

Cobb County Department of Transportation

# East-West Connector Needs Assessment

**Traffic and Safety Analysis Report**

August 8, 2024

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## 1 Introduction and Background

The East-West Connector, spanning 8.5 miles, is a Principal Arterial that serves as a vital thoroughfare connecting southeastern and southwestern Cobb County. This roadway experiences a significant volume of commuter traffic on a daily basis, with predominantly residential land uses located to the west and a connection to I-285 in the east. The corridor consists mostly of two lanes in each direction, with occasional segments featuring a third auxiliary lane between major intersections. The speed limit along most of the corridor is set at 45 miles per hour. The East-West Connector connects with Barrett Parkway in the west and Cumberland Parkway in the east.

Given its excellent connectivity to Interstate 285 and other major arterials, the East-West Connector corridor is expected to continue experiencing growth in terms of both commuter and local traffic. Furthermore, there are discussions regarding additional mobility solutions along the corridor, such as bus rapid transit or arterial express lanes. To adequately prepare for future growth, Cobb County intends to conduct a Needs Assessment for the East-West Corridor. This study will encompass approximately 9.3 miles from Powder Springs Road to the Cumberland Parkway at the I-285 overpass and will lay the groundwork for future scoping studies aimed at localized and full corridor improvements along the East-West Connector. The study area including all analyzed intersections is shown in the figure on the next page.

This report focuses on the existing and future traffic operations as well on the historical crashes along the corridor.

## 2 Volume Projections

The key activities performed to project the volumes presented in this document are:

1. Data collection
2. Existing year volume development
3. Growth rate calculation
4. Future year volume development

### 2.1 Data Collection

Traffic counts were collected November 8, 2023.

- Turning movement counts (TMC's) for 27 intersections (see Figure 2-1 and Table 2-1) were collected during the AM and PM peak periods:
  - AM peak period: 6:30 – 9:30 AM
  - PM peak period: 3:30 – 6:30 PM
- 24-hour tube counts were collected at 3 locations (see Figure 2-1, locations A/B/C):
  - Classification
  - Speed

TMC's and tube-counts were taken at fifteen-minute intervals. The raw traffic counts can be found in the ZIP-file in Appendix A.

# East-West Connector Needs Assessment – Traffic and Safety Study

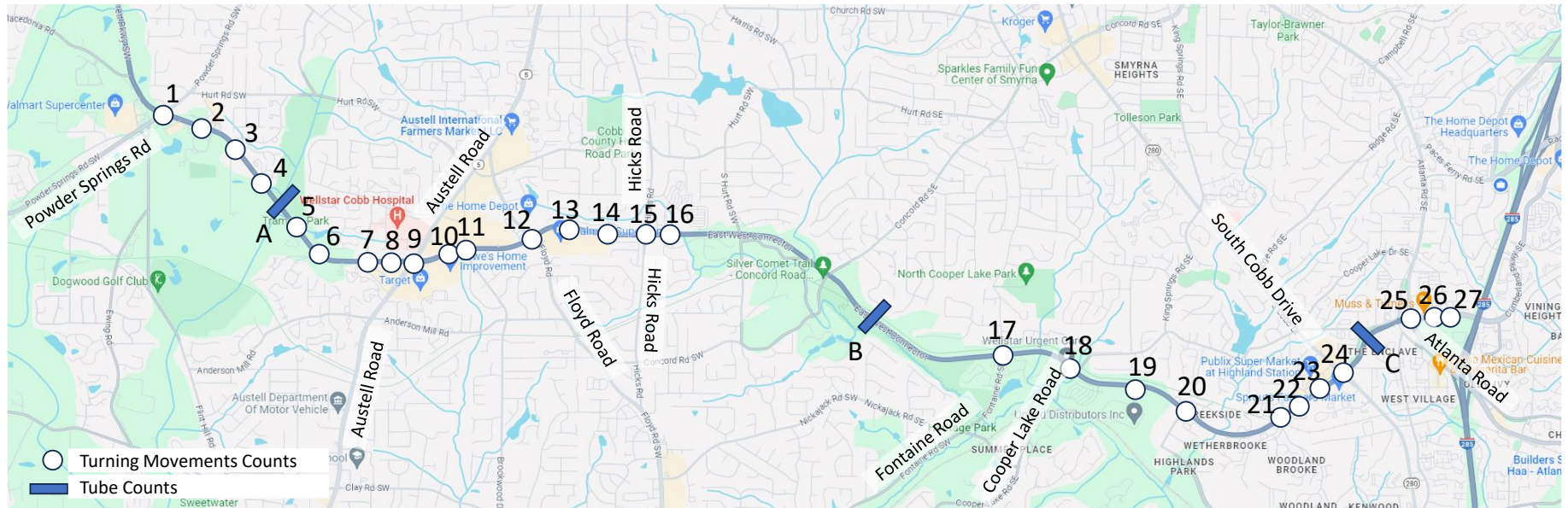


Figure 2-1: Traffic Count Locations

Table 2-1: Intersection TMC's

Int. No	Intersection Description	Int. No	Intersection Description	Int. No	Intersection Description
1	Powder Springs Road	10	Hospital Drive	19	United Drive
2	Marathon Circle	11	Brookwood Drive	20	Highlands Ridge Road
3	Tramore Pointe Pkwy / Asquith Ave	12	Floyd Road	21	Camp Highland Road
4	Police Academy / Tramore Village	13	Walmart Driveway	22	Gaylor Street
5	Tramore Village / Tramore Park	14	Auldryn Drive	23	Old Ivey Village
6	Mesa Valley Way / Champion Drive	15	Hicks Road	24	South Cobb Drive
7	Lipson Drive	16	Barnes Meadow Road	25	Atlanta Road
8	ATT / Kohl's Driveway	17	Fontaine Road	26	Bridgehaven Drive
9	Austell Road	18	Cooper Lake Road	27	Gilmore Road

## 2.2 Existing Year Vehicular Volumes

The TMC data collected on November 8, 2023, was converted into design hourly vehicular volumes (DHVs) using GDOT’s Traffic Factors. The AM and PM peak hours were determined based on the four 15-minute time intervals with the highest traffic volumes from the 3-hour peak period counts, which were:

- AM Peak Hour: 7:15 – 8:15 AM
- PM Peak Hour: 5:15 – 6:15 PM

The 2023 peak hour volume diagrams can be found in Appendix B.

## 2.3 Future Year Vehicular Volumes

To forecast future year volumes, a growth rate was calculated using four available data sources in the surrounding area. Table 2-2 presents the range of sources for growth rate development.

The growth rate for the area was calculated using the annual volume statistics from GDOT Traffic Analysis and Data Application (TADA), the County census data, the Governor’s Office of Planning and Budget (OPB) projections, and the Metropolitan Planning Organization Travel Demand Model data. For each of the sources, there were volume or population pairs used to calculate the growth rate. For instance, the TADA provides actual counts. Using a recent count and a historic count to form a volume pair, the growth rate can be calculated with the following equation:

$$\text{Annual Growth Rate} = \left( \frac{\text{End Count}}{\text{Begin Count}} \right)^{\frac{1}{\text{End Year} - \text{Begin Year}}} - 1$$

The growth rate calculation for the MPO model data, the census data, and the OPB data utilizes the same equation. Note growth rates from the TADA data and the Cobb County Census data are based on historic data, whereas the growth rates from the Governor’s OPB Projections and the MPO model are based on projected future data.

Table 2-2 Growth Rate Sources, Growth Rate Weights

Data Source	Data Years	Obtained From	Annual Growth Rate	Short Term Weighting	Long Term Weighting
GDOT TADA	2012 – 2023	Internet Website <sup>1</sup>	1.56%	30%	0%
Cobb County Census	2010 – 2020	Internet Website <sup>2</sup>	1.08%	30%	0%
Governor’s OPB Projections	2023 – 2055	Internet Website <sup>3</sup>	0.62%	20%	50%
MPO TDM	2020 – 2040	Cube Models	0.54%	20%	50%

Using the four annual growth rates, both a short-term growth rate (until 2035) and a long-term growth rate (from 2035 to 2055) were calculated. The short-term growth rate relies more on historical data from available sources,

1 <https://gdottrafficdata.drakewell.com/publicmultinodemap.asp>

2 <https://www.census.gov/quickfacts/fact/table/cobbcountygeorgia/PST045223>

3 <https://opb.georgia.gov/census-data/population-projections>

while the long-term growth rate is based solely on predicted future growth rates. The weights for these rates are displayed in Table 2-2. The average short-term growth rate is determined to be 1.02%, while the long-term growth rate is calculated as 0.58%. These percentages are applied to project the volumes for 2035 and 2055. The future year volume diagrams can be found in Appendix C.

## 2.4 Trucks

Truck percentages were retrieved from the traffic counts. Table 2-3 shows the average truck percentages for all approaches for each intersection. With an average of 3.5%, the truck percentages in the AM peak are higher than the average 1.5% in the PM peak.

Table 2-3: Average Truck Percentages – All Intersection Approaches (2023)

Int. No	Intersection	AM	PM	Int. No	Intersection	AM	PM
1	Powder Springs Road	3.8%	1.7%	15	Hicks Rd	3.2%	1.1%
2	Marathon Circle	3.5%	1.7%	16	Barnes Meadow Rd	2.8%	0.7%
3	Tramore Pointe Pkwy/ Asquith Ave	3.9%	2.1%	17	Fontaine Rd	2.7%	1.0%
4	Police Academy / Tramore Village	4.1%	2.3%	18	Cooper Lake Rd	2.6%	1.0%
5	Tramore Village / Tramore Park	4.1%	1.8%	19	United Dr	3.7%	1.1%
6	Mesa Valley Way/ Champion Dr	4.1%	2.1%	20	Highlands Ridge Rd	3.7%	1.2%
7	Lipson Dr	3.8%	1.8%	21	Camp Highland Rd	3.8%	1.5%
8	ATT / Kohl's	4.2%	2.0%	22	Gaylor St	3.4%	1.2%
9	Austell Rd	3.6%	1.7%	23	Old Ivey Village	3.3%	1.2%
10	Hospital Dr	4.5%	1.8%	24	South Cobb Dr	3.3%	1.5%
11	Brookwood Dr	4.2%	1.7%	25	Atlanta Rd	2.7%	1.2%
12	Floyd Rd	4.3%	1.6%	26	Bridgehaven Dr	2.1%	0.9%
13	Walmart	3.4%	1.2%	27	Gilmore Rd	2.0%	1.7%
14	Auldyn Dr	2.7%	0.7%				

Figure 2-2 through Figure 2-7 present the average percentages of mainline trucks throughout the day for the tube count locations A, B, and C in both the Eastbound and Westbound directions. It is evident that the distribution of truck percentages fluctuates throughout the day. The average peak hour truck percentages on the main line are 5.8% in the AM peak hour and 3.6% in the PM peak hour. During nighttime hours when overall volumes are lower, the mainline truck percentages reach their peak. A maximum of 23% is observed at Location B, at the Silver Comet Trail Overpass in westbound direction.

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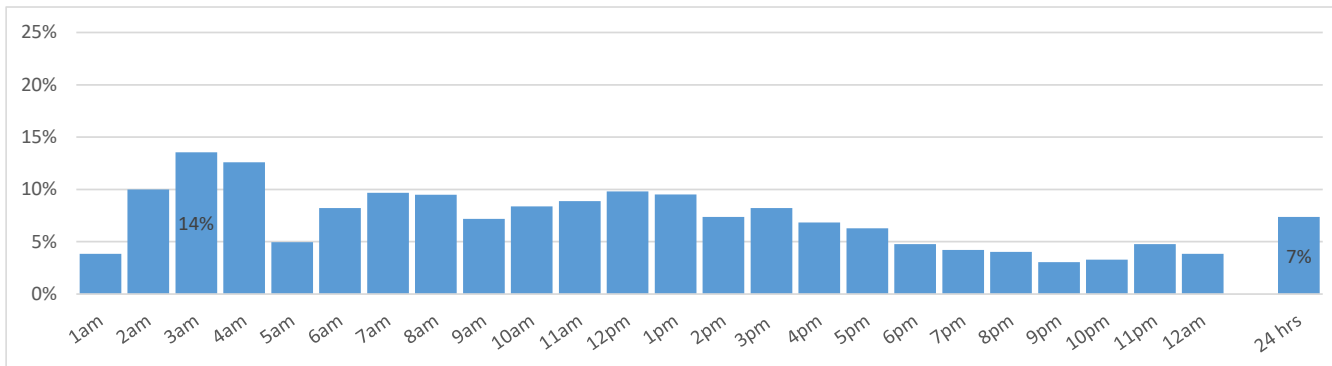


Figure 2-2: Mainline Truck Percentages at Location A, East-West Connector, West of Tramore Park, Eastbound (2023)

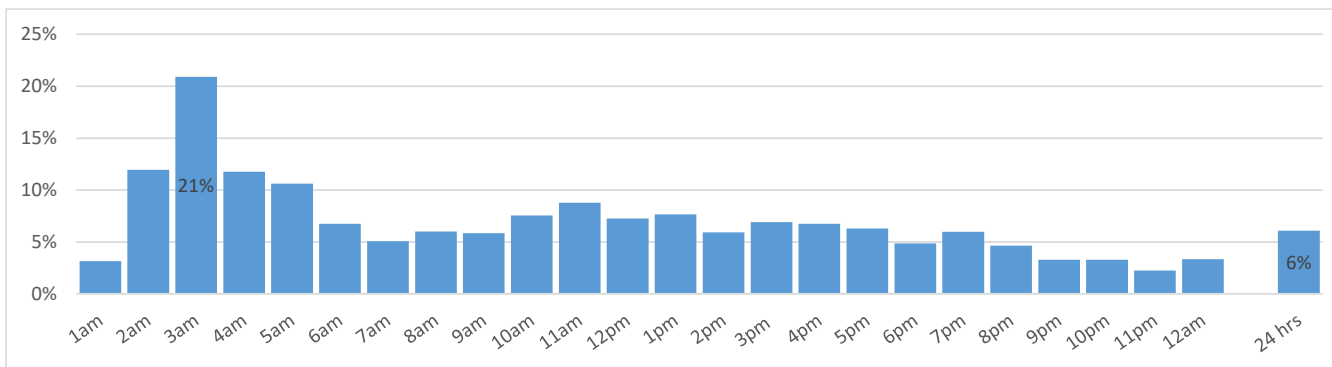


Figure 2-3: Mainline Truck Percentages at Location A, East-West Connector, West of Tramore Park, Westbound (2023)

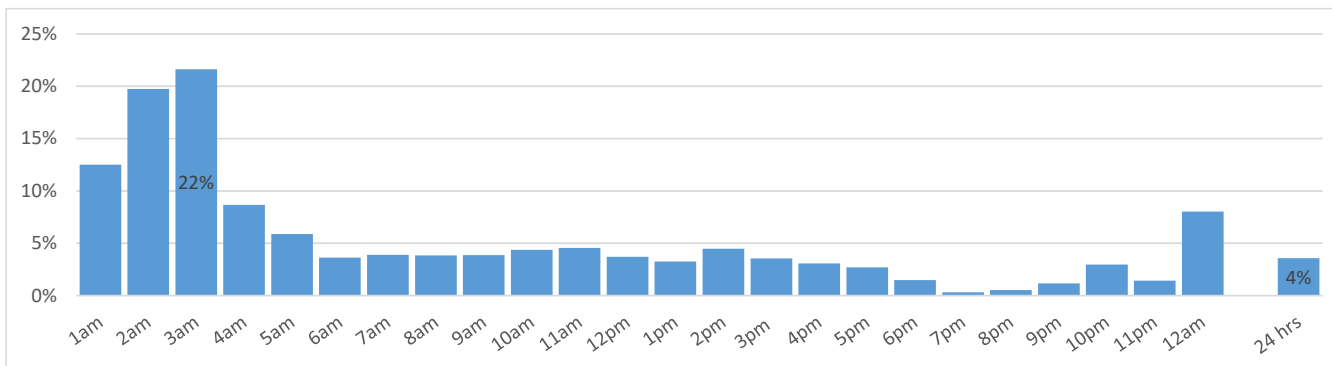


Figure 2-4: Mainline Truck Percentages at Location B, East-West Connector, at Silver Comet Trail Overpass, Eastbound (2023)

East-West Connector Needs Assessment – Traffic and Safety Study

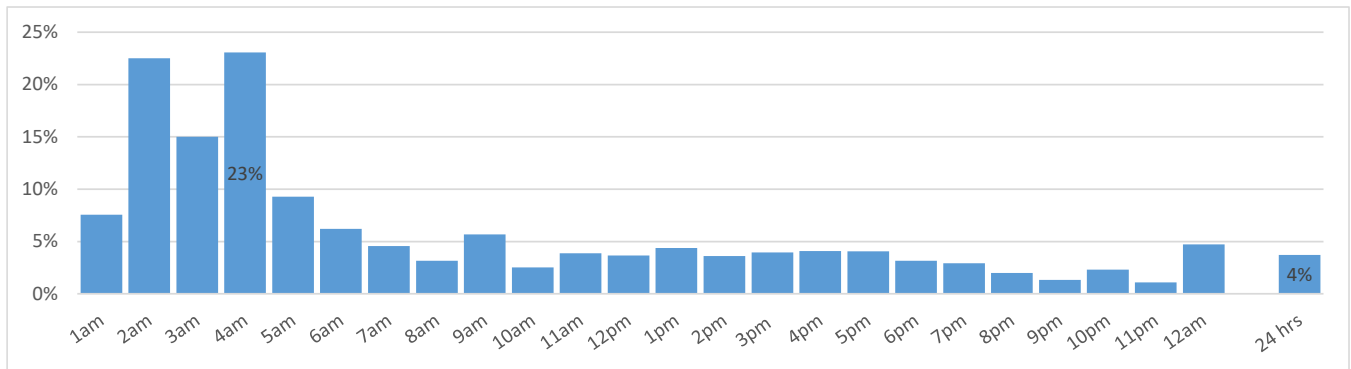


Figure 2-5: Mainline Truck Percentages at Location B, East-West Connector, at Silver Comet Trail Overpass, Westbound (2023)

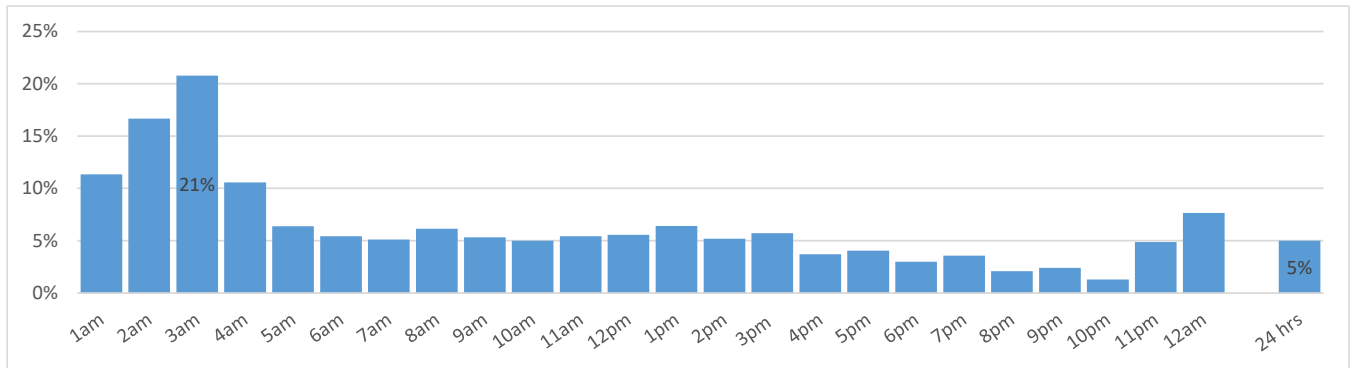


Figure 2-6: Mainline Truck Percentages at Location C, Cumberland Parkway, west of Atlanta Road, Eastbound (2023)

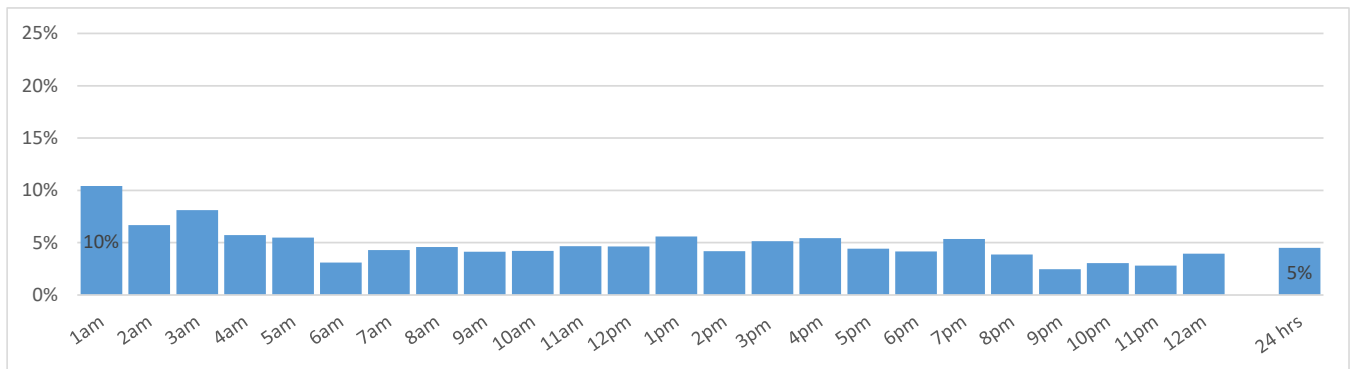


Figure 2-7: Mainline Truck Percentages at Location C, Cumberland Parkway, west of Atlanta Road, Westbound (2023)

**2.5 Bicycles**

Bicycle counts were taken at the 27 intersections. Table 2-4 depicts the bicycle volumes on the travel lanes (road) and using the crosswalks. It can be concluded that most cyclists are using the crosswalks instead of mixing with vehicular traffic. The intersections with Camp Highland Road (intersection 21), Gaylor Street (intersection 22), and South Cobb Drive (intersection 24) experience the highest number of cyclists.

East-West Connector Needs Assessment – Traffic and Safety Study

Table 2-4: Bicycle Counts (2023)

Int. No	Intersection Description	AM Peak Hour			PM Peak Hour		
		Road	Crosswalk	Total	Road	Crosswalk	Total
1	Powder Springs Road	0	0	0	0	0	0
2	Marathon Circle	0	0	0	0	0	0
3	Tramore Pointe Pkwy/ Asquith Ave	0	0	0	0	0	0
4	Police Academy / Tramore Village	0	0	0	0	0	0
5	Tramore Village / Tramore Park	0	2	2	0	2	2
6	Mesa Valley Way/ Champion Dr	0	2	2	0	2	2
7	Lipson Dr	0	0	0	0	0	0
8	ATT / Kohl's	0	1	1	0	1	1
9	Austell Rd	0	0	0	0	0	0
10	Hospital Dr	0	1	1	0	1	1
11	Brookwood Dr	0	0	0	0	0	0
12	Floyd Rd	0	0	0	0	0	0
13	Walmart	0	0	0	0	0	0
14	Auldyn Dr	0	0	0	0	0	0
15	Hicks Rd	0	0	0	0	0	0
16	Barnes Meadow Rd	0	1	1	0	1	1
17	Fontaine Rd	0	0	0	0	0	0
18	Cooper Lake Rd	0	0	0	0	0	0
19	United Dr	0	0	0	0	0	0
20	Highlands Ridge Rd	0	0	0	0	0	0
21	Camp Highland Rd	2	7	9	0	7	7
22	Gaylor St	0	4	4	0	4	4
23	Old Ivey Village	0	0	0	0	0	0
24	South Cobb Dr	2	3	5	0	3	3
25	Atlanta Rd	0	0	0	0	0	0
26	Bridgehaven Dr	0	1	1	0	1	1
27	Gilmore Rd	0	0	0	0	0	0
<b>Total</b>		<b>4</b>	<b>22</b>	<b>26</b>	<b>0</b>	<b>22</b>	<b>22</b>

Figure 2-8 shows more detail on the cyclists passing these three intersections. The cyclists using the crosswalk are mostly on the north side of the intersection. These cyclists are using the Silver Comet Trail and the Silver Comet Trail Connector.

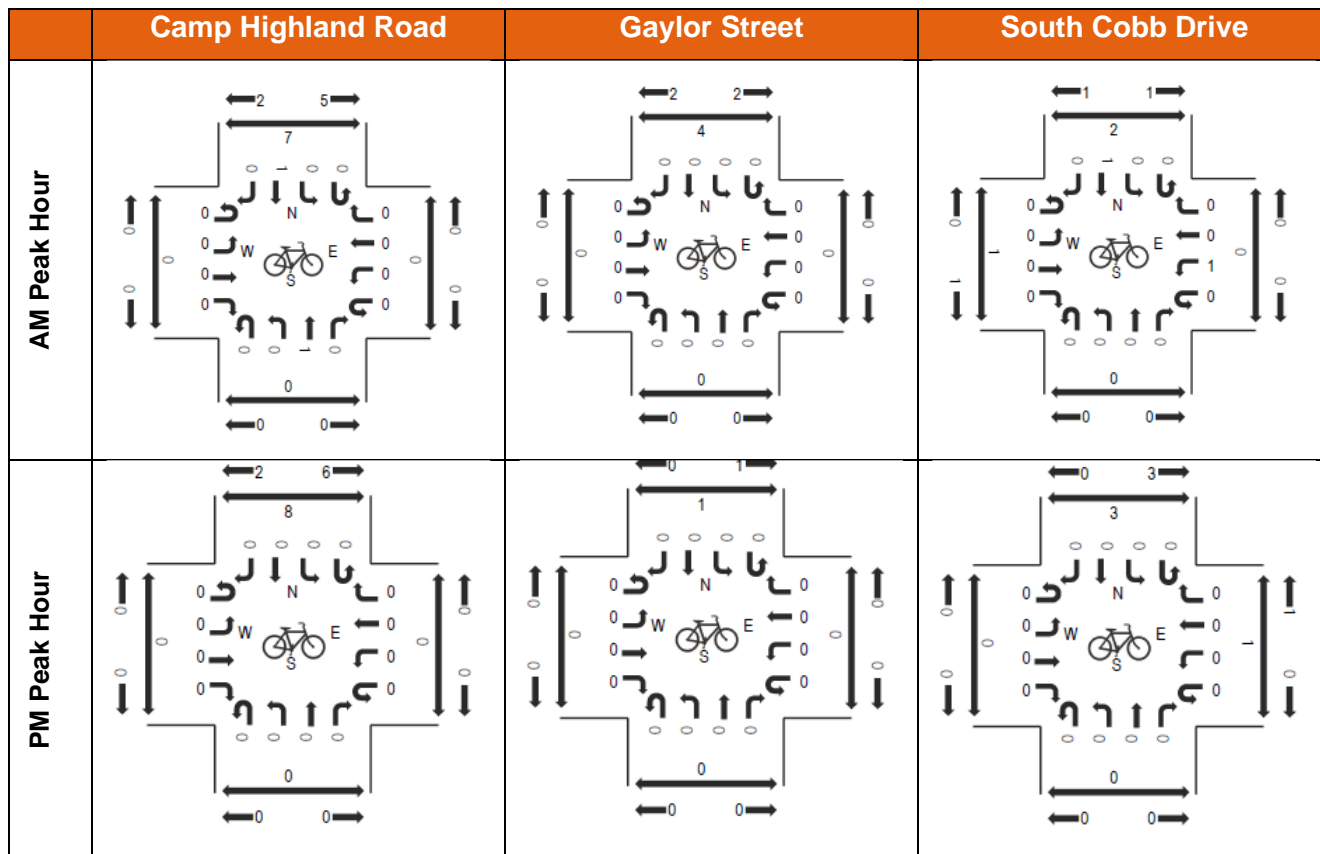


Figure 2-8: Intersection Bicycle Crossings (2023)

### 3 Arterial Travel Time

The travel times for the corridor were obtained from the Regional Integrated Transportation Information System (RITIS). Table 3-1 displays the RITIS travel time results for westbound travel, while Table 3-2 presents the results for eastbound travel. These tables provide the average travel times for Tuesdays, Wednesdays, and Thursdays in 2023. Based on the data, it can be concluded that, on an average day, it takes longer to travel the corridor during the PM peak hour compared to the AM peak hour. For westbound travel, the average travel time is 26.69 minutes during the PM peak hour, whereas it is 15.89 minutes during the AM peak hour. Similarly, for eastbound travel, the average travel time is 20.03 minutes during the PM peak hour and 9.63 minutes during the AM peak hour.

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Table 3-1: Average Speed and Travel Time: Westbound (RITIS 2023 TUE/WED/THU)

Corridor	RITIS Segment	RITIS ID	Length (miles)	AM peak hour		PM peak hour	
				Speed (mph)	Time (min)	Speed (mph)	Time (min)
Cumberland Parkway	ATLANTA RD SE	101-13244	0.57	27	1.26	13	2.61
	GA-280/S COBB DR SE	101-13243	0.57	28	1.22	9	3.79
	GA-280/S COBB DR SE	101N13243	0.02	28	0.05	9	0.16
East-West Connector	GA-280/S COBB DR SE	101N12970	0.03	19	0.10	12	0.16
	HIGHLANDS RIDGE RD SE	101-12969	1.12	38	1.77	20	3.36
	COOPER LAKE RD SE	101-12968	0.77	38	1.21	17	2.71
	CONCORD RD SE	101-12967	1.80	49	2.20	46	2.35
	HICKS RD SW	101-12966	1.24	48	1.55	35	2.13
	FLOYD RD SW	101-12965	0.74	33	1.35	32	1.40
	FLOYD RD SW	101N12965	0.02	33	0.04	32	0.04
	BROOKWOOD DR SW	101-12964	0.42	37	0.68	22	1.15
	GA-5/AUSTELL RD SW	101-12963	0.29	21	0.83	14	1.25
	GA-5/AUSTELL RD SW	101N12963	0.05	21	0.13	14	0.20
	POWDER SPRINGS RD SW	101-12962	1.94	34	3.42	22	5.28
	POWDER SPRINGS RD SW	101N12962	0.04	34	0.08	22	0.12
<b>Entire Corridor Westbound</b>			<b>9.62</b>	<b>36</b>	<b>15.89</b>	<b>22</b>	<b>26.69</b>
Cumberland Parkway Corridor			1.16	28	2.53	11	6.56
East-West Connector Corridor			8.46	38	13.37	25	20.13

Table 3-2: Average Speed and Travel Time: Eastbound (RITIS 2023 TUE/WED/THU)

Corridor	RITIS Segment	ID	Length (miles)	AM peak hour		PM peak hour	
				Speed (mph)	Time (min)	Speed (mph)	Time (min)
Cumberland Parkway	BEECH HAVEN TRL SE	101+13245	0.56	32	1.06	30	1.13
	ATLANTA RD SE	101+13244	0.56	23	1.47	26	1.30
	GA-280/S COBB DR SE	101P13243	0.02	15	0.09	15	0.09
East-West Connector	GA-280/S COBB DR SE	101P12970	0.03	21	0.08	29	0.06
	GA-280/S COBB DR SE	101+12970	1.14	21	3.25	29	2.35
	HIGHLANDS RIDGE RD SE	101+12969	0.77	37	1.25	35	1.32
	COOPER LAKE RD SE	101+12968	1.80	21	5.13	39	2.76
	CONCORD RD SE	101+12967	1.24	52	1.43	51	1.46
	HICKS RD SW	101+12966	0.70	42	1.00	29	1.45
	FLOYD RD SW	101P12965	0.07	40	0.10	25	0.16
	FLOYD RD SW	101+12965	0.42	40	0.63	25	1.00
	BROOKWOOD DR SW	101+12964	0.34	32	0.63	26	0.78
	GA-5/AUSTELL RD SW	101P12963	0.06	31	0.11	30	0.11
	GA-5/AUSTELL RD SW	101+12963	1.89	31	3.66	30	3.78
	POWDER SPRINGS RD SW	101P12962	0.05	18	0.15	16	0.17
	<b>Entire Corridor Eastbound</b>			<b>9.62</b>	<b>36</b>	<b>20.03</b>	<b>29</b>
Cumberland Parkway Corridor			1.16	28	2.62	26	2.52
East-West Connector Corridor			8.46	38	17.41	29	15.40

### 3.1 Average Speed Locations

Speed data was collected on November 8<sup>th</sup>, 2023, at the three specific tube count locations as indicated in Figure 2-1. The results of the speed data are presented in Figure 3-1 through Figure 3-6. The figures display the average distribution of speeds per hour, as well as a 24-hour speed distribution. Each location is represented by an eastbound speed and a westbound speed. The speed limit at all three locations is 45 mph. In the figures, the percentage of traffic that adheres to the speed limit is represented by green. The yellow, orange, red, and purple portions indicate drivers who are exceeding the speed limit by 10 mph, 20 mph, 30 mph, or more, respectively.

#### Location A: East-West Connector, West of Tramore Park

Figure 3-1 illustrates the westbound speed distribution, while Figure 3-2 depicts the eastbound speed distribution for Location A. From the data, it can be concluded that most drivers are exceeding the speed limit. 80% of westbound drivers and 67% of eastbound drivers are observed to be speeding over the 45-mph speed limit. Furthermore, 25% of westbound drivers and 13% of eastbound drivers are traveling at speeds that are more than 10 mph above the speed limit. The average speeds are higher in the eastbound direction than in the westbound direction.

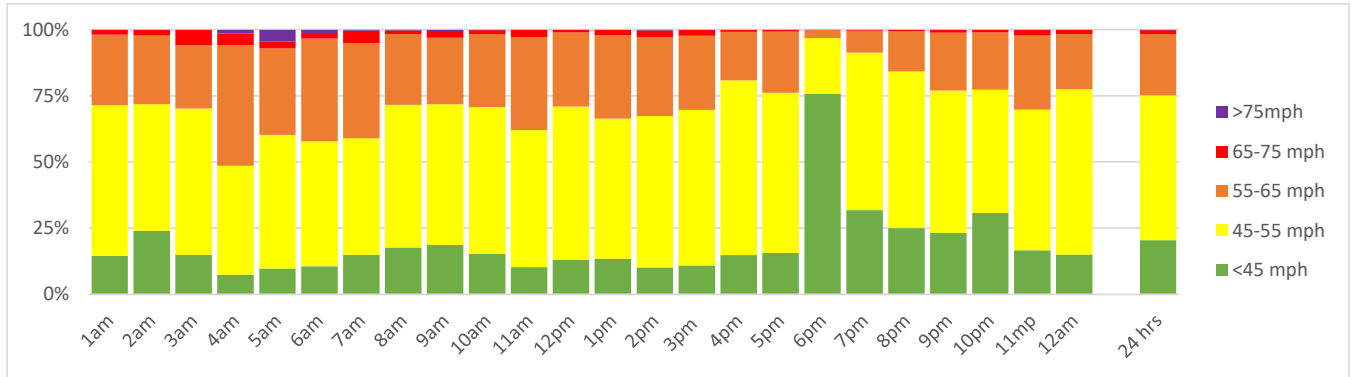


Figure 3-1: Average Speed at Location A, East-West Connector, West of Tramore Park, Westbound (2023)

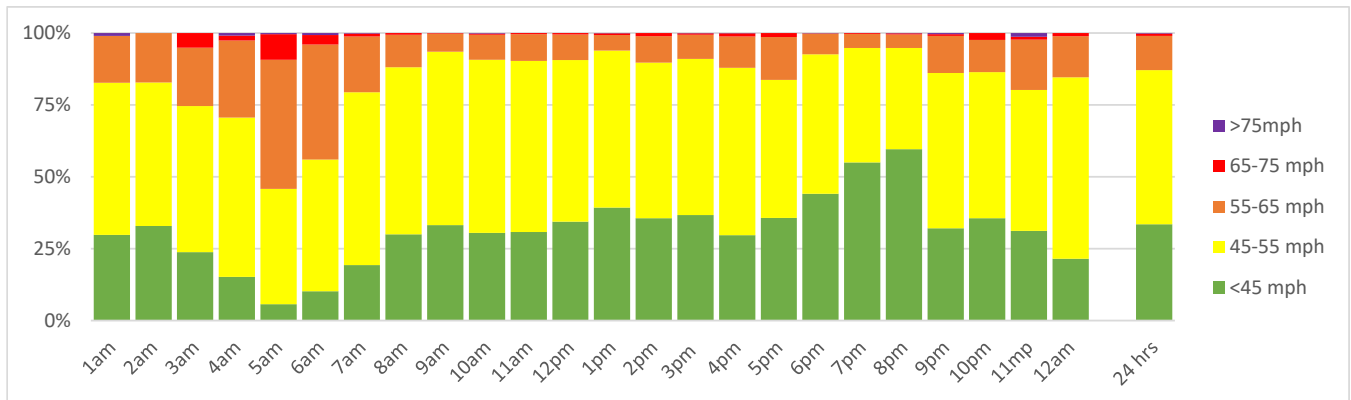


Figure 3-2: Average Speed at Location A, East-West Connector, West of Tramore Park, Eastbound (2023)

**Location B: East-West Connector, near Silver Comet Trail overpass**

The segment of the East-West Connector between Fontaine Road and Barnes Meadow Road spans 2.4 miles without any side roads. The straight nature of this section tends to result in higher speeds (see Figure 3-3 for westbound speeds, and Figure 3-4 for eastbound speeds). Specifically, only 8.5% of westbound drivers are observed to be driving at or below the speed limit. The majority, 64%, of westbound traffic is traveling within the range of 45-55 mph, while 26% of drivers are exceeding the speed limit with speeds ranging from 55-65 mph. For eastbound traffic, the percentages are as follows: 13% are not speeding, 46% are driving within the range of 45-55 mph, and 36% are traveling at speeds between 55-65 mph.

During the nighttime hours, speeds tend to increase. Specifically, between 5-6 am, it is observed that 11.6% of eastbound traffic is traveling at speeds ranging from 65-75 mph, while 1% of drivers are exceeding 75 mph.

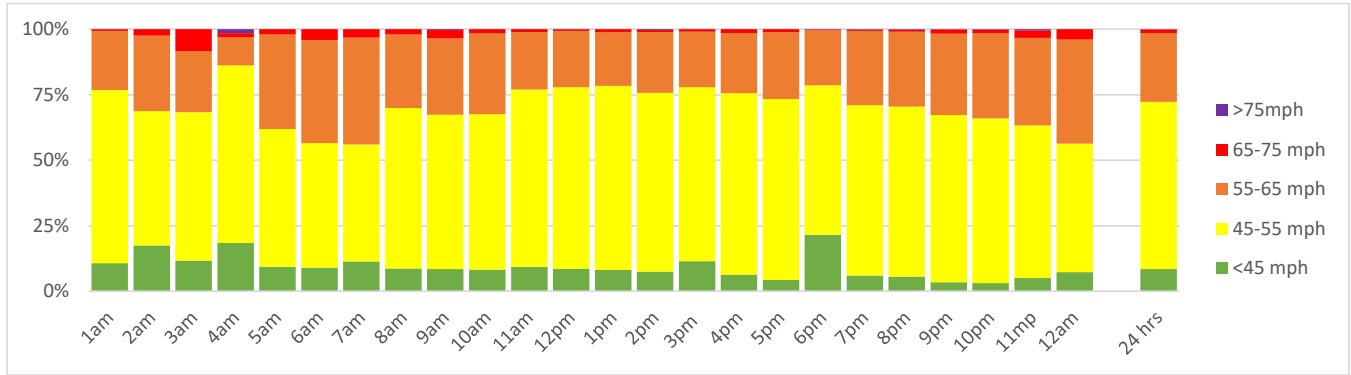


Figure 3-3: Average Speed at Location B, East-West Connector, at Silver Comet Trail Overpass, Westbound (2023)

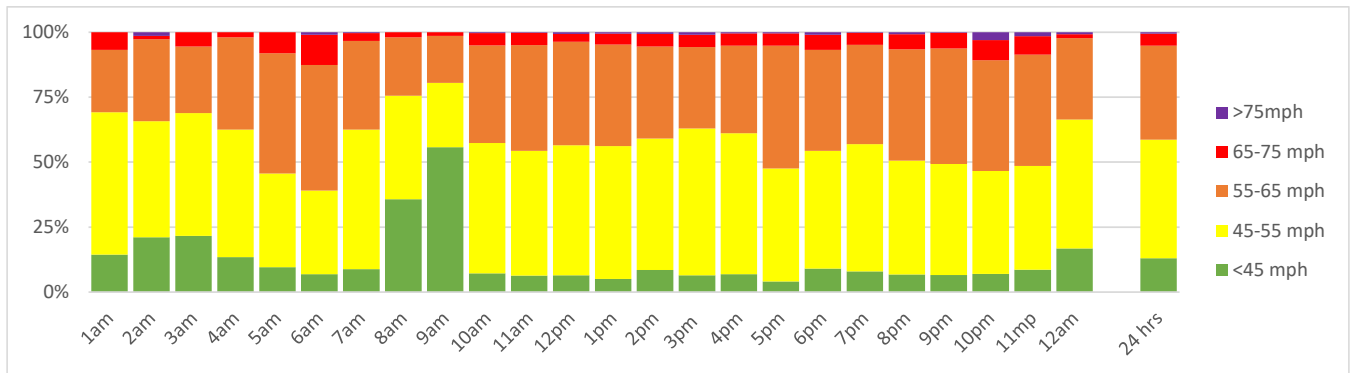


Figure 3-4: Average Speed at Location B, East-West Connector, at Silver Comet Trail Overpass, Eastbound (2023)

**Location C: Cumberland Parkway, west of Atlanta Road**

Speed location C is situated on Cumberland Parkway between Atlanta Road and South Cobb Drive. In contrast to the other two locations, the average speeds observed along this 0.6-mile segment are not as high (see Figure 3-5 and Figure 3-6). The congestion levels in this area are greater, resulting in most of the traffic adhering to or driving at speeds below the designated speed limit.

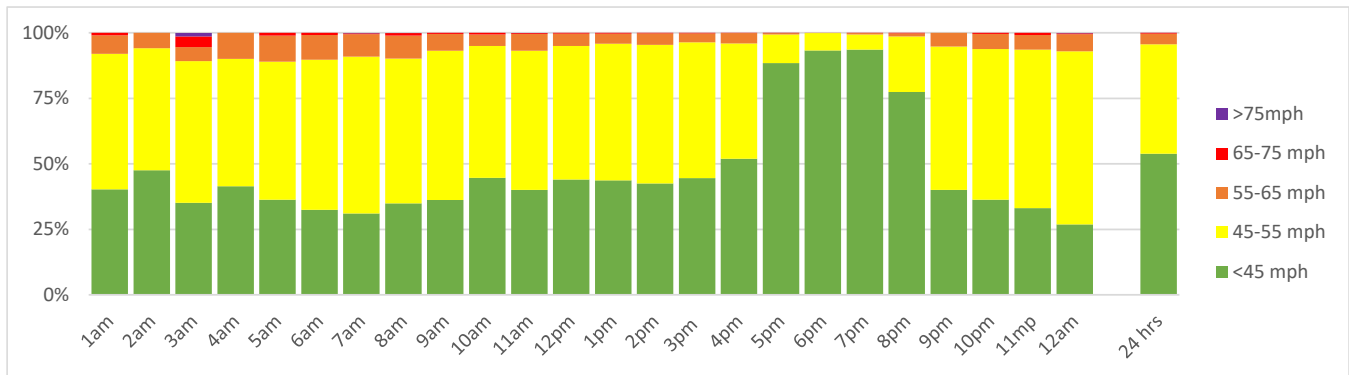


Figure 3-5: Average Speed at Location C, Cumberland Parkway, west of Atlanta Road, Westbound (2023)



Figure 3-6: Average Speed at Location C, Cumberland Parkway, west of Atlanta Road, Eastbound (2023)

## 4 Existing Operations

Synchro was used to study traffic operations at intersections and SimTraffic was used to study travel times along the corridor. To match the existing field conditions and travel times, the Synchro models were calibrated. The following adjustments were included in the model:

- To accurately depict the non-compliance of drivers with the speed limit on the roadway section between Fontaine Road and Barnes Meadow Road, the models were adjusted to reflect this behavior. As vehicles in the model typically adhere to the speed limits coded in the model, the model speed limit was adjusted to simulate the observed speeding in this section.
- Model signal timings were adjusted at the intersections of East-West Connector at Atlanta Road and East-West Connector at South Cobb Drive to replicate the currently existing congestion patterns more accurately.
- Model through capacities were reduced along East-West Connector westbound between the intersections with Gilmore Road and with South Cobb Drive to better replicate the existing congestion build-up patterns.

**4.1 Intersection Operations 2023**

Existing condition traffic operations were analyzed for the study area using existing (2023) turning movement traffic counts during the AM and PM peak hours. Table 4-1 lists the results of the peak hour analysis conducted in Synchro. Delays in seconds per vehicle and the corresponding intersection Level of Service (LOS) are provided for each of the 27 intersections within the corridor. As a reference, for each intersection, the sum of all approach volumes is included in the table, too.

Table 4-1 Synchro 2023 Analysis Results (Delay per Vehicle (sec/veh) / LOS), Sum of Approach Volumes

Int. No.	Intersection	2023 AM			2023 PM		
		Sum Volume	Delay	LOS	Sum Volume	Delay	LOS
1	Powder Springs Road	4,485	56.4	E	4,885	57.7	E
2	Marathon Circle	2,900	13.4	B	3,210	18.5	B
3	Tramore Pointe Pkwy / Asquith	2,890	6.4	A	3,005	12.5	B
4	Police Academy / Tramore	2,760	4.1	A	2,890	11.4	B
5	Tramore Village / Tramore	2,745	2.9	A	2,915	7.5	A
6	Mesa Valley Way/ Champion	2,920	10.8	B	3,035	6.1	A
7	Lipson Dr	2,945	11.5	B	3,085	24.7	C
8	ATT / Kohl's	2,540	0.0	A	2,845	0.5	A
9	Austell Rd	4,870	50.8	D	5,265	53.2	D
10	Hospital Dr	2,550	13.1	B	3,025	27.8	C
11	Brookwood Dr	3,035	17.5	B	3,490	36.5	D
12	Floyd Rd	3,420	42.1	D	3,875	54.8	D
13	Walmart	2,270	8.9	A	2,580	15.9	B
14	Auldyn Dr	2,410	12.2	B	2,515	5.5	A
15	Hicks Rd	3,185	49.6	D	3,390	44.3	D
16	Barnes Meadow Rd	2,115	8.4	A	2,255	5.9	A
17	Fontaine Rd	2,815	78.5	E	2,945	20.8	C
18	Cooper Lake Rd	3,735	42.2	D	3,920	38.7	D
19	United Dr	3,015	8.3	A	3,140	2.8	A
20	Highlands Ridge Rd	3,130	9.8	A	3,265	37.9	D
21	Camp Highland Rd	2,835	10.8	B	2,965	3.9	A
22	Gaylor St	2,980	11.7	B	3,305	20.5	C
23	Old Ivey Village	2,825	N/A*	N/A*	3,095	N/A*	N/A*
24	S Cobb Dr	5,420	58.3	E	5,540	59.4	E
25	Atlanta Rd	4,685	142.4	F	4,875	47.2	D
26	Bridgehaven Dr	1,075	0.4	A	1,300	1.1	A
27	Gilmore Rd	1,135	9.1	A	1,295	7.2	A
Number intersections with LOS F		1			0		
Number intersections with LOS E		3			2		

\* Delay not provided in Synchro

Four intersections namely, Powder Springs Road, Fontaine Road, South Cobb Drive, and Atlanta Road exhibit a LOS E or LOS F in one or both peak hours.

#### 4.2 Travel Times 2023

The travel time comparison between the RITIS data and the model output is shown in Table 4-2. Based on the findings, it can be concluded that the models closely align with the RITIS data, indicating that the models are well-calibrated. When looking at the travel times, the eastbound and westbound travel times together differ only 3-13% for the PM and AM peak hours, respectively.

Table 4-2: 2023 Travel Time (in minutes) Comparison: RITIS data vs Model outputs

Segment		From - To	2023 AM		2023 PM	
			RITIS	Model	RITIS	Model
WB	Cumberland Prkwy	Atlanta Rd - South Cobb Dr	2.5	2.8	6.6	6.9
	East-West Conn	S. Cobb Dr - Powder Springs Rd	13.4	15.4	20.1	19.2
	<b>Entire Corridor</b>	<b>Atlanta Rd - Powder Springs Rd</b>	<b>15.9</b>	<b>18.1</b>	<b>26.7</b>	<b>26.1</b>
EB	East-West Conn	Powder Springs Rd - S. Cobb Dr	17.4	18.9	15.4	17.3
	Cumberland Prkwy	S. Cobb Dr - Atlanta Rd	2.6	3.2	2.5	2.6
	<b>Entire Corridor</b>	<b>Powder Springs Rd - Atlanta Rd</b>	<b>20.0</b>	<b>22.3</b>	<b>17.9</b>	<b>19.9</b>
<b>Eastbound + Westbound</b>			<b>35.9</b>	<b>40.4</b>	<b>44.6</b>	<b>46.0</b>

## 5 Future Year Conditions

To evaluate the traffic operations for the future year 2035 and 2055 (see section 2.3 for future volume development), the existing year synchro models were used as a basis and were coded with future year volumes.

### 5.1 Intersection Operations 2035/2055

Table 5-1 and Table 5-2 list the results of the future year peak hour intersection analysis conducted in Synchro for 2035 and 2055 respectively.

In 2035, eight intersections would operate under LOS E or F in one or both peak hours. In 2055 it is expected that this number increases to nine. In addition to the four intersections with LOS E or F in 2023 (Powder Springs Road, Fontaine Road, South Cobb Drive, and Atlanta Road), the intersections with Austell Road, Brookhaven Drive, Floyd Road, Hicks Road, and Cooper Lake Road also exhibit a LOS E or F in one or both peak hours.

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Table 5-1: Synchro 2035 Analysis Results (Delay per Vehicle (sec/veh) / LOS), Sum of Approach Volumes

Int. No.	Intersection	2035 AM			2035 PM		
		Sum Volume	Delay	LOS	Sum Volume	Delay	LOS
1	Powder Springs Road	5,065	72.7	E	5,520	70.9	E
2	Marathon Circle	3,275	17.2	B	3,630	21.8	C
3	Tramore Pointe Pkwy / Asquith	3,265	8.5	A	3,390	14.1	B
4	Police Academy / Tramore	3,115	4.8	A	3,260	11.8	B
5	Tramore Village / Tramore Park	3,095	3.1	A	3,290	7.2	A
6	Mesa Valley Way/ Champion Dr	3,290	10.8	B	3,425	7.1	A
7	Lipson Dr	3,325	13.8	B	3,485	26.1	C
8	ATT / Kohl's	2,870	0.0	A	3,210	0.5	A
9	Austell Rd	5,505	60.3	E	5,960	57.5	E
10	Hospital Dr	2,885	13.6	B	3,420	28.0	C
11	Brookwood Dr	3,435	18.7	B	3,945	40.3	D
12	Floyd Rd	3,865	41.5	D	4,370	65.1	E
13	Walmart	2,565	9.6	A	2,920	19.5	B
14	Auldyn Dr	2,720	13.2	B	2,840	5.7	A
15	Hicks Rd	3,595	76.9	E	3,825	50.3	D
16	Barnes Meadow Rd	2,390	10.3	B	2,555	6.3	A
17	Fontaine Rd	3,185	153.4	F	3,330	25.2	C
18	Cooper Lake Rd	4,215	58.6	E	4,425	45.6	D
19	United Dr	3,410	11.7	B	3,555	3.1	A
20	Highlands Ridge Rd	3,535	12.6	B	3,680	39.8	D
21	Camp Highland Rd	3,200	12.8	B	3,350	4.0	A
22	Gaylor St	3,370	12.1	B	3,735	19.6	B
23	Old Ivey Village	3,195	N/A*	N/A*	3,495	N/A*	N/A*
24	S Cobb Dr	6,125	84.2	F	6,265	73.7	E
25	Atlanta Rd	5,300	164.8	F	5,505	53.4	D
26	Bridgehaven Dr	1,215	0.4	A	1,470	1.1	A
27	Gilmore Rd	1,280	9.8	A	1,470	7.9	A
Number intersections with LOS F			3			0	
Number intersections with LOS E			4			4	

\* Delay not provided in Synchro

Table 5-2: Synchro 2055 Analysis Results (Delay per Vehicle (sec/veh) / LOS), Sum of Approach Volumes

Int. No.	Intersection	2055 AM			2055 PM		
		Sum Volume	Delay	LOS	Sum Volume	Delay	LOS
1	Powder Springs Road	5,685	96.7	F	6,200	94.2	F
2	Marathon Circle	3,680	25.5	C	4,070	25.5	C
3	Tramore Pointe Pkwy / Asquith	3,660	10.0	B	3,800	12.7	B
4	Police Academy / Tramore	3,490	5.0	A	3,650	10.7	B
5	Tramore Village / Tramore Park	3,470	2.7	A	3,690	7.7	A
6	Mesa Valley Way/ Champion Dr	3,690	13.3	B	3,840	7.0	A
7	Lipson Dr	3,730	15.0	B	3,910	26.7	C
8	ATT / Kohl's	3,220	0.0	A	3,600	0.4	B
9	Austell Rd	6,190	76.8	E	6,695	72.0	F
10	Hospital Dr	3,240	14.8	B	3,840	25.6	C
11	Brookwood Dr	3,860	21.2	C	4,430	55.7	E
12	Floyd Rd	4,340	49.0	D	4,905	84.0	F
13	Walmart	2,880	10.0	A	3,275	23.2	C
14	Auldyn Dr	3,045	11.9	B	3,185	6.3	A
15	Hicks Rd	4,035	63.1	E	4,290	55.7	E
16	Barnes Meadow Rd	2,685	11.8	B	2,875	6.6	A
17	Fontaine Rd	3,575	259.6	F	3,740	31.8	C
18	Cooper Lake Rd	4,735	98.2	F	4,970	68.1	E
19	United Dr	3,825	21.0	C	4,000	3.3	A
20	Highlands Ridge Rd	3,965	15.0	B	4,120	49.2	D
21	Camp Highland Rd	3,585	16.7	B	3,760	4.2	A
22	Gaylor St	3,780	12.4	B	4,195	21.5	C
23	Old Ivey Village	3,590	N/A*	N/A*	3,925	N/A*	N/A*
24	S Cobb Dr	6,865	118.6	F	7,035	100.5	F
25	Atlanta Rd	5,950	188.3	F	6,180	57.1	E
26	Bridgehaven Dr	1,365	0.4	A	1,650	1.2	A
27	Gilmore Rd	1,430	10.7	B	1,650	9.1	A
Number intersections with LOS F			5			4	
Number intersections with LOS E			2			4	

\* Delay not provided in Synchro

## 5.2 Travel Times 2035/2055

Future year travel times were analyzed using SimTraffic. Table 5-3 displays the westbound and eastbound travel times for 2035 and 2055, along with the travel times for 2023 as a reference. The westbound direction during the AM peak hour and the eastbound direction during the PM peak hour are the off-peak directions. Travel times for the off-peak directions show an increase of 14-16% between 2023 and 2055. However, in the peak directions, travel times experience a more significant increase of 61-90%.

Table 5-3: SimTraffic 2023, 2035, and 2055 Travel Times (in minutes)

Segment		From - To	AM			PM		
			2023	2035	2055	2023	2035	2055
WB	Cumberland Prkwy	Atlanta Rd - South Cobb Dr	2.8	3.0	4.6	6.9	9.3	11.6
	East-West Conn	S. Cobb Dr - Powder Springs Rd	15.4	15.8	16.4	19.2	24.3	38.1
	<b>Entire Corridor</b>	<b>Atlanta Rd - Powder Springs</b>	<b>18.1</b>	<b>18.9</b>	<b>21.0</b>	<b>26.1</b>	<b>33.6</b>	<b>49.6</b>
EB	East-West Conn	Powder Springs Rd - S. Cobb Dr	18.9	25.2	32.4	17.3	18.5	21.1
	Cumberland Prkwy	S. Cobb Dr - Atlanta Rd	3.2	3.3	3.6	2.6	2.8	2.9
	<b>Entire Corridor</b>	<b>Powder Springs Rd - Atlanta</b>	<b>22.3</b>	<b>28.5</b>	<b>36.0</b>	<b>19.9</b>	<b>21.3</b>	<b>24.1</b>

### 5.3 Mainline Volumes 2035/2055

Table 5-4 lists the maximum Service Flow Rates (SFRs) for targeted LOS according to Exhibit 12-38 from TRB’s Highway Capacity Manual (6<sup>th</sup> Edition). These SFRs are in personal cars per hour per lane (pc/h/ln) for a free flow speed of 45 mph. With the average mainline AM and PM peak hour truck percentages of 5.8% and 3.6%, respectively (see section 2.2), and a Personal Car Equivalent of 2.5 per truck<sup>4</sup>, these SFRs can be transformed from **personal cars** per hour per lane into **vehicles** per hour per lane. Since the truck percentages differ for the AM and the PM peak hours, the SFRs in vehicles per lane per hour differ, too. The AM and the PM peak hour SFRs in vehicles per hour per lane are also listed in Table 5-4.

Table 5-4: Maximum SFR for Target LOS in pc/h/hr and Maximum SFR for AM and PM peak hours in veh/h/ln

LOS	Service Flow Rates (pc/h/ln)	AM Service Flow Rates (Veh/h/ln)	PM Service Flow Rates (Veh/h/ln)
A	<290	<265	<274
B	290 – 810	265 – 740	274 – 766
C	810 – 1,170	740 – 1,068	766 – 1,107
D	1,170 – 1,550	1,068 – 1,415	1,107 – 1,466
E	1,550 – 1,900	1,415 – 1,735	1,466 – 1,797
F	>1,900	>1,735	>1,797

Using these LOS boundaries and the mainline volumes for the segments between the intersections, the mainline LOS was calculated. Table 5-5 and Table 5-6 show the mainline peak hour volumes for 2055 and the corresponding LOS for the westbound and eastbound mainline segments respectively. In urban areas, LOS D is an acceptable LOS. All segments operate under LOS D or better. A corridor mainline widening would not be necessary in 2055. It should be mentioned that local intersection widening might be necessary to reduce intersection congestion.

<sup>4</sup> Personal Car Equivalent of 2.5 means that a truck is equal to 2.5 personal cars.

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Table 5-5: 2055 Eastbound Mainline Volumes and LOS

Segment Between Intersections		Lanes	2055 AM		2055 PM	
			Veh.	LOS	Veh.	LOS
Powder Springs Rd	Marathon Cir	2	2,480	D	1,410	B
Marathon Cir	Tramore Pointe Pkwy/Asquith	2	2,480	D	1,420	B
Tramore Village / Tramore Park	Police Academy / Tramore	2	2,340	D	1,440	B
Police Academy / Tramore	Tramore Village / Tramore Park	2	2,355	D	1,440	B
Tramore Pointe Pkwy/Asquith	Mesa Valley Way/ Champion Dr	2	2,360	D	1,455	B
Mesa Valley Way/ Champion Dr	Lipson Dr	2	2,435	D	1,535	C
Lipson Dr	ATT / Kohl's	3	2,095	B	1,450	B
ATT / Kohl's	Austell Rd	3	2,095	B	1,510	B
Austell Rd	Hospital Dr	3	2,080	B	1,250	B
Hospital Dr	Brookwood Dr	2	2,040	C	1,350	B
Brookwood Dr	Floyd Rd	2	2,195	D	1,345	B
Floyd Rd	Walmart	2	1,930	C	1,110	B
Walmart	Auldyn Dr	2	1,950	C	1,165	B
Auldyn Dr	Hicks Rd	2	2,005	C	1,145	B
Hicks Rd	Barnes Meadow Rd	2	1,725	C	995	B
Barnes Meadow Rd	Fontaine Rd	2	1,750	C	970	B
Fontaine Rd	Cooper Lake Rd	2	2,515	D	1,230	B
Cooper Lake Rd	United Dr	2	2,660	D	1,275	B
United Dr	Highlands Ridge Rd	2	2,665	D	1,250	B
Highlands Ridge Rd	Camp Highland Rd	2	2,150	D	1,260	B
Camp Highland Rd	Gaylor St	2	2,350	D	1,395	B
Gaylor St	Old Ivey Village	3	2,275	C	1,450	B
Old Ivey Village	S Cobb Dr	3	2,325	C	1,545	B
S Cobb Dr	Atlanta Rd	3	2,740	C	1,520	B
Atlanta Rd	Bridgehaven Dr	2	940	B	665	B
Bridgehaven Dr	Gilmore Rd	2	925	B	595	B

Table 5-6: 2055 Westbound Mainline Volumes and LOS

Segment Between Intersections		Lanes	2055 AM		2055 PM	
			Veh.	LOS	Veh.	LOS
Powder Springs Rd	Marathon Cir	2	1,050	B	2,305	D
Marathon Cir	Tramore Pointe Pkwy/Asquith	2	1,085	B	2,265	D
Tramore Village / Tramore Park	Police Academy / Tramore	2	1,110	B	2,220	D
Police Academy / Tramore	Tramore Village / Tramore Park	2	1,100	B	2,165	C
Tramore Pointe Pkwy/Asquith	Mesa Valley Way/ Champion Dr	2	1,095	B	2,180	C
Mesa Valley Way/ Champion Dr	Lipson Dr	2	1,185	B	2,250	D
Lipson Dr	ATT / Kohl's	3	1,115	B	2,000	B
ATT / Kohl's	Austell Rd	3	1,175	B	2,080	B
Austell Rd	Hospital Dr	3	1,015	B	2,000	B
Hospital Dr	Brookwood Dr	2	1,085	B	2,120	C
Brookwood Dr	Floyd Rd	2	1,185	B	2,235	D
Floyd Rd	Walmart	2	885	B	1,915	C
Walmart	Auldyn Dr	2	890	B	1,855	C
Auldyn Dr	Hicks Rd	2	950	B	1,905	C
Hicks Rd	Barnes Meadow Rd	2	895	B	1,810	C
Barnes Meadow Rd	Fontaine Rd	2	830	B	1,805	C
Fontaine Rd	Cooper Lake Rd	2	1,015	B	2,450	D
Cooper Lake Rd	United Dr	2	1,065	B	2,680	D
United Dr	Highlands Ridge Rd	2	1,115	B	2,685	D
Highlands Ridge Rd	Camp Highland Rd	2	1,150	B	2,180	C
Camp Highland Rd	Gaylor St	2	1,165	B	2,310	D
Gaylor St	Old Ivey Village	3	1,175	B	2,240	B
Old Ivey Village	S Cobb Dr	3	1,220	B	2,345	C
S Cobb Dr	Atlanta Rd	3	1,365	B	2,265	B
Atlanta Rd	Bridgehaven Dr	2	410	B	920	B
Bridgehaven Dr	Gilmore Rd	2	400	B	900	B

## 6 Origin and Destination Traffic on East-West Connector

As a special study, an origin-destination (OD) analysis was performed for the East-West Connector corridor between South Cobb Drive and Powder Springs Road. The OD analysis was performed with RITIS data and analyzes the feasibility of implementing an express lane system along the East-West Connector. The main side roads were defined as origins and destinations. The relative flows between these side roads and the road segment west of South Cobb Drive were studied. It should be noted that this will not cover all traffic flows along the East-West Connector but will cover the main traffic flows. The RITIS data for the AM and PM peak hours for 2023 were analyzed.

### 6.1 Westbound

Figure 6-1 illustrates the results of the westbound OD-analyses, combining the AM peak and PM peak hours. When looking at the westbound traffic just west of South Cobb Drive with a destination to one of the other seven major westbound locations, it can be noted that approximately 8% of traffic travels the entire corridor passing Powder Springs Road. A significant portion of westbound traffic travels to Powder Springs Road, accounting for 32% of the total. Other notable destinations include Fontaine Road (21%) and Cooper Lake Road (17%). The other destinations accommodate lower travel volumes: Austell Road, 6%, Floyd Road, 7% and Hicks Road, 10%. For the westbound traffic west of South Cobb Drive, about 75% comes from Atlanta Road and 25% from South Cobb Drive.

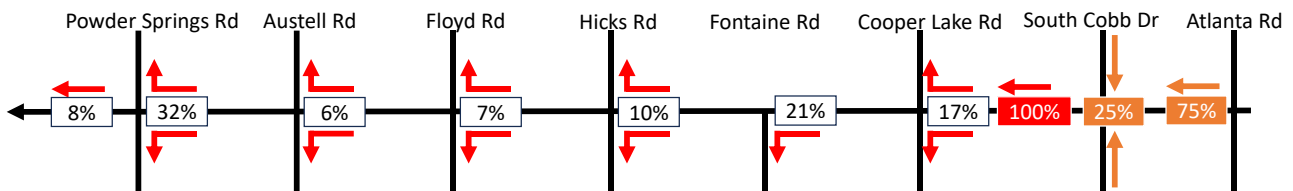


Figure 6-1: Westbound OD-Results – 2023 AM + PM peak hour volumes

### 6.2 Eastbound

Figure 6-2 provides an overview of the results obtained from the eastbound OD-analyses, considering both the AM peak and PM peak hours. Like the westbound traffic, approximately 40% of the eastbound traffic seen around South Cobb Drive is associated with the western section of the corridor. Specifically, 8% originates west of Powder Springs Road, while 32% originates from Powder Springs Road itself. Additionally, relatively high traffic volumes are observed for Fontaine Road (25%) and Cooper Lake Road (17%). Austell Road, Floyd Road, and Hicks Road represent origins with comparatively lower traffic volumes, accounting for 4%, 8%, and 4% of the total, respectively. Among the eastbound vehicles seen west of South Cobb Drive, 18% make a turn onto South Cobb Drive, while the majority, 82%, continue towards Atlanta Road.

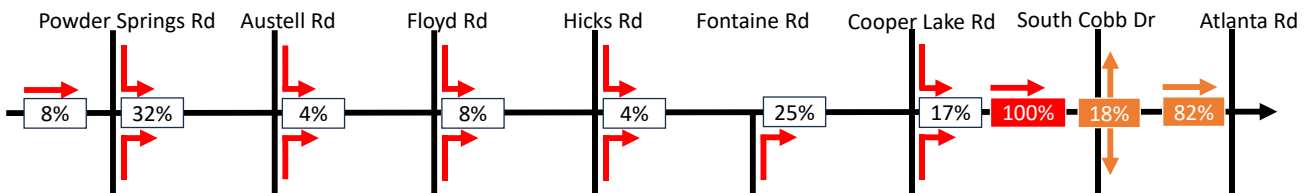


Figure 6-2: Eastbound OD-Results – 2023 AM + PM peak hour volumes

## 7 Corridor Safety Analysis

This section discusses the safety analysis performed for the East-West Connector Corridor. Historical crash data from the last 3 years (2021-2023) from Cobb County was analyzed and summarized in the sections below. The crash data for the intersections of East-West Connector with Fontaine Road and Cooper Lake Road were quality checked by Cobb County, and all other data were not quality checked by Cobb County. Throughout this section of the report, data will be summarized into two categories: intersection crashes and non-intersections crashes, which

occurred along the corridor between the intersections. Crashes located within 100 feet of an intersection are categorized as intersection crashes. The other crashes are categorized as non-intersection crashes.

The crash data includes no injury/property damage only crashes (PDO), complained injury crashes, visible injury crashes, serious injury crashes, and fatal crashes. Serious injury crashes consist of injury crashes that prevent the person from performing daily activities which he/she was capable of before the accident. Visible injury crashes are injury crashes which are clearly seen or evident at the accident scene.

A total of 2,749 crashes have occurred on the East-West Connector between 2021 and 2023 (see Table 7-1). Of these 2,749 crashes, 1,930 crashes occurred within the 27 intersections in the study area, and the other 819 crashes occurred along the corridor outside of the intersections.

Table 7-1: Number of Intersection and Non-Intersection crashes

Crash Location	Number Crashes
Intersection crashes	1,930
Non-intersection crashes	819
<b>Total Corridor</b>	<b>2,749</b>

29% of crashes along the corridor are categorized as Fatal and Injury (FI) crashes. This is equal to a total of 803 FI crashes along the corridor (see Table 7-2), which are broken down further into intersection and non-intersection FI crashes:

- 550 FI intersection crashes.
- 257 FI non-intersection crashes.

Most crashes took place at the intersections of East-West Connector with Austell Road (314 crashes) and with South Cobb Drive (266 crashes). Ten intersections have an above average FI rate (color coded in Table 7-2). Upon closely reviewing intersections with more than 10 crashes, it is observed that relatively smaller intersections exhibit a relatively high FI rate. These intersections include intersection number 8, East-West Connector at ATT and Kohl's, with a 50% FI rate and intersection number 16, East-West Connector with Barnes Meadow Road, at a 56% FI rate.

Table 7-2 Fatal and Injury (FI) Crashes (2021-2023)

Int. No.	Crashes	FI Crashes	% FI Crashes
<b>Intersection Crashes</b>			
1	123	21	17%
2	53	15	28%
3	2	0	0%
4	7	4	57%
5	62	21	34%
6	37	10	27%
7	42	15	36%

Int. No.	Crashes	FI Crashes	% FI Crashes
8	52	26	50%
9	314	85	27%
10	95	25	26%
11	85	25	29%
12	165	54	33%
13	10	4	40%
14	18	5	28%
15	130	38	29%
16	16	9	56%
17	69	27	39%
18	86	35	41%
19	18	3	17%
20	19	3	16%
21	28	7	25%
22	38	10	26%
23	1	0	0%
24	266	70	26%
25	188	37	20%
26	1	1	100%
27	5	0	0%
Total	1,930	550	28%
<b>Non-Intersection Crashes</b>			
Total	819	257	31%
<b>Corridor Crashes (Intersection + Non-Intersection)</b>			
Total	2,749	803	29%

### 7.1 Crash Severity Analysis

Detailed crash severity was analyzed using the KABCO score:

- K = Killed
- A = Serious Injury
- B = Visual Injury
- C = Complaints
- O = Not Injured

From Table 7-3 it can be concluded that between 2021 and 2023:

- Four crashes were reported fatal (K). All four were non-intersection crashes.

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- Although no fatalities were reported at the intersections, the KABCO distribution for intersection crashes is similar to non-intersection crashes.
- 1,942 crashes were reported as Property Damage Only (PDO), which is 70.6% of all crashes.

Table 7-3: Severity of Crashes – KABCO (2021-2023)

Int. No.	Killed (K)	Serious Injury (A)	Visible Injury (B)	Complaint (C)	Not Injured (O)	Total
<b>Intersection Crashes</b>						
1	0	0	3	18	102	123
2	0	0	1	14	38	53
3	0	0	0	0	2	2
4	0	0	1	3	3	7
5	0	1	7	13	41	62
6	0	1	2	7	27	37
7	0	1	4	10	27	42
8	0	1	7	18	26	52
9	0	2	22	61	229	314
10	0	1	3	21	70	95
11	0	2	5	18	60	85
12	0	2	7	45	111	165
13	0	1	1	2	6	10
14	0	0	2	3	13	18
15	0	2	10	26	92	130
16	0	0	3	6	7	16
17	0	2	6	19	42	69
18	0	7	8	20	51	86
19	0	1	1	1	15	18
20	0	0	1	2	16	19
21	0	0	2	5	21	28
22	0	1	4	5	28	38
23	0	0	0	0	1	1
24	0	1	11	58	196	266
25	0	1	7	29	151	188
26	0	0	0	1	0	1
27	0	0	0	0	5	5
<b>Total</b>	<b>0 (0.0%)</b>	<b>27 (1.4%)</b>	<b>118 (6.1%)</b>	<b>405 (21.0%)</b>	<b>1,380 (71.5%)</b>	<b>1,930</b>
<b>Non-Intersection Crashes</b>						
<b>Total</b>	<b>4 (0.5%)</b>	<b>13 (1.6%)</b>	<b>64 (7.8%)</b>	<b>176 (21.5%)</b>	<b>562 (68.6%)</b>	<b>819</b>
<b>Corridor Crashes (Intersection + Non-Intersection)</b>						
<b>Total</b>	<b>4 (0.1%)</b>	<b>40 (1.5%)</b>	<b>182 (6.6%)</b>	<b>581 (21.1%)</b>	<b>1,942 (70.6%)</b>	<b>2,719</b>

### 7.2 Fatal Crashes

As mentioned in previous sections, in the year three years from 2021 to 2023, four fatal crashes were reported. All four fatal crashes occurred on non-intersection segments. Table 7-4 on the next page provides additional information on these four crashes.

The crashes are spread out over the three years with one crash in 2021, two crashes in 2022, and one crash in 2023. Two of the fatal crashes are listed as crashes with a “fixed object” and two are categorized as “other” which could indicate crashes with a pedestrian, bicyclist, animal, etc.

Two of the four fatal crashes occurred in dark and not lighted conditions and one crash occurred during dark but lighted conditions. The fourth fatal crash occurred during daylight.

### 7.3 Crash Type Analysis

The crash data was analyzed to determine the frequency of crashes by collision type along the corridor. In Georgia, crash data are categorized by collision types. In this analysis the collision types were: Right Angle, Head On, Rear End, Sideswipe, Angle Crashes, Fixed Object, and Other. A crash categorized as “other” can be described by incidents involving backing, pedestrians, animals etc. Figure 7-1 shows the crash frequency for intersection crashes by type for the East-West Connector corridor.

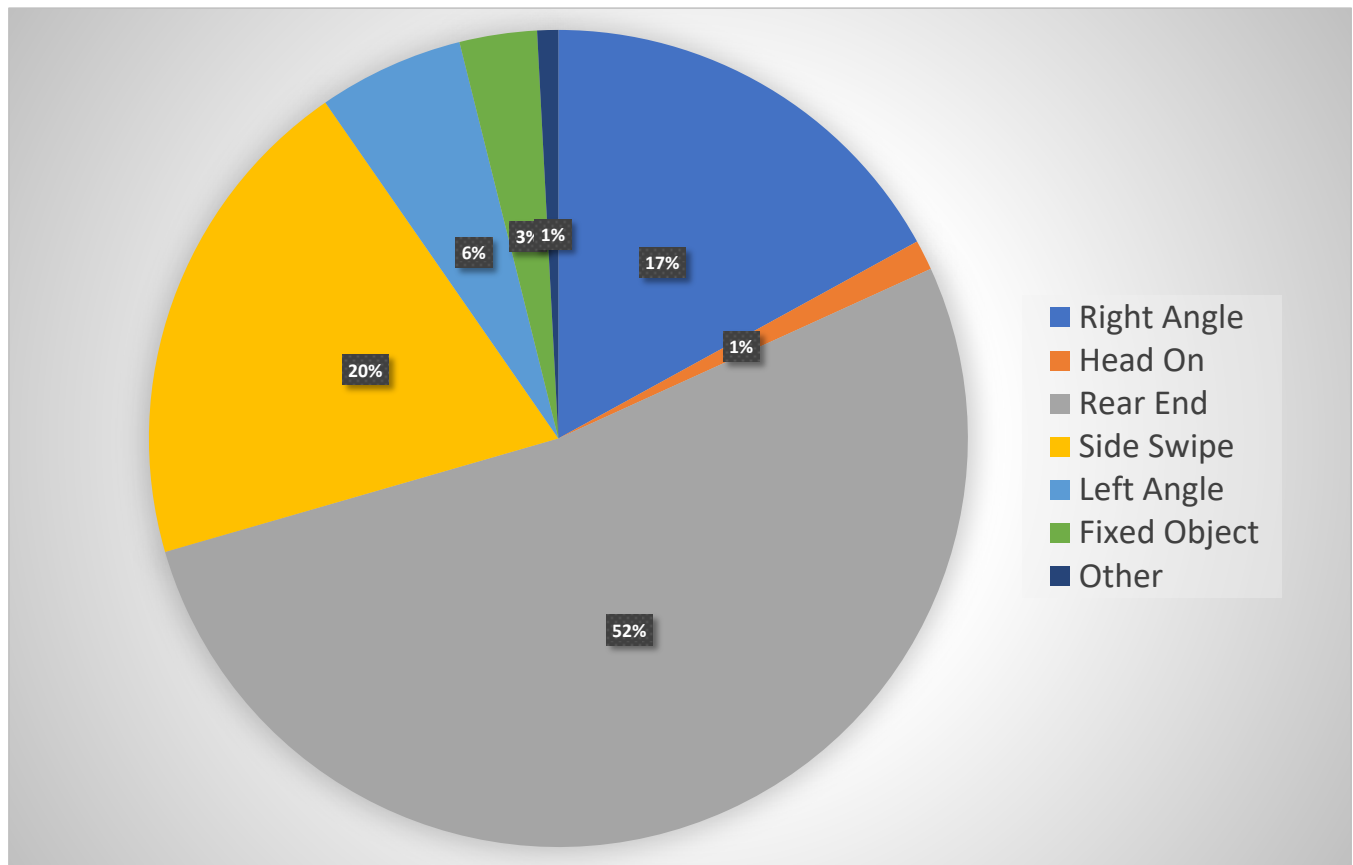


Figure 7-1: Manner of Collision for Intersection Crashes – Percentage Distribution (2021-2023)

# East-West Connector Needs Assessment – Traffic and Safety Study

Table 7-4: Non-Intersection Fatal Crash Information

Accident Date	Road	Nearest Intersection	Vehicles	Injured	Fatal	Distance from Intersection	Manner of Collision	Weather	Road Surface	Light Conditions	Traffic Flow Type
04-30-21	East-West Connector	South Hurt Rd	3	2	1	1,400	Fixed Object	Rain	Wet	Dark-Not Lighted	Two Way Traffic-Way with Physical Separation
06-18-22	East-West Connector	Brookwood Dr	1	0	1	557	Other	Clear	Dry	Dark-Lighted	Two Way Traffic-Way with Physical Separation
10-25-22	Cumberland Pkwy	South Cobb Dr	2	0	1	250	Other	Clear	Dry	Daylight	Two Way Traffic-Way with Physical Barrier
01-01-23	East-West Connector	Fontaine Rd	1	0	1	300	Fixed Object	Cloudy	Wet	Dark-Not Lighted	Two Way Traffic-Way with Physical Separation

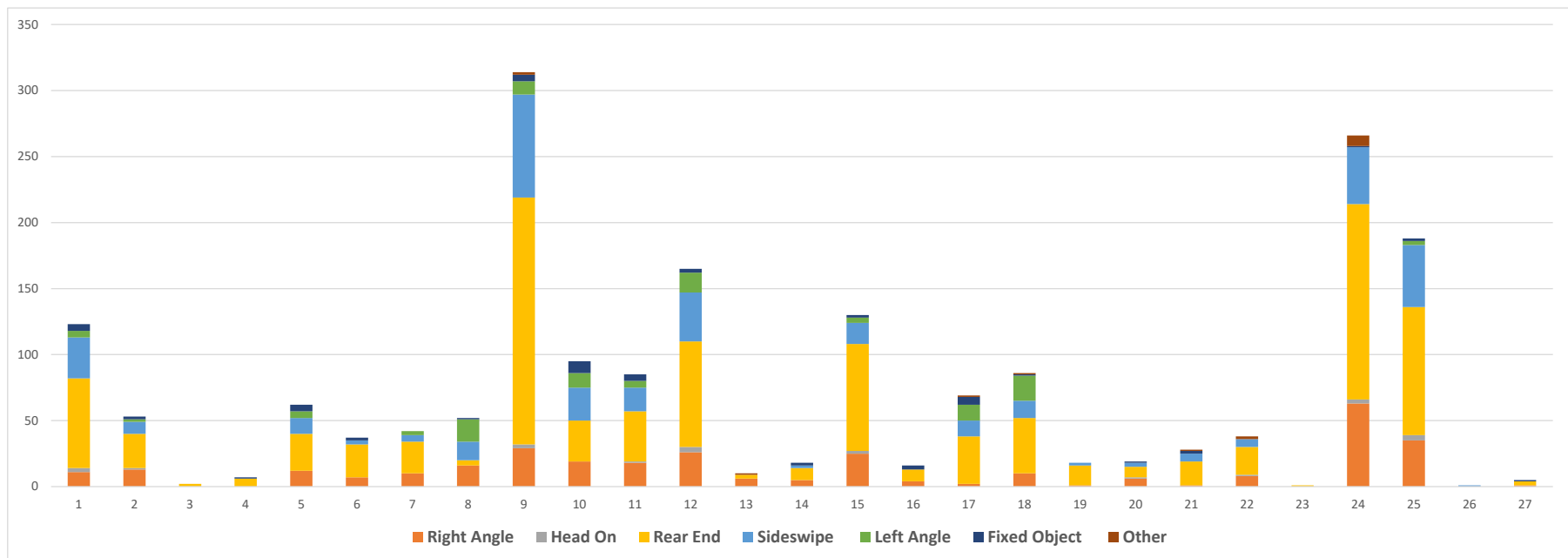


Figure 7-2: Distribution of Intersection Crashes by Manner of Collision (2021-2023)

The majority of intersection crashes observed are rear end crashes (52%), followed by sideswipe crashes (20%), right angle crashes (17%), angle crashes (6%), fixed object crashes (3%), head on crashes (1%), and other crashes (1%). Additionally, this section includes Figure 7-2 and Table 7-5 that break down the distribution of collision in bar chart and table form.

Figure 7-3 shows the crash frequency for non-intersection crashes by type for the East-West Connector corridor. The largest number of non-intersection crashes are rear end crashes (43%), followed by right angle crashes (22%), sideswipe crashes (20%), fixed object crashes (7%), angle crashes (5%), other (2%), and head on collision (1%).

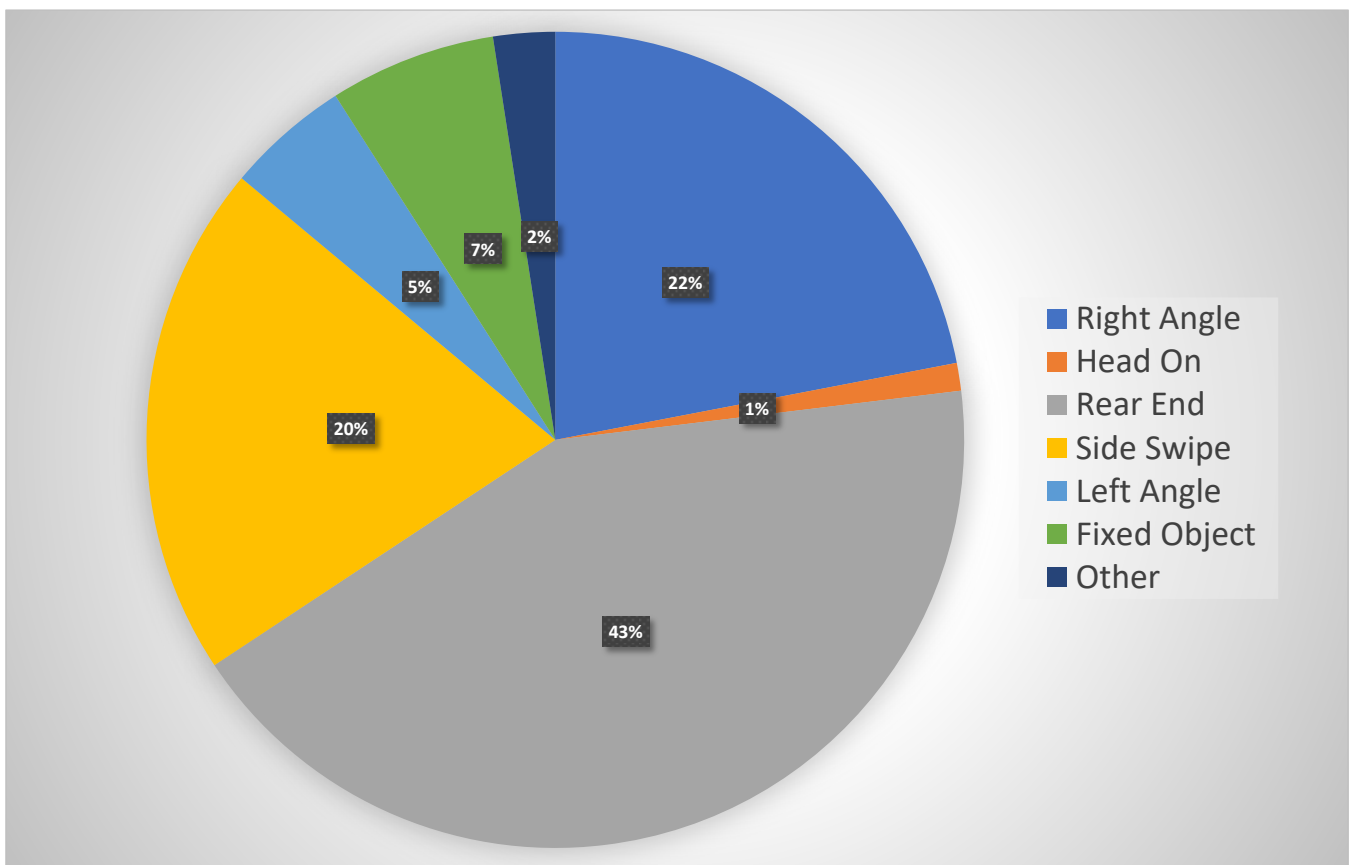


Figure 7-3: Manner of Collision for Non-Intersection Crashes

East-West Connector Needs Assessment – Traffic and Safety Study

Table 7-5: Manner of Collision by Type (2021-2023)

Int. No.	Right Angle	Head On	Rear End	Side Swipe	Left Angle	Fixed Object	Other
<b>Intersection Crashes</b>							
1	11	3	68	31	5	5	0
2	13	1	26	9	2	2	0
3	0	0	2	0	0	0	0
4	0	0	6	0	0	1	0
5	12	0	28	12	5	5	0
6	7	0	25	3	0	2	0
7	10	0	24	5	3	0	0
8	16	0	4	14	17	1	0
9	29	3	187	78	10	5	2
10	19	0	31	25	11	9	0
11	18	1	38	18	5	5	0
12	26	4	80	37	15	3	0
13	6	0	3	0	0	0	1
14	5	0	9	2	0	2	0
15	25	2	81	16	4	2	0
16	4	0	9	0	0	3	0
17	2	0	36	12	12	6	1
18	10	0	42	13	19	1	1
19	1	0	15	2	0	0	0
20	6	1	8	3	0	1	0
21	1	0	18	6	0	2	1
22	8	1	21	6	0	0	2
23	0	0	1	0	0	0	0
24	63	3	148	43	0	1	8
25	35	4	97	47	3	2	0
26	0	0	0	1	0	0	0
27	1	0	3	0	0	1	0
Total	328	23	1,010	383	111	59	16
<b>Non-Intersection Crashes</b>							
Total	180	9	349	167	40	54	20
<b>Corridor Crashes (Intersection + Non-Intersection)</b>							
Total	508	32	1,359	550	151	113	36

## 8 Recommendations

### 8.1 Intersections

Table 8-1 through Table 8-9 display the LOS for each turning movement at the nine intersections where LOS E or LOS F for the overall intersection is observed. The oversaturated turning movements with LOS E or LOS F are highlighted in these tables. To reduce intersection delay, it would be beneficial to increase the capacity of these specific turning movements by adding lanes or including right-turn bypass lanes. Implementing additional capacity at turning movements that experience oversaturation during both the AM and PM peak periods would yield the greatest benefits. The eastbound and westbound directions experience the highest traffic volumes. Therefore, increasing capacity in these directions would provide significant benefits, too.

#### Powder Springs Road

The table below shows the LOS for each turning movement at the Powder Springs Road intersection. Potential alternatives to investigate for this location are:

- Adding third through lanes East-West Connector.
- Adding third through lanes Powder Springs Road.
- Second eastbound left turn lane.
- Southbound right turn as by-pass lane.
- Second northbound right turn lane.
- Grade separated intersection.

Table 8-1: Powder Springs Road – 2055 LOS

Leg	Turn	LOS AM	LOS PM	Leg	Turn	LOS AM	LOS PM
Eastbound	Left	E	F	Northbound	Left	E	F
	Through	F	E		Through	E	E
	Right	A	C		Right	F	C
Westbound	Left	F	F	Southbound	Left	F	F
	Through	E	E		Through	D	F
	Right	A	B		Right	A	A

#### Austell Road

The table below shows the LOS for each turning movement at the Austell Road intersection. Potential alternatives to investigate for this location are:

- Second westbound left turn lane.
- Increase through capacity on Austell Road.
- Grade separated intersection.

Table 8-2: Austell Road – 2055 LOS

Leg	Turn	LOS AM	LOS PM	Leg	Turn	LOS AM	LOS PM
Eastbound	Left	F	F	Northbound	Left	F	F
	Through	F	F		Through	F	D
	Right	C	F		Right	B	A
Westbound	Left	F	F	Southbound	Left	F	F
	Through	E	E		Through	E	F
	Right	E	E		Right	A	B

**Brookwood Drive**

The table below shows the LOS for each turning movement at the Brookwood Drive intersection. Potential alternatives to investigate for this location are:

- Add right turn pockets at Brookwood Drive / Widening Brookwood Drive.

Table 8-3: Brookwood Drive – 2055 LOS

Leg	Turn	LOS AM	LOS PM	Leg	Turn	LOS AM	LOS PM
Eastbound	Left	B	F	Northbound	Left	F	F
	Through	D	D		Through	F	E
	Right	A	B		Right	E	E
Westbound	Left	D	B	Southbound	Left	E	E
	Through	C	E		Through	E	F
	Right	A	A		Right	F	F

**Floyd Road**

The table below shows the LOS for each turning movement at the Floyd Road intersection. Potential alternatives to investigate for this location are:

- Adding eastbound and westbound through capacity.

Table 8-4: Floyd Road – 2055 LOS

Leg	Turn	LOS AM	LOS PM	Leg	Turn	LOS AM	LOS PM
Eastbound	Left	A	F	Northbound	Left	F	F
	Through	B	E		Through	E	E
	Right	A	C		Right	A	A
Westbound	Left	D	C	Southbound	Left	F	F
	Through	C	F		Through	F	F
	Right	A	B		Right	A	A

**Hicks Road**

The table below shows the LOS for each turning movement at the Hicks Road intersection. Potential alternatives to investigate for this location are:

- Adding eastbound and westbound through capacity.
- Adding northbound and southbound through capacity.

Table 8-5: Hicks Road – 2055 LOS

Leg	Turn	LOS AM	LOS PM	Leg	Turn	LOS AM	LOS PM
Eastbound	Left	E	F	Northbound	Left	E	D
	Through	D	B		Through	F	F
	Right	A	A		Right	A	A
Westbound	Left	D	C	Southbound	Left	F	F
	Through	D	F		Through	F	E
	Right	A	C		Right	A	C

**Fontaine Road**

The table below shows the LOS for each turning movement at the Fontaine Road intersection. Potential alternatives to investigate for this location are:

- Dual westbound left turn lanes.
- Extend westbound left turn lane.
- Dual northbound right turn lanes, in the signal.
- Extend third eastbound lane to the Cooper Lake Road intersection.

Table 8-6: Fontaine Road – 2055 LOS

Leg	Turn	LOS AM	LOS PM	Leg	Turn	LOS AM	LOS PM
Eastbound	Left	-	-	Northbound	Left	E	F
	Through	C	D		Through	-	-
	Right	A	B		Right	F	C
Westbound	Left	F	D	Southbound	Left	-	-
	Through	B	A		Through	-	-
	Right	-	-		Right	-	-

**Cooper Lake Road**

The table below shows the LOS for each turning movement at the Cooper Lake Road intersection. Potential alternatives to investigate for this location are:

- Add eastbound right turn pocket.
- Add third eastbound and westbound through lanes.
- Add second westbound left turn lane.
- Add dedicated northbound through lane, together with two dedicated right turn lanes.

Table 8-7: Cooper Lake Road – 2055 LOS

Leg	Turn	LOS AM	LOS PM	Leg	Turn	LOS AM	LOS PM
Eastbound	Left	B	F	Northbound	Left	E	E
	Through	F	D		Through	F	F
	Right	F	D		Right	F	B
Westbound	Left	F	F	Southbound	Left	E	E
	Through	D	D		Through	F	F
	Right	D	D		Right	B	C

**South Cobb Drive**

The table below shows the LOS for each turning movement at the South Cobb Drive intersection. Potential alternatives to investigate for this location are:

- Grade separated intersection.

Table 8-8: South Cobb Drive – 2055 LOS

Leg	Turn	LOS AM	LOS PM	Leg	Turn	LOS AM	LOS PM
Eastbound	Left	D	F	Northbound	Left	E	F
	Through	F	D		Through	F	E
	Right	A	A		Right	C	B
Westbound	Left	E	E	Southbound	Left	F	F
	Through	D	F		Through	F	F
	Right	C	B		Right	A	B

**Atlanta Road**

The table below shows the LOS for each turning movement at the Atlanta Road intersection. Potential alternatives to investigate for this location are:

- Grade Separated intersection.

Table 8-9: Atlanta Road – 2055 LOS

Leg	Turn	LOS AM	LOS PM	Leg	Turn	LOS AM	LOS PM
Eastbound	Left	F	F	Northbound	Left	E	E
	Through	F	E		Through	C	C
	Right	F	B		Right	A	A
Westbound	Left	E	F	Southbound	Left	E	F
	Through	E	F		Through	D	E
	Right	A	B		Right	B	C

**8.2 Express Lanes**

The addition of express lanes along the corridor would substantially enhance capacity. The travel time analysis indicates that the extra capacity is primarily required in the peak directions of travel. If express lanes are being explored as an option, it would be worth considering a scenario that incorporates variable or reversible express lanes.

Since the road segments do not require widening (they operate under LOS D or better in 2025), the additional express lane capacity would primarily help in reducing the delays at intersections. By incorporating grade-separated express lanes, the through volumes at intersections would be reduced, leading to lower delays.

Based on the analysis of traffic origins and destinations, it can be deduced that an express lane would be capable of accommodating a significant portion of the traffic traveling to and from Powder Springs Road throughout the entire eastern section of the corridor. Additionally, important ingress and egress points such as Fontaine Road and Cooper Lake Road should also be considered for the express lane implementation.

### 8.3 Other Strategies

Other strategies to reduce congestion can be found in reducing peak hour traffic volumes. To alleviate congestion, additional strategies can be employed to reduce traffic volumes during peak hours. These include:

- Enhancing bike facilities: Improving infrastructure for biking and promoting cycling as a viable mode of transportation can encourage commuters to choose this option instead of driving alone. This helps reduce the number of vehicles on the road during peak hours.
- Enhancing public transport: Investing in public transportation systems, such as expanding bus or train networks, can provide commuters with reliable and efficient alternatives to driving. This encourages a shift towards using public transport, which can significantly reduce traffic volumes during peak periods.
- Implementing mobility management incentives: Introducing flexible work hours or telecommuting options can incentivize drivers to adjust their travel times to avoid peak hours. By spreading out traffic throughout the day, congestion can be alleviated during the busiest periods.

By implementing these strategies, congestion can be mitigated, providing a more efficient and sustainable transportation system.

# Appendix A

## Traffic Counts (ZIP-File)

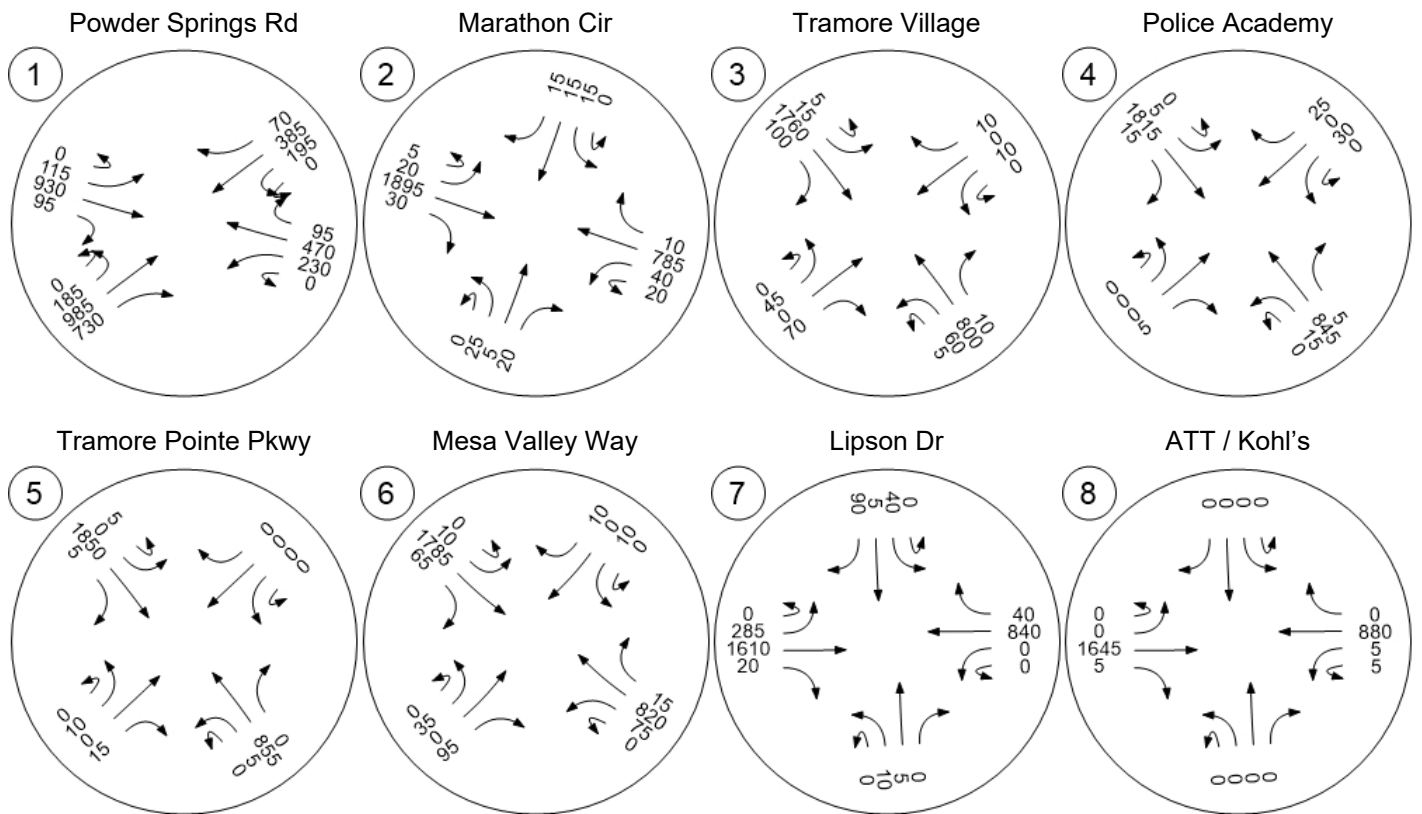
# Appendix B

## Existing Year Volumes

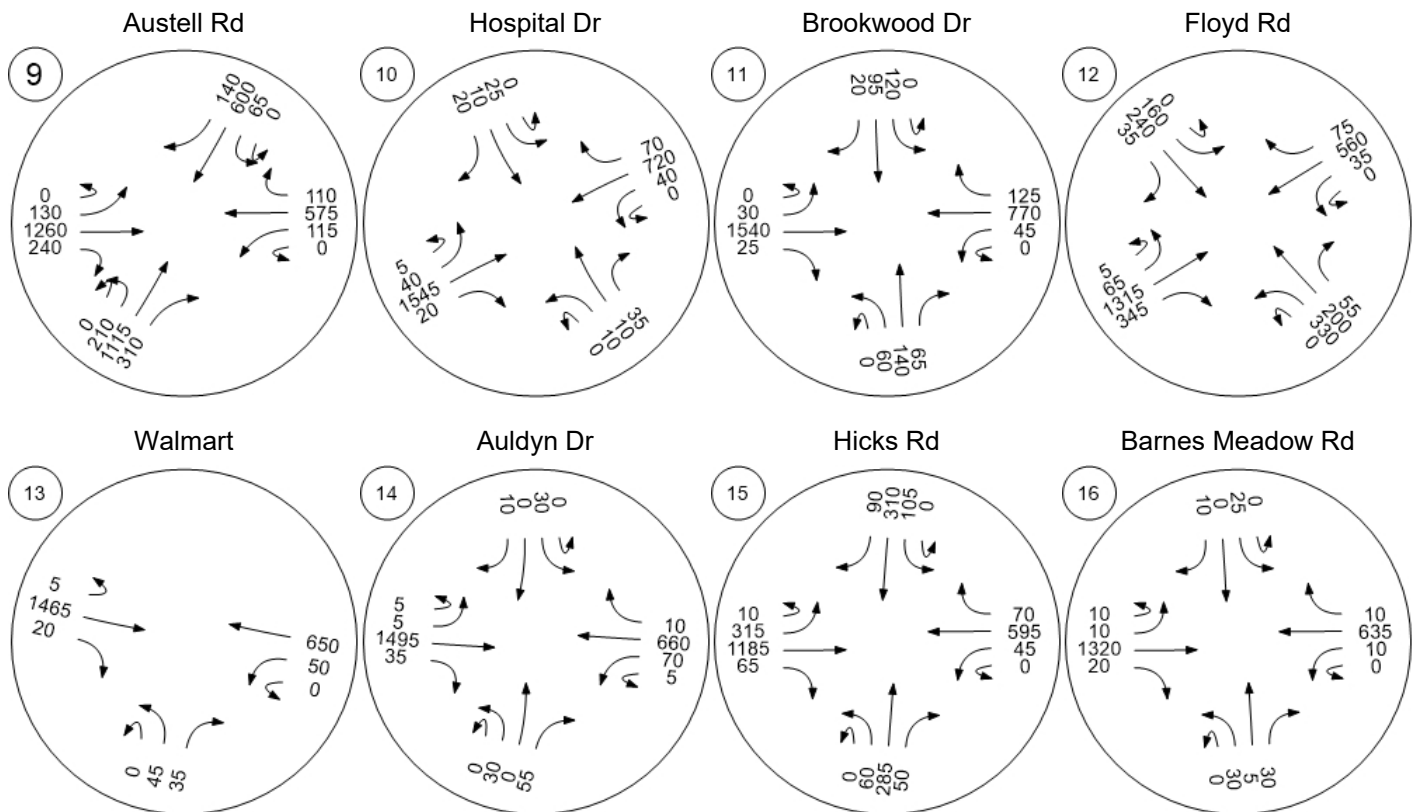
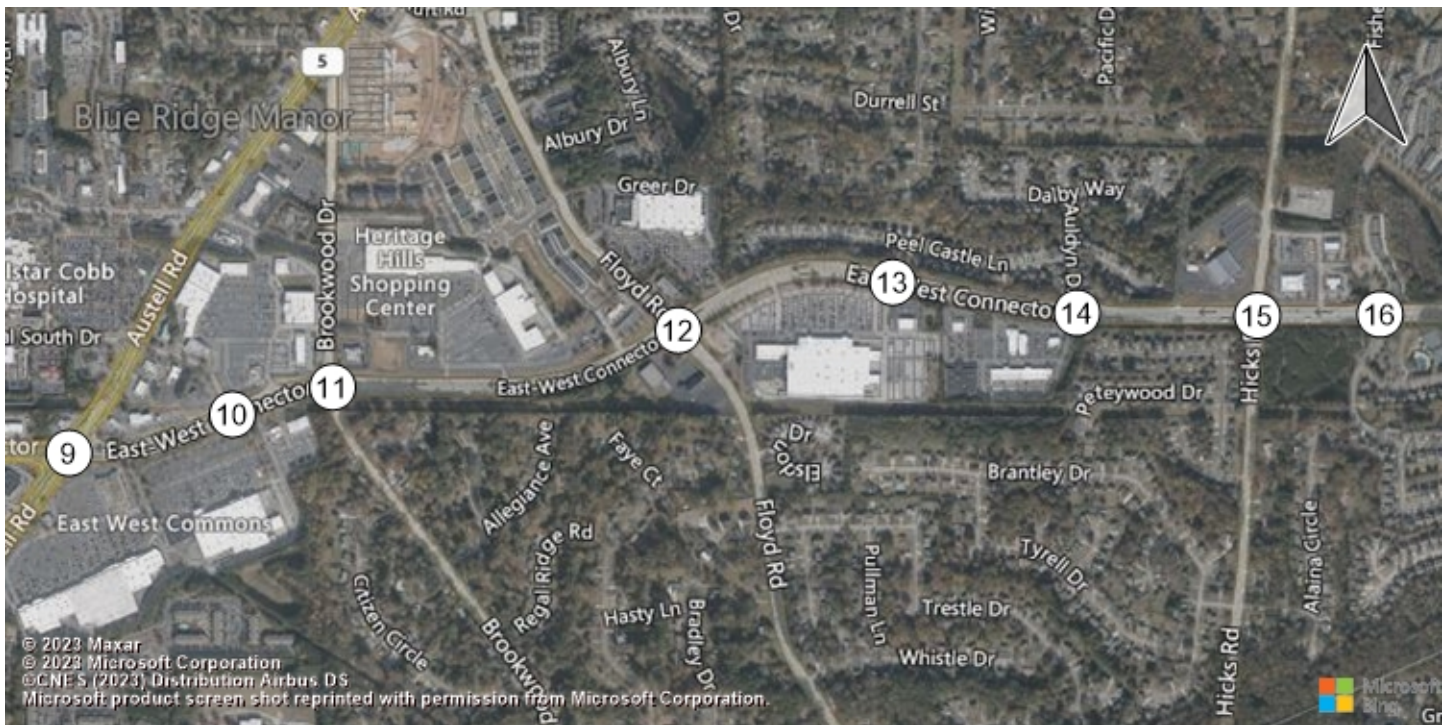
- 2023 AM Peak Hour
- 2023 PM Peak Hour

**2023 AM Peak Hour**

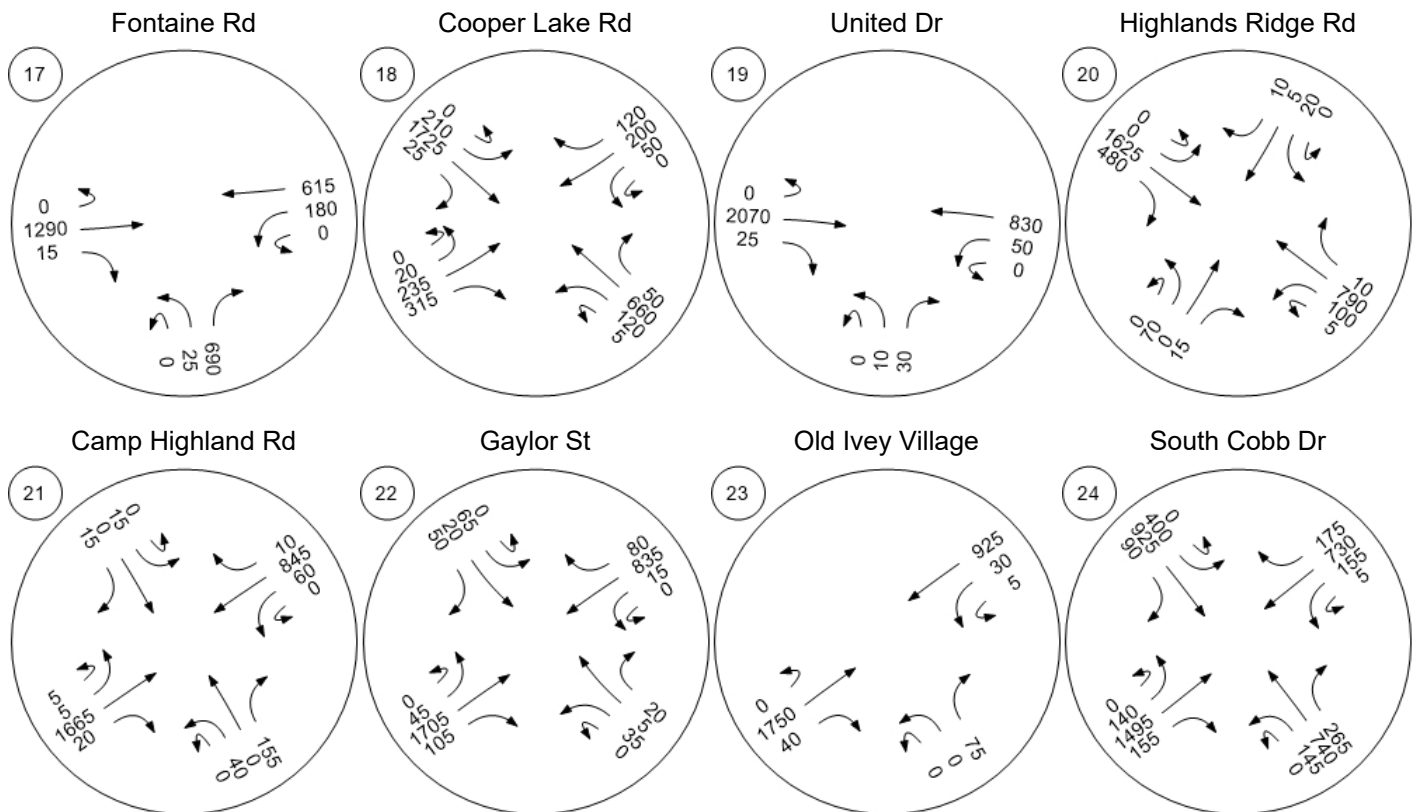
Traffic Volume - Base Volume



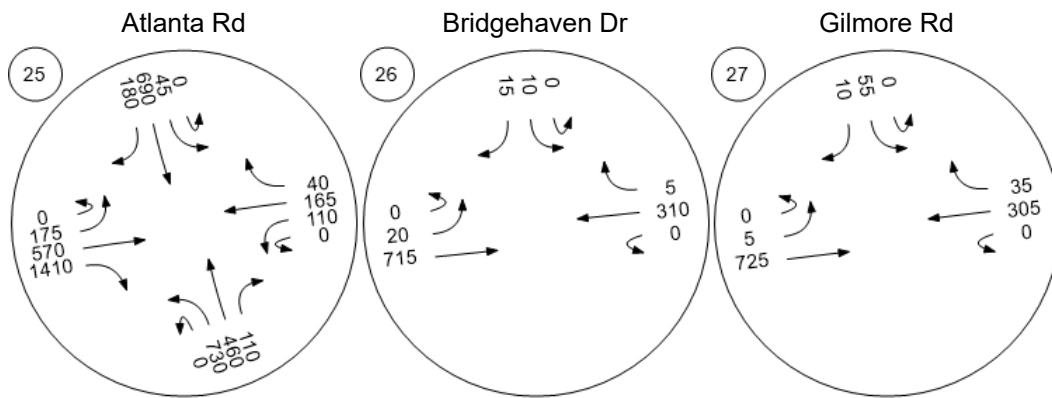
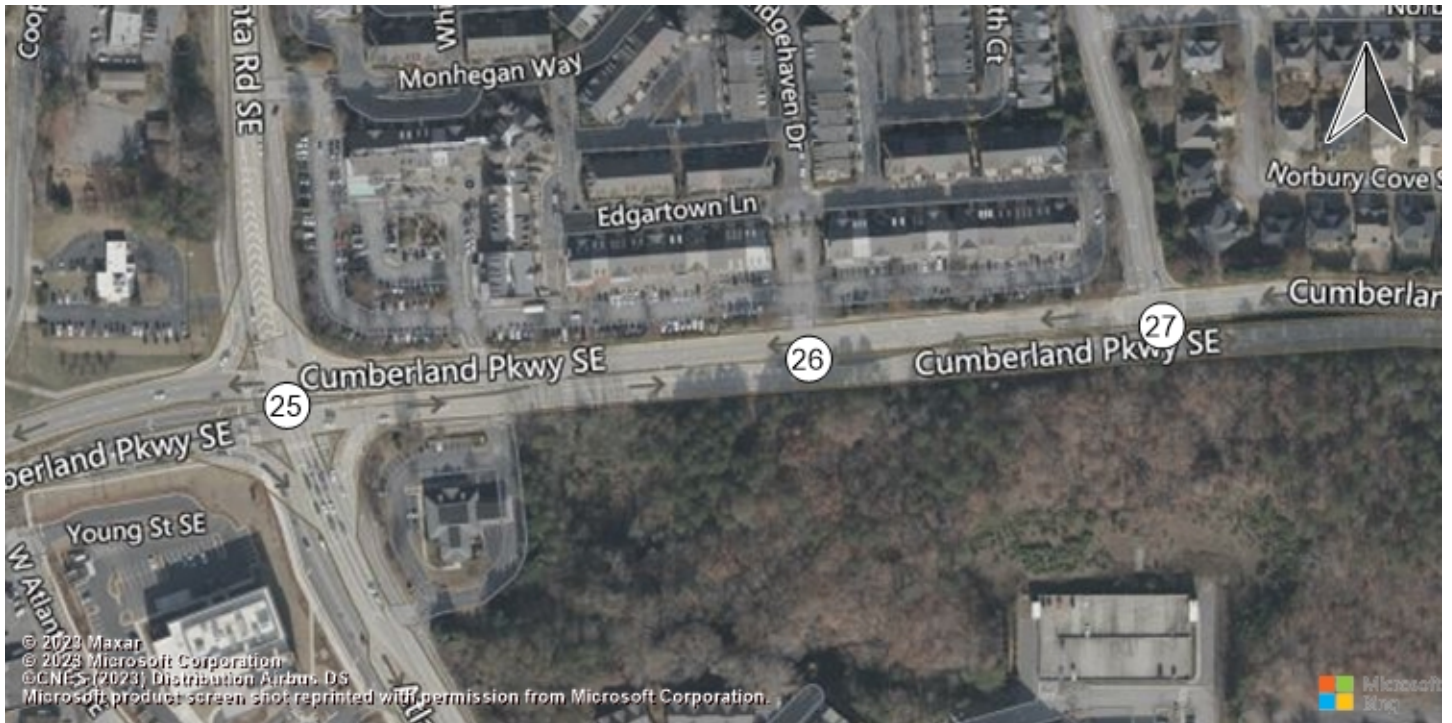
Traffic Volume - Base Volume



Traffic Volume - Base Volume

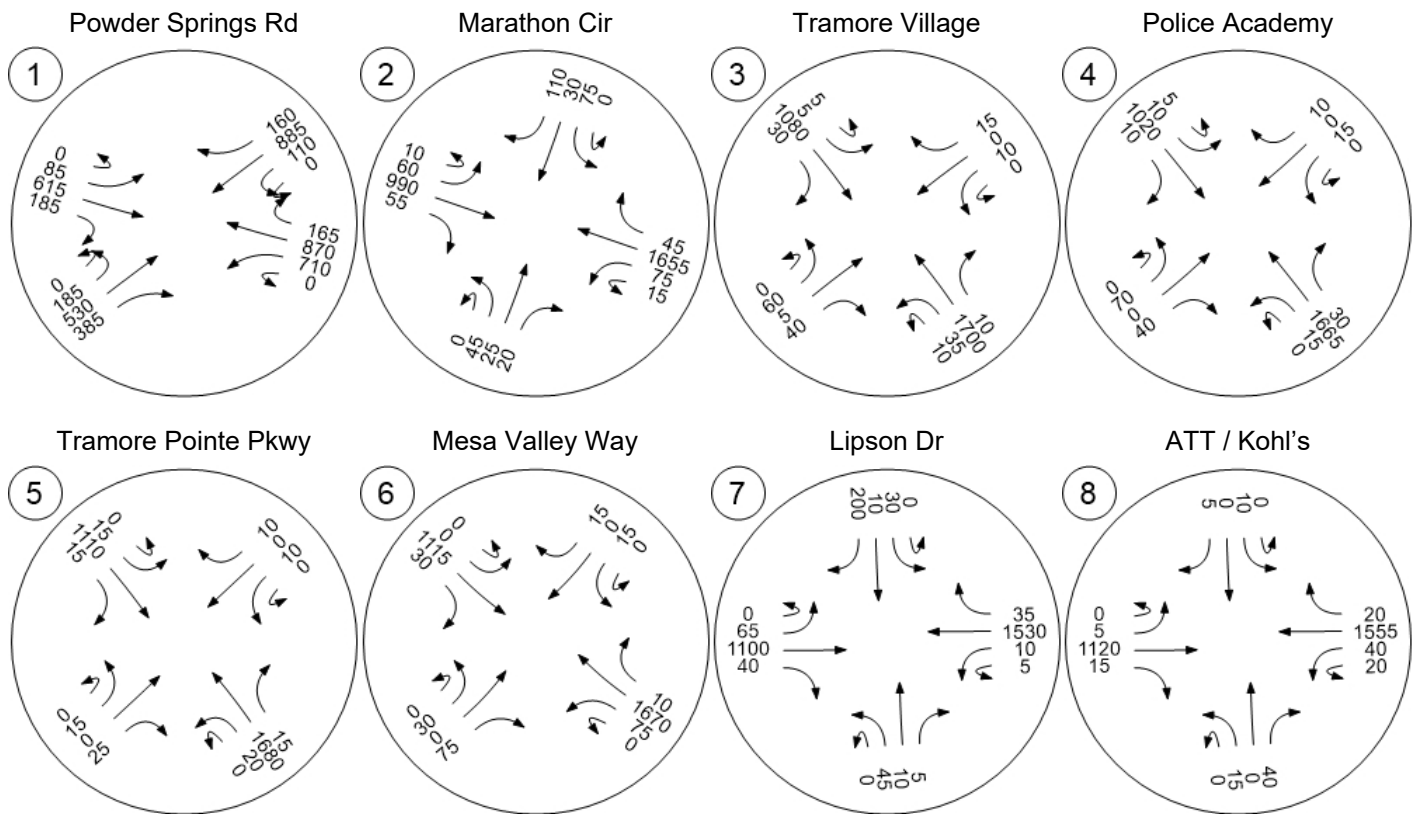


Traffic Volume - Base Volume

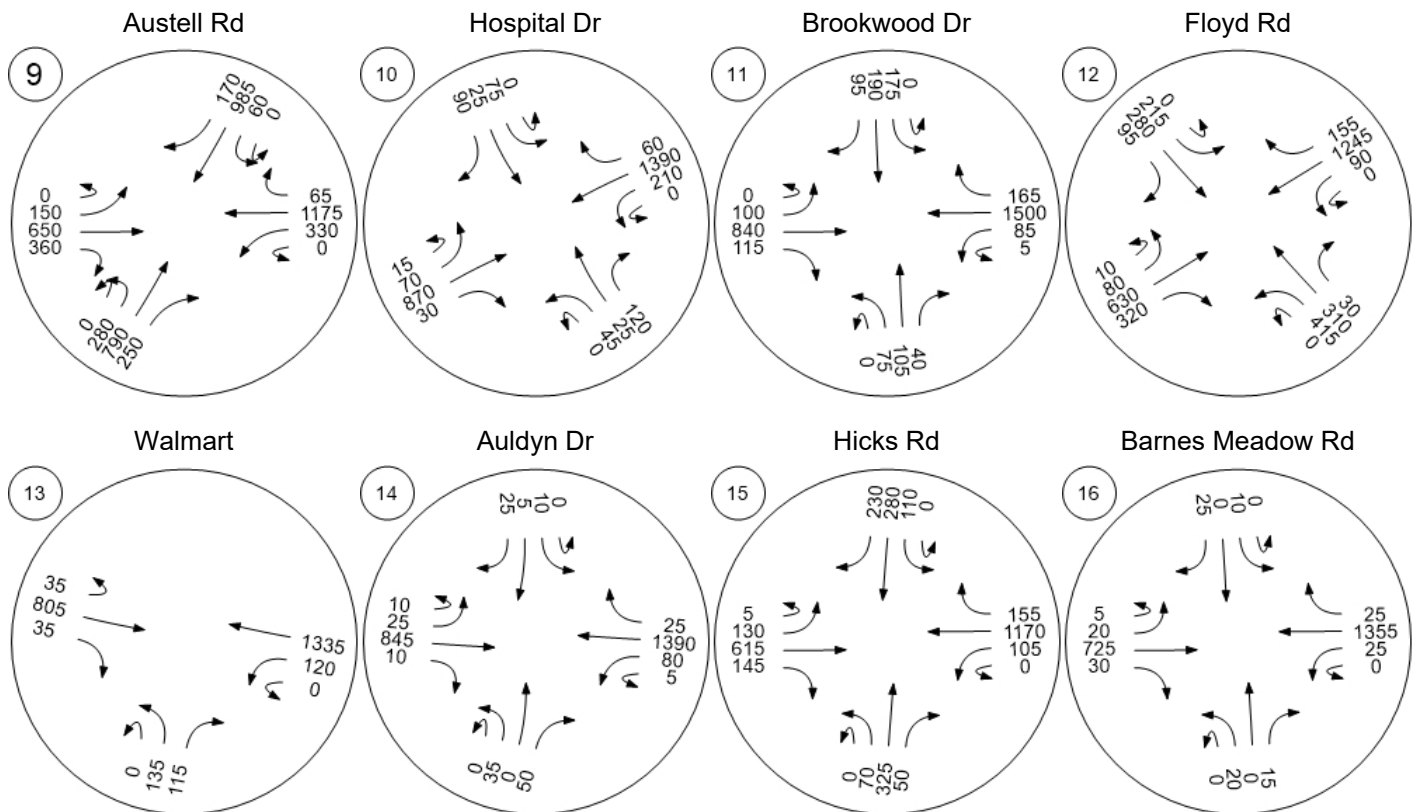


**2023 PM Peak Hour**

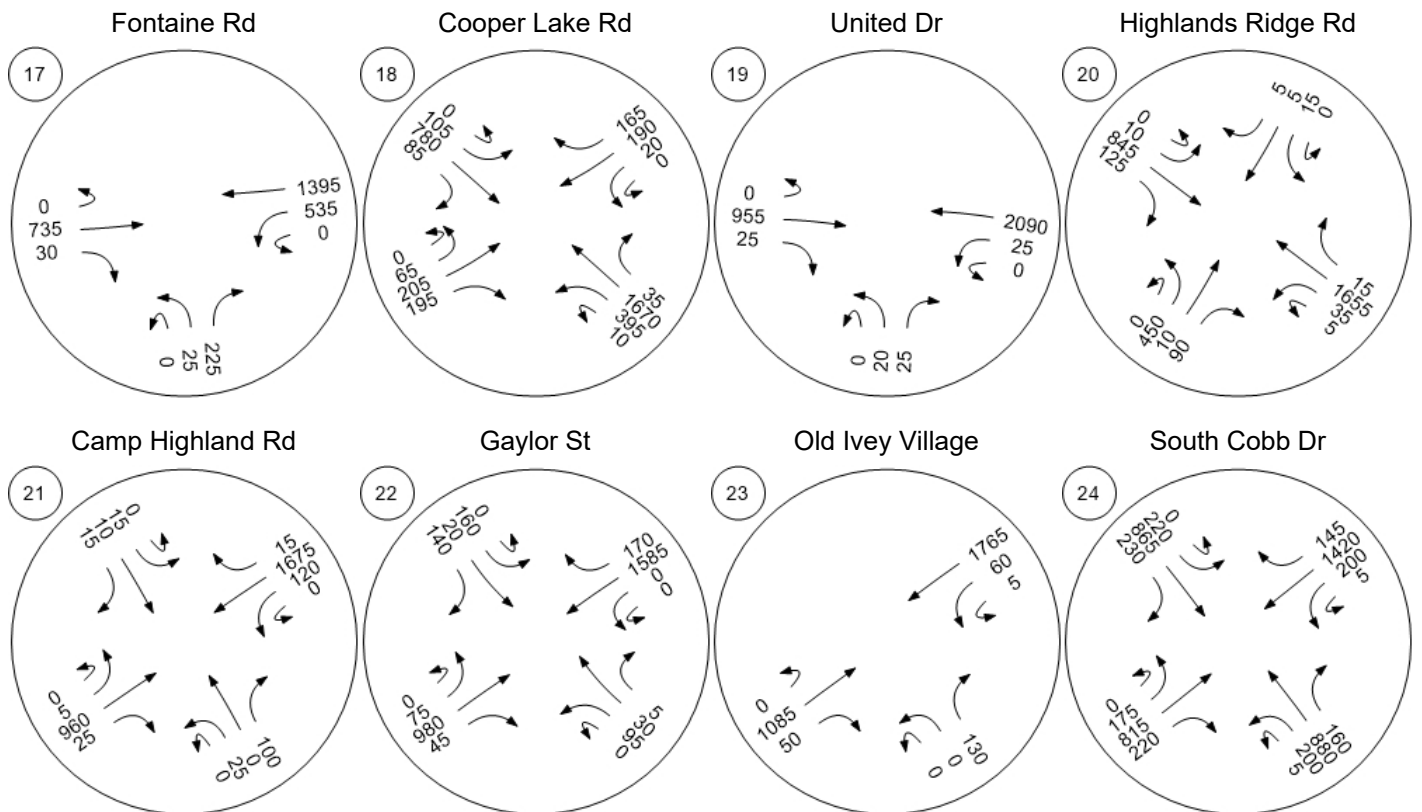
Traffic Volume - Base Volume



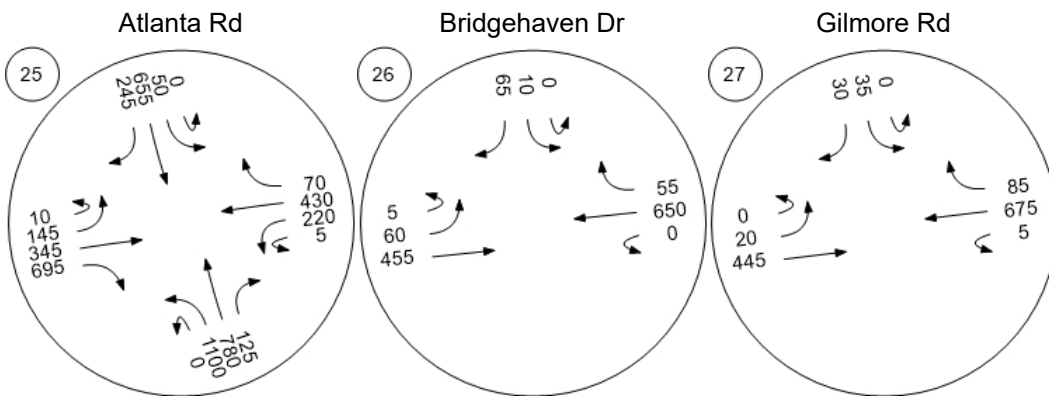
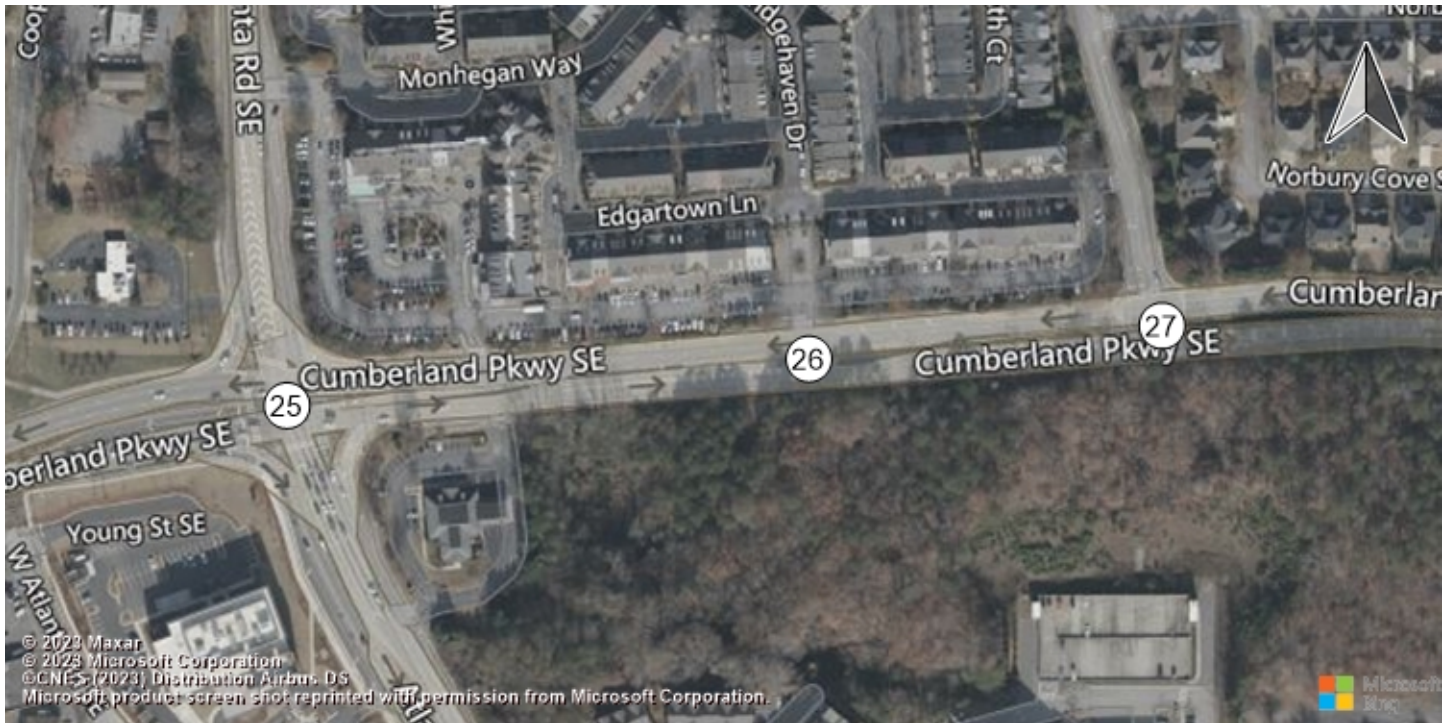
Traffic Volume - Base Volume



Traffic Volume - Base Volume



Traffic Volume - Base Volume



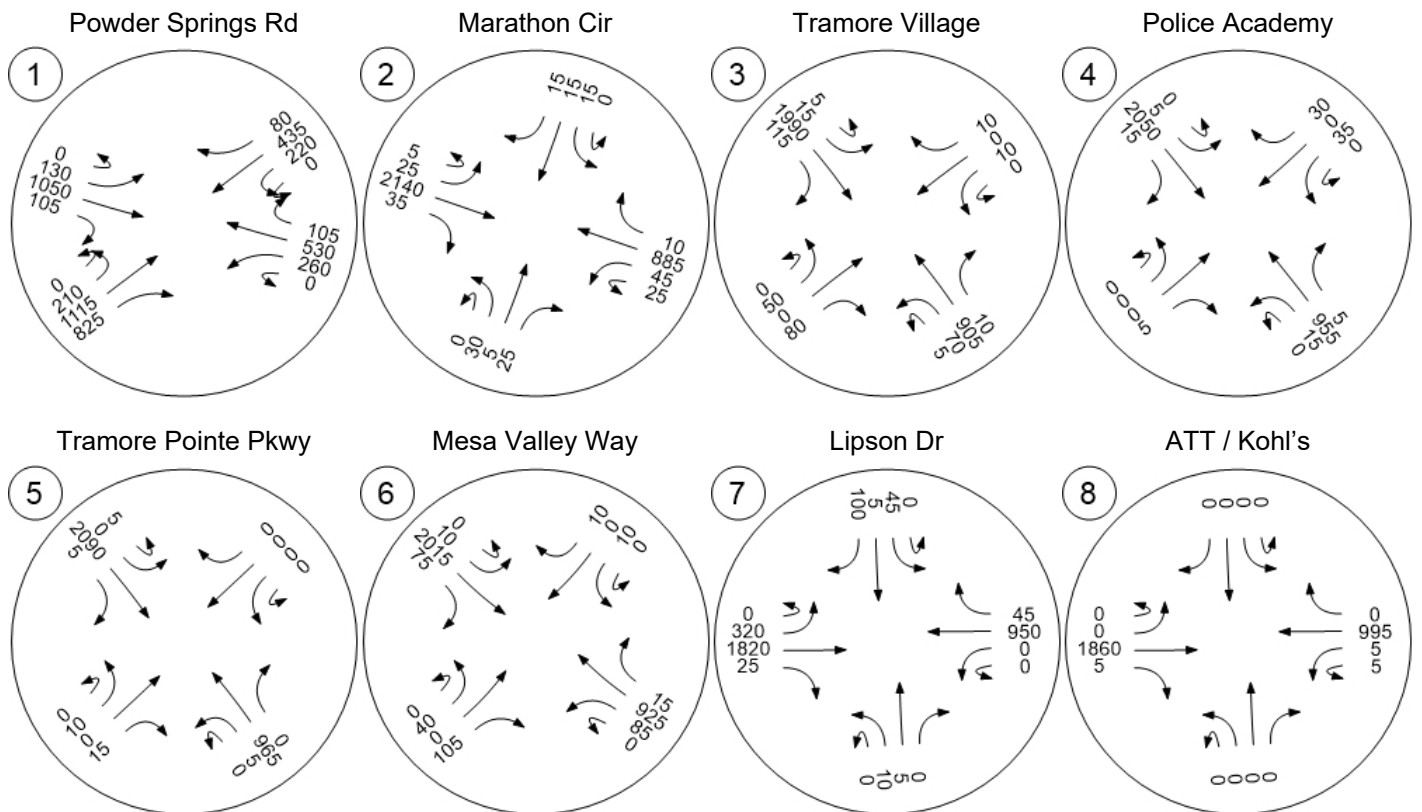
# Appendix C

## Future Year Volumes

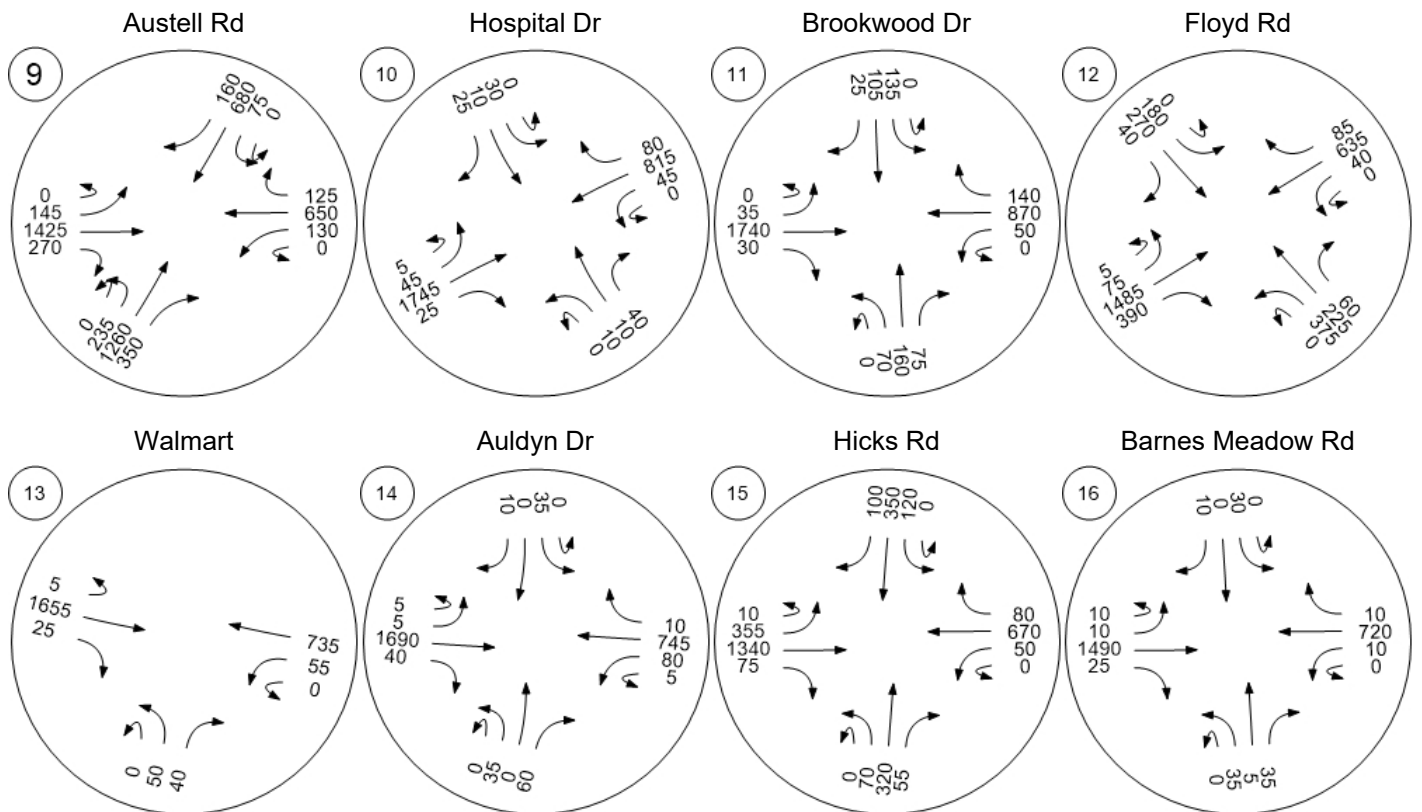
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- 2035 PM Peak Hour
- 2055 AM Peak Hour
- 2055 PM Peak Hour

**2035 AM Peak Hour**

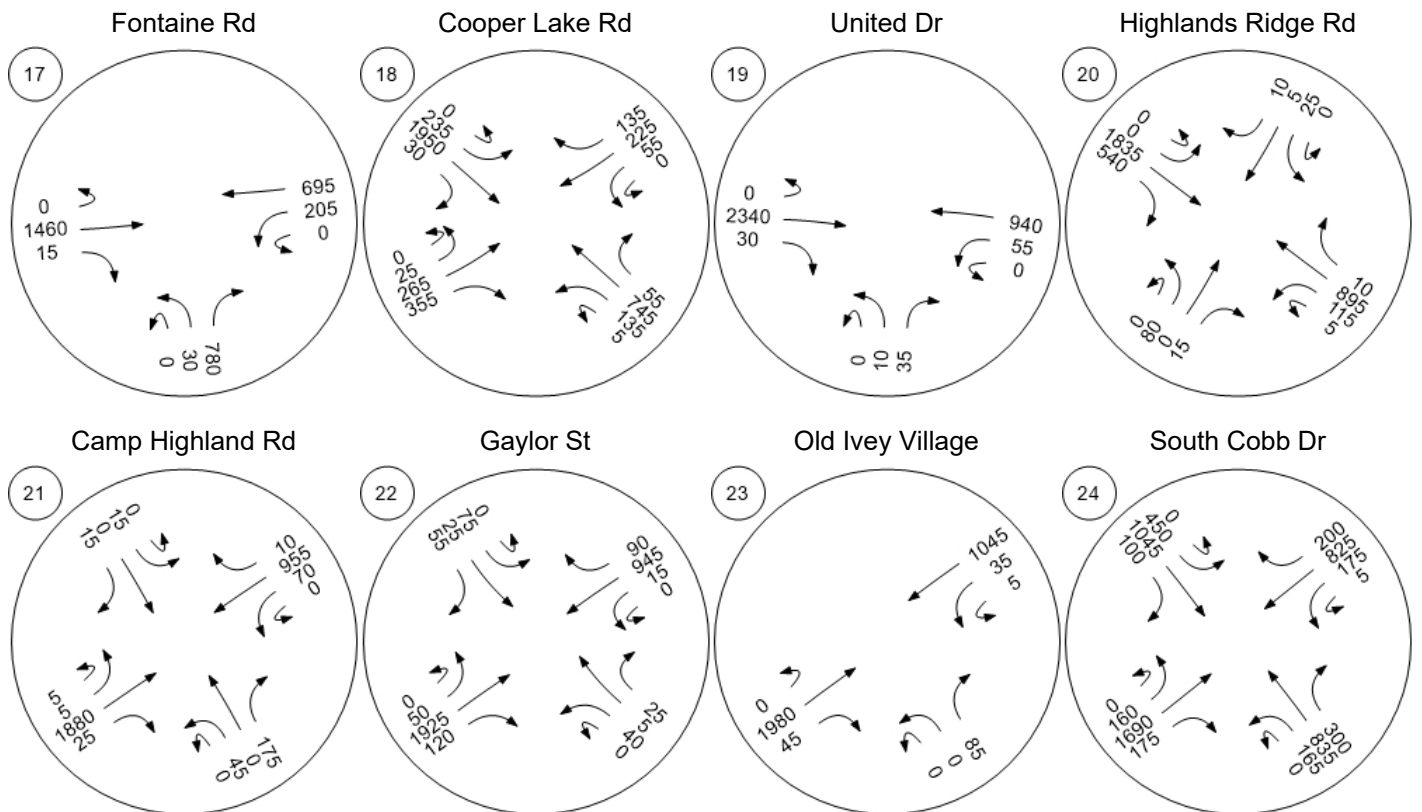
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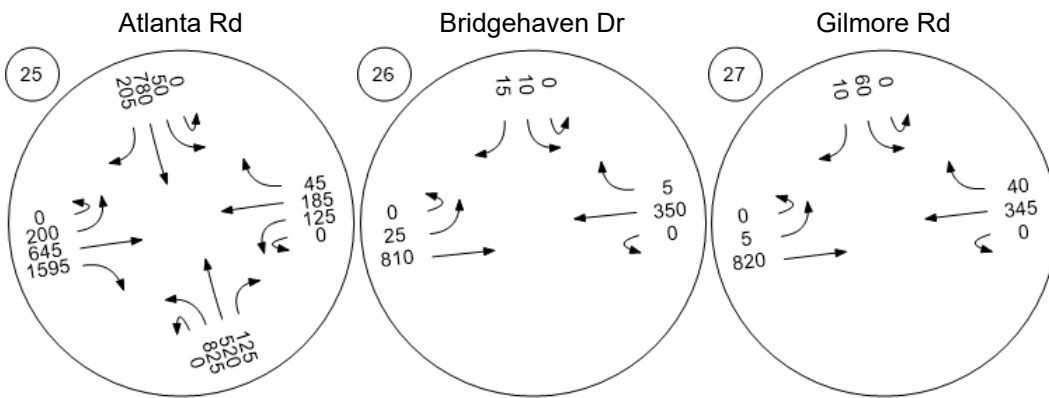
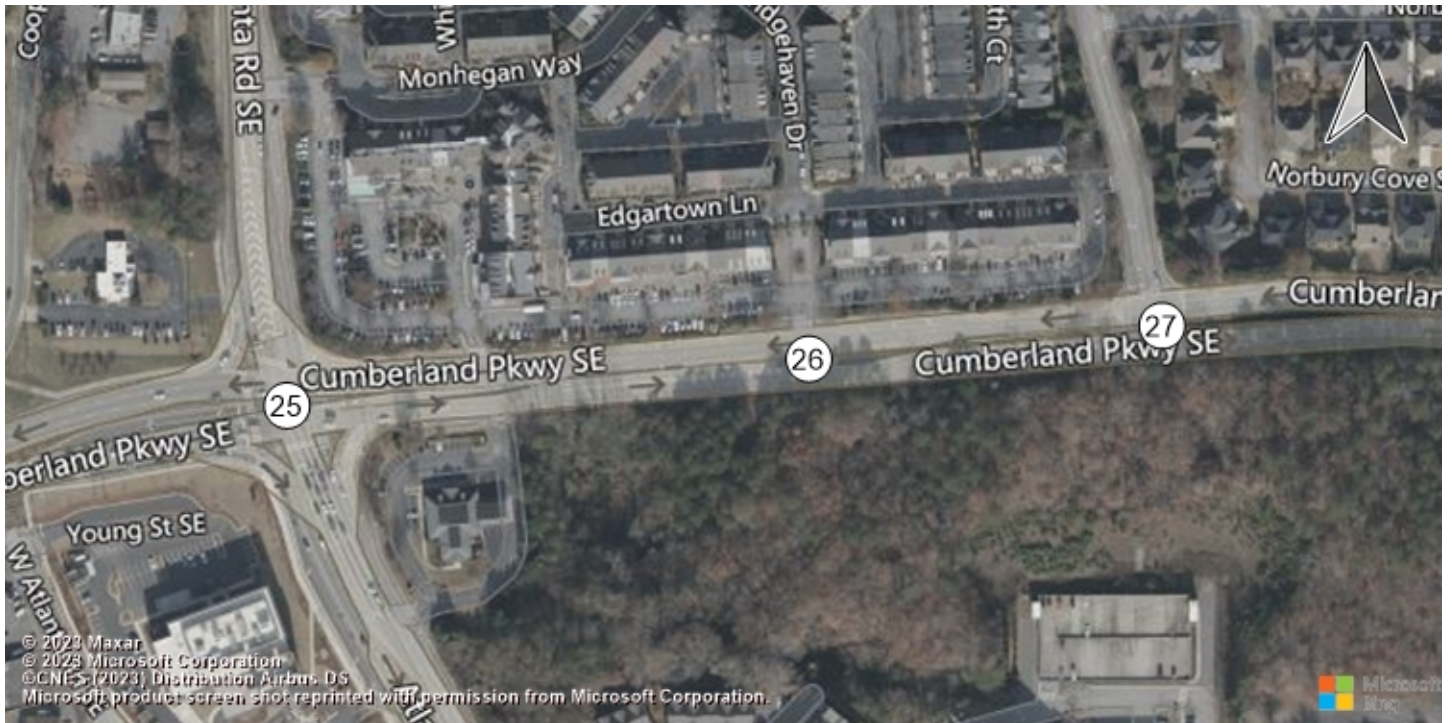
Traffic Volume - Base Volume



Traffic Volume - Base Volume

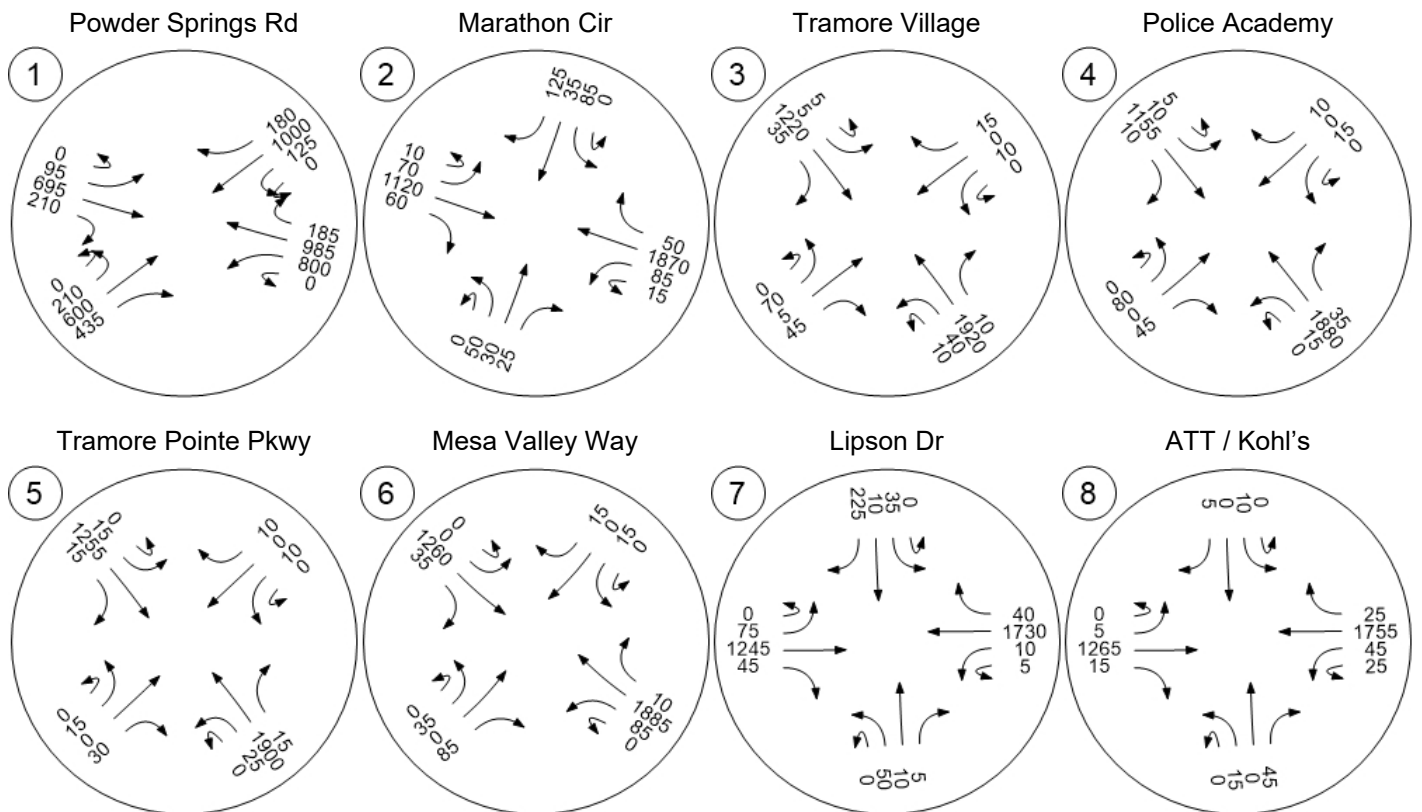
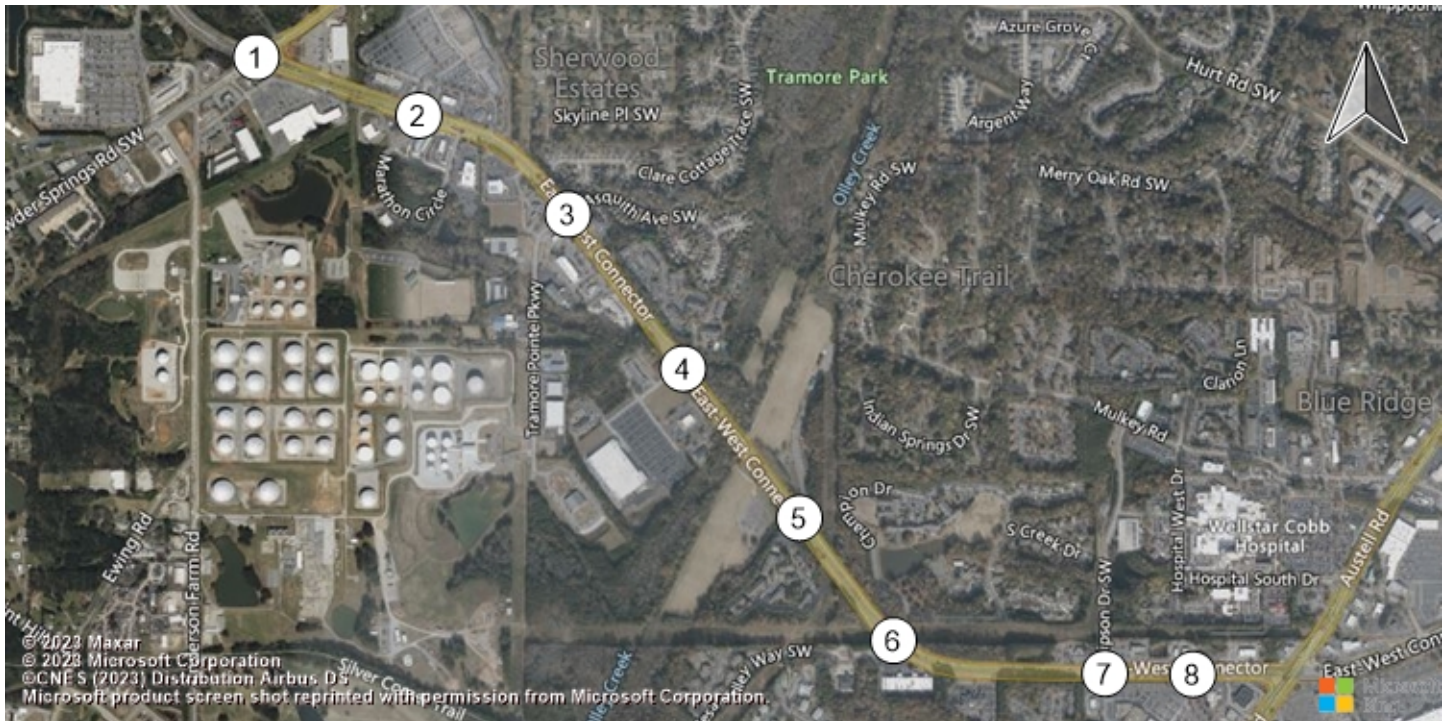


Traffic Volume - Base Volume

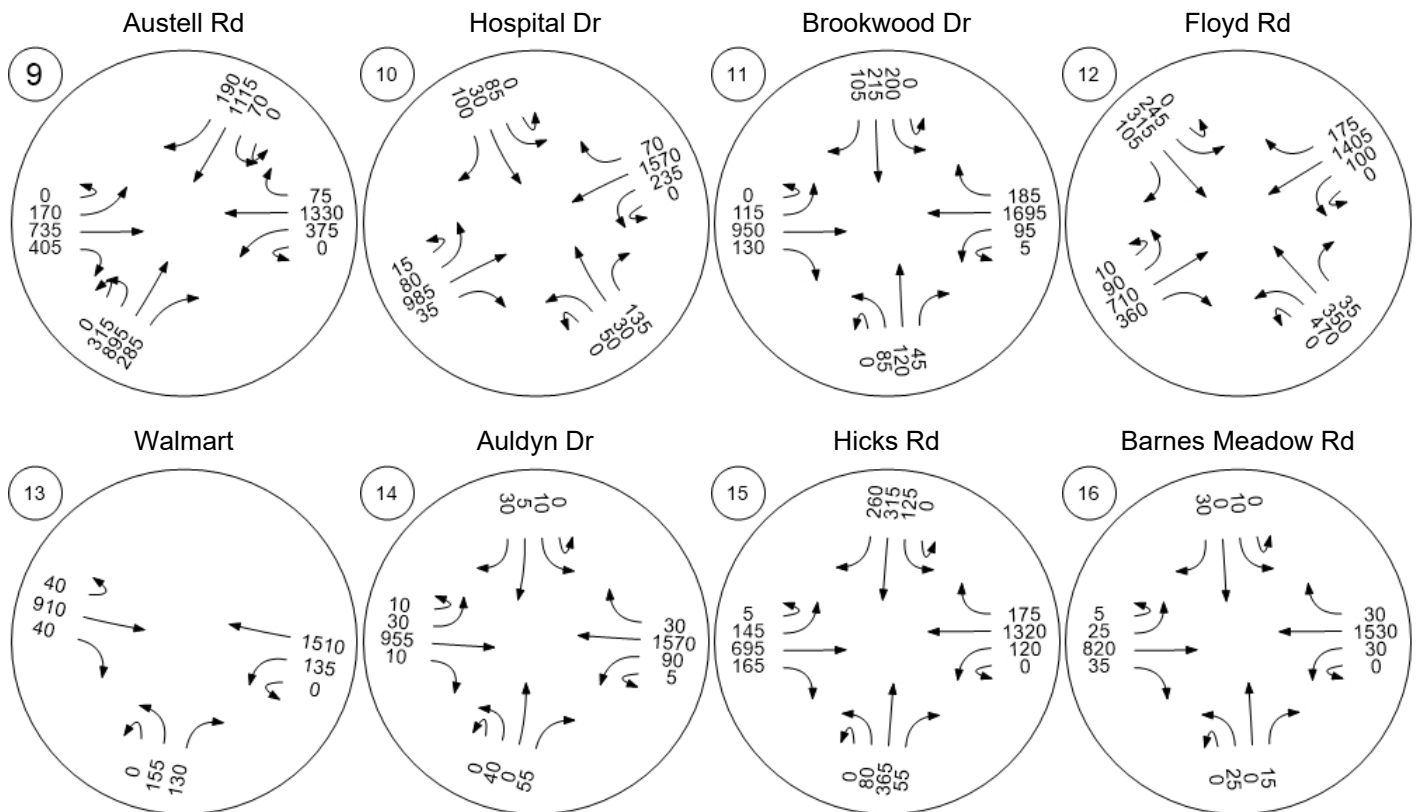
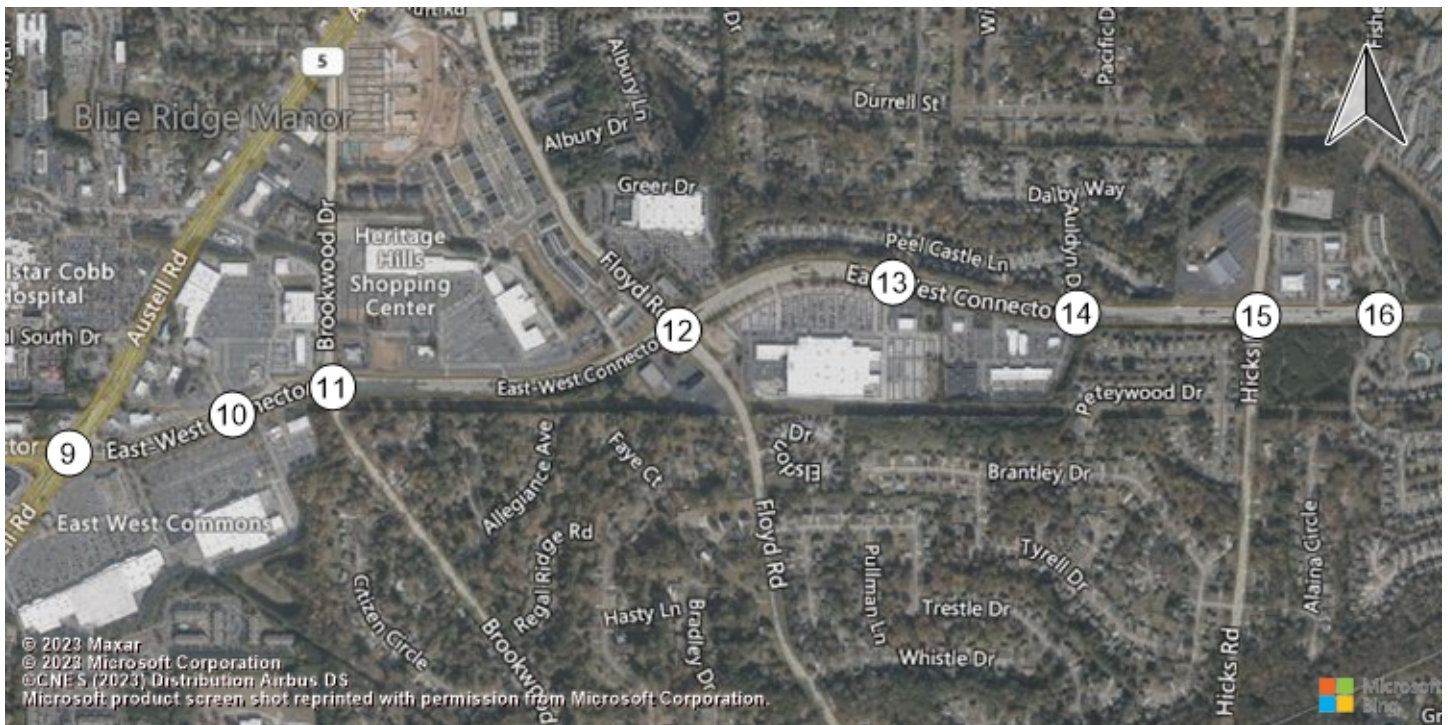


**2035 PM Peak Hour**

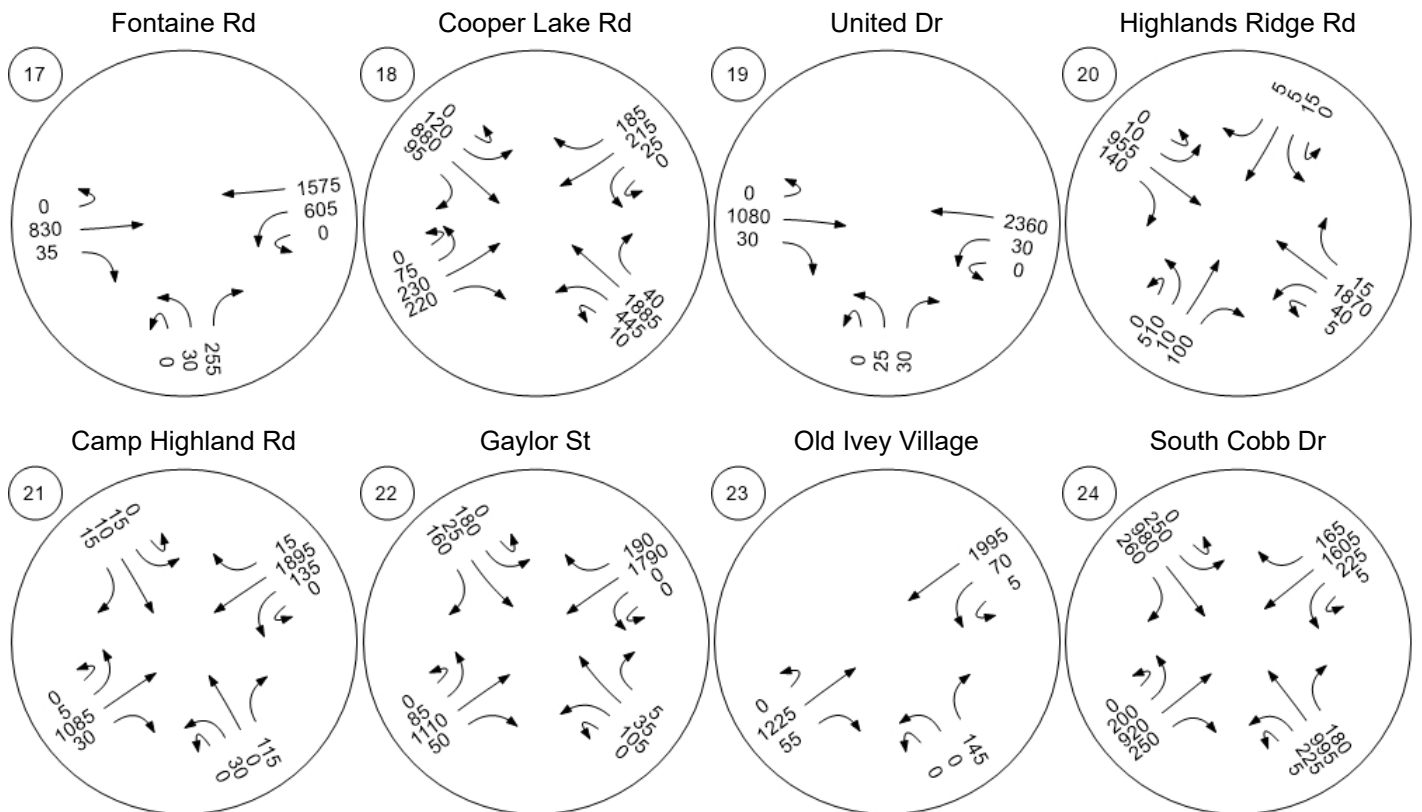
Traffic Volume - Base Volume



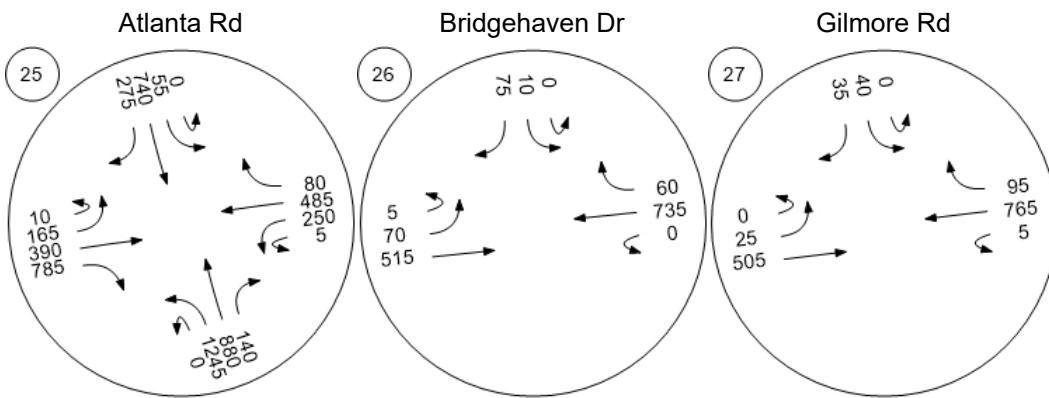
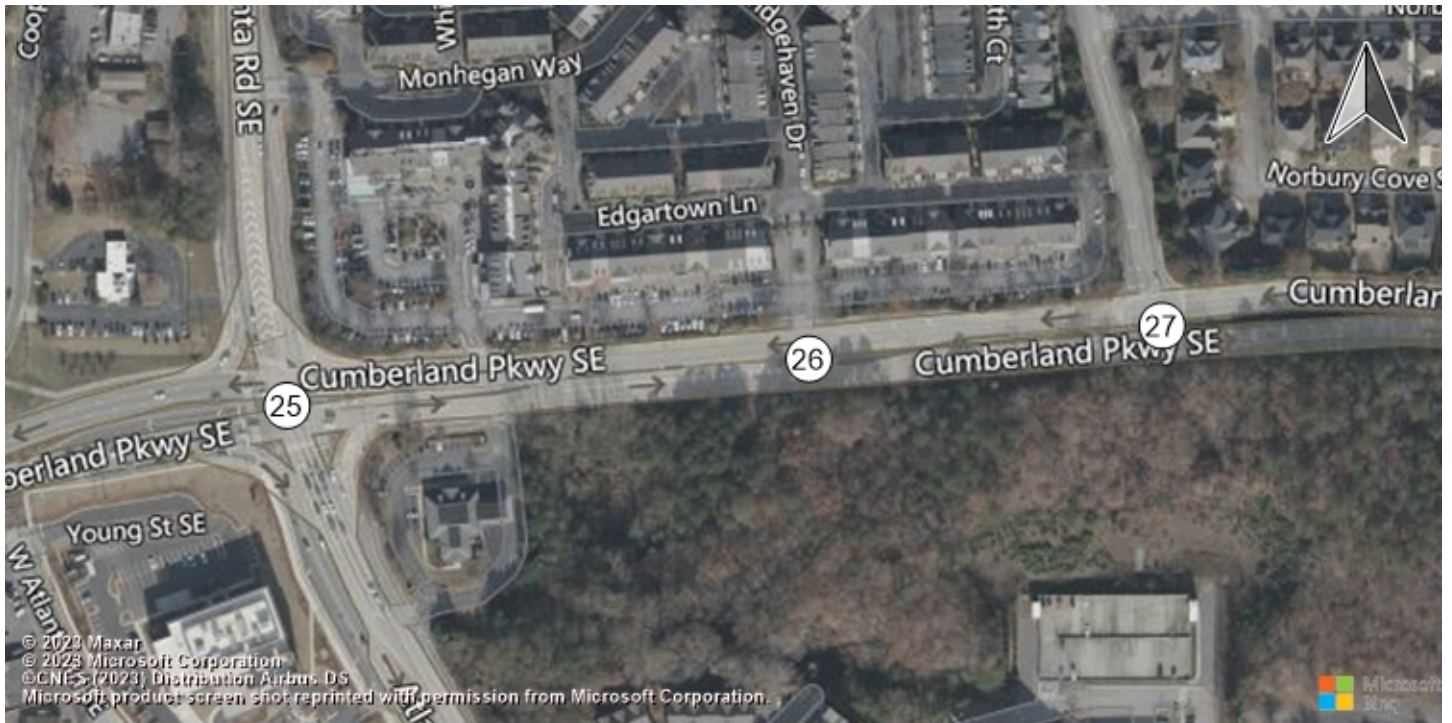
Traffic Volume - Base Volume



Traffic Volume - Base Volume

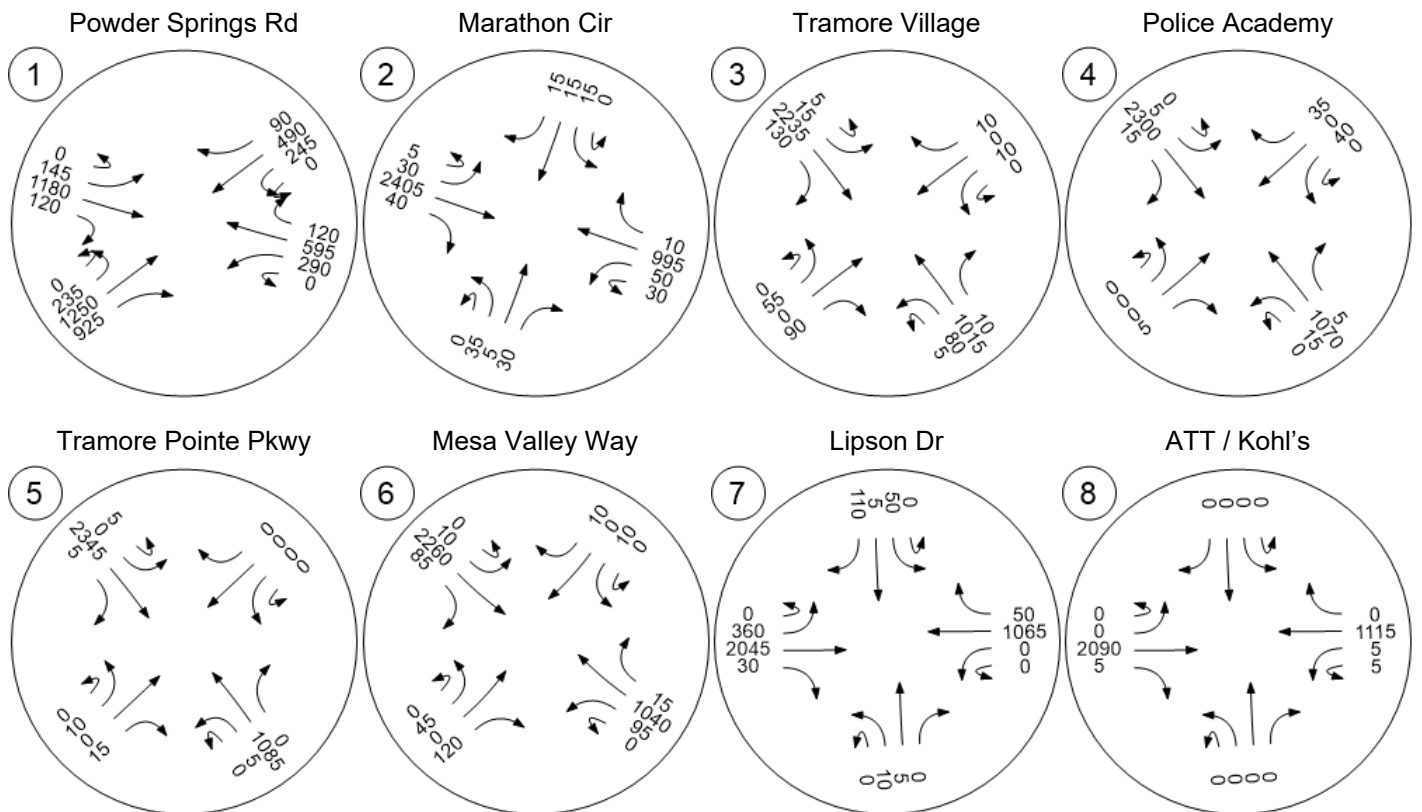
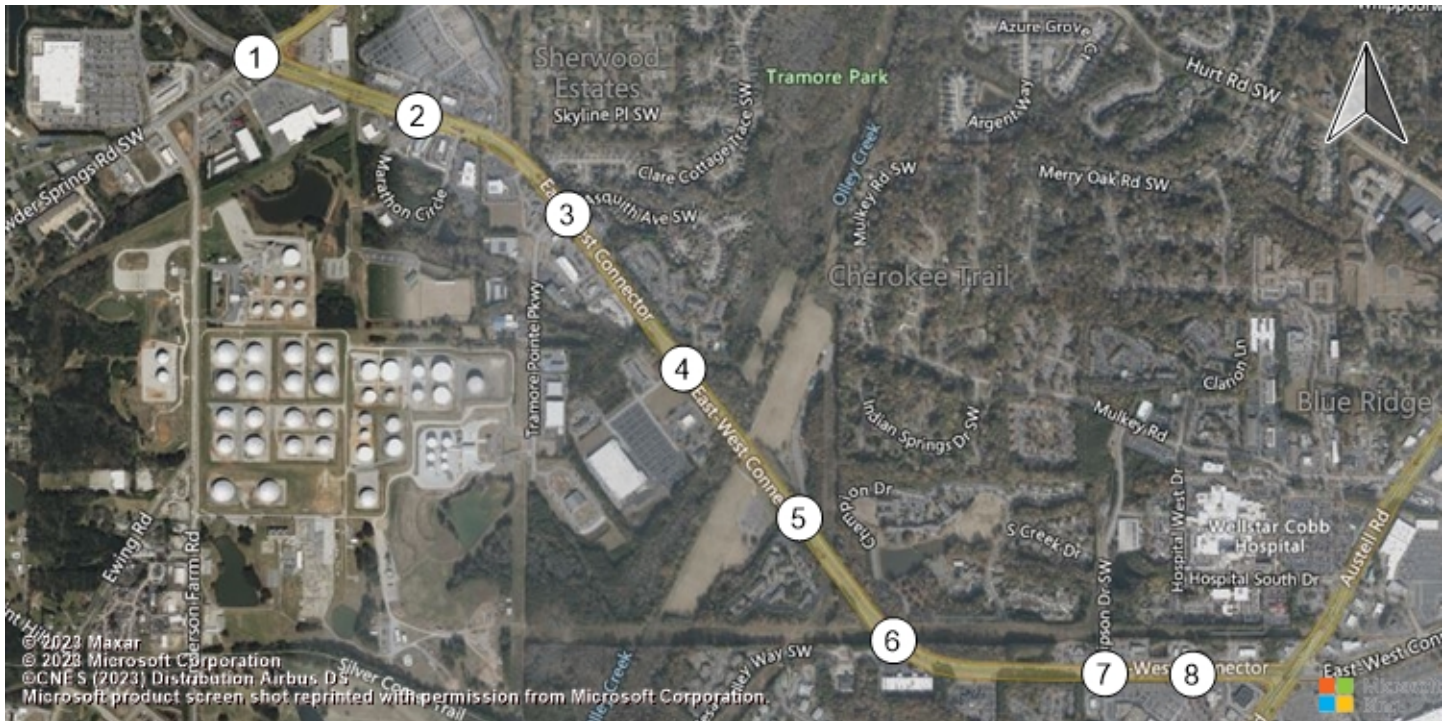


Traffic Volume - Base Volume

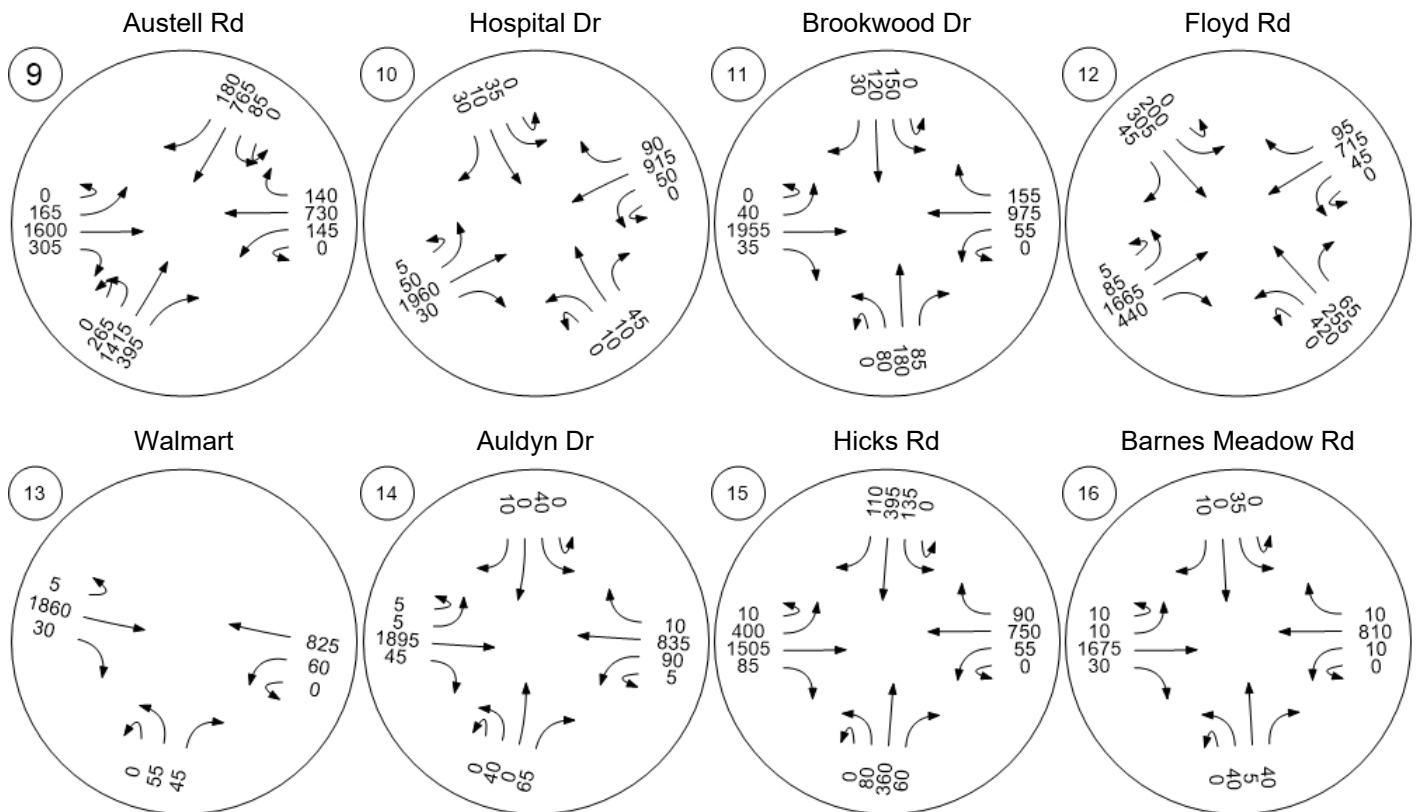


**2055 AM Peak Hour**

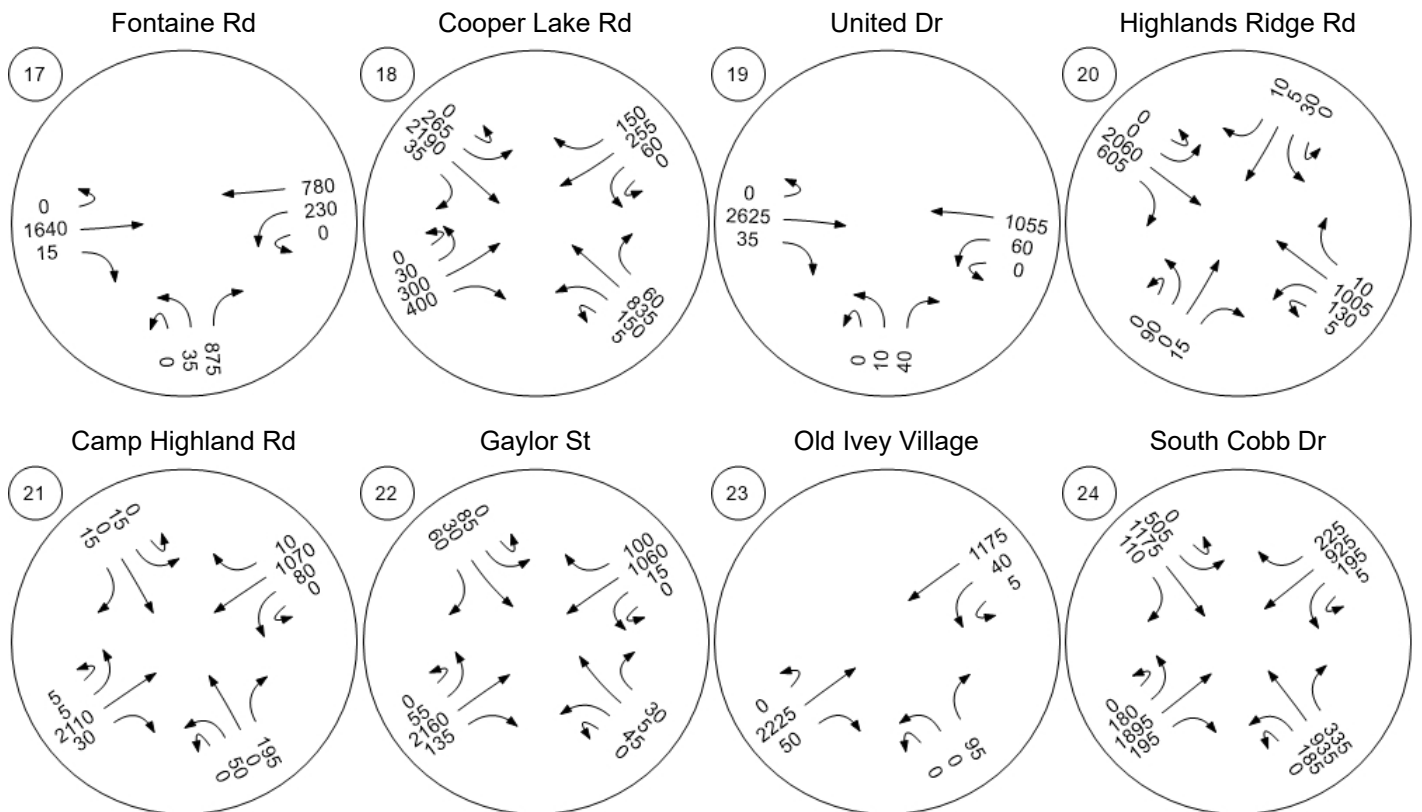
Traffic Volume - Base Volume



Traffic Volume - Base Volume



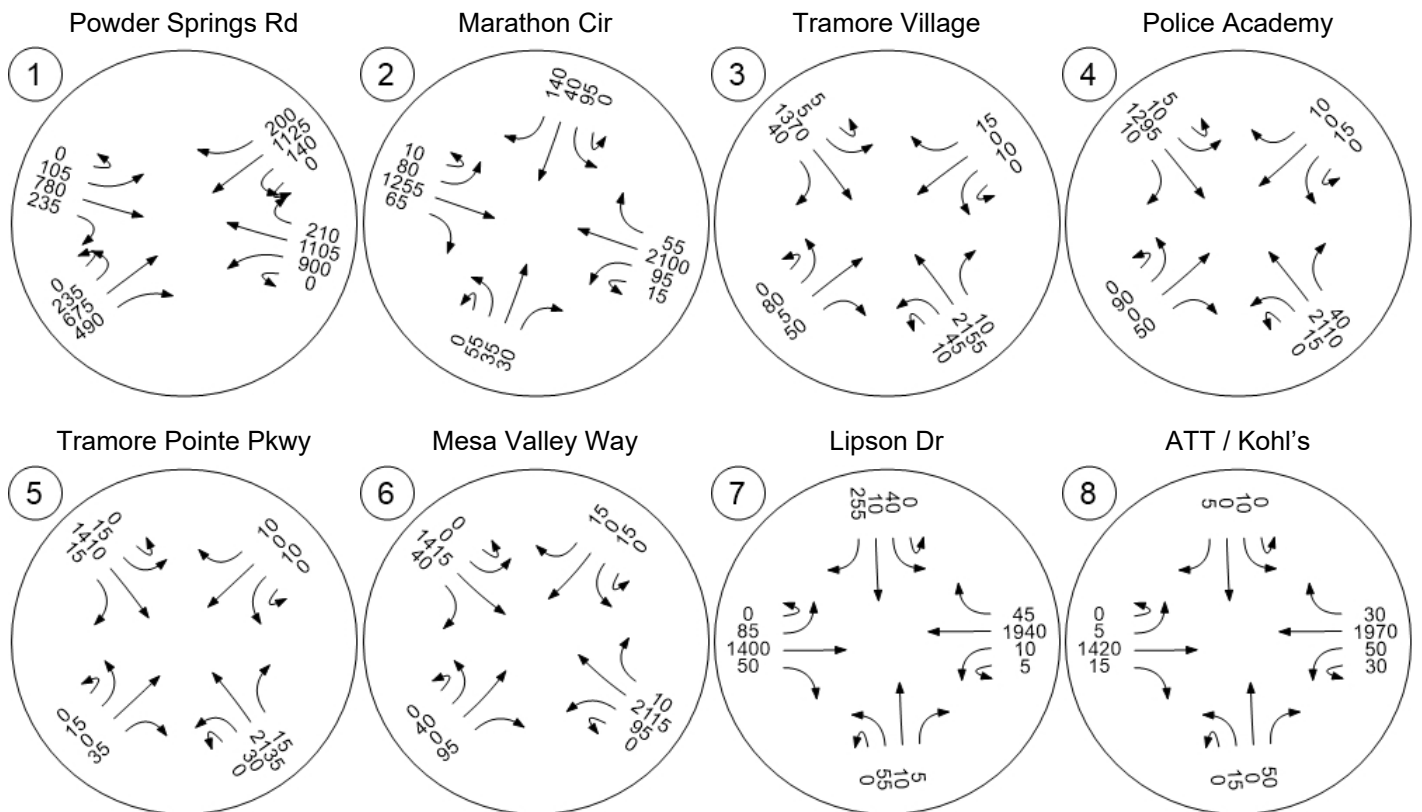
Traffic Volume - Base Volume



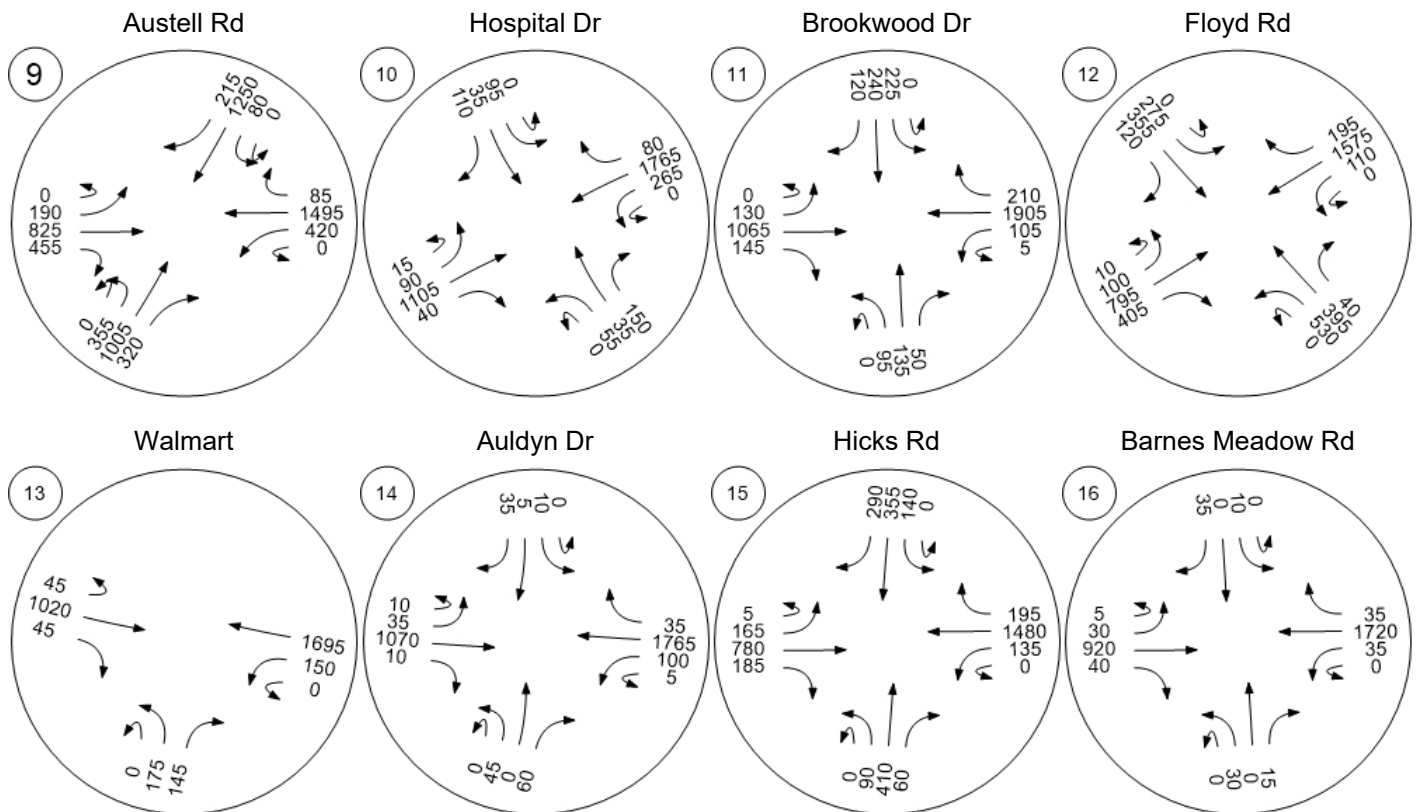


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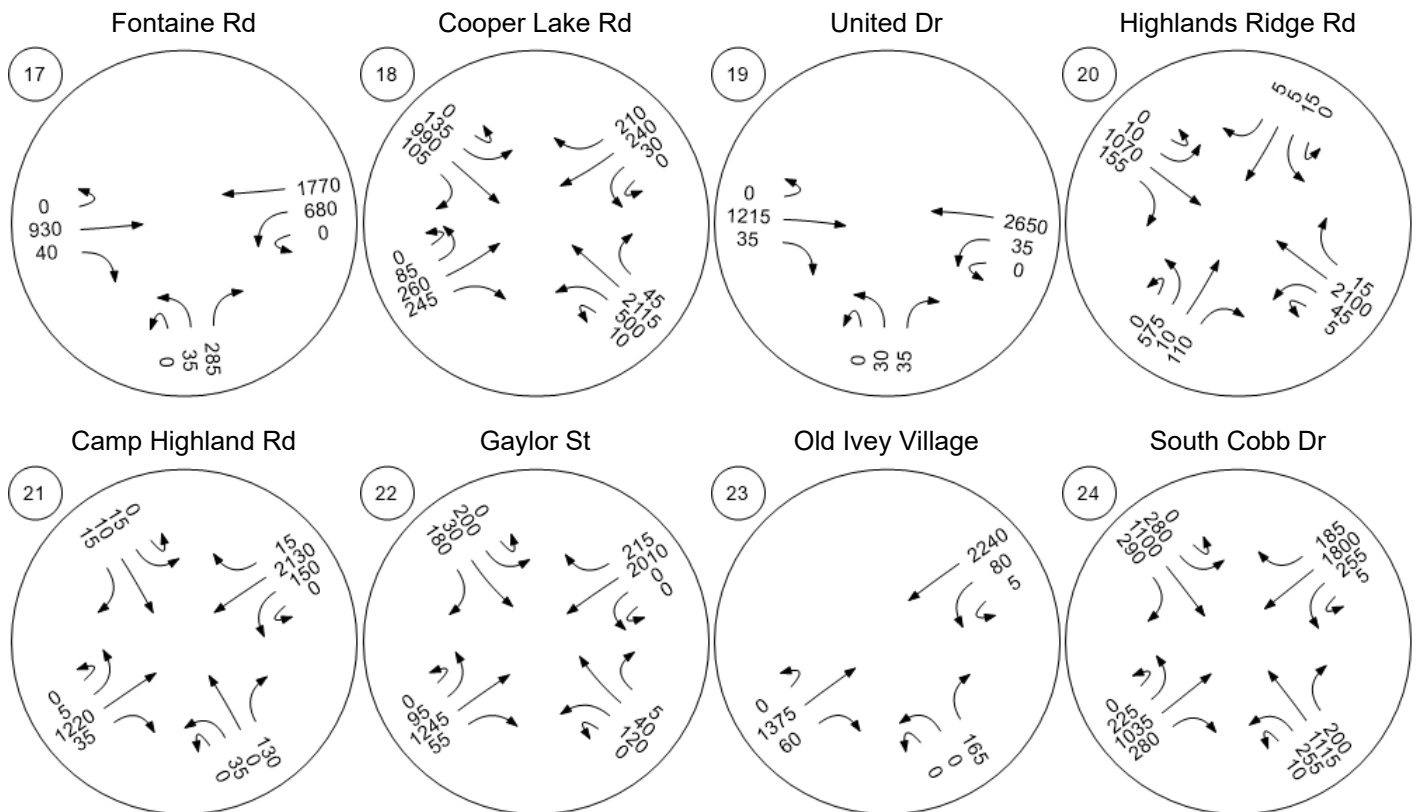
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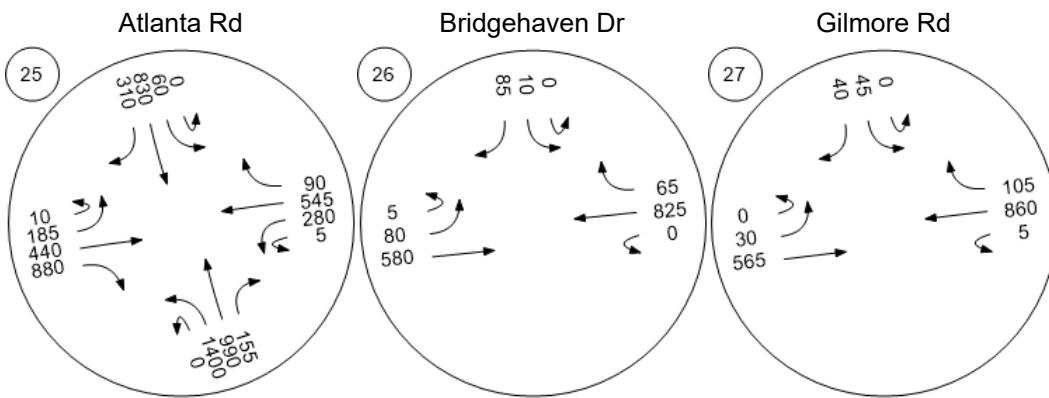
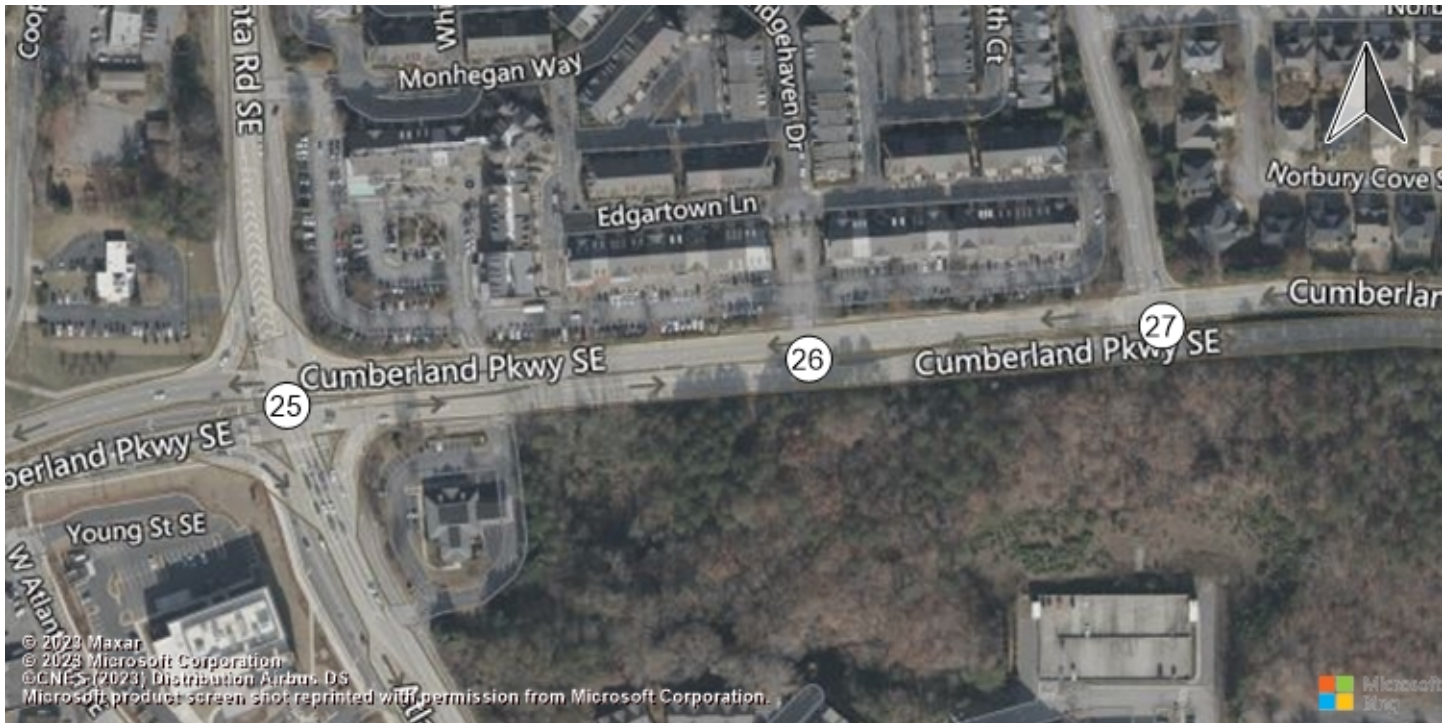
Traffic Volume - Base Volume



Traffic Volume - Base Volume



Traffic Volume - Base Volume



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