

KY 3 Auxier Corridor Study
Floyd & Johnson Counties

Traffic Forecast Report



December 2022

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1.0 PROJECT DESCRIPTION

This traffic forecast report has been prepared by Qk4 for the Kentucky Transportation Cabinet (KYTC) for a KY 3 corridor study between US 23 and Thunder Ridge Lane (Floyd County milepoints 0.000 to 3.518), serving Floyd and Johnson counties. The study area, shown in **Figure 1**, includes the existing KY 3 corridor and the considered region of a new connection. This section of KY 3 represents the last 2.5-mile gap in a five-lane connection between US 23 and KY 645 at Inez.

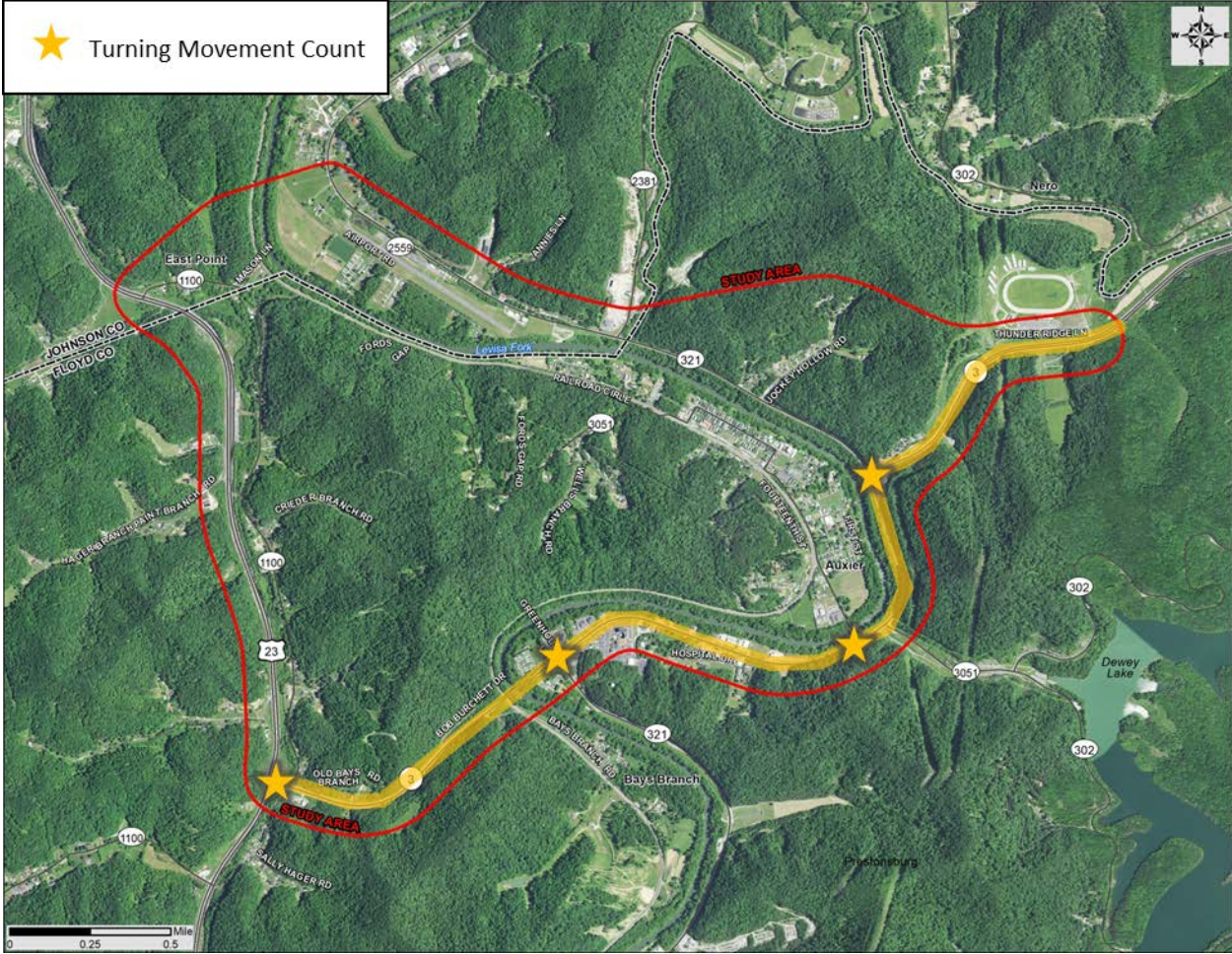


Figure 1: Study Area & Turning Movement Count Locations

2.0 Forecasting Data

2.1 TRAFFIC COUNTS

Historic traffic count data from the KYTC CTS database were obtained for 5 locations (Station 036786 on US 23 and Stations 036792, 036758, 036788, 036022 on KY 3). Data collected in 2020 and 2021 were excluded due to travel impacts resulting from the COVID-19 pandemic. These count station locations are provided in **Figure 2** and plotted in **Figure 3**. Station 036786 presents a declining trendline of traffic volumes along US 23, with traffic counts over the past 20 years ranging between 15,600 vehicles per day (vpd) in 2005 and 10,200 vpd in 2018. Trendline data from the KY 3 count stations suggest relatively flat to declining growth within the study area.

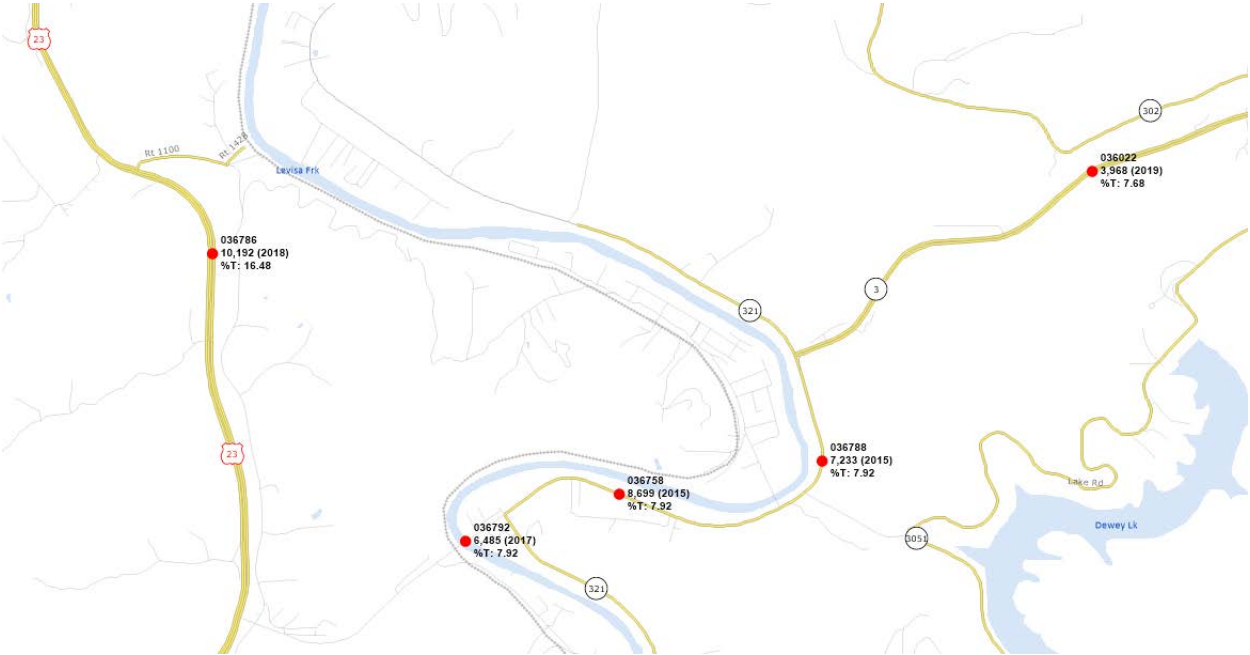


Figure 2: Study Area Count Station Locations

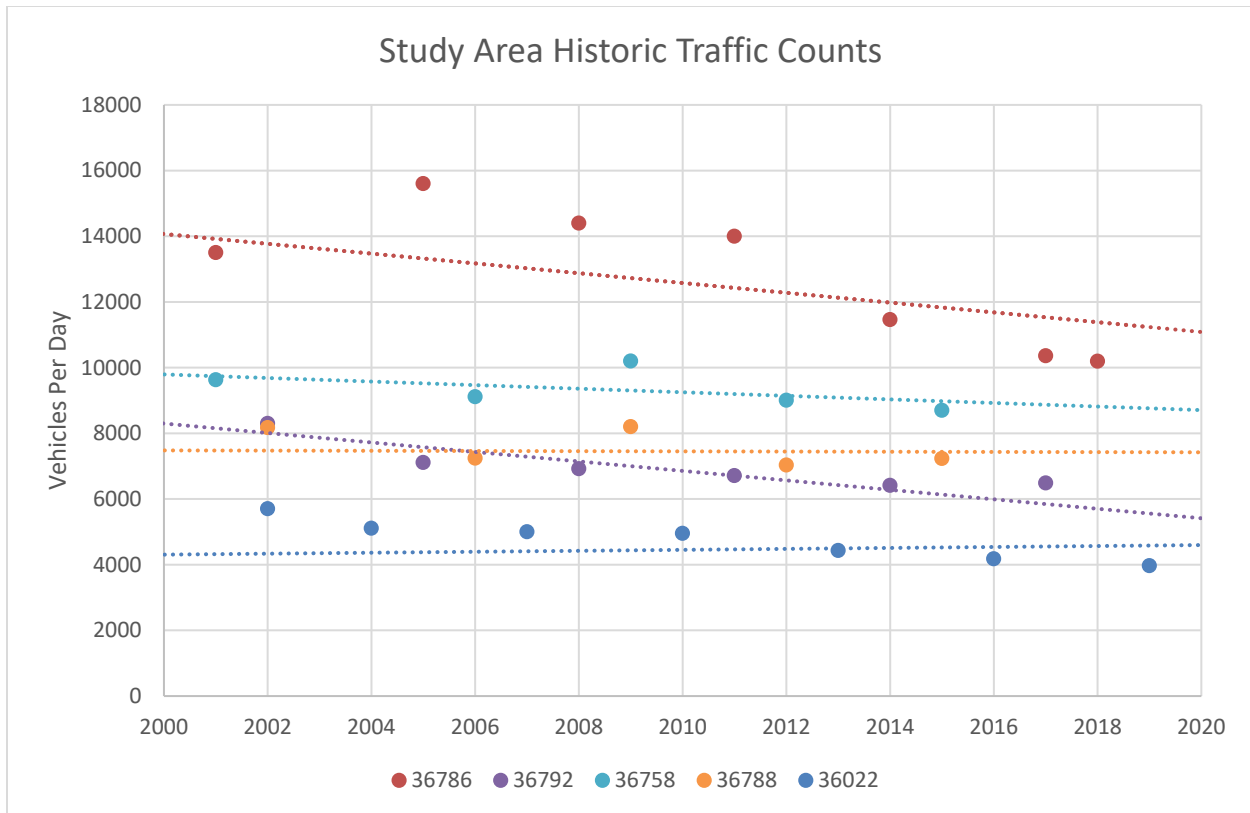


Figure 3: Historic Traffic Counts and Trendlines

Video-based turning movement counts were collected by Qk4 at four intersections, identified in **Figure 1**.

- US 23 at KY 3
- KY 3 at KY 321 (Southern, towards Prestonsburg)
- KY 3 at KY 3051 / John CC Mayo Ave
- KY 3 at KY 321 (Northern, towards Paintsville)

These 12-hour counts were conducted on February 17, 2022, and February 22, 2022. These videos were processed to count and classify vehicles into five categories: motorcycles, cars & light good vehicles, buses, single unit trucks, and articulated trucks. Unadjusted turning movement counts are presented in **Appendix A.A**. Turning movement forecasts for 2022 are presented in **Appendix A.B** for these intersections. For the study corridor in the 2022 existing scenario, the maximum weekday average daily traffic reaches 10,100 vehicles per day (vpd) at the southern KY 3 and KY 321 (toward Prestonsburg) intersection.

2.2 SOCIOECONOMIC DATA

Population data for Floyd and Johnson counties were obtained from the 2010 decennial census, the 2020 redistricting data¹ (P.L. 94-171), and the Kentucky State Data Center projections (2016 release). Although summary files for the 2020 decennial census were not available at the time of this study, the redistricting

¹ <https://www.census.gov/programs-surveys/decennial-census/about/rdo/summary-files.html>

data provides a complete count of 2020 population totals, with resolution available down to the Census block level. Summarized in **Table 1**, the data forecasts an overall decline in population for both Floyd and Johnson counties through the year 2040.

Table 1: Population Projections - Johnson & Floyd Counties

Population	Census		KSDC Projections (Oct 2016)			
	2010	2020	2025	2030	2035	2040
Johnson County	23,356	22,680	22,813	22,416	21,935	21,451
Floyd County	39,451	35,942	34,308	32,302	30,240	28,262

Employment and household estimates were obtained from KYTC’s Statewide Travel Demand Model (KYSTM)², shown in **Figure 4**. Inputs to the model provide both collected and estimated socioeconomic data throughout Kentucky spanning 2015 through 2045. The KYSTM data for county-level employment and household totals are presented in **Table 2**.

Table 2: KYSTM Socioeconomic Data Projections

	Johnson County			Floyd County		
	2020	2045	AAGR	2020	2045	AAGR
Households	9,260	8,701	-0.24%	15,345	11,966	-0.84%
Employment	5,472	5,093	-0.27%	9,820	7,324	-0.94%

² KYSTMv19 Version v20200701 with 5999 TAZs

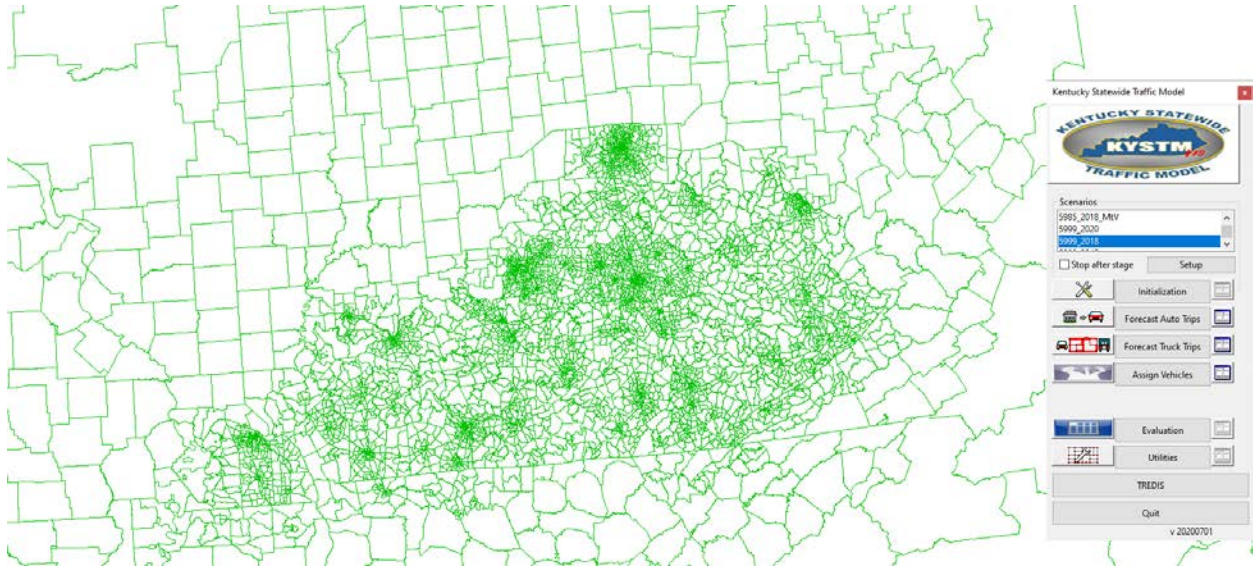


Figure 4: KY Statewide Travel Model Interface

3.0 TRAFFIC GROWTH

To project future year traffic forecasts, the KYSTM was applied. A model year of 2020 served to represent the existing scenario with a future year forecast for 2045. The KYTC model runs in TransCAD 7 and is a 24-hour model providing daily volume projections across two vehicle classes: denoted as “Auto” and “Truck” within the model. These classes, standard to many statewide and regional travel models, are generalizations of the FHWA Vehicle Classifications, presented in **Figure 5**. Within the model, Autos typically correspond with FHWA Class 1-4 with Trucks representing FHWA Class 5-12.

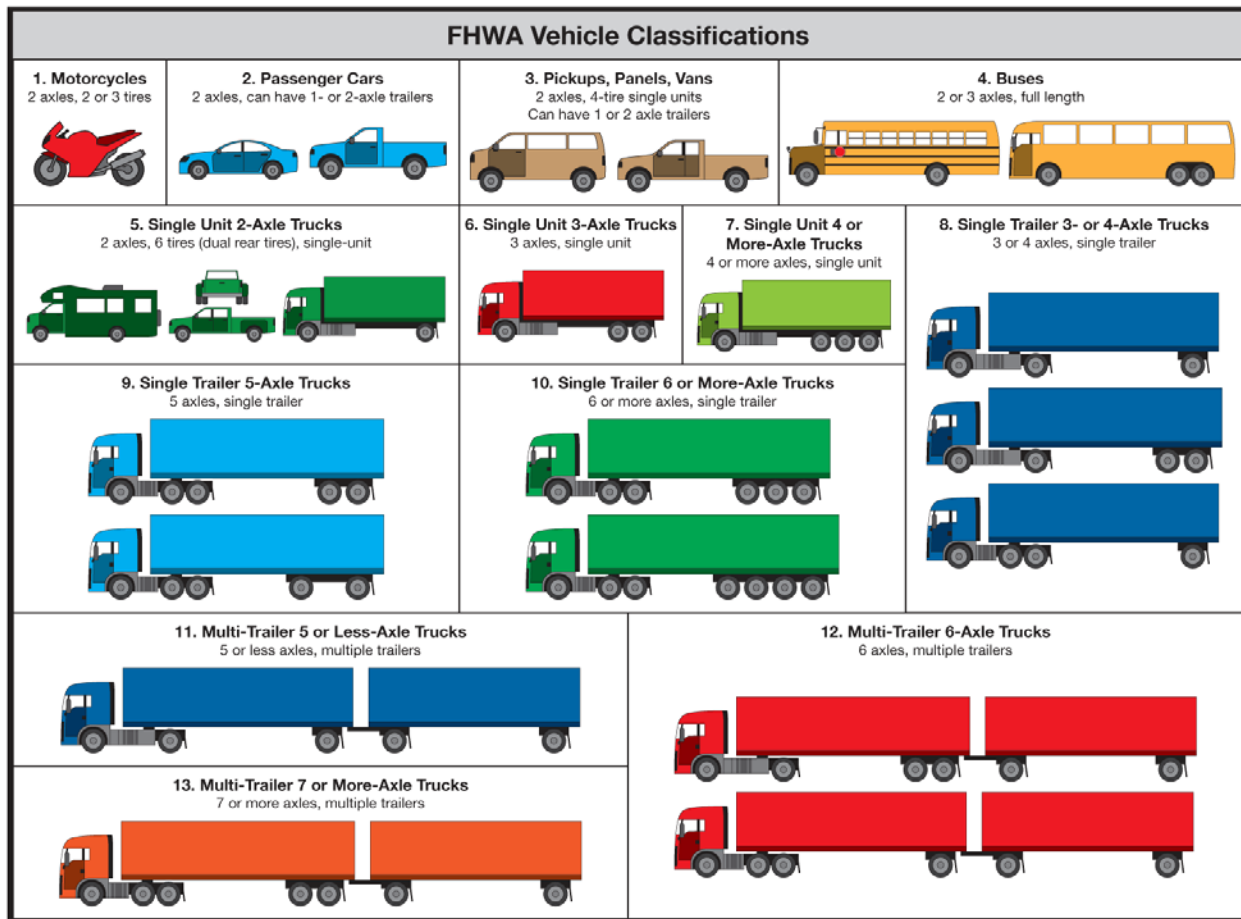


Figure 5: FHWA Vehicle Classifications

With support from KYTC, traffic analysis zone (TAZ) boundaries of the KYSTM were modified and updated to provide more granularity and the latest available socioeconomic data. As shown in **Figure 6**, seven TAZs within Johnson County and Floyd County were split along existing geographical boundaries, primarily following roadways and waterways, into 21 new TAZs. This process updated the KYSTM from 5985 zones to 5999 zones, facilitated by several procedures built into the KYSTM. These procedures automate many of the adjustments needed to split the model (attributes, parameters, trip tables), while additional centroids and centroid connectors were manually added to support these new zones.

TAZ socioeconomic data were provided by KYTC at the end of April 2022. The data was reviewed and the KYSTM was tested and validated against a 2018 model year. The base year model's root mean square error (RMSE) for Floyd and Johnson counties decreased from 58.51% to 50.55% and 70.46% to 67.94%, respectively. However, the overall statewide RMSE saw a minor increase from 54.56% to 55.07% against all count station data within the KYSTM.

As a result of a local officials and stakeholders meeting on May 24, 2022, additional employees were added to the 2045 forecast scenario to reflect expected growth of the region. For expansion of the hospital

system, 73 employees were added to TAZ 4036026 while projected growth at the Eastern KY Business Park east of the study area provided an additional 47 employees to TAZ 4080021.

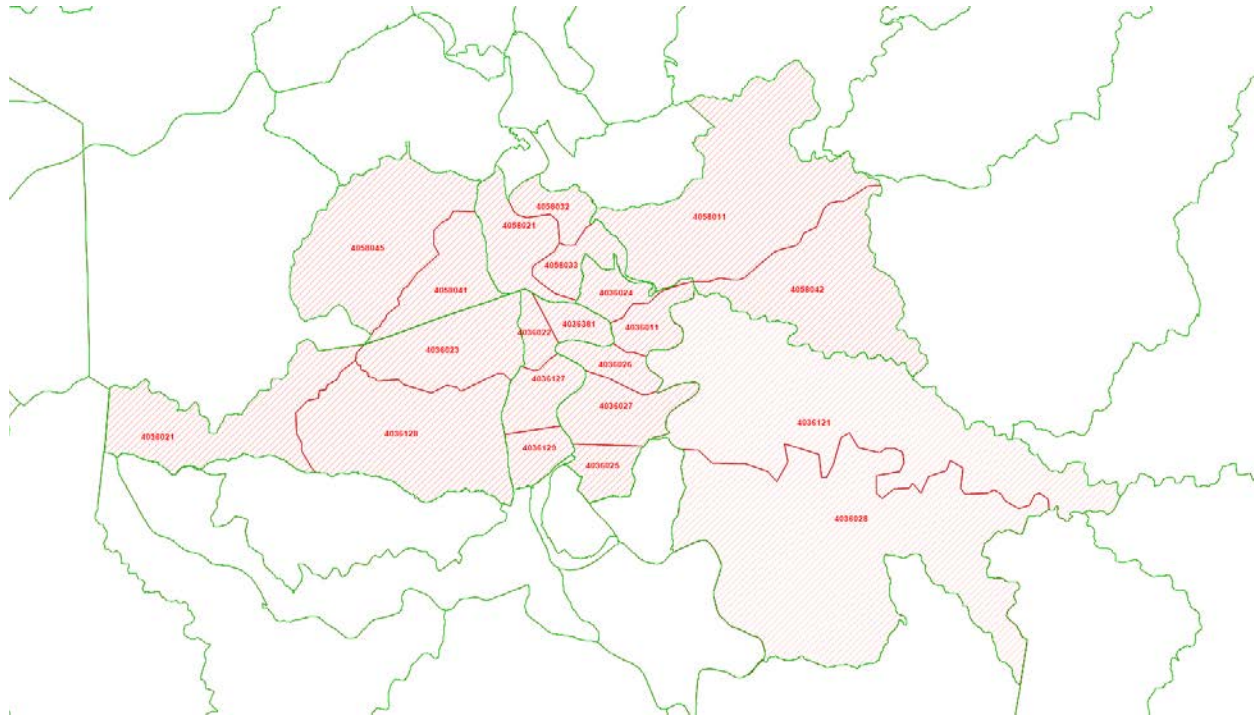


Figure 6: New KYSTM TAZ Boundaries in Johnson and Floyd Counties

Within the study area, the model projects a +0.21% growth in vehicle trips annually for the region between 2020 and 2045. This includes an average annual growth of +1.0% trips on the KY 3 corridor and +0.22% trips along US 23. While the model does reflect the slight decline in the county-wide socioeconomic data outlined in **Section 2.2**, localized growth along the KY 3 and US 23 corridors as well as a projected increase in heavy vehicle and longer-haul freight support the modeled increase in traffic volumes.

Figure 7 and **Figure 8** summarize the distribution and changes in households and employment for the TAZs in the study vicinity.

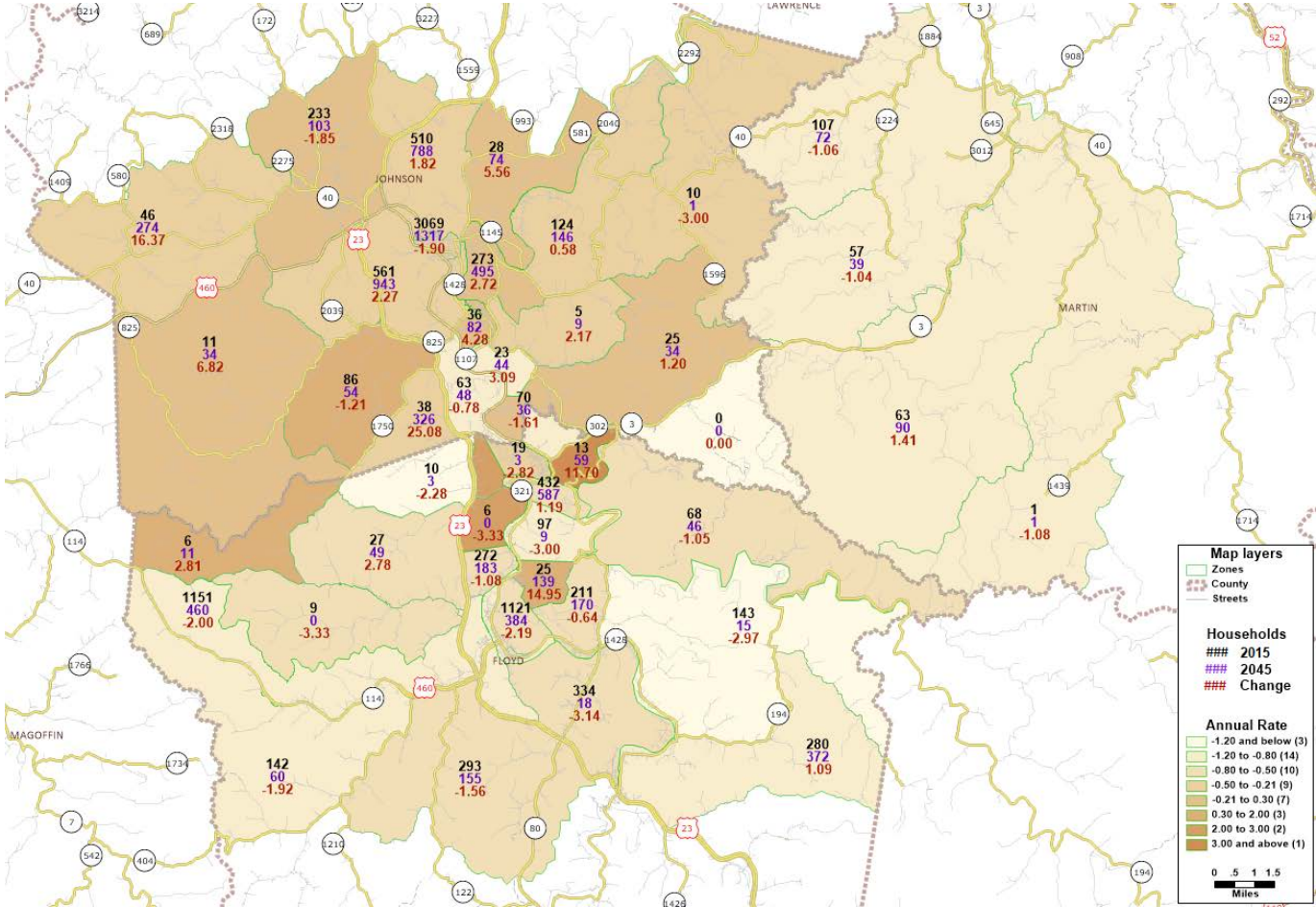


Figure 7: Projected Household Change, 2015 to 2045

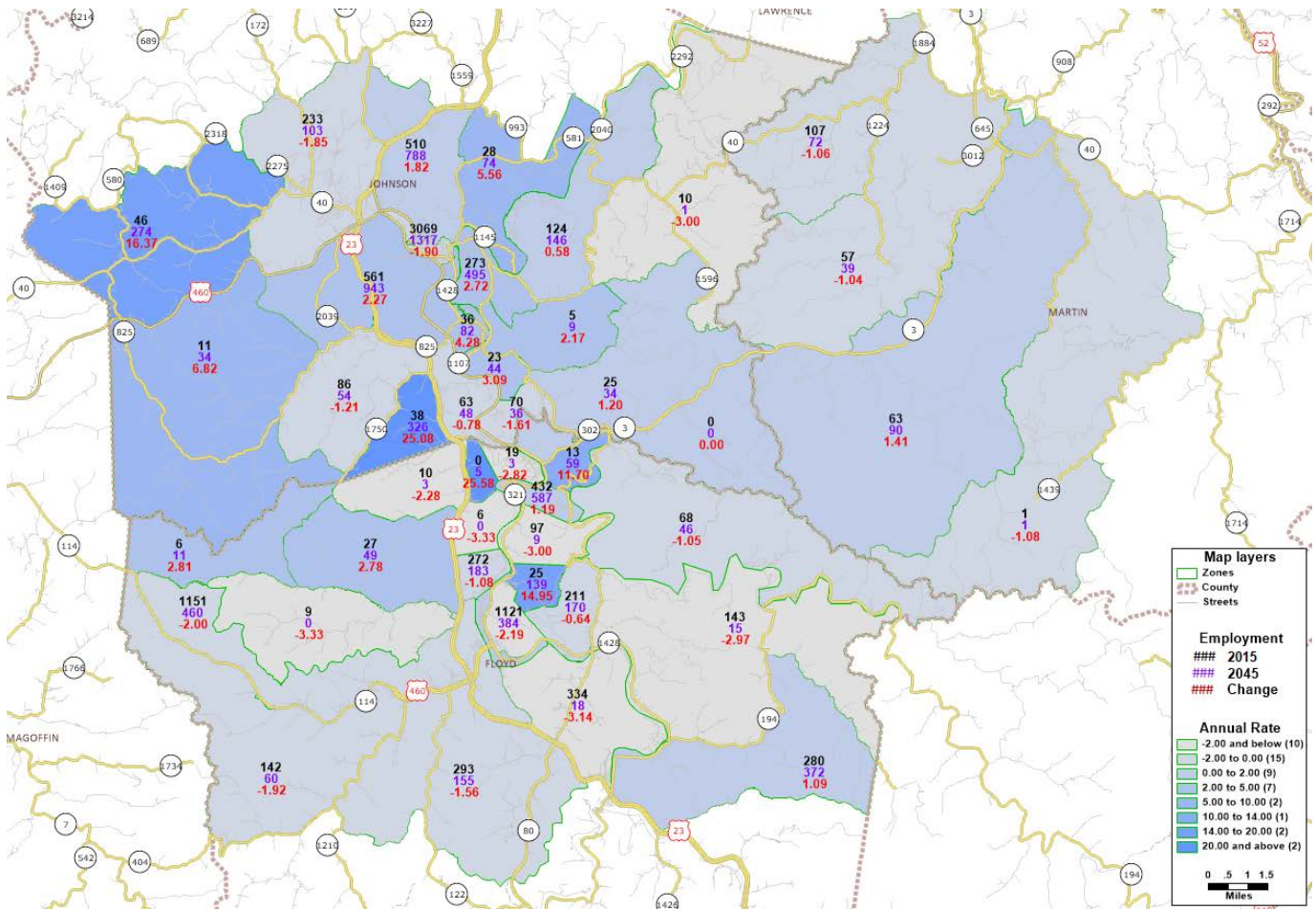


Figure 8: Projected Employment Change, 2015 to 2045

3.1 2045 NO-BUILD TRAFFIC PROJECTIONS

Considering all available data, including historic traffic growth rates, population projections, anticipated development, and KYSTM projections, an annual growth rate of 1.0% was applied to the study area to project future 2045 traffic. The highest KY 3 corridor volume is expected to carry 12,700 vpd in the 2045 No-Build scenario, an increase from 10,100 vpd from 2022. No-Build forecasts for study area intersections can be found in **Appendix A.C**.

Highway Capacity Software (HCS) was analyzed for 2022 existing and 2045 no-build volumes of the study intersections, including calculations for level of service (LOS) measurements. For the existing scenario, summarized in **Figure 9**, KY 3 segments and intersections operate at LOS C or better, except for the northbound KY 321 stop-controlled approach at the southern KY 3 intersection (LOS D in AM peak hour). With the growth in the no-build volumes, the same northbound approach at the southern KY 3/KY 321 intersection operates at LOS E in both periods, while all other intersections perform at LOS C.

HCS was also used to calculate volume to capacity (v/c) ratios for study area routes. Under the existing scenario, the maximum segment v/c of 0.47 in the AM peak hour was calculated along KY 3 approaching US 23. With the volume increases in the 2045 no-build forecast, this segment sees a maximum v/c of 0.58.

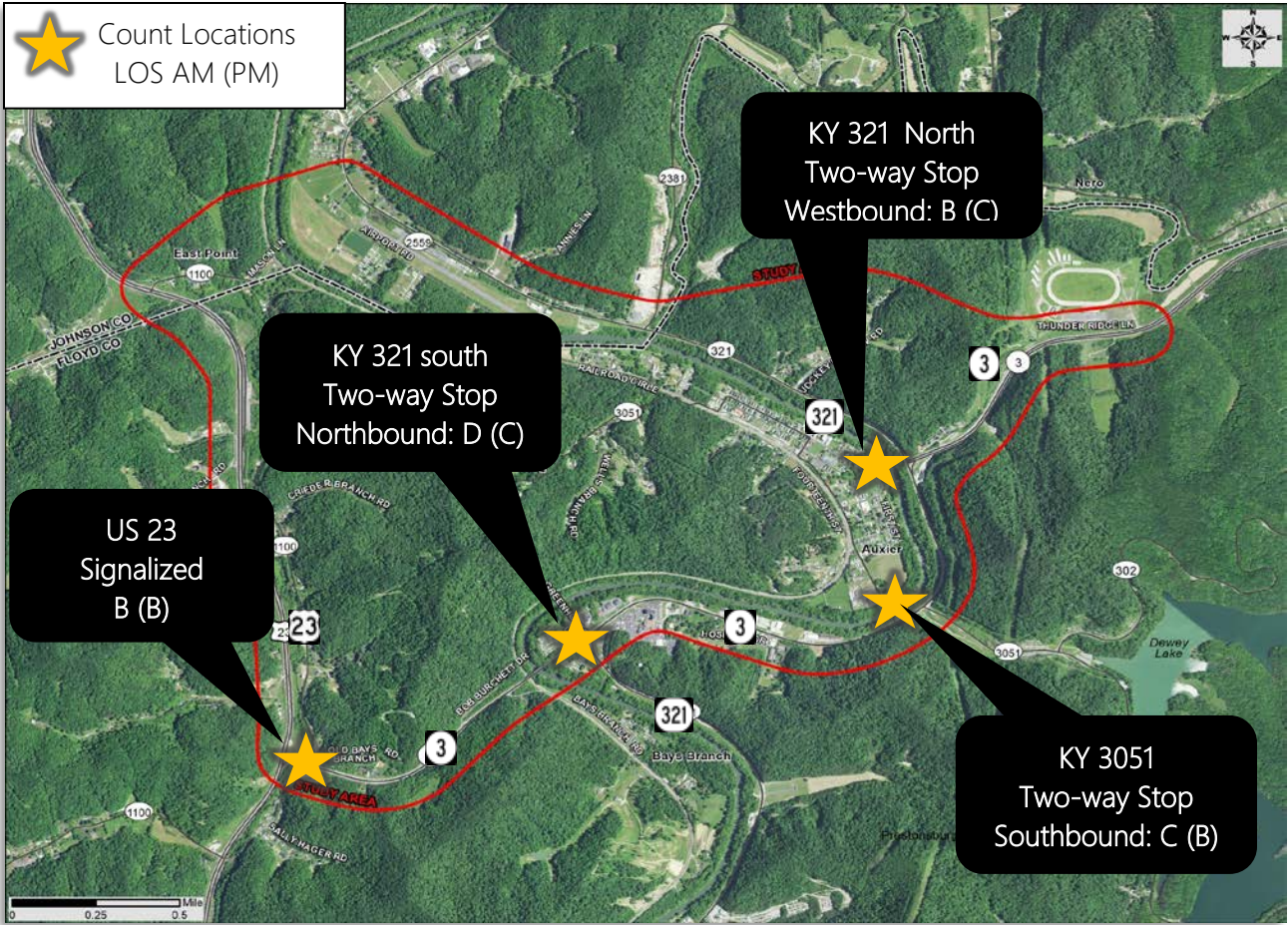


Figure 9: AM (PM) Peak LOS at Study Area Count Locations

Table 3: LOS and Delay at Study Intersections – Existing & No Build Scenarios

Location	Control ³	2022 Weekday		2045 No-Build	
		AM Peak	PM Peak	AM Peak	PM Peak
KY 3 at US 23	Signalized	B 20 sec	B 20 sec	C 24 sec	C 23 sec
KY 3 at KY 321 (South) toward Prestonsburg	Two-Way Stop	D 28 sec	C 24 sec	E 46 sec	E 37 sec
KY 3 at KY 3051 (John CC Mayo Ave)	Two-Way Stop	C 16 sec	B 13 sec	C 23 sec	C 16 sec
KY 3 at KY 321 (North) toward Paintsville	Two-Way Stop	B 14 sec	C 15 sec	C 18 sec	C 23 sec

³ For stop-controlled intersections, metrics from the highest delay approach are documented

4.0 BUILD TRAFFIC

4.1 BUILD 1: FIVE LANE KY 3, EXISTING ALIGNMENT

The first Build scenario assumes KY 3 is widened along its existing alignment and provides two thru lanes in each direction. This Build scenario was tested within the KYSTM, but given the resolution of the statewide model, provided identical results to the 2045 No-Build scenario. Utilizing HCS, this additional capacity does result in reduced delays at all study intersections with several LOS improvements. These results are documented in **Table 4** (on page 12). The worst performing stop-controlled approach is at KY 3 at KY 321 (South) toward Prestonsburg. This approach remains LOS E in the AM Peak No-Build scenario, and improves from LOS E to LOS D in the PM Peak. KY 3 at US 23 improves from LOS C to LOS B, with the assumption of an additional left turn lane toward US 23. All other study intersections and approaches remain LOS C or better.

4.2 BUILD 2: NEW CONNECTOR TO US 23

The second Build scenario analyzed a new five-lane connector between US 23 and KY 3 along the northern limit of the study area. While multiple alignment options were reviewed, the differences between each would not alter forecasted demand within the travel demand model. Therefore the Yellow Concept, depicted in **Figure 10**, served as a template for coding a Build 2 scenario into the KYSTM for traffic analysis. Adjusting for model error, an estimated 3,700 daily vehicles would travel on the new connector and provide a 15% reduction of vehicle volumes on the existing southern KY 3 corridor.

KY 3 at KY 321 (South) toward Prestonsburg, whose northbound approach operates at LOS E in 2022, sees the largest reduction in delay (12 seconds per vehicle) and improvement to LOS D for both periods in Build 2. during both peak hours. Generally, the other study intersections see similar improvement as the Build 1 scenario and operate at LOS C or better. Comparisons between the no-build and both build scenarios are presented in **Table 4**.



Figure 10: Yellow Concept, representative of proposed new US 23 connector

Table 4: LOS and Delay at Study Intersections – Build Scenarios

Location	Control ⁴	2045 No-Build (2 lane)		2045 Build 1 (4 lane + TWLTL)		2045 Build 2 (New Connector)	
		AM Peak	PM Peak	AM Peak	PM Peak	AM Peak	PM Peak
KY 3 at US 23	Signalized	C 24 sec	C 23 sec	B 18 sec	B 19 sec	C 20 sec	C 20 sec
KY 3 at KY 321 (South) toward Prestonsburg	Two-Way Stop	E 46 sec	E 37 sec	E 42 sec	D 30 sec	D 30 sec	D 26 sec
KY 3 at KY 3051 (John CC Mayo Ave)	Two-Way Stop	C 23 sec	C 16 sec	C 18 sec	B 13 sec	C 17 sec	B 13 sec
KY 3 at KY 321 (North) toward Paintsville	Two-Way Stop	C 18 sec	C 23 sec	C 15 sec	C 20 sec	B 14 sec	C 16 sec

⁴ For stop-controlled intersections, metrics from the highest delay approach are documented

Appendix A.A

2022 Turning Movement Counts

Study Name US 23 & KY 3
 Start Date 02/22/2022
 Start Time 7:00 AM
 Site Code

Start Time	US 23 Southbound			KY 3 Westbound			US 23 Northbound		
	Thru	Left	U-Turn	Right	Left	U-Turn	Right	Thru	U-Turn
7:00 AM	99	16	0	5	29	0	31	42	0
7:15 AM	113	22	0	11	42	0	45	67	0
7:30 AM	145	28	0	9	61	0	62	113	0
7:45 AM	170	36	0	11	44	0	98	99	0
8:00 AM	152	23	0	7	50	0	42	90	0
8:15 AM	115	26	0	9	41	0	44	95	0
8:30 AM	101	10	0	6	22	0	43	62	0
8:45 AM	96	23	0	9	33	0	49	82	0
9:00 AM	74	10	0	9	22	0	39	61	0
9:15 AM	89	12	0	8	30	0	37	71	0
9:30 AM	69	13	0	13	31	0	39	109	0
9:45 AM	71	8	0	8	45	0	37	53	0
10:00 AM	72	8	0	7	32	0	35	65	0
10:15 AM	57	11	0	9	29	0	30	54	0
10:30 AM	71	15	0	10	45	0	32	76	0
10:45 AM	72	9	0	7	29	0	27	77	0
11:00 AM	71	11	0	8	40	0	34	53	0
11:15 AM	75	9	0	11	35	0	33	66	0
11:30 AM	58	4	0	9	39	0	33	72	0
11:45 AM	68	10	0	10	32	0	30	71	0
12:00 PM	62	12	0	8	35	0	21	67	0
12:15 PM	83	8	0	11	33	0	38	53	0
12:30 PM	69	15	0	10	42	0	44	75	0
12:45 PM	70	12	0	16	38	0	42	67	0
1:00 PM	68	11	0	10	33	0	36	82	0
1:15 PM	59	10	0	9	34	0	45	58	0
1:30 PM	78	8	0	12	40	0	42	72	0
1:45 PM	66	11	0	14	43	0	46	75	0
2:00 PM	83	14	0	15	51	0	42	66	0
2:15 PM	59	10	0	23	57	0	30	81	0
2:30 PM	72	15	0	10	40	0	49	106	0
2:45 PM	65	11	0	17	42	0	46	94	0
3:00 PM	83	11	0	9	60	0	48	92	0
3:15 PM	80	12	0	17	46	0	41	103	0
3:30 PM	84	14	0	20	45	0	47	87	0
3:45 PM	111	10	0	20	65	0	35	94	0
4:00 PM	83	14	0	18	62	0	62	102	0
4:15 PM	74	8	0	25	42	0	42	104	0
4:30 PM	95	12	0	38	64	0	53	141	0
4:45 PM	92	11	0	21	45	0	46	146	0
5:00 PM	88	9	0	29	46	0	48	161	0
5:15 PM	116	10	0	10	63	0	56	116	0
5:30 PM	80	11	0	20	45	0	33	86	0
5:45 PM	67	9	0	9	40	0	40	101	0
6:00 PM	57	10	0	12	28	0	30	77	0
6:15 PM	56	9	0	10	23	0	35	96	0
6:30 PM	64	13	0	13	29	0	21	92	0
6:45 PM	54	9	0	8	21	0	33	54	0

Study Name KY 3 & KY 321
 Start Date 02/17/2022
 Start Time 7:00 AM
 Site Code

Start Time	Greenhouse Ln Southbound			KY 3 Westbound				KY 321 Northbound				KY 3 Eastbound			
	Right	Thru	Left	Right	Thru	Left	U-Turn	Right	Thru	Left	U-Turn	Right	Thru	Left	U-Turn
7:00 AM	0	0	0	0	35	10	0	15	3	2	0	1	42	0	0
7:15 AM	1	2	2	0	48	19	0	18	0	9	0	4	62	0	0
7:30 AM	1	0	1	0	40	29	0	20	0	5	0	5	89	1	0
7:45 AM	0	0	0	0	56	52	0	22	1	1	0	10	115	1	0
8:00 AM	0	1	0	0	36	31	0	21	1	1	0	10	78	2	0
8:15 AM	0	0	0	0	39	20	0	27	0	5	0	12	78	0	0
8:30 AM	0	0	0	0	30	12	0	19	0	1	0	2	54	0	0
8:45 AM	0	0	1	0	35	28	0	19	0	2	0	3	61	1	0
9:00 AM	1	1	0	0	29	21	0	18	0	2	0	2	39	0	0
9:15 AM	1	0	0	0	31	24	0	16	0	1	0	3	55	1	0
9:30 AM	0	0	0	0	47	27	0	19	0	1	0	3	48	0	0
9:45 AM	1	0	0	0	38	23	0	22	0	5	0	4	55	0	0
10:00 AM	0	0	0	0	31	15	0	11	1	2	0	6	21	0	0
10:15 AM	0	0	1	0	52	29	0	21	0	3	0	3	37	0	0
10:30 AM	0	0	2	0	33	29	0	27	1	3	0	1	43	2	0
10:45 AM	0	2	0	0	33	33	0	26	0	5	0	3	49	1	0
11:00 AM	1	0	1	0	50	28	0	24	0	6	0	2	43	0	0
11:15 AM	0	0	0	0	62	38	0	24	0	8	0	4	41	0	0
11:30 AM	0	0	0	0	40	40	0	30	1	2	0	0	33	1	0
11:45 AM	1	0	0	0	43	32	0	24	0	3	0	7	39	0	0
12:00 PM	0	2	0	0	54	35	0	31	0	4	0	2	36	0	0
12:15 PM	0	1	1	0	42	20	0	28	0	5	0	2	57	0	0
12:30 PM	0	0	0	0	53	37	0	33	1	8	0	4	64	0	0
12:45 PM	0	0	2	0	46	29	0	27	3	1	0	3	46	2	0
1:00 PM	0	0	2	0	37	27	0	38	0	2	0	5	54	0	0
1:15 PM	1	2	1	0	37	33	0	24	0	6	0	3	50	3	0
1:30 PM	0	0	0	0	49	23	0	24	1	3	0	5	45	0	0
1:45 PM	2	1	0	0	32	24	0	30	0	9	0	9	57	0	0
2:00 PM	2	1	0	0	51	27	0	29	3	3	0	3	34	0	0
2:15 PM	1	0	0	0	53	37	0	33	0	5	0	4	48	0	0
2:30 PM	0	0	2	0	44	30	0	29	0	7	0	8	41	2	0
2:45 PM	0	1	1	0	44	27	0	26	2	6	0	6	41	0	0
3:00 PM	0	3	0	0	74	27	0	28	0	4	0	16	39	0	0
3:15 PM	0	0	0	0	60	19	0	26	0	8	0	22	43	0	0
3:30 PM	2	0	0	0	65	23	0	31	1	4	0	27	52	0	0
3:45 PM	2	1	0	0	75	30	0	15	0	7	0	34	40	2	0
4:00 PM	2	1	1	0	86	29	0	38	0	8	0	26	44	0	0
4:15 PM	0	0	1	0	62	39	0	28	0	5	0	2	55	0	0
4:30 PM	0	0	1	0	91	25	0	41	2	7	0	7	43	0	0
4:45 PM	0	0	0	0	58	21	0	31	0	8	0	6	39	1	0
5:00 PM	0	0	0	0	63	19	0	34	1	6	0	11	46	0	0
5:15 PM	0	0	0	0	56	27	0	32	0	8	0	30	50	1	0
5:30 PM	0	0	0	0	64	20	0	21	0	5	0	23	33	1	0
5:45 PM	1	0	2	0	41	15	0	16	0	4	0	19	28	1	0
6:00 PM	1	1	0	0	41	21	0	19	1	2	0	24	34	0	0
6:15 PM	1	0	0	0	35	11	0	18	0	4	0	17	46	2	0
6:30 PM	0	1	0	0	27	13	0	14	0	5	0	17	34	2	0
6:45 PM	0	0	0	0	20	8	0	16	0	1	0	10	29	1	0

Study Name KY 321 & John CC Mayo Ave
 Start Date 02/17/2022
 Start Time 7:00 AM
 Site Code

Start Time	John CC Mayo Ave Southbound			KY 321 Westbound			KY 321 Eastbound		
	Right	Left	U-Turn	Right	Thru	U-Turn	Thru	Left	U-Turn
7:00 AM	9	7	0	1	32	0	39	3	0
7:15 AM	20	6	0	1	48	0	51	5	0
7:30 AM	19	10	0	9	66	0	56	13	0
7:45 AM	17	9	0	10	99	0	50	21	0
8:00 AM	17	3	0	9	67	0	35	10	0
8:15 AM	15	6	0	6	46	0	41	25	0
8:30 AM	9	5	0	3	36	0	31	13	0
8:45 AM	13	3	0	6	46	0	33	15	0
9:00 AM	8	4	0	2	33	0	21	10	0
9:15 AM	15	2	0	2	36	0	43	9	0
9:30 AM	16	9	0	1	49	0	34	9	0
9:45 AM	10	2	0	6	47	0	42	12	0
10:00 AM	12	4	0	4	35	0	36	11	0
10:15 AM	19	5	0	5	44	0	36	12	0
10:30 AM	14	4	0	9	41	0	46	14	0
10:45 AM	5	5	0	4	62	0	41	15	0
11:00 AM	23	10	0	6	38	0	48	8	0
11:15 AM	20	2	0	7	57	0	46	7	0
11:30 AM	14	11	0	2	40	0	44	15	0
11:45 AM	13	9	0	6	41	0	37	6	0
12:00 PM	18	9	0	10	36	0	42	19	0
12:15 PM	13	8	0	10	45	0	38	15	0
12:30 PM	10	4	0	7	52	0	41	28	0
12:45 PM	22	5	0	9	49	0	55	17	0
1:00 PM	26	10	0	8	47	0	49	23	0
1:15 PM	20	6	0	11	40	0	42	11	0
1:30 PM	14	7	0	6	47	0	48	11	0
1:45 PM	19	2	0	4	32	0	50	10	0
2:00 PM	17	2	0	3	53	0	57	9	0
2:15 PM	14	5	0	7	50	0	49	15	0
2:30 PM	12	12	0	4	44	0	60	11	0
2:45 PM	11	7	0	6	43	0	41	18	0
3:00 PM	11	6	0	10	68	0	53	14	0
3:15 PM	16	4	0	10	39	0	49	13	0
3:30 PM	14	4	0	8	53	0	60	20	0
3:45 PM	17	4	0	10	54	0	51	16	0
4:00 PM	15	10	0	6	76	0	55	18	0
4:15 PM	17	5	0	4	51	0	77	26	0
4:30 PM	26	8	0	9	34	0	80	21	0
4:45 PM	11	8	0	6	47	0	60	17	0
5:00 PM	22	5	0	4	35	0	69	19	0
5:15 PM	17	5	0	6	49	0	67	23	0
5:30 PM	8	3	0	6	54	0	40	14	0
5:45 PM	9	4	0	8	37	0	34	7	0
6:00 PM	11	1	0	4	43	0	34	17	0
6:15 PM	8	2	0	5	36	0	43	9	0
6:30 PM	13	0	0	1	24	0	31	13	0
6:45 PM	2	1	0	0	13	0	23	3	0

Study Name KY 3 & KY 321 North
 Start Date 02/22/2022
 Start Time 7:00 AM
 Site Code

Start Time	KY 321 Southbound			KY 3 Westbound			KY 3 Northbound		
	Thru	Left	U-Turn	Right	Left	U-Turn	Right	Thru	U-Turn
7:00 AM	21	7	0	7	11	0	20	17	0
7:15 AM	33	7	0	13	17	0	32	28	0
7:30 AM	62	7	0	30	25	0	26	46	0
7:45 AM	59	19	0	20	31	0	26	34	0
8:00 AM	44	11	0	8	30	0	19	20	0
8:15 AM	35	3	0	11	26	0	17	16	0
8:30 AM	27	5	0	10	21	0	15	18	0
8:45 AM	39	12	0	6	17	0	23	19	0
9:00 AM	25	5	0	9	11	0	24	23	0
9:15 AM	21	1	0	5	13	0	19	18	0
9:30 AM	25	7	0	8	29	0	15	29	0
9:45 AM	19	6	0	9	23	0	16	19	0
10:00 AM	20	8	0	6	22	0	9	24	0
10:15 AM	26	6	0	8	22	0	9	27	0
10:30 AM	35	11	0	15	19	0	21	22	0
10:45 AM	26	6	0	8	13	0	15	20	0
11:00 AM	31	8	0	10	27	0	17	15	0
11:15 AM	28	3	0	15	26	0	16	38	0
11:30 AM	35	4	0	8	9	0	16	25	0
11:45 AM	25	6	0	15	18	0	18	25	0
12:00 PM	25	4	0	5	16	0	17	38	0
12:15 PM	32	6	0	8	15	0	13	27	0
12:30 PM	40	8	0	11	21	0	17	27	0
12:45 PM	26	7	0	11	20	0	16	28	0
1:00 PM	36	13	0	8	14	0	24	27	0
1:15 PM	37	3	0	6	18	0	20	29	0
1:30 PM	39	8	0	14	20	0	12	26	0
1:45 PM	20	8	0	10	23	0	14	20	0
2:00 PM	22	13	0	12	31	0	19	47	0
2:15 PM	24	9	0	13	25	0	15	30	0
2:30 PM	29	14	0	14	18	0	17	47	0
2:45 PM	36	6	0	15	17	0	15	38	0
3:00 PM	70	20	0	7	19	0	25	32	0
3:15 PM	43	11	0	6	18	0	28	23	0
3:30 PM	24	10	0	21	26	0	22	44	0
3:45 PM	37	12	0	39	46	0	27	34	0
4:00 PM	32	11	0	19	30	0	27	47	0
4:15 PM	32	19	0	14	25	0	23	42	0
4:30 PM	31	11	0	18	23	0	29	59	0
4:45 PM	26	21	0	16	21	0	30	41	0
5:00 PM	34	13	0	10	17	0	22	61	0
5:15 PM	25	14	0	10	24	0	36	48	0
5:30 PM	34	19	0	7	25	0	23	41	0
5:45 PM	19	12	0	20	16	0	17	37	0
6:00 PM	15	7	0	12	17	0	21	22	0
6:15 PM	18	10	0	9	9	0	24	22	0
6:30 PM	17	4	0	10	15	0	13	27	0
6:45 PM	12	8	0	2	15	0	16	8	0

Appendix A.B

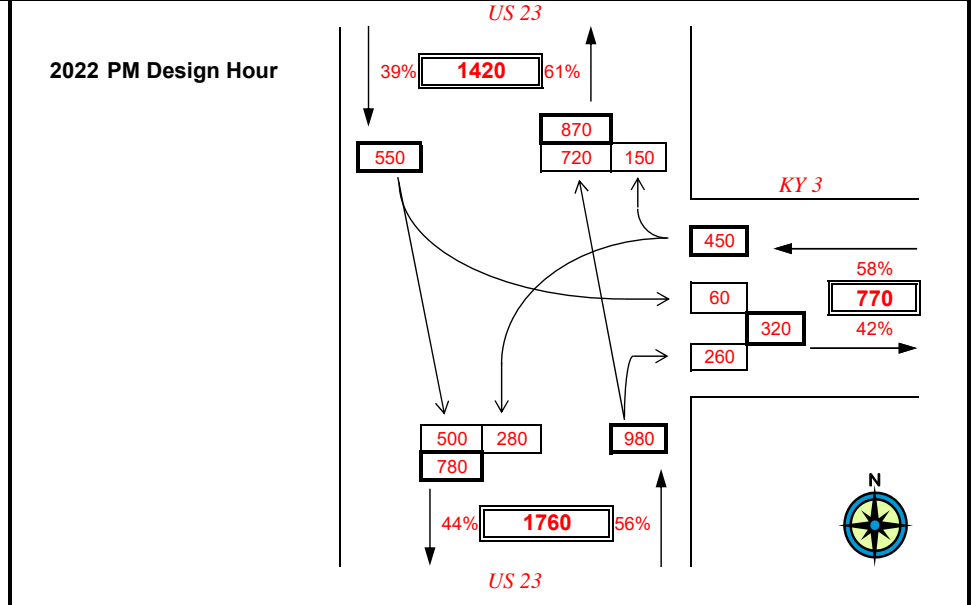
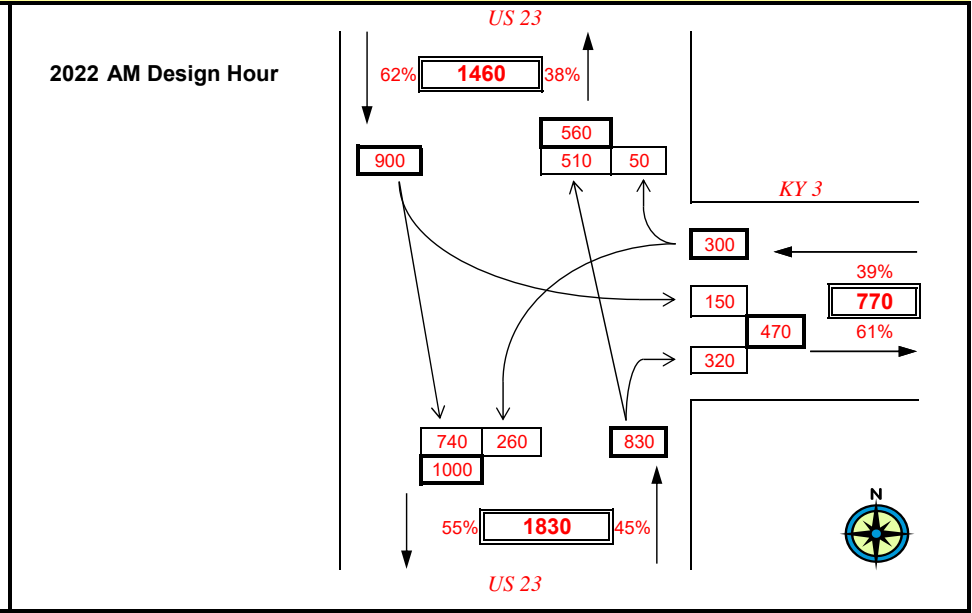
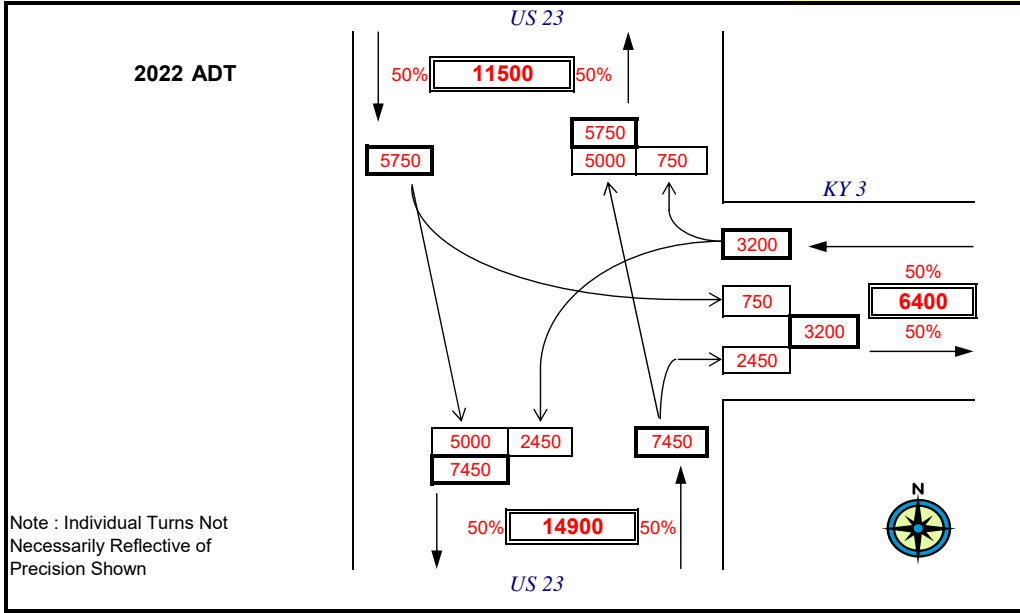
2022 Turning Movement Estimates

PROJECT: KY 3 Auxier Corridor Study
 ITEM NUMBER: 0
 MARS NUMBER: 0
 REQUEST DATE: February 8, 2022
 ANALYST: ST
 YEAR: 2022 ADT and Design Hour Volumes
 INTERSECTION: US 23 & Bays Branch Road

NOTE: K-Factors, Directional Distributions, and Peak Hour Factors were determined from a 2022 Turning Movement Count. AM and PM DHVs represent 30th highest hour estimates for each turn maneuver.

TURN MOVEMENT (2022)

****DHV TURN MOVEMENT FORECASTS SHOULD NOT BE USED FOR SIGNAL TIMING OR WARRANT ANALYSIS**

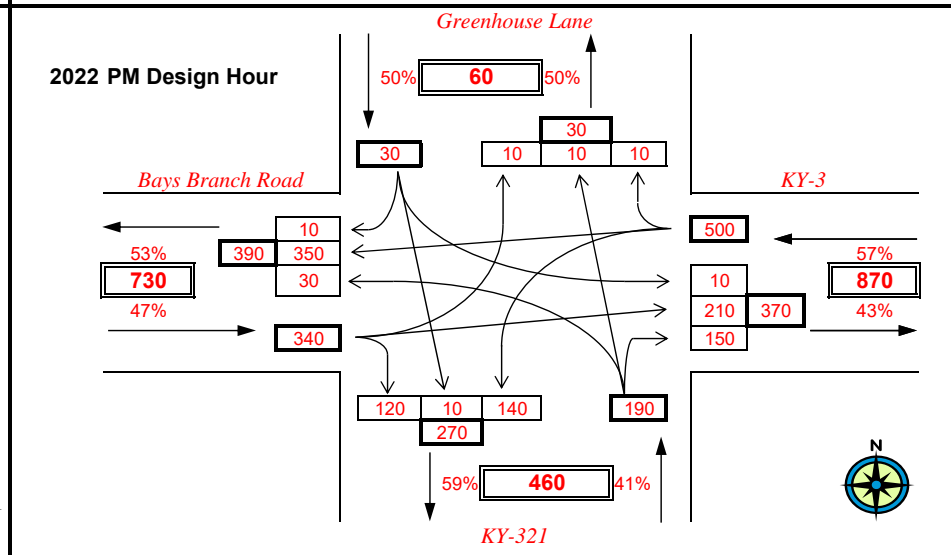
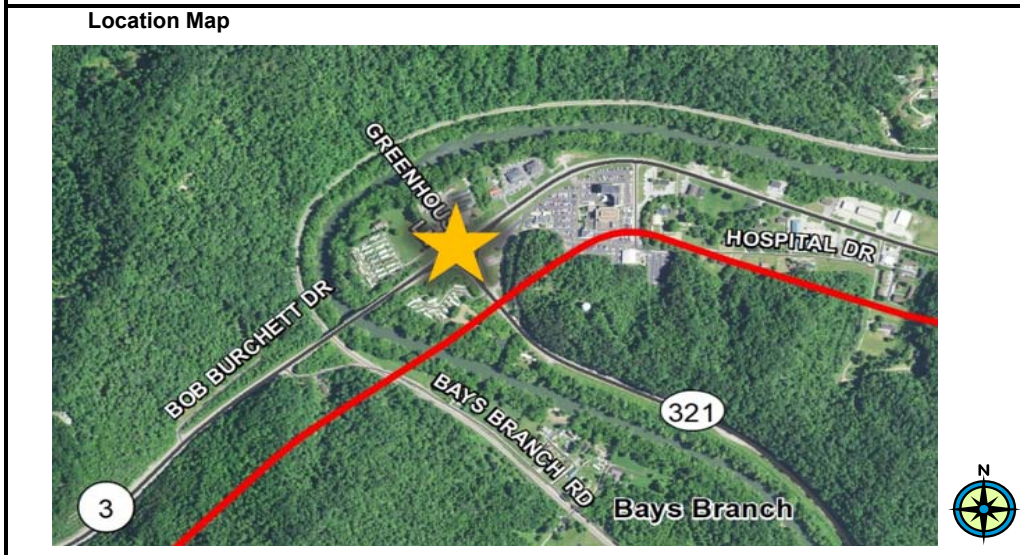
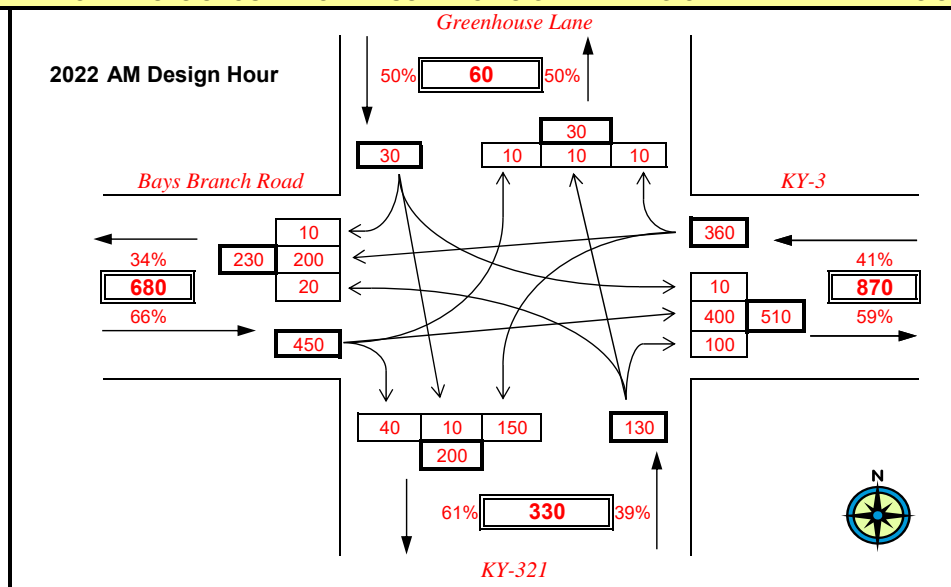
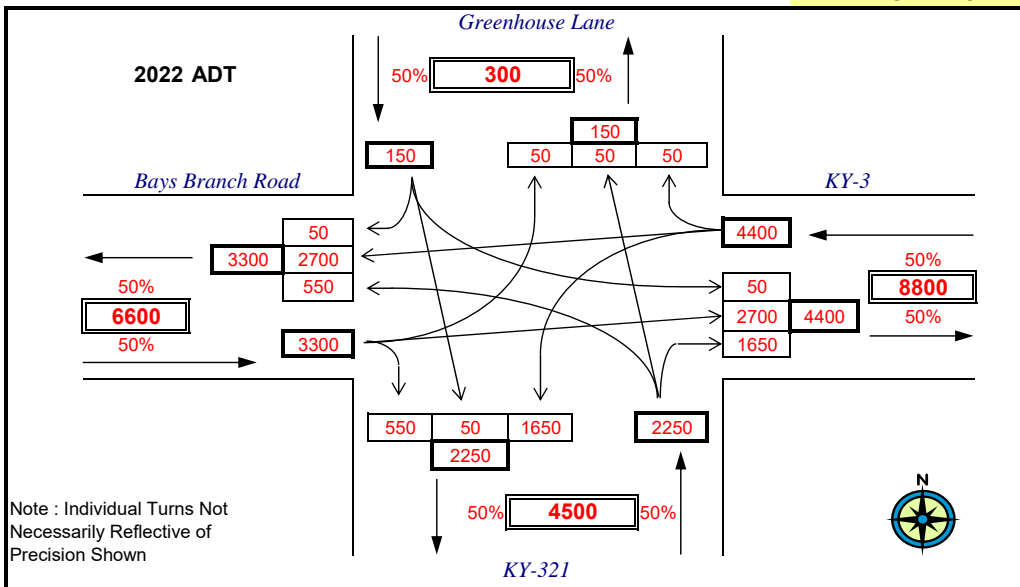


PROJECT: KY 3 Auxier Corridor Study
 ITEM NUMBER: 0
 MARS NUMBER: 0
 REQUEST DATE: February 8, 2022
 ANALYST: ST
 YEAR: 2022 ADT and Design Hour Volumes
 INTERSECTION: KY-321 & KY-3 (Bays Branch Road)

NOTE: K-Factors, Directional Distributions, and Peak Hour Factors were determined from a 2022 Turning Movement Count. AM and PM DHVs represent 30th highest hour estimates for each turn maneuver.

TURN MOVEMENT (2022)

****DHV TURN MOVEMENT FORECASTS SHOULD NOT BE USED FOR SIGNAL TIMING OR WARRANT ANALYSIS**

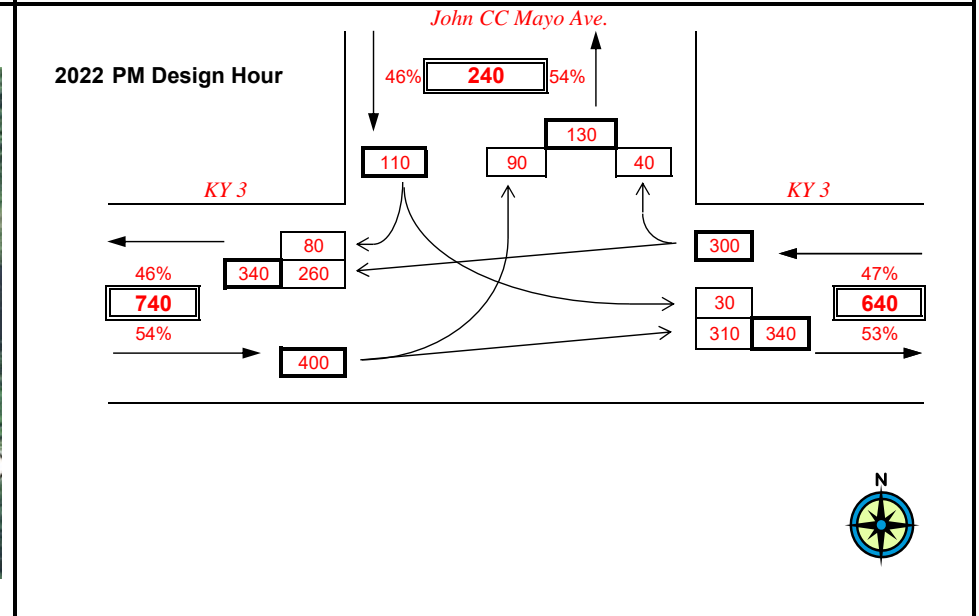
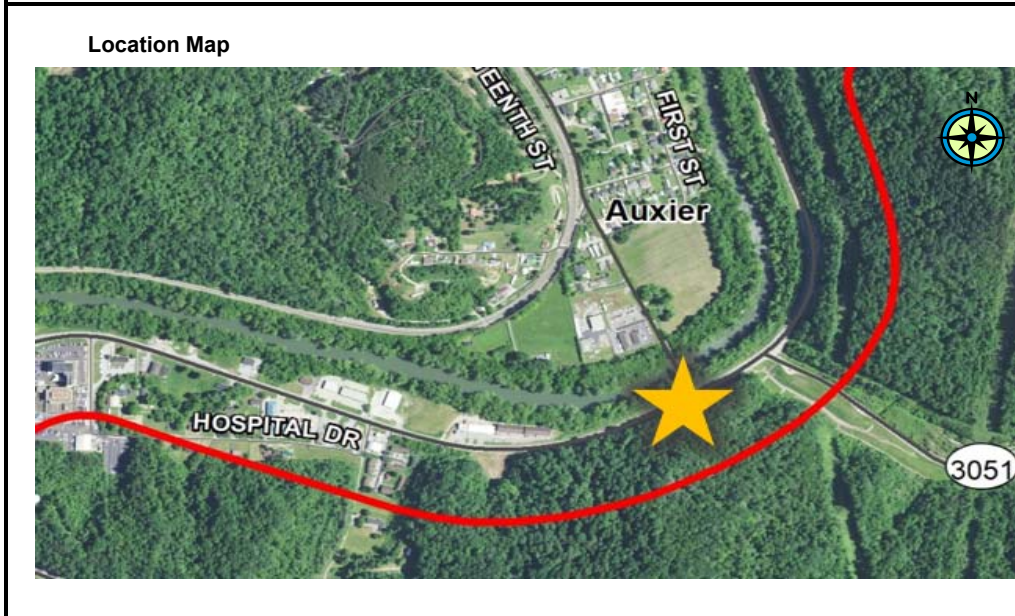
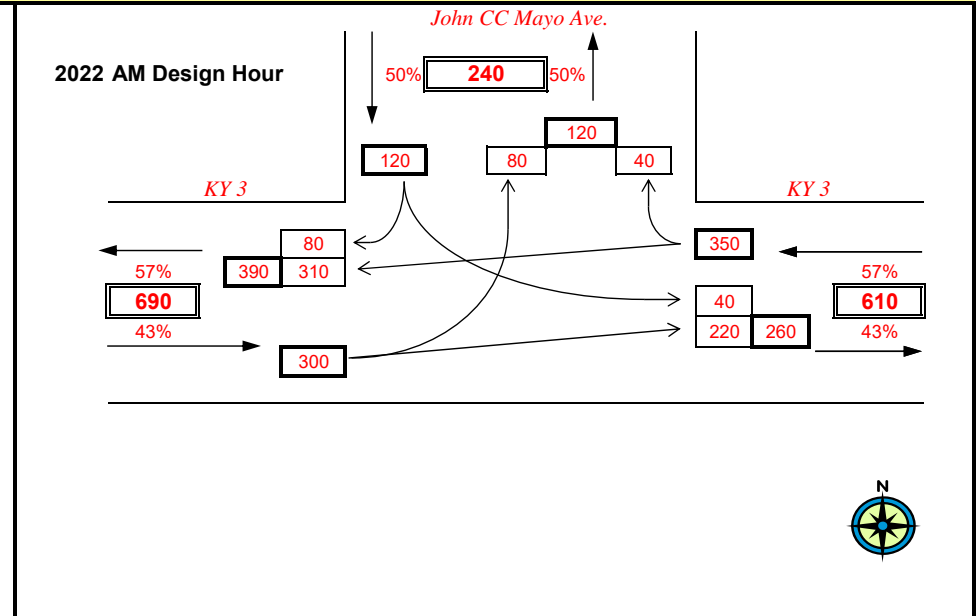
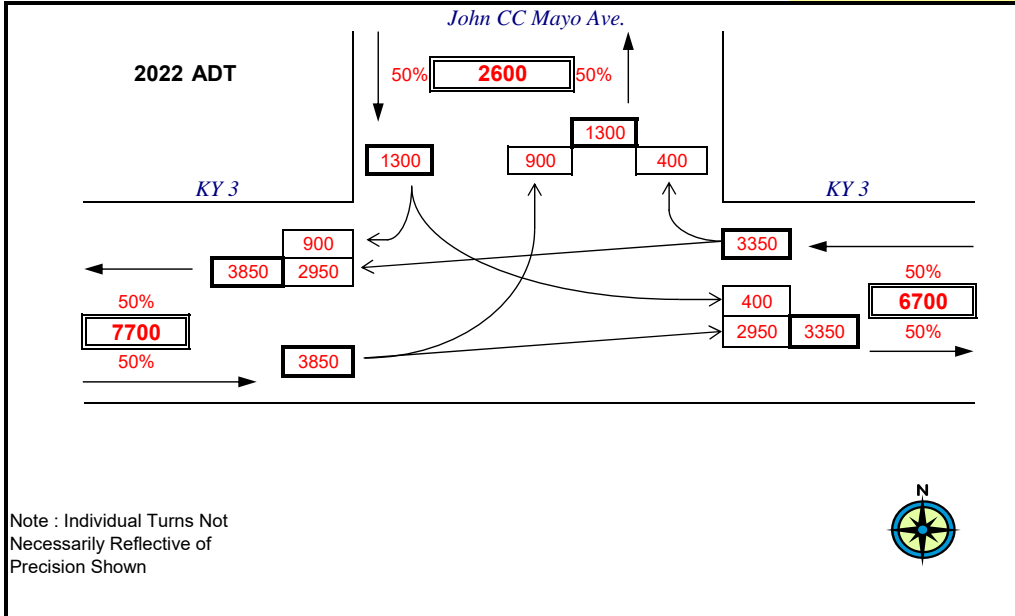


PROJECT: KY 3 Auxier Corridor Study
 ITEM NUMBER: 0
 MARS NUMBER: 0
 REQUEST DATE: February 8, 2022
 ANALYST: ST
 YEAR: 2022 ADT and Design Hour Volumes
 INTERSECTION: KY 3 at KY 3051 (John CC Mayo Ave)

NOTE: K-Factors, Directional Distributions, and Peak Hour Factors were determined from a 2022 Turning Movement Count. AM and PM DHVs represent 30th highest hour estimates for each turn maneuver.

TURN MOVEMENT (2022)

****DHV TURN MOVEMENT FORECASTS SHOULD NOT BE USED FOR SIGNAL TIMING OR WARRANT ANALYSIS**

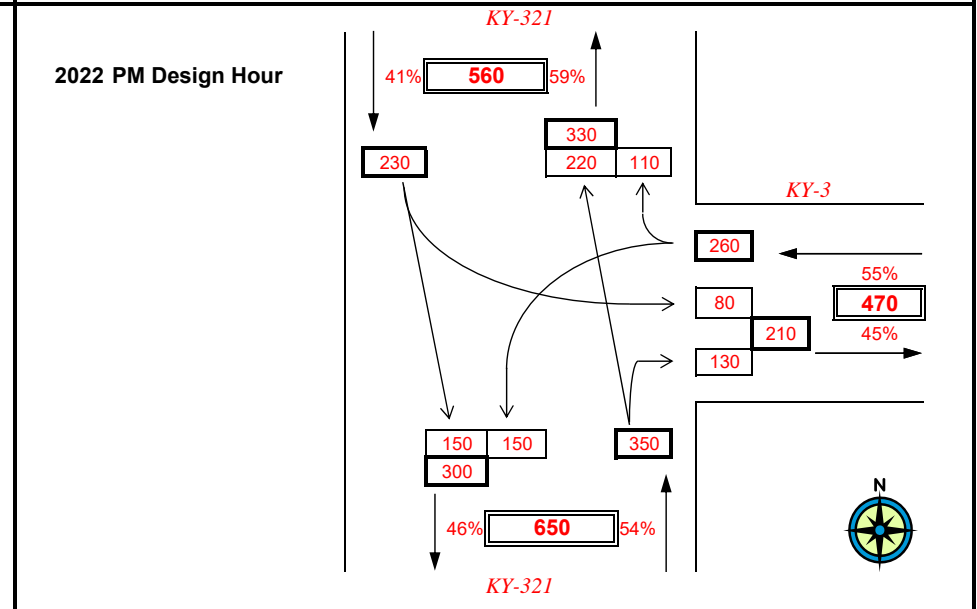
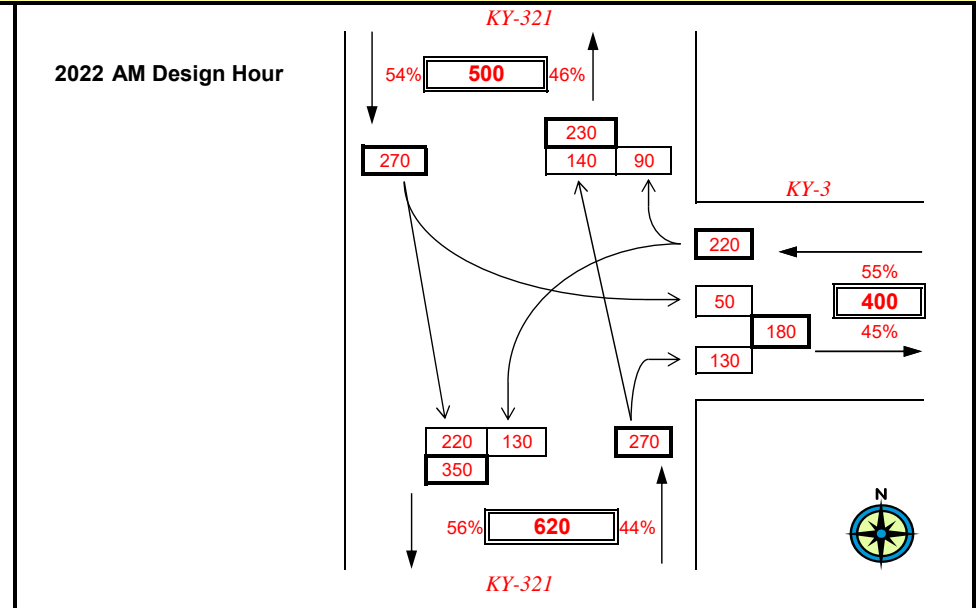
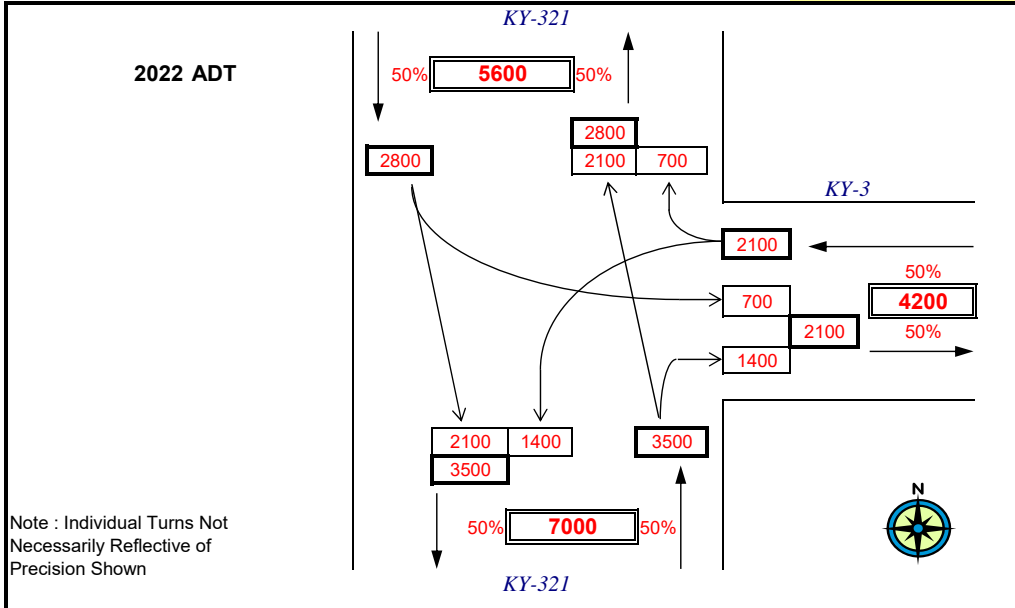


PROJECT: KY 3 Auxier Corridor Study
 ITEM NUMBER: 0
 MARS NUMBER: 0
 REQUEST DATE: February 8, 2022
 ANALYST: ST
 YEAR: 2022 ADT and Design Hour Volumes
 INTERSECTION: KY-321 & KY-3

NOTE: K-Factors, Directional Distributions, and Peak Hour Factors were determined from a 2022 Turning Movement Count. AM and PM DHVs represent 30th highest hour estimates for each turn maneuver.

TURN MOVEMENT (2022)

****DHV TURN MOVEMENT FORECASTS SHOULD NOT BE USED FOR SIGNAL TIMING OR WARRANT ANALYSIS**



Appendix A.C

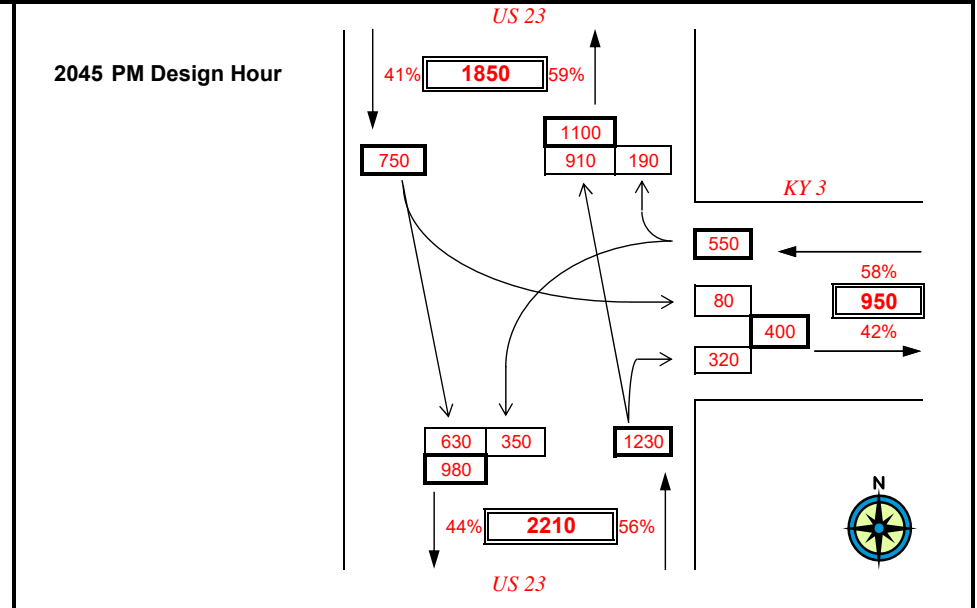
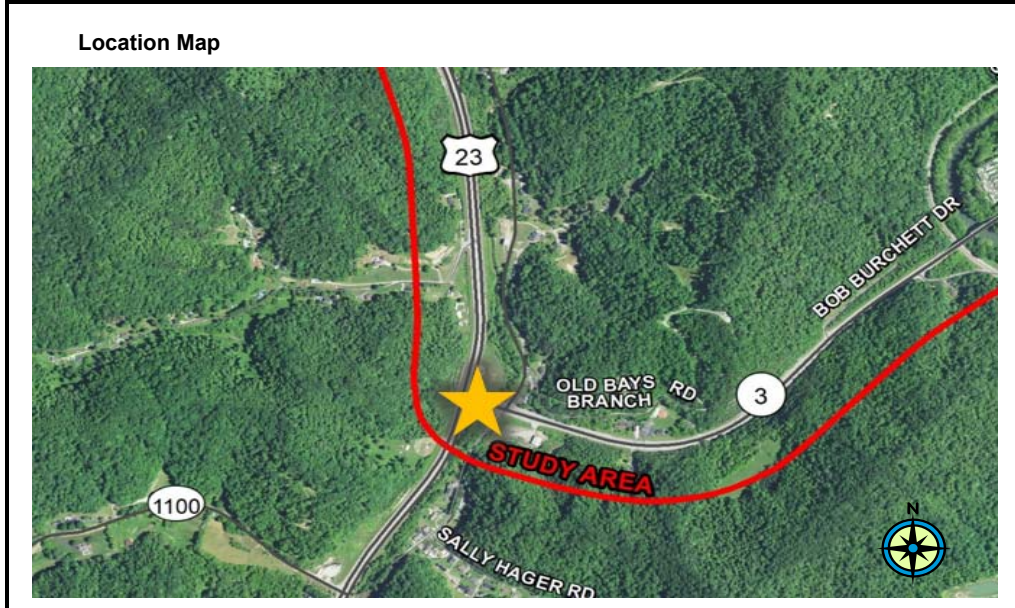
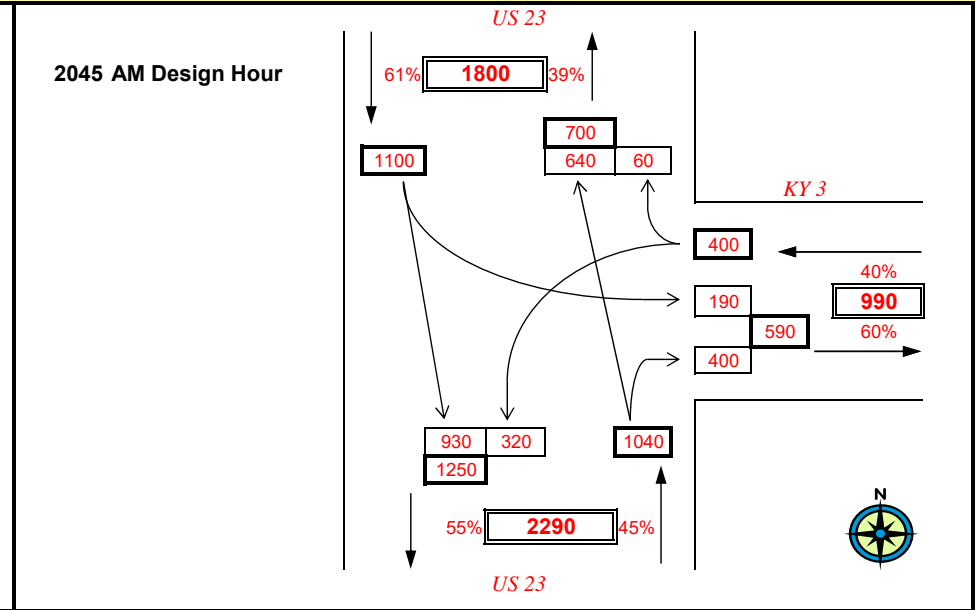
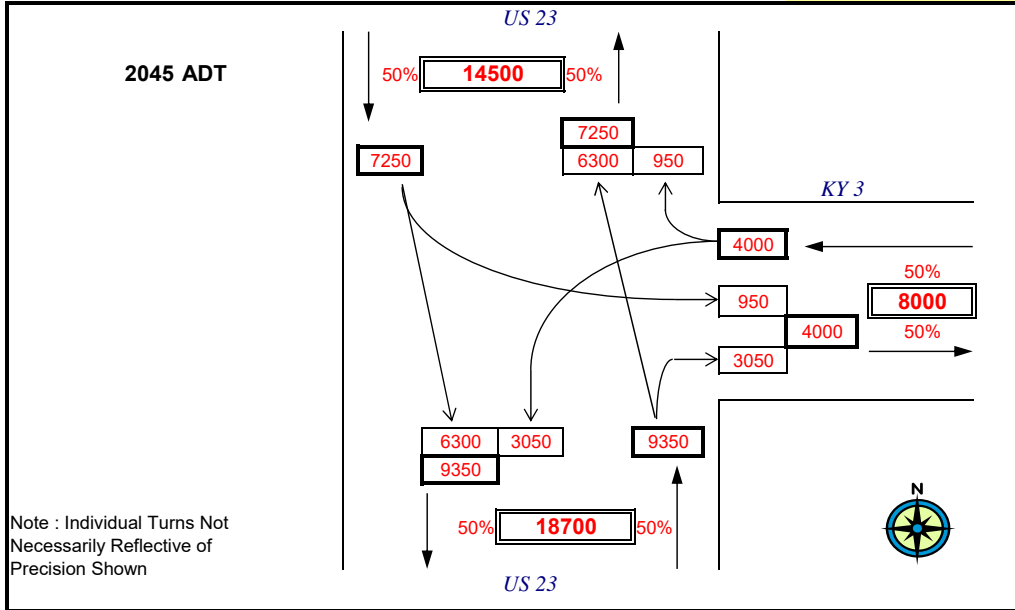
2045 No-Build Turning Movement Forecasts

PROJECT: KY 3 Auxier Corridor Study
 ITEM NUMBER: 0
 MARS NUMBER: 0
 REQUEST DATE: February 8, 2022
 ANALYST: ST
 YEAR: 2045 ADT and Design Hour Volumes
 INTERSECTION: US 23 & Bays Branch Road

NOTE: K-Factors, Directional Distributions, and Peak Hour Factors were determined from a 2045 Turning Movement Count. AM and PM DHVs represent 30th highest hour estimates for each turn maneuver.

TURN MOVEMENT (2045)

****DHV TURN MOVEMENT FORECASTS SHOULD NOT BE USED FOR SIGNAL TIMING OR WARRANT ANALYSIS**



PROJECT: KY 3 Auxier Corridor Study

ITEM NUMBER: 0

MARS NUMBER: 0

REQUEST DATE: February 8, 2022

ANALYST: ST

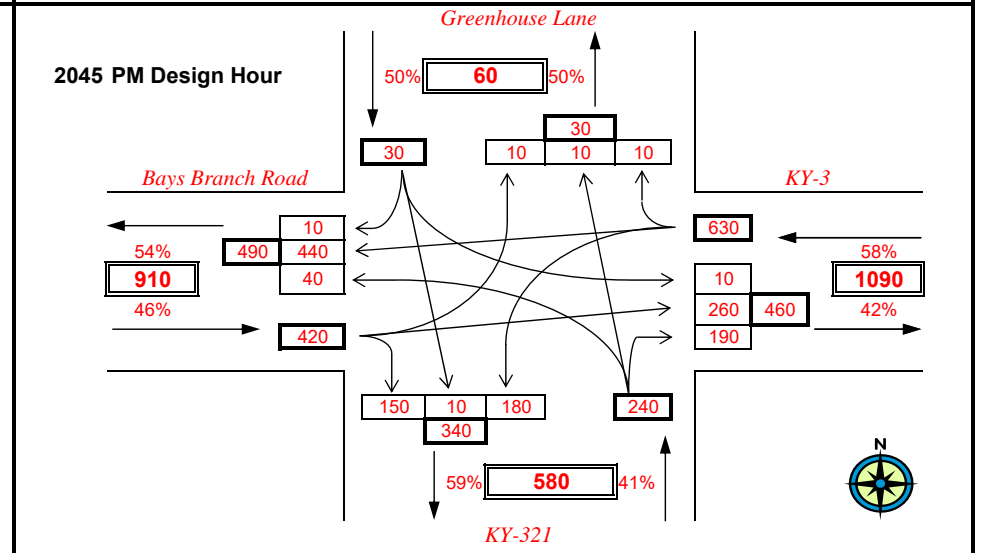
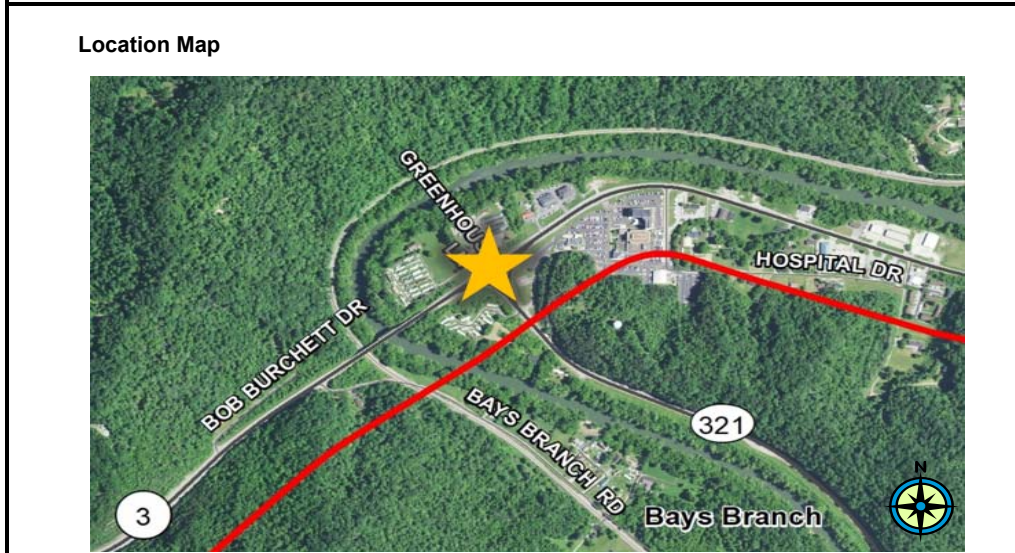
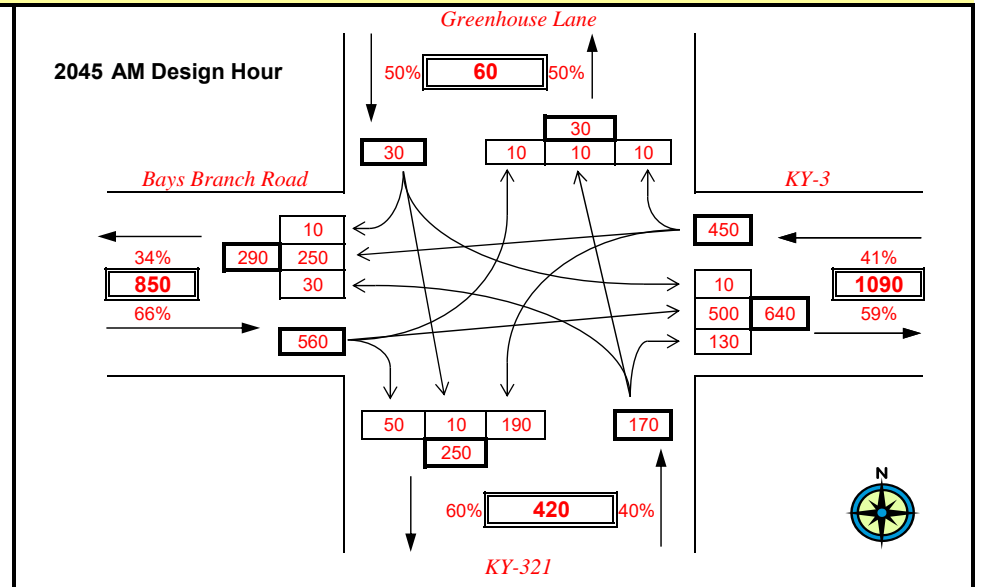
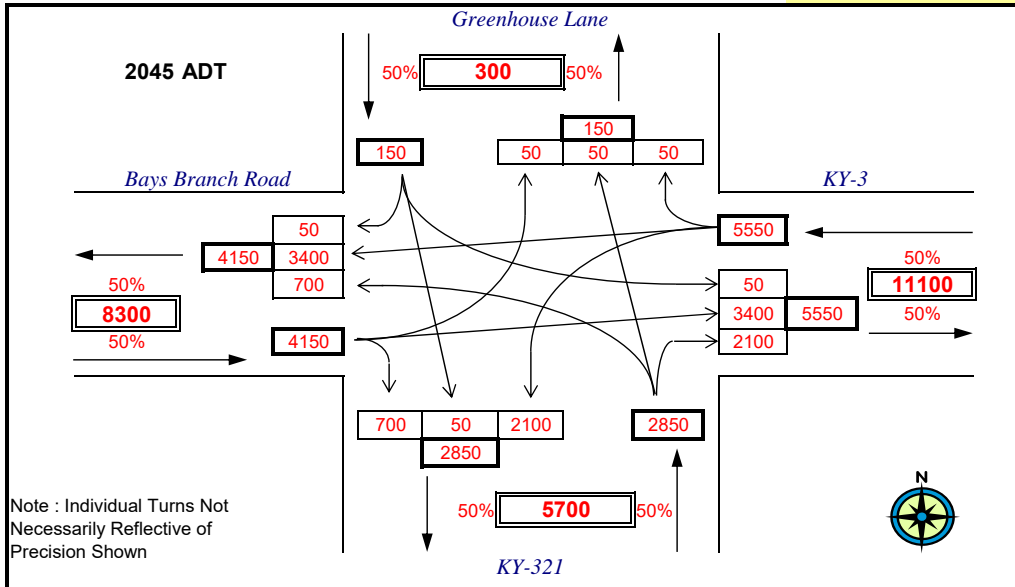
YEAR: 2045 ADT and Design Hour Volumes

INTERSECTION: KY-321 & KY-3 (Bays Branch Road)

NOTE: K-Factors, Directional Distributions, and Peak Hour Factors were determined from a 2045 Turning Movement Count. AM and PM DHVs represent 30th highest hour estimates for each turn maneuver.

TURN MOVEMENT (2045)

****DHV TURN MOVEMENT FORECASTS SHOULD NOT BE USED FOR SIGNAL TIMING OR WARRANT ANALYSIS**

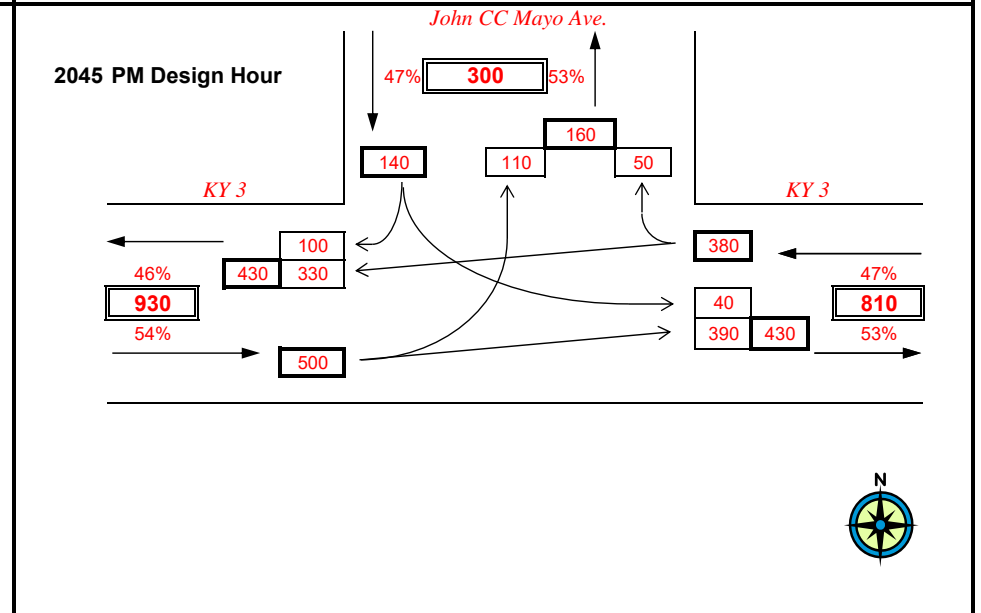
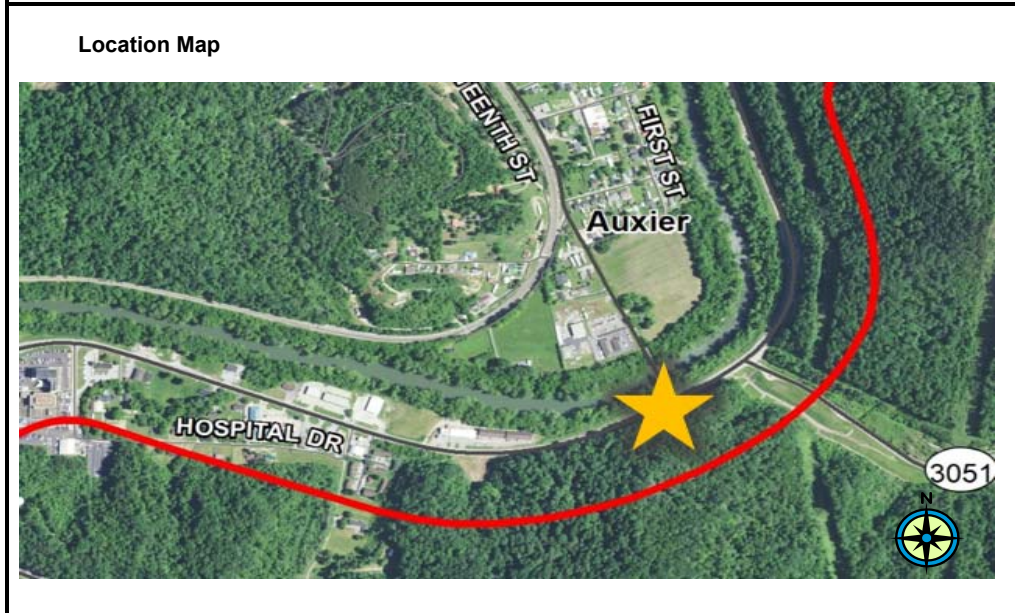
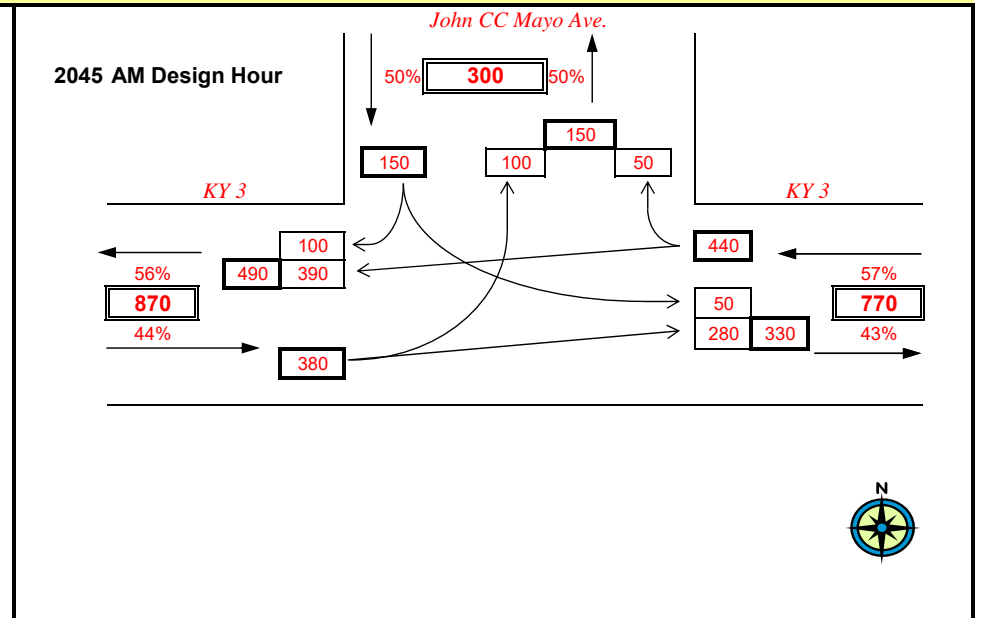
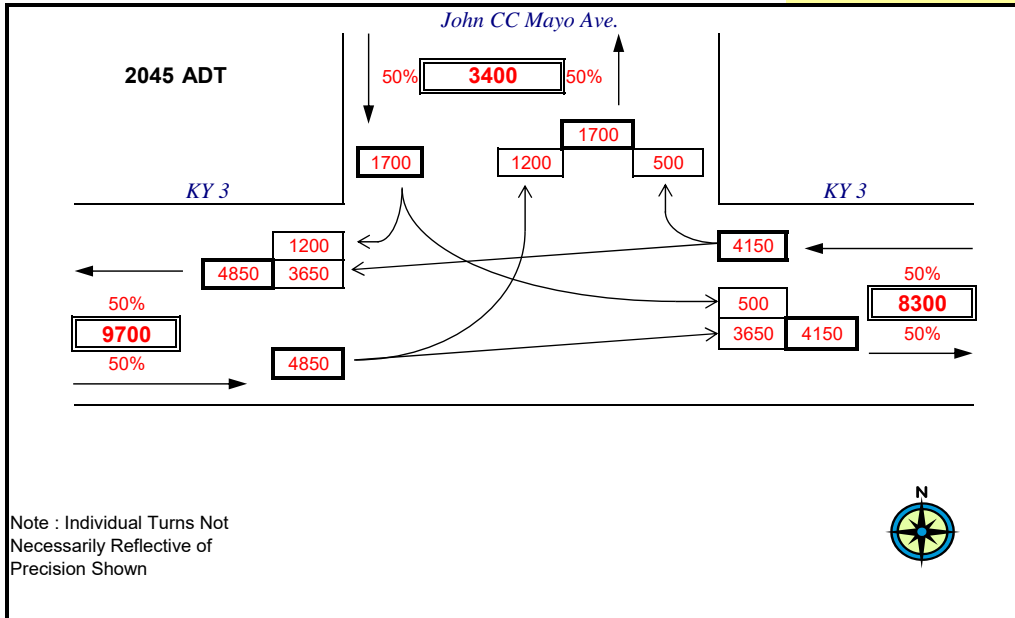


PROJECT: KY 3 Auxier Corridor Study
 ITEM NUMBER: 0
 MARS NUMBER: 0
 REQUEST DATE: February 8, 2022
 ANALYST: ST
 YEAR: 2045
 INTERSECTION: KY 3 at KY 3051 (John CC Mayo Ave)

NOTE: K-Factors, Directional Distributions, and Peak Hour Factors were determined from a 2045 Turning Movement Count. AM and PM DHVs represent 30th highest hour estimates for each turn maneuver.

TURN MOVEMENT (2045)

****DHV TURN MOVEMENT FORECASTS SHOULD NOT BE USED FOR SIGNAL TIMING OR WARRANT ANALYSIS**

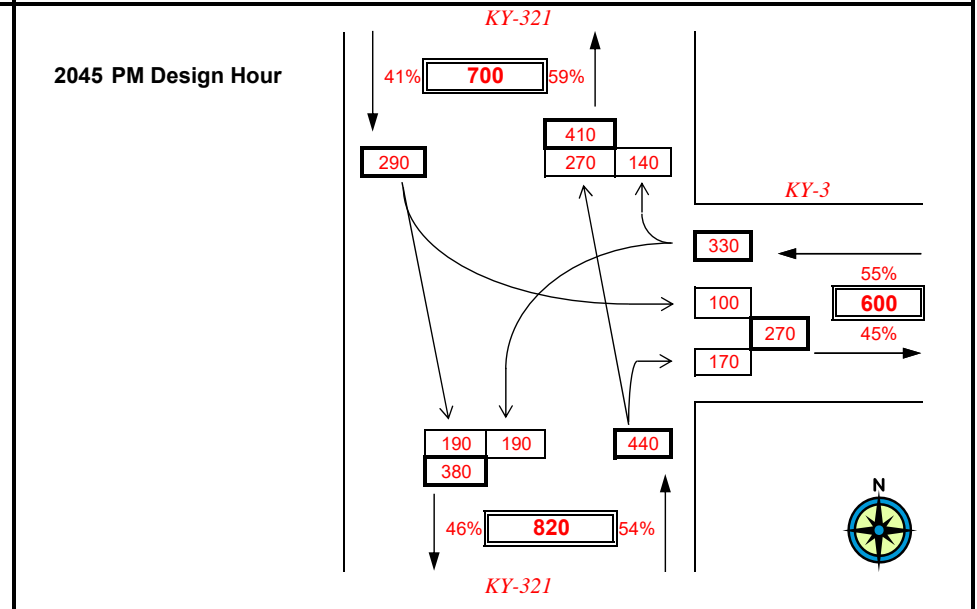
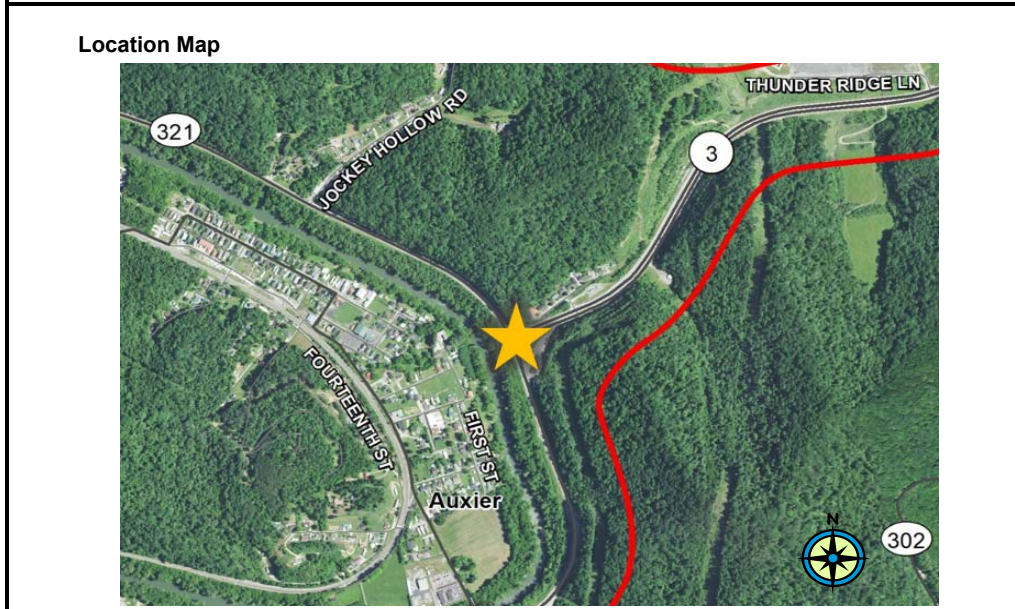
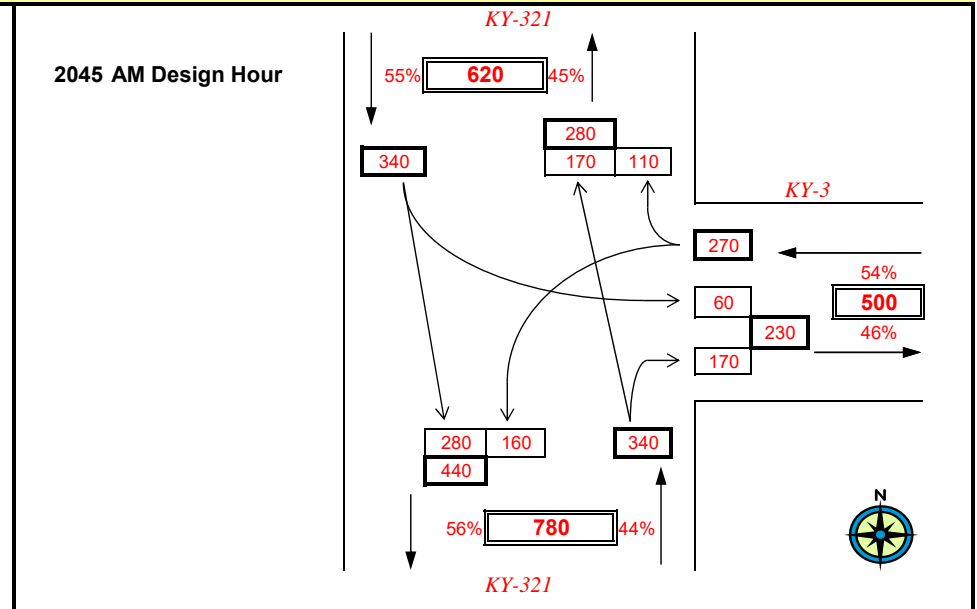
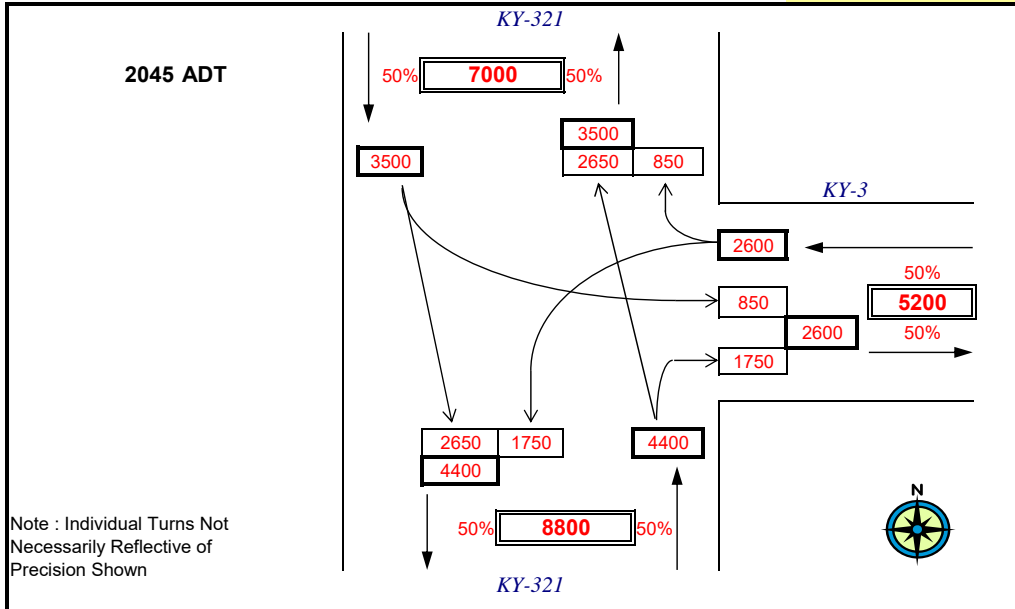


PROJECT: KY 3 Auxier Corridor Study
 ITEM NUMBER: 0
 MARS NUMBER: 0
 REQUEST DATE: February 8, 2022
 ANALYST: ST
 YEAR: 2045 ADT and Design Hour Volumes
 INTERSECTION: KY-321 & KY-3

NOTE: K-Factors, Directional Distributions, and Peak Hour Factors were determined from a 2045 Turning Movement Count. AM and PM DHVs represent 30th highest hour estimates for each turn maneuver.

TURN MOVEMENT (2045)

****DHV TURN MOVEMENT FORECASTS SHOULD NOT BE USED FOR SIGNAL TIMING OR WARRANT ANALYSIS**



Appendix A.D

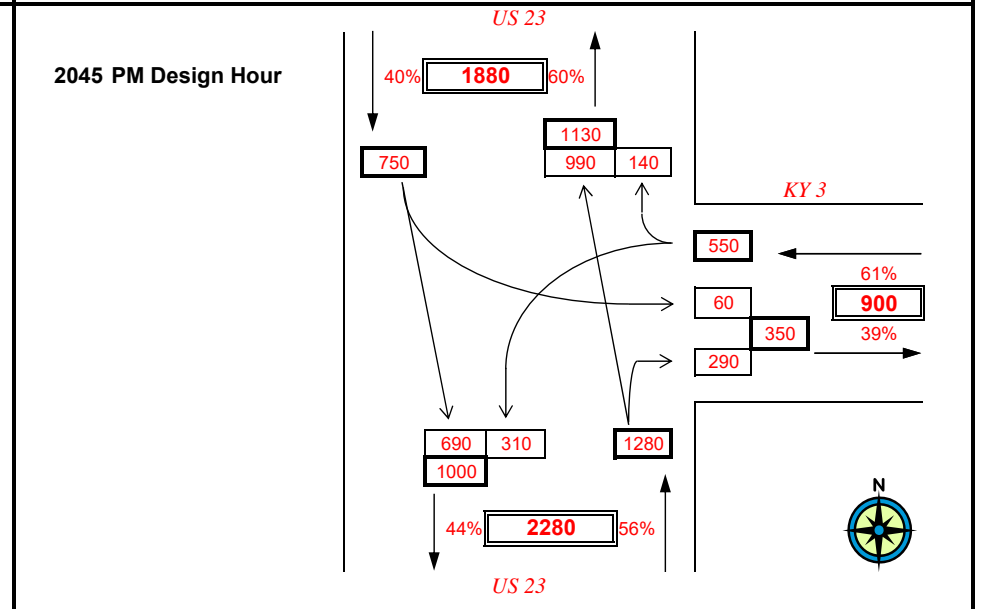
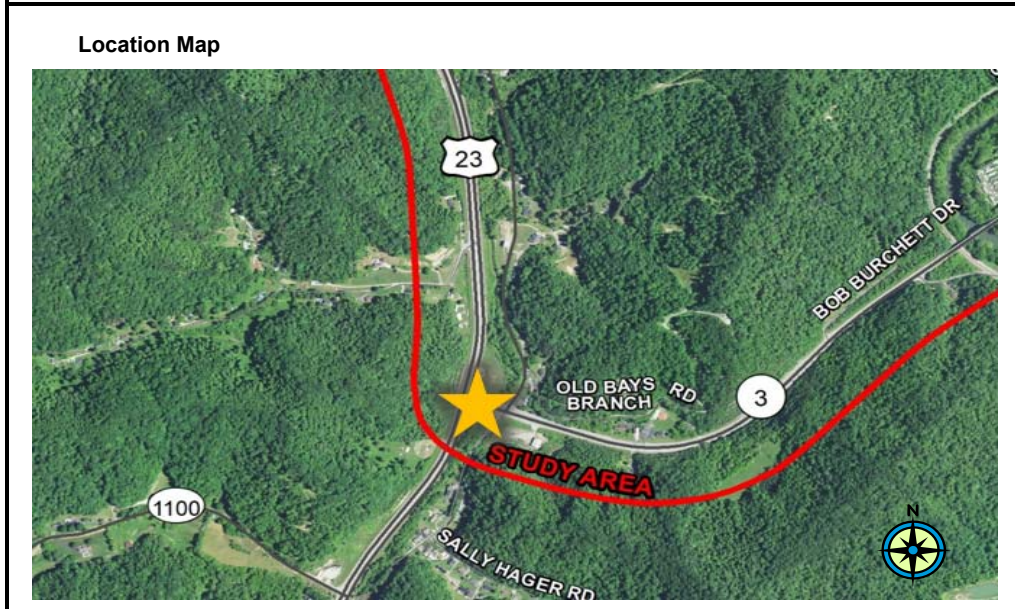
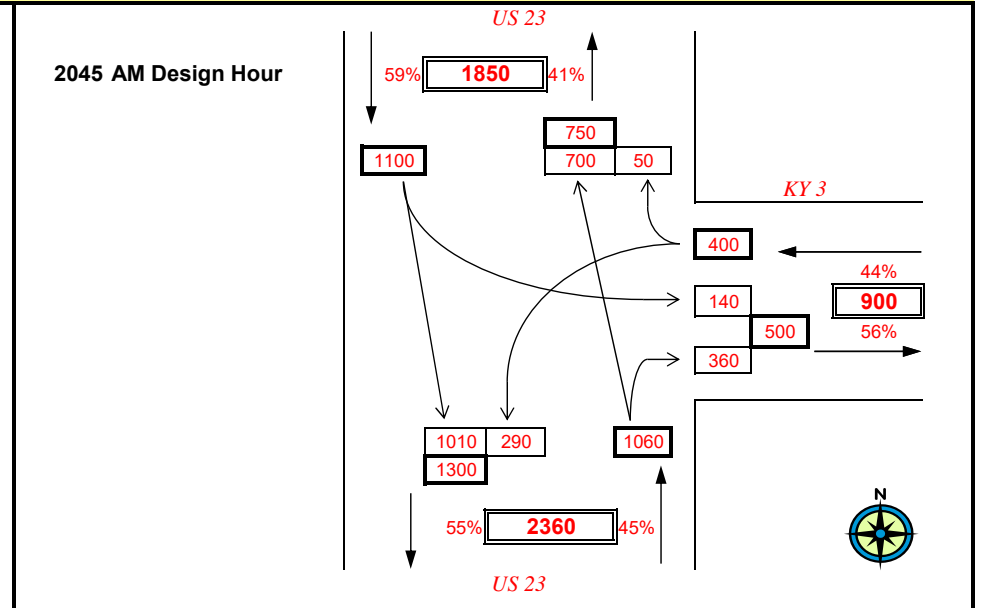
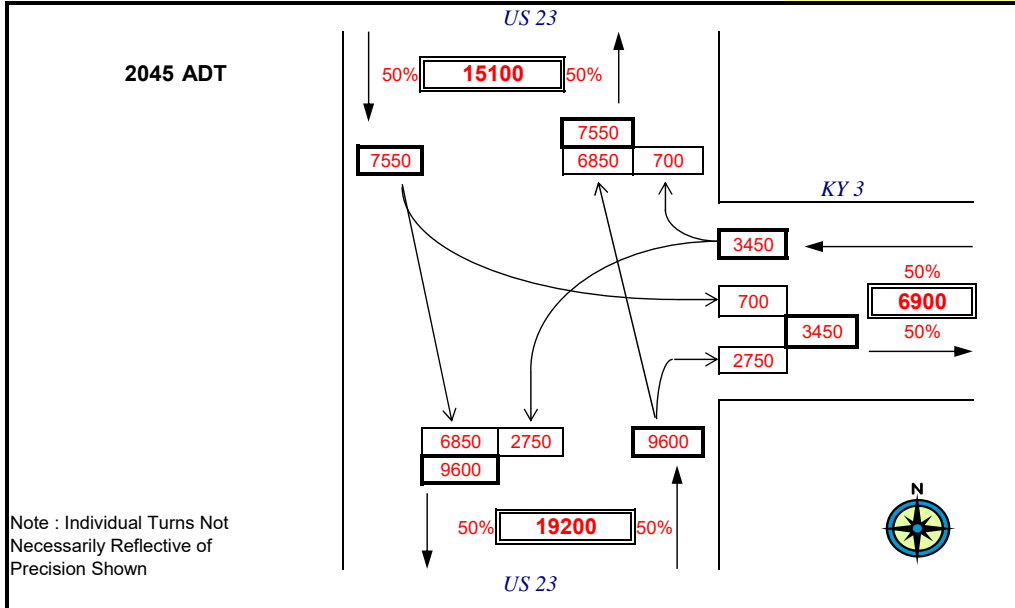
2045 Yellow Concept Build - New Connector Turning Movement Forecasts

PROJECT: KY 3 Auxier Corridor Study
 ITEM NUMBER: 0
 MARS NUMBER: 0
 REQUEST DATE: February 8, 2022
 ANALYST: ST
 YEAR: 2045 ADT and Design Hour Volumes
 INTERSECTION: US 23 & Bays Branch Road

NOTE: K-Factors, Directional Distributions, and Peak Hour Factors were determined from a 2045 Turning Movement Count. AM and PM DHVs represent 30th highest hour estimates for each turn maneuver.

TURN MOVEMENT (2045)

****DHV TURN MOVEMENT FORECASTS SHOULD NOT BE USED FOR SIGNAL TIMING OR WARRANT ANALYSIS**



PROJECT: KY 3 Auxier Corridor Study

ITEM NUMBER: 0

MARS NUMBER: 0

REQUEST DATE: February 8, 2022

ANALYST: ST

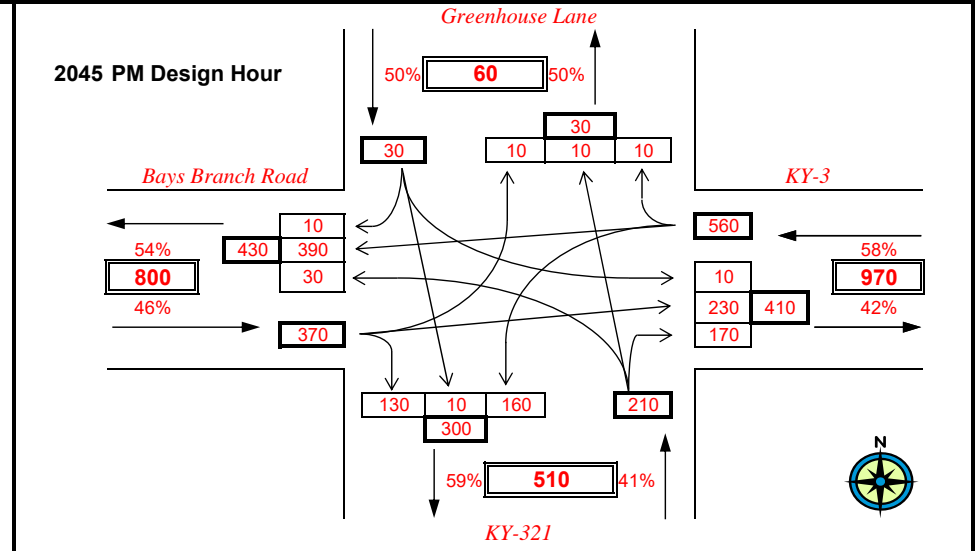
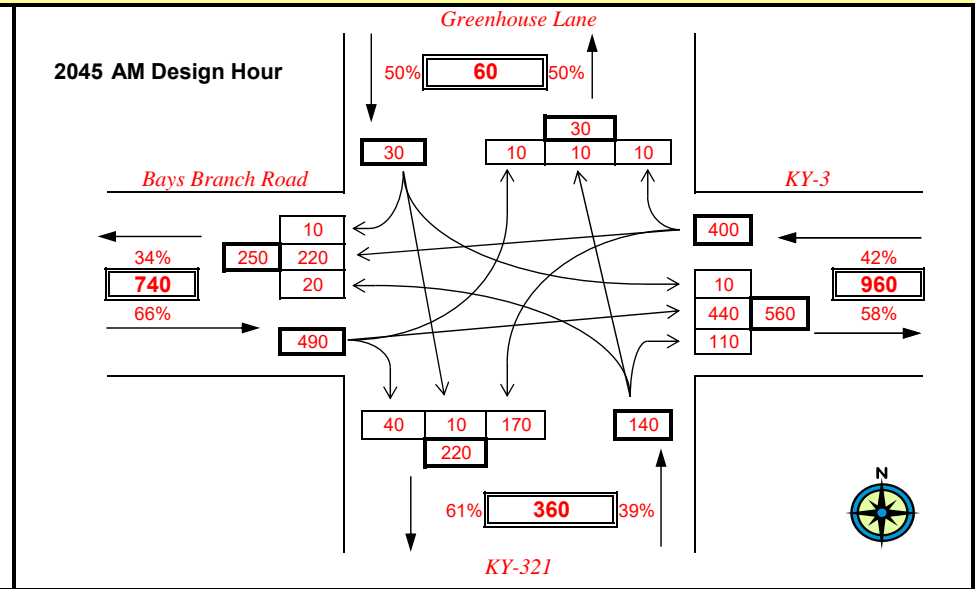
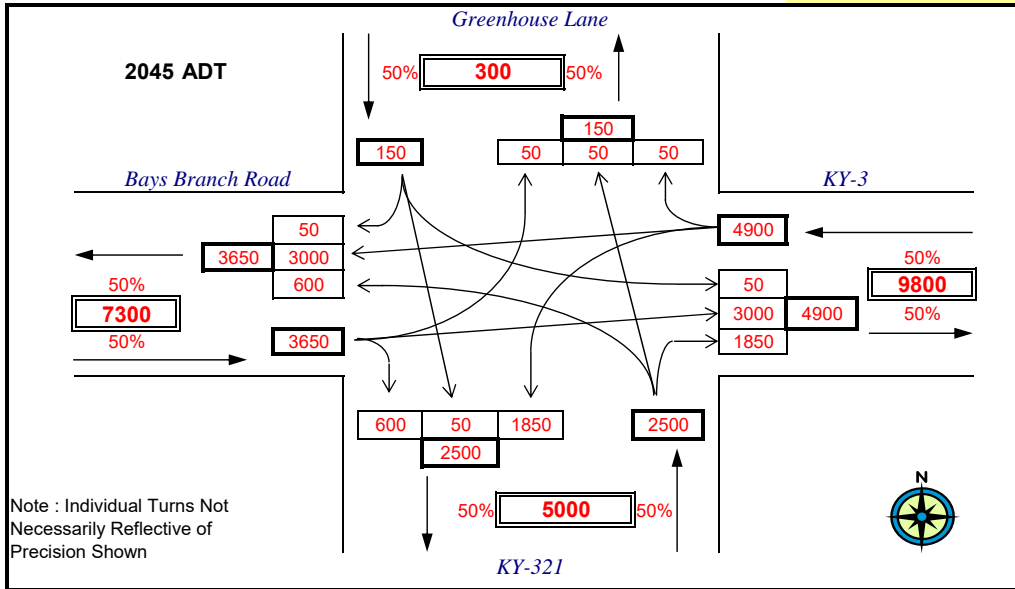
YEAR: 2045 ADT and Design Hour Volumes

INTERSECTION: KY-321 & KY-3 (Bays Branch Road)

NOTE: K-Factors, Directional Distributions, and Peak Hour Factors were determined from a 2045 Turning Movement Count. AM and PM DHVs represent 30th highest hour estimates for each turn maneuver.

TURN MOVEMENT (2045)

****DHV TURN MOVEMENT FORECASTS SHOULD NOT BE USED FOR SIGNAL TIMING OR WARRANT ANALYSIS**

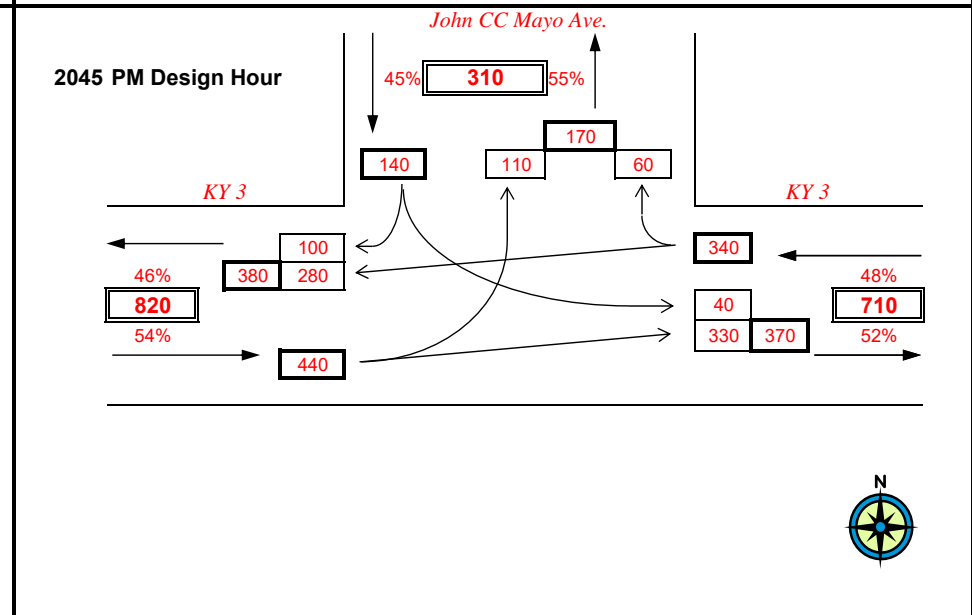
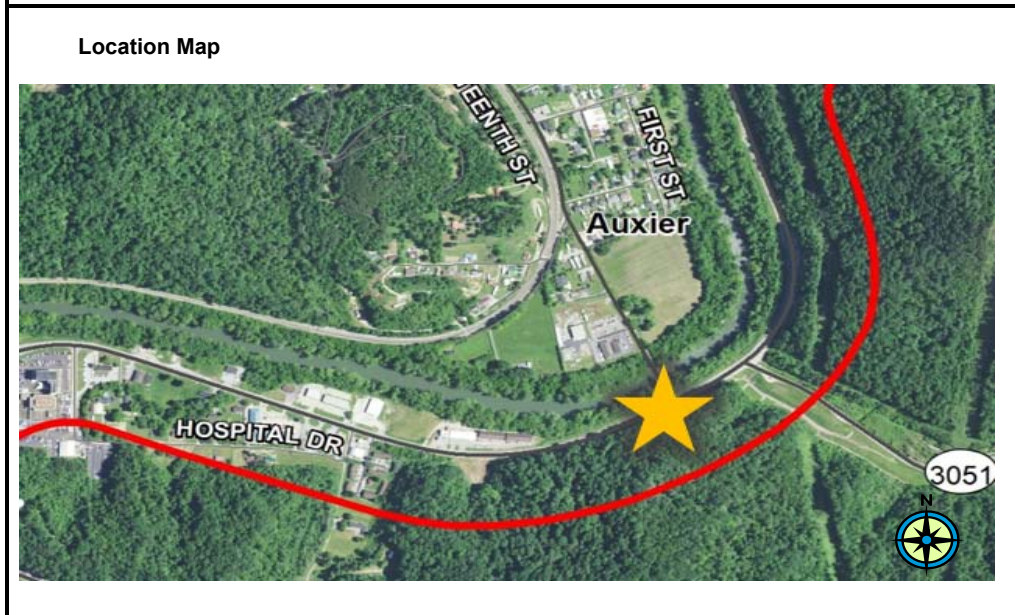
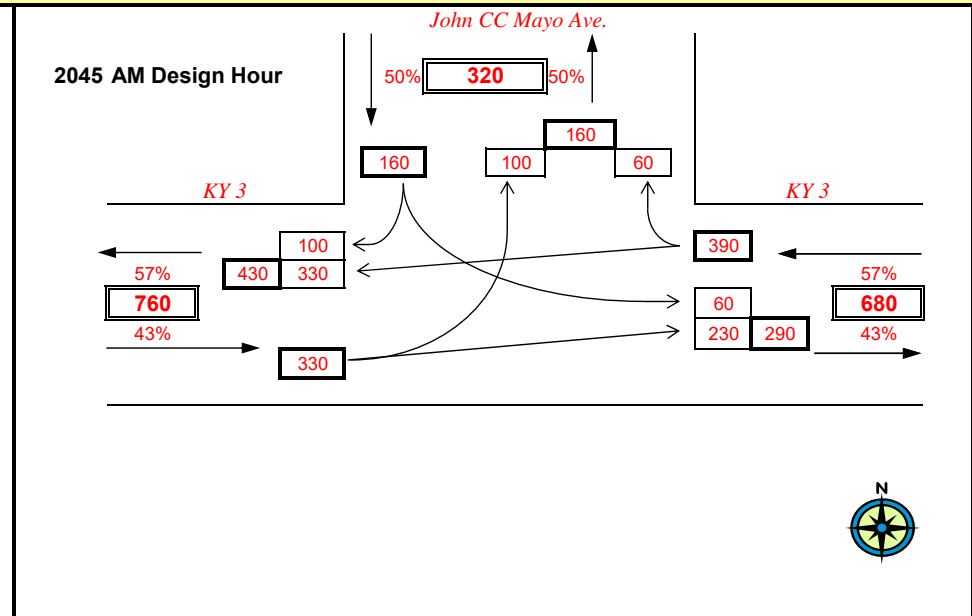
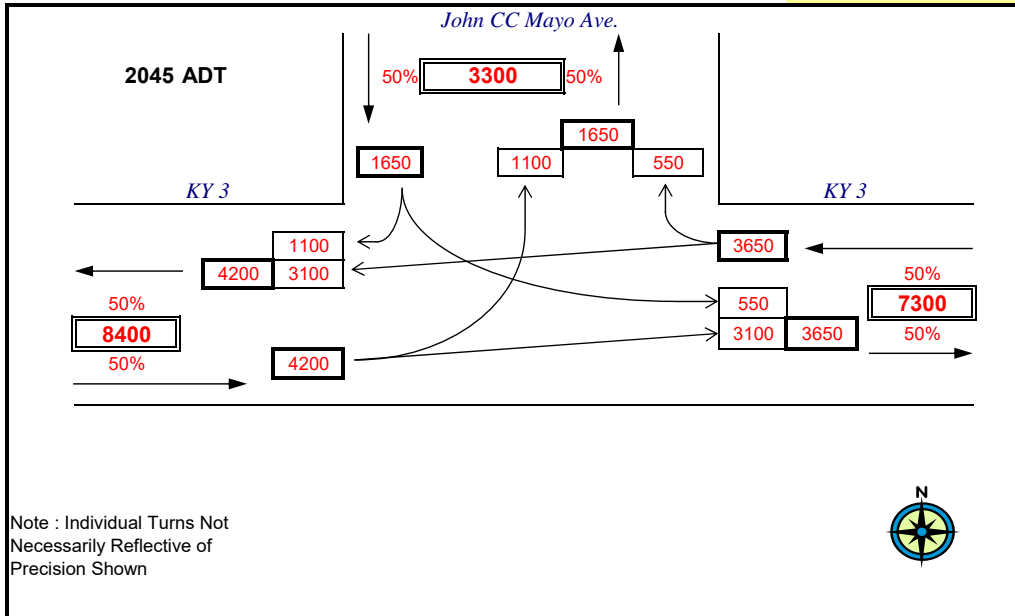


PROJECT: KY 3 Auxier Corridor Study
 ITEM NUMBER: 0
 MARS NUMBER: 0
 REQUEST DATE: February 8, 2022
 ANALYST: ST
 YEAR: 2045
 INTERSECTION: KY 3 at KY 3051 (John CC Mayo Ave)

NOTE: K-Factors, Directional Distributions, and Peak Hour Factors were determined from a 2045 Turning Movement Count. AM and PM DHVs represent 30th highest hour estimates for each turn maneuver.

TURN MOVEMENT (2045)

****DHV TURN MOVEMENT FORECASTS SHOULD NOT BE USED FOR SIGNAL TIMING OR WARRANT ANALYSIS**



PROJECT: KY 3 Auxier Corridor Study
 ITEM NUMBER: 0
 MARS NUMBER: 0
 REQUEST DATE: February 8, 2022
 ANALYST: ST
 YEAR: 2045 ADT and Design Hour Volumes
 INTERSECTION: KY-321 & KY-3

NOTE: K-Factors, Directional Distributions, and Peak Hour Factors were determined from a 2045 Turning Movement Count. AM and PM DHVs represent 30th highest hour estimates for each turn maneuver.

TURN MOVEMENT (2045)

****DHV TURN MOVEMENT FORECASTS SHOULD NOT BE USED FOR SIGNAL TIMING OR WARRANT ANALYSIS**

