CITY OF D'IBERVILLE

TRAFFIC CIRCULATION STUDY FOR THE LAMEY BRIDGE ROAD AND MALLETT ROAD AREA

Prepared for

City of D'Iberville
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Looking south east at Sangani Blvd/Lamey Bridge Intersection

1.0 Introduction

The intention of this study was to evaluate the circulation of traffic in the Lamey Bridge Rd, Sangani Blvd., and Mallett Rd commercial area. Analysis was conducted at five main intersections in the area, including East Walmart Dr and Sangani Blvd., Lamey Bridge Rd and Sangani Blvd., I-10 off Ramp and Lamey Bridge Rd, Cinema Dr and Mallett Rd, and Daisy Vestry Rd and Mallett Rd, as well as each driveway between these intersections. Driveways were evaluated for access and existing traffic volumes. This analysis includes design concepts for roadway widening alignments north/south along Lamey Bridge Rd and west along Sangani Blvd. and east along Mallett Rd. The location of the study area is in the northeast quadrant of where I-10 and I-110 intersect within the City of D'Iberville, Mississippi, and is shown in **Figure 1**.

1.1 Project Background

The four quadrants for I-10 and I-110 have become a major trade center for the City of D'Iberville and the Mississippi Gulf Coast with a number of restaurants, car dealerships, retail shops, and big box stores. The overall interchange functions very efficiently in its current state. The area with the most need for road improvements is the northeast quadrant that leads back to the Harrison / Jackson County line. Jackson County within the last year constructed a new four-lane road from Cook Rd through predominantly vacant land to the intersection of Mallett Rd and Daisy Vestry Rd. This new connection has made a new parallel roadway to I-10 and provided access for West Jackson County residents to D'Iberville's commercial areas.

The City of D'Iberville, Gulf Regional Planning Commission (GRPC), and Mississippi Department of Transportation have identified the Mallett Rd Corridor as an important transportation improvement project for the Mississippi Gulf Coast region. The project includes widening the existing three lane roadway from Lamey Bridge Rd to Daisy Vestry Rd to match the four lane sections on either end of this roadway segment of Mallett Rd. By eliminating this "bottleneck" in the regional transportation system, this project will support economic growth, alleviate traffic congestion, and improve commuter times, especially for those in West Jackson County and D'Iberville. To complement this project, the city, Gulf Regional Planning Commission, and Mississippi Department of Transportation are currently committing resources to providing improvements to the Lamey Bridge Rd intersection.

Figure 1. Study Area

2.0 Existing Intersection Geometry

2.1 East Walmart Dr and Sangani Blvd

Sangani Blvd. is classified as a Minor Arterial roadway. The section of Sangani Blvd from I-110/ US Hwy 67 to Lamey Bridge Rd is undivided with two thru 12 ft travel lanes in each direction and 5-foot sidewalks on both roadsides. Left turn lanes are provided for both the eastbound and westbound approaches at the intersection. The northbound approach serves as the eastern access point to Walmart and consists of a thru-left and exclusive right turn lane. The southbound approach serves as the primary access point for Academy Sports and as a secondary access point for Lake View Village and also consists of a thru-left and exclusive right turn lane. Both north and south bound approaches provide overlap signal phasing for right turns to operate simultaneously with mainline lefts.

Looking east on Sangani Blvd at East Walmart Dr

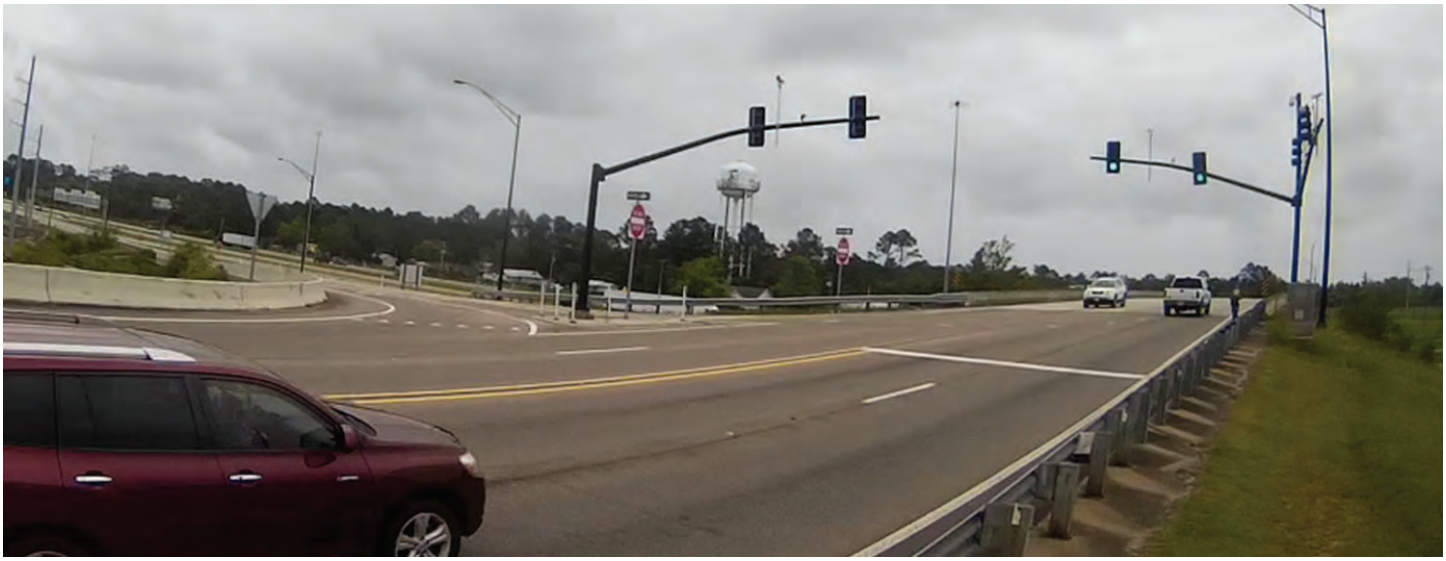
2.2 Lamey Bridge Rd and Sangani Blvd

Lamey Bridge Rd is classified as a Minor Arterial roadway between Downtown D'Iberville, D'Iberville Junior High, and the Lamey Bridge/Mallett Rd Commercial District. This section of Lamey Bridge Rd is an undivided four-lane roadway with 12 ft travel lanes to the south and a two-lane roadway to the north with 10 ft travel lanes. Mallett Rd is an east/west Collector roadway between Lamey Bridge Rd and Daisy Vestry Rd that includes 5 ft sidewalks on both sides ending at Cinema Dr, one 11 ft travel lane in each direction with a 12 ft center two-way left turn lane. The northbound and southbound approach along Lamey Bridge Rd consists of one thru lane, an exclusive right turn lane, and an exclusive left turn lane. The southbound right turn is a free movement to a westbound added lane. The eastbound approach of Sangani Blvd consists of one thru lane, one exclusive right turn lane, and an exclusive left turn lane. The westbound approach of Mallett Rd consists of one thru-right lane and an exclusive left turn lane.

Looking west on Mallett Rd at Lamey Bridge Rd and Sangani Blvd

2.3 Lamey Bridge Rd and I-10 Off Ramp

The intersection at I-10 off ramp consist of three 12 ft west bound turn lanes, two left and one channelized right, with the northbound and southbound movements on Lamey Bridge Rd both consisting of two 12 ft thru-lanes.



Looking west on Mallett Rd at Lamey Bridge Rd and Sangani Blvd

2.4 Mallett Rd and Cinema Dr

Cinema Dr is a primary driveway of the Lakeview Village development which includes the Grand Theatre, multiple retail stores, restaurants, and the Courtyard by Marriott hotel and consist of two 11.5 ft travel lanes in each direction with an 8 ft grass median. The northbound approach of Cinema Dr consists of an exclusive left turn lane and an exclusive right turn lane. The eastbound approach along Mallett Rd consists of a shared thru-right lane while the westbound approach consists of a thru lane and an exclusive left turn lane.

Looking west on Mallett Rd at Cinema Dr

2.5 Mallett Rd and Daisy Vestry Dr

Daisy Vestry Rd is a two-lane local collector connecting Mallett Rd to Tucker Rd with a number of connections to residential developments along its length. With the recent construction of Cook Rd, a northbound and westbound approach were added to the intersection. The new Cook/Mallett Rd is a four-lane divided roadway creating a parallel route to I-10 between Washington Ave and Lamey Bridge Rd. The new northbound approach was an existing utility access with no existing development. All four approaches consist of a shared thru-right lane and an exclusive left turn lane.

Looking east on Mallett Rd at Daisy Vestry Rd

3.0 Existing Traffic Volumes

Turning movement counts were obtained for each intersection as listed in Table 1.

Table 1. Existing Traffic Count Information

Intersection	Count Date	Source
East Walmart Dr at Sangani Blvd	5/20/2021	Neel-Schaffer Video TMC
Lamey Bridge Rd at Sangani Blvd/ Mallett Rd	5/20/2021	Neel-Schaffer Video TMC
Lamey Bridge Rd at I-10 WB Ramps	5/20/2021	Neel-Schaffer Video TMC
Mallett Rd at Cinema Dr	5/20/2021	Neel-Schaffer Video TMC
Mallett Rd at Daisy Vestry Rd	5/20/2021	Neel-Schaffer Video TMC
All Study Area Driveway Counts	5/20/2021	Neel-Schaffer Video TMC

The existing turning movement traffic volumes in the study area are shown in **Figure 2**. The detailed counts are provided in the report **Appendix**.

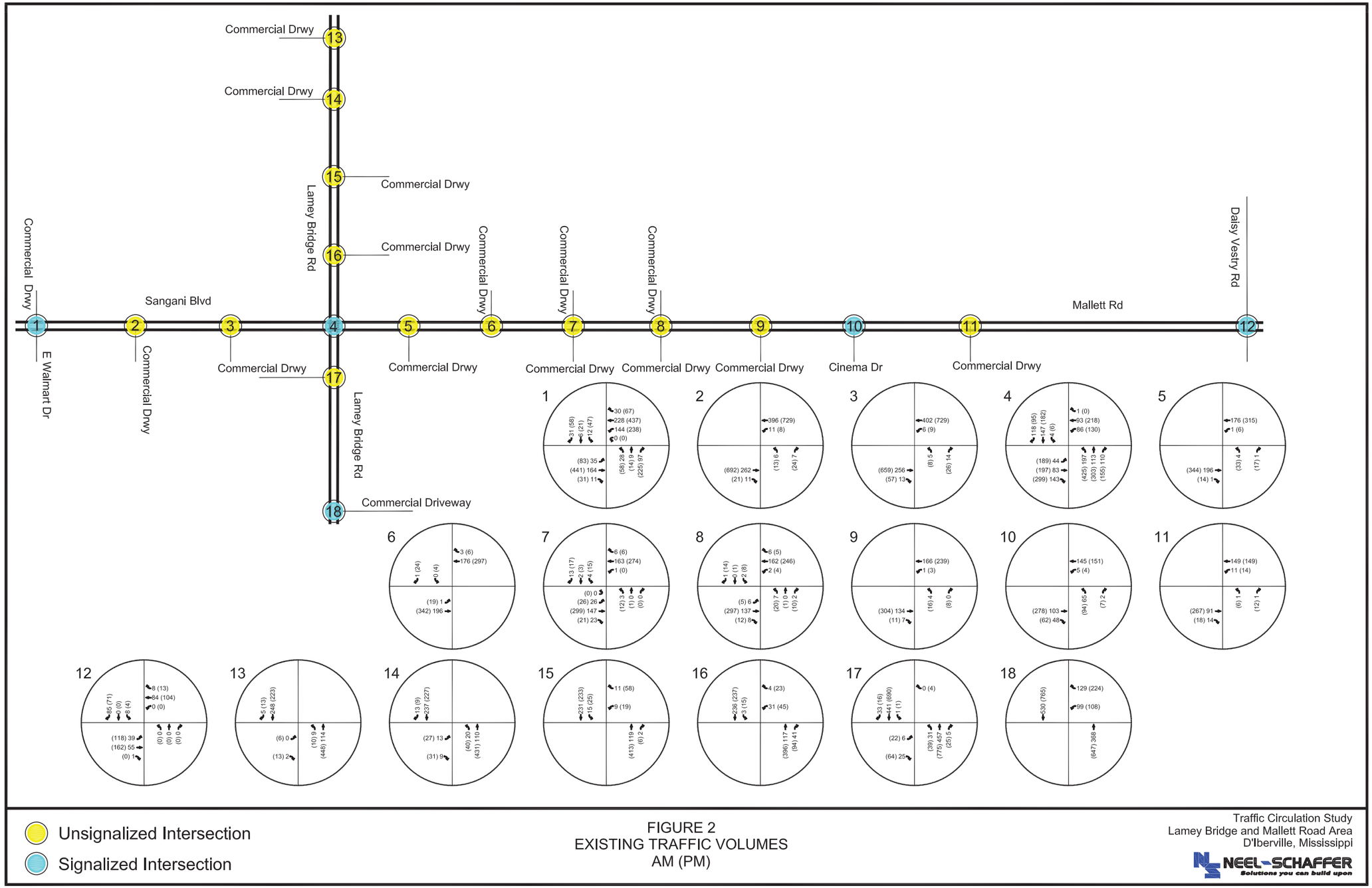


Figure 2. Existing Traffic Volumes

4.0 Existing Traffic Analysis

To determine how the existing system operates, an existing analysis is performed. This provides quantitative values to combine with field observations and local stakeholder input to determine the actual existing conditions and determine what potential issues exist and where they occur.

For this study area, the intersection of Lamey Bridge Rd and Sangani Blvd/Mallett Rd was presented by local stakeholders as the primary area of congestion. One major concern was the ingress/egress from the Walgreens and other developments in the southwest quadrant of the intersection. Peak period queueing at the intersection creates difficulties for these movements.

4.1 Traffic Analysis Methodology

The analysis of the studied intersections was performed using Synchro 11 software based on the *Highway Capacity Manual 6th Edition (HCM)*. The HCM provides analysis methodologies for evaluating various roadway segments, intersections, and interchange components as well as the transit, pedestrian, and bicyclist modes and their interactions with motor vehicles. In general, a measure of effectiveness is calculated to provide a basic understanding of performance that is relatable to other locations and can be assigned a qualitative level of service.

The two dominate measures of effectiveness for motor vehicles are density (passenger car equivalents per hour per lane) and average control delay (seconds of control delay per vehicle). Uninterrupted traffic flows, such as along freeways and highways, are evaluated based on the density of the segment in question. Typical applications include the analysis of interstate mainlines, ramp locations, and weaving segments. Average control delay is used in the evaluation of interrupted flow at intersections controlled by all-way or two-way stops, traffic signals, and roundabouts.

Levels of service (LOS) values are assigned to ranges of the various measures of effectiveness to aide in the evaluation, understanding, and presentation of the analysis results. Levels of service values are letter designations ranging from A to F. Level of service "A" denotes the most desirable condition and reflects conditions in which a user can expect the least amount of delay and impedance from control devices and/or other users. Level of service "F" indicates conditions in which users can expect significant delays and find their desired routes greatly impeded by other users. Additionally, a LOS F condition may also indicate situations in which demand has exceeded capacity.

Table 2 presents the level of service criteria for signalized intersections, and **Table 3** presents the level of service criteria for unsignalized intersections.

Table 2. Level of Services Criteria for Signalized Intersections	
LOS	**Average Control Delay per Vehicle (s/veh)**
A	0 – 10
B	> 10 – 20
C	> 20 – 35
D	> 35 – 55
E	> 55 – 80
F	> 80
Note: LOS F when the ratio of volume to capacity is greater than 1.0.	
Source: HCM 6th Edition	

Table 3. Level of Services Criteria for Unsignalized Intersections	
LOS	**Average Control Delay per Vehicle (s/veh)**
A	0 – 10
B	> 10 – 15
C	> 15 – 25
D	> 25 – 35
E	> 35 – 50
F	> 50
Note: LOS F when the ratio of volume to capacity is greater than 1.0.	
Source: HCM 6th Edition	

4.2 Existing Traffic - Level of Service

The existing traffic analysis identifies that the 2021 existing traffic volumes are operating with acceptable delays. The analysis also verifies the stakeholder comments. While the LOS at the intersection of Lamey Bridge Rd and Sangani Blvd/Mallett Rd is acceptable, two of the movements experience the highest delay across the study area in the PM peak period. This intersection also has the longest queues in the analysis. While the analysis shows that the primary access point for Walgreens (the southern driveway along Lamey Bridge Rd) functions at an acceptable level of service, the HCM analysis does not consider the effect of the queue from the signalized intersection blocking the egress movements which is confirmed to occur in the queue analysis. The detailed analysis results are provided in the report **Appendix**. The results of the existing traffic analysis are shown in **Table 4** and **Table 5**.

Table 4. Existing (2021) Capacity Analysis Summary												
Signalized Intersection	Time Period	Approach LOS				Intersection						
		EB			WB			NB			SB	LOS
Sangani Blvd @	AM Peak	C			C			C			C	C (24.0)
East Walmart Dr	PM Peak	C			C			C			C	C (27.9)
Lamey Bridge Rd @	AM Peak	C			C			B			C	C (20.4)
Sangani Blvd / Mallett Rd	PM Peak	D			C			C			D	C (30.5)
Lamey Bridge Rd @	AM Peak	-			C			A			A	A (5.2)
I-10 WB Off Ramps	PM Peak	-			C			A			A	A (4.8)
Mallett Rd @	AM Peak	B			A			B			-	B (12.6)
Cinema Dr	PM Peak	B			A			C			-	B (12.3)
Mallett Rd @	AM Peak	A			B			-			B	B (11.9)
Daisy Vestry Rd	PM Peak	A			B			-			B	B (10.5)
Unsignalized Intersections	Time Period	Critical Movement Level of Service											
		Eastbound			Westbound			Northbound			Southbound		
		Lt	Th	Rt	Lt	Th	Rt	Lt	Th	Rt	Lt	Th	Rt
Lamey Bridge Rd @	AM Peak	A	-	A	-	-	-	A	A	-	-	-	-
Academy N Drwy	PM Peak	B	-	B	-	-	-	A	A	-	-	-	-
Lamey Bridge Rd @	AM Peak	B	-	B	-	-	-	A	A	-	-	-	-
Academy S Drwy	PM Peak	B	-	B	-	-	-	A	A	-	-	-	-
Lamey Bridge Rd @	AM Peak	-	-	-	B	-	B	-	-	-	A	A	-
Chevron N Drwy	PM Peak	-	-	-	B	-	B	-	-	-	A	A	-
Lamey Bridge Rd @	AM Peak	-	-	-	B	-	B	-	-	-	A	A	-
Chevron S Drwy	PM Peak	-	-	-	C	-	C	-	-	-	A	A	-
Sangani Blvd @	AM Peak	-	-	-	-	-	-	-	-	A	-	-	-
Walgreens N Drwy	PM Peak	-	-	-	-	-	-	-	-	B	-	-	-
Sangani Blvd @	AM Peak	-	-	-	-	-	-	-	-	A	-	-	-
NTB Drwy	PM Peak	-	-	-	-	-	-	-	-	B	-	-	-
Lamey Bridge Rd @	AM Peak	B	B	B	-	-	A	A	A	-	-	A	-
Walgreens S Drwy	PM Peak	C	C	C	-	-	B	A	A	-	-	A	-
Mallett Rd @	AM Peak	-	-	-	A	-	-	B	-	A	-	-	-
Village W Drwy	PM Peak	-	-	-	A	-	-	B	-	B	-	-	-
Mallett Rd @	AM Peak	A	-	-	-	-	-	-	-	-	A	-	A
Town Square W Drwy	PM Peak	A	-	-	-	-	-	-	-	-	B	-	B
Mallett Rd @	AM Peak	A	-	-	A	-	-	B	B	A	B	B	A
Town Square Center Drwy	PM Peak	A	-	-	A	-	-	C	C	A	C	C	B
Mallett Rd @	AM Peak	A	-	-	A	-	-	B	B	A	B	B	A
Town Square E Drwy	PM Peak	A	-	-	A	-	-	B	B	B	B	B	A
Mallett Rd @	AM Peak	-	-	-	A	-	-	B	-	B	-	-	-
Village Center Drwy	PM Peak	-	-	-	A	-	-	B	-	B	-	-	-
Mallett Rd @	AM Peak	-	-	-	A	-	-	A	-	A	-	-	-
Village E Drwy	PM Peak	-	-	-	A	-	-	B	-	B	-	-	-

Source: HCM 6th Edition

Table 5. Existing (2021) Signalized Intersection 95th Percentile Queue Analysis Summary												
Unsignalized Intersections	Time Period	Critical Movement 95th Percentile Queue (ft)										
		Eastbound			Westbound			Northbound			Southbound	
		Lt	Th	Rt	Lt	Th	Rt	Lt	Th	Rt	Lt	Th	Rt
Sangani Blvd @	AM Peak	30	73	-	93	96	-	-	43	27	-	26	0
East Walmart Dr	PM Peak	51	180	-	133	171	-	-	80	44	-	77	0
Lamey Bridge Rd @	AM Peak	37	83	25	62	88	-	104	88	26	6	124	8
Sangani Blvd / Mallett Rd	PM Peak	132	178	67	94	196	-	256	233	42	9	178	0
Lamey Bridge Rd @	AM Peak	-	-	-	42	45	-	-	34	-	-	50	-
I-10 WB Off Ramps	PM Peak	-	-	-	44	76	-	-	80	-	-	98	-
Mallett Rd @	AM Peak	-	82	-	6	66	-	58	-	5	-	-	-
Cinema Dr	PM Peak	-	174	-	4	54	-	91	-	11	-	-	-
Mallett Rd @	AM Peak	23	30	-	-	65	-	-	-	-	10	0	-
Daisy Vestry Rd	PM Peak	50	66	-	-	82	-	-	-	-	7	0	-

Source: HCM 6th Ed.

5.0 Existing Safety Analysis

Six years of crash history (2016 to 2021) for the study area was provided for review upon request by the Mississippi Department of Transportation (MDOT). These crashes were reviewed to determine if any crash hot spots existed within the study area and if so to identify the potential cause or deficiency.

Over the six-year period, 253 crashes occurred within the study area for an average of 42 crashes per year as detailed in A breakdown by severity is shown in **Table 7**. This breakdown shows that most crashes occurring in the study area are property damage only or minor injury; however, one fatality occurred on August 22, 2018, at 5:16 PM, which is just after the PM peak hour.

Table 6. A breakdown by severity is shown in **Table 7**. This breakdown shows that most crashes occurring in the study area are property damage only or minor injury; however, one fatality occurred on August 22, 2018, at 5:16 PM, which is just after the PM peak hour.

Table 6. Crashes by Year	
Year	Crash Number
2016	45
2017	39
2018	41
2019	33
2020	44
2021	51
Total	253

Table 7. Crashes by Severity	
Level of Severity	Crash Number
(K) Fatal injury	1
(A) Suspected serious injury	0
(B) Suspected minor injury	13
(C) Possible injury	50
(O) Property damage only	189
2021	51
Total	253

This fatal crash involved a prohibited southbound left turn from Lamey Bridge Rd into the Lakeview Village Driveway, which is designed for right-in/right out access only. During the movement, the southbound vehicle turned through a queue of vehicles in the northbound left turn lane and was struck by a northbound vehicle traveling in the outside lane, whose vision was most likely obscured by the northbound queue. This location was a primary concern to local stakeholders as ingress/egress issues are a common public complaint especially for the developments in the southwest quadrant of the Lamey Bridge Rd/ Sangani Blvd/Mallett Rd intersection. In addition, similar illegal lefts into driveways designed as right in/right out were observed during the turning movement counts, which signifies that the existing deterrents are not fully effective at preventing these undesirable high-risk movements.

A review of the crashes by time of day, as shown in **Figure 3**, shows that crashes generally increase and decrease with traffic volume. One interesting note is that for this area, the largest crash numbers are found during the buildup and reduction from the peak volumes. This is generally seen at locations where significant congestion during the peak period tends to drastically reduce speeds, which increases the time available for drivers to react.

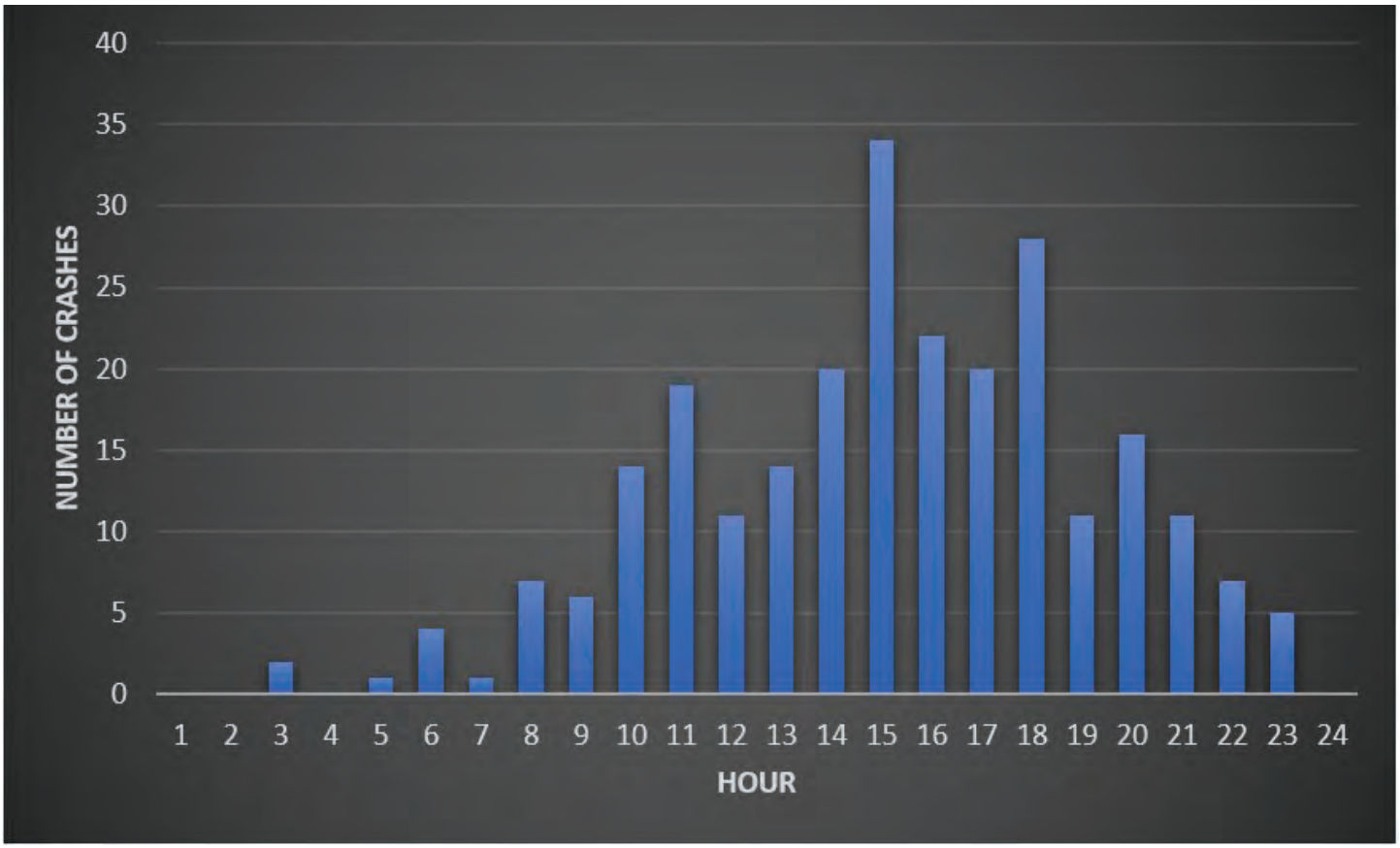


Figure 3. Crashes by Time of Day

A geographic illustration of the number of crashes, shown in the heat map in **Figure 4**, identifies three primary crash hot spots. The largest of these occurs at the intersection of Lamey Bridge Rd and Sangani Blvd/Mallett Rd. A second occurs at the intersection of Lamey Bridge Rd and I-10 WB Ramps, and a final one is seen between these two intersections along Lamey Bridge Rd at the Lakeview Village/Walgreens driveways. The two hot spots at the intersections are expected as signalized intersections, especially between two major roadways, are typically the location of crash clusters within an area. The cluster at the two driveways is typical of a stop control intersection impacted by the queue of a signalized intersection. This further confirms both the traffic analysis results, field observations, and local stakeholder comments.

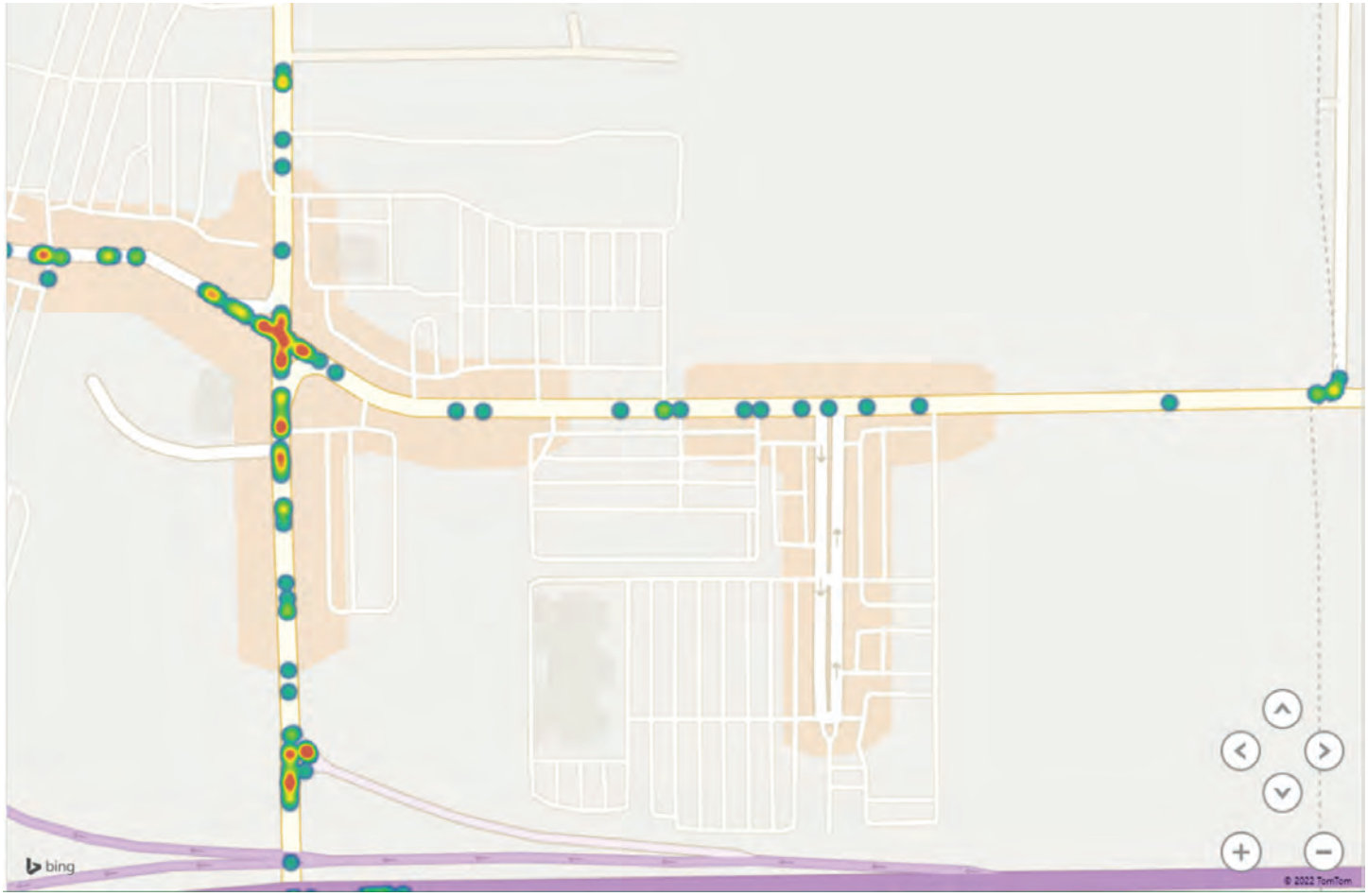


Figure 4. All Crashes Heat Map / Source: Microsoft Excel

To determine if these cluster locations have a pattern that may indicate potential causes or deficiencies, the crash types were reviewed as shown in **Table 8**. This analysis shows that the four primary crash types occuring in the study area are angle, left turn, sideswipe, and rear end. These are then geographically illustrated as heat maps in **Figure 5**, **Figure 6**, **Figure 7**, and **Figure 8**. From this review, no additional crash cluster locations were acknowledged, further acknowledging the intersection of Lamey Bridge Rd and Sangani Blvd/Mallett Rd as the primary cluster location, with crashes related to traffic congestion/queuing.

Table 8. Crashes by Manner of Collision	
Manner of Collision	**Crash Number**
Angle	52
Bicycle	1
Fixed Object	2
Left turn same roadway	31
Opposite Direction Sideswipe	3
Other Object	1
Overturn	1
Rear end slow or stop	107
Rear end turn	1
Run off Road - Left	6
Run off Road - Right	3
Run off Road - Straight	3
Sideswipe	41
Unknown	1

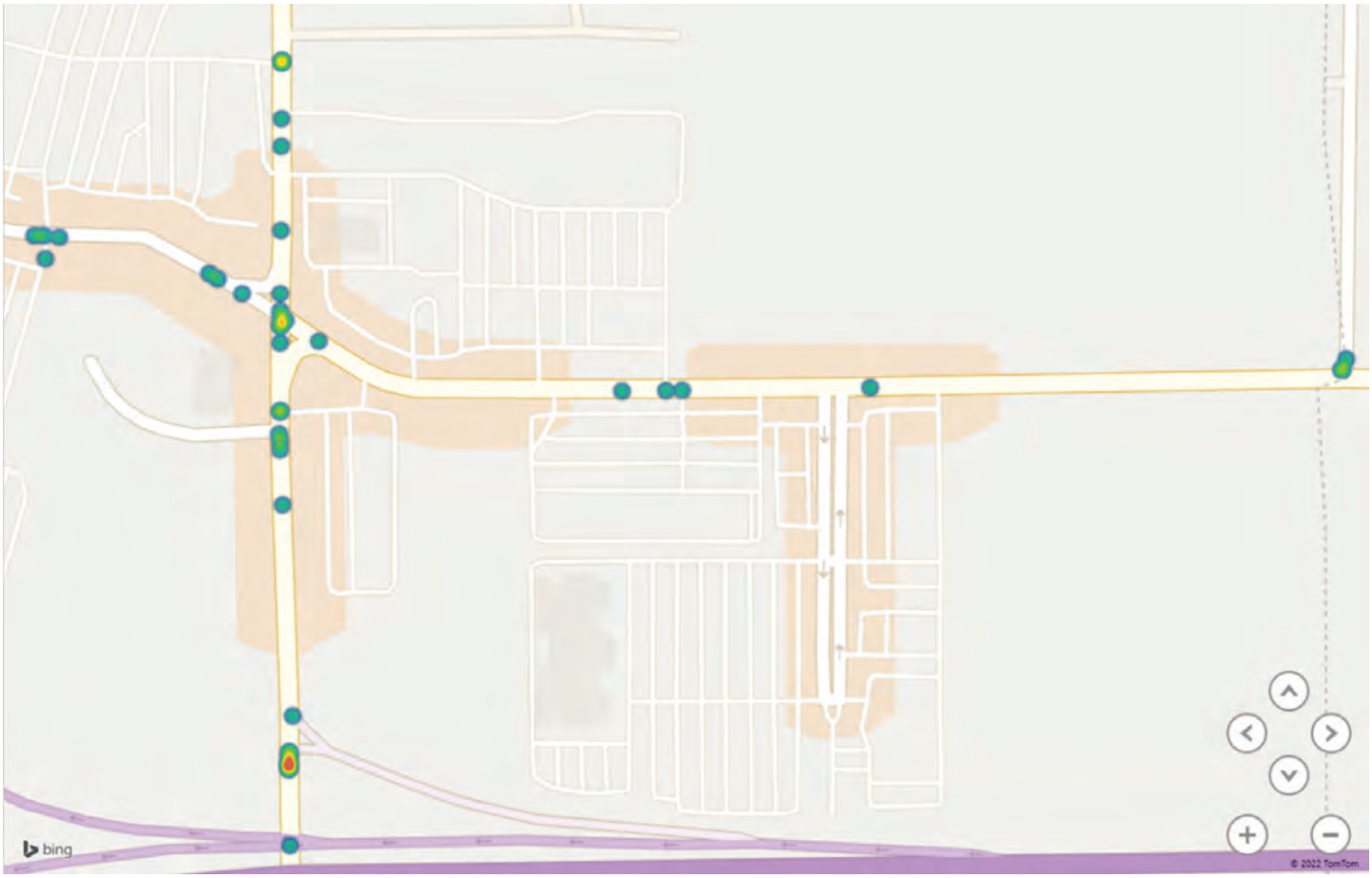


Figure 5. Angle Crash Heat Map / Source: Microsoft Excel

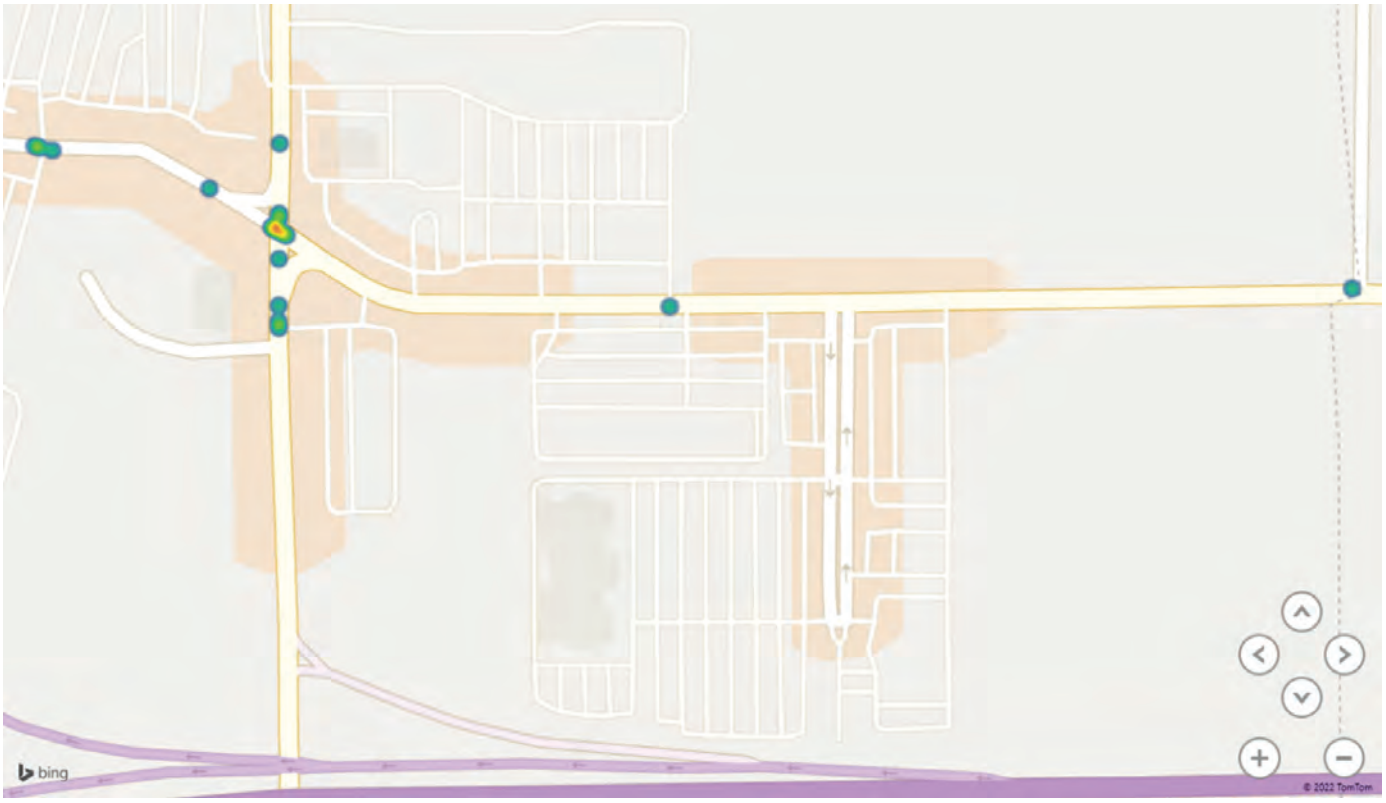


Figure 6. Left Turn Crash Heat Map / Source: Microsoft Excel

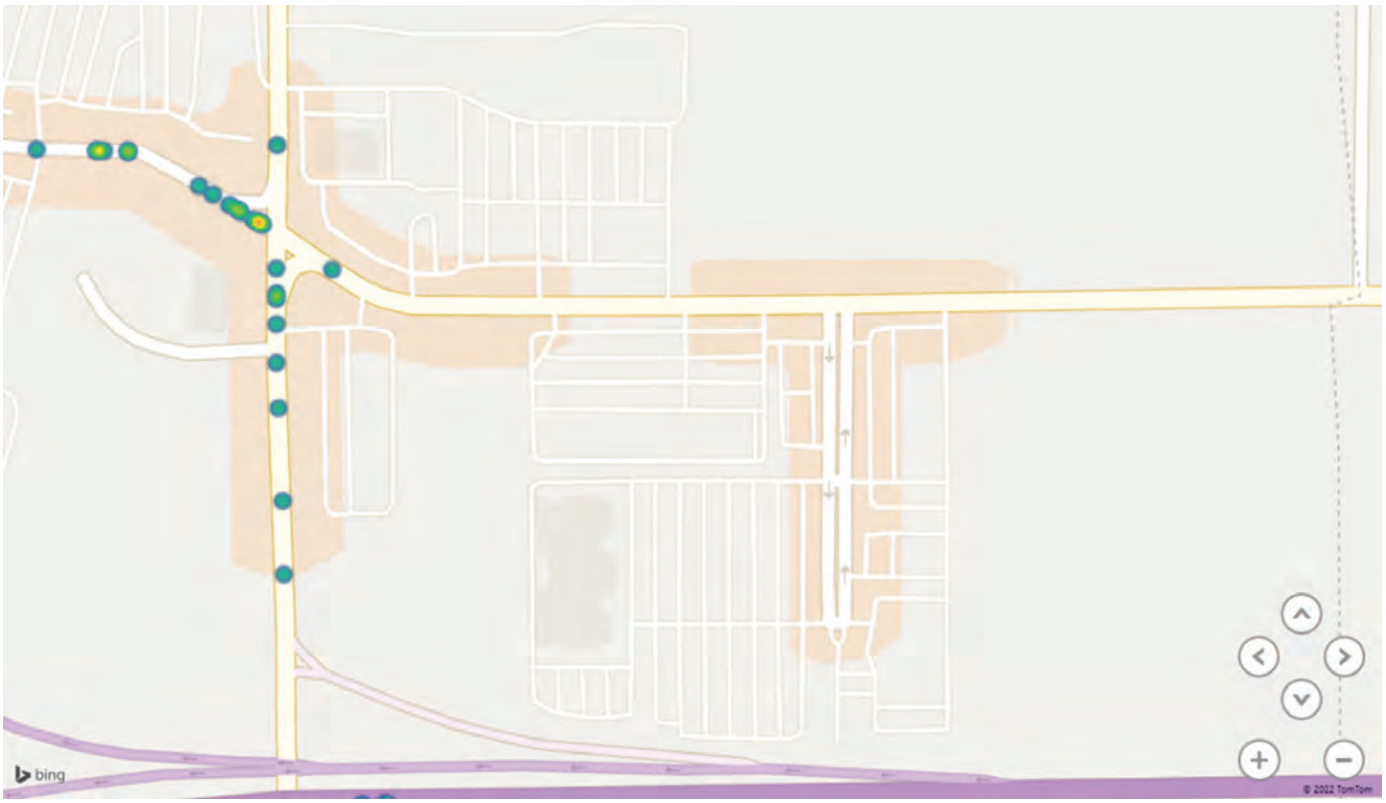


Figure 7. Sideswipe Crash Heat Map / Source: Microsoft Excel

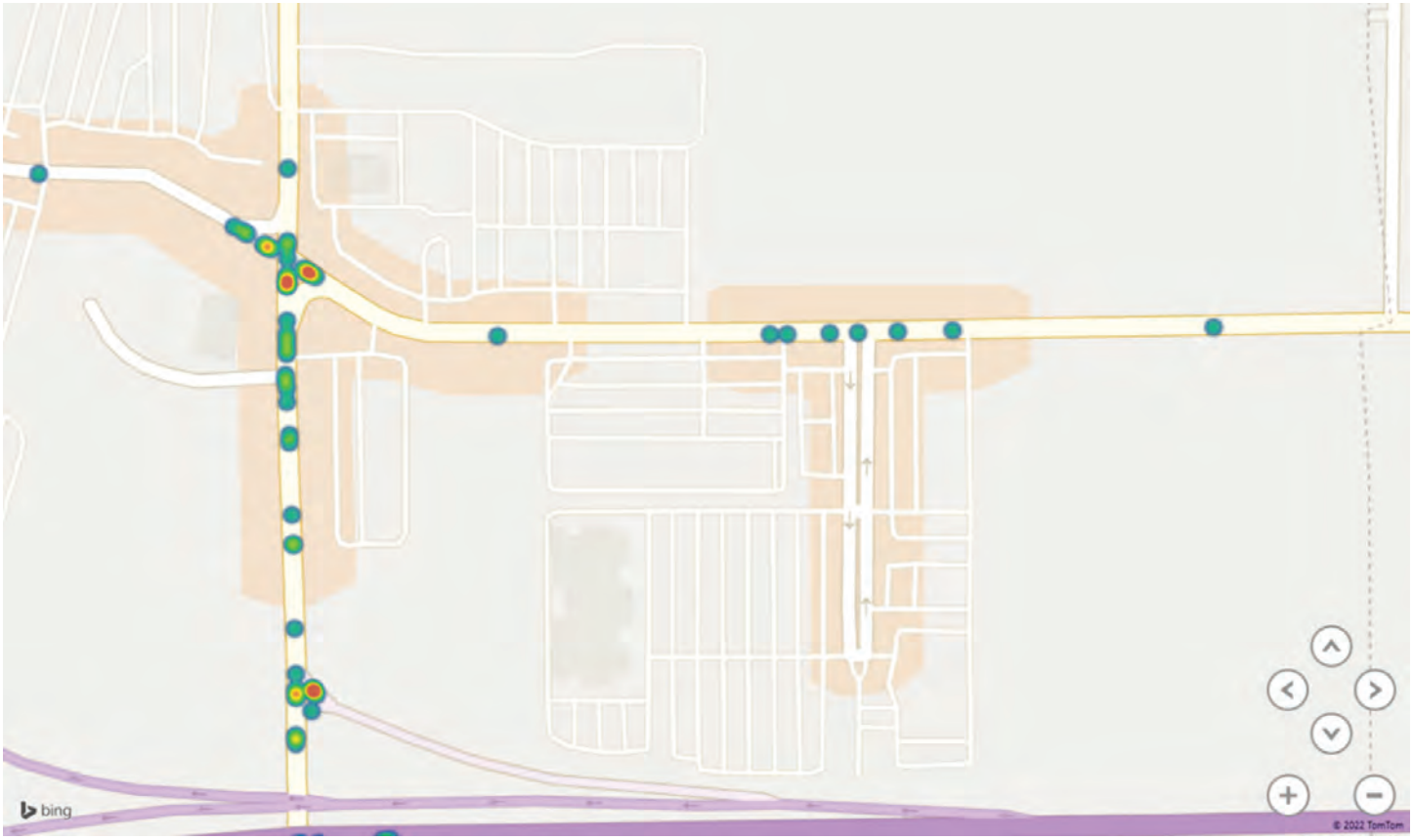


Figure 8. Rear End Crash Heat Map / Source: Microsoft Excel

6.0 Trip Generation

While any proposed improvements should benefit the existing conditions, consideration must be given to the future traffic growth to ensure that improvements will remain functional throughout the life of the project. In this study, traffic projections were developed for a build year of 2026 and a design year of 2041.

For this projection, two considerations were made. The first was trip generation from the *ITE Trip Generation Manual, 11th Edition* for all known proposed developments in the study area. For this, the only known development proposed within the study area was a sporting goods superstore in the southeast quadrant of the intersection of Mallett Rd and Daisy Vestry Rd. An estimate of 90,000 sq ft of gross floor area was determined based on the size of similar stores in Baton Rouge, LA, and Jackson, MS. The trip generation calculations are shown in **Table 9** with the *Trip Generation Manual* exerts provided in the report **Appendix**. The entirety of this volume was added in the 2026 build year volumes. The trip generation volumes are shown in **Figure 9**.

Table 9. Trip Generation										
Land Use		Intensity		Daily	AM Peak Hour			PM Peak Hour		
				Trip	Total	In	Out	Total	In	Out
Sporting Goods Superstore [ITE 861]		90	1000 Sq Ft GFA	2157	43	34	9	181	83	98
Daily	Traffic	[ITE 861]		=	T = 28.15*X-376.50					
	Retail									
AM Peak Hour	Traffic	[ITE 861]		=	n/a; (78%in/22%out)					
	Retail									
PM Peak Hour	Traffic	[ITE 861]		=	Ln(T) = 0.94*Ln(X)+0.97; (46%in/54%out)					
	Retail									
Source: ITE Trip Generation Manual, 11th Edition										

The second consideration was to develop an annual growth rate to account for the area population growth as well as any other future developments that are not currently known since the newly constructed four-lane Cook Rd is expected to have multiple developments completed within the study period while also providing a more direct access to the area from the east. While most of the development is expected to occur along or connected to Mallett Rd, it is expected that traffic volumes will increase relatively evenly across the area's roadway network. This is due to the connectivity of the area since Lamey Bridge Rd only provides direct access to and from the East on I-10 while vehicles wanting to travel to or from the west on the interstate are required to take Sangani Blvd and proceed through the interchange or gain access from D'Iberville Blvd. For this reason, the growth rate developed is applied to the entire network.

The background traffic annual growth rate based on population growth in the area determined using census data shown in **Table 10**. For this study an annual growth rate of 2.0% was assumed.

Table 10. US Census Population			
Location	Population		Annual Growth Rate
	2010	2020	
City of D'Iberville	9,486	12,721	3.0%
Harrison County	187,105	208,621	1.1%
Jackson County	139,668	143,252	0.3%

Source: census.gov

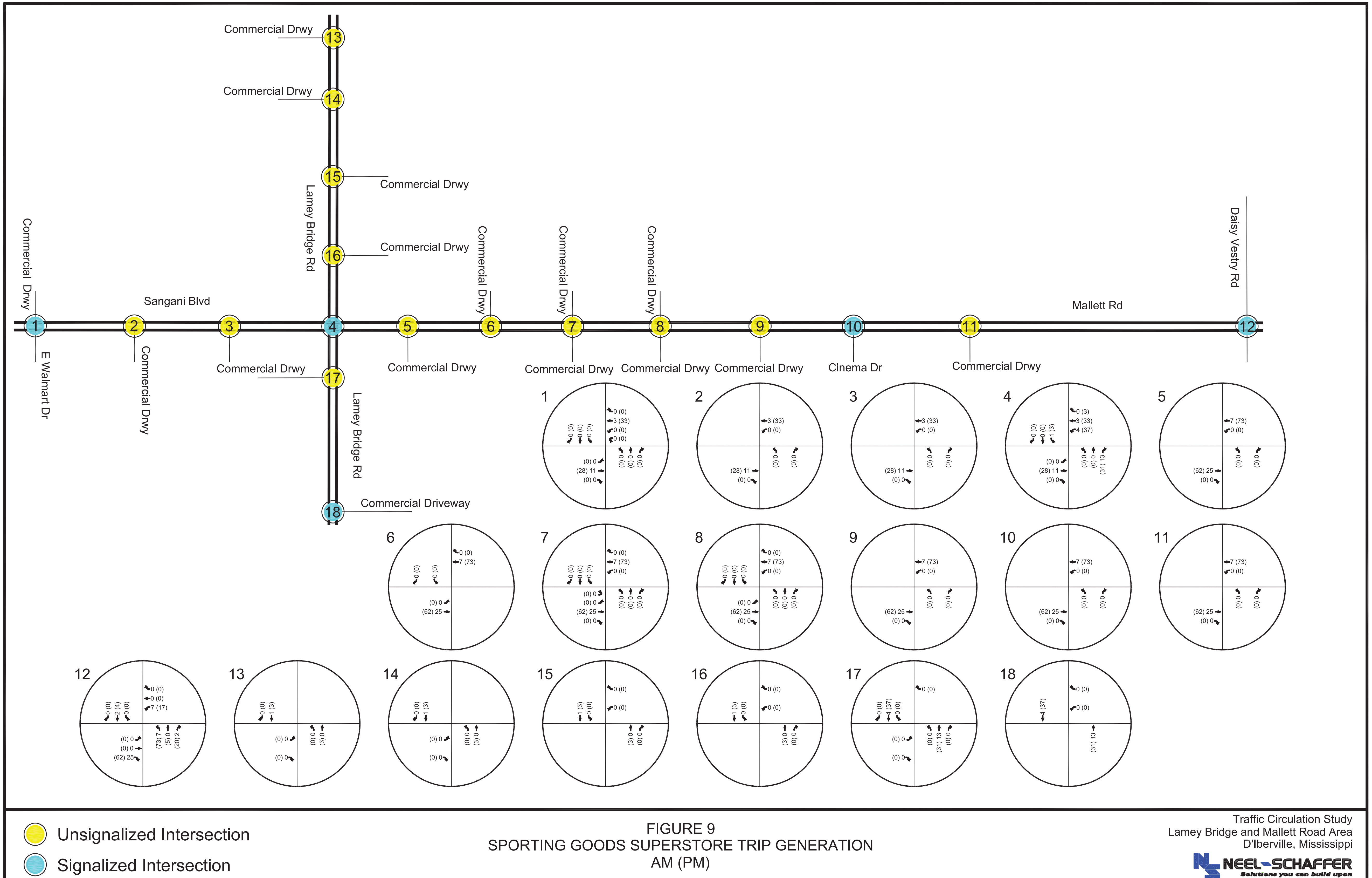


Figure 9. Sporting Goods Superstore Trip Generation

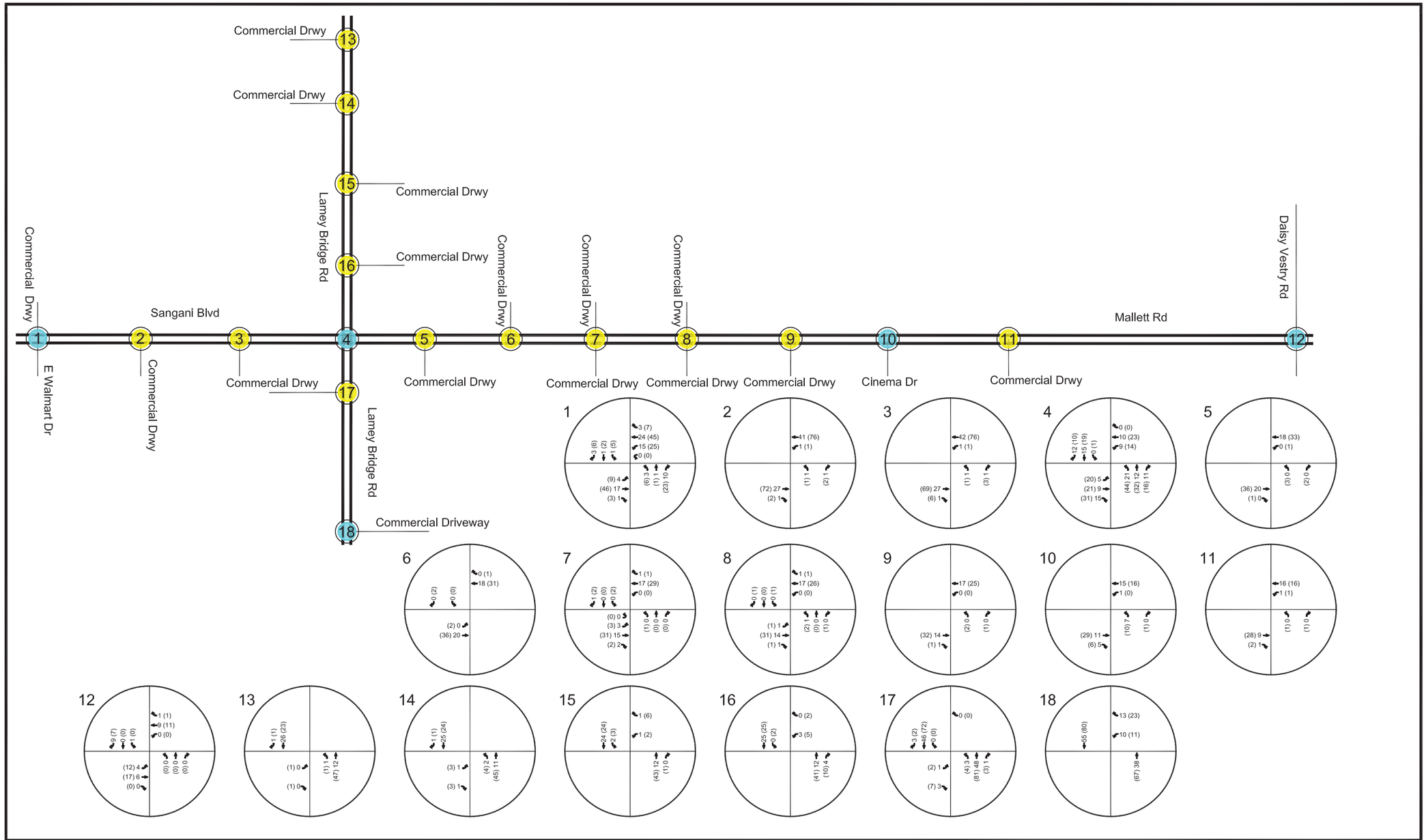


Figure 10. 2026 Background Traffic Growth

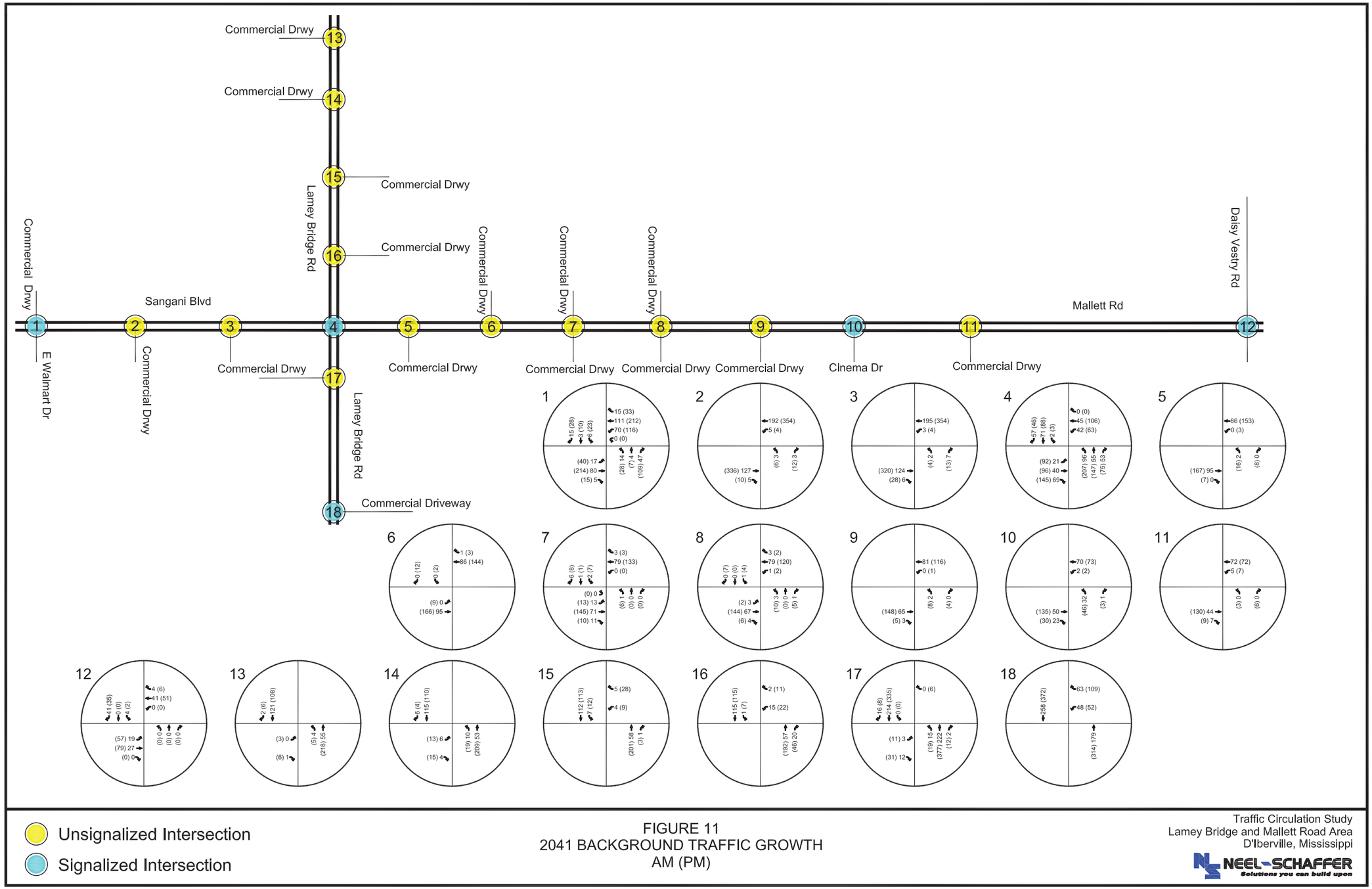


Figure 11. 2041 background Traffic Growth

7.0 Alternative Development

7.1 Preliminary Planning Level Analysis

This study focuses on providing alternatives to combine both the Mallett Rd Corridor widening project and the complementary improvements at the intersection of Lamey Bridge Rd and Sangani Blvd/Mallett Rd in both a safe and efficient manner. All alternatives provide similar access management strategies along Mallett Rd as a part of the four-lane expansion while multiple intersection improvement options were reviewed. For this review, a planning level capacity analysis was performed on a variety of intersection types utilizing the Capacity Analysis for Planning of Junctions (CAP-X) tool developed and provided by the U.S. Department of Transportation Federal Highway Administration.

This tool provides the means to compare multiple established alternative intersection types from a high-level view, allowing the user to quickly determine the best options for a particular location by using the rankings provided based on a calculated volume to capacity ratio. Analyses on the existing, 2026, and 2041 PM peak period volumes were performed with the detailed reports provided in the report **Appendix**. The existing and 2041 results for the intersection of Lamey Bridge Rd and Sangani Blvd/Mallett Rd are shown in **Figure 12** and **Figure 13** and detailed in the following subsections.

Results for Intersections

#	TYPE OF INTERSECTION	Sheet	Zone 1 (North)		Zone 2 (South)		Zone 3 (East)		Zone 4 (West)		Zone 5 (Center)		Overall v/c Ratio	Ranking
			CLV	V/C	CLV	V/C	CLV	V/C	CLV	V/C	CLV	V/C		
1	Conventional	FULL									741	0.46	0.46	2
2	Conventional Shared RT LN	CSRL									897	0.56	0.56	10
3.1	Quadrant Roadway	S-W			846	0.53			726	0.45	370	0.23	0.53	6
3.2		N-E	598	0.37			405	0.25			730	0.46	0.46	1
3.3		S-E			783	0.49	783	0.49			668	0.42	0.49	5
3.4		N-W	1082	0.68					736	0.46	730	0.46	0.68	12
4.1	Partial Displaced Left Turn	N-S	508	0.32	776	0.48					771	0.48	0.48	3
4.2		E-W					244	0.15	531	0.33	846	0.53	0.53	6
5	Displaced Left Turn	FULL	508	0.32	776	0.48	244	0.15	531	0.33	660	0.41	0.48	3
6.1	Restricted Crossing U-Turn	N-S	733	0.46	943	0.59	631	0.39	832	0.52			0.59	11
6.2		E-W	781	0.49	1108	0.69	642	0.40	590	0.37			0.69	13
7.1	Median U-Turn	N-S	998	0.62	699	0.44					1211	0.76	0.76	14
7.2		E-W					961	0.60	523	0.33	1212	0.76	0.76	15
8.1	Partial Median U-Turn	N-S	832	0.52	458	0.29					864	0.54	0.54	8
8.2		E-W					419	0.26	516	0.32	864	0.54	0.54	8

Results for Roundabouts

#	TYPE OF ROUNDABOUT	Zone 1 (North)			Zone 3 (East)			Zone 2 (South)			Zone 4 (West)			Overall v/c Ratio	Ranking
		Lane 1	Lane 2	Lane 3	Lane 1	Lane 2	Lane 3	Lane 1	Lane 2	Lane 3	Lane 1	Lane 2	Lane 3		
9.1	50 ICD	1.34			1.01			1.43			6.10			6.10	7
9.2	75 ICD	1.01			0.98			1.35			2.38			2.38	6
9.3	1 X 1	0.56			0.86			1.19			0.80			1.19	5
9.4	1 X 2	0.44			0.36	0.50		1.05			0.55	0.25		1.05	4
9.5	2 X 1	0.19	0.37		0.78			0.78	0.41		0.60			0.78	3
9.6	2 X 2	0.16	0.29		0.44	0.19		0.70	0.37		0.33	0.45		0.70	2
9.7	3 X 3	0.01	0.17	0.27	0.12	0.23	0.40	0.28	0.46	0.35	0.16	0.37	0.20	0.46	1

Figure 12. PM Existing CAP-X Results / Source: FHWA CAP-X Version 2.0

Results for Intersections

#	TYPE OF INTERSECTION	Sheet	Zone 1 (North)		Zone 2 (South)		Zone 3 (East)		Zone 4 (West)		Zone 5 (Center)		Overall v/c Ratio	Ranking
			CLV	V/C	CLV	V/C	CLV	V/C	CLV	V/C	CLV	V/C		
1	Conventional	FULL									1116	0.70	0.70	2
2	Conventional Shared RT LN	CSRL									1362	0.85	0.85	10
3.1	Quadrant Roadway	S-W			1256	0.79			1118	0.70	612	0.38	0.79	6
3.2		N-E	853	0.53			646	0.40			1085	0.68	0.68	1
3.3		S-E			1162	0.73	1162	0.73			992	0.62	0.73	3
3.4		N-W	1607	1.00					1110	0.69	1085	0.68	1.00	12
4.1	Partial Displaced Left Turn	N-S	759	0.47	1189	0.74					1163	0.73	0.74	4
4.2		E-W					417	0.26	807	0.50	1256	0.79	0.79	6
5	Displaced Left Turn	FULL	759	0.47	1189	0.74	417	0.26	807	0.50	981	0.61	0.74	4
6.1	Restricted Crossing U-Turn	N-S	1180	0.74	1453	0.91	1052	0.66	1277	0.80			0.91	11
6.2		E-W	1159	0.72	1662	1.04	991	0.62	892	0.56			1.04	13
7.1	Median U-Turn	N-S	1531	0.96	1059	0.66					1799	1.12	1.12	14
7.2		E-W					1466	0.92	842	0.53	1881	1.18	1.18	15
8.1	Partial Median U-Turn	N-S	1237	0.77	700	0.44					1283	0.80	0.80	8
8.2		E-W					660	0.41	827	0.52	1283	0.80	0.80	8

Results for Roundabouts

#	TYPE OF ROUNDABOUT	Zone 1 (North)			Zone 3 (East)			Zone 2 (South)			Zone 4 (West)			Overall v/c Ratio	Ranking
		Lane 1	Lane 2	Lane 3	Lane 1	Lane 2	Lane 3	Lane 1	Lane 2	Lane 3	Lane 1	Lane 2	Lane 3		
9.1	50 ICD	-1.72			2.16			3.45			-1.47			3.45	7
9.2	75 ICD	-2.99			2.02			3.01			-2.15			3.01	6
9.3	1 X 1	1.32			1.59			2.27			2.14			2.27	5
9.4	1 X 2	0.91			0.67	0.92		1.88			1.48	0.66		1.88	4
9.5	2 X 1	0.46	0.86		1.36			1.45	0.82		1.41			1.45	3
9.6	2 X 2	0.34	0.60		1.05	0.43		1.24	0.68		0.59	0.79		1.24	2
9.7	3 X 3	0.02	0.40	0.59	0.21	0.43	0.72	0.53	0.86	0.68	0.46	0.96	0.48	0.96	1

Figure 13. PM 2041 CAP-X Results / Source: FHWA CAP-X Version 2.0

7.1.1 Conventional Intersection

A conventional intersection refers to the traditional intersection configuration with the standard eight phase traffic signal. A conventional intersection can be altered via shared lanes, shared movements, or split phasing. The CAP-X analysis considers only two configurations: the typical 8-phase signal and a configuration assuming the right and thru lanes are shared. The shared lane configuration scores poorly and is not feasible on the approaches of the study intersection with large right turn movements. The typical 8-phase signal ranks 2nd in both existing and 2041 analyses. Two alternatives were developed for a conventional intersection: an 8-phase signal and a split phase signal. Both are further detailed in the following sections.

7.1.2 Quadrant Roadway

A quadrant roadway (QR) splits a single eight phase intersection into one two-phase intersection and two three-phase intersections improving efficiency. This is done by building a connection road in one quadrant of the intersection. **Figure 14** shows a QR intersection where the connection road is placed in the southwest quadrant. For the study intersection, only a southwest or northeast QR are feasible due to the existing land use and topography.

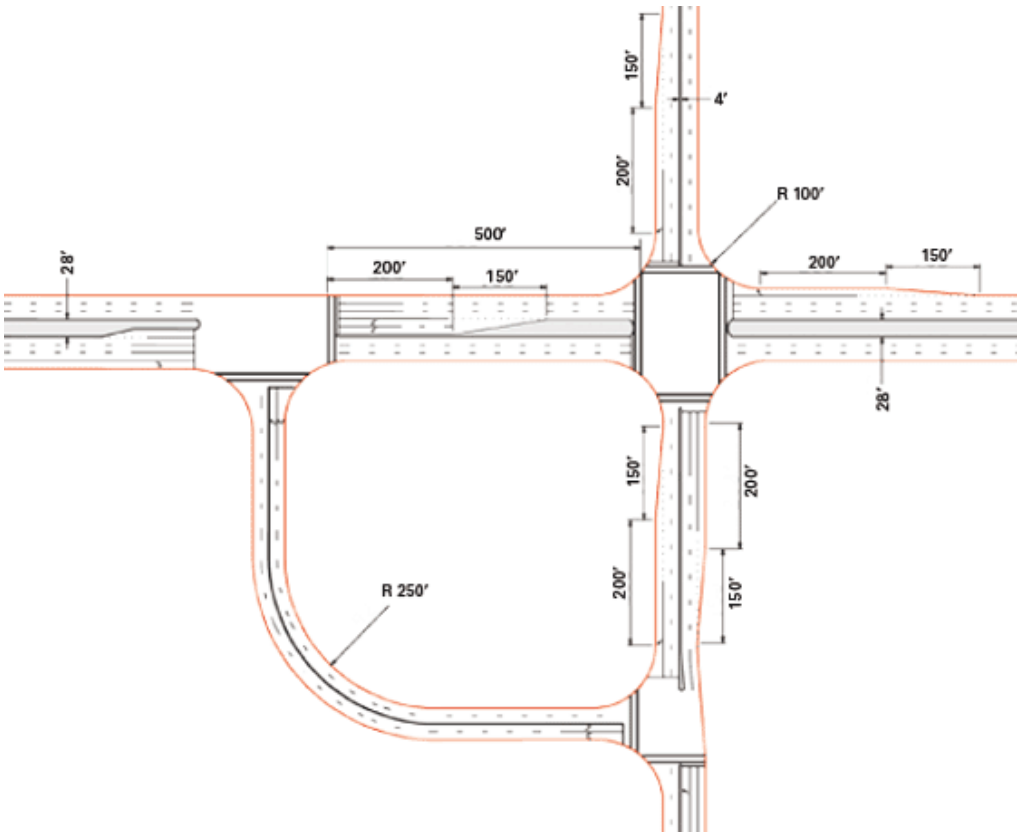


Figure 14. QR Intersection Geometry (S-W) / Source: FHWA-HRT-09-058

The CAP-X analysis scores a northeast and southwest QR as the 1st and 6th ranked intersection types in both existing and 2041 analyses. The southwest QR would be required to utilize the existing intersection of Sangani Blvd and East Walmart Dr as the western intersection which is not captured in this simplified analysis. This configuration is expected to move the "bottleneck" from the study intersection to the East Walmart Dr intersection instead of reducing congestion while also potentially creating queuing issues with the I-10 WB off ramp intersection.

A northeast QR was removed from consideration due to the vast amount of right-of-way that would be required to be acquired.

7.1.3 Displaced Left Turn Lane

Also known as a continuous flow intersection (CFI), a displaced left turn (DLT) intersection's primary geometric feature is the removal of left turns from the primary intersection to a new signalized location several hundred feet upstream. The left turn traffic then travels in a new set of lanes parallel to opposing traffic. This intersection type typically requires all driveways in the impact area of the intersection to be right in/right out with restricted median openings in the vicinity of the intersection as well. **Figure 15** shows a typical full DLT which has a 450 ft spacing between the main intersection and the upstream signalized left.

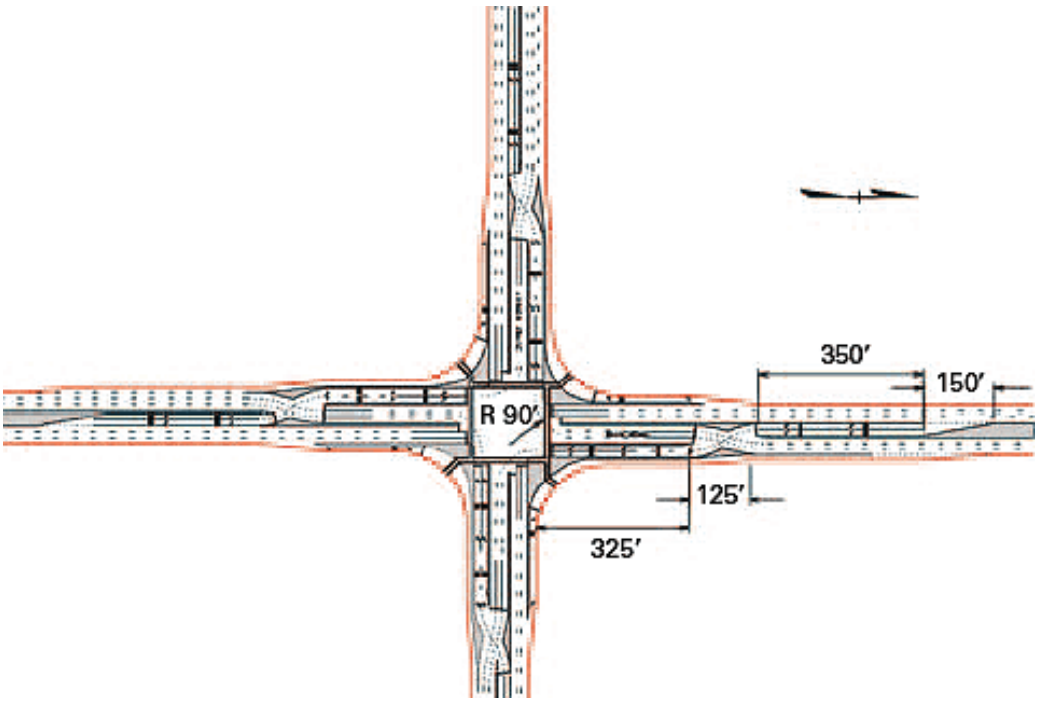


Figure 15. Typical full DLT / Source: FHWA-HRT-09-055

The CAP-X analysis scores both a full and partial (N-S) DLT with a single left turn lane as the 3rd (existing) and 4th (2041) ranked intersection types; however, the existing signal spacing on the west leg of approximately 600 feet removes the possibility of creating a displaced left turn on the E-W legs as there is not enough room to fit the western signalized left between the existing intersections thus removing a full DLT from consideration.

A partial (N-S) DLT is not as restricted by signal spacing, but the extent of the impact area is expected to overlap the impact area from the I-10 WB off ramp signalized intersection which could create queueing issues between the two intersections. In addition, since all driveways within the vicinity of the intersection would be restricted to right in/right out only, access from the southwest quadrant (Walgreens) would be cut off to the west and access from the south (the major movement) to the southwest quadrant would be cut off as well. While these access issues could potentially be resolved by providing U-turn locations, the major prohibition to a partial (N-S) DLT is the space requirements of this type of intersection. A large portion of right of way would be required to be purchased to provide the channelized right and the new left turn travel lanes running parallel to the opposing traffic. **Figure 16** provides a closer view of the lane configuration of a partial (N-S) DLT. While the study intersection would have a reduced number of lanes than those shown here, a general idea of the layout and additional right of way required can be developed.

In addition, DLT intersections are generally applicable when through volumes are high and balanced and left turn volumes are high on all approaches with DLT configuration (FHWA-HRT-09-055). While this is true for the northbound approach, the southbound left turn volume is relatively low with only twelve vehicles making the movement during the pm peak hour.

Due to these expected significant right-of-way impacts and the low southbound left turn volumes, a partial (N-S) DLT was also removed from consideration.

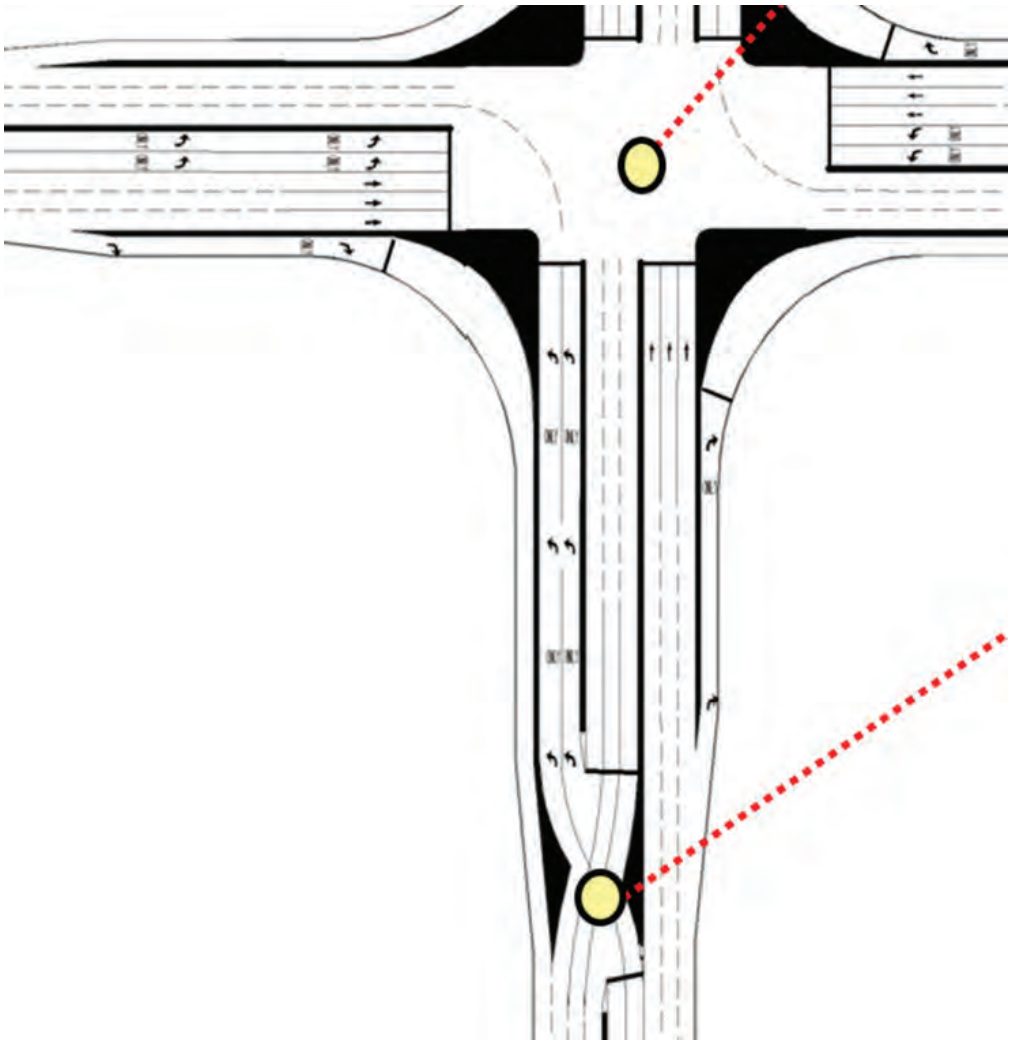


Figure 16. N-S DLT Example / Source: Image from FHWA CAP-X Excel Tool

7.1.4 Restricted Crossing U-Turn

Also known as a J-turn or superstreet (especially when implemented at multiple intersections along a segment), a restricted crossing U-Turn (RCUT) prohibits left turns and through movements from the side street. **Figure 17** shows an example of a RCUT with the major roadway being the east-west roadway. This forces these prohibited movements to make a right followed by a U-Turn at a one-way median opening within 1,000 ft of the intersection. RCUT intersections perform poorly in the CAP-X analysis, which is expected, as generally RCUT intersections are only applicable where the minor road volume is low to medium with the ratio of total minor road volume to total intersection volume less than 0.20 (FHWA-HRT-09-059). For the study intersection, this ratio is 48% with no true minor roadway. For these reasons, the RCUT was removed from consideration.

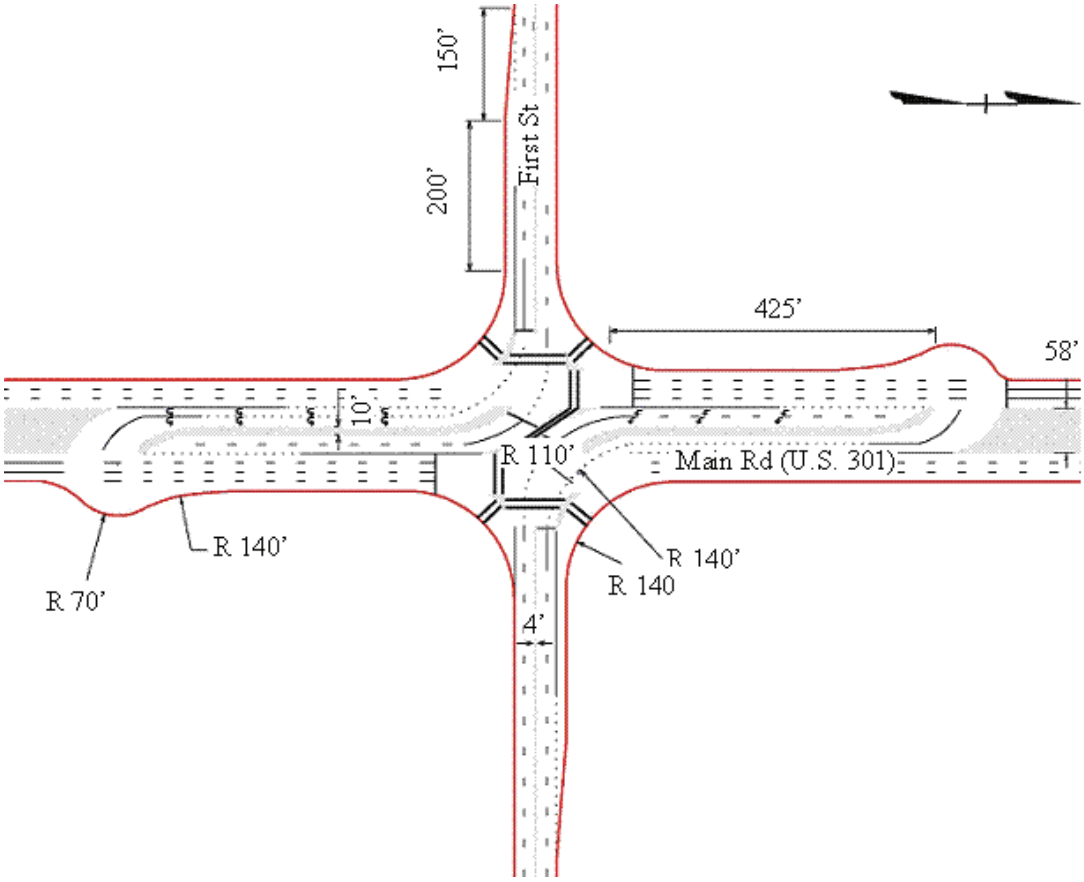


Figure 17. E-W RCUT Example / Source: FHWA A-HRT-09-059

7.1.5 Median U-Turn

A median U-Turn (MUT) intersection is similar to an RCUT except the minor approach through movement is not prohibited and the major approach left turn is prohibited. A full MUT prohibits all lefts at the main intersection forcing these movements to make rights and a U-Turn, whereas a partial MUT only prohibits the lefts on the major approaches. Generally, a median width greater than 40 feet is required to accommodate heavy vehicles, which would require significant right-of-way to be purchased in the study area (FHWA-HRT-09-057). In addition, MUT intersections perform poorly in the CAP-X analysis and even have a volume to capacity (V/C) ratio greater than 1.0 in the 2041 analysis, which corresponds to a LOS F. For these reasons the MUT intersection was removed from consideration.

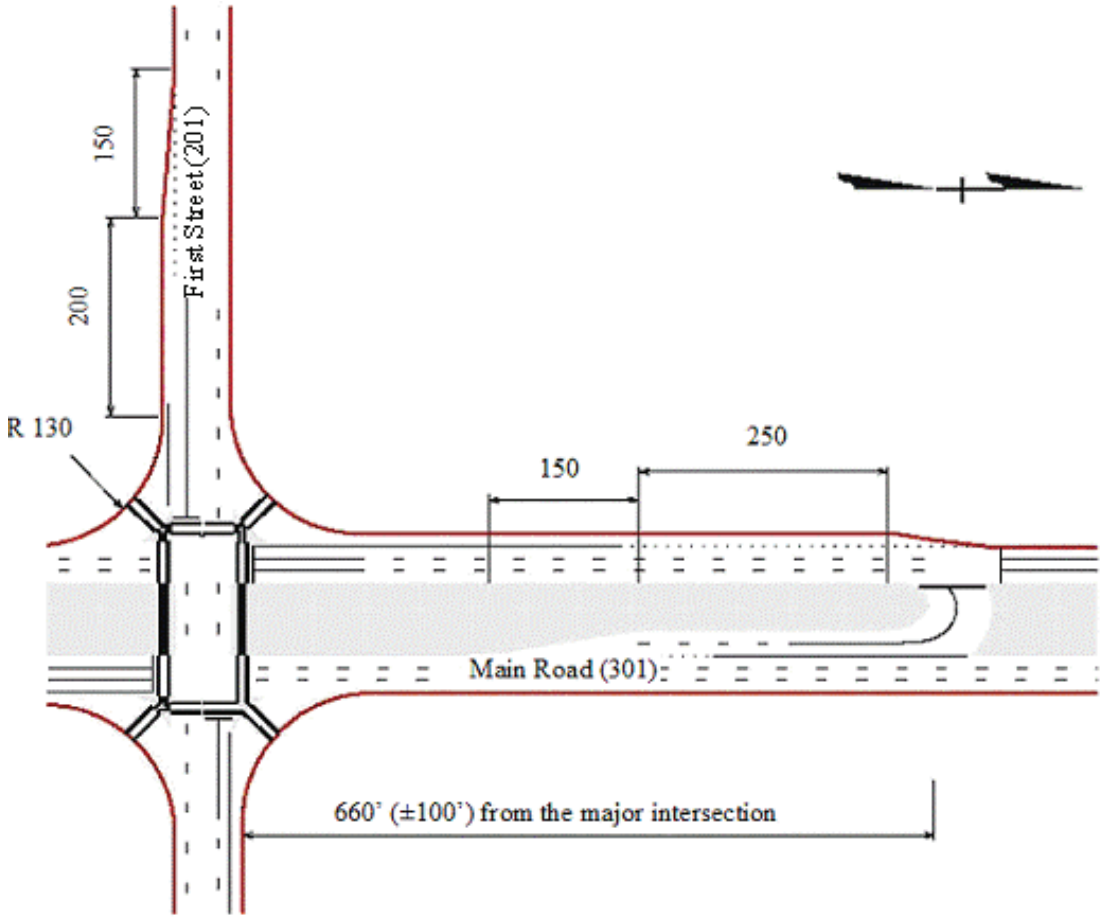


Figure 18. Typical MUT Intersection / Source: FHWA A-HRT-09-057

7.1.6 Roundabout

A roundabout replaces stop control or signalized control with yield control on all approaches. All vehicles yield to motorists already in the intersection. Roundabouts are known to significantly reduce severe and fatal crashes, remove crossing conflict points, and decrease delays where favorable conditions exist.

Roundabouts, however, experience limitations in their effectiveness. They cannot provide explicit priority to a particular user or approach as they treat all movements with equal priority. Due to this, increased delay may be experienced by the major movements especially where the approach turning movement volumes are highly unbalanced. Roundabout capacity reduces as the number of conflicting movements increases. In addition, roundabouts spaced closely to signalized intersections with significant queues can experience significant delays if those queues extend to or through the roundabout since successful roundabout operation requires unimpeded flow within the circulatory roadway. Pedestrian considerations at roundabouts have evolved over time with the existing recommendation in the proposed *Public Right-of-Way Accessibility Guidelines* (PROWAG) being to install signalized pedestrian crossings at all locations where pedestrians are required to cross two or more lanes without a pedestrian refuge. Roundabouts also typically require a larger intersection footprint than other alternatives.

The study intersection turning movements are unbalanced with the two largest movements (NB and EB) conflicting each other. With this in mind, the CAP-X results for existing volumes expectedly show that one and two-lane roundabouts are outperformed by all other options except a full MUT intersection based on the V/C ratio. While a 3x3 roundabout shows similar V/C to the top performing intersection options, the required right of way for a three-lane roundabout was deemed to be unacceptable as it would require acquiring most of the parking lots in both the northeast and southwest quadrants of the intersection. The 2041 CAP-X results show that all one and two-lane roundabouts have a V/C greater than 1.0 corresponding to an LOS F.

Another option for roundabouts is to provide right turn slip lanes that remove the right turn volume out of the circulatory roadway. The CAP-X analysis was performed with all the right turn volumes removed to determine if this would improve the roundabout alternative. The results for Lamey Bridge Rd and Sangani Blvd/Mallett Rd are shown in **Figure 19** and **Figure 20**. While these show improvements in the V/C for single lane roundabouts, two and three lane roundabouts are unaffected and would require even more right-of-way to provide these slip lanes.

Considering all of this, roundabouts were deemed to not be a feasible solution for this location and were removed from consideration.

Results for Roundabouts

#	TYPE OF ROUNDABOUT	Zone 1 (North)			Zone 3 (East)			Zone 2 (South)			Zone 4 (West)			Overall v/c Ratio	Ranking
		Lane 1	Lane 2	Lane 3	Lane 1	Lane 2	Lane 3	Lane 1	Lane 2	Lane 3	Lane 1	Lane 2	Lane 3		
9.1	50 ICD	0.89			0.57			1.18			6.10			6.10	7
9.2	75 ICD	0.67			0.56			1.11			2.38			2.38	6
9.3	1 X 1	0.37			0.48			0.98			0.80			0.98	5
9.4	1 X 2	0.30			0.36	0.12		0.87			0.55	0.25		0.87	4
9.5	2 X 1	0.19	0.18		0.44			0.78	0.20		0.60			0.78	3
9.6	2 X 2	0.16	0.14		0.44	0.19		0.70	0.18		0.33	0.11		0.70	2
9.7	3 X 3	0.01	0.17	0.15	0.12	0.23	0.11	0.28	0.46	0.18	0.16	0.37	0.20	0.46	1

Figure 19. PM Exisitng CAP-X No-Rights Roundabout Results

Results for Roundabouts														
#	TYPE OF ROUNDABOUT	Zone 1 (North)			Zone 3 (East)			Zone 2 (South)			Zone 4 (West)			Overall v/c Ratio	Ranking
		Lane 1	Lane 2	Lane 3	Lane 1	Lane 2	Lane 3	Lane 1	Lane 2	Lane 3	Lane 1	Lane 2	Lane 3		
9.1	50 ICD	-1.15			1.25			2.78			-1.47			2.78	7
9.2	75 ICD	-1.99			1.17			2.43			-2.13			2.43	6
9.3	1 X 1	0.88			0.92			1.83			2.13			2.13	5
9.4	1 X 2	0.61			0.67	0.24		1.51			1.48	0.65		1.51	4
9.5	2 X 1	0.46	0.42		0.78			1.45	0.38		1.40			1.45	3
9.6	2 X 2	0.34	0.29		1.05	0.43		1.24	0.31		0.59	0.21		1.24	2
9.7	3 X 3	0.02	0.40	0.31	0.21	0.43	0.22	0.53	0.86	0.33	0.46	0.96	0.47	0.96	1

Figure 20. PM 2041 CAP-X No-Rights Roundabout Results

7.2 Alternative 1: Dual Left Turn Lane

Alternative 1 is a basic eight phase conventional intersection with geometric improvements to increase capacity. This alternative includes the following improvements and is shown in **Figure 21**.

- Mallett Rd expansion from three to four lanes
- Mallett Rd/Lamey Bridge Rd access management (driveway alterations)
- Westbound U-Turn location at East Walmart Signal (northbound right turn overlap removed)
- Eastbound U-Turn location at unsignalized full access driveway to Lakeview Village/Lakeview Town Square
- Lamey Bridge Rd at Sangani Blvd/Mallett Rd
  - » Extended northbound left turn lane
  - » Added northbound left turn lane
  - » Centerline slotted curb on west and south approaches
  - » Southbound right free movement converted to a yielded movement
  - » Eastbound right turn overlap phase added

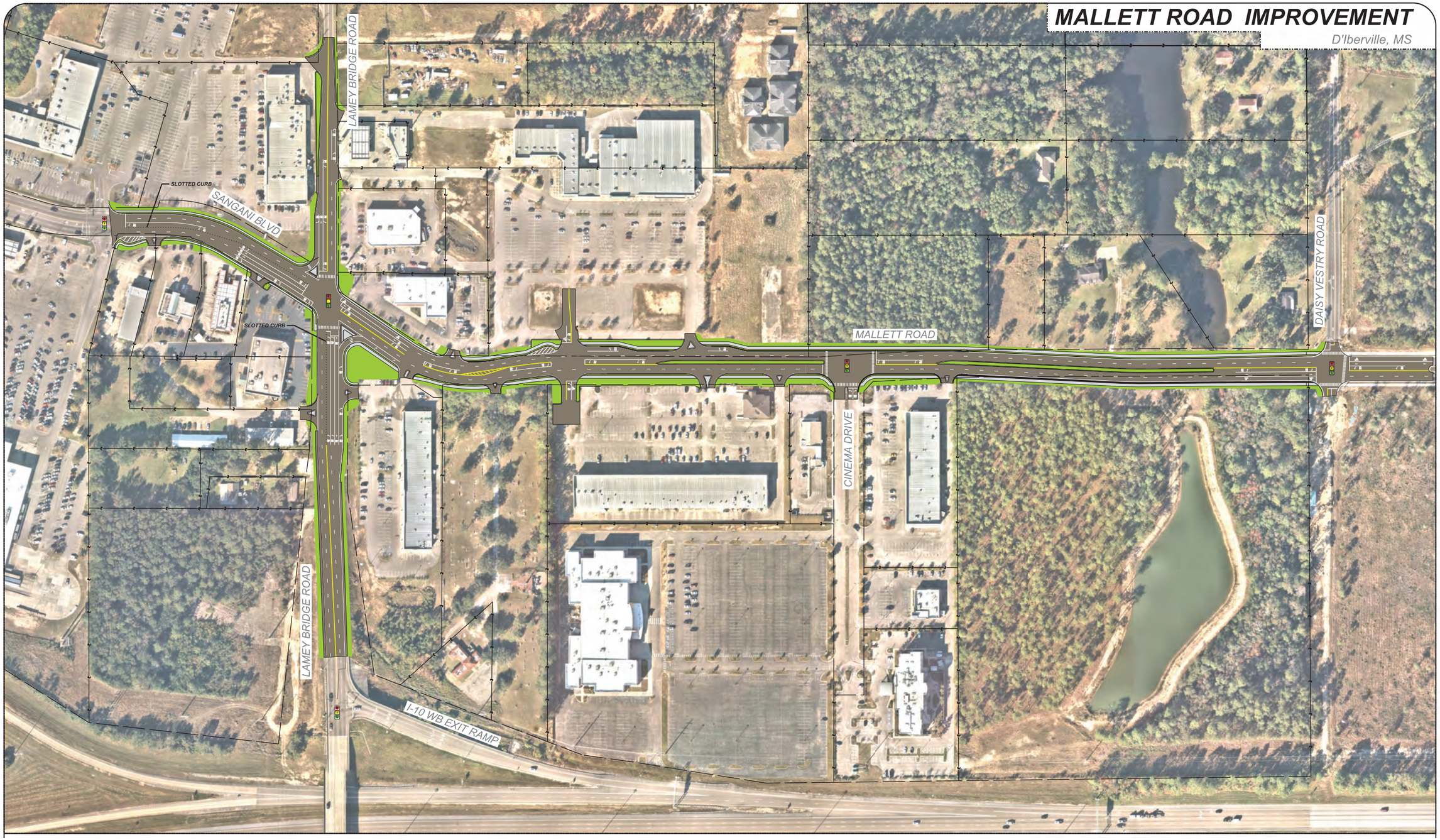


Figure 21. Alternative 1 Layout

7.3 Alternative 2: Split Phase

Alternative 2 is a conventional intersection with the phasing altered to split phase on the north and south approaches. The intent of this alternative was to improve capacity through phasing due to the unbalanced nature of the north and southbound movements while minimally impacting the right-of-way on the south leg. This alternative includes the following improvements and is shown in **Figure 22**.

- Mallett Rd expansion from three to four lanes
- Mallett Rd/Lamey Bridge Rd access management (driveway alterations)
- Westbound U-Turn location at East Walmart Signal (northbound right turn overlap removed)
- Eastbound U-Turn location at unsignalized full access driveway to Lakeview Village/Lakeview Town Square
- Lamey Bridge Rd at Sangani Blvd/Mallett Rd
  - » Extended northbound left turn lane
  - » Centerline slotted curb on west and south approaches
  - » Southbound right free movement converted to a yielded movement
  - » Eastbound right turn overlap phase added

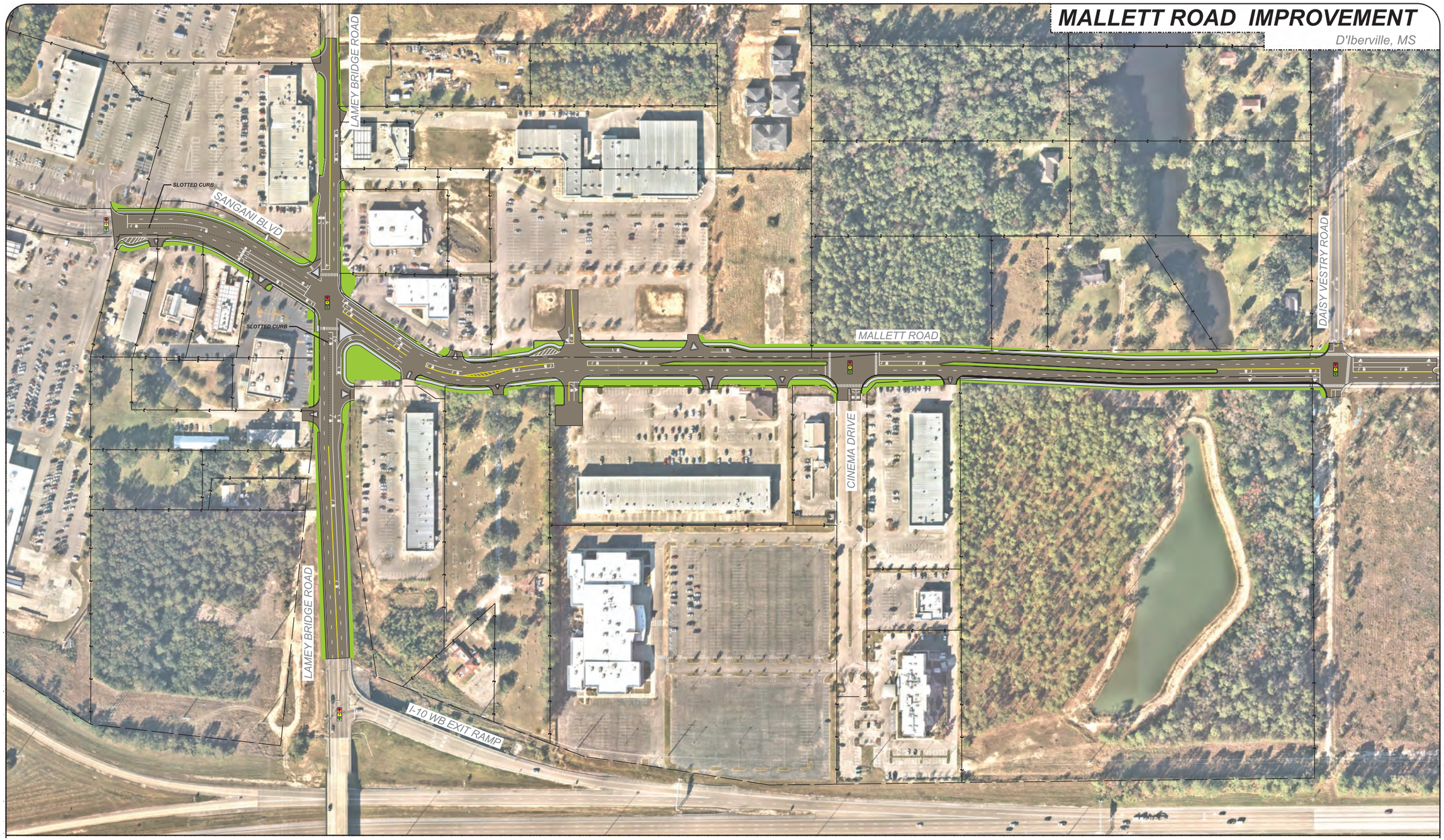


Figure 22. Alternative 2 Layout

7.4 Alternative 3: New Walgreens Access Signalized

One of the concerns with the first two alternatives is the required westbound U-turn added to the intersection of Sangani Blvd and East Walmart Dr. This not only increases the delay and travel length of northbound left turns attempting to access the businesses in the southwest quadrant of the intersection of Lamey Bridge Rd and Sangani Blvd/Mallett Rd, but it requires the northbound right overlap to be removed at the Sangani Blvd/East Walmart Dr signal due to conflicts between the right and U-turns. The removal of this overlap increases the delay experienced by the heavy northbound right leaving the Walmart parking lot.

To mitigate this, a new signalized full-access connection is proposed on Lamey Bridge Rd that provides access to the businesses in the southwest quadrant of the intersection of Lamey Bridge Rd and Sangani Blvd/Mallett Rd as well as a secondary access to Walmart. In addition to solving the U-Turn issue, the connection is expected to relieve pressure from the intersection of Sangani Blvd and East Walmart Dr and the intersection of Lamey Bridge Rd and Sangani Blvd/Mallett Rd, thus improving operations.

Two locations were reviewed for this new connection: at a midpoint between the two existing signalized intersections north of I-10 and as a fourth west leg at the signalized intersection of Lamey Bridge Rd and the I-10 WB Off Ramp. However, the location at the existing I-10 WB Off Ramp signal was deemed infeasible for two reasons. The first was due to the topography of the area. A large grade change exists at this location and would require extensive fill to provide access at this location. The second was due to the bridge across I-10. Placing the connection at this location would not allow for a north bound left turn lane to be provided without widening the existing bridge creating/moving the same congestion issue that currently exists at the intersection of Lamey Bridge Rd and Sangani Blvd/Mallett Rd.

Alternative 3 combines Alternative 1 and the new connection. This alternative includes the following improvements and is shown in **Figure 23**.

- Mallett Rd expansion from three to four lanes
- Mallett Rd/Lamey Bridge Rd access management (driveway alterations)
- Eastbound U-Turn location at unsignalized full access driveway to Lakeview Village/Lakeview Town Square
- Lamey Bridge Rd at Sangani Blvd/Mallett Rd
  - » Extended northbound left turn lane
  - » Added northbound left turn lane
  - » Centerline slotted curb on west and south approaches
  - » Southbound right free movement converted to a yielded movement
  - » Eastbound right turn overlap phase added
- New signalized connection on Lamey Bridge Rd to Walmart, Walgreens, and other businesses in this quadrant.

A combination of Alternative 2 and the new connection was deemed unfeasible due to the expected northbound queue length and the existing signal spacing.

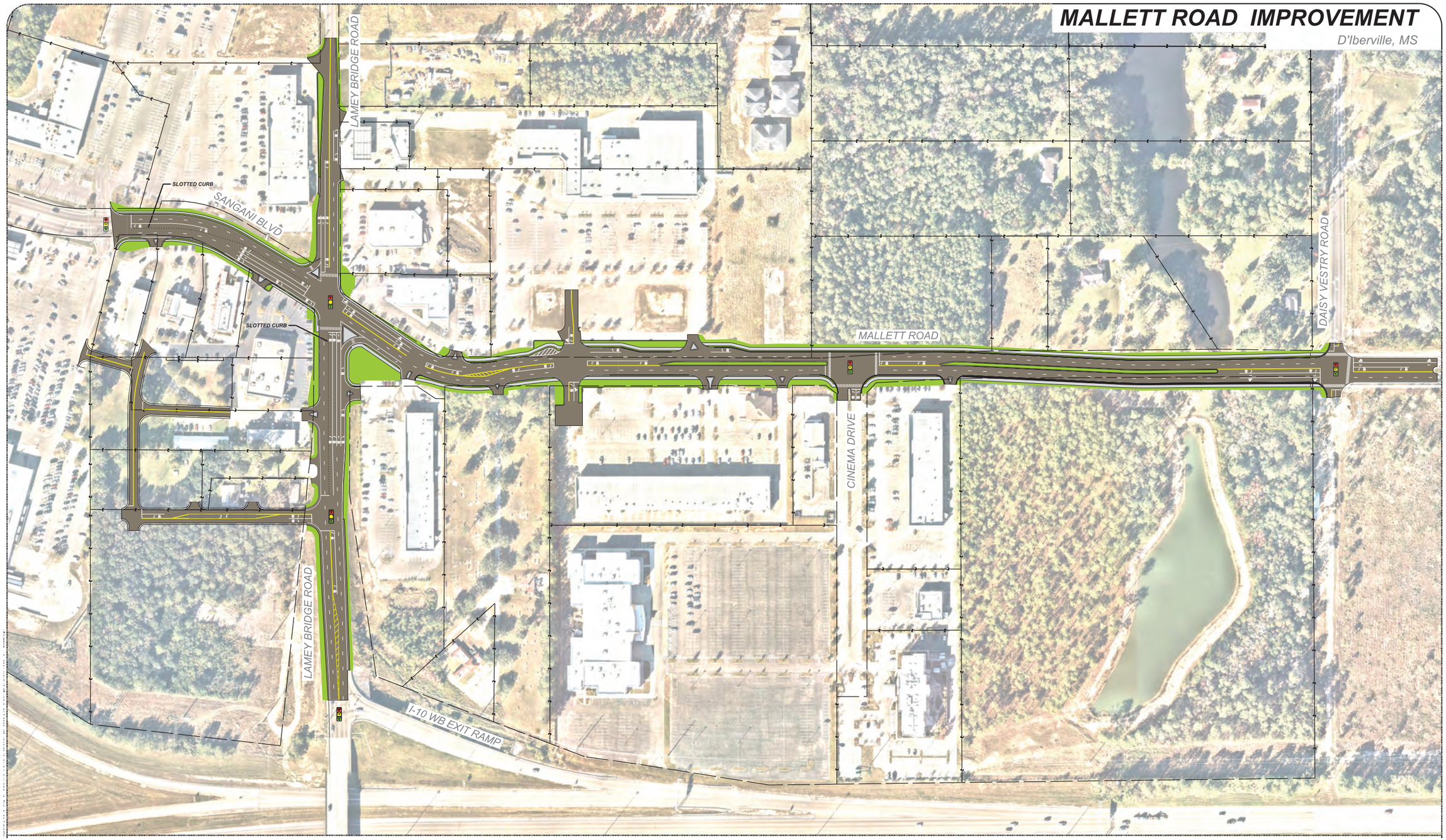


Figure 23. Alternative 3 Layout

7.4.1 Alternative 3B: New Walgreens Access Unsignaized

In the event that the new connection cannot be extended to connect with the Walmart parking lot, it is still beneficial in removing the westbound U-Turn requirement. The connection, however, would no longer require signalization. A sub-alternative was reviewed to determine these impacts.

This alternative includes the following improvements and is shown in **Figure 23**.

- Mallett Rd expansion from three to four lanes
- Mallett Rd/Lamey Bridge Rd access management (driveway alterations)
- Eastbound U-Turn location at unsignalized full access driveway to Lakeview Village/Lakeview Town Square
- Lamey Bridge Rd at Sangani Blvd/Mallett Rd
  - » Extended northbound left turn lane
  - » Added northbound left turn lane
  - » Centerline slotted curb on west and south approaches
  - » Southbound right free movement converted to a yielded movement
  - » Eastbound right turn overlap phase added
- New unsignalized connection on Lamey Bridge Rd to Walgreens and other businesses in this quadrant excluding Walmart.

8.0 Trip Re-Distribution and Analysis Volumes

Traffic turning movements were redistributed for each alternative to account for the changes in access. Generally, all restricted left turns from driveways were moved to the closest remaining full-access driveway. The exceptions occur where no full-access driveway is provided. These movements are then rerouted to U-Turn locations and altered to right turns. The redistribution and analysis volumes are shown in **Figure 24** to **Figure 37**.

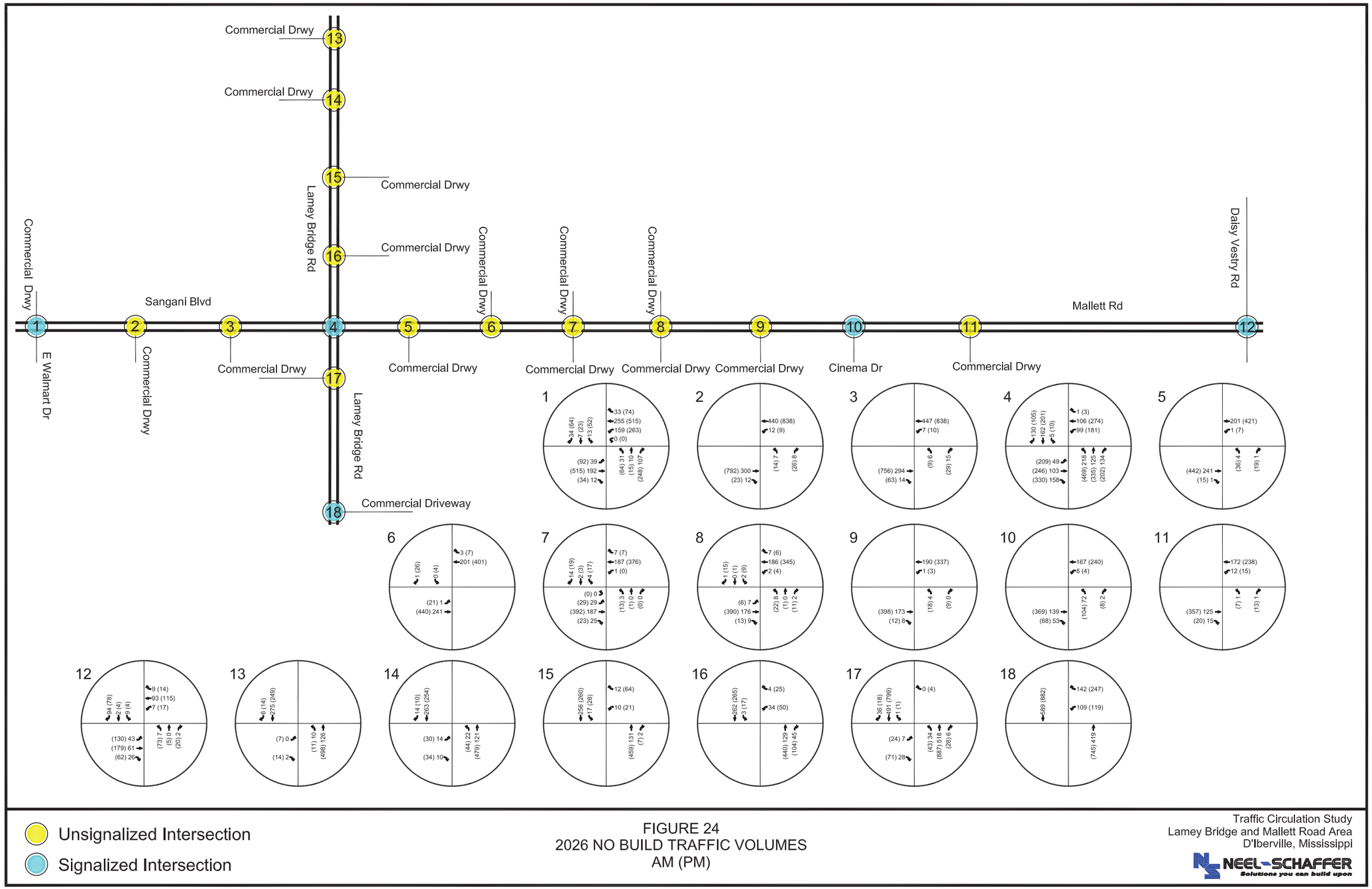


FIGURE 24
2026 NO BUILD TRAFFIC VOLUMES
AM (PM)

Traffic Circulation Study
Lamey Bridge and Mallett Road Area
D'Iberville, Mississippi
NEEL-SCHAFFER
Solutions you can build upon

Figure 24. 2026 No Build Volume

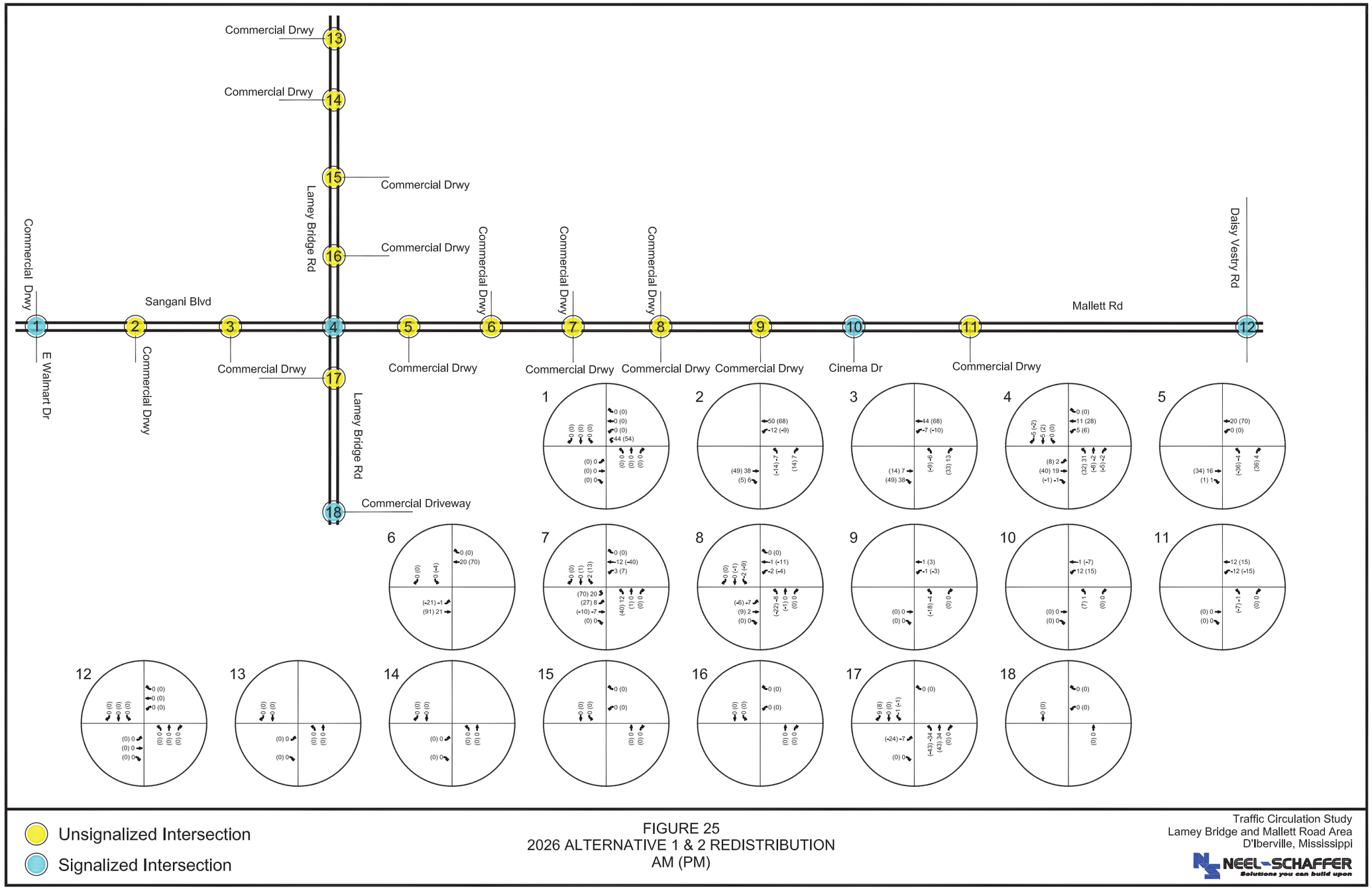


Figure 25. 2026 Alternative 1 & 2 Redistribution

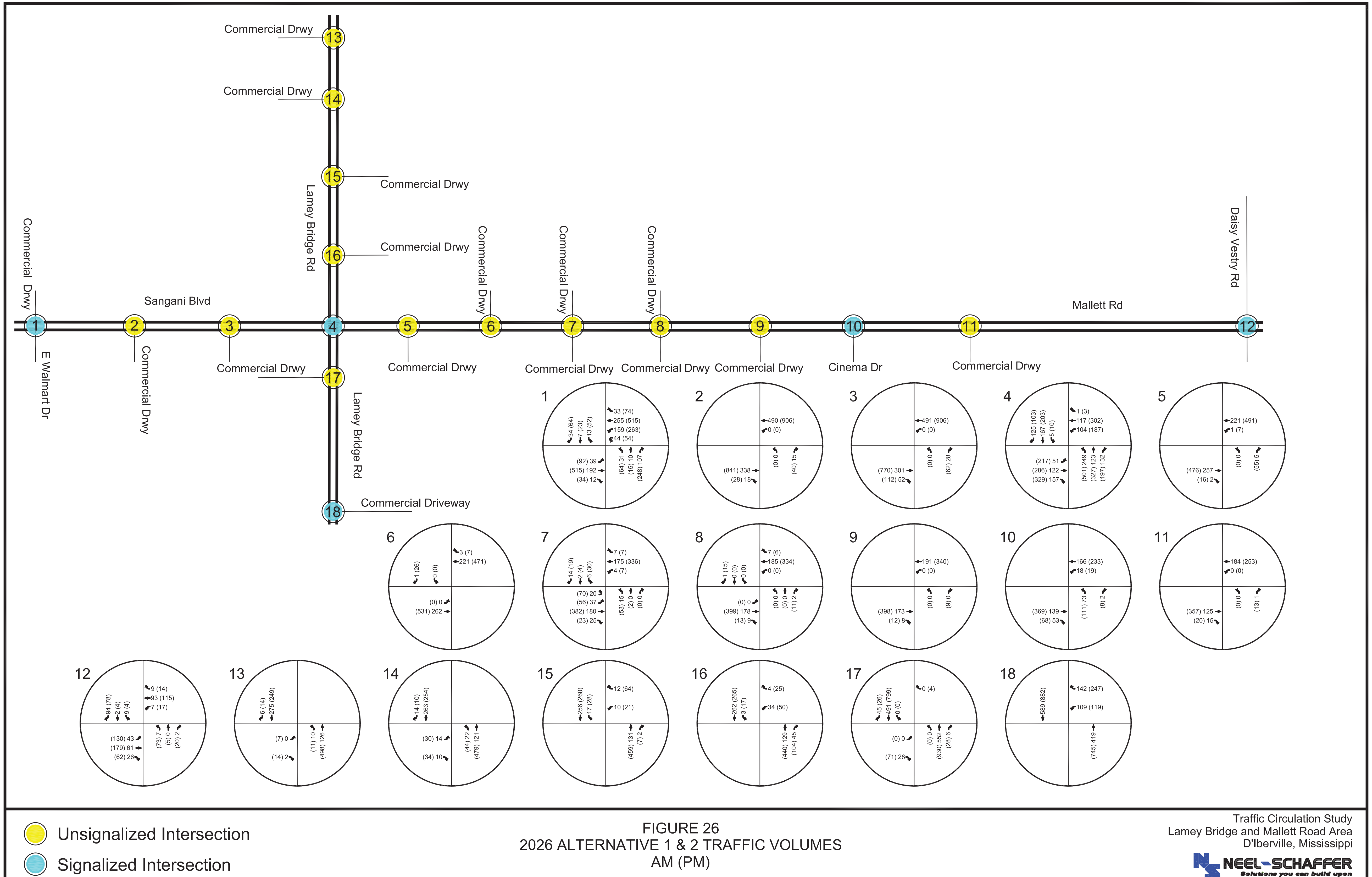


Figure 26. 2026 Alternative 1 & 2 Volume

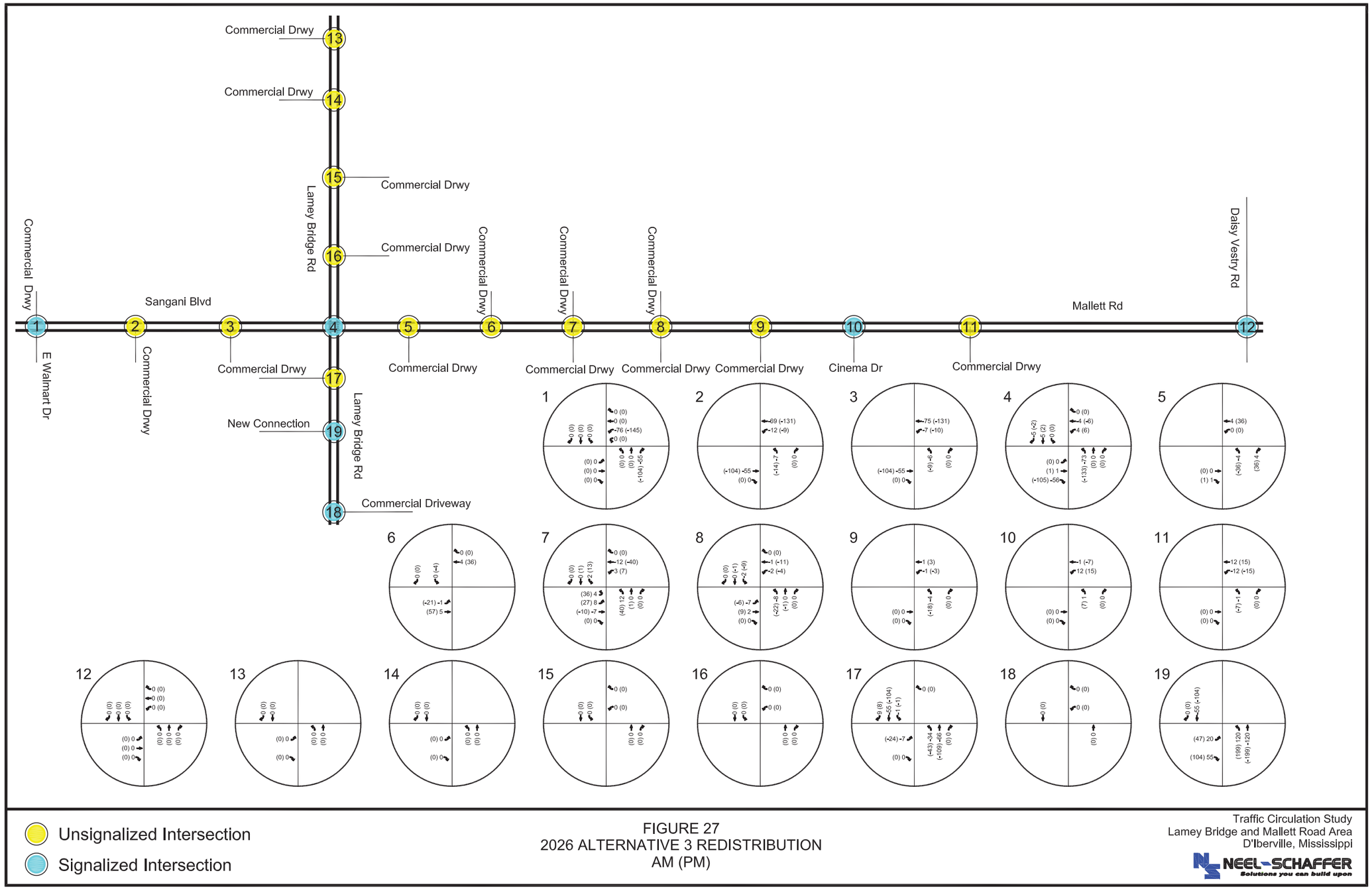


Figure 27. 2026 Alternative 3 Redistribution

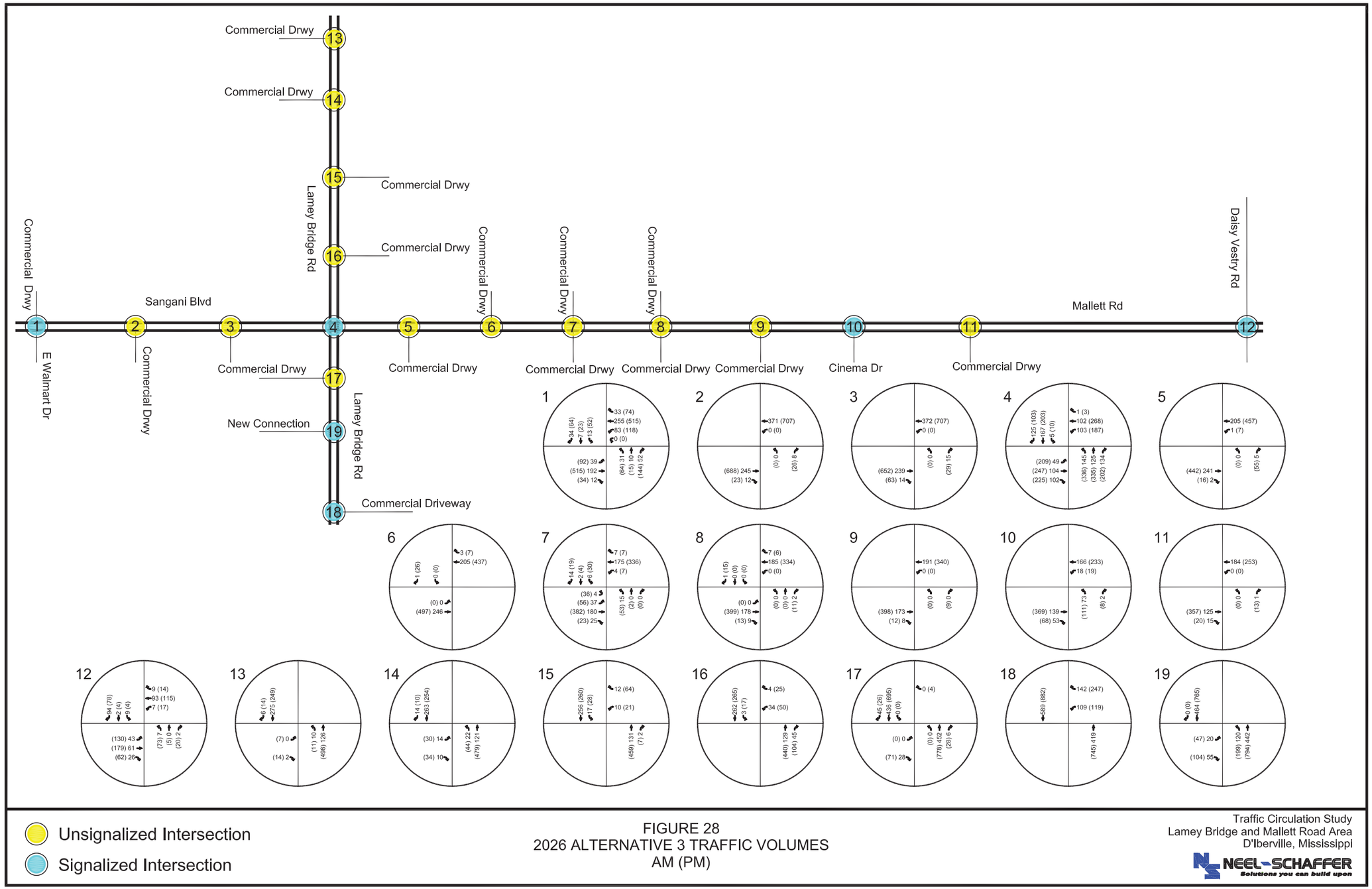


FIGURE 28
2026 ALTERNATIVE 3 TRAFFIC VOLUMES
AM (PM)

Traffic Circulation Study
Lamey Bridge and Mallett Road Area
D'Iberville, Mississippi

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Figure 28. 2026 Alternative 3 Volume

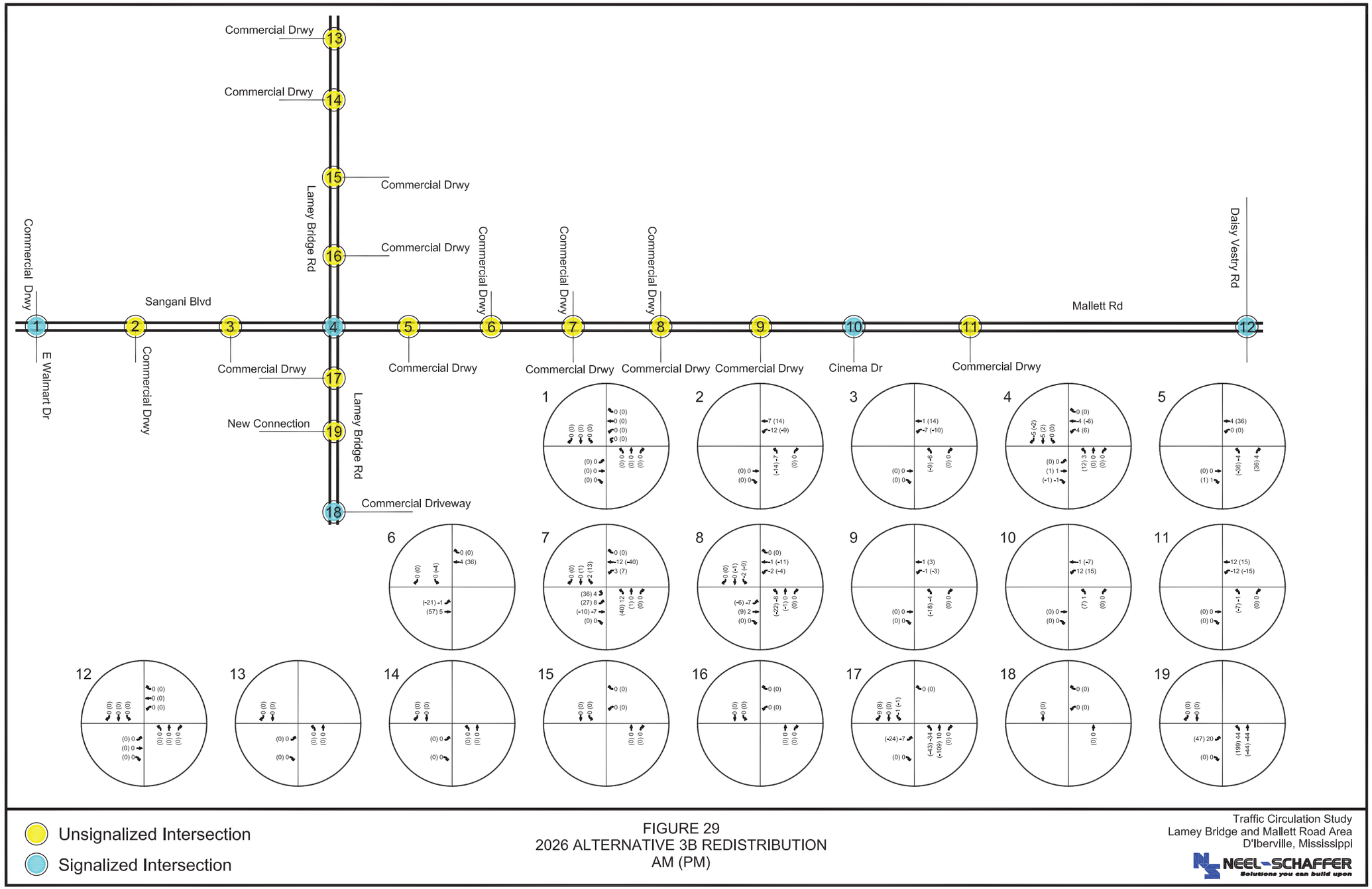
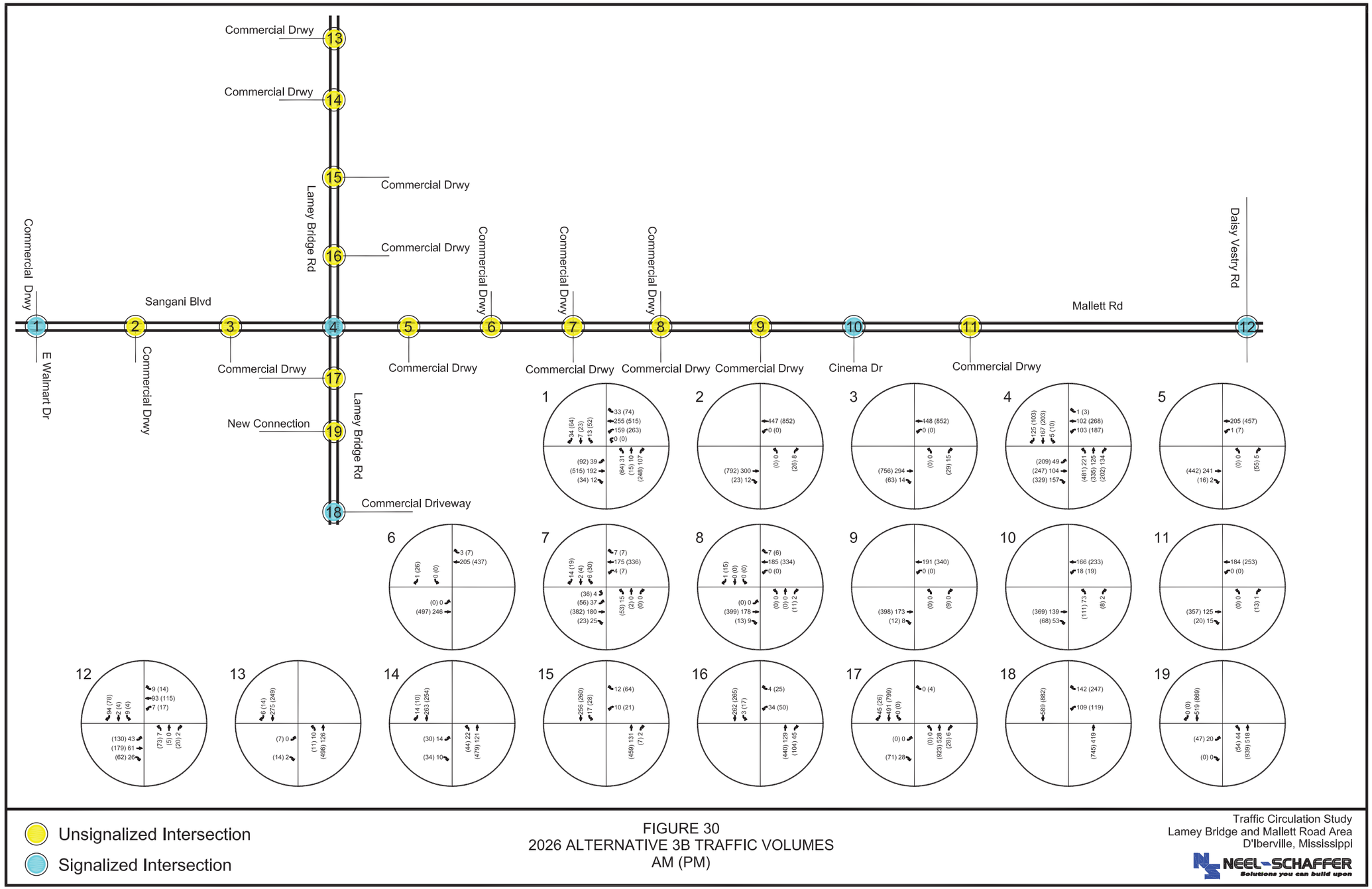


Figure 29. 2026 Alternative 3B Redistribution



Unsignalized Intersection

Signalized Intersection

FIGURE 30
2026 ALTERNATIVE 3B TRAFFIC VOLUMES
AM (PM)

Traffic Circulation Study
Lamey Bridge and Mallett Road Area
D'Iberville, Mississippi

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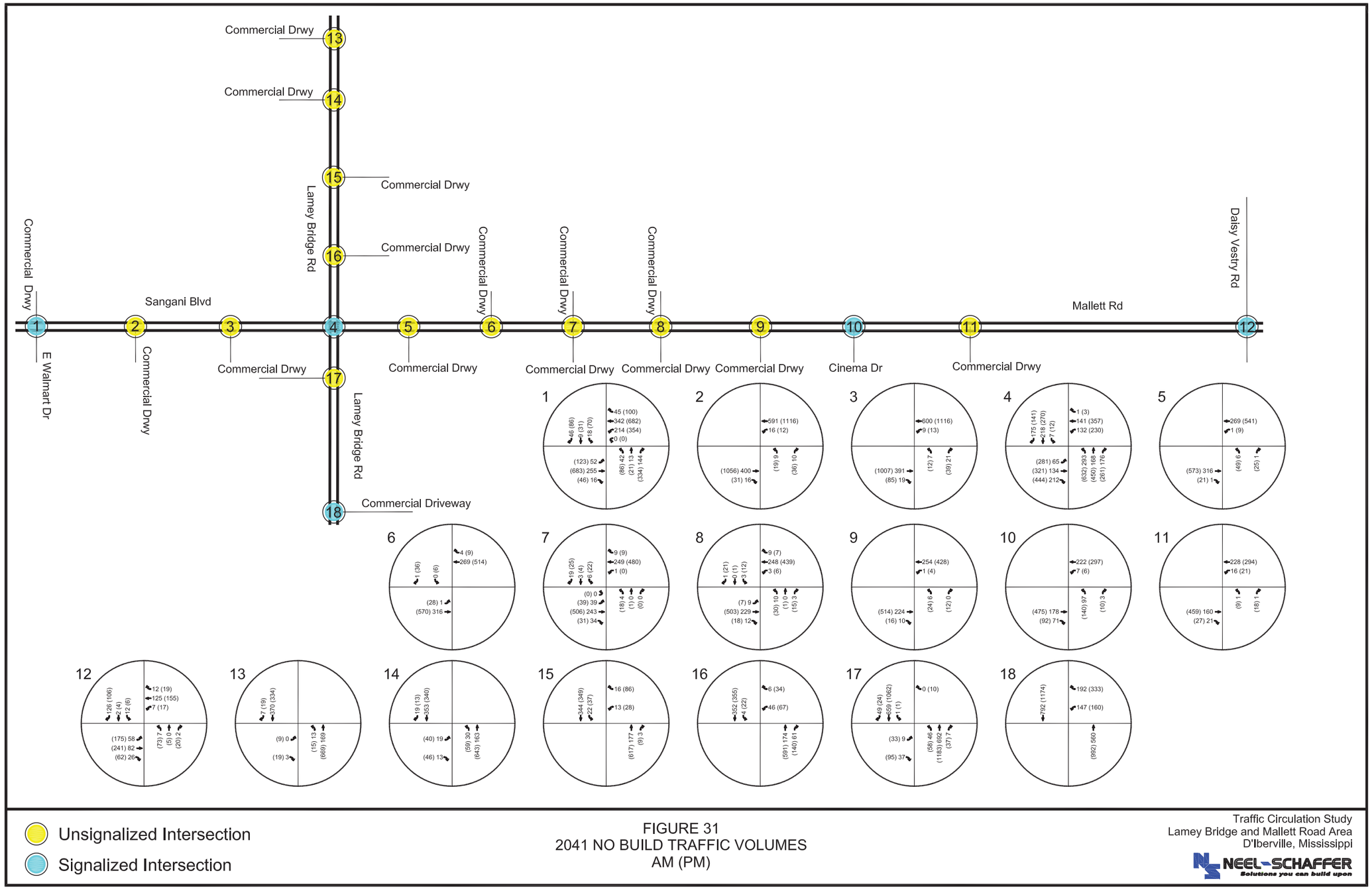
Figure 30. 2026 Alternative 3B Volume



Unsignalized Intersection

Signalized Intersection

FIGURE 31
2041 NO BUILD TRAFFIC VOLUMES
AM (PM)

Traffic Circulation Study
Lamey Bridge and Mallett Road Area
D'Iberville, Mississippi

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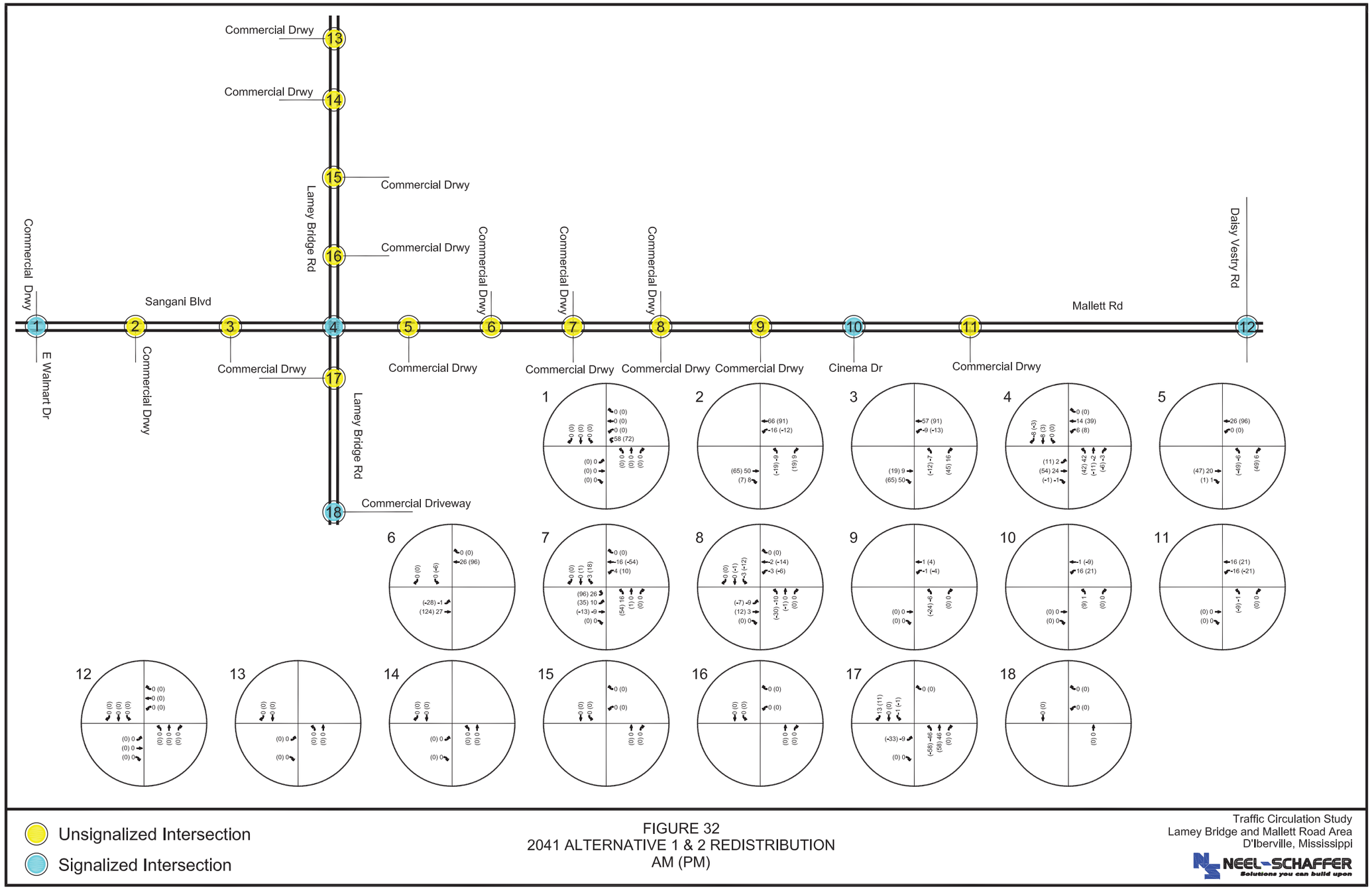
Figure 31. 2041 No Build Volume



Unsignalized Intersection

Signalized Intersection

FIGURE 32
2041 ALTERNATIVE 1 & 2 REDISTRIBUTION
AM (PM)

Traffic Circulation Study
Lamey Bridge and Mallett Road Area
D'Iberville, Mississippi

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Figure 32. 2041 Alternative 1 & 2 Redistribution

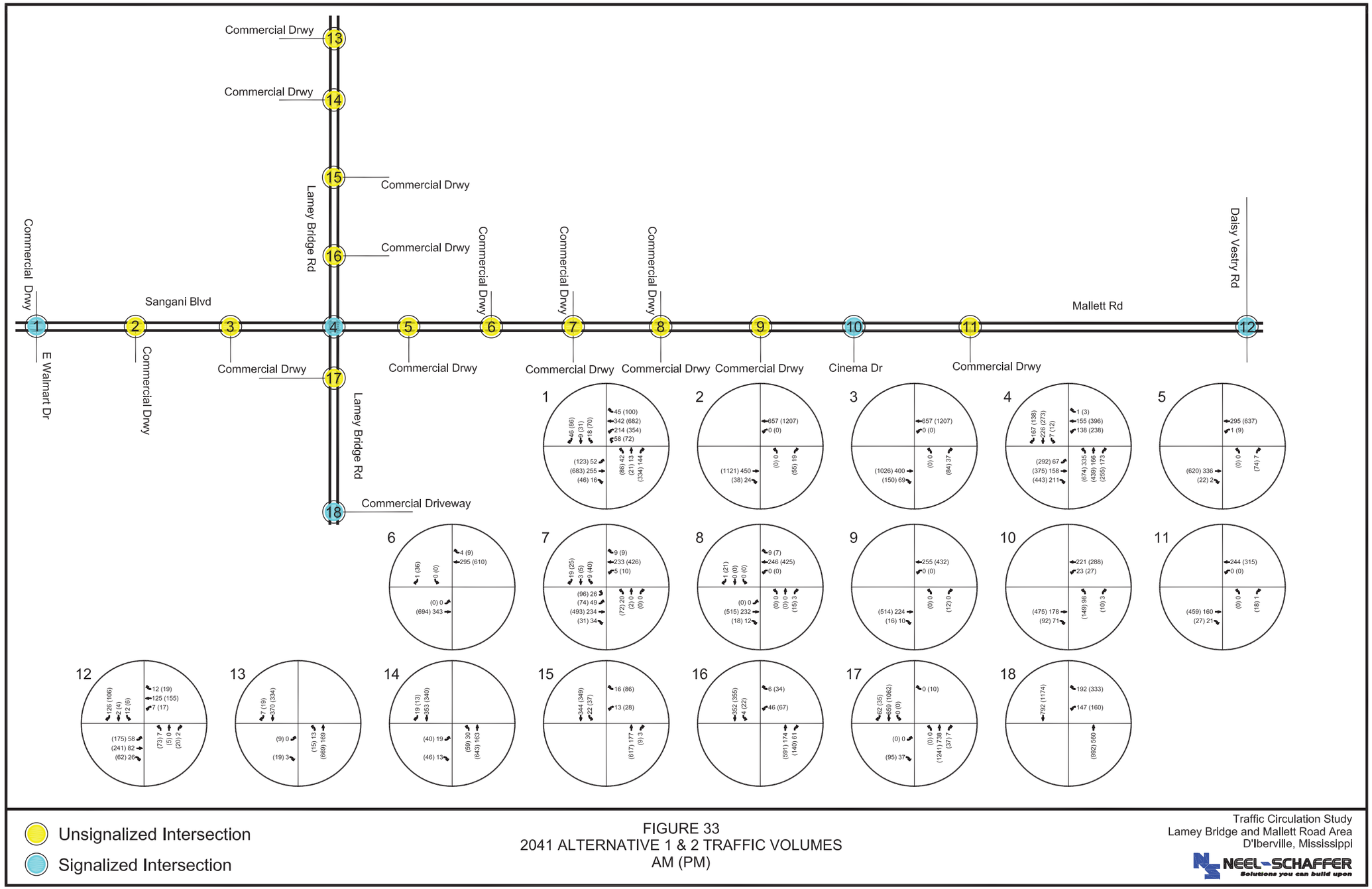

Figure 33. 2041 Alternative 1 & 2 Volume

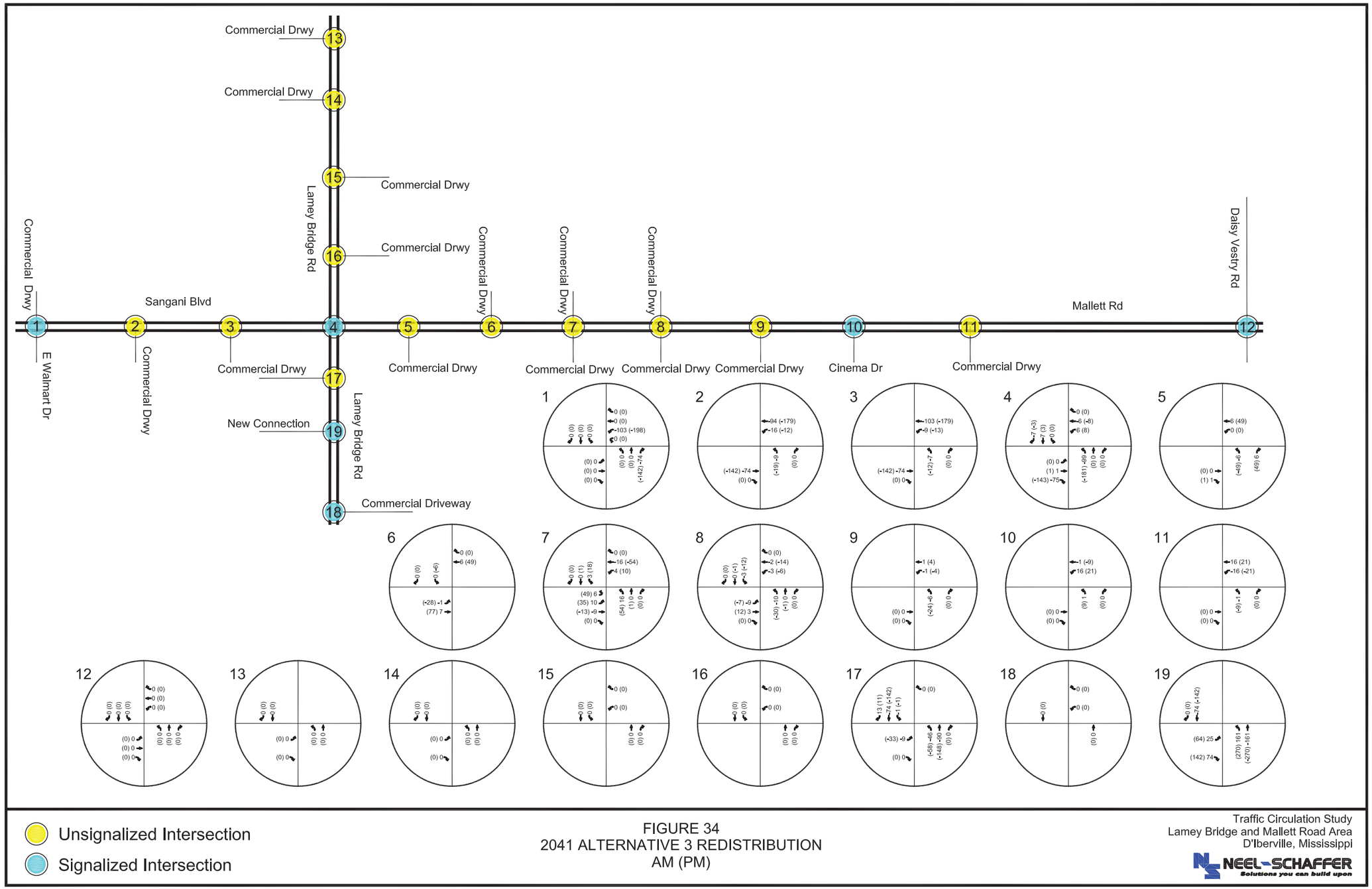

Figure 34. 2041 Alternative 3 Redistribution

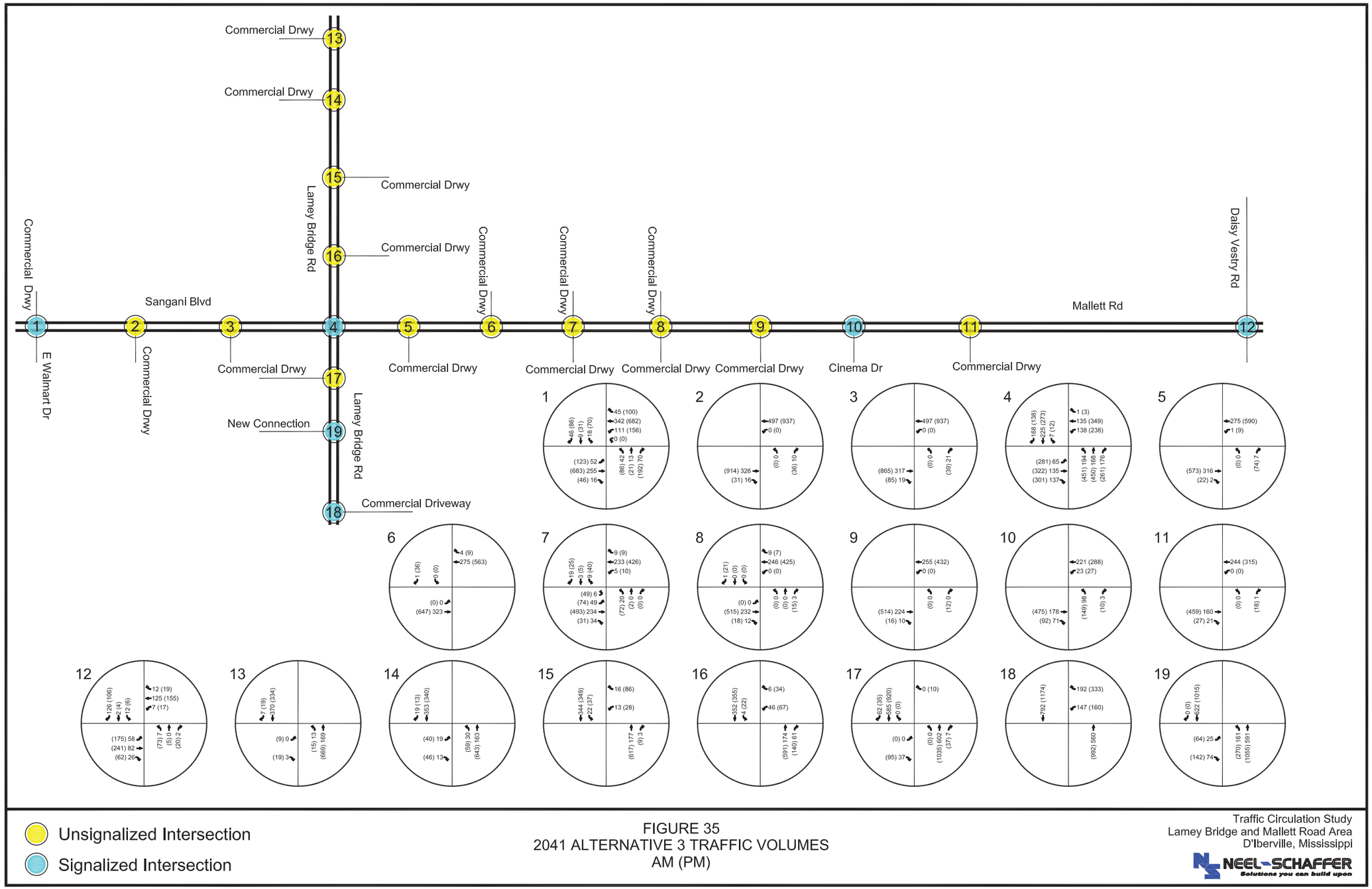

Figure 35. 2041 Alternative 3 Volume

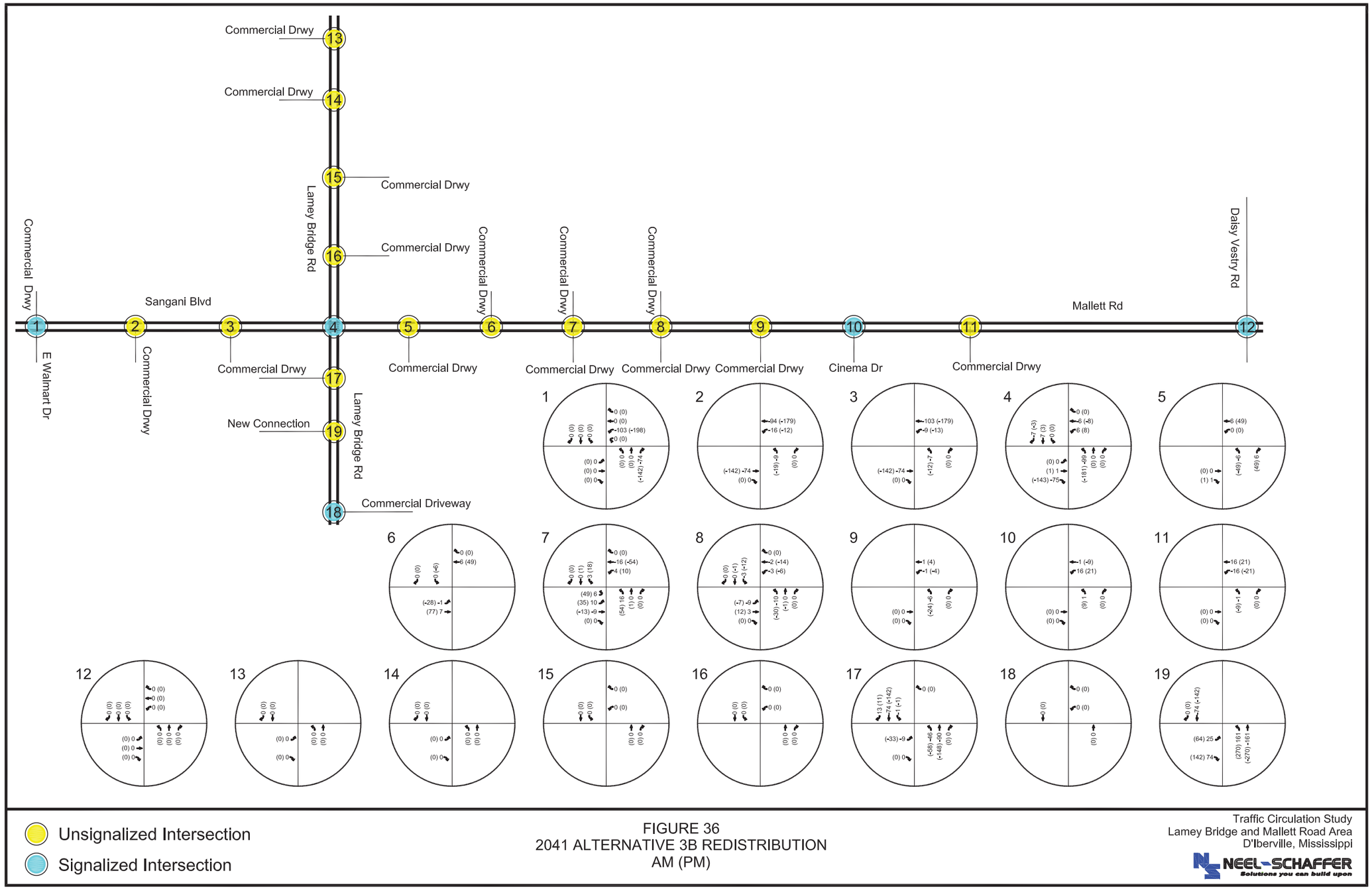

FIGURE 36
2041 ALTERNATIVE 3B REDISTRIBUTION
AM (PM)

Traffic Circulation Study
Lamey Bridge and Mallett Road Area
D'Iberville, Mississippi

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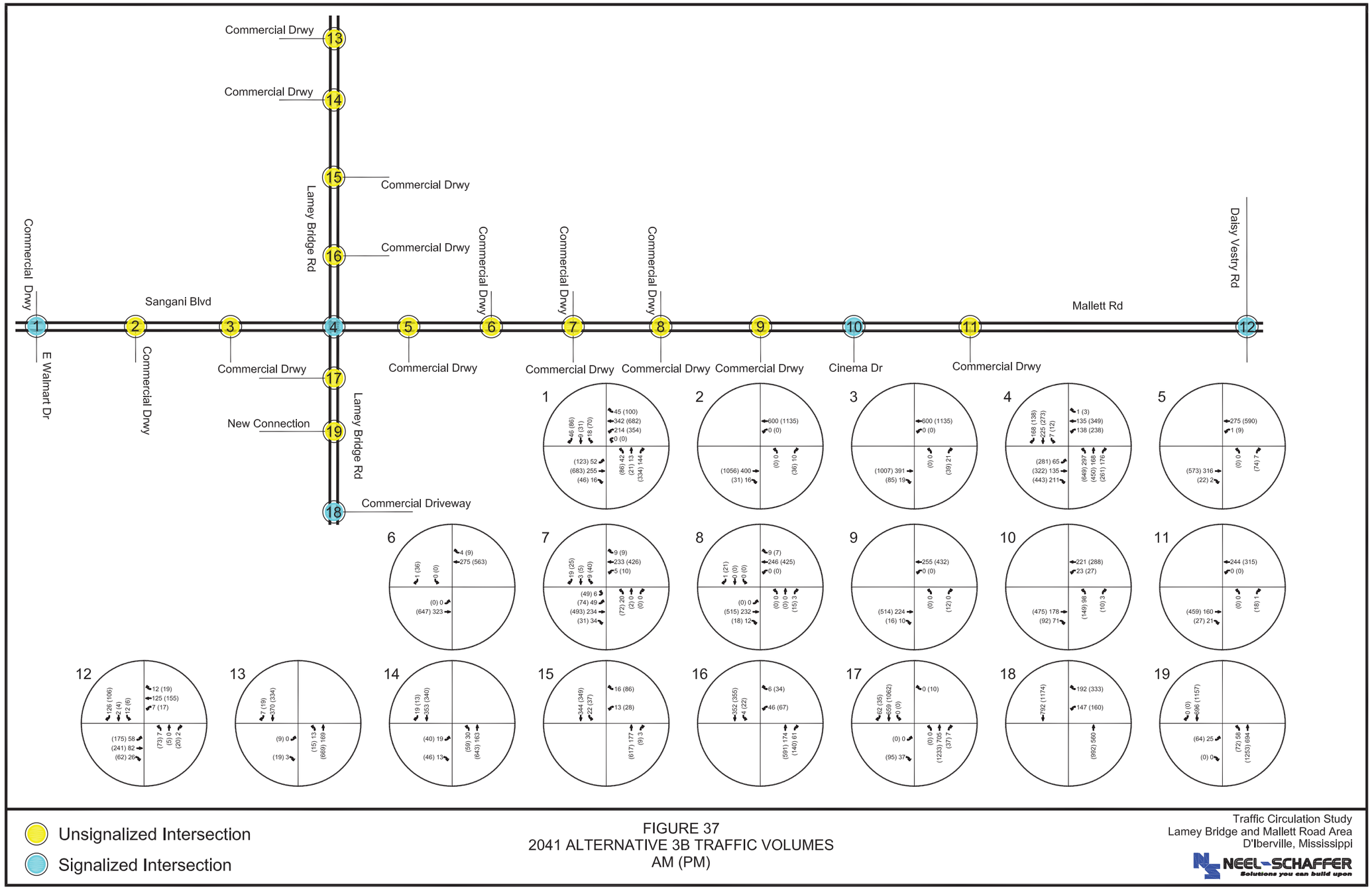
Solutions you can build upon

Figure 36. 2041 Alternative 3B Redistribution



Unsignalized Intersection

Signalized Intersection

FIGURE 37
2041 ALTERNATIVE 3B TRAFFIC VOLUMES
AM (PM)

Traffic Circulation Study
Lamey Bridge and Mallett Road Area
D'Iberville, Mississippi

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Figure 37. 2041 Alternative 3B Volume

9.0 Alternative Analysis

Detailed analysis reports for all scenarios are attached in the report **Appendix**.

9.1 2026 Build Year Analysis

9.1.1 2026 No Build

The analysis results for the 2026 No Build condition are shown in **Table 11** and **Table 12**. The results show that in 2026 all locations still operate at acceptable levels of service with the northbound left turn queue at the intersection of Lamey Bridge Rd and Sangani Blvd/Mallett Rd almost doubling when compared to existing conditions. This is expected to only increase the stakeholder concerns with ingress/egress from the nearby driveways.

Mallett Road looking west toward Sangani Blvd/Lamey Bridge Intersection

Table 11. 2026 No Build Capacity Analysis Summary												
Signalized Intersection	Time Period	Approach LOS				Intersection						
		EB			WB			NB			SB	LOS
Sangani Blvd @	AM Peak	C			C			C			C	C (24.5)
East Walmart Dr	PM Peak	C			C			C			C	C (30.0)
Lamey Bridge Rd @	AM Peak	C			C			B			C	C (21.1)
Sangani Blvd / Mallett Rd	PM Peak	D			C			C			D	D (35.2)
Lamey Bridge Rd @	AM Peak	-			C			A			A	A (5.3)
I-10 WB Off Ramps	PM Peak	-			C			A			A	A (5.0)
Mallett Rd @	AM Peak	B			A			C			-	B (12.2)
Cinema Dr	PM Peak	B			A			C			-	B (11.9)
Mallett Rd @	AM Peak	B			B			B			B	B (16.0)
Daisy Vestry Rd	PM Peak	B			B			B			B	B (16.8)
Unsignalized Intersections	Time Period	Critical Movement Level of Service											
		Eastbound			Westbound			Northbound			Southbound		
		Lt	Th	Rt	Lt	Th	Rt	Lt	Th	Rt	Lt	Th	Rt
Lamey Bridge Rd @	AM Peak	A	-	A	-	-	-	A	A	-	-	-	-
Academy N Drwy	PM Peak	B	-	B	-	-	-	A	A	-	-	-	-
Lamey Bridge Rd @	AM Peak	B	-	B	-	-	-	A	A	-	-	-	-
Academy S Drwy	PM Peak	B	-	B	-	-	-	A	A	-	-	-	-
Lamey Bridge Rd @	AM Peak	-	-	-	B	-	B	-	-	-	A	A	-
Chevron N Drwy	PM Peak	-	-	-	B	-	B	-	-	-	A	A	-
Lamey Bridge Rd @	AM Peak	-	-	-	B	-	B	-	-	-	A	A	-
Chevron S Drwy	PM Peak	-	-	-	C	-	C	-	-	-	A	A	-
Sangani Blvd @	AM Peak	-	-	-	-	-	-	-	-	A	-	-	-
Walgreens N Drwy	PM Peak	-	-	-	-	-	-	-	-	B	-	-	-
Sangani Blvd @	AM Peak	-	-	-	-	-	-	-	-	A	-	-	-
NTB Drwy	PM Peak	-	-	-	-	-	-	-	-	B	-	-	-
Lamey Bridge Rd @	AM Peak	B	B	B	-	-	A	A	A	-	-	A	-
Walgreens S Drwy	PM Peak	D	D	D	-	-	B	B	A	-	-	A	-
Mallett Rd @	AM Peak	-	-	-	A	-	-	B	-	A	-	-	-
Village W Drwy	PM Peak	-	-	-	A	-	-	B	-	B	-	-	-
Mallett Rd @	AM Peak	A	-	-	-	-	-	-	-	-	A	-	A
Town Square W Drwy	PM Peak	A	-	-	-	-	-	-	-	-	B	-	B
Mallett Rd @	AM Peak	A	-	-	A	-	-	B	B	A	B	B	A
Town Square Center Drwy	PM Peak	A	-	-	A	-	-	C	C	A	C	C	B
Mallett Rd @	AM Peak	A	-	-	A	-	-	B	B	A	B	B	A
Town Square E Drwy	PM Peak	A	-	-	A	-	-	C	C	B	C	C	B
Mallett Rd @	AM Peak	-	-	-	A	-	-	B	-	B	-	-	-
Village Center Drwy	PM Peak	-	-	-	A	-	-	B	-	B	-	-	-
Mallett Rd @	AM Peak	-	-	-	A	-	-	A	-	A	-	-	-
Village E Drwy	PM Peak	-	-	-	A	-	-	B	-	B	-	-	-

Source: HCM 6th Ed.

Table 12. 2026 No Build Signalized Intersection 95th Percentile Queue Analysis Summary												
Unsignalized Intersections	Time Period	Critical Movement 95th Percentile Queue (ft)										
		Eastbound			Westbound			Northbound			Southbound	
		Lt	Th	Rt	Lt	Th	Rt	Lt	Th	Rt	Lt	Th	Rt
Sangani Blvd @	AM Peak	32	84	-	101	106	-	-	47	29	-	29	1
East Walmart Dr	PM Peak	58	247	-	160	211	-	-	103	48	-	99	5
Lamey Bridge Rd @	AM Peak	40	98	34	69	98	-	120	99	40	7	138	15
Sangani Blvd / Mallett Rd	PM Peak	#172	248	72	146	285	-	#355	296	71	13	226	14
Lamey Bridge Rd @	AM Peak	-	-	-	46	-	47	-	40	-	-	57	-
I-10 WB Off Ramps	PM Peak	-	-	-	46	-	116	-	121	-	-	150	-
Mallett Rd @	AM Peak	-	102	-	7	70	-	67	-	5	-	-	-
Cinema Dr	PM Peak	-	227	-	4	78	-	103	-	12	-	-	-
Mallett Rd @	AM Peak	31	61	-	10	81	-	9	0	-	10	33	-
Daisy Vestry Rd	PM Peak	68	158	-	14	98	-	49	20	-	7	36	-

Source: HCM 6th Ed.
95th percentile volume exceeds capacity, queue may be longer

9.1.2 2026 Alternative 1

The analysis results for the 2026 Alternative 1 condition are shown in **Table 13** and **Table 14**. This analysis shows impacts of the Mallett Rd widening and access management changes as most right turns from driveways improve while an increase in delay appears on the minor driveway approaches of the remaining full access driveway locations. This was expected with the left turn volumes being consolidated down to one location as well as the increased distance of the movement. This increase, however, has a minimal impact on the delay of the overall network due to the small volume of vehicles affected as well as the decreases of delay experienced along Mallett Rd. Minor delay improvements at the signalized intersections occur; however, significant queue length reductions result. The intersection of Sangani Blvd and East Walmart Dr actually has a minor increase in delay related to the addition of the westbound U-Turn that removes the ability to provide an overlap phase for the northbound right turn.

Table 13. 2026 Alternative 1 Capacity Analysis Summary												
Signalized Intersection	Time Period	Approach LOS				Intersection						
		EB			WB			NB			SB	LOS
Sangani Blvd @	AM Peak	C			C			C			C	C (25.3)
East Walmart Dr	PM Peak	C			C			D			D	C (30.6)
Lamey Bridge Rd @	AM Peak	C			C			C			C	C (23.8)
Sangani Blvd / Mallett Rd	PM Peak	C			C			C			C	C (27.7)
Lamey Bridge Rd @	AM Peak	-			C			A			A	A (5.3)
I-10 WB Off Ramps	PM Peak	-			C			A			A	A (5.0)
Mallett Rd @	AM Peak	B			B			B			-	B (14.0)
Cinema Dr	PM Peak	B			A			C			-	B (13.6)
Mallett Rd @	AM Peak	B			B			B			B	B (16.1)
Daisy Vestry Rd	PM Peak	B			B			B			B	B (16.7)
Unsignalized Intersections	Time Period	Critical Movement Level of Service											
		Eastbound			Westbound			Northbound			Southbound		
		Lt	Th	Rt	Lt	Th	Rt	Lt	Th	Rt	Lt	Th	Rt
Lamey Bridge Rd @	AM Peak	A	-	A	-	-	-	A	A	-	-	-	-
Academy N Drwy	PM Peak	B	-	B	-	-	-	A	A	-	-	-	-
Lamey Bridge Rd @	AM Peak	B	-	B	-	-	-	A	A	-	-	-	-
Academy S Drwy	PM Peak	B	-	B	-	-	-	A	A	-	-	-	-
Lamey Bridge Rd @	AM Peak	-	-	-	B	-	B	-	-	-	A	A	-
Chevron N Drwy	PM Peak	-	-	-	B	-	B	-	-	-	A	A	-
Lamey Bridge Rd @	AM Peak	-	-	-	B	-	B	-	-	-	A	A	-
Chevron S Drwy	PM Peak	-	-	-	C	-	C	-	-	-	A	A	-
Sangani Blvd @	AM Peak	-	-	-	-	-	-	-	-	A	-	-	-
Walgreens N Drwy	PM Peak	-	-	-	-	-	-	-	-	B	-	-	-
Sangani Blvd @	AM Peak	-	-	-	-	-	-	-	-	A	-	-	-
NTB Drwy	PM Peak	-	-	-	-	-	-	-	-	B	-	-	-
Lamey Bridge Rd @	AM Peak	-	-	B	-	-	A	-	-	-	-	-	-
Walgreens S Drwy	PM Peak	-	-	B	-	-	B	-	-	-	-	-	-
Mallett Rd @	AM Peak	-	-	-	A	-	-	-	-	A	-	-	-
Village W Drwy	PM Peak	-	-	-	A	-	-	-	-	B	-	-	-
Mallett Rd @	AM Peak	-	-	-	-	-	-	-	-	-	-	-	A
Town Square W Drwy	PM Peak	-	-	-	-	-	-	-	-	-	-	-	B
Mallett Rd @	AM Peak	A	-	-	A	-	-	B	A	A	B	A	A
Town Square Center Drwy	PM Peak	A	-	-	A	-	-	D	D	D	C	B	B
Mallett Rd @	AM Peak	-	-	-	-	-	-	-	-	A	-	-	A
Town Square E Drwy	PM Peak	-	-	-	-	-	-	-	-	A	-	-	A
Mallett Rd @	AM Peak	-	-	-	-	-	-	-	-	A	-	-	-
Village Center Drwy	PM Peak	-	-	-	-	-	-	-	-	A	-	-	-
Mallett Rd @	AM Peak	-	-	-	-	-	-	-	-	A	-	-	-
Village E Drwy	PM Peak	-	-	-	-	-	-	-	-	A	-	-	-

Source: HCM 6th Ed.

Table 14. 2026 Alternative 1 Signalized Intersection 95th Percentile Queue Analysis Summary												
Unsignalized Intersections	Time Period	Critical Movement 95th Percentile Queue (ft)										
		Eastbound			Westbound			Northbound			Southbound	
		Lt	Th	Rt	Lt	Th	Rt	Lt	Th	Rt	Lt	Th	Rt
Sangani Blvd @	AM Peak	31	87	-	124	104	-	-	48	1	-	30	0
East Walmart Dr	PM Peak	51	191	-	#231	193	-	-	84	64	-	89	0
Lamey Bridge Rd @	AM Peak	42	57	35	75	54	-	102	94	37	7	138	12
Sangani Blvd / Mallett Rd	PM Peak	152	121	61	138	132	-	201	254	47	11	186	0
Lamey Bridge Rd @	AM Peak	-	-	-	46	-	47	-	40	-	-	57	-
I-10 WB Off Ramps	PM Peak	-	-	-	46	-	116	-	121	-	-	150	-
Mallett Rd @	AM Peak	-	51	-	15	40	-	57	-	4	-	-	-
Cinema Dr	PM Peak	-	117	-	14	47	-	93	-	11	-	-	-
Mallett Rd @	AM Peak	32	31	-	10	40	-	9	0	-	10	33	-
Daisy Vestry Rd	PM Peak	75	70	-	16	51	-	47	20	-	6	36	-

Source: HCM 6th Ed.
95th percentile volume exceeds capacity, queue may be longer

9.1.3 2026 Alternative 2

The analysis results for the 2026 Alternative 2 condition are shown in **Table 15** and **Table 16**. Alternative 2 results are similar to those found in Alternative 1 with the only change occurring at the intersection of Lamey Bridge Rd and Sangani Blvd/Mallett Rd where the phasing was converted to split phase on the northbound and southbound approaches. This change increases both the delay and queue length at this intersection; however, it provides a smaller footprint as fewer additional lanes are required for implementation. The northbound queue lengths in this configuration, however, are drastically increased.

Table 15. 2026 Alternative 2 Capacity Analysis Summary												
Signalized Intersection	Time Period	Approach LOS				Intersection						
		EB			WB			NB			SB	LOS
Sangani Blvd @	AM Peak	C			C			C			C	C (25.3)
East Walmart Dr	PM Peak	C			C			D			D	C (30.6)
Lamey Bridge Rd @	AM Peak	C			C			C			C	C (26.0)
Sangani Blvd / Mallett Rd	PM Peak	C			C			D			D	C (32.9)
Lamey Bridge Rd @	AM Peak	-			C			A			A	A (5.3)
I-10 WB Off Ramps	PM Peak	-			C			A			A	A (5.0)
Mallett Rd @	AM Peak	B			B			B			-	B (14.0)
Cinema Dr	PM Peak	B			A			C			-	B (13.6)
Mallett Rd @	AM Peak	B			B			B			B	B (16.1)
Daisy Vestry Rd	PM Peak	B			B			B			B	B (16.7)
Unsignalized Intersections	Time Period	Critical Movement Level of Service											
		Eastbound			Westbound			Northbound			Southbound		
		Lt	Th	Rt	Lt	Th	Rt	Lt	Th	Rt	Lt	Th	Rt
Lamey Bridge Rd @	AM Peak	A	-	A	-	-	-	A	A	-	-	-	-
Academy N Drwy	PM Peak	B	-	B	-	-	-	A	A	-	-	-	-
Lamey Bridge Rd @	AM Peak	B	-	B	-	-	-	A	A	-	-	-	-
Academy S Drwy	PM Peak	B	-	B	-	-	-	A	A	-	-	-	-
Lamey Bridge Rd @	AM Peak	-	-	-	B	-	B	-	-	-	A	A	-
Chevron N Drwy	PM Peak	-	-	-	B	-	B	-	-	-	A	A	-
Lamey Bridge Rd @	AM Peak	-	-	-	B	-	B	-	-	-	A	A	-
Chevron S Drwy	PM Peak	-	-	-	C	-	C	-	-	-	A	A	-
Sangani Blvd @	AM Peak	-	-	-	-	-	-	-	-	A	-	-	-
Walgreens N Drwy	PM Peak	-	-	-	-	-	-	-	-	B	-	-	-
Sangani Blvd @	AM Peak	-	-	-	-	-	-	-	-	A	-	-	-
NTB Drwy	PM Peak	-	-	-	-	-	-	-	-	B	-	-	-
Lamey Bridge Rd @	AM Peak	-	-	B	-	-	A	-	-	-	-	-	-
Walgreens S Drwy	PM Peak	-	-	B	-	-	B	-	-	-	-	-	-
Mallett Rd @	AM Peak	-	-	-	A	-	-	-	-	A	-	-	-
Village W Drwy	PM Peak	-	-	-	A	-	-	-	-	B	-	-	-
Mallett Rd @	AM Peak	-	-	-	-	-	-	-	-	-	-	-	A
Town Square W Drwy	PM Peak	-	-	-	-	-	-	-	-	-	-	-	B
Mallett Rd @	AM Peak	A	-	-	A	-	-	B	A	A	B	A	A
Town Square Center Drwy	PM Peak	A	-	-	A	-	-	D	D	D	C	B	B
Mallett Rd @	AM Peak	-	-	-	-	-	-	-	-	A	-	-	A
Town Square E Drwy	PM Peak	-	-	-	-	-	-	-	-	A	-	-	A
Mallett Rd @	AM Peak	-	-	-	-	-	-	-	-	A	-	-	-
Village Center Drwy	PM Peak	-	-	-	-	-	-	-	-	A	-	-	-
Mallett Rd @	AM Peak	-	-	-	-	-	-	-	-	A	-	-	-
Village E Drwy	PM Peak	-	-	-	-	-	-	-	-	A	-	-	-

Source: HCM 6th Ed.

Table 16. 2026 Alternative 2 Signalized Intersection 95th Percentile Queue Analysis Summary												
Unsignalized Intersections	Time Period	Critical Movement 95th Percentile Queue (ft)										
		Eastbound			Westbound			Northbound			Southbound	
		Lt	Th	Rt	Lt	Th	Rt	Lt	Th	Rt	Lt	Th	Rt
Sangani Blvd @	AM Peak	31	87	-	124	104	-	-	48	1	-	30	0
East Walmart Dr	PM Peak	51	191	-	#231	193	-	-	84	64	-	89	0
Lamey Bridge Rd @	AM Peak	44	59	17	78	56	-	165	166	42	76	76	41
Sangani Blvd / Mallett Rd	PM Peak	#172	126	43	147	135	-	#405	#417	73	98	98	27
Lamey Bridge Rd @	AM Peak	-	-	-	46	-	47	-	40	-	-	57	-
I-10 WB Off Ramps	PM Peak	-	-	-	46	-	116	-	121	-	-	150	-
Mallett Rd @	AM Peak	-	51	-	15	40	-	57	-	4	-	-	-
Cinema Dr	PM Peak	-	117	-	14	47	-	93	-	11	-	-	-
Mallett Rd @	AM Peak	32	31	-	10	40	-	9	0	-	10	33	-
Daisy Vestry Rd	PM Peak	75	70	-	16	51	-	47	20	-	6	36	-

Source: HCM 6th Ed.
95th percentile volume exceeds capacity, queue may be longer

9.1.4 2026 Alternative 3

The analysis results for the 2026 Alternative 3 condition are shown in **Table 17** and **Table 18**. These results show that the addition of a signalized connection to both Walmart and Walgreens with the assumed redistribution of traffic could relieve some of the pressure off the two most congested intersections in the area. In addition, the connection allows for the removal of the westbound U-Turn location at the intersection of Sangani Blvd and East Walmart Dr which allows the northbound right turn overlap phase to be retained, thus reducing delay at the intersection. In addition, this connection also is expected to relieve the eastern U-Turn location as it provides a more direct egress point for those leaving the businesses in the southwest quadrant of the intersection of Lamey Bridge Rd and Sangani Blvd/Mallett Rd.

Table 17. 2026 Alternative 3 Capacity Analysis Summary													
Signalized Intersection	Time Period	Approach LOS				Intersection							
		EB			WB			NB			SB		LOS
Sangani Blvd @	AM Peak	C			C			C			C		C (25.2)
East Walmart Dr	PM Peak	C			C			C			C		C (28.5)
Lamey Bridge Rd @	AM Peak	C			C			C			C		C (22.6)
Sangani Blvd / Mallett Rd	PM Peak	C			C			C			C		C (25.6)
Lamey Bridge Rd @	AM Peak	-			C			A			A		A (5.3)
I-10 WB Off Ramps	PM Peak	-			C			A			A		A (5.0)
Mallett Rd @	AM Peak	B			B			B			-		B (14.0)
Cinema Dr	PM Peak	B			A			C			-		B (13.6)
Mallett Rd @	AM Peak	B			B			B			B		B (16.1)
Daisy Vestry Rd	PM Peak	B			B			B			B		B (16.7)
Lamey Bridge Rd @	AM Peak	D			-			A			A		A (4.1)
New Connection	PM Peak	D			-			A			A		A (5.9)
Unsignalized Intersections	Time Period	Critical Movement Level of Service											
		Eastbound			Westbound			Northbound			Southbound		
		Lt	Th	Rt	Lt	Th	Rt	Lt	Th	Rt	Lt	Th	Rt
Lamey Bridge Rd @	AM Peak	A	-	A	-	-	-	A	A	-	-	-	-
Academy N Drwy	PM Peak	B	-	B	-	-	-	A	A	-	-	-	-
Lamey Bridge Rd @	AM Peak	B	-	B	-	-	-	A	A	-	-	-	-
Academy S Drwy	PM Peak	B	-	B	-	-	-	A	A	-	-	-	-
Lamey Bridge Rd @	AM Peak	-	-	-	B	-	B	-	-	-	A	A	-
Chevron N Drwy	PM Peak	-	-	-	B	-	B	-	-	-	A	A	-
Lamey Bridge Rd @	AM Peak	-	-	-	B	-	B	-	-	-	A	A	-
Chevron S Drwy	PM Peak	-	-	-	C	-	C	-	-	-	A	A	-
Sangani Blvd @	AM Peak	-	-	-	-	-	-	-	-	A	-	-	-
Walgreens N Drwy	PM Peak	-	-	-	-	-	-	-	-	B	-	-	-
Sangani Blvd @	AM Peak	-	-	-	-	-	-	-	-	A	-	-	-
NTB Drwy	PM Peak	-	-	-	-	-	-	-	-	B	-	-	-
Lamey Bridge Rd @	AM Peak	-	-	B	-	-	A	-	-	-	-	-	-
Walgreens S Drwy	PM Peak	-	-	B	-	-	B	-	-	-	-	-	-
Mallett Rd @	AM Peak	-	-	-	A	-	-	-	-	A	-	-	-
Village W Drwy	PM Peak	-	-	-	A	-	-	-	-	B	-	-	-
Mallett Rd @	AM Peak	-	-	-	-	-	-	-	-	-	-	-	A
Town Square W Drwy	PM Peak	-	-	-	-	-	-	-	-	-	-	-	A
Mallett Rd @	AM Peak	A	-	-	A	-	-	B	A	A	B	A	A
Town Square Center Drwy	PM Peak	A	-	-	A	-	-	D	C	C	C	B	B
Mallett Rd @	AM Peak	-	-	-	-	-	-	-	-	A	-	-	A
Town Square E Drwy	PM Peak	-	-	-	-	-	-	-	-	A	-	-	A
Mallett Rd @	AM Peak	-	-	-	-	-	-	-	-	A	-	-	-
Village Center Drwy	PM Peak	-	-	-	-	-	-	-	-	A	-	-	-
Mallett Rd @	AM Peak	-	-	-	-	-	-	-	-	A	-	-	-
Village E Drwy	PM Peak	-	-	-	-	-	-	-	-	A	-	-	-

Source: HCM 6th Ed.

Table 18. 2026 Alternative 3 Signalized Intersection 95th Percentile Queue Analysis Summary												
Unsignalized Intersections	Time Period	Critical Movement 95th Percentile Queue (ft)										
		Eastbound			Westbound			Northbound			Southbound	
		Lt	Th	Rt	Lt	Th	Rt	Lt	Th	Rt	Lt	Th	Rt
Sangani Blvd @	AM Peak	32	81	-	58	106	-	-	46	12	-	28	0
East Walmart Dr	PM Peak	56	191	-	69	204	-	-	87	40	-	83	0
Lamey Bridge Rd @	AM Peak	40	50	31	72	46	-	67	97	39	7	132	37
Sangani Blvd / Mallett Rd	PM Peak	146	105	39	131	117	-	141	266	48	12	181	0
Lamey Bridge Rd @	AM Peak	-	-	-	46	-	47	-	40	-	-	57	-
I-10 WB Off Ramps	PM Peak	-	-	-	46	-	116	-	121	-	-	150	-
Mallett Rd @	AM Peak	-	51	-	15	40	-	57	-	4	-	-	-
Cinema Dr	PM Peak	-	117	-	14	47	-	93	-	11	-	-	-
Mallett Rd @	AM Peak	32	31	-	10	40	-	9	0	-	10	33	-
Daisy Vestry Rd	PM Peak	75	70	-	16	51	-	47	20	-	6	36	-
Lamey Bridge Rd @	AM Peak	30	-	32	-	-	-	25	33	-	-	35	-
New Connection	PM Peak	57	-	45	-	-	-	68	74	-	-	71	-

Source: HCM 6th Ed.

9.1.5 2026 Alternative 3B

The analysis results for the 2026 Alternative 3B condition are shown in **Table 19** and **Table 20**. The primary differences in these results occur at the two intersections of Sangani Blvd at East Walmart Dr and Lamey Bridge Rd at Sangani Blvd/Mallett Rd as well as the new connection along Lamey Bridge Rd.

By removing the connection to Walmart, the new intersection no longer has a volume that could warrant a signal. As a two-way stop control intersection, the new connection has a failing level of service in the PM peak on the eastbound driveway approach. This is common for full access two-way stop control intersections on high volume roadways. Although the no build condition results show a level of service D, it does not consider the interaction with the queue that is known to block the intersection ingress/egress and thus most likely operates at a worse level of service than shown. In addition, the expected queue length of the failing movement, 30 feet, is only five feet longer than the expected no build queue.

Table 19. 2026 Alternative 3B Capacity Analysis Summary												
Signalized Intersection	Time Period	Approach LOS										Intersection LOS
		EB			WB			NB			SB	
Sangani Blvd @	AM Peak	C			C			C			C	C (24.7)
East Walmart Dr	PM Peak	C			C			C			C	C (29.3)
Lamey Bridge Rd @	AM Peak	C			B			C			C	C (22.5)
Sangani Blvd / Mallett Rd	PM Peak	C			C			C			C	C (27.6)
Lamey Bridge Rd @	AM Peak	-			C			A			A	A (5.3)
I-10 WB Off Ramps	PM Peak	-			C			A			A	A (5.0)
Mallett Rd @	AM Peak	B			B			B			-	B (14.0)
Cinema Dr	PM Peak	B			A			C			-	B (13.6)
Mallett Rd @	AM Peak	B			B			B			B	B (16.1)
Daisy Vestry Rd	PM Peak	B			B			B			B	B (16.7)
Unsignalized Intersections	Time Period	Critical Movement Level of Service											
		Eastbound			Westbound			Northbound			Southbound		
		Lt	Th	Rt	Lt	Th	Rt	Lt	Th	Rt	Lt	Th	Rt
Lamey Bridge Rd @	AM Peak	A	-	A	-	-	-	A	A	-	-	-	-
Academy N Drwy	PM Peak	B	-	B	-	-	-	A	A	-	-	-	-
Lamey Bridge Rd @	AM Peak	B	-	B	-	-	-	A	A	-	-	-	-
Academy S Drwy	PM Peak	B	-	B	-	-	-	A	A	-	-	-	-
Lamey Bridge Rd @	AM Peak	-	-	-	B	-	B	-	-	-	A	A	-
Chevron N Drwy	PM Peak	-	-	-	B	-	B	-	-	-	A	A	-
Lamey Bridge Rd @	AM Peak	-	-	-	B	-	B	-	-	-	A	A	-
Chevron S Drwy	PM Peak	-	-	-	C	-	C	-	-	-	A	A	-
Sangani Blvd @	AM Peak	-	-	-	-	-	-	-	-	A	-	-	-
Walgreens N Drwy	PM Peak	-	-	-	-	-	-	-	-	B	-	-	-
Sangani Blvd @	AM Peak	-	-	-	-	-	-	-	-	A	-	-	-
NTB Drwy	PM Peak	-	-	-	-	-	-	-	-	B	-	-	-
Lamey Bridge Rd @	AM Peak	-	-	B	-	-	A	-	-	-	-	-	-
Walgreens S Drwy	PM Peak	-	-	B	-	-	B	-	-	-	-	-	-
Mallett Rd @	AM Peak	-	-	-	A	-	-	-	-	A	-	-	-
Village W Drwy	PM Peak	-	-	-	A	-	-	-	-	B	-	-	-
Mallett Rd @	AM Peak	-	-	-	-	-	-	-	-	-	-	-	A
Town Square W Drwy	PM Peak	-	-	-	-	-	-	-	-	-	-	-	A
Mallett Rd @	AM Peak	A	-	-	A	-	-	B	A	A	B	A	A
Town Square Center Drwy	PM Peak	A	-	-	A	-	-	D	C	C	C	B	B
Mallett Rd @	AM Peak	-	-	-	-	-	-	-	-	A	-	-	A
Town Square E Drwy	PM Peak	-	-	-	-	-	-	-	-	A	-	-	A
Mallett Rd @	AM Peak	-	-	-	-	-	-	-	-	A	-	-	-
Village Center Drwy	PM Peak	-	-	-	-	-	-	-	-	A	-	-	-
Mallett Rd @	AM Peak	-	-	-	-	-	-	-	-	A	-	-	-
Village E Drwy	PM Peak	-	-	-	-	-	-	-	-	A	-	-	-
Lamey Bridge Rd @	AM Peak	C	-	C	-	-	-	A	-	-	-	-	-
New Connection	PM Peak	F	-	F	-	-	-	B	-	-	-	-	-

Source: HCM 6th Ed.

Table 20. 2026 Alternative 3B Signalized Intersection 95th Percentile Queue Analysis Summary													
Unsignalized Intersections	Time Period	Critical Movement 95th Percentile Queue (ft)											
		Eastbound			Westbound			Northbound			Southbound		
		Lt	Th	Rt	Lt	Th	Rt	Lt	Th	Rt	Lt	Th	Rt
Sangani Blvd @	AM Peak	32	84	-	101	106	-	-	47	29	-	29	0
East Walmart Dr	PM Peak	56	209	-	150	204	-	-	87	47	-	83	0
Lamey Bridge Rd @	AM Peak	40	50	34	73	47	-	90	96	39	7	140	12
Sangani Blvd / Mallett Rd	PM Peak	146	105	55	134	117	-	195	261	47	11	184	0
Lamey Bridge Rd @	AM Peak	-	-	-	46	-	47	-	40	-	-	57	-
I-10 WB Off Ramps	PM Peak	-	-	-	46	-	116	-	121	-	-	150	-
Mallett Rd @	AM Peak	-	51	-	15	40	-	57	-	4	-	-	-
Cinema Dr	PM Peak	-	117	-	14	47	-	93	-	11	-	-	-
Mallett Rd @	AM Peak	32	31	-	10	40	-	9	0	-	10	33	-
Daisy Vestry Rd	PM Peak	75	70	-	16	51	-	47	20	-	6	36	-

Source: HCM 6th Ed.

9.2 2041 Design Year Analysis

9.2.1 2041 No Build

The analysis results for the 2041 No Build condition are shown in **Table 21** and **Table 22**. The results show that in 2041 delay at all locations has increased with some locations experiencing failing movements or failing total levels of service with significant queue increases over existing and 2026 No Build conditions. The egress movement at the Walgreens access on Lamey Bridge Rd has begun failing and experiencing significant delays with queue lengths exceeding 225 ft in the analysis. In addition, the entire intersection of Lamey Bridge Rd and Sangani Blvd/Mallett Rd has a failing level of service with extensive queues on multiple approaches. The northbound queue is projected to exceed 900 ft which could potentially cause blocking issues at the I-10 WB Off Ramp intersection.

Table 21. 2041 No Build Capacity Analysis Summary												
Signalized Intersection	Time Period	Approach LOS				Intersection						
		EB	WB	NB	SB	LOS						
Sangani Blvd @	AM Peak	C	C	C	C	C (25.0)						
East Walmart Dr	PM Peak	D	C	D	D	C (34.1)						
Lamey Bridge Rd @	AM Peak	C	C	B	C	C (24.1)						
Sangani Blvd / Mallett Rd	PM Peak	**F**	**E**	**E**	**F**	**F (84.5)**						
Lamey Bridge Rd @	AM Peak	-	C	A	A	A (5.7)						
I-10 WB Off Ramps	PM Peak	-	C	A	A	A (5.8)						
Mallett Rd @	AM Peak	B	A	C	-	B (12.8)						
Cinema Dr	PM Peak	B	A	C	-	B (12.9)						
Mallett Rd @	AM Peak	B	C	B	B	B (17.2)						
Daisy Vestry Rd	PM Peak	B	B	B	C	B (17.5)						
Unsignalized Intersections	Time Period	Critical Movement Level of Service											
		Eastbound			Westbound			Northbound			Southbound		
		Lt	Th	Rt	Lt	Th	Rt	Lt	Th	Rt	Lt	Th	Rt
Lamey Bridge Rd @	AM Peak	B	-	B	-	-	-	A	A	-	-	-	-
Academy N Drwy	PM Peak	B	-	B	-	-	-	A	A	-	-	-	-
Lamey Bridge Rd @	AM Peak	B	-	B	-	-	-	A	A	-	-	-	-
Academy S Drwy	PM Peak	C	-	C	-	-	-	A	A	-	-	-	-
Lamey Bridge Rd @	AM Peak	-	-	-	B	-	B	-	-	-	A	A	-
Chevron N Drwy	PM Peak	-	-	-	C	-	C	-	-	-	A	A	-
Lamey Bridge Rd @	AM Peak	-	-	-	B	-	B	-	-	-	A	A	-
Chevron S Drwy	PM Peak	-	-	-	**E**	-	**E**	-	-	-	A	A	-
Sangani Blvd @	AM Peak	-	-	-	-	-	-	-	-	A	-	-	-
Walgreens N Drwy	PM Peak	-	-	-	-	-	-	-	-	B	-	-	-
Sangani Blvd @	AM Peak	-	-	-	-	-	-	-	-	A	-	-	-
NTB Drwy	PM Peak	-	-	-	-	-	-	-	-	B	-	-	-
Lamey Bridge Rd @	AM Peak	C	C	C	-	-	A	A	A	-	-	A	-
Walgreens S Drwy	PM Peak	**F**	**F**	**F**	-	-	B	B	A	-	-	A	-
Mallett Rd @	AM Peak	-	-	-	A	-	-	B	-	B	-	-	-
Village W Drwy	PM Peak	-	-	-	A	-	-	C	-	B	-	-	-
Mallett Rd @	AM Peak	A	-	-	-	-	-	-	-	-	A	-	A
Town Square W Drwy	PM Peak	A	-	-	-	-	-	-	-	-	B	-	B
Mallett Rd @	AM Peak	A	-	-	A	-	-	C	C	A	B	B	A
Town Square Center Drwy	PM Peak	A	-	-	A	-	-	D	D	A	D	D	B
Mallett Rd @	AM Peak	A	-	-	A	-	-	B	B	A	B	B	A
Town Square E Drwy	PM Peak	A	-	-	A	-	-	D	D	B	D	D	B
Mallett Rd @	AM Peak	-	-	-	A	-	-	B	-	B	-	-	-
Village Center Drwy	PM Peak	-	-	-	A	-	-	B	-	B	-	-	-
Mallett Rd @	AM Peak	-	-	-	A	-	-	B	-	B	-	-	-
Village E Drwy	PM Peak	-	-	-	A	-	-	B	-	B	-	-	-

Source: HCM 6th Ed.

Table 22. 2041 No Build Signalized Intersection 95th Percentile Queue Analysis Summary													
Unsignalized Intersections	Time Period	Critical Movement 95th Percentile Queue (ft)											
		Eastbound			Westbound			Northbound			Southbound		
		Lt	Th	Rt	Lt	Th	Rt	Lt	Th	Rt	Lt	Th	Rt
Sangani Blvd @	AM Peak	38	110	-	126	136	-	-	62	32	-	38	0
East Walmart Dr	PM Peak	75	427	-	345	302	-	-	176	207	-	169	38
Lamey Bridge Rd @	AM Peak	51	122	56	92	128	-	166	131	45	9	192	44
Sangani Blvd / Mallett Rd	PM Peak	#485	433	97	#283	#564	-	#916	480	159	17	#485	66
Lamey Bridge Rd @	AM Peak	-	-	-	59	-	55	-	59	-	-	88	-
I-10 WB Off Ramps	PM Peak	-	-	-	57	-	223	-	260	-	-	331	-
Mallett Rd @	AM Peak	-	134	-	7	91	-	85	-	6	-	-	-
Cinema Dr	PM Peak	-	290	-	5	89	-	137	-	14	-	-	-
Mallett Rd @	AM Peak	40	78	-	10	108	-	9	0	-	13	39	-
Daisy Vestry Rd	PM Peak	81	192	-	13	123	-	54	22	-	10	43	-

Source: HCM 6th Ed.

95th percentile volume exceeds capacity, queue may be longer

9.2.2 2041 Alternative 1

The analysis results for the 2041 Alternative 1 condition are shown in **Table 23** and **Table 24**. The same impacts shown in the 2026 analyses can be seen here with the differences exaggerated. The intersection of Lamey Bridge Rd and Sangani Blvd/Mallett Rd has improved to acceptable levels of service; however, the delay at the intersection of Sangani Blvd and East Walmart Dr due to the restrictions caused by the westbound U-Turn has increased significantly. This intersection still has an overall level of service that is acceptable, but the two minor approaches are approaching failing conditions. A failing movement does occur at the remaining full access unsignalized intersection on Mallett Rd on the minor low-volume northbound approach; however, the queue is expected to be less than 80 ft. This is not uncommon at full access two-way stop-controlled locations on high volume roadways. The overall network impact tends to be minimal given the major movement delay reductions generally vastly outweigh the negative impact on the minor approaches. In addition, the failing movement also has access to utilize the signal at Cinema Dr which has the capacity to accommodate the additional movements.

Table 23. 2041 Alternative 1 Capacity Analysis Summary												
Signalized Intersection	Time Period	Approach LOS				Intersection						
		EB			WB			NB			SB	LOS
Sangani Blvd @	AM Peak	C			C			C			C	C (26.6)
East Walmart Dr	PM Peak	D			D			**E**			**E**	D (47.1)
Lamey Bridge Rd @	AM Peak	C			C			C			C	C (25.8)
Sangani Blvd / Mallett Rd	PM Peak	C			D			D			D	D (38.0)
Lamey Bridge Rd @	AM Peak	-			C			A			A	A (5.7)
I-10 WB Off Ramps	PM Peak	-			C			A			A	A (5.8)
Mallett Rd @	AM Peak	B			B			B			-	B (14.3)
Cinema Dr	PM Peak	B			A			C			-	B (14.2)
Mallett Rd @	AM Peak	B			C			B			B	B (17.2)
Daisy Vestry Rd	PM Peak	B			B			B			B	B (17.1)
Unsignalized Intersections	Time Period	Critical Movement Level of Service											
		Eastbound			Westbound			Northbound			Southbound		
		Lt	Th	Rt	Lt	Th	Rt	Lt	Th	Rt	Lt	Th	Rt
Lamey Bridge Rd @	AM Peak	B	-	B	-	-	-	A	A	-	-	-	-
Academy N Drwy	PM Peak	B	-	B	-	-	-	A	A	-	-	-	-
Lamey Bridge Rd @	AM Peak	B	-	B	-	-	-	A	A	-	-	-	-
Academy S Drwy	PM Peak	C	-	C	-	-	-	A	A	-	-	-	-
Lamey Bridge Rd @	AM Peak	-	-	-	B	-	B	-	-	-	A	A	-
Chevron N Drwy	PM Peak	-	-	-	C	-	C	-	-	-	A	A	-
Lamey Bridge Rd @	AM Peak	-	-	-	B	-	B	-	-	-	A	A	-
Chevron S Drwy	PM Peak	-	-	-	**E**	-	**E**	-	-	-	A	A	-
Sangani Blvd @	AM Peak	-	-	-	-	-	-	-	-	B	-	-	-
Walgreens N Drwy	PM Peak	-	-	-	-	-	-	-	-	C	-	-	-
Sangani Blvd @	AM Peak	-	-	-	-	-	-	-	-	B	-	-	-
NTB Drwy	PM Peak	-	-	-	-	-	-	-	-	B	-	-	-
Lamey Bridge Rd @	AM Peak	-	-	B	-	-	A	-	-	-	-	-	-
Walgreens S Drwy	PM Peak	-	-	C	-	-	B	-	-	-	-	-	-
Mallett Rd @	AM Peak	-	-	-	A	-	-	-	-	A	-	-	-
Village W Drwy	PM Peak	-	-	-	A	-	-	-	-	B	-	-	-
Mallett Rd @	AM Peak		-	-	-	-	-	-	-	-	-	-	A
Town Square W Drwy	PM Peak	-	-	-	-	-	-	-	-	-	-	-	B
Mallett Rd @	AM Peak	A	-	-	A	-	-	C	A	A	B	B	B
Town Square Center Drwy	PM Peak	B	-	-	A	-	-	**F**	**E**	**E**	**E**	C	C
Mallett Rd @	AM Peak	-	-	-	-	-	-	-	-	A	-	-	A
Town Square E Drwy	PM Peak	-	-	-	-	-	-	-	-	B	-	-	A
Mallett Rd @	AM Peak	-	-	-	-	-	-	-	-	A	-	-	-
Village Center Drwy	PM Peak	-	-	-	-	-	-	-	-	B	-	-	-
Mallett Rd @	AM Peak	-	-	-	-	-	-	-	-	A	-	-	-
Village E Drwy	PM Peak	-	-	-	-	-	-	-	-	B	-	-	-

Source: HCM 6th Ed.

Table 24. 2041 Alternative 1 Signalized Intersection 95th Percentile Queue Analysis Summary													
Unsignalized Intersections	Time Period	Critical Movement 95th Percentile Queue (ft)											
		Eastbound			Westbound			Northbound			Southbound		
		Lt	Th	Rt	Lt	Th	Rt	Lt	Th	Rt	Lt	Th	Rt
Sangani Blvd @	AM Peak	37	112	-	161	135	-	-	62	25	-	38	0
East Walmart Dr	PM Peak	76	#375	-	#474	302	-	-	120	77	-	#156	0
Lamey Bridge Rd @	AM Peak	55	72	40	102	70	-	135	120	42	8	184	36
Sangani Blvd / Mallett Rd	PM Peak	#277	185	217	203	211	-	#334	402	54	14	#321	41
Lamey Bridge Rd @	AM Peak	-	-	-	59	-	55	-	59	-	-	88	-
I-10 WB Off Ramps	PM Peak	-	-	-	57	-	223	-	260	-	-	331	-
Mallett Rd @	AM Peak	-	63	-	18	52	-	75	-	6	-	-	-
Cinema Dr	PM Peak	-	153	-	17	56	-	124	-	12	-	-	-
Mallett Rd @	AM Peak	42	38	-	10	54	-	9	0	-	12	37	-
Daisy Vestry Rd	PM Peak	94	90	-	15	66	-	49	21	-	9	42	-

Source: HCM 6th Ed.

95th percentile volume exceeds capacity, queue may be longer

9.2.3 2041 Alternative 2

The analysis results for the 2041 Alternative 2 condition are shown in **Table 25** and **Table 26**. The increase in delay at the intersection of Lamey Bridge Rd and Sangani Blvd/Mallett Rd over Alternative 1 is greater than what was seen in the 2026 results. The northbound queue lengths have now increased to near 900 ft and would most likely impact the operations of the I-10 WB Off Ramp signal.

Table 25. 2041 Alternative 2 Capacity Analysis Summary						
Signalized Intersection	Time Period	Approach LOS				Intersection
		EB	WB	NB	SB	LOS
Sangani Blvd @	AM Peak	C	C	C	C	C (26.6)
East Walmart Dr	PM Peak	D	C	**E**	**E**	D (47.8)
Lamey Bridge Rd @	AM Peak	C	C	C	C	C (27.7)
Sangani Blvd / Mallett Rd	PM Peak	D	**E**	**E**	**E**	D (54.0)
Lamey Bridge Rd @	AM Peak	-	C	A	A	A (5.7)
I-10 WB Off Ramps	PM Peak	-	C	A	A	A (5.8)
Mallett Rd @	AM Peak	B	B	B	-	B (14.3)
Cinema Dr	PM Peak	B	A	C	-	B (14.2)
Mallett Rd @	AM Peak	B	C	B	B	B (17.2)
Daisy Vestry Rd	PM Peak	B	B	B	B	B (17.1)

Unsignalized Intersections	Time Period	Critical Movement Level of Service											
		Eastbound			Westbound			Northbound			Southbound		
		Lt	Th	Rt	Lt	Th	Rt	Lt	Th	Rt	Lt	Th	Rt
Lamey Bridge Rd @	AM Peak	B	-	B	-	-	-	A	A	-	-	-	-
Academy N Drwy	PM Peak	B	-	B	-	-	-	A	A	-	-	-	-
Lamey Bridge Rd @	AM Peak	B	-	B	-	-	-	A	A	-	-	-	-
Academy S Drwy	PM Peak	C	-	C	-	-	-	A	A	-	-	-	-
Lamey Bridge Rd @	AM Peak	-	-	-	B	-	B	-	-	-	A	A	-
Chevron N Drwy	PM Peak	-	-	-	C	-	C	-	-	-	A	A	-
Lamey Bridge Rd @	AM Peak	-	-	-	B	-	B	-	-	-	A	A	-
Chevron S Drwy	PM Peak	-	-	-	**E**	-	**E**	-	-	-	A	A	-
Sangani Blvd @	AM Peak	-	-	-	-	-	-	-	-	B	-	-	-
Walgreens N Drwy	PM Peak	-	-	-	-	-	-	-	-	C	-	-	-
Sangani Blvd @	AM Peak	-	-	-	-	-	-	-	-	B	-	-	-
NTB Drwy	PM Peak	-	-	-	-	-	-	-	-	B	-	-	-
Lamey Bridge Rd @	AM Peak	-	-	B	-	-	A	-	-	-	-	-	-
Walgreens S Drwy	PM Peak	-	-	C	-	-	B	-	-	-	-	-	-
Mallett Rd @	AM Peak	-	-	-	A	-	-	-	-	A	-	-	-
Village W Drwy	PM Peak	-	-	-	A	-	-	-	-	B	-	-	-
Mallett Rd @	AM Peak		-	-	-	-	-	-	-	-	-	-	A
Town Square W Drwy	PM Peak	-	-	-	-	-	-	-	-	-	-	-	B
Mallett Rd @	AM Peak	A	-	-	A	-	-	C	A	A	B	B	B
Town Square Center Drwy	PM Peak	B	-	-	A	-	-	**F**	**E**	**E**	**E**	C	C
Mallett Rd @	AM Peak	-	-	-	-	-	-	-	-	A	-	-	A
Town Square E Drwy	PM Peak	-	-	-	-	-	-	-	-	B	-	-	A
Mallett Rd @	AM Peak	-	-	-	-	-	-	-	-	A	-	-	-
Village Center Drwy	PM Peak	-	-	-	-	-	-	-	-	B	-	-	-
Mallett Rd @	AM Peak	-	-	-	-	-	-	-	-	A	-	-	-
Village E Drwy	PM Peak	-	-	-	-	-	-	-	-	B	-	-	-

Source: HCM 6th Ed.

Table 26. 2041 Alternative 2 Signalized Intersection 95th Percentile Queue Analysis Summary													
Unsignalized Intersections	Time Period	Critical Movement 95th Percentile Queue (ft)											
		Eastbound			Westbound			Northbound			Southbound		
		Lt	Th	Rt	Lt	Th	Rt	Lt	Th	Rt	Lt	Th	Rt
Sangani Blvd @	AM Peak	37	112	-	161	135	-	-	62	25	-	38	0
East Walmart Dr	PM Peak	85	465	-	493	337	-	-	159	91	-	#211	28
Lamey Bridge Rd @	AM Peak	57	73	18	104	72	-	210	212	46	101	101	54
Sangani Blvd / Mallett Rd	PM Peak	#378	248	120	276	278	-	#848	#869	210	205	205	66
Lamey Bridge Rd @	AM Peak	-	-	-	59	-	55	-	59	-	-	88	-
I-10 WB Off Ramps	PM Peak	-	-	-	57	-	223	-	260	-	-	331	-
Mallett Rd @	AM Peak	-	63	-	18	52	-	75	-	6	-	-	-
Cinema Dr	PM Peak	-	153	-	17	56	-	124	-	12	-	-	-
Mallett Rd @	AM Peak	42	38	-	10	54	-	9	0	-	12	37	-
Daisy Vestry Rd	PM Peak	94	90	-	15	66	-	49	21	-	9	42	-

Source: HCM 6th Ed.
95th percentile volume exceeds capacity, queue may be longer

9.2.4 2041 Alternative 3

The analysis results for the 2041 Alternative 3 condition are shown in **Table 27** and **Table 28**. These results show the same impacts seen in the 2026 analysis. In addition, the failing movement at the remaining full access unsignalized intersection on Mallett Rd has seen a reduction in delay with the expected queue length in alternative 3 only being 60 feet (3 vehicles).

Table 27. 2041 Alternative 3 Capacity Analysis Summary						
Signalized Intersection	Time Period	Approach LOS				Intersection
		EB	WB	NB	SB	LOS
Sangani Blvd @	AM Peak	C	C	C	C	C (26.9)
East Walmart Dr	PM Peak	C	C	C	C	C (31.8)
Lamey Bridge Rd @	AM Peak	C	C	C	C	C (24.2)
Sangani Blvd / Mallett Rd	PM Peak	C	C	C	C	C (29.3)
Lamey Bridge Rd @	AM Peak	-	C	A	A	A (5.7)
I-10 WB Off Ramps	PM Peak	-	C	A	A	A (5.8)
Mallett Rd @	AM Peak	B	B	B	-	B (14.3)
Cinema Dr	PM Peak	B	A	C	-	B (14.2)
Mallett Rd @	AM Peak	B	C	B	B	B (17.2)
Daisy Vestry Rd	PM Peak	B	B	B	B	B (17.1)
Lamey Bridge Rd @	AM Peak	D	-	A	A	A (5.8)
New Connection	PM Peak	C	-	A	B	A (9.3)

Unsignalized Intersections	Time Period	Critical Movement Level of Service											
		Eastbound			Westbound			Northbound			Southbound		
		Lt	Th	Rt	Lt	Th	Rt	Lt	Th	Rt	Lt	Th	Rt
Lamey Bridge Rd @	AM Peak	B	-	B	-	-	-	A	A	-	-	-	-
Academy N Drwy	PM Peak	B	-	B	-	-	-	A	A	-	-	-	-
Lamey Bridge Rd @	AM Peak	B	-	B	-	-	-	A	A	-	-	-	-
Academy S Drwy	PM Peak	C	-	C	-	-	-	A	A	-	-	-	-
Lamey Bridge Rd @	AM Peak	-	-	-	B	-	B	-	-	-	A	A	-
Chevron N Drwy	PM Peak	-	-	-	C	-	C	-	-	-	A	A	-
Lamey Bridge Rd @	AM Peak	-	-	-	B	-	B	-	-	-	A	A	-
Chevron S Drwy	PM Peak	-	-	-	**E**	-	**E**	-	-	-	A	A	-
Sangani Blvd @	AM Peak	-	-	-	-	-	-	-	-	A	-	-	-
Walgreens N Drwy	PM Peak	-	-	-	-	-	-	-	-	B	-	-	-
Sangani Blvd @	AM Peak	-	-	-	-	-	-	-	-	A	-	-	-
NTB Drwy	PM Peak	-	-	-	-	-	-	-	-	B	-	-	-
Lamey Bridge Rd @	AM Peak	-	-	B	-	-	A	-	-	-	-	-	-
Walgreens S Drwy	PM Peak	-	-	B	-	-	B	-	-	-	-	-	-
Mallett Rd @	AM Peak	-	-	-	A	-	-	-	-	A	-	-	-
Village W Drwy	PM Peak	-	-	-	A	-	-	-	-	B	-	-	-
Mallett Rd @	AM Peak		-	-	-	-	-	-	-	-	-	-	A
Town Square W Drwy	PM Peak	-	-	-	-	-	-	-	-	-	-	-	B
Mallett Rd @	AM Peak	A	-	-	A	-	-	B	A	A	B	B	B
Town Square Center Drwy	PM Peak	B	-	-	A	-	-	F	D	D	D	B	B
Mallett Rd @	AM Peak	-	-	-	-	-	-	-	-	A	-	-	A
Town Square E Drwy	PM Peak	-	-	-	-	-	-	-	-	B	-	-	A
Mallett Rd @	AM Peak	-	-	-	-	-	-	-	-	A	-	-	-
Village Center Drwy	PM Peak	-	-	-	-	-	-	-	-	B	-	-	-
Mallett Rd @	AM Peak	-	-	-	-	-	-	-	-	A	-	-	-
Village E Drwy	PM Peak	-	-	-	-	-	-	-	-	B	-	-	-

Source: HCM 6th Ed.

Table 28. 2041 Alternative 3 Signalized Intersection 95th Percentile Queue Analysis Summary												
Unsignalized Intersections	Time Period	Critical Movement 95th Percentile Queue (ft)										
		Eastbound			Westbound			Northbound			Southbound	
		Lt	Th	Rt	Lt	Th	Rt	Lt	Th	Rt	Lt	Th	Rt
Sangani Blvd @	AM Peak	40	105	-	73	142	-	-	61	22	-	37	0
East Walmart Dr	PM Peak	71	274	-	88	286	-	-	111	44	-	106	14
Lamey Bridge Rd @	AM Peak	52	62	35	96	61	-	86	124	44	9	101	0
Sangani Blvd / Mallett Rd	PM Peak	#228	137	92	#197	150	-	177	358	51	12	#264	20
Lamey Bridge Rd @	AM Peak	-	-	-	59	-	55	-	59	-	-	88	-
I-10 WB Off Ramps	PM Peak	-	-	-	57	-	223	-	260	-	-	331	-
Mallett Rd @	AM Peak	-	63	-	18	52	-	75	-	6	-	-	-
Cinema Dr	PM Peak	-	153	-	17	56	-	124	-	12	-	-	-
Mallett Rd @	AM Peak	42	38	-	10	54	-	9	0	-	12	37	-
Daisy Vestry Rd	PM Peak	94	90	-	15	66	-	49	21	-	9	42	-
Lamey Bridge Rd @	AM Peak	35	-	38	-	-	-	29	48	-	-	107	-
New Connection	PM Peak	71	-	77	-	-	-	113	135	-	-	311	-

Source: HCM 6th Ed.
95th percentile volume exceeds capacity, queue may be longer

9.2.5 2041 Alternative 3B

The analysis results for the 2041 Alternative 3B condition are shown in **Table 29** and **Table 30**. These results show same impacts seen in the 2026 analysis. The failing driveway movement at the new connection has increased in delay and queue from 2026 with an expected queue of 150 ft; however, this queue is 75 ft shorter than the expected No Build queue and would have a much lower potential of being blocked by a northbound queue from the intersection of Lamey Bridge Rd and Sangani Blvd/Mallett Rd.

Table 29. 2041 Alternative 3B Capacity Analysis Summary												
Signalized Intersection	Time Period	Approach LOS										Intersection LOS
		EB			WB			NB			SB	
Sangani Blvd @	AM Peak	C			C			C			C	C (25.8)
East Walmart Dr	PM Peak	D			C			C			D	D (36.0)
Lamey Bridge Rd @	AM Peak	C			C			C			C	C (24.6)
Sangani Blvd / Mallett Rd	PM Peak	C			C			D			D	D (35.6)
Lamey Bridge Rd @	AM Peak	-			C			A			A	A (5.7)
I-10 WB Off Ramps	PM Peak	-			C			A			A	A (5.8)
Mallett Rd @	AM Peak	B			B			B			-	B (14.3)
Cinema Dr	PM Peak	B			A			C			-	B (14.2)
Mallett Rd @	AM Peak	B			C			B			B	B (17.2)
Daisy Vestry Rd	PM Peak	B			B			B			B	B (17.1)
Unsignalized Intersections	Time Period	Critical Movement Level of Service											
		Eastbound			Westbound			Northbound			Southbound		
		Lt	Th	Rt	Lt	Th	Rt	Lt	Th	Rt	Lt	Th	Rt
Lamey Bridge Rd @	AM Peak	B	-	B	-	-	-	A	A	-	-	-	-
Academy N Drwy	PM Peak	B	-	B	-	-	-	A	A	-	-	-	-
Lamey Bridge Rd @	AM Peak	B	-	B	-	-	-	A	A	-	-	-	-
Academy S Drwy	PM Peak	C	-	C	-	-	-	A	A	-	-	-	-
Lamey Bridge Rd @	AM Peak	-	-	-	B	-	B	-	-	-	A	A	-
Chevron N Drwy	PM Peak	-	-	-	C	-	C	-	-	-	A	A	-
Lamey Bridge Rd @	AM Peak	-	-	-	B	-	B	-	-	-	A	A	-
Chevron S Drwy	PM Peak	-	-	-	**E**	-	**E**	-	-	-	A	A	-
Sangani Blvd @	AM Peak	-	-	-	-	-	-	-	-	A	-	-	-
Walgreens N Drwy	PM Peak	-	-	-	-	-	-	-	-	B	-	-	-
Sangani Blvd @	AM Peak	-	-	-	-	-	-	-	-	A	-	-	-
NTB Drwy	PM Peak	-	-	-	-	-	-	-	-	B	-	-	-
Lamey Bridge Rd @	AM Peak	-	-	B	-	-	A	-	-	-	-	-	-
Walgreens S Drwy	PM Peak	-	-	C	-	-	B	-	-	-	-	-	-
Mallett Rd @	AM Peak	-	-	-	A	-	-	-	-	A	-	-	-
Village W Drwy	PM Peak	-	-	-	A	-	-	-	-	B	-	-	-
Mallett Rd @	AM Peak		-	-	-	-	-	-	-	-	-	-	A
Town Square W Drwy	PM Peak	-	-	-	-	-	-	-	-	-	-	-	B
Mallett Rd @	AM Peak	A	-	-	A	-	-	B	A	A	B	B	B
Town Square Center Drwy	PM Peak	B	-	-	A	-	-	**F**	D	D	D	B	B
Mallett Rd @	AM Peak	-	-	-	-	-	-	-	-	A	-	-	A
Town Square E Drwy	PM Peak	-	-	-	-	-	-	-	-	B	-	-	A
Mallett Rd @	AM Peak	-	-	-	-	-	-	-	-	A	-	-	-
Village Center Drwy	PM Peak	-	-	-	-	-	-	-	-	B	-	-	-
Mallett Rd @	AM Peak	-	-	-	-	-	-	-	-	A	-	-	-
Village E Drwy	PM Peak	-	-	-	-	-	-	-	-	B	-	-	-
Lamey Bridge Rd @	AM Peak	D	-	D	-	-	-	A	-	-	-	-	-
New Connection	PM Peak	**F**	-	**F**	-	-	-	B	-	-	-	-	-

Source: HCM 6th Ed.

Table 30. 2041 Alternative 3B Signalized Intersection 95th Percentile Queue Analysis Summary													
Unsignalized Intersections	Time Period	Critical Movement 95th Percentile Queue (ft)											
		Eastbound			Westbound			Northbound			Southbound		
		Lt	Th	Rt	Lt	Th	Rt	Lt	Th	Rt	Lt	Th	Rt
Sangani Blvd @	AM Peak	38	112	-	129	138	-	-	62	33	-	38	0
East Walmart Dr	PM Peak	70	#347	-	#318	283	-	-	118	113	-	112	0
Lamey Bridge Rd @	AM Peak	53	64	38	100	62	-	118	123	43	9	192	38
Sangani Blvd / Mallett Rd	PM Peak	#199	140	193	173	153	-	#324	#427	55	14	#290	26
Lamey Bridge Rd @	AM Peak	-	-	-	59	-	55	-	59	-	-	88	-
I-10 WB Off Ramps	PM Peak	-	-	-	57	-	223	-	260	-	-	331	-
Mallett Rd @	AM Peak	-	63	-	18	52	-	75	-	6	-	-	-
Cinema Dr	PM Peak	-	153	-	17	56	-	124	-	12	-	-	-
Mallett Rd @	AM Peak	42	38	-	10	54	-	9	0	-	12	37	-
Daisy Vestry Rd	PM Peak	94	90	-	15	66	-	49	21	-	9	42	-

Source: HCM 6th Ed.
95th percentile volume exceeds capacity, queue may be longer

10.0 Preliminary Estimate of Cost

Each alternative was evaluated to identify the anticipated construction costs and construction phasing. The preliminary estimate is shown in **Table 31**.

Table 31. Opinion of Probable Cost					
Alternative	Description	PE	ROW	Construction	Total
1	Dual Left Turn Lane	$580,000.00	$600,000.00	$5,800,000.00	$6,980,000.00
2	Split Phase	$580,000.00	$1,125,000.00	$5,800,000.00	$7,505,000.00
3	New Walgreens Access Signalized	$740,000.00	$1,458,000.00	$7,400,000.00	$9,598,000.00
3B	New Walgreens Access Unsignalized	$700,000.00	$1,458,000.00	$7,000,000.00	$9,158,000.00

A detail of the cost calculations is provided in the Appendix.

11.0 Recommentations and Conclusions

The expansion of Mallett Rd from a three lane to four lane roadway is expected to have minor impacts on traffic delay considering existing volumes; however, providing this improvement creates additional capacity, increased development opportunity, and improved connections to Jackson County as a parallel route to I-10. As part of this expansion, improvements are required at the intersection of Lamey Bridge Rd and Sangani Blvd/Mallett Rd to remove the current bottleneck and provide acceptable operations for the life of the project. In this report, multiple improvements, including alternative intersections and roundabouts, were reviewed but removed from consideration for the reasons detailed in section 7 of this report. This left a conventional intersection with two configurations, an eight-phase traffic signal (Alternative 1) and a split-phase traffic signal (Alternative 2). In addition, a new connection along Lamey Bridge Rd was explored to provide access to Walgreens and potentially Walmart at a location outside of the impact of the northbound queue from the intersection of Lamey Bridge Rd and Sangani Blvd/Mallett Rd (Alternative 3 and 3B).

Alternative 2 should not be considered since the excessive queue lengths are expected to create issues at other intersections/driveways, especially along Lamey Bridge Rd. In addition, long term operational issues result, and this alternative could not be a short-term phasing option for an eventual move to Alternative 3 since the queue lengths would prohibit the new connection.

Alternative 1 is acceptable in the short-term and could be used to stage the implementation of Alternative 3 or 3B; however, the long term 2041 analysis shows that operational issues exist at both the Lamey Bridge Rd and Sangani Blvd/Mallett Rd intersection and the Sangani Blvd and East Walmart Dr intersection with near failing movements and excessive queues primarily due to the U-Turn requirements providing access to Walgreens and surrounding businesses.

Alternative 3 is the recommended alternative as it provides the best operational performance throughout the twenty-year projected life of the project with no major movement failures and only a few minor low-volume movements experiencing large delays. If the connection to Walmart is not feasible or achievable, then Alternative 3B would be preferred.

Appendix