



# FREIGHT CLUSTER PLAN

## TRAFFIC STUDY

IN COOPERATION WITH **ARC**

**FINAL REPORT**  
APRIL 2024



PREPARED BY



METRO ANALYTICS



# Stonecrest Freight Cluster Plan

## Traffic Study: Final Report

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For



In cooperation with



**April 2024**

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**Appendix A – Traffic Counts**

**Appendix B – Crash Analysis Data**

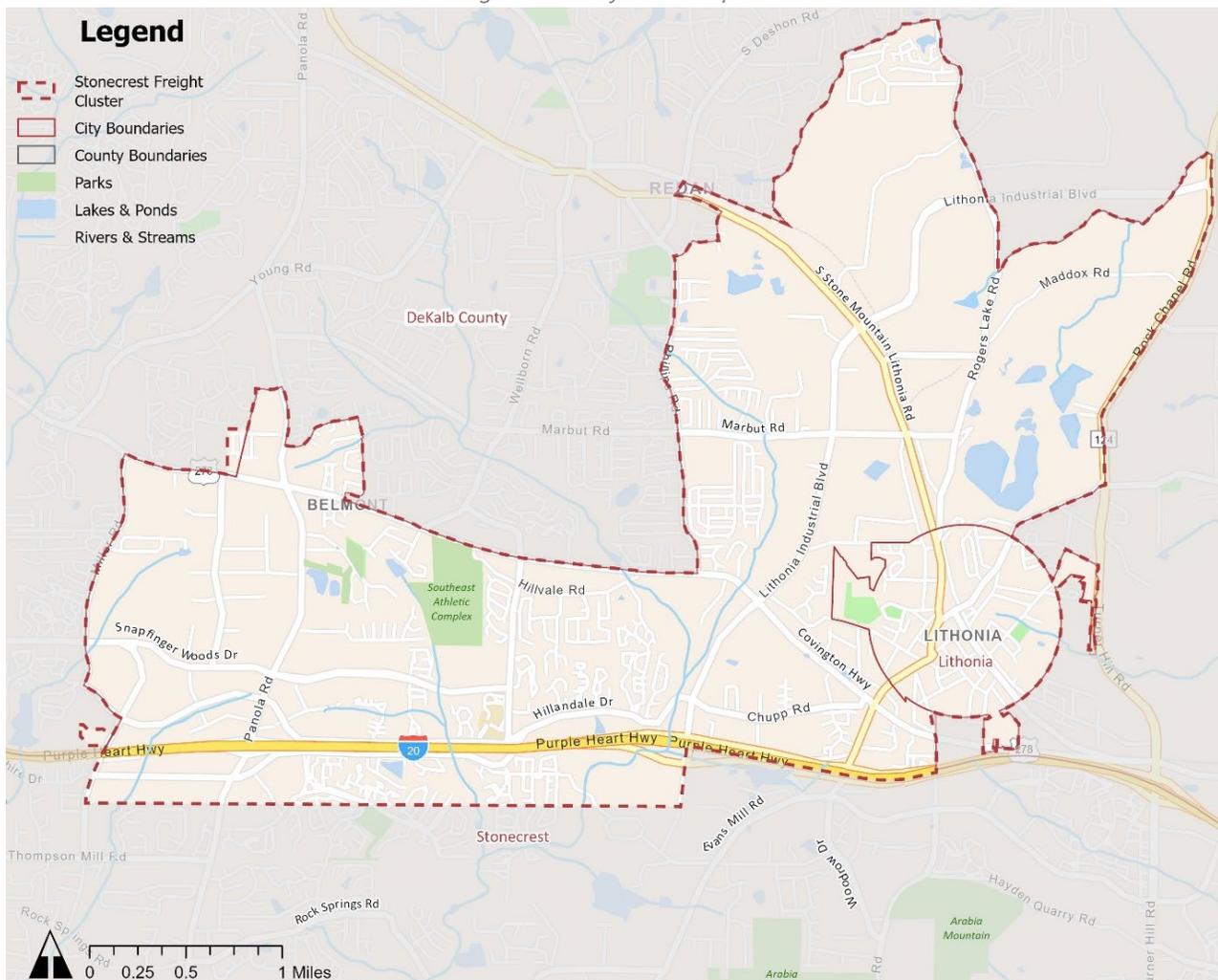
**Appendix C – Synchro Intersection Capacity Analysis**

**Appendix D – Intersection Growth Rate Analysis**

## 1 Overview

As an essential component of the freight cluster plan, an in-depth traffic analysis was undertaken at critical intersections located within the study area. The study evaluated the capacity, operational functionality, and safety at these intersections with the goal of identifying shortcomings and suggesting potential improvement projects to address any deficiencies. Subsequent sections of this report provide an overview of the intersection selection process, the methodology employed for the traffic analysis, the findings derived from this analysis, and recommendations for proposed improvements. A general map of the study area used for this traffic study is shown in Figure 1 below.

Figure 1: Study Area Map



## 2 Inventory of Study Intersections

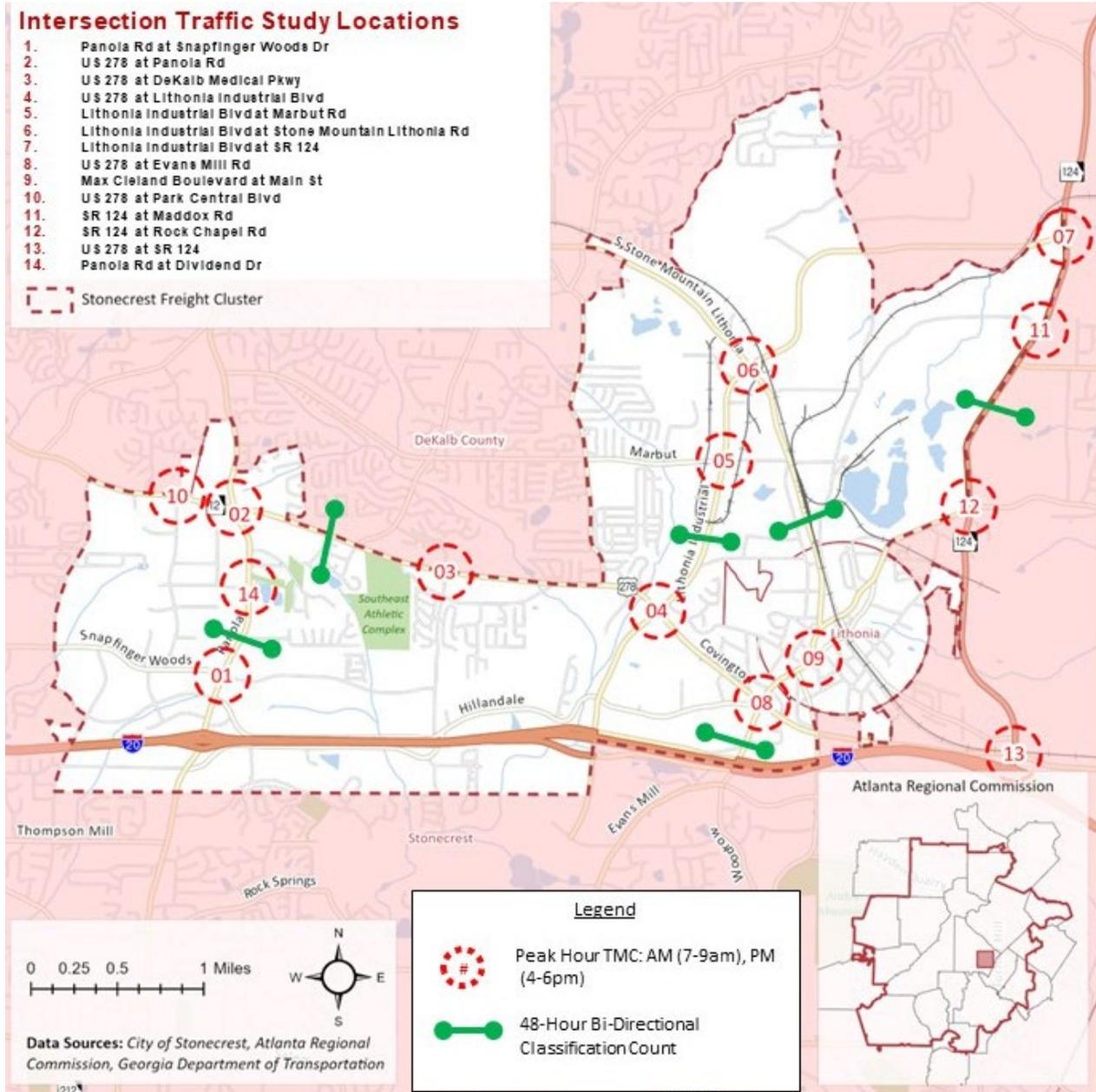
Fourteen intersections were selected based on input from Metro Analytics, Atlas Technical Consultants, and the City of Stonecrest. Criteria that were used to identify the study intersections were based on selecting the main signalized intersections, locations of high freight volumes, and logical routes of freight movement within the study area. These fourteen intersections used as the base for the traffic analysis are:

- Panola Road at Snapfinger Woods Drive
- US 278 at Panola Road
- US 278 at DeKalb Medical Parkway
- US 278 at Lithonia Industrial Boulevard
- Lithonia Industrial Boulevard at Marbut Road
- Lithonia Industrial Boulevard at Stone Mountain Lithonia Road
- Lithonia Industrial Boulevard at SR 124
- US 278 at Evans Mill Road
- Max Cleland Boulevard at Main Street
- US 278 at Park Central Boulevard
- SR 124 at Maddox Road
- SR 124 at Rock Chapel Road
- US 278 at SR 124
- Panola Road at Dividend Drive

Additionally, 6 roadway segments were selected as important locations to conduct 48-hour bi-directional classification counts (September 12 and 13, 2023) within the project study area based on involvement with the project management team mentioned above. The locations for these counts are depicted as green lines in Figure 2 on the preceding page. The six roadway locations where 48-hour classification counts were taken are:

- Panola Road (north of Snapfinger Woods Drive)
- US 278 (east of Panola Road)
- Lithonia Industrial Boulevard (south of Marbut Road)
- Stone Mountain Lithonia Road (south of Lithonia Industrial Boulevard)
- SR 124 (north of Rock Chapel Road / Union Grove Road)
- Evans Mill Road (south of US 278)

Figure 2 : Traffic Count Map



### 3 Existing Conditions

#### 3.1 Existing Volumes

For the basis of the existing and future traffic capacity analysis, existing traffic counts were conducted at the 14 study intersections during the AM (7:00 – 9:00 am) and PM (4:00 – 6:00 pm) peak period on Tuesday, September 12, 2023. When conducting traffic counts in the field, Tuesday, Wednesday, and Thursday represent the most typical commute patterns and thus better reflect existing traffic conditions within the study area. Additionally, six 48-hour bi-directional counts were collected along important roadway study segments from September 12 at 00:00 hours to September 14, 2023 at 00:00 hours. For this study the 48-hour classification counts were averaged over 24 hours to reflect average daily traffic (ADT) for each roadway segment location. The results of the existing traffic counts are presented in Figures 3 through 6 below.

Figure 3: Existing Turning Movement Counts (Locations 1 - 6)

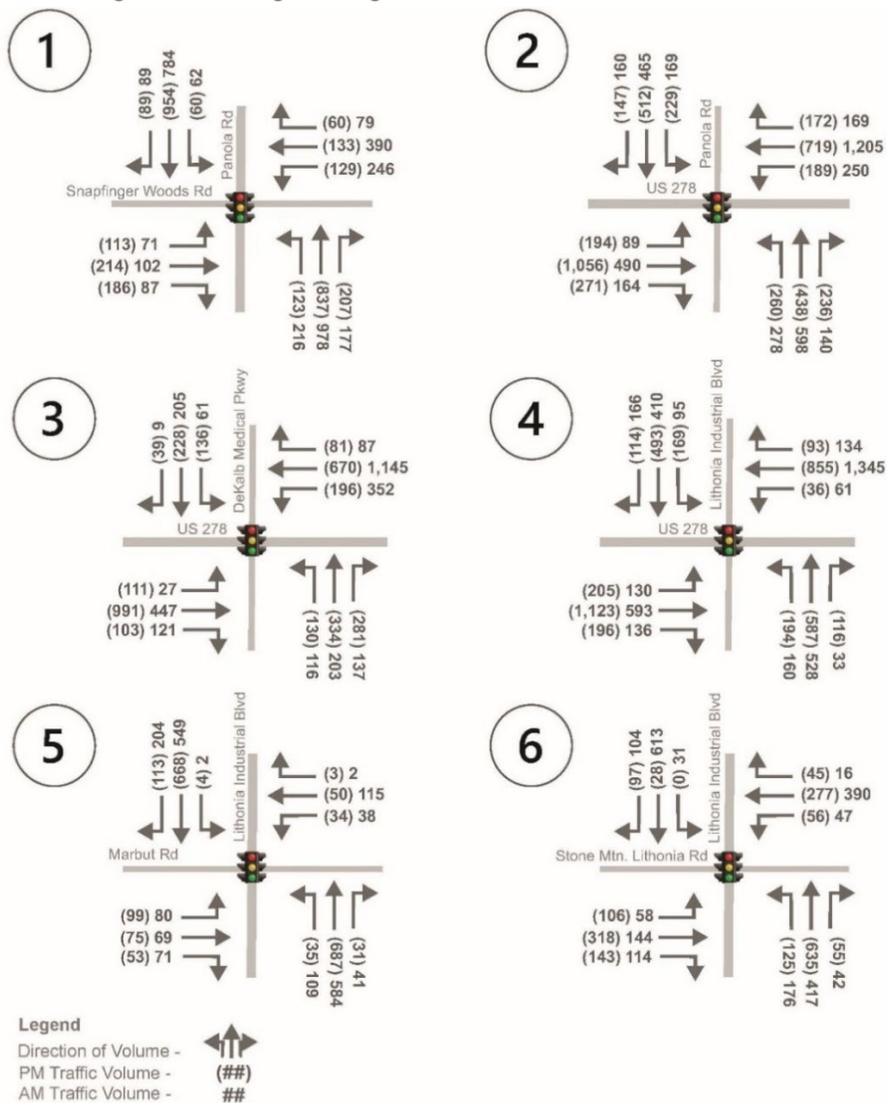


Figure 4: EXISTING TURNING MOVEMENT COUNTS (LOCATIONS 7 - 12)

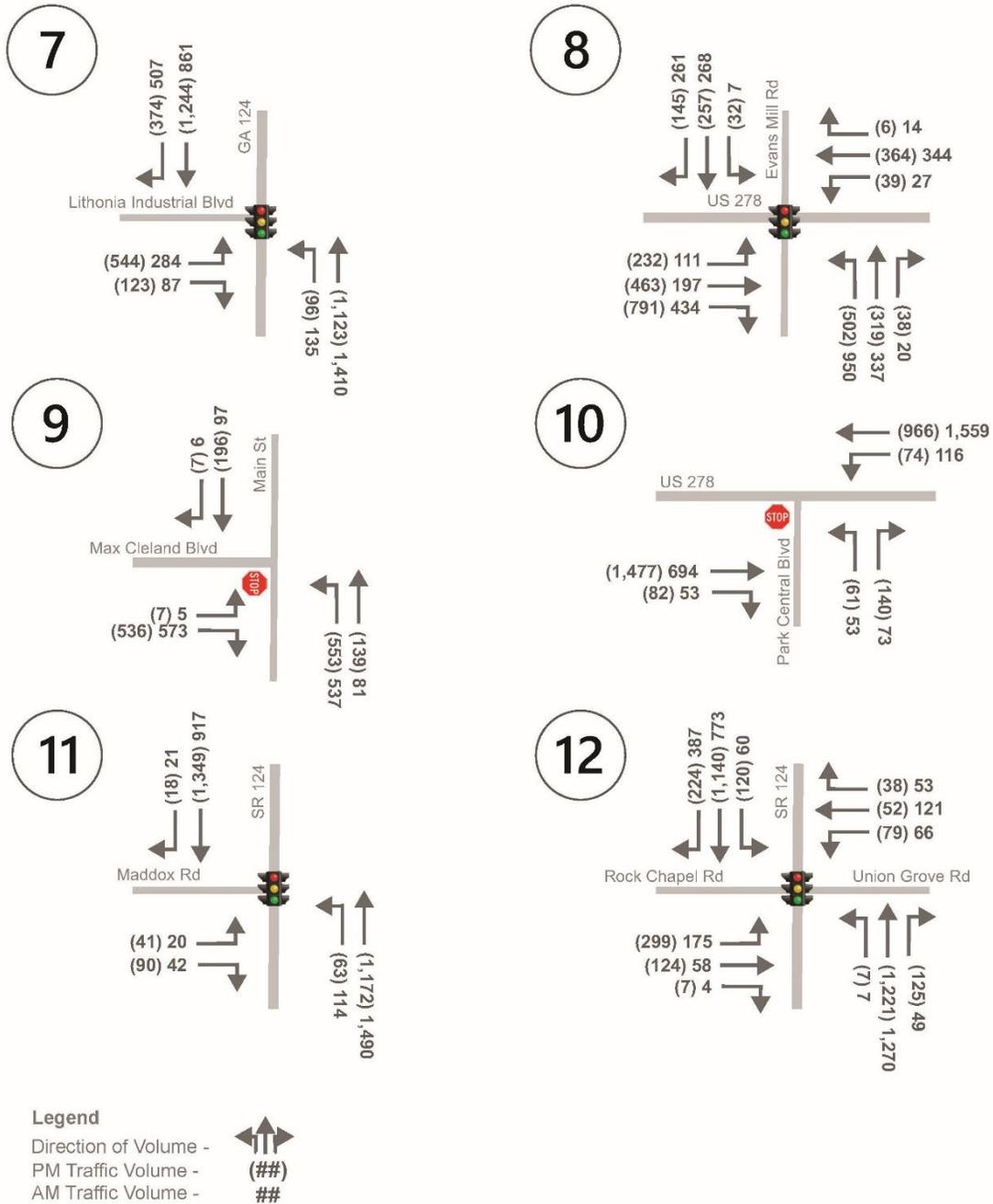


Figure 5: EXISTING TURNING MOVEMENT COUNTS (LOCATIONS 13 and 14)

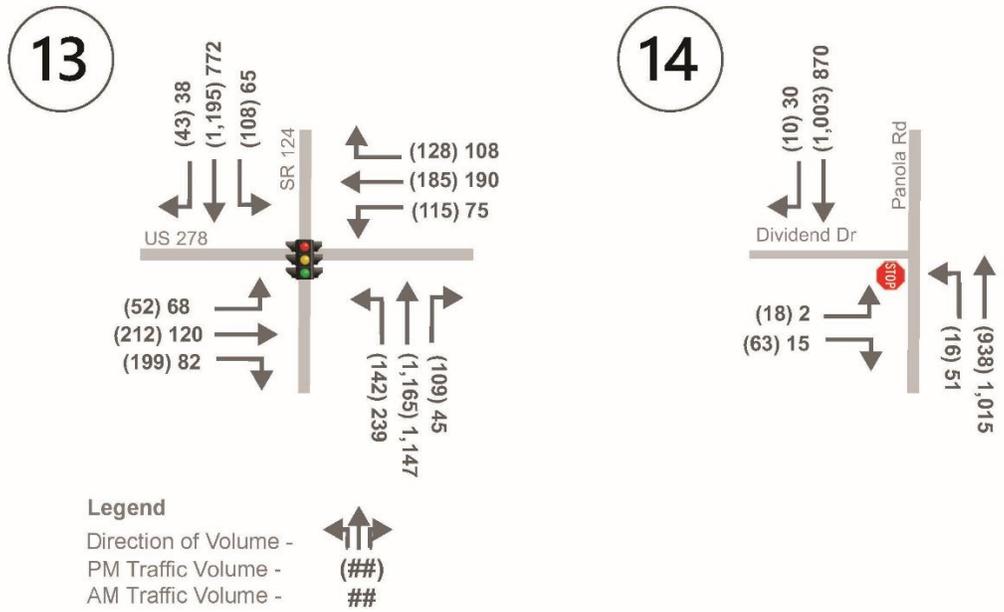
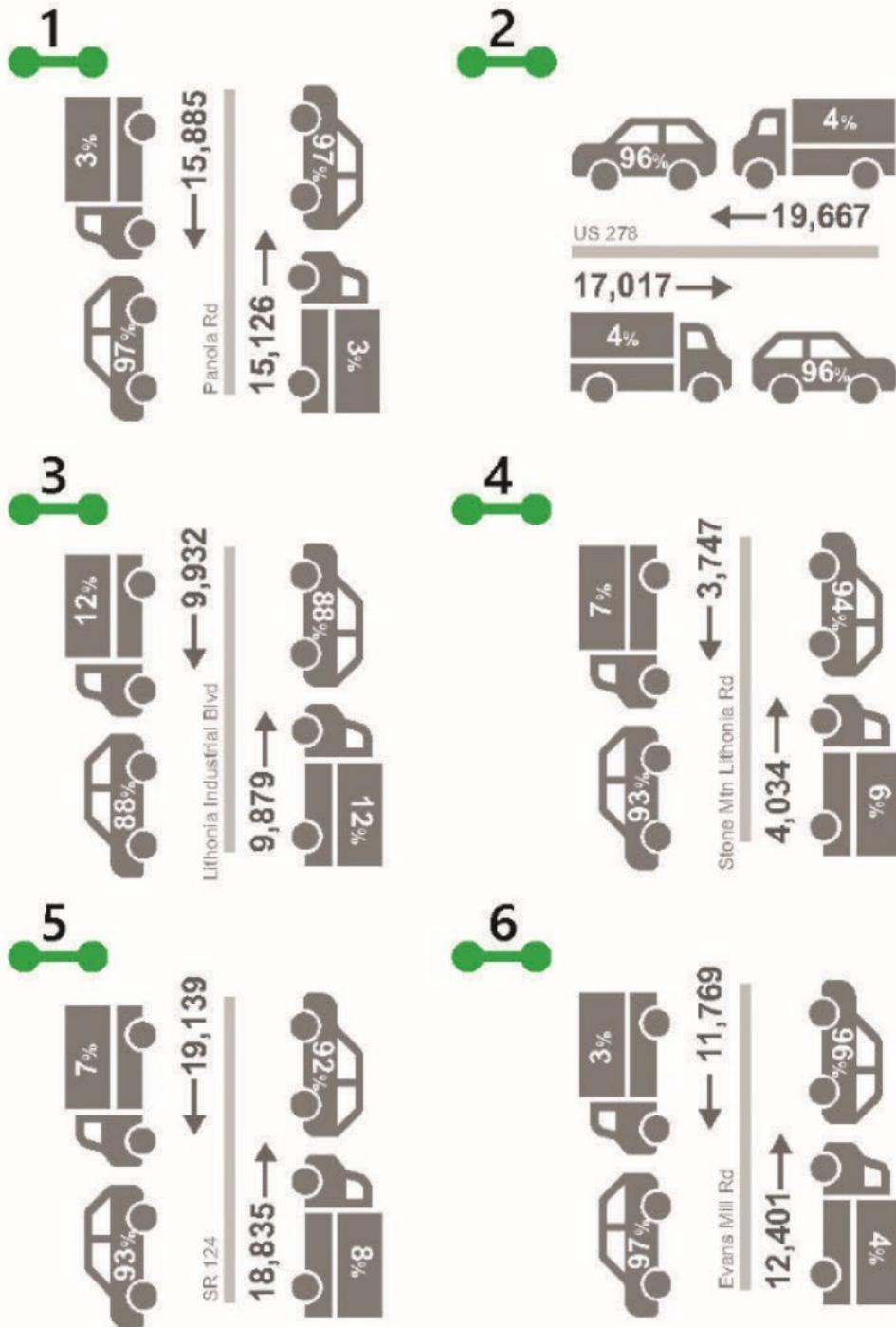


Figure 6: Existing Average Daily Traffic (ADT) with Truck and Vehicle Percentages



## 3.2 Site Visit and Field Observations

An operational and geometric design field review was conducted on Tuesday November 14<sup>th</sup>, 2023 at each of the 14 intersections and along the main project corridors within the study area. The field review primarily focused on existing operations and infrastructure conditions at each of the 14 study intersections with additional congestion and safety analysis observed throughout the main study area roadways. The field review primarily analyzed intersection operations including truck turning movements, condition of sidewalks, curb radii, existing lighting and signage, and other intersection elements including the potential for enhanced development. The existing conditions diagrams of the observed intersections highlight the current issues and are shown in Figures 7 to 20 below.

Figure 7: Intersection #1 Field Review

### 1. Panola Rd at Snapfinger Woods Dr



Figure 8: Intersection #2 Field Review

**2. US 278 at Panola Rd**

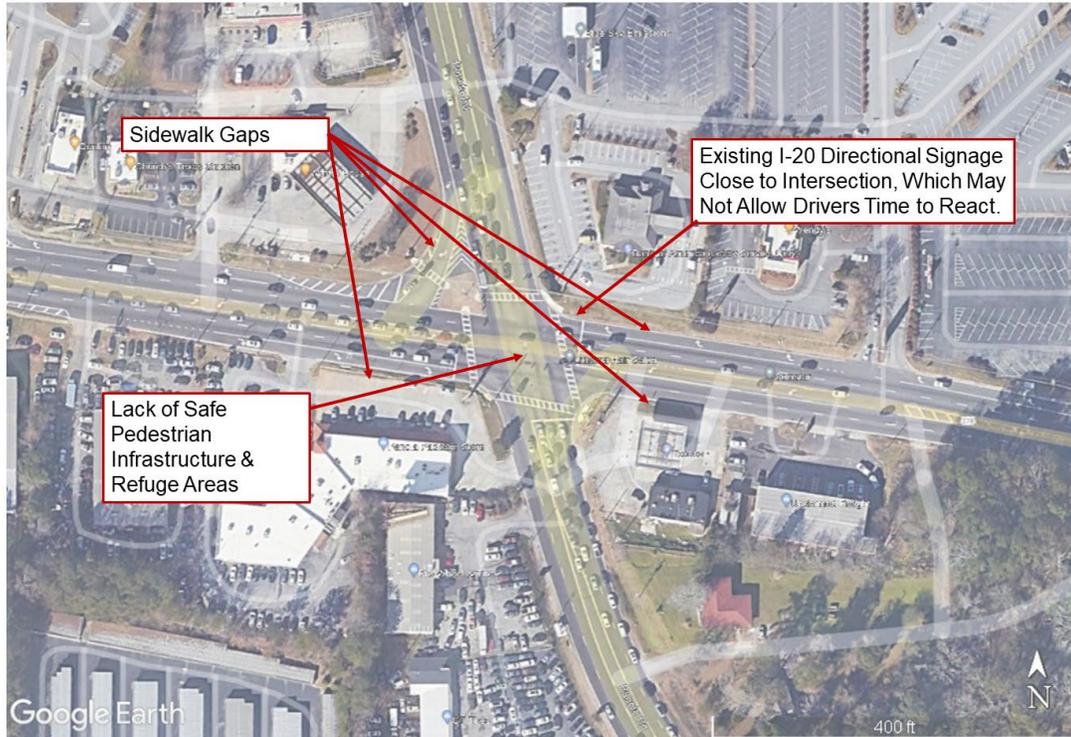


Figure 9: Intersection #3 Field Review

### 3. US 278 at DeKalb Medical Pkwy



Figure 10: Intersection #4 Field Review

#### 4. US 278 at Lithonia Industrial Blvd

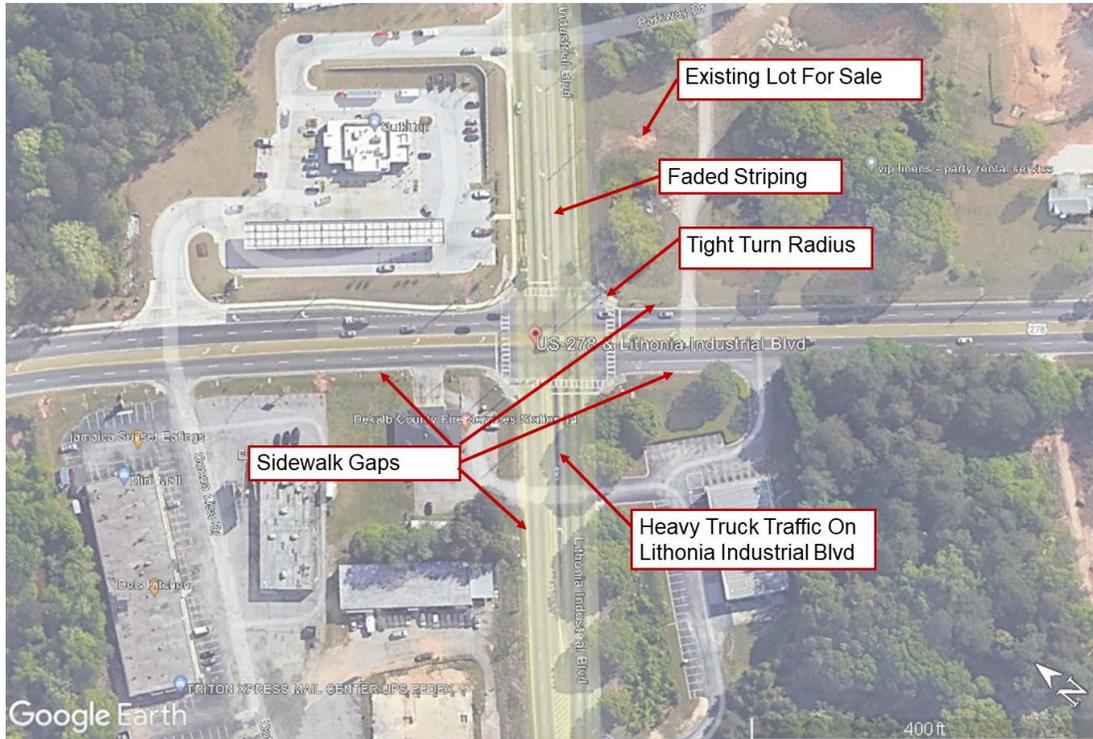


Figure 11: Intersection #5 Field Review

### 5. Lithonia Industrial Blvd at Marbut Rd

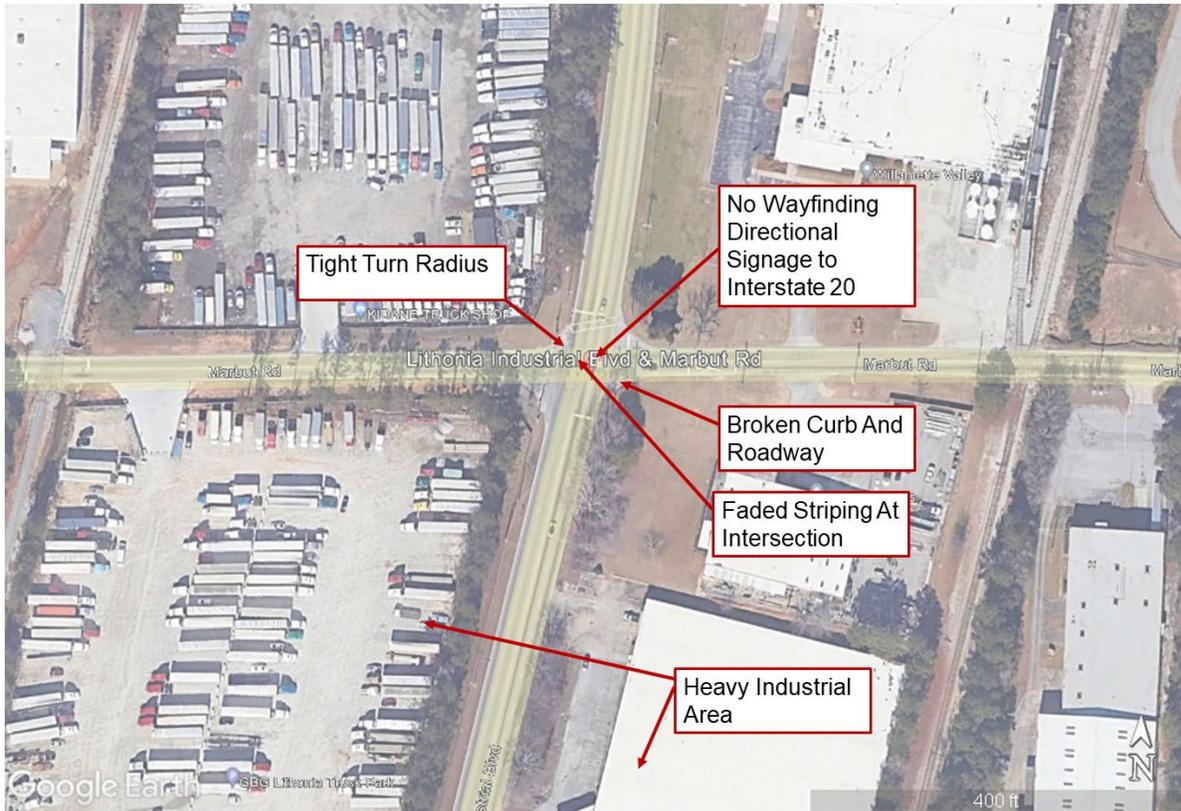


Figure 12: Intersection #6 Field Review

### 6. Lithonia Industrial Blvd at Stone Mountain Lithonia Rd



Figure 13: Intersection #7 Field Review

### 7. Lithonia Industrial Blvd at SR 124

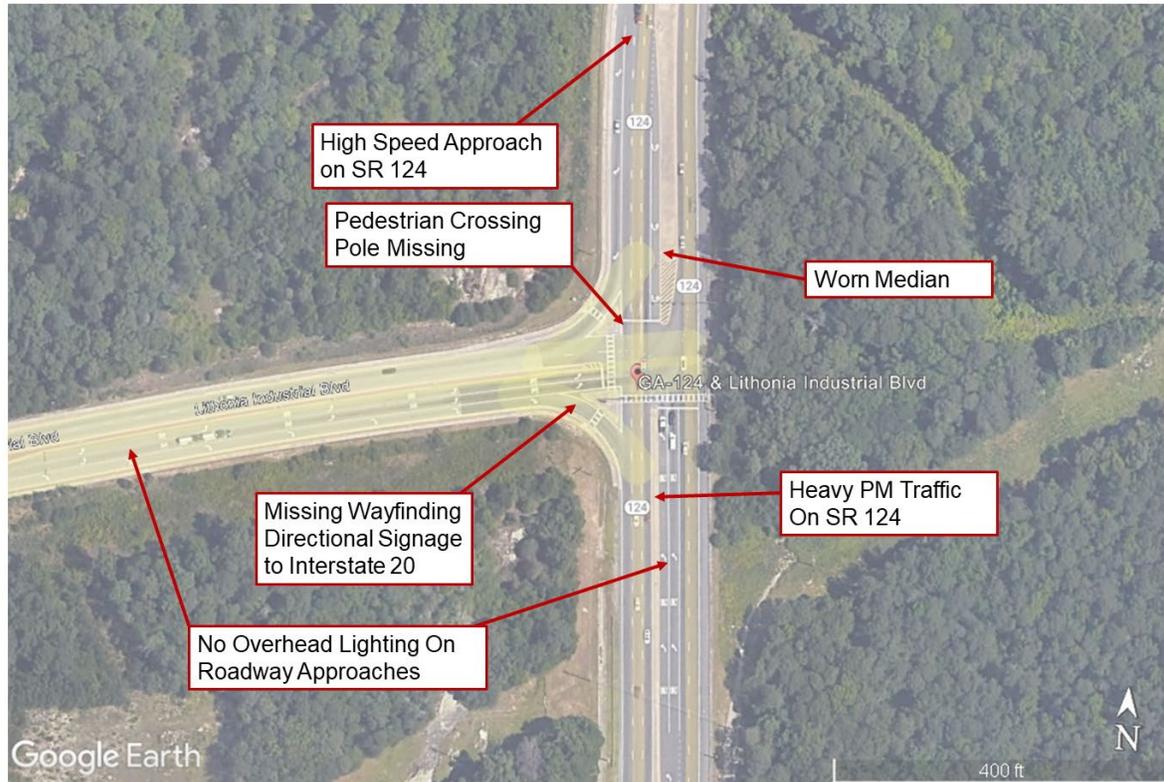


Figure 14: Intersection #8 Field Review

**8. US 278 at Evans Mill Rd**

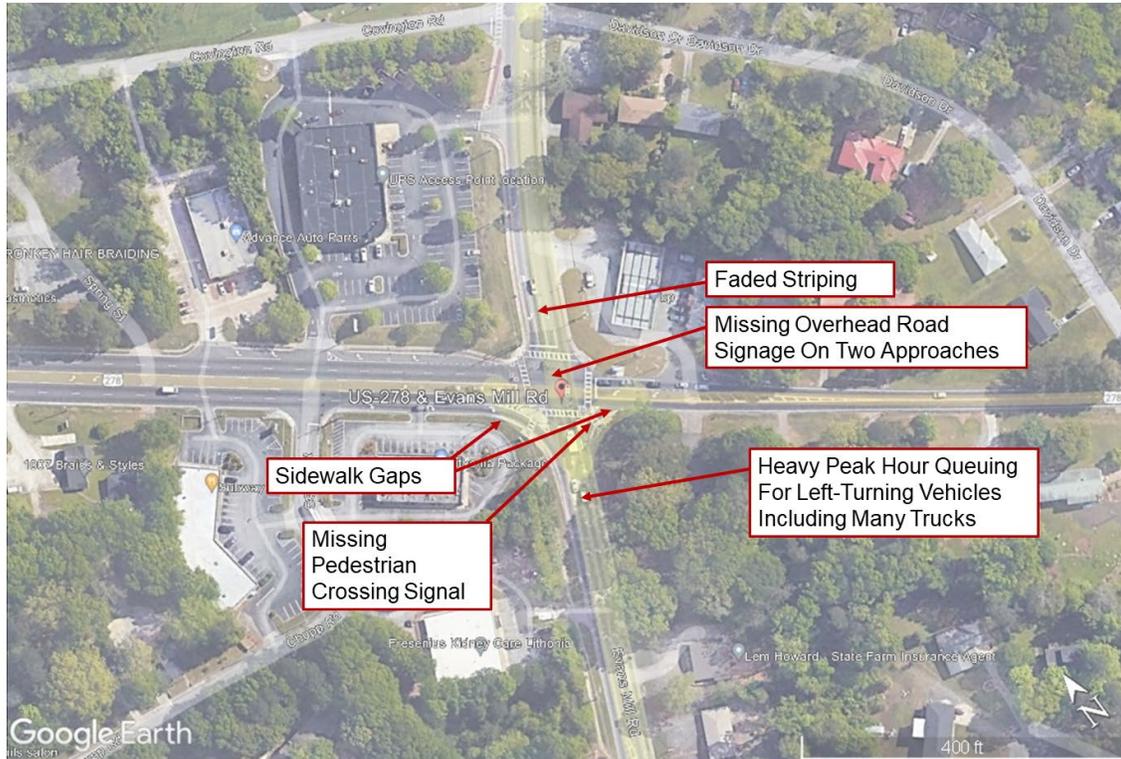


Figure 15: Intersection #9 Field Review

### 9. Max Cleland Boulevard at Main St

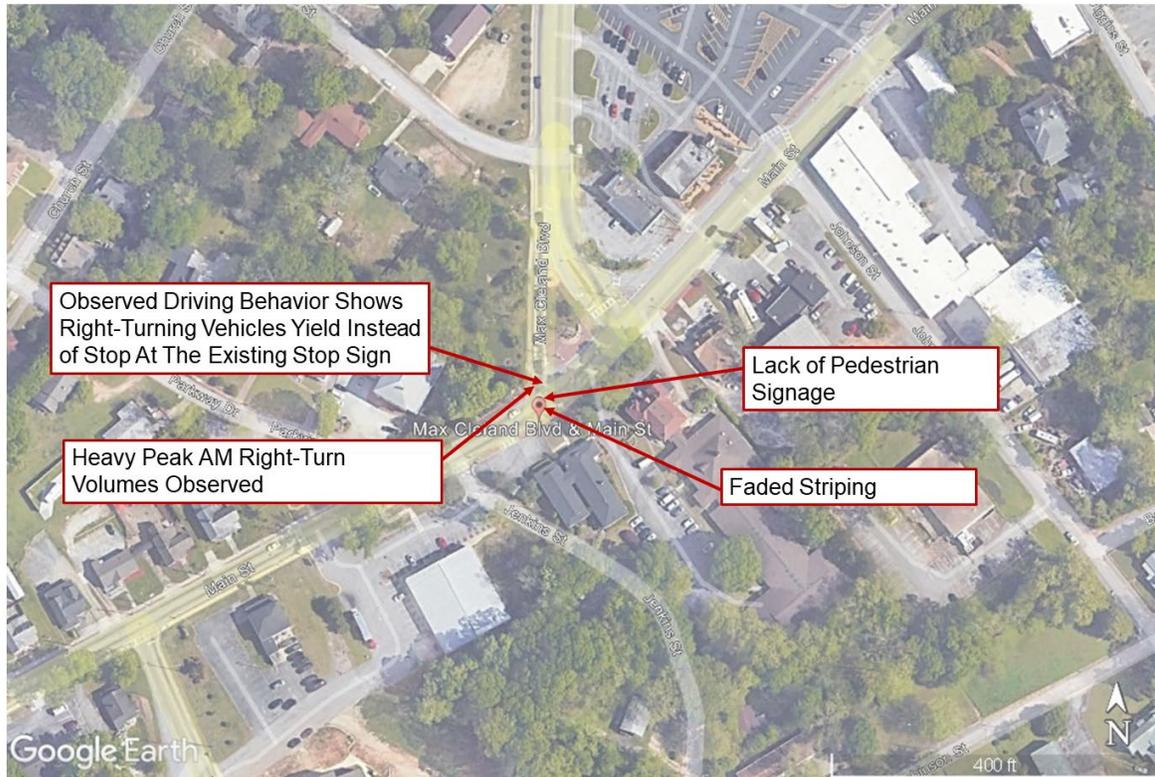


Figure 16: Intersection #10 Field Review

**10. US 278 at Park Central Blvd**



Figure 17: Intersection #11 Field Review

**11. SR 124 at Maddox Rd**

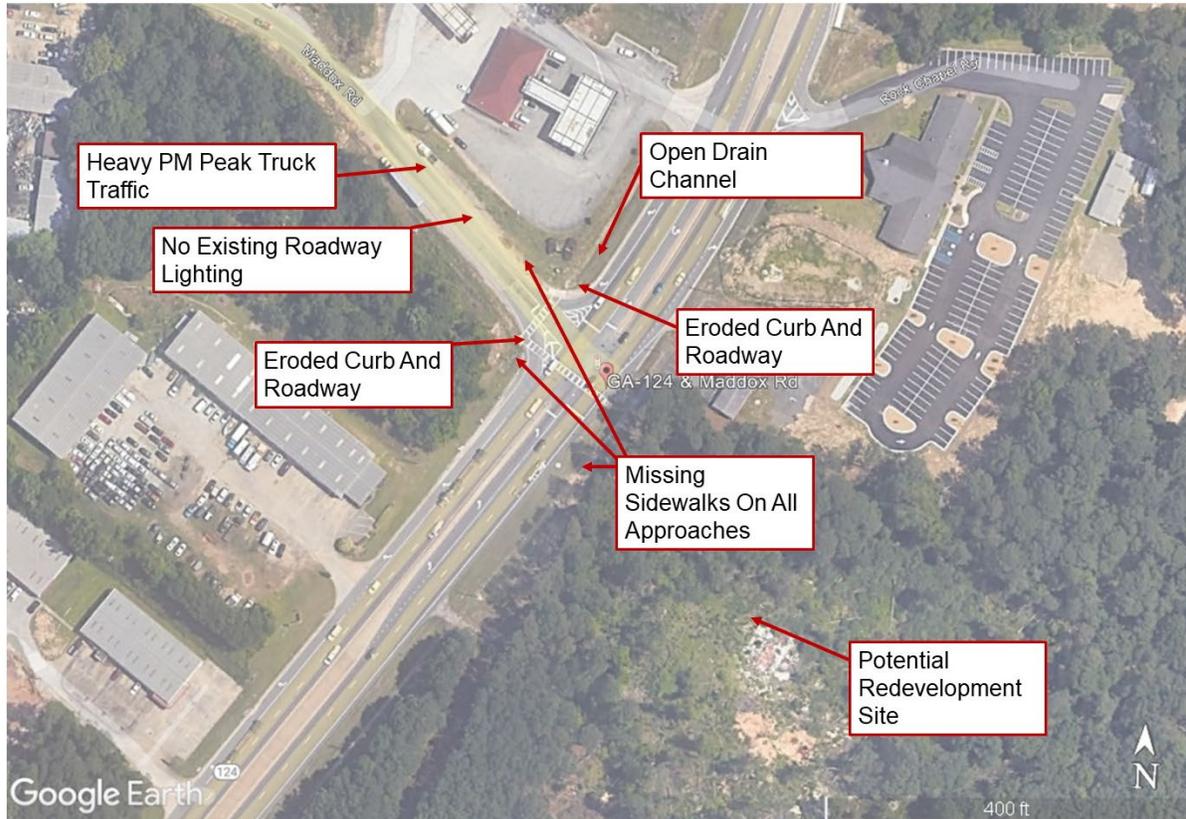


Figure 18: Intersection #12 Field Review

## 12. SR 124 at Rock Chapel Rd



Figure 19: Intersection #13 Field Review

**13. US 278 at SR 124**

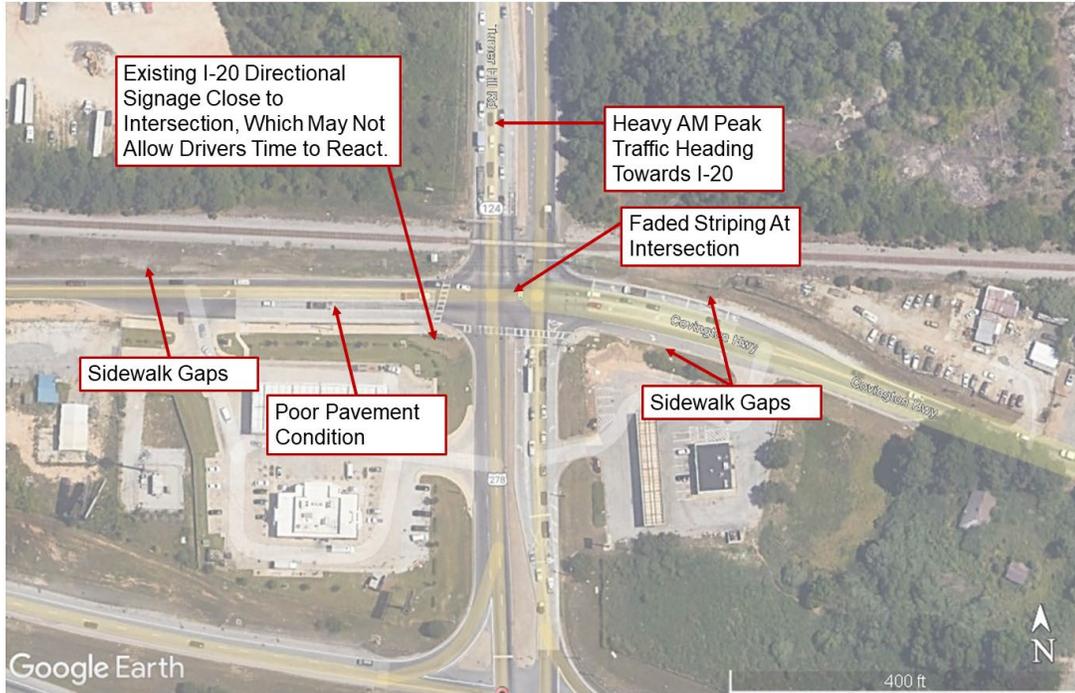


Figure 20: Intersection #14 Field Review

**14. Panola Rd at Dividend Dr**



The 14 intersection site observation aerial diagrams were consolidated into a summary matrix showing each intersection with a high-level assessment of the intersection’s elements which ranged from pedestrian facilities to the quality of roadway condition and striping. This table is a planning level analysis to rate each intersection based on field observations. Table 1 below details the existing conditions analysis for each of the 14 study intersections.

Table 1: Existing Intersection Analysis Matrix

Legend	Stonecrest Freight Plan Traffic Study											
	Existing Intersection Analysis											
Good Condition ✓	Needs Improvement ✗	Fair Condition ~	Roadway Striping	Freight Conductive Infrastructure	Roadway Condition	Sidewalk Condition	Pedestrian Safety Features	Existing Traffic Flow	Intersection Sight Distance	Intersection Driveway Potential	Existing Roadway Lighting	Existing Transit Facilities
			~	✓	~	✗	✓	✗	✗	✓	~	~
			✓	✓	~	✗	✗	✗	✓	~	~	~
			✗	✓	~	~	~	✓	✓	~	✗	~
			✗	✗	✗	✗	~	~	✓	✓	~	✗
			✗	~	✗	✗	✗	~	~	~	~	✗
			✗	✓	~	✓	✓	✓	✓	✓	~	✗
			✓	✓	✓	~	~	~	✓	✓	✗	✗
			✗	✗	✓	~	✗	✗	✓	~	~	~
			✗	~	~	✓	✗	~	~	~	✓	~
			✗	✓	✓	✗	✗	~	~	~	~	✗
			✓	✓	~	✗	✗	~	~	✓	✗	✗
			~	~	✗	✗	✗	✗	~	~	✗	✗
			✗	~	✗	✗	✗	~	~	~	~	✗
			✗	~	✓	✗	✗	✓	✗	✓	✗	✗

### 3.3 Crash History

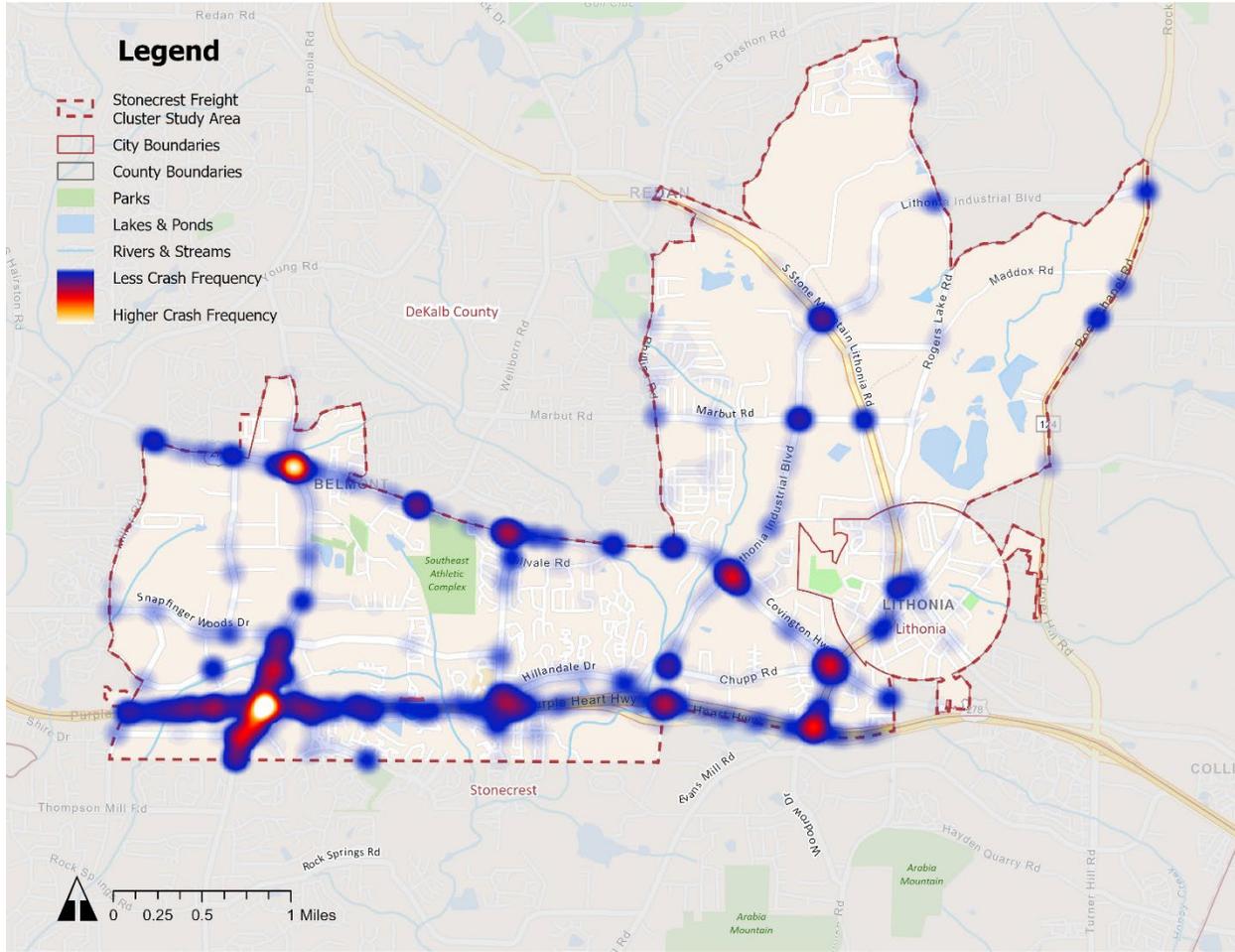
Crash data at the traffic study intersections was obtained from the GDOT Numetric crash analysis tool for the five-year period between January 1, 2018, and December 31, 2022. A summary of this reported crash history is shown in Table 2 below. The top five intersections with the highest average crashes annually occurred along US-278. Three out of the top five intersections along US 278 with the highest annual crashes reported that rear-end crashes were the most common type of crash which suggests that stop and go traffic conditions may be contributing to this type of accident.

*Table 2: Study Intersections Crash History (2018 - 2022)*

No	Intersection	Average Crashes per Year	% Injury Crashes	# of Fatal Crashes	Frequent Crash Type
1	Panola Rd at Snapfinger Woods Dr	44	34%	0	49% Rear End 36% Angle
2	US 278 at Panola Rd	141	33%	2	45% Angle 33% Rear End
3	US 278 at DeKalb Medical Pkwy	65	31%	1	43% Angle 34% Rear End
4	US 278 at Lithonia Industrial Blvd	86	35%	0	42% Rear End 35% Angle
5	Lithonia Industrial Blvd at Marbut Rd	26	35%	0	42% Angle 39% Rear End
6	Lithonia Industrial Blvd at Stone Mountain Lithonia Rd	37	33%	2	48% Angle 34% Rear End
7	Lithonia Industrial Blvd at SR 124	24	28%	1	47% Rear End 21% Not a Collision with a Motor Vehicle
8	US 278 at Evans Mill Rd	70	25%	0	42% Rear End 34% Angle
9	Max Cleland Boulevard at Main St	13	24%	0	51% Rear End 28% Angle
10	US 278 at Park Central Blvd	15	38%	0	68% Rear End 42% Angle
11	SR 124 at Maddox Rd	13	35%	0	56% Rear End 23% Angle
12	SR 124 at Rock Chapel Rd	21	19%	0	47% Rear End 35% Angle
13	US 278 at SR 124	57	20%	0	42% Rear End 31% Angle
14	Panola Rd at Dividend Dr	8	29%	0	42% Rear End 28% Angle

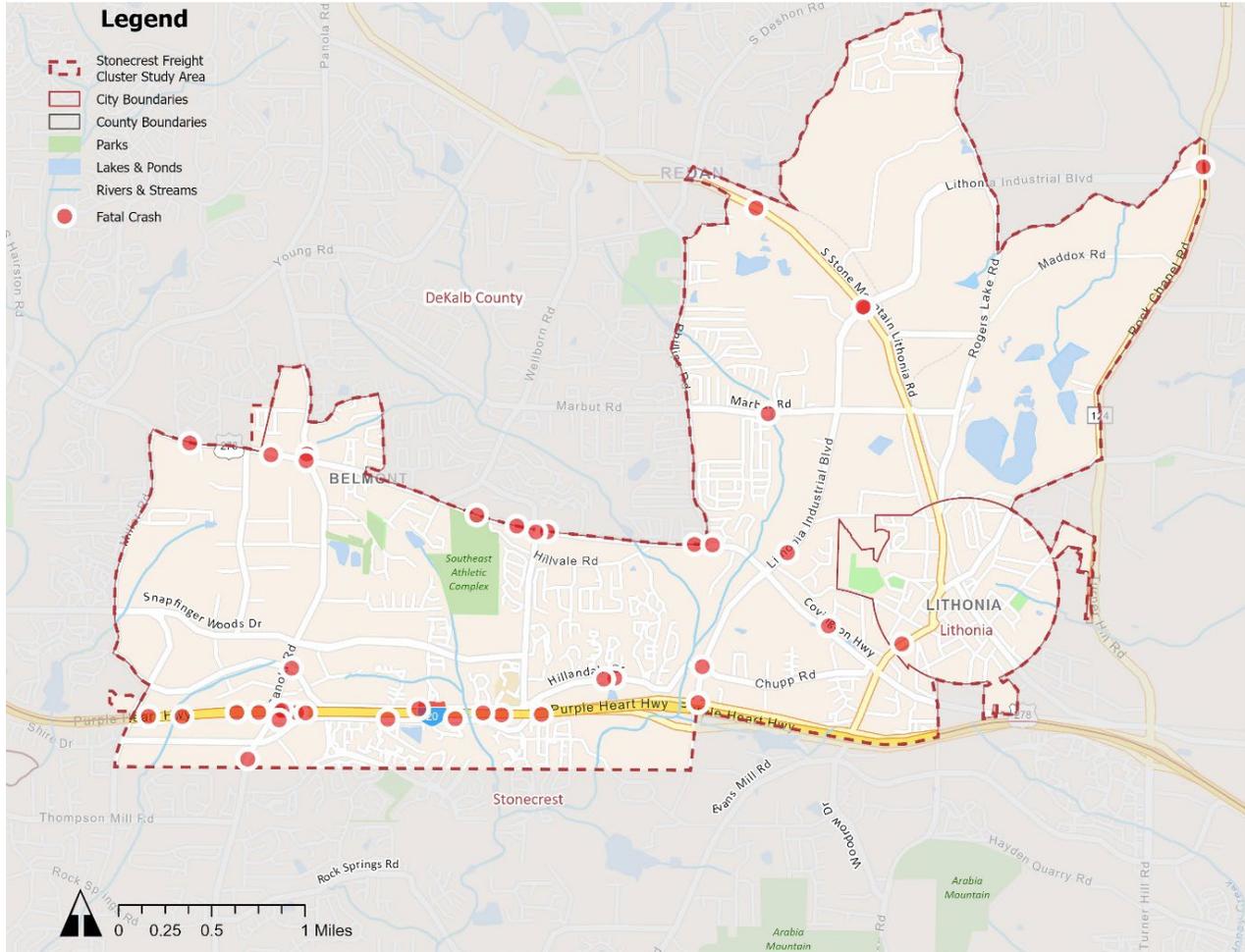
Ten of the fourteen study intersections show that rear end crashes were the most frequent crash type. This crash type is common occurrence along congested facilities and at signalized intersections where stop-and-go traffic is occurring. Additionally crash data for the entire study area was collected using the same GDOT Numetric Tool for the same study period (2018-2022) to better understand crash frequency patterns and the spatial distribution of fatal crashes. Figure 21 shows a heat map of crash intensity to better understand where the higher frequency of crashes occurred in the study area and Figure 22 shows where the fatal crashes in the study area occurred between 2018 and 2022.

Figure 21: Crash Frequency Heat Map (2018-2022)



As shown on the heat map the highest concentration of crashes are along the major arterial routes and as shown and most commonly at the signalized intersections. For example US 278 at Panola Rd is a high crash location that connects two main arterial routes in the study area. Additionally, there are higher crash locations shown along US 278 at Panola Rd, US 278 at Wellborn Rd, US 278 at DeKalb Medical Pkwy, US 278 at Lithonia Industrial Blvd, and US 278 at Stone Mountain Lithonia Rd within the study area and multiple hot spot crash locations along I-20 at several interchanges within the study area.

Figure 22: Crash Fatality Map (2018-2022)



While I-20 showed the highest number of fatal crashes, the interstate system is typically not in the scope of a city-managed traffic study, and thus was not included in the analysis. Overall there were 39 fatal crashes in the study area with a third of them (13) being pedestrian involved fatal crashes. The study area roadways that contain the highest number of fatal crashes between 2018-2022 are; US 278 with 10 fatal crashes with 4 being pedestrian related crashes, Lithonia Industrial Blvd with 4 fatal crashes, and Panola Road and Stone Mountain Lithonia Road with 3 fatal crashes each.

### 3.4 Intersection Capacity Analysis

The capacity analysis was performed using Trafficware’s Synchro software, version 11, which is the industry standard for determining intersection capacity, delay values, queue lengths, optimal signal phasing and timing. The software also allows for analysis to be performed following the methodology described in the Highway Capacity Manual (HCM). The study intersections will be analyzed under the 6<sup>th</sup> edition HCM methodology.

A capacity analysis evaluates traffic operations at an intersection and determines the level of service (LOS) and average delay that vehicles experience when traveling through the intersection. The LOS is used to assess the quality of traffic flow and overall congestion at an intersection. It is represented by letter designations ranging from A to F, with A indicating the best traffic conditions and F indicating the worst. Each LOS letter corresponds to a specific range of delay values, which measure the amount of time a vehicle spends waiting at or traveling through an intersection. The Highway Capacity Manual (HCM) establishes the LOS criteria for both signal-controlled and uncontrolled intersections, based on the average vehicle control delay as shown in Table 3:

*Table 3: HCM LOS and Corresponding Average Delay Values*

LOS	Signalized Intersection	STOP-controlled Intersection
A	≤10 sec	≤10 sec
B	10–20 sec	10–15 sec
C	20–35 sec	15–25 sec
D	35–55 sec	25–35 sec
E	55–80 sec	35–50 sec
F	>80 sec	>50 sec

LOS can be computed on a per-movement or per-approach basis for various intersection layouts. However, for stop-controlled intersections, where traffic on the main line does not stop, the side-street average delay is considered the overall intersection delay. The average delays of the AM and PM LOS analyses for the intersections are shown below in Table 4.

*Table 4: 2023 Existing LOS and Average Delays*

Intersection*	AM	PM
1) Panola Road at Snapfinger Woods Drive †PM EB	C (26.3)	C (34.3)
2) US 278 at Panola Road †PM NB	D (38.8)	D (40.0)
3) US 278 at DeKalb Medical Parkway	C (20.2)	C (33.2)
4) US 278 at Lithonia Industrial Boulevard †AM WB & PM SB Thru	D (47.6)	D (41.9)
5) Lithonia Industrial Boulevard at Marbut Road	A (7.5)	A (7.4)
6) Lithonia Industrial Boulevard at Stone Mountain Lithonia Road	C (22.7)	B (19.7)
7) Lithonia Industrial Boulevard at SR 124	A (9.2)	B (12.9)
8) US 278 at Evans Mill Road	C (31.6)	C (23.9)

Intersection*	AM	PM
9) Main Street at <i>Max Cleland Boulevard</i>	C (15.9)	C (19.6)
10) US 278 at <i>Park Central Boulevard</i>	F (114.9)	F (327.8)
11) <b>SR 124 at Maddox Road</b>	A (5.7)	A (6.9)
12) <b>SR 124 at Rock Chapel Road †PM EB</b>	B (18.1)	C (20.4)
13) <b>US 278 at SR 124</b>	C (20.4)	C (24.1)
14) Panola Road at <i>Dividend Drive</i>	B (13.5)	C (17.9)

\*Signalized Intersections shown in bold font and stop controlled approaches are shown in italics.

The results in Table 4 are for overall intersection LOS and even though the intersection of US 278 at Park Central Blvd is the only location with a failing overall LOS, intersections 1, 2, 4, and 12 have individual approaches with a failing LOS in either AM and PM period despite that the overall intersection LOS is acceptable. Specifically, Panola Rd at Snapfinger Woods Dr (Intersection #1) has a failing LOS on the Snapfinger Woods Dr eastbound approach during the PM peak period; US 278 at Panola Rd (Intersection #2) shows a failing LOS on the Panola Rd northbound approach during the PM peak period. US 278 at Lithonia Industrial Blvd (Intersection #4) has a failing LOS on the US 278 westbound approach during the AM peak period and a failing LOS in the PM peak period along the Lithonia Industrial Blvd southbound approach. Lastly, SR 124 at Rock Chapel Rd has a failing LOS during the PM peak period on the Rock Chapel Rd eastbound approach.

## 4 Future Conditions

### 4.1 Background Growth Rate

According to the GDOT traffic forecasting manual, the development of traffic growth rates should factor in two important calculations. First, the existing traffic growth rate should be based on the analysis of historical trends in traffic volumes based on actual traffic counts and not estimated traffic data. Secondly, the development of a background growth rate should factor in the projected population and traffic growth rates based on credible information sources.

For this study, the data used to project the growth rate were the actual historic traffic count data from GDOT from 2014 to 2022 to obtain a longer historical traffic trend. Additionally, population growth estimates between the existing year 2023 and the future scenario year of 2033 were sourced from the Governor’s Office of Planning and Budget (OPB) for DeKalb County. Lastly the Atlanta Regional Commission’s (ARC) Activity Based Model (ABM) 2020 and 2030 network output volumes were projected for the main roadways within the study area. These data sources were used to formulate an overall background growth rate which was applied to obtain future year (2033) traffic volumes.

The table below shows the population projections between 2023-2033 for DeKalb County obtained from OPB. This shows a steady population growth of approximately **0.5%** for DeKalb County through 2033.

*Table 5: Georgia Office of Budget and Planning Population Projections (DeKalb County)*

2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
767,066	770,888	773,306	779,047	781,223	784,832	789,743	793,184	797,300	801,475	807,881

Six GDOT count stations along primary roadways in the study area were inventoried for historical actual traffic count data between 2014-2022. The six roadway locations that were used to obtain the GDOT historical traffic counts were: Panola Rd, US 278, Lithonia Industrial Blvd, Stone Mountain Lithonia Rd, Evans Mill Rd, and SR 124. These count stations are located on roadways that have different functional classifications, traffic volumes, level of development etc. Therefore, the growth rate may vary widely from one count station to the next, in this case from 0% to 3.5%. To derive a singular growth rate, the six count stations were used to obtain a weighted average growth rate. The weighted average growth rate was determined to be **1%**.

*Table 6: GDOT Count Station Historical Growth Rates (2014-2022)*

TADA Count Loc ID	Location	% Growth	Avg ADT (2014-2022)
089-0551	Panola Rd S of Covington Hwy	0%	27125
089-0078	US 278/SR12/Covington Hwy E of Panola Rd	0.91%	27350
089-4061	Lithonia Ind Blvd N of Covington Hwy	3.5%	20764
089-0512	S Stn Mtn Lithonia Rd E of Redan Rd	0%	12600
089-0141	Evans Mill Rd	1.2%	23301
089-0156	SR 124/Turner Hill Rd	0.35%	29975

Four ARC ABM roadway segments in the study area were inventoried for model traffic count data for the model scenario years 2020 and 2030. The four roadway locations that were used to obtain the ARC ABM model data were Panola Rd, US 278, Lithonia Industrial Blvd, and SR 124. The results in the table below show that the traffic volume growth for each location between 2020-2030 ranged between 0.5% to 1.7% annual growth. When averaged together the overall growth rate is projected to be **1%**.

*Table 7: ARC Model Average Segment Growth Rate (2020-2030)*

Road Segment	ARC Link ID	2020 ADT	2030 ADT	Growth Rate
Panola Rd	84462_208875	23480	27181	1.5%
US 278/ Covington Hwy	245903_245911	23711	28110	1.7%
Lithonia Industrial Blvd	323879_323881	17160	18343	0.7%
SR 124	97415_197621	36524	38252	0.5%
<b>Average Growth Rate</b>				<b>1.0%</b>

Based on the historical and projected model traffic data, a **1.5%** growth rate for Panola Rd and US 278 is proposed for projecting traffic in the future analysis (2033) because these two corridors show consistently higher traffic growth rates in Table 7 compared to the average for the study area. Also, it

more accurately reflects the ABM traffic growth and better replicates the recent development trends through those two corridors and consistent usage of these two corridors as an alternate route when traffic incidents occur on I-20. For the remaining intersections that were not located on Panola Rd or US 278 an average annual growth of **1.0%** is proposed to grow the existing traffic volumes to project future traffic in 2033.

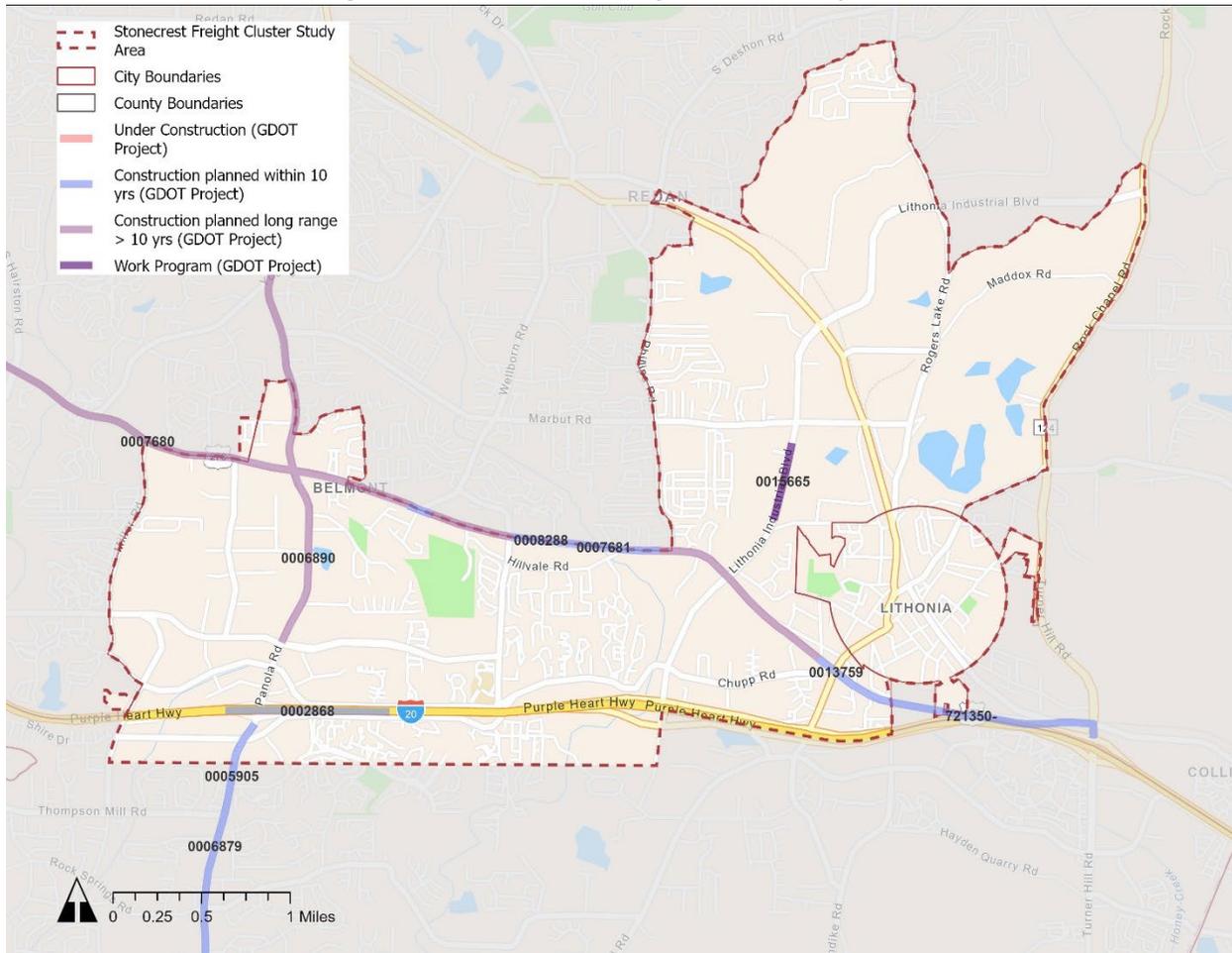
#### 4.2 Planned Roadway Projects

Upon review of GDOT’s GEOPI project planning tool in ArcGIS, a total of 12 proposed roadway improvements projects within the study area are planned for future implementation. The type of improvements listed below in Table 8 include; sidewalk enhancements, roadway widening, intersection improvements, active transportation facilities, and railroad crossing safety improvements. Figure 23 shows the location of each project, by project ID, that is listed in Table 8.

*Table 8: GDOT Planned Projects*

Project ID	New Project Description	Type	Primary Work Type
7681	SR 12/US 278 FM CR 7938/PANOLA RD TO CR 6305/EVANS MILL RD	Enhancement	Sidewalks
721350-	SR 12/COVINGTON HWY FM EVANS MILL RD TO SR 124/TURNER HILL	Reconstruction/Rehabilitation	Widening
7680	SR 12/US 278 FM CR 782/MARGARETTE DR TO CR 7938/PANOLA RD	Enhancement	Sidewalks
6890	PANOLA RD FM SR 12/COVINGTON HWY TO SNAPFINGER WOODS DR	Reconstruction/Rehabilitation	Widening
5905	PANOLA RD FM THOMPSON MILL RD TO SNAPFINGER RD	Reconstruction/Rehabilitation	Widening
13175	SR 12 @ CR 5192/COVE LAKE ROAD/WELLBORN ROAD	Safety	Intersection Improvement
13759	SR 12 @ CR 6305/EVANS MILL ROAD	Reconstruction/Rehabilitation	Operational Improvement
2868	PANOLA RD FM FAIRINGTON RD TO SNAPFINGER WOODS DR	Reconstruction/Rehabilitation	Interchange
6879	PANOLA ROAD FM THOMPSON MILL ROAD TO SR 212/BROWNS MILL ROAD	Reconstruction/Rehabilitation	Turn Lanes
7095	CR 7938/PANOLA RD FM SR 12/COVINGTON HWY TO CR 5193/REDAN RD	Enhancement	Bicycle/Ped. Facility
15665	CR 2989/LITHONIA INDUSTRIAL BLVD @ CSX #279702U	Safety	RRX Warning Device
8288	SR 12/US 278 FM DEKALB MEDICAL PKWY TO CR 6313/CRAGSTONE CT	Safety	Turn Lanes

Figure 23: GDOT Planned Projects In the Study Area



### 4.3 Future Traffic Volumes

The growth rate discussed in section 4.1 was applied to the existing traffic volumes previously shown in section 3.1 of this report. For the future traffic projections at each intersection, a growth rate of 1.5% was used for intersections on Panola Rd and Covington Hwy. For all other intersections in the study area, a growth rate of 1% was applied to each intersection approach. The following figures show the future (2033) volumes for the 14 studied intersections.

Figure 24: 2033 Traffic Volumes (LOCATIONS 1 - 6)

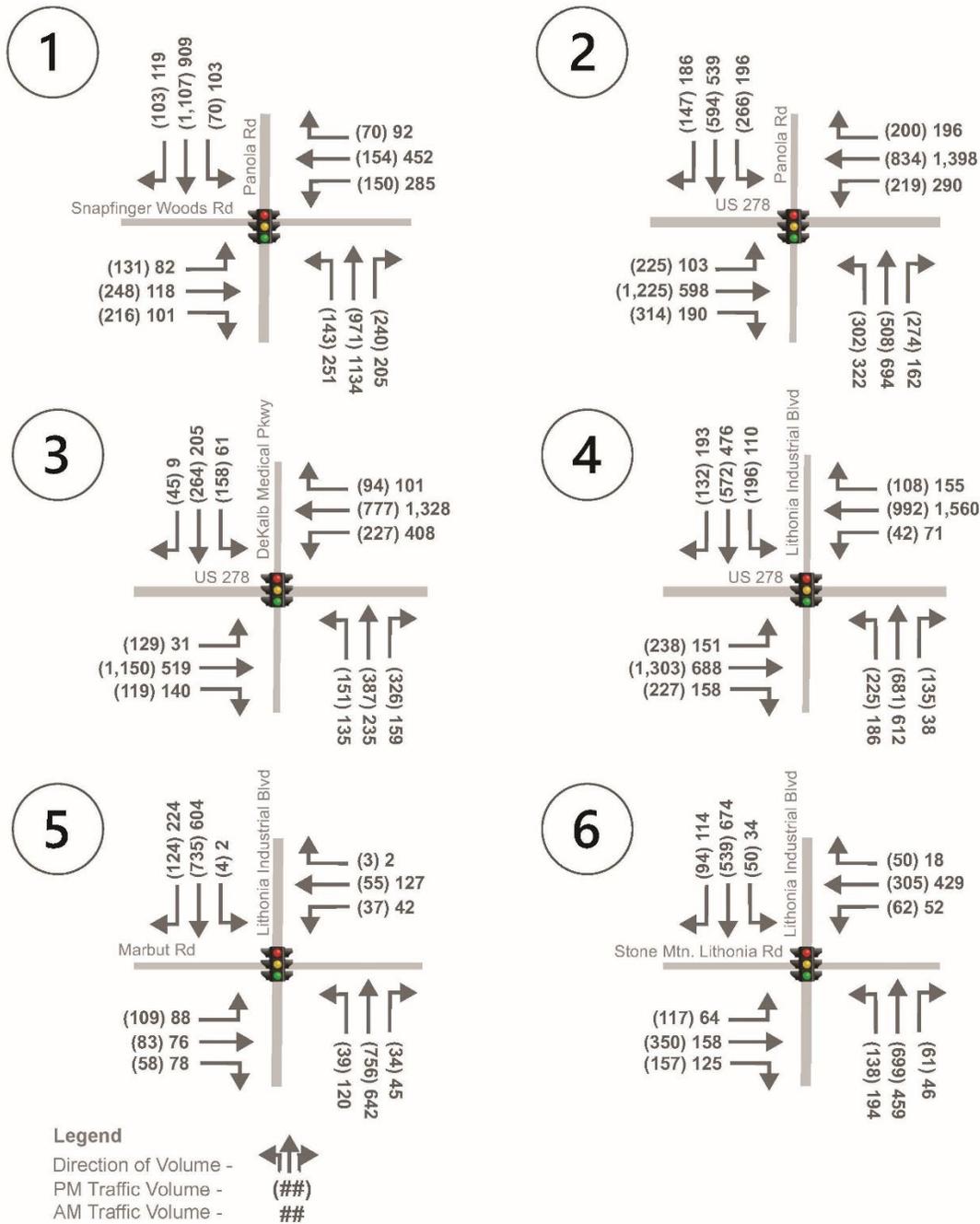


Figure 25: 2033 Traffic Volumes (Locations 7 - 12)

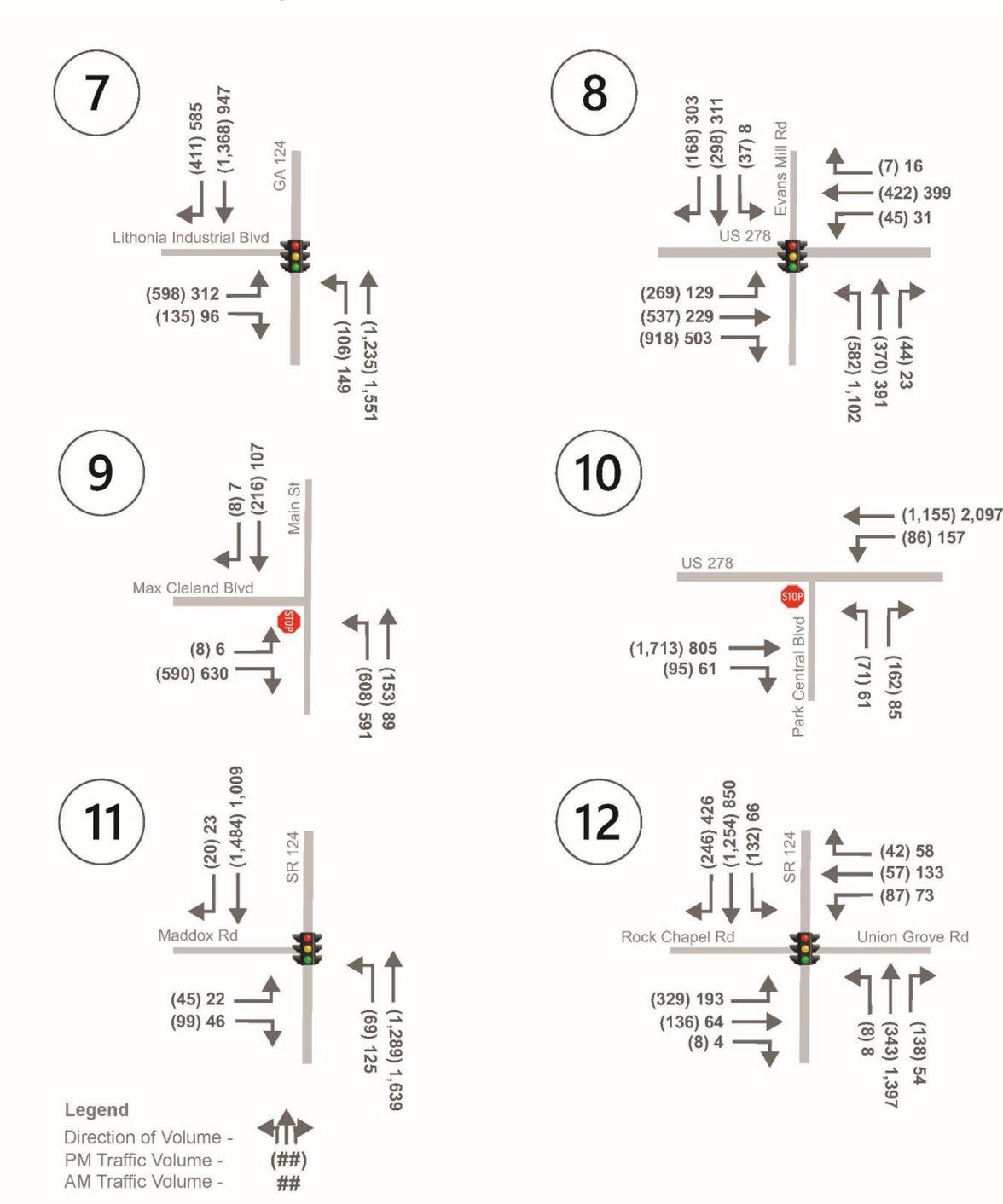
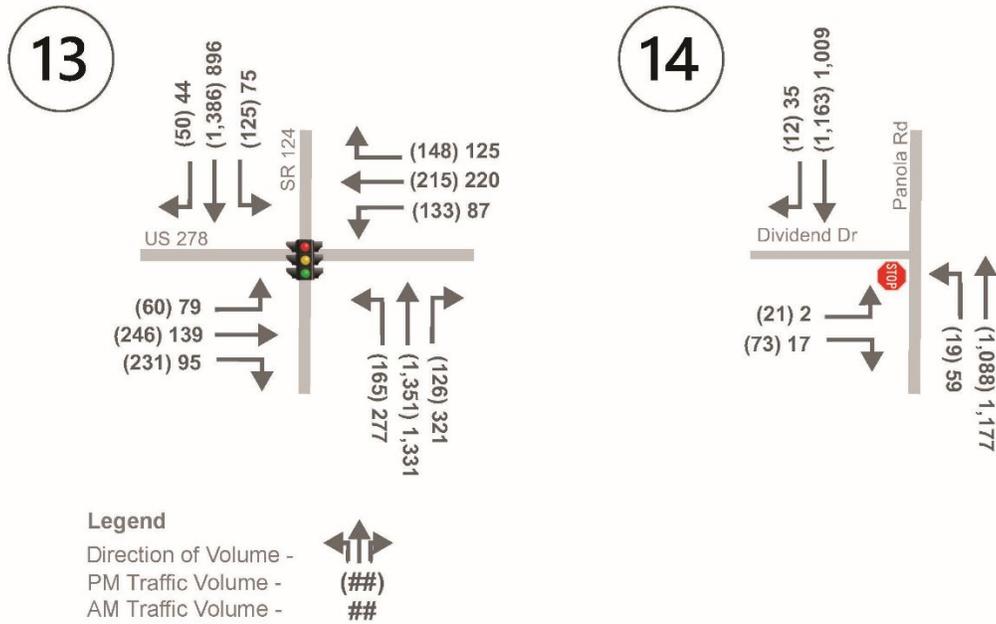


Figure 26: 2033 TRAFFIC VOLUMES (LOCATIONS 13 & 14)



### 4.4 Intersection Capacity Analysis – Without Improvements

A no-build analysis is the assessment of projected future traffic conditions and volumes in the absence of any proposed changes. It serves as a baseline comparison against which the impacts of the proposed roadway improvements can be evaluated. This analysis helps in determining the extent to which the proposed improvements will affect traffic operations at the 14 study intersections. For the purposes of this study, 2033 will be considered the future year scenario. Table 9 below shows the 2033 No Build LOS and average delay results per intersection.

Table 9: 2033 No Build LOS and Average Delays

Intersection*	AM	PM
1) Panola Road at Snapfinger Woods Drive	C (26.9)	C (34.4)
2) US 278 at Panola Road	D (41.9)	D (48.7)
3) US 278 at DeKalb Medical Parkway	C (23)	D (53.1)
4) US 278 at Lithonia Industrial Boulevard	E (69.5)	E (63.8)
5) Lithonia Industrial Boulevard at Marbut Road	A (8.1)	A (7.9)
6) Lithonia Industrial Boulevard at Stone Mountain Lithonia Road	C (25.8)	C (21.8)
7) Lithonia Industrial Boulevard at SR 124	B (10.1)	B (14.4)
8) US 278 at Evans Mill Road	E (68.2)	D (43.9)
9) Main Street at Max Cleland Boulevard	C (19)	D (25.5)
10) US 278 at Park Central Boulevard	F (510)	F (881)
11) SR 124 at Maddox Road	A (5.3)	A (7.1)

Intersection*	AM	PM
12) <b>SR 124 at Rock Chapel Road</b>	B (19.8)	C (25.3)
13) <b>US 278 at SR 124</b>	C (23.5)	C (28.7)
14) Panola Road at <i>Dividend Drive</i>	C (16.5)	D (27.1)

\*Signalized Intersections shown in bold font and stop controlled approaches are shown in italics.

#### 4.5 Proposed Improvements

The fourteen intersections in the study area were assessed to identify potential enhancements necessary to maintain an acceptable overall level of service (LOS “D” or better). Additionally, the evaluation aimed to ensure that each individual approach and movement also meets acceptable levels of service, wherever possible. The below paragraphs outlines the improvements needed to achieve these objectives.

##### Intersection #1 – Panola Rd at Snapfinger Woods Dr

Even though Intersection #1 showed acceptable levels of service (LOS C) for the overall intersection, a detailed look reveals that specific approaches were failing and thus requires mitigation procedures to achieve acceptable LOS. Consequently, it is proposed that an additional left-turn lane (dual lefts) on the westbound approach and a separate right-turn lane on the eastbound approach be considered under the future build (2033) condition to achieve acceptable LOS. GDOT Project #6890 is planned at this intersection, so these recommended improvements could potentially be incorporated to that GDOT project.

##### Intersection #2 – US 278 at Panola Rd

Even though Intersection #1 showed acceptable levels of service (LOS C), left turning volumes for the Panola Road northbound and southbound approaches warrants the implementation of double left turn lanes. In order for all movements to obtain LOS C or better, US 278/Covington Highway would have to be widened to three lanes in each direction. This would result in a LOS C for the overall intersection for both AM and PM peak hours. GDOT Project #6890 is planned at this intersection, so these recommended improvements could potentially be incorporated to that GDOT project.

##### Intersection #3 – US 278 at Dekalb Medical Parkway

Although this intersection presented acceptable levels of service (D or better) for both AM and PM peak hours, certain movements had failing levels of service. The implementation of a Westbound double-left addressed this issue and maintained the overall level of service at a D or better for both AM and PM peak hours.

##### Intersection #4 – US 278 at Lithonia Industrial Boulevard

This intersection has LOS E for both AM and PM by the year 2033, with several failing movements during both peak hours, mainly left turns at both the main road and the side-street. The addition of a second left turn lane for the northbound approach of Lithonia Industrial boulevard improves the performance of this intersection to a LOS D for both AM and PM peak hours. However, some movements do not improve beyond a LOS E.

#### Intersection #5 – Lithonia Industrial Boulevard at Marbut Road.

This intersection performs at a level of service A for both AM and PM peak hours by the year 2033. Additionally, each approach to the intersection has a level of service B or better during both peak hours. No improvements are needed at this location.

#### Intersection #6 – Lithonia Industrial Boulevard at Stone Mountain Lithonia Road.

This intersection performs at a level of service C for both the AM and PM peak hours by the year 2033. Individual movements at this intersection have LOS D or better on all approaches. No improvements are needed at this location.

#### Intersection #7 – SR 124 at Lithonia Industrial Boulevard

The Synchro analysis indicates that this intersection performs at a level of service B for both the AM and PM peak hours of the year 2033. All movements and approaches perform at LOS C or better, therefore, no improvements are necessary at this location.

#### Intersection #8 – US 278 at Evans Mill Road

During the AM peak hour, Evans Mill Road has northbound left turn volume of over 1000 vehicles by 2033. This results in a failing level of service at the intersection. In order to address this a triple-left turn is proposed for the Evans Mill Road northbound approach to the intersection. After this improvement the overall LOS for the intersection is D for both AM and PM peak hours, although certain movements will operate at a LOS E.

#### Intersection #9 – Main Street at Max Cleland Boulevard

This intersection is currently unsignalized and performs at acceptable levels of service for both AM and PM in 2033. No improvements are needed.

#### Intersection #10 – US 278 at Park Central Boulevard

This unsignalized intersection fails for both AM and PM with LOS F. Due to the volumes on Park Central Boulevard, this intersection would be a candidate for another type of traffic control, like signalization or a roundabout. Signalization would result in a LOS “B” for both the AM and “C” for the PM peak hour.

#### Intersection #11 – Rock Chapel Road at Maddox Road

This intersection is currently signalized and would perform at LOS A for both the AM and PM respectively, by the year 2033. No improvements are needed at this location.

#### Intersection #12 – SR 124 at Union Grove Road

This intersection is projected to perform at a LOS C for both AM and PM peak hours. However, the PM eastbound left turning volume is greater than 300 vehicles and would have a LOS F. An additional left turn lane (double left) would improve the left turn LOS to a “D” and maintain the overall LOS at a “C”.

#### Intersection #13 – US 278 at SR 124

This intersection would perform at LOS C for both AM and PM peak hours in 2033. All approaches and movements also perform at LOS D or better for both AM and PM peak hours. No improvements are needed at this intersection.

**Intersection #14 – Panola Road at Dividend Drive**

This intersection is currently unsignalized and performs at a LOS B in the AM and D in the PM of 2033. No short-term operational improvements are necessary at this intersection.

**4.6 Intersection Capacity Analysis – With Improvements**

A summary of the results of the intersection capacity analysis with the improvements described in section 4.5 is shown in Table 10.

*Table 10 : 2033 Build LOS and Average Delay*

Intersection*	AM	PM
1) <b>Panola Road at Snapfinger Woods Drive</b>	C (25.0)	C (23.8)
2) <b>US 278 at Panola Road</b>	C (29.8)	C (32.2)
3) <b>US 278 at DeKalb Medical Parkway</b>	C (24.2)	D (51.3)
4) <b>US 278 at Lithonia Industrial Boulevard</b>	D (43.3)	D (50.8)
5) <b>Lithonia Industrial Boulevard at Marbut Road</b>	A (8.1)	A (8.0)
6) <b>Lithonia Industrial Boulevard at Stone Mountain Lithonia Road</b>	C (26.1)	C (21.8)
7) <b>Lithonia Industrial Boulevard at SR 124</b>	B (10.2)	B (14.4)
8) <b>US 278 at Evans Mill Road</b>	D (45.9)	D (35.1)
9) <i>Main Street at Max Cleland Boulevard</i>	C (19.0)	D (25.5)
10) <i>US 278 at Park Central Boulevard</i>	B (16.2)	C (20.4)
11) <b>SR 124 at Maddox Road</b>	A (6.3)	B (11.9)
12) <b>SR 124 at Rock Chapel Road</b>	C (20.5)	C (22.1)
13) <b>US 278 at SR 124</b>	C (26.8)	C (28.7)
14) <i>Panola Road at Dividend Drive</i>	B (16.5)	D (27.1)
*Signalized Intersections shown in bold font and stop controlled approaches are shown in italics.		

## 5 Conclusions and Recommendations

Comprehensive intersection analysis for each of the 14 study intersections was conducted. Also, capacity analysis was conducted under the proposed improvements scenario (section 4.5) and compared with the baseline Synchro traffic model for the future conditions (2033) with no roadway improvements (section 4.4) to see which specific improvements are necessary to obtain optimal traffic operations. In addition, field observations which focused on intersection safety and existing freight movement were combined with the Synchro analysis to provide the recommendations at each study intersection. The proposed improvements described in section 4.5 are visualized in the following recommendation diagram figures per each study intersection.

*Figure 27: Intersection #1 Proposed Improvements*

### 1. Panola Rd at Snapfinger Woods Dr



Figure 28: Intersection #2 Proposed Improvements

**2. US 278 at Panola Rd**

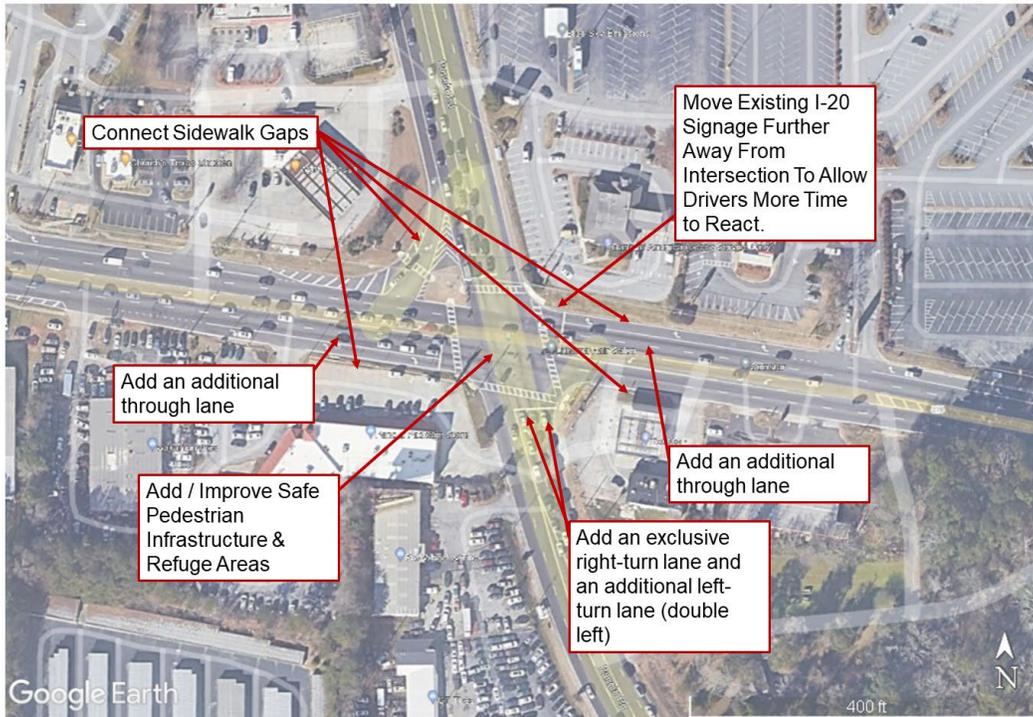


Figure 29: Intersection #3 Proposed Improvements

**3. US 278 at DeKalb Medical Pkwy**



Figure 30: Intersection #4 Proposed Improvements

**4. US 278 at Lithonia Industrial Blvd**

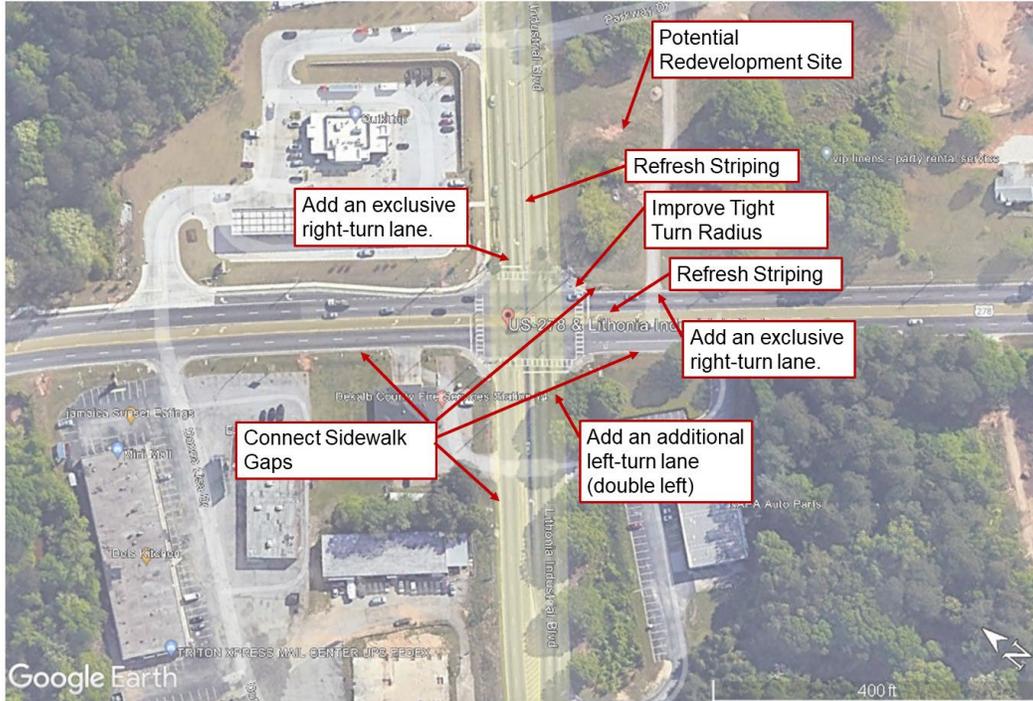


Figure 31: Intersection #5 Proposed Improvements

**5. Lithonia Industrial Blvd at Marbut Rd**

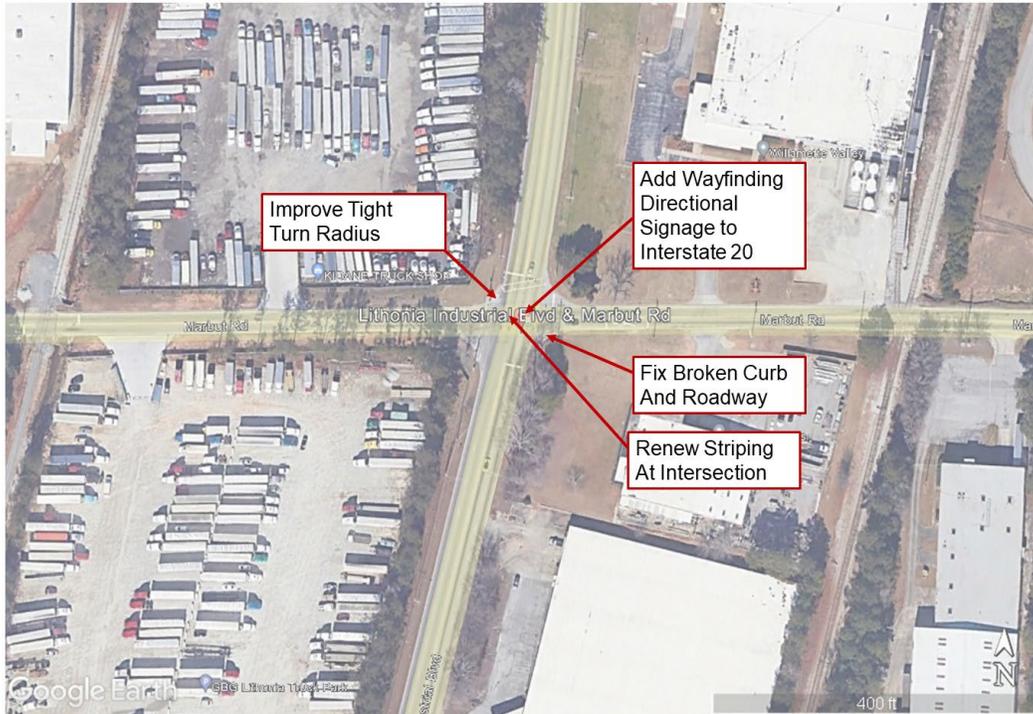


Figure 32: Intersection #6 Proposed Improvements

**6. Lithonia Industrial Blvd at Stone Mountain Lithonia Rd**



Figure 33: Intersection #7 Proposed Improvements

**7. Lithonia Industrial Blvd at SR 124**

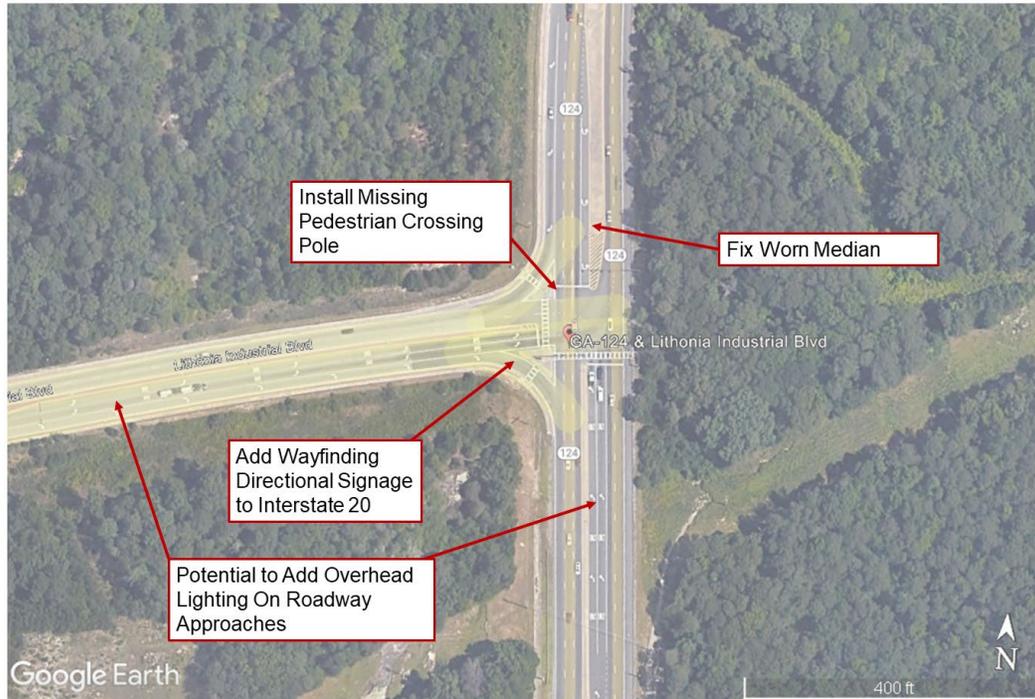


Figure 34: Intersection #8 Proposed Improvements

**8. US 278 at Evans Mill Rd**

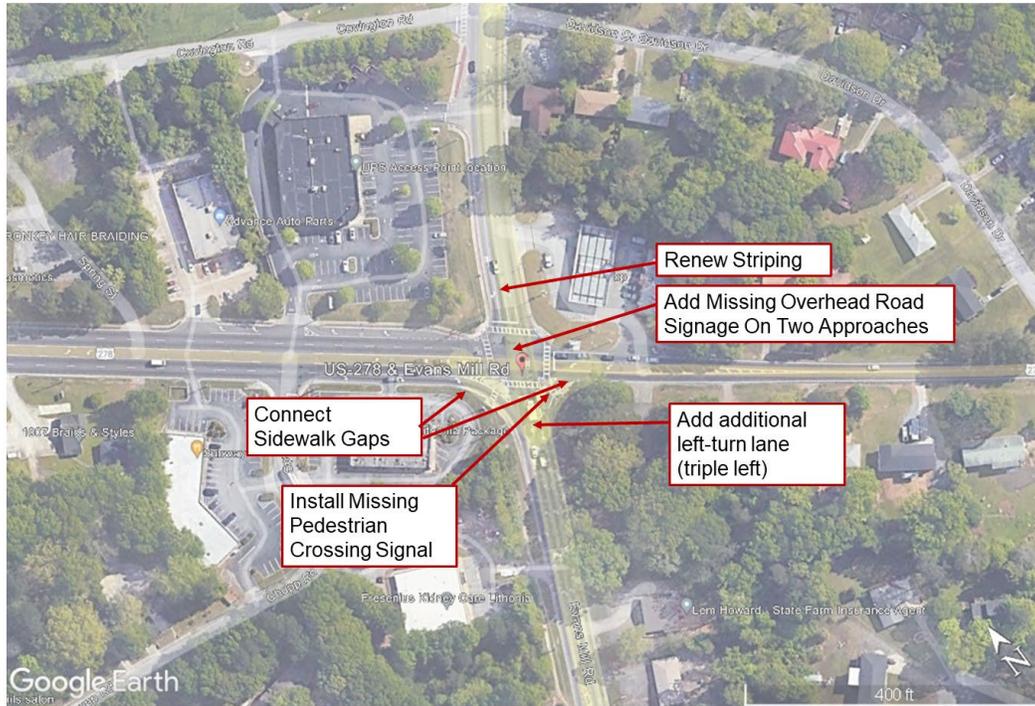


Figure 35: Intersection #9 Proposed Improvements

**9. Max Cleland Boulevard at Main St**

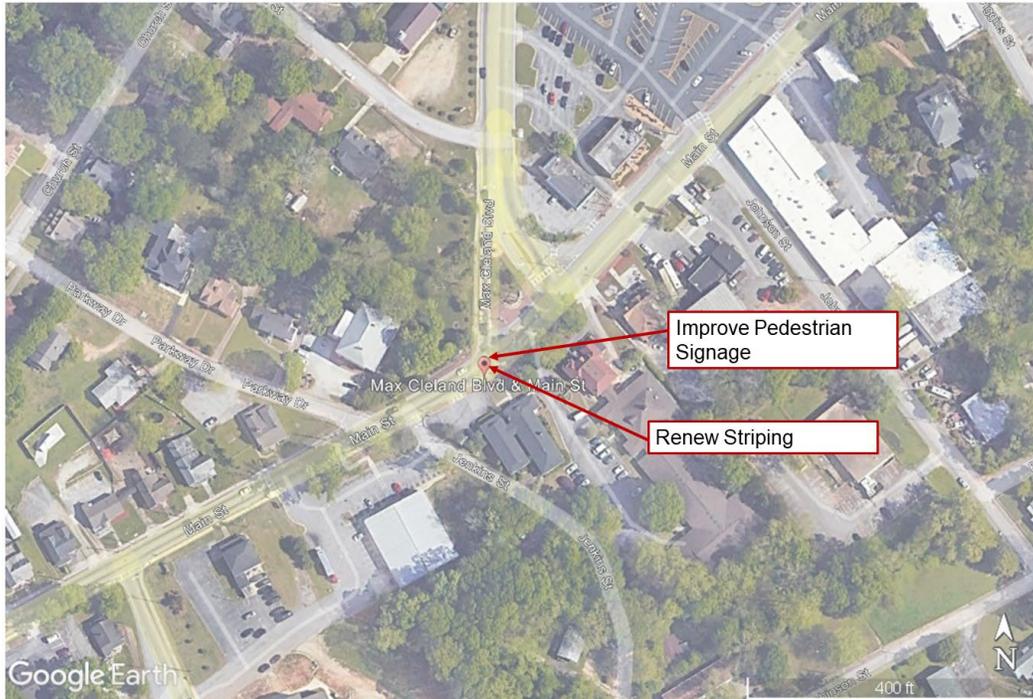


Figure 36: Intersection #10 Proposed Improvements

**10. US 278 at Park Central Blvd**



Figure 37: Intersection #11 Proposed Improvements

**11. SR 124 at Maddox Rd**

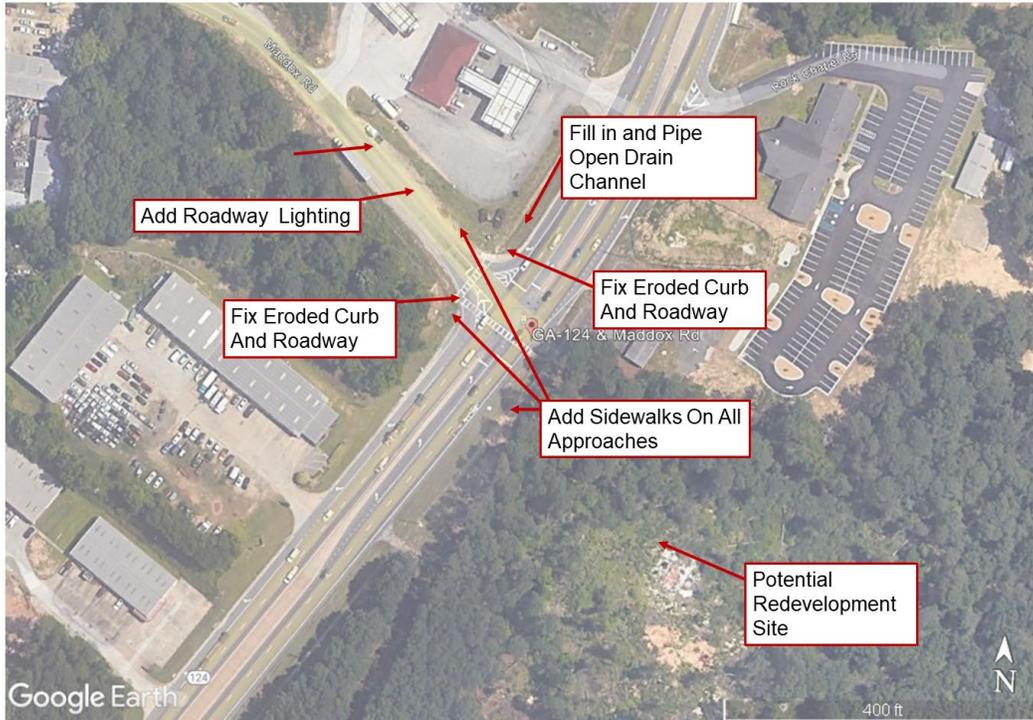


Figure 38: Intersection #12 Proposed Improvements

**12. SR 124 at Rock Chapel Rd**

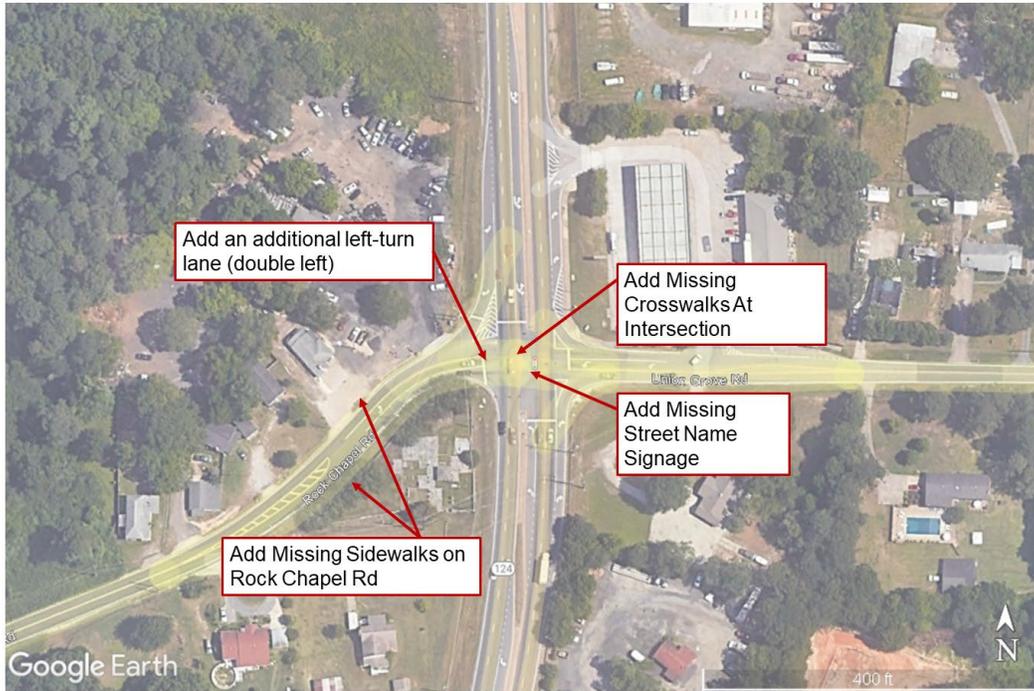


Figure 39: Intersection #13 Proposed Improvements

**13. US 278 at SR 124**



Figure 40: Intersection #14 Proposed Improvements

**14. Panola Rd at Dividend Dr**

