Specified	Southbound, None Specified	Northbound, None Specified	Southbound, None Specified	Northbound, None Specified	Southbound, None Specified	Northbound, None Specified	Southbound, None Specified	Northbound, None Specified	Southbound, None Specified	Northbound, None Specified	Southbound, None Specified	Northbound, None Specified
12:00 AM	*	*	*	*	*	*	*	*	2	3	2	3	0	1	0	0
1:00	*	*	*	*	*	*	1	1	3	1	2	1	1	1	0	0
2:00	*	*	*	*	*	*	0	0	2	3	1	2	1	0	1	3
3:00	*	*	*	*	*	*	0	0	0	1	0	0	1	1	1	2
4:00	*	*	*	*	*	*	0	1	1	1	0	1	1	4	0	0
5:00	*	*	*	*	*	*	2	3	0	2	1	2	0	1	0	0
6:00	*	*	*	*	*	*	4	3	6	2	5	2	0	0	0	0
7:00	*	*	*	*	*	*	7	1	4	1	6	1	0	2	1	1
8:00	*	*	*	*	*	*	2	6	1	5	2	6	1	1	1	1
9:00	*	*	*	*	*	*	6	12	5	9	6	10	6	2	2	0
10:00	*	*	*	*	*	*	4	7	6	4	5	6	5	4	12	3
11:00	*	*	*	*	*	*	0	5	4	6	2	6	10	7	15	4
12:00 PM	*	*	*	*	*	*	10	7	5	10	8	8	9	5	14	10
1:00	*	*	*	*	*	*	6	9	9	10	8	10	12	16	4	15
2:00	*	*	*	*	*	*	14	3	9	9	12	6	5	10	8	16
3:00	*	*	*	*	*	*	8	11	7	11	8	11	8	7	6	12
4:00	*	*	*	*	*	*	6	7	15	11	10	9	10	9	7	8
5:00	*	*	*	*	*	*	15	7	11	8	13	8	16	11	14	11
6:00	*	*	*	*	*	*	10	12	6	10	8	11	4	10	10	6
7:00	*	*	*	*	*	*	3	3	6	5	4	4	7	4	6	12
8:00	*	*	*	*	*	*	5	0	9	4	7	2	4	1	7	3
9:00	*	*	*	*	*	*	3	3	3	5	3	4	4	5	1	0
10:00	*	*	*	*	*	*	4	1	4	2	4	2	1	1	0	3
11:00	*	*	*	*	*	*	0	3	2	1	1	2	2	1	1	0
Day	0		0		0		215		244		235		212		221	
AM Peak							12:00 PM	9:00	6:00	12:00 PM	12:00 PM	9:00	11:00	11:00	11:00	12:00 PM
Volume	0	0	0	0	0	0	10	12	6	10	8	10	10	7	15	10
Total	0	0	0	0	0	0	110	105	120	124	118	117	108	104	111	110
PM Peak							5:00	6:00	4:00	3:00	5:00	3:00	5:00	1:00	12:00 PM	2:00
Volume	0	0	0	0	0	0	15	12	15	11	13	11	16	16	14	16
Comb Total	0		0		0		215		244		235		212		221	
ADT	N/A															

Bluebird Solar Project
Harrison County, KY

Location 1:	Silar Rd
Location 2:	
Latitude:	38.277579
Longitude:	-84.381999

File Name:	Silas Road Volumes
Start Date:	1/6/2021
End Date:	1/11/2021

Combined Lanes

Peak Analysis

Classes Excluded From Peaks: None

Date	AM Peak	Hour Volume	Highest Interval Time	Highest Interval Volume	Peak Hour Factor	Pm Peak	Hour Volume	Highest Interval Time	Highest Interval Volume	Peak Hour Factor
1/6/2021	No Volume					No Volume				
1/7/2021	8:41 AM	21	9:23 AM	8	0.66	5:50 PM	29	5:51 PM	11	0.66
1/8/2021	9:34 AM	16	9:45 AM	8	0.50	4:22 PM	30	4:46 PM	12	0.63
1/9/2021	10:52 AM	21	11:36 AM	10	0.53	12:57 PM	28	1:34 PM	15	0.47
1/10/2021	10:17 AM	22	10:50 AM	9	0.61	4:47 PM	29	4:52 PM	12	0.60
1/11/2021	No Volume					No Volume				

Classification Statistics

Unclassed	Motorcycles	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi
7	4	755	105	5	10	3	0	6	0	0	0	0	0
0.8%	0.4%	84.4%	11.7%	0.6%	1.1%	0.3%	0.0%	0.7%	0.0%	0.0%	0.0%	0.0%	0.0%

Percentile Speeds

Percentile	5th	10th	15th	20th	25th	30th	35th	40th	45th	50th	55th	60th	65th	70th	75th	80th	85th	90th	95th	100th
Speed - MPH	17.1	19.2	21	22.1	23.1	24.2	25.1	25.8	26.7	27.4	28.2	29	29.9	30.6	31.4	32.3	33.3	34.9	37.8	54

Mean, Median, and Mode Averages

Mean:	27.4
Median (50th %):	27.4
Mode:	26.9

AADT

Date	Lane	Volume	x	User	x	Daily	=	ADT	x	Season	=	AADT
1/7/2021	Channel 1, A to B	110		1.00		1.00		110		1.00		110
1/7/2021	Channel 2, B to A	108		1.00		1.00		108		1.00		108
1/7/2021	Day Total	218						218				218
1/8/2021	Channel 1, A to B	120		1.00		1.00		120		1.00		120
1/8/2021	Channel 2, B to A	124		1.00		1.00		124		1.00		124
1/8/2021	Day Total	244						244				244
1/9/2021	Channel 1, A to B	108		1.00		1.00		108		1.00		108

Bluebird Solar Project
Harrison County, KY

Location 1: Silar Rd
Location 2:
Latitude: 38.277579
Longitude: -84.381999

File Name: Silas Road Volumes
Start Date: 1/6/2021
End Date: 1/11/2021

Date	Lane	Volume	x	User	x	Daily	=	ADT	x	Season	=	AADT
1/9/2021	Channel 2, B to A	104		1.00		1.00		104		1.00		104
1/9/2021	Day Total	212						212				212
1/10/2021	Channel 1, A to B	111		1.00		1.00		111		1.00		111
1/10/2021	Channel 2, B to A	110		1.00		1.00		110		1.00		110
1/10/2021	Day Total	221						221				221
Total		895						895				895
Average		224						224				224

Bluebird Solar Project
Harrison County, KY

Location 1: Allen Pike
Location 2:
Latitude: 38.289639
Longitude: -84.390414

File Name: Allen Pike Volumes
Start Date: 1/6/2021
End Date: 1/10/2021

1/4/2021	1/4/2021		1/5/2021		1/6/2021		1/7/2021		1/8/2021		Weekday Average		1/9/2021		1/10/2021	
Time	Southbound, A to B	Northbound, B to A	Southbound, A to B	Northbound, B to A	Southbound, A to B	Northbound, B to A	Southbound, A to B	Northbound, B to A	Southbound, A to B	Northbound, B to A	Southbound, A to B	Northbound, B to A	Southbound, A to B	Northbound, B to A	Southbound, A to B	Northbound, B to A
12:00 AM	*	*	*	*	*	*	0	0	0	0	0	0	0	0	0	0
1:00	*	*	*	*	*	*	0	0	0	0	0	0	0	0	0	1
2:00	*	*	*	*	*	*	0	0	0	0	0	0	1	0	0	0
3:00	*	*	*	*	*	*	0	0	0	0	0	0	0	1	0	0
4:00	*	*	*	*	*	*	0	1	0	1	0	1	0	0	0	0
5:00	*	*	*	*	*	*	0	0	0	0	0	0	0	0	0	0
6:00	*	*	*	*	*	*	0	0	0	0	0	0	0	0	0	0
7:00	*	*	*	*	*	*	0	2	0	0	0	1	0	0	0	0
8:00	*	*	*	*	*	*	2	0	1	0	2	0	0	0	0	1
9:00	*	*	*	*	*	*	1	1	0	0	0	0	0	0	1	1
10:00	*	*	*	*	*	*	0	1	3	2	2	2	3	1	0	0
11:00	*	*	*	*	*	*	1	0	2	1	2	0	1	3	0	0
12:00 PM	*	*	*	*	*	*	0	1	6	4	3	2	0	0	0	2
1:00	*	*	*	*	*	*	3	1	2	5	2	3	1	0	2	0
2:00	*	*	*	*	*	*	0	0	2	4	1	2	2	3	2	0
3:00	*	*	*	*	*	*	1	0	3	7	2	4	3	4	2	2
4:00	*	*	*	*	*	*	1	0	1	0	1	0	1	0	0	0
5:00	*	*	*	*	*	*	1	3	2	0	2	2	1	3	3	3
6:00	*	*	*	*	*	*	1	3	1	2	1	2	0	0	0	4
7:00	*	*	*	*	0	0	0	0	0	2	0	1	1	1	0	0
8:00	*	*	*	*	0	0	0	0	0	0	0	0	0	0	0	0
9:00	*	*	*	*	0	0	0	0	0	0	0	0	0	0	0	0
10:00	*	*	*	*	0	0	0	2	0	0	0	1	0	0	0	0
11:00	*	*	*	*	0	0	0	0	0	0	0	0	1	0	0	0
Day	0		0		0		26		51		39		31		24	
AM Peak							8:00	7:00	12:00 PM	12:00 PM	12:00 PM	10:00	10:00	11:00	9:00	12:00 PM
Volume	0	0	0	0	0	0	2	2	6	4	3	2	3	3	1	2
Total	0	0	0	0	0	0	11	15	23	28	18	21	15	16	10	14
PM Peak							1:00	5:00	12:00 PM	3:00	12:00 PM	3:00	3:00	3:00	5:00	6:00
Volume	0	0	0	0	0	0	3	3	6	7	3	4	3	4	3	4
Comb Total	0		0		0		26		51		39		31		24	
ADT	N/A															

Bluebird Solar Project
Harrison County, KY

Location 1:	Allen Pike
Location 2:	
Latitude:	38.289639
Longitude:	-84.390414

File Name:	Allen Pike Volumes
Start Date:	1/6/2021
End Date:	1/11/2021

Combined Lanes

Peak Analysis

Classes Excluded From Peaks: None

Date	AM Peak	Hour Volume	Highest Interval Time	Highest Interval Volume	Peak Hour Factor	Pm Peak	Hour Volume	Highest Interval Time	Highest Interval Volume	Peak Hour Factor
1/6/2021	No Volume					No Volume				
1/7/2021	8:33 AM	3	8:35 AM	2	0.38	5:33 PM	6	5:44 PM	2	0.75
1/8/2021	10:05 AM	6	10:17 AM	3	0.50	1:18 PM	13	1:33 PM	6	0.54
1/9/2021	9:58 AM	4	9:58 AM	2	0.50	2:27 PM	9	2:50 PM	5	0.45
1/10/2021	8:51 AM	3	8:51 AM	1	0.75	4:47 PM	6	5:11 PM	4	0.38
1/11/2021	No Volume					No Volume				

Classification Statistics

Unclassed	Motorcycles	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi
22	20	48	8	17	15	2	0	0	0	0	0	0	0
16.7%	15.2%	36.4%	6.1%	12.9%	11.4%	1.5%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

Mean, Median, and Mode Averages

Mean:	29.1
Median (50th %):	21.7
Mode:	12.3

AADT

Date	Lane	Volume	x	User	x	Daily	=	ADT	x	Season	=	AADT
1/7/2021	Southbound, A to B	11		1.00		1.00		11		1.00		11
1/7/2021	Northbound, B to A	15		1.00		1.00		15		1.00		15
1/7/2021	Day Total	26						26				26
1/8/2021	Southbound, A to B	23		1.00		1.00		23		1.00		23
1/8/2021	Northbound, B to A	28		1.00		1.00		28		1.00		28
1/8/2021	Day Total	51						51				51
1/9/2021	Southbound, A to B	15		1.00		1.00		15		1.00		15
1/9/2021	Northbound, B to A	16		1.00		1.00		16		1.00		16
1/9/2021	Day Total	31						31				31
1/10/2021	Southbound, A to B	10		1.00		1.00		10		1.00		10
1/10/2021	Northbound, B to A	14		1.00		1.00		14		1.00		14
1/10/2021	Day Total	24						24				24

Bluebird Solar Project
Harrison County, KY

Location 1:	Allen Pike	File Name:	Allen Pike Volumes
Location 2:		Start Date:	1/6/2021
Latitude:	38.289639	End Date:	1/11/2021
Longitude:	-84.390414		

Date	Lane	Volume	x	User	x	Daily	=	ADT	x	Season	=	AADT
Total		132						132				132
Average		33						33				33

HCS7 Two-Lane Highway Report

Project Information

Analyst	JJLC	Date	4/13/2021
Agency	PEC	Analysis Year	2023
Jurisdiction		Time Period Analyzed	No Build AM
Project Description	Leesburg Pike - Bluebird Solar Farm	Unit	United States Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	5280
Lane Width, ft	12	Shoulder Width, ft	2
Speed Limit, mi/h	55	Access Point Density, pts/mi	1.4

Demand and Capacity

Directional Demand Flow Rate, veh/h	327	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	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	59.4
Speed Slope Coefficient	3.77695	Speed Power Coefficient	0.41674
PF Slope Coefficient	-1.30235	PF Power Coefficient	0.75961
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	2.4
%Improved % Followers	0.0	% Improved Avg Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	5280	-	-	57.3

Vehicle Results

Average Speed, mi/h	57.3	Percent Followers, %	42.7
Segment Travel Time, minutes	1.05	Followers Density, followers/mi/ln	2.4
Vehicle LOS	B		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	327	Bicycle Effective Width, ft	14
Bicycle LOS Score	5.68	Bicycle Effective Speed Factor	4.79
Bicycle LOS	F		

HCS7 Two-Lane Highway Report

Project Information

Analyst	JJLC	Date	4/13/2021
Agency	PEC	Analysis Year	2023
Jurisdiction		Time Period Analyzed	No Build PM
Project Description	Leesburg Pike - Bluebird Solar Farm	Unit	United States Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	5280
Lane Width, ft	12	Shoulder Width, ft	2
Speed Limit, mi/h	55	Access Point Density, pts/mi	1.4

Demand and Capacity

Directional Demand Flow Rate, veh/h	406	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.89	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	59.4
Speed Slope Coefficient	3.77695	Speed Power Coefficient	0.41674
PF Slope Coefficient	-1.30235	PF Power Coefficient	0.75961
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	3.4
%Improved % Followers	0.0	% Improved Avg Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	5280	-	-	57.0

Vehicle Results

Average Speed, mi/h	57.0	Percent Followers, %	48.1
Segment Travel Time, minutes	1.05	Followers Density, followers/mi/ln	3.4
Vehicle LOS	B		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	406	Bicycle Effective Width, ft	14
Bicycle LOS Score	5.79	Bicycle Effective Speed Factor	4.79
Bicycle LOS	F		

HCS7 Two-Lane Highway Report

Project Information

Analyst	JJLC	Date	4/16/2021
Agency	PEC	Analysis Year	2023
Jurisdiction		Time Period Analyzed	AM No Build
Project Description	Russel Cave - Bluebird Solar in Harrison County, KY	Unit	United States Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	5280
Lane Width, ft	11	Shoulder Width, ft	2
Speed Limit, mi/h	55	Access Point Density, pts/mi	1.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	108	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.73	Total Trucks, %	1.50
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.06

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	59.0
Speed Slope Coefficient	3.75797	Speed Power Coefficient	0.41674
PF Slope Coefficient	-1.30577	PF Power Coefficient	0.75803
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.4
%Improved % Followers	0.0	% Improved Avg Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	5280	-	-	58.5

Vehicle Results

Average Speed, mi/h	58.5	Percent Followers, %	21.5
Segment Travel Time, minutes	1.03	Followers Density, followers/mi/ln	0.4
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	108	Bicycle Effective Width, ft	21
Bicycle LOS Score	2.65	Bicycle Effective Speed Factor	4.79
Bicycle LOS	C		

HCS7 Two-Lane Highway Report

Project Information

Analyst	JJLC	Date	4/16/2021
Agency	PEC	Analysis Year	2023
Jurisdiction		Time Period Analyzed	PM No Build
Project Description	Russel Cave - Bluebird Solar in Harrison County, KY	Unit	United States Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	5280
Lane Width, ft	11	Shoulder Width, ft	2
Speed Limit, mi/h	55	Access Point Density, pts/mi	1.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	114	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.76	Total Trucks, %	1.50
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.07

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	59.0
Speed Slope Coefficient	3.75797	Speed Power Coefficient	0.41674
PF Slope Coefficient	-1.30577	PF Power Coefficient	0.75803
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.4
%Improved % Followers	0.0	% Improved Avg Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	5280	-	-	58.4

Vehicle Results

Average Speed, mi/h	58.4	Percent Followers, %	22.3
Segment Travel Time, minutes	1.03	Followers Density, followers/mi/ln	0.4
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	114	Bicycle Effective Width, ft	20
Bicycle LOS Score	2.88	Bicycle Effective Speed Factor	4.79
Bicycle LOS	C		

HCS7 Two-Lane Highway Report

Project Information

Analyst	JJLC	Date	4/16/2021
Agency	PEC	Analysis Year	2023
Jurisdiction		Time Period Analyzed	AM No Build
Project Description	Allen Pike - Bluebird Solar in Harrison County, KY	Unit	United States Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	5280
Lane Width, ft	9	Shoulder Width, ft	0
Speed Limit, mi/h	55	Access Point Density, pts/mi	1.2

Demand and Capacity

Directional Demand Flow Rate, veh/h	12	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.50	Total Trucks, %	42.50
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.01

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	55.0
Speed Slope Coefficient	3.54034	Speed Power Coefficient	0.41674
PF Slope Coefficient	-1.33150	PF Power Coefficient	0.75313
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.0
%Improved % Followers	0.0	% Improved Avg Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	5280	-	-	55.0

Vehicle Results

Average Speed, mi/h	55.0	Percent Followers, %	4.6
Segment Travel Time, minutes	1.09	Followers Density, followers/mi/ln	0.0
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	12	Bicycle Effective Width, ft	18
Bicycle LOS Score	28.88	Bicycle Effective Speed Factor	4.79
Bicycle LOS	F		

HCS7 Two-Lane Highway Report

Project Information

Analyst	JJLC	Date	4/16/2021
Agency	PEC	Analysis Year	2023
Jurisdiction		Time Period Analyzed	PM No Build
Project Description	Allen Pike - Bluebird Solar in Harrison County, KY	Unit	United States Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	5280
Lane Width, ft	9	Shoulder Width, ft	0
Speed Limit, mi/h	55	Access Point Density, pts/mi	1.2

Demand and Capacity

Directional Demand Flow Rate, veh/h	13	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.55	Total Trucks, %	42.50
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.01

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	55.0
Speed Slope Coefficient	3.54034	Speed Power Coefficient	0.41674
PF Slope Coefficient	-1.33150	PF Power Coefficient	0.75313
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.0
%Improved % Followers	0.0	% Improved Avg Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	5280	-	-	55.0

Vehicle Results

Average Speed, mi/h	55.0	Percent Followers, %	4.9
Segment Travel Time, minutes	1.09	Followers Density, followers/mi/ln	0.0
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	13	Bicycle Effective Width, ft	18
Bicycle LOS Score	28.92	Bicycle Effective Speed Factor	4.79
Bicycle LOS	F		

HCS7 Two-Lane Highway Report

Project Information

Analyst	JJLC	Date	4/16/2021
Agency	PEC	Analysis Year	2023
Jurisdiction		Time Period Analyzed	AM No Build
Project Description	Silas Road - Bluebird Solar Farm in Harrison County, KY	Unit	United States Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	5280
Lane Width, ft	9	Shoulder Width, ft	0
Speed Limit, mi/h	55	Access Point Density, pts/mi	2.9

Demand and Capacity

Directional Demand Flow Rate, veh/h	26	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.61	Total Trucks, %	3.50
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.02

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	55.9
Speed Slope Coefficient	3.58770	Speed Power Coefficient	0.41674
PF Slope Coefficient	-1.32995	PF Power Coefficient	0.74991
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.0
%Improved % Followers	0.0	% Improved Avg Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	5280	-	-	55.9

Vehicle Results

Average Speed, mi/h	55.9	Percent Followers, %	8.3
Segment Travel Time, minutes	1.07	Followers Density, followers/mi/ln	0.0
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	26	Bicycle Effective Width, ft	17
Bicycle LOS Score	3.19	Bicycle Effective Speed Factor	4.79
Bicycle LOS	C		

HCS7 Two-Lane Highway Report

Project Information

Analyst	JJLC	Date	4/16/2021
Agency	PEC	Analysis Year	2023
Jurisdiction		Time Period Analyzed	PM No Build
Project Description	Silas Road - Bluebird Solar Farm in Harrison County, KY	Unit	United States Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	5280
Lane Width, ft	9	Shoulder Width, ft	0
Speed Limit, mi/h	55	Access Point Density, pts/mi	2.9

Demand and Capacity

Directional Demand Flow Rate, veh/h	25	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.63	Total Trucks, %	3.50
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.01

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	55.9
Speed Slope Coefficient	3.58770	Speed Power Coefficient	0.41674
PF Slope Coefficient	-1.32995	PF Power Coefficient	0.74991
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.0
%Improved % Followers	0.0	% Improved Avg Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	5280	-	-	55.9

Vehicle Results

Average Speed, mi/h	55.9	Percent Followers, %	8.1
Segment Travel Time, minutes	1.07	Followers Density, followers/mi/ln	0.0
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	25	Bicycle Effective Width, ft	17
Bicycle LOS Score	3.17	Bicycle Effective Speed Factor	4.79
Bicycle LOS	C		

HCS7 Two-Lane Highway Report

Project Information

Analyst	JJLC	Date	4/13/2021
Agency	PEC	Analysis Year	2023
Jurisdiction		Time Period Analyzed	Build AM
Project Description	Leesburg Pike - Bluebird Solar Farm	Unit	United States Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	5280
Lane Width, ft	12	Shoulder Width, ft	2
Speed Limit, mi/h	55	Access Point Density, pts/mi	1.4

Demand and Capacity

Directional Demand Flow Rate, veh/h	344	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	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	59.4
Speed Slope Coefficient	3.77695	Speed Power Coefficient	0.41674
PF Slope Coefficient	-1.30235	PF Power Coefficient	0.75961
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	2.6
%Improved % Followers	0.0	% Improved Avg Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	5280	-	-	57.3

Vehicle Results

Average Speed, mi/h	57.3	Percent Followers, %	44.0
Segment Travel Time, minutes	1.05	Followers Density, followers/mi/ln	2.6
Vehicle LOS	B		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	344	Bicycle Effective Width, ft	14
Bicycle LOS Score	5.70	Bicycle Effective Speed Factor	4.79
Bicycle LOS	F		

HCS7 Two-Lane Highway Report

Project Information

Analyst	JJLC	Date	4/13/2021
Agency	PEC	Analysis Year	2023
Jurisdiction		Time Period Analyzed	Build PM
Project Description	Leesburg Pike - Bluebird Solar Farm	Unit	United States Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	5280
Lane Width, ft	12	Shoulder Width, ft	2
Speed Limit, mi/h	55	Access Point Density, pts/mi	1.4

Demand and Capacity

Directional Demand Flow Rate, veh/h	422	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.89	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	59.4
Speed Slope Coefficient	3.77695	Speed Power Coefficient	0.41674
PF Slope Coefficient	-1.30235	PF Power Coefficient	0.75961
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	3.6
%Improved % Followers	0.0	% Improved Avg Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	5280	-	-	57.0

Vehicle Results

Average Speed, mi/h	57.0	Percent Followers, %	49.2
Segment Travel Time, minutes	1.05	Followers Density, followers/mi/ln	3.6
Vehicle LOS	B		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	422	Bicycle Effective Width, ft	14
Bicycle LOS Score	5.81	Bicycle Effective Speed Factor	4.79
Bicycle LOS	F		

HCS7 Two-Lane Highway Report

Project Information

Analyst	JJLC	Date	4/16/2021
Agency	PEC	Analysis Year	2023
Jurisdiction		Time Period Analyzed	AM Build
Project Description	Russel Cave - Bluebird Solar in Harrison County, KY	Unit	United States Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	5280
Lane Width, ft	11	Shoulder Width, ft	2
Speed Limit, mi/h	55	Access Point Density, pts/mi	1.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	129	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.73	Total Trucks, %	1.50
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.08

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	59.0
Speed Slope Coefficient	3.75797	Speed Power Coefficient	0.41674
PF Slope Coefficient	-1.30577	PF Power Coefficient	0.75803
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.5
%Improved % Followers	0.0	% Improved Avg Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	5280	-	-	58.1

Vehicle Results

Average Speed, mi/h	58.1	Percent Followers, %	24.1
Segment Travel Time, minutes	1.03	Followers Density, followers/mi/ln	0.5
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	129	Bicycle Effective Width, ft	20
Bicycle LOS Score	2.94	Bicycle Effective Speed Factor	4.79
Bicycle LOS	C		

HCS7 Two-Lane Highway Report

Project Information

Analyst	JJLC	Date	4/16/2021
Agency	PEC	Analysis Year	2023
Jurisdiction		Time Period Analyzed	PM Build
Project Description	Russel Cave - Bluebird Solar in Harrison County, KY	Unit	United States Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	5280
Lane Width, ft	11	Shoulder Width, ft	2
Speed Limit, mi/h	55	Access Point Density, pts/mi	1.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	134	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.76	Total Trucks, %	1.50
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.08

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	59.0
Speed Slope Coefficient	3.75797	Speed Power Coefficient	0.41674
PF Slope Coefficient	-1.30577	PF Power Coefficient	0.75803
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.6
%Improved % Followers	0.0	% Improved Avg Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	5280	-	-	58.1

Vehicle Results

Average Speed, mi/h	58.1	Percent Followers, %	24.8
Segment Travel Time, minutes	1.03	Followers Density, followers/mi/ln	0.6
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	134	Bicycle Effective Width, ft	19
Bicycle LOS Score	3.16	Bicycle Effective Speed Factor	4.79
Bicycle LOS	C		

HCS7 Two-Lane Highway Report

Project Information

Analyst	JJLC	Date	4/16/2021
Agency	PEC	Analysis Year	2023
Jurisdiction		Time Period Analyzed	AM Build
Project Description	Allen Pike - Bluebird Solar in Harrison County, KY	Unit	United States Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	5280
Lane Width, ft	9	Shoulder Width, ft	0
Speed Limit, mi/h	55	Access Point Density, pts/mi	1.2

Demand and Capacity

Directional Demand Flow Rate, veh/h	42	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.50	Total Trucks, %	42.50
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.02

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	55.0
Speed Slope Coefficient	3.54034	Speed Power Coefficient	0.41674
PF Slope Coefficient	-1.33150	PF Power Coefficient	0.75313
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.1
%Improved % Followers	0.0	% Improved Avg Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	5280	-	-	55.0

Vehicle Results

Average Speed, mi/h	55.0	Percent Followers, %	11.5
Segment Travel Time, minutes	1.09	Followers Density, followers/mi/ln	0.1
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	42	Bicycle Effective Width, ft	17
Bicycle LOS Score	29.69	Bicycle Effective Speed Factor	4.79
Bicycle LOS	F		

HCS7 Two-Lane Highway Report

Project Information

Analyst	JJLC	Date	4/16/2021
Agency	PEC	Analysis Year	2023
Jurisdiction		Time Period Analyzed	PM Build
Project Description	Allen Pike - Bluebird Solar in Harrison County, KY	Unit	United States Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	5280
Lane Width, ft	9	Shoulder Width, ft	0
Speed Limit, mi/h	55	Access Point Density, pts/mi	1.2

Demand and Capacity

Directional Demand Flow Rate, veh/h	40	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.55	Total Trucks, %	42.50
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.02

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	55.0
Speed Slope Coefficient	3.54034	Speed Power Coefficient	0.41674
PF Slope Coefficient	-1.33150	PF Power Coefficient	0.75313
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.1
%Improved % Followers	0.0	% Improved Avg Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	5280	-	-	55.0

Vehicle Results

Average Speed, mi/h	55.0	Percent Followers, %	11.1
Segment Travel Time, minutes	1.09	Followers Density, followers/mi/ln	0.1
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	40	Bicycle Effective Width, ft	17
Bicycle LOS Score	29.67	Bicycle Effective Speed Factor	4.79
Bicycle LOS	F		

HCS7 Two-Lane Highway Report

Project Information

Analyst	JJLC	Date	4/16/2021
Agency	PEC	Analysis Year	2023
Jurisdiction		Time Period Analyzed	AM Build
Project Description	Silas Road - Bluebird Solar Farm in Harrison County, KY	Unit	United States Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	5280
Lane Width, ft	9	Shoulder Width, ft	0
Speed Limit, mi/h	55	Access Point Density, pts/mi	2.9

Demand and Capacity

Directional Demand Flow Rate, veh/h	49	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.61	Total Trucks, %	3.50
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.03

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	55.9
Speed Slope Coefficient	3.58770	Speed Power Coefficient	0.41674
PF Slope Coefficient	-1.32995	PF Power Coefficient	0.74991
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.1
%Improved % Followers	0.0	% Improved Avg Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	5280	-	-	55.9

Vehicle Results

Average Speed, mi/h	55.9	Percent Followers, %	13.0
Segment Travel Time, minutes	1.07	Followers Density, followers/mi/ln	0.1
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	49	Bicycle Effective Width, ft	17
Bicycle LOS Score	3.51	Bicycle Effective Speed Factor	4.79
Bicycle LOS	D		

HCS7 Two-Lane Highway Report

Project Information

Analyst	JJLC	Date	4/16/2021
Agency	PEC	Analysis Year	2023
Jurisdiction		Time Period Analyzed	PM Build
Project Description	Silas Road - Bluebird Solar Farm in Harrison County, KY	Unit	United States Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	5280
Lane Width, ft	9	Shoulder Width, ft	0
Speed Limit, mi/h	55	Access Point Density, pts/mi	2.9

Demand and Capacity

Directional Demand Flow Rate, veh/h	49	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.63	Total Trucks, %	3.50
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.03

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	55.9
Speed Slope Coefficient	3.58770	Speed Power Coefficient	0.41674
PF Slope Coefficient	-1.32995	PF Power Coefficient	0.74991
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.1
%Improved % Followers	0.0	% Improved Avg Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	5280	-	-	55.9

Vehicle Results

Average Speed, mi/h	55.9	Percent Followers, %	13.0
Segment Travel Time, minutes	1.07	Followers Density, followers/mi/ln	0.1
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	49	Bicycle Effective Width, ft	17
Bicycle LOS Score	3.51	Bicycle Effective Speed Factor	4.79
Bicycle LOS	D		

HCS7 Two-Lane Highway Report

Project Information

Analyst	JJLC	Date	4/13/2021
Agency	PEC	Analysis Year	2033
Jurisdiction		Time Period Analyzed	No Build AM
Project Description	Leesburg Pike - Bluebird Solar Farm	Unit	United States Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	5280
Lane Width, ft	12	Shoulder Width, ft	2
Speed Limit, mi/h	55	Access Point Density, pts/mi	1.4

Demand and Capacity

Directional Demand Flow Rate, veh/h	439	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	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	59.4
Speed Slope Coefficient	3.77695	Speed Power Coefficient	0.41674
PF Slope Coefficient	-1.30235	PF Power Coefficient	0.75961
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	3.9
%Improved % Followers	0.0	% Improved Avg Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	5280	-	-	56.9

Vehicle Results

Average Speed, mi/h	56.9	Percent Followers, %	50.2
Segment Travel Time, minutes	1.05	Followers Density, followers/mi/ln	3.9
Vehicle LOS	B		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	439	Bicycle Effective Width, ft	14
Bicycle LOS Score	5.83	Bicycle Effective Speed Factor	4.79
Bicycle LOS	F		

HCS7 Two-Lane Highway Report

Project Information

Analyst	JJLC	Date	4/13/2021
Agency	PEC	Analysis Year	2033
Jurisdiction		Time Period Analyzed	No Build PM
Project Description	Leesburg Pike - Bluebird Solar Farm	Unit	United States Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	5280
Lane Width, ft	12	Shoulder Width, ft	2
Speed Limit, mi/h	55	Access Point Density, pts/mi	1.4

Demand and Capacity

Directional Demand Flow Rate, veh/h	545	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.89	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	59.4
Speed Slope Coefficient	3.77695	Speed Power Coefficient	0.41674
PF Slope Coefficient	-1.30235	PF Power Coefficient	0.75961
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	5.4
%Improved % Followers	0.0	% Improved Avg Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	5280	-	-	56.7

Vehicle Results

Average Speed, mi/h	56.7	Percent Followers, %	56.0
Segment Travel Time, minutes	1.06	Followers Density, followers/mi/ln	5.4
Vehicle LOS	C		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	545	Bicycle Effective Width, ft	14
Bicycle LOS Score	5.94	Bicycle Effective Speed Factor	4.79
Bicycle LOS	F		

HCS7 Two-Lane Highway Report

Project Information

Analyst	JJLC	Date	4/16/2021
Agency	PEC	Analysis Year	2033
Jurisdiction		Time Period Analyzed	AM No Build
Project Description	Russel Cave - Bluebird Solar in Harrison County, KY	Unit	United States Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	5280
Lane Width, ft	11	Shoulder Width, ft	2
Speed Limit, mi/h	55	Access Point Density, pts/mi	1.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	108	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.73	Total Trucks, %	1.50
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.06

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	59.0
Speed Slope Coefficient	3.75797	Speed Power Coefficient	0.41674
PF Slope Coefficient	-1.30577	PF Power Coefficient	0.75803
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.4
%Improved % Followers	0.0	% Improved Avg Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	5280	-	-	58.5

Vehicle Results

Average Speed, mi/h	58.5	Percent Followers, %	21.5
Segment Travel Time, minutes	1.03	Followers Density, followers/mi/ln	0.4
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	108	Bicycle Effective Width, ft	21
Bicycle LOS Score	2.65	Bicycle Effective Speed Factor	4.79
Bicycle LOS	C		

HCS7 Two-Lane Highway Report

Project Information

Analyst	JJLC	Date	4/16/2021
Agency	PEC	Analysis Year	2033
Jurisdiction		Time Period Analyzed	PM No Build
Project Description	Russel Cave - Bluebird Solar in Harrison County, KY	Unit	United States Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	5280
Lane Width, ft	11	Shoulder Width, ft	2
Speed Limit, mi/h	55	Access Point Density, pts/mi	1.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	114	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.76	Total Trucks, %	1.50
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.07

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	59.0
Speed Slope Coefficient	3.75797	Speed Power Coefficient	0.41674
PF Slope Coefficient	-1.30577	PF Power Coefficient	0.75803
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.4
%Improved % Followers	0.0	% Improved Avg Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	5280	-	-	58.4

Vehicle Results

Average Speed, mi/h	58.4	Percent Followers, %	22.3
Segment Travel Time, minutes	1.03	Followers Density, followers/mi/ln	0.4
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	114	Bicycle Effective Width, ft	20
Bicycle LOS Score	2.88	Bicycle Effective Speed Factor	4.79
Bicycle LOS	C		

HCS7 Two-Lane Highway Report

Project Information

Analyst	JJLC	Date	4/16/2021
Agency	PEC	Analysis Year	2033
Jurisdiction		Time Period Analyzed	AM No Build
Project Description	Allen Pike - Bluebird Solar in Harrison County, KY	Unit	United States Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	5280
Lane Width, ft	9	Shoulder Width, ft	0
Speed Limit, mi/h	55	Access Point Density, pts/mi	1.2

Demand and Capacity

Directional Demand Flow Rate, veh/h	12	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.50	Total Trucks, %	42.50
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.01

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	55.0
Speed Slope Coefficient	3.54034	Speed Power Coefficient	0.41674
PF Slope Coefficient	-1.33150	PF Power Coefficient	0.75313
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.0
%Improved % Followers	0.0	% Improved Avg Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	5280	-	-	55.0

Vehicle Results

Average Speed, mi/h	55.0	Percent Followers, %	4.6
Segment Travel Time, minutes	1.09	Followers Density, followers/mi/ln	0.0
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	12	Bicycle Effective Width, ft	18
Bicycle LOS Score	28.88	Bicycle Effective Speed Factor	4.79
Bicycle LOS	F		

HCS7 Two-Lane Highway Report

Project Information

Analyst	JJLC	Date	4/16/2021
Agency	PEC	Analysis Year	2033
Jurisdiction		Time Period Analyzed	PM No Build
Project Description	Allen Pike - Bluebird Solar in Harrison County, KY	Unit	United States Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	5280
Lane Width, ft	9	Shoulder Width, ft	0
Speed Limit, mi/h	55	Access Point Density, pts/mi	1.2

Demand and Capacity

Directional Demand Flow Rate, veh/h	13	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.55	Total Trucks, %	42.50
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.01

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	55.0
Speed Slope Coefficient	3.54034	Speed Power Coefficient	0.41674
PF Slope Coefficient	-1.33150	PF Power Coefficient	0.75313
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.0
%Improved % Followers	0.0	% Improved Avg Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	5280	-	-	55.0

Vehicle Results

Average Speed, mi/h	55.0	Percent Followers, %	4.9
Segment Travel Time, minutes	1.09	Followers Density, followers/mi/ln	0.0
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	13	Bicycle Effective Width, ft	18
Bicycle LOS Score	28.92	Bicycle Effective Speed Factor	4.79
Bicycle LOS	F		

HCS7 Two-Lane Highway Report

Project Information

Analyst	JJLC	Date	4/16/2021
Agency	PEC	Analysis Year	2033
Jurisdiction		Time Period Analyzed	AM No Build
Project Description	Silas Road - Bluebird Solar Farm in Harrison County, KY	Unit	United States Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	5280
Lane Width, ft	9	Shoulder Width, ft	0
Speed Limit, mi/h	55	Access Point Density, pts/mi	2.9

Demand and Capacity

Directional Demand Flow Rate, veh/h	26	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.61	Total Trucks, %	3.50
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.02

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	55.9
Speed Slope Coefficient	3.58770	Speed Power Coefficient	0.41674
PF Slope Coefficient	-1.32995	PF Power Coefficient	0.74991
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.0
%Improved % Followers	0.0	% Improved Avg Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	5280	-	-	55.9

Vehicle Results

Average Speed, mi/h	55.9	Percent Followers, %	8.3
Segment Travel Time, minutes	1.07	Followers Density, followers/mi/ln	0.0
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	26	Bicycle Effective Width, ft	17
Bicycle LOS Score	3.19	Bicycle Effective Speed Factor	4.79
Bicycle LOS	C		

HCS7 Two-Lane Highway Report

Project Information

Analyst	JJLC	Date	4/16/2021
Agency	PEC	Analysis Year	2033
Jurisdiction		Time Period Analyzed	PM No Build
Project Description	Silas Road - Bluebird Solar Farm in Harrison County, KY	Unit	United States Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	5280
Lane Width, ft	9	Shoulder Width, ft	0
Speed Limit, mi/h	55	Access Point Density, pts/mi	2.9

Demand and Capacity

Directional Demand Flow Rate, veh/h	27	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.63	Total Trucks, %	3.50
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.02

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	55.9
Speed Slope Coefficient	3.58770	Speed Power Coefficient	0.41674
PF Slope Coefficient	-1.32995	PF Power Coefficient	0.74991
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.0
%Improved % Followers	0.0	% Improved Avg Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	5280	-	-	55.9

Vehicle Results

Average Speed, mi/h	55.9	Percent Followers, %	8.5
Segment Travel Time, minutes	1.07	Followers Density, followers/mi/ln	0.0
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	27	Bicycle Effective Width, ft	17
Bicycle LOS Score	3.21	Bicycle Effective Speed Factor	4.79
Bicycle LOS	C		

HCS7 Two-Lane Highway Report

Project Information

Analyst	JJLC	Date	4/13/2021
Agency	PEC	Analysis Year	2033
Jurisdiction		Time Period Analyzed	Build AM
Project Description	Leesburg Pike - Bluebird Solar Farm	Unit	United States Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	5280
Lane Width, ft	12	Shoulder Width, ft	2
Speed Limit, mi/h	55	Access Point Density, pts/mi	1.4

Demand and Capacity

Directional Demand Flow Rate, veh/h	456	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	6.00
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.27

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	59.4
Speed Slope Coefficient	3.77695	Speed Power Coefficient	0.41674
PF Slope Coefficient	-1.30235	PF Power Coefficient	0.75961
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	4.1
%Improved % Followers	0.0	% Improved Avg Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	5280	-	-	56.9

Vehicle Results

Average Speed, mi/h	56.9	Percent Followers, %	51.2
Segment Travel Time, minutes	1.05	Followers Density, followers/mi/ln	4.1
Vehicle LOS	C		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	456	Bicycle Effective Width, ft	14
Bicycle LOS Score	5.85	Bicycle Effective Speed Factor	4.79
Bicycle LOS	F		

HCS7 Two-Lane Highway Report

Project Information

Analyst	JJLC	Date	4/13/2021
Agency	PEC	Analysis Year	2033
Jurisdiction		Time Period Analyzed	Build PM
Project Description	Leesburg Pike - Bluebird Solar Farm	Unit	United States Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	5280
Lane Width, ft	12	Shoulder Width, ft	2
Speed Limit, mi/h	55	Access Point Density, pts/mi	1.4

Demand and Capacity

Directional Demand Flow Rate, veh/h	562	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.89	Total Trucks, %	6.00
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.33

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	59.4
Speed Slope Coefficient	3.77695	Speed Power Coefficient	0.41674
PF Slope Coefficient	-1.30235	PF Power Coefficient	0.75961
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	5.6
%Improved % Followers	0.0	% Improved Avg Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	5280	-	-	56.6

Vehicle Results

Average Speed, mi/h	56.6	Percent Followers, %	56.8
Segment Travel Time, minutes	1.06	Followers Density, followers/mi/ln	5.6
Vehicle LOS	C		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	562	Bicycle Effective Width, ft	14
Bicycle LOS Score	5.95	Bicycle Effective Speed Factor	4.79
Bicycle LOS	F		

HCS7 Two-Lane Highway Report

Project Information

Analyst	JJLC	Date	4/16/2021
Agency	PEC	Analysis Year	2033
Jurisdiction		Time Period Analyzed	AM Build
Project Description	Russel Cave - Bluebird Solar in Harrison County, KY	Unit	United States Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	5280
Lane Width, ft	11	Shoulder Width, ft	2
Speed Limit, mi/h	55	Access Point Density, pts/mi	1.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	129	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.73	Total Trucks, %	1.50
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.08

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	59.0
Speed Slope Coefficient	3.75797	Speed Power Coefficient	0.41674
PF Slope Coefficient	-1.30577	PF Power Coefficient	0.75803
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.5
%Improved % Followers	0.0	% Improved Avg Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	5280	-	-	58.1

Vehicle Results

Average Speed, mi/h	58.1	Percent Followers, %	24.1
Segment Travel Time, minutes	1.03	Followers Density, followers/mi/ln	0.5
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	129	Bicycle Effective Width, ft	20
Bicycle LOS Score	2.94	Bicycle Effective Speed Factor	4.79
Bicycle LOS	C		

HCS7 Two-Lane Highway Report

Project Information

Analyst	JJLC	Date	4/16/2021
Agency	PEC	Analysis Year	2033
Jurisdiction		Time Period Analyzed	PM Build
Project Description	Russel Cave - Bluebird Solar in Harrison County, KY	Unit	United States Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	5280
Lane Width, ft	11	Shoulder Width, ft	2
Speed Limit, mi/h	55	Access Point Density, pts/mi	1.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	134	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.76	Total Trucks, %	1.50
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.08

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	59.0
Speed Slope Coefficient	3.75797	Speed Power Coefficient	0.41674
PF Slope Coefficient	-1.30577	PF Power Coefficient	0.75803
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.6
%Improved % Followers	0.0	% Improved Avg Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	5280	-	-	58.1

Vehicle Results

Average Speed, mi/h	58.1	Percent Followers, %	24.8
Segment Travel Time, minutes	1.03	Followers Density, followers/mi/ln	0.6
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	134	Bicycle Effective Width, ft	19
Bicycle LOS Score	3.16	Bicycle Effective Speed Factor	4.79
Bicycle LOS	C		

HCS7 Two-Lane Highway Report

Project Information

Analyst	JJLC	Date	4/16/2021
Agency	PEC	Analysis Year	2033
Jurisdiction		Time Period Analyzed	AM Build
Project Description	Allen Pike - Bluebird Solar in Harrison County, KY	Unit	United States Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	5280
Lane Width, ft	9	Shoulder Width, ft	0
Speed Limit, mi/h	55	Access Point Density, pts/mi	1.2

Demand and Capacity

Directional Demand Flow Rate, veh/h	42	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.50	Total Trucks, %	42.50
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.02

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	55.0
Speed Slope Coefficient	3.54034	Speed Power Coefficient	0.41674
PF Slope Coefficient	-1.33150	PF Power Coefficient	0.75313
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.1
%Improved % Followers	0.0	% Improved Avg Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	5280	-	-	55.0

Vehicle Results

Average Speed, mi/h	55.0	Percent Followers, %	11.5
Segment Travel Time, minutes	1.09	Followers Density, followers/mi/ln	0.1
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	42	Bicycle Effective Width, ft	17
Bicycle LOS Score	29.69	Bicycle Effective Speed Factor	4.79
Bicycle LOS	F		

HCS7 Two-Lane Highway Report

Project Information

Analyst	JJLC	Date	4/16/2021
Agency	PEC	Analysis Year	2033
Jurisdiction		Time Period Analyzed	PM Build
Project Description	Allen Pike - Bluebird Solar in Harrison County, KY	Unit	United States Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	5280
Lane Width, ft	9	Shoulder Width, ft	0
Speed Limit, mi/h	55	Access Point Density, pts/mi	1.2

Demand and Capacity

Directional Demand Flow Rate, veh/h	40	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.55	Total Trucks, %	42.50
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.02

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	55.0
Speed Slope Coefficient	3.54034	Speed Power Coefficient	0.41674
PF Slope Coefficient	-1.33150	PF Power Coefficient	0.75313
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.1
%Improved % Followers	0.0	% Improved Avg Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	5280	-	-	55.0

Vehicle Results

Average Speed, mi/h	55.0	Percent Followers, %	11.1
Segment Travel Time, minutes	1.09	Followers Density, followers/mi/ln	0.1
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	40	Bicycle Effective Width, ft	17
Bicycle LOS Score	29.67	Bicycle Effective Speed Factor	4.79
Bicycle LOS	F		

HCS7 Two-Lane Highway Report

Project Information

Analyst	JJLC	Date	4/16/2021
Agency	PEC	Analysis Year	2033
Jurisdiction		Time Period Analyzed	AM Build
Project Description	Silas Road - Bluebird Solar Farm in Harrison County, KY	Unit	United States Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	5280
Lane Width, ft	9	Shoulder Width, ft	0
Speed Limit, mi/h	55	Access Point Density, pts/mi	2.9

Demand and Capacity

Directional Demand Flow Rate, veh/h	51	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.61	Total Trucks, %	3.50
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.03

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	55.9
Speed Slope Coefficient	3.58770	Speed Power Coefficient	0.41674
PF Slope Coefficient	-1.32995	PF Power Coefficient	0.74991
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.1
%Improved % Followers	0.0	% Improved Avg Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	5280	-	-	55.9

Vehicle Results

Average Speed, mi/h	55.9	Percent Followers, %	13.3
Segment Travel Time, minutes	1.07	Followers Density, followers/mi/ln	0.1
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	51	Bicycle Effective Width, ft	17
Bicycle LOS Score	3.53	Bicycle Effective Speed Factor	4.79
Bicycle LOS	D		

HCS7 Two-Lane Highway Report

Project Information

Analyst	JJLC	Date	4/16/2021
Agency	PEC	Analysis Year	2033
Jurisdiction		Time Period Analyzed	PM Build
Project Description	Silas Road - Bluebird Solar Farm in Harrison County, KY	Unit	United States Customary

Segment 1

Vehicle Inputs

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Demand and Capacity

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Bicycle LOS	D