PEDESTRIAN STUDY
For the
US Highway 49 Corridor

Updated December 2021

Prepared for

The City of Gulfport
4050 Hewes Avenue
Gulfport, MS 39507

Prepared by:

NEEL-SCHAFFER

Contents

LIST OF TABLES

LIST OF FIGURES

Appendix

1.0 Introduction and Summary

This report summarizes the findings of a traffic analysis performed by Neel-Schaffer, Inc. as requested by the City of Gulfport to evaluate the pedestrian circulation and high fatality rate of pedestrians along US Highway 49 between Creosote Road and Turkey Creek. Several pedestrians have been struck by vehicles along this route and injured or killed. An evaluation of the available right-of-way, existing lane geometry, adjacent land uses/driveways, pedestrian activity and potential mitigation options was conducted.

Per the National Highway Traffic Safety Administration (NHTSA), there were 6,283 pedestrians killed in 2018 and 857 bicyclists killed in the United States. Most crashes occur when the pedestrian crosses a road, and most fatalities and serious injuries occur on roads designed with little attention for pedestrian safety. There has been a 53% increase (nationally) in pedestrian fatalities over the last 9 years.

US Highway 49 presents a major obstacle to bicycle and pedestrian movements, as the roadway has six thru lanes, left turn lanes, and right turn lanes at three signalized intersections in the northern portion of the corridor. This 108 ft width leaves pedestrians/bicyclists at a significant disadvantage when crossing the Highway, as it requires 31 seconds to cross at 3.5 ft/sec.

1.1 Purpose

The purpose of this analysis is to evaluate the existing vehicular and pedestrian traffic and identify recommendations to modify the existing right-of-way/lane geometry to better accommodate pedestrian traffic within this ±1-mile corridor. A field survey was conducted to evaluate the topography of the existing corridor, such that proposed pedestrian infrastructure will not adversely affect the drainage along US Highway 49. Pedestrian traffic was quantified along the corridor based on a daytime traffic count. To analyze the related impact to the surrounding area, existing roadway capacity and levels-of-service were evaluated. In addition, a field review was conducted to observe existing land usage within the study area and the existing geometrics of the surrounding roadways.

2.0 Existing Conditions

2.1 Corridor Location/Description

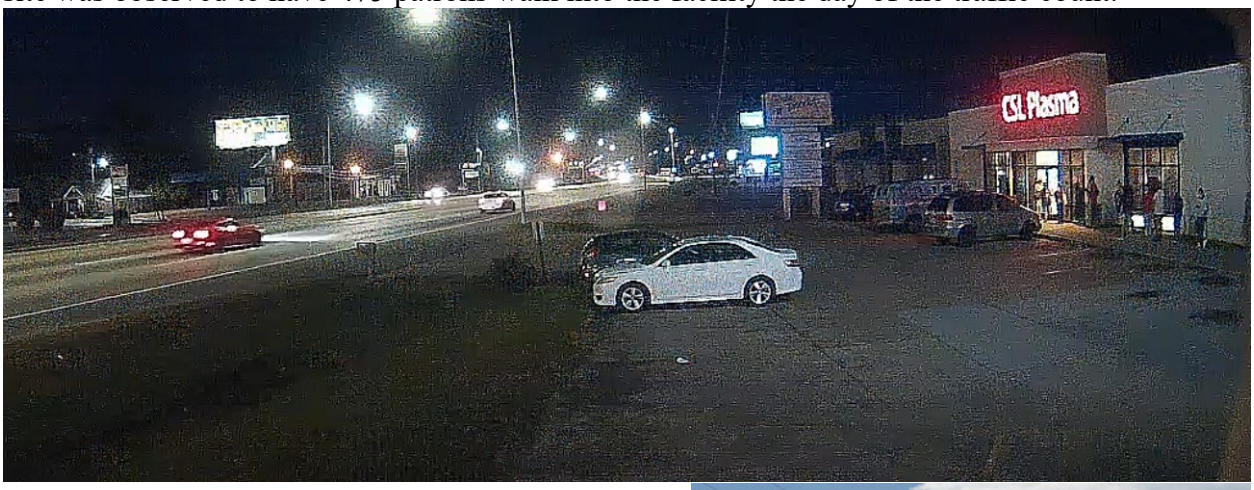
The study corridor of US Highway 49 has 3 thru lanes northbound and southbound, with paved shoulders. Around 2010, the corridor was modified from a 7-lane roadway with a center two-way left turn lane (TWLTL) to a raised curb median/slotted curb to restrict left turns to designated median openings. Prior to this modification, US Highway 49 was widened in the late 1980's from a four-lane divided roadway to a 7 lane roadway with 3 northbound lanes (12', 12', 13'), 3 southbound lanes (12', 12', 13'), a center 14' turn lane, and 10 ft shoulders – 108' total. The right-of-way varies along US Highway 49. The right-of-way is 170 ft at Creosote Road, with 85 ft on each side of the centerline, extending south 900 ft, where it then widens to 210 ft. The 210 ft right-of-way includes 110 ft on the west side of the center line and 100 ft on the east side, extending south 1500 ft to just north of Airport Road. The right-of-way then narrows to 170 ft south to Lafayette Street, widens to 210 ft extending south to Russell Street, then narrows to 200 ft at Turkey Creek.

Three traffic signals exist on US Highway 49 along this 1 mile corridor: 1) Creosote Road, 2) Middle Drive, and 3) Airport Road. No designated pedestrian accommodations exist within the right-of-way currently, other than a CTA bus bench. The posted speed limit is 50 mph in the study corridor. The study corridor is shown graphically in **Figure 1**.

2.2 Pedestrian Generators

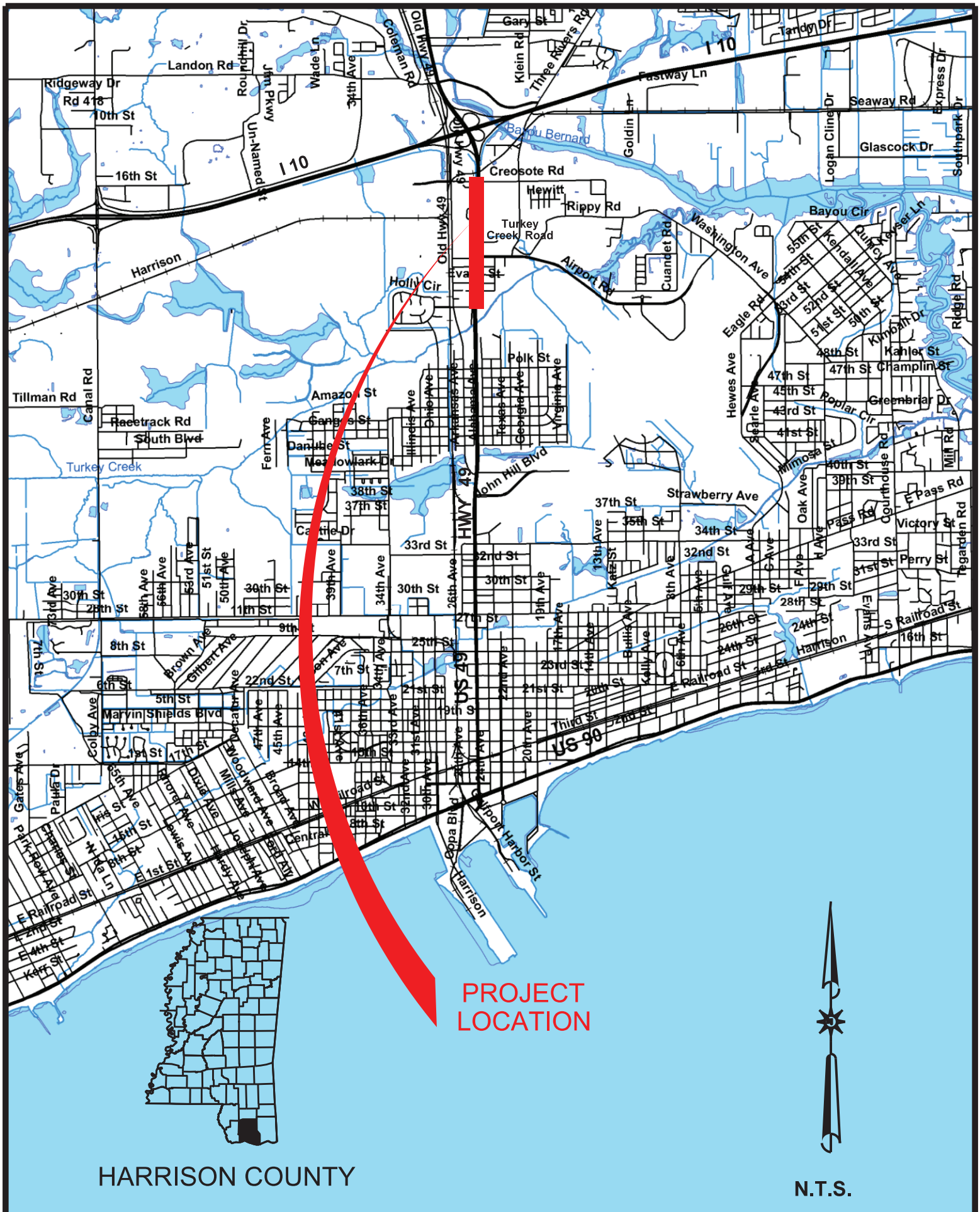
There are many hotels, restaurants, retail stores and a Plasma Center that generate significant pedestrian volumes in the study corridor. Pedestrians, bicyclists and disabled pedestrians are commonly seen along US Highway 49. The movements of these pedestrians were documented for a single day (9/18/19); however, the movement of pedestrians through this corridor has been observed through many days, at different times of the day, and pedestrians were observed walking/biking along US Highway 49 between Turkey Creek and I-10 during every site visit.

An inventory of pedestrian activity was summarized from 6 AM to 7 PM throughout the corridor. One of the highest pedestrian generators is the CSL Plasma site. The CSL Plasma site advertises that they will pay $50 for new donors. This incentive attracts many people, particularly (apparent) homeless and low-income clientele. The site opens at 6 AM, and there was a queue of people on the front walkway at 6 AM waiting for the Plasma Center to open. The site was observed to have 475 patrons walk into the facility the day of the traffic count.



Above: Line at CSL Plasma at 6:00 AM.
Right: CSL Plasma sign – Earn $50 Today.

The hotels and restaurants along the west side of US Highway 49 between Airport Road and Creosote Road along with the restaurants and retail (Walmart and others) on the east side of US Highway 49 generate a significant volume of pedestrian traffic crossing US Highway 49. Many of these pedestrian crossings are mid-block. With the high vehicular travel speeds (posted speed limit is 50 mph) and heavy traffic volumes, pedestrians are at a high risk for being injured or killed.



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STUDY CORRIDOR

FIGURE 1

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Above: Pedestrian crossing US Highway 49 mid-block, south of Wal-Mart driveway, while looking down at his cell phone, causing the truck to change lanes to avoid him.

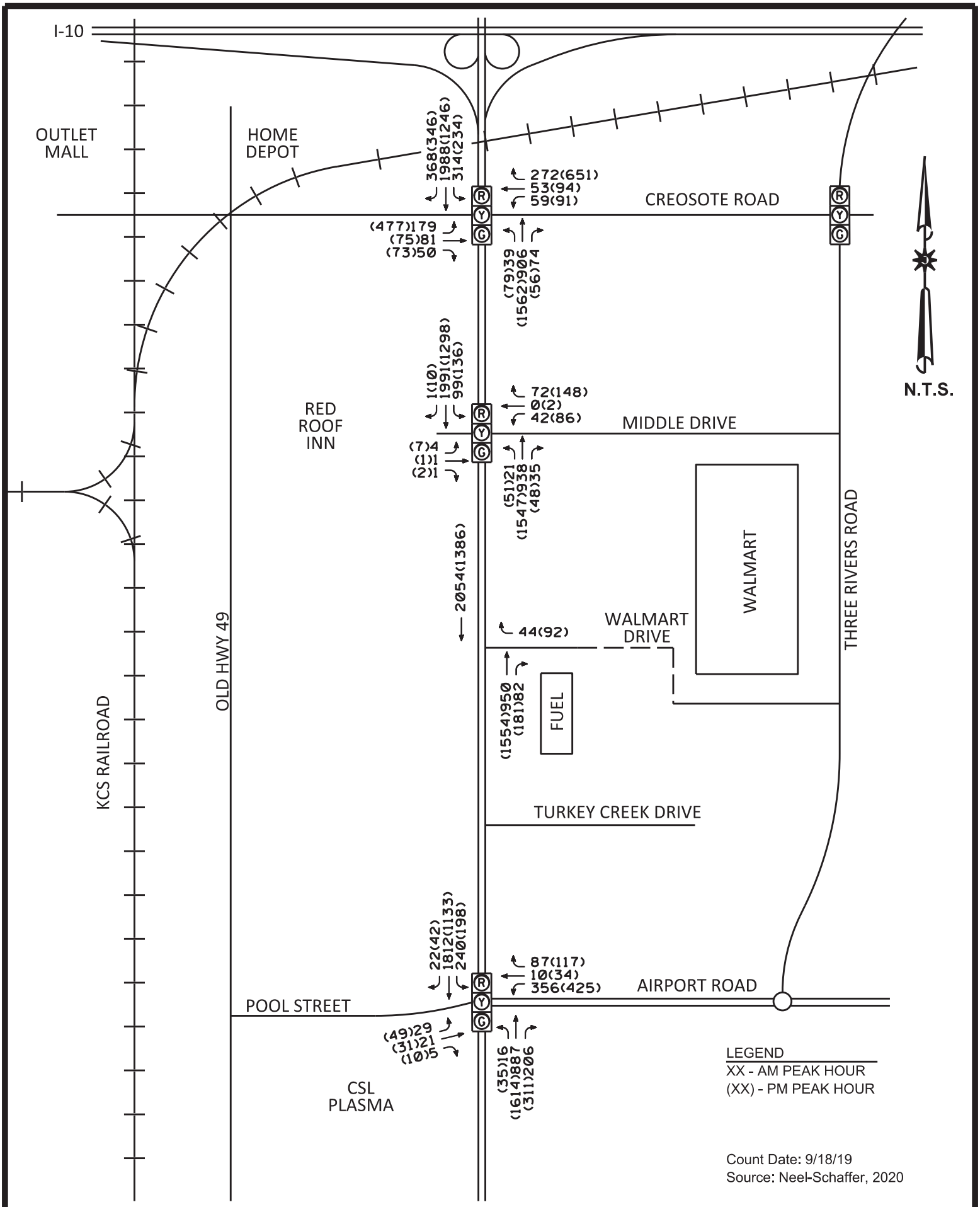
2.3 Vehicular Traffic Volumes

The traffic volumes on US Highway 49 were recorded at four intersections: Creosote Road, Middle Drive, Airport Road, and the Wal-Mart driveway. The Creosote Road/US Highway 49 count recorded 47,304 vehicles in 13 hours on the north approach and 36,739 on the south approach. A conservative estimate of 75% of the daily total traffic occurring in this 13-hour period would equate to approximately 63,000 vehicles per day (vpd) north of Creosote Road, and 49,000 vpd south of Creosote Road. These totals are higher than the AADT listed on the MDOT website at 53,000 vpd north and 43,000 vpd south. By this calculation, the recorded volumes are 14-19% higher than the AADT volumes. The vehicular turning movements are shown graphically in **Figure 2**.

Peak hour volumes on US Highway 49 range from 3,077 vehicles per hour (vph) to 3,528 vph north/south of Airport Road. Vehicular volumes exceed 4,500 vph north of Creosote Road in the PM peak hour.

2.4 Pedestrian/Bicycle Traffic Volumes

The study corridor was documented using video cameras during daylight hours to evaluate the pedestrian movements when vehicular traffic was greatest (AM/PM peaks). The pedestrian volumes were recorded from 6:00 AM to 7:00 PM at the major intersections in the corridor. An inventory of the pedestrian movements was developed during the 13-hour time period on 9/18/19. The inventory is summarized in **Table 1**.



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2019 EXISTING VEHICULAR TRAFFIC

FIGURE 2

Table 1 - Bicycle/Pedestrian Inventory

US Hwy 49 at	Crossing US Hwy 49 East/West			Traveling North/South along US Hwy 49		
	E/W Peds	E/W Bikes	E/W Total	N/S Peds	N/S Bikes	N/S total
Russell St	1	1	2	**36**	**34**	**70**
Airport Rd	4	1	5	41	19	60
Walmart Drive	**59**	**1**	**60**	12	10	22
Middle Dr	16	1	17	30	12	11
Creosote Rd	11	0	11	5	6	11

*13-Hour Total on 9/18/19, Source: Neel-Schaffer, 2020.

The field inventory revealed that the busiest daytime area for north/south pedestrian and bicycle movements was at the south end of the corridor at Russell Street, where 36 pedestrians and 34 bicycles were observed traveling north/south along US Highway 49 in the 13-hour study period for data collection. The busiest daytime crossing area of pedestrians crossing US Highway 49 was at Walmart Drive where 59 pedestrians and 1 bicyclist crossed Highway 49 in the 13-hour study period. Overall, approximately 100 pedestrians crossed US Highway 49 between Creosote Road and Airport Road in the 13-hour count.

The presence of many adults on bicycles and walking along the corridor with no dedicated bike lanes or pedestrian facilities reveals that this corridor may be serving a segment of the population that are reliant on non-automobile transportation as these trips are likely not recreational.

2.5 Historical Crash Data for Pedestrians/Bicyclists

The vehicular traffic volumes on US Highway 49 are in excess of 50,000 vehicles per day with three hours of the day having in excess of 3,000 vph. The 1-mile study corridor was researched to identify the historical pedestrian/bicycle involved crashes along US Highway 49. The 8-year crash history (2012-2019) identified 22 crashes involving vehicles hitting pedestrians, bicycles, or wheelchairs. Five of these crashes resulted in fatalities for the pedestrian or bicyclist. In addition to this crash data (per WLOX), on February 5, 2020, at approximately 5:15 AM, a van drove into the line of patrons at the CSL Plasma Center in the parking lot, hit 6 pedestrians, killing one and injuring four. The driver fled the scene and was caught later that day.

The crash records from the pedestrian/bicycle crashes were evaluated. A summary of the bike/ped crash data is provided in **Table 2**.

Table 2 - Bicycle/Pedestrian Crash Inventory

	Crashes			Total People	
Year	PDO	Injury	Fatal	Injured	Killed
2012		1-P		2	
2013		1-P		1	
2014			1-P		1
2015		2-P, 2-B		4	
2016		3-P		3	
2017			1-P		1
2018		4-P, 1-B	1-P	6	1
2019-partial	1-B	2-P	1-P, 1-B	2	2
Total	1-B	13-P, 3-B	4-P, 1-B	18	5

P-Pedestrian, B-Bicyclist. Source: MDOT, Neel-Schaffer, 2020.

All Bicycle/Pedestrian Crashes (22 total crashes)

- Only one bike/ped crash included a DUI for the driver of the automobile, for the most recent crash provided from 8/3/19, where the driver struck and killed a pedestrian on the shoulder of the road at approximately 1 AM.
- Six of the crashes (29%) were in wet conditions and 16 with dry pavement.
- Ten of the crashes occurred in Daylight (45%) and 12 in darkness. Three crashes are listed as "Dark-unlit"; however, the entire corridor has street lighting.
- Fifteen are listed as "Not Intersection Related" (71%) and 7 related to the intersection.
- Nineteen crashes are reported as "Roadway" crashes (90%), with 2 listed as "Parking lot," and 1 as "Roadside." The "Roadside" crash is the 2019 pedestrian fatality in bullet #1 that included the DUI for the vehicle's driver.
- Two crashes involved two pedestrians getting struck in one crash and one crash involved a disabled person in a wheelchair getting struck by a car.

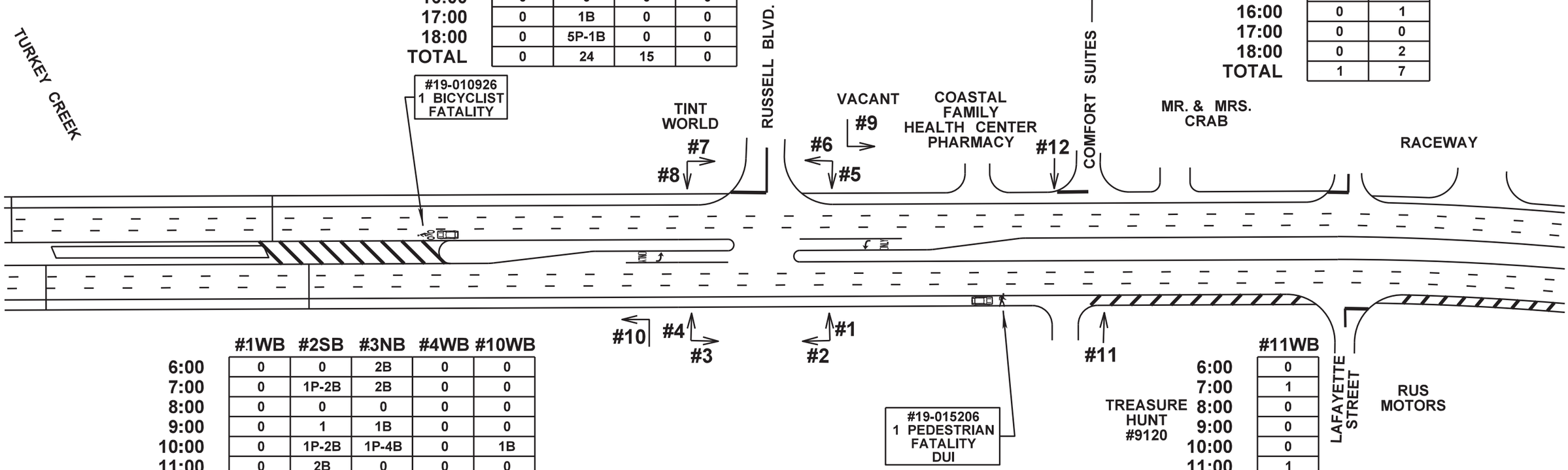
Fatal Bicycle/Pedestrian Crashes (5 total crashes)

- Two fatal crashes were in wet conditions, 3 crashes on dry pavement.
- Four fatal crashes were in darkness, one in daylight.
- Three fatal crashes were within 500 ft north/south of the Wal-Mart right-in/right-out driveway. The two north of the Wal-Mart driveway are within a section with a raised curb median.
- Two fatal crashes were within 400 ft north/south of Russell Street, where a raised curb median exists.
- Four of the fatal crashes involved mid-block crossings of US Hwy 49 by pedestrians or bicyclists.
- This data excludes the recent (2/5/2020) pedestrian fatality in the CSL Plasma parking lot where 6 pedestrians were struck by a van, with 1 pedestrian killed and 4 pedestrians injured.

The analysis of the pedestrian/bicycle crashes geographically within the study corridor revealed that 10 of 22 bike/ped crashes (and 3 of 5 fatalities) have occurred in the section of US Highway 49 between Airport Road and Middle Drive, a distance of approximately 1,700 ft. An inventory of the bike/ped crashes and pedestrian crossing information is summarized in **Figures 3A-D**.

	#5EB	#6SB	#7NB	#8EB
6:00	0	1B	2	0
7:00	0	0	2B	0
8:00	0	1P-2B	4	0
9:00	0	1P-2B	0	0
10:00	0	2	0	0
11:00	0	0	1	0
12:00	0	2P-1B	2B	0
13:00	0	2	0	0
14:00	0	1B	1B	0
15:00	0	2	3	0
16:00	0	0	0	0
17:00	0	1B	0	0
18:00	0	5P-1B	0	0
TOTAL	0	24	15	0

	#9NB	#12EB
6:00	0	0
7:00	0	0
8:00	0	2
9:00	0	0
10:00	1	1
11:00	0	1
12:00	0	0
13:00	0	0
14:00	0	0
15:00	0	0
16:00	0	1
17:00	0	0
18:00	0	2
TOTAL	1	7



	#1WB	#2SB	#3NB	#4WB	#10WB
6:00	0	0	2B	0	0
7:00	0	1P-2B	2B	0	0
8:00	0	0	0	0	0
9:00	0	1	1B	0	0
10:00	0	1P-2B	1P-4B	0	1B
11:00	0	2B	0	0	0
12:00	0	2P-1B	0	0	0
13:00	0	1B	1	1	0
14:00	0	1	1P-1B	0	0
15:00	0	0	1P-1B	0	0
16:00	0	0	0	0	0
17:00	0	0	0	0	0
18:00	0	1P-1B	0	0	0
TOTAL	0	16	15	1	1

	#11WB
6:00	0
7:00	1
8:00	0
9:00	0
10:00	0
11:00	1
12:00	0
13:00	0
14:00	0
15:00	0
16:00	0
17:00	1
18:00	0
TOTAL	3

Notes:
Volumes in tables are pedestrian volumes, unless noted otherwise.
Table volumes are hourly volume totals from 9/18/19. Pedestrian/bicyclist crash data was provided by MDOT from 1/1/2012 to 8/23/19.
2 - Bicyclist/pedestrian crashes with 2 fatalities on this sheet.

LEGEND
P = PEDESTRIAN
B = BICYCLIST

N.T.S.

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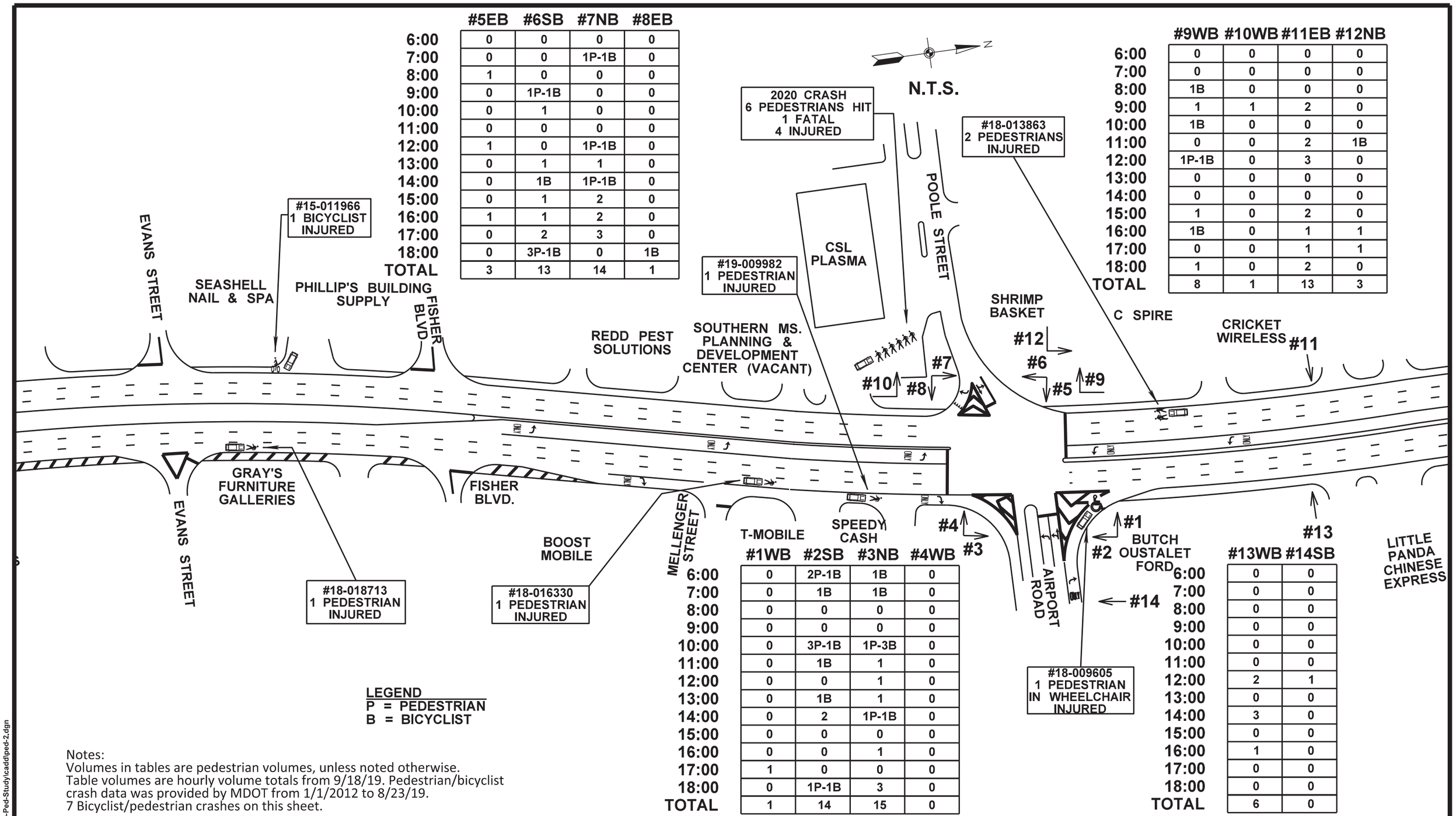
3A



	#5EB	#6SB	#7NB	#8EB
6:00	0	0	0	0
7:00	0	0	1P-1B	0
8:00	1	0	0	0
9:00	0	1P-1B	0	0
10:00	0	1	0	0
11:00	0	0	0	0
12:00	1	0	1P-1B	0
13:00	0	1	1	0
14:00	0	1B	1P-1B	0
15:00	0	1	2	0
16:00	1	1	2	0
17:00	0	2	3	0
18:00	0	3P-1B	0	1B
TOTAL	3	13	14	1

	#9WB	#10WB	#11EB	#12NB
6:00	0	0	0	0
7:00	0	0	0	0
8:00	1B	0	0	0
9:00	1	1	2	0
10:00	1B	0	0	0
11:00	0	0	2	1B
12:00	1P-1B	0	3	0
13:00	0	0	0	0
14:00	0	0	0	0
15:00	1	0	2	0
16:00	1B	0	1	1
17:00	0	0	1	1
18:00	1	0	2	0
TOTAL	8	1	13	3

	#1WB	#2SB	#3NB	#4WB
6:00	0	2P-1B	1B	0
7:00	0	1B	1B	0
8:00	0	0	0	0
9:00	0	0	0	0
10:00	0	3P-1B	1P-3B	0
11:00	0	1B	1	0
12:00	0	0	1	0
13:00	0	1B	1	0
14:00	0	2	1P-1B	0
15:00	0	0	0	0
16:00	0	0	1	0
17:00	1	0	0	0
18:00	0	1P-1B	3	0
TOTAL	1	14	15	0

	#13WB	#14SB
6:00	0	0
7:00	0	0
8:00	0	0
9:00	0	0
10:00	0	0
11:00	0	0
12:00	2	1
13:00	0	0
14:00	3	0
15:00	0	0
16:00	1	0
17:00	0	0
18:00	0	0
TOTAL	6	0

LEGEND
P = PEDESTRIAN
B = BICYCLIST

Notes:
Volumes in tables are pedestrian volumes, unless noted otherwise.
Table volumes are hourly volume totals from 9/18/19. Pedestrian/bicyclist crash data was provided by MDOT from 1/1/2012 to 8/23/19.
7 Bicyclist/pedestrian crashes on this sheet.

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PEDESTRIAN INVENTORY - US HWY 49

3B

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Notes:
Volumes in tables are pedestrian volumes, unless noted otherwise. Table volumes are hourly volume totals from 9/18/19.
Pedestrian/bicyclist crash data was provided by MDOT from 1/1/2012 to 8/23/19.
8 Bicyclist/pedestrian crashes and 3 fatalities on this sheet.

	#5EB	#6SB	#7NB	#8EB
6:00	1	1	0	0
7:00	2	0	1P-1B	0
8:00	7	0	1	1
9:00	3	1P-1B	0	0
10:00	3	1	0	0
11:00	0	0	0	1B
12:00	0	1B	1B	1
13:00	3	1	0	0
14:00	1	1B	1	2
15:00	0	0	1	1
16:00	0	1B	1	0
17:00	0	1	1	4
18:00	2	0	0	1
TOTAL	22	9	8	11

N.T.S.

	#5EB	#6SB	#7NB	#8EB
6:00	0	1	1	0
7:00	0	0	1	0
8:00	0	0	0	0
9:00	0	1P-1B	0	0
10:00	0	0	1	0
11:00	0	0	1	0
12:00	3	1B	1B	0
13:00	0	0	1	0
14:00	0	1B	1	0
15:00	0	1	1	0
16:00	1P-1DP	1	1	0
17:00	0	1	0	0
18:00	3	3	3	0
TOTAL	8	11	12	0

	#9EB	#12SB
6:00	0	0
7:00	0	0
8:00	0	0
9:00	0	0
10:00	3	0
11:00	0	0
12:00	2	1
13:00	0	0
14:00	0	0
15:00	0	0
16:00	0	0
17:00	0	0
18:00	0	0
TOTAL	5	1

#16-027587
1 PEDESTRIAN INJURED

#18-021581
1 PEDESTRIAN FATALITY

#15-028814
1 PEDESTRIAN INJURED

#17-001610
1 PEDESTRIAN FATALITY

#14-029625
1 PEDESTRIAN FATALITY

#12-008859
2 PEDESTRIANS INJURED

#19-016588
1 SB BICYCLIST HIT
NO INJURIES

#18-025601
1 BICYCLIST INJURED

METRO BEAUTY SUPPLY

APPLEBEE'S

ECONO LODGE INN & SUITES

KRISPY KREME

CTA BUS STOP
ROUTE 37

MOTEL 6
GULFPORT

#9375
SUPER 8
(FORMER AMERICAN BEST VALUE INN)

VERIZON

LUXURY INN

KOI SUSHI
(VACANT)

RED ROOF INN

QUALITY INN

WENDY'S

TURKEY CREEK DRIVE

ARBY'S

WOK EXPRESS DRIVE THRU

LITTLE PANDA CHINESE EXPRESS

SPRINT STORE

WALMART DRIVE

PAYLESS SHOE STORE
(VACANT)

TACO BELL

#9400
AZTECAS RESTAURANT & CANTINA

#9350
WALMART

REGIONS

MIDDLE DRIVE

BURGER KING

LEGEND
P = PEDESTRIAN
B = BICYCLIST
DP = DISABLED PEDESTRIAN

	#1WB	#2SB	#3NB	#4WB	#9EB
6:00	0	0	0	0	0
7:00	1	0	0	0	1B
8:00	1	0	0	2	0
9:00	0	0	1	2	0
10:00	3	0	0	0	0
11:00	4	1B	0	0	0
12:00	2	0	0	1	0
13:00	2	0	0	0	0
14:00	1	0	1B	1	0
15:00	1	0	0	0	0
16:00	4	0	0	0	0
17:00	0	0	0	0	0
18:00	2	1B	0	0	0
TOTAL	21	2	2	6	1

	#1WB	#2SB	#3NB	#4WB
6:00	0	0	0	0
7:00	0	0	0	0
8:00	0	0	2	0
9:00	1B	1	2	0
10:00	0	1	1B	1
11:00	0	1B	1	0
12:00	0	1	0	0
13:00	2	0	1B	0
14:00	0	0	1B	0
15:00	0	0	0	0
16:00	0	1P-1DP	1P-1B	0
17:00	1P-1DP	0	0	0
18:00	0	2B	1B	3
TOTAL	5	8	11	4

	#10EB	#11WB
6:00	0	0
7:00	0	0
8:00	1B	1
9:00	2	1
10:00	0	0
11:00	0	0
12:00	1	0
13:00	0	0
14:00	0	0
15:00	1	0
16:00	0	0
17:00	0	1
18:00	0	1B
TOTAL	5	4

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PEDESTRIAN INVENTORY - US HWY 49

3C

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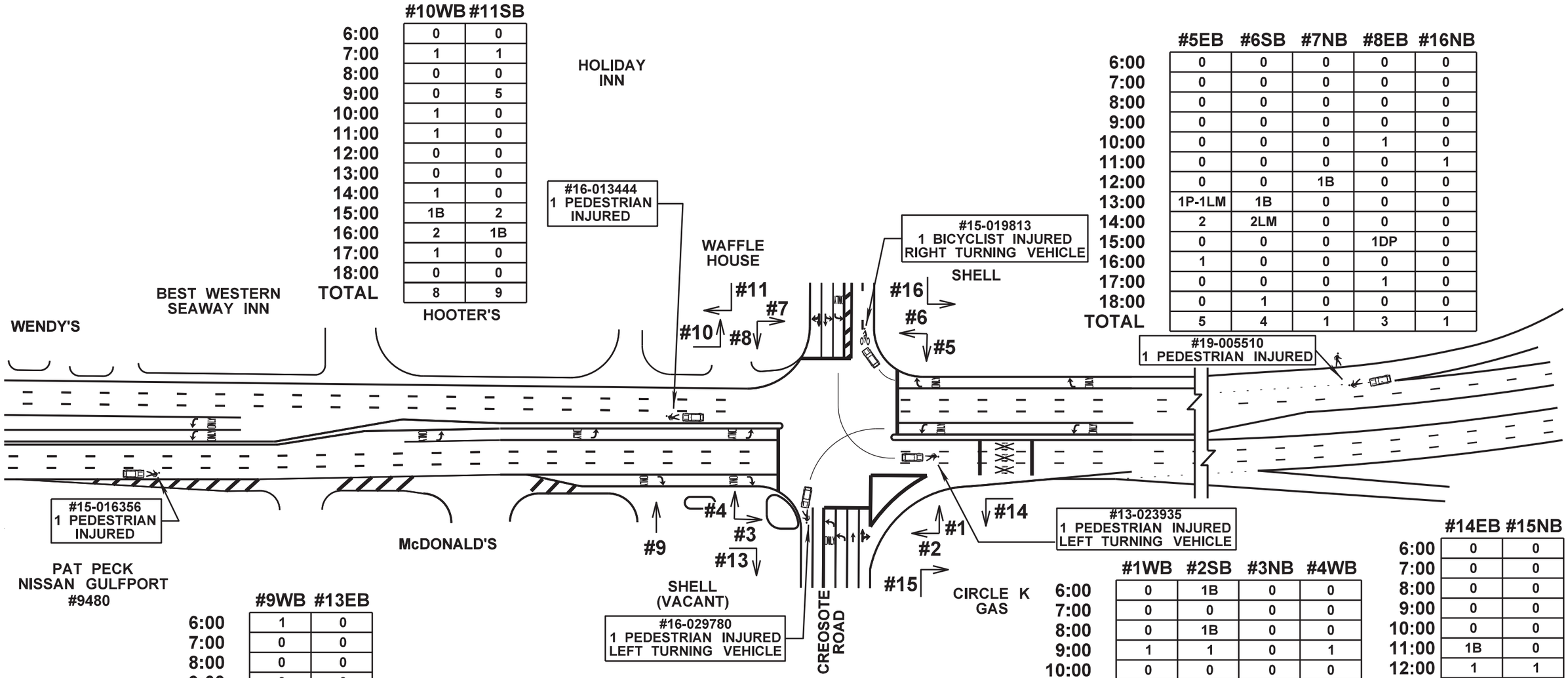

	#10WB	#11SB
6:00	0	0
7:00	1	1
8:00	0	0
9:00	0	5
10:00	1	0
11:00	1	0
12:00	0	0
13:00	0	0
14:00	1	0
15:00	1B	2
16:00	2	1B
17:00	1	0
18:00	0	0
TOTAL	8	9

	#5EB	#6SB	#7NB	#8EB	#16NB
6:00	0	0	0	0	0
7:00	0	0	0	0	0
8:00	0	0	0	0	0
9:00	0	0	0	0	0
10:00	0	0	0	1	0
11:00	0	0	0	0	1
12:00	0	0	1B	0	0
13:00	1P-1LM	1B	0	0	0
14:00	2	2LM	0	0	0
15:00	0	0	0	1DP	0
16:00	1	0	0	0	0
17:00	0	0	0	1	0
18:00	0	1	0	0	0
TOTAL	5	4	1	3	1

	#9WB	#13EB
6:00	1	0
7:00	0	0
8:00	0	0
9:00	0	0
10:00	3	1B
11:00	0	0
12:00	0	0
13:00	0	0
14:00	1	0
15:00	0	0
16:00	0	0
17:00	0	0
18:00	0	0
TOTAL	5	1

Notes:
Volumes in tables are pedestrian volumes, unless noted otherwise.
Table volumes are hourly volume totals from 9/18/19. Pedestrian/bicyclist crash data was provided by MDOT from 1/1/2012 to 8/23/19.
6 Bicyclist/pedestrian crashes on this sheet.

LEGEND
P = PEDESTRIAN
B = BICYCLIST
DP = DISABLED PEDESTRIAN
LM = LAWN MOWER

	#1WB	#2SB	#3NB	#4WB
6:00	0	1B	0	0
7:00	0	0	0	0
8:00	0	1B	0	0
9:00	1	1	0	1
10:00	0	0	0	0
11:00	0	1B	1	2
12:00	0	0	0	0
13:00	0	1	1B	0
14:00	0	0	0	0
15:00	0	0	0	0
16:00	0	0	1	0
17:00	0	0	0	0
18:00	0	0	0	0
TOTAL	1	5	3	3

	#14EB	#15NB
6:00	0	0
7:00	0	0
8:00	0	0
9:00	0	0
10:00	0	0
11:00	1B	0
12:00	1	1
13:00	0	0
14:00	0	0
15:00	0	0
16:00	0	0
17:00	1	1
18:00	0	0
TOTAL	3	2

N

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PEDESTRIAN INVENTORY - US HWY 49

3D

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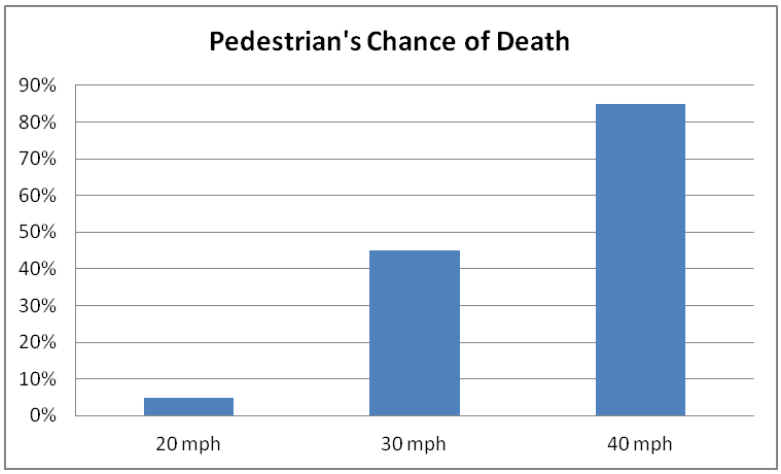
3.0 Pedestrian Design Consideration/Countermeasures

3.1 General Contributing Factors to Ped v. Vehicle Conflicts

Location, speed, time of occurrence, and alcohol impairment are major determining factors that contribute to conflicts between pedestrians and vehicles. According to the *National Safety Council*, 65% of crashes involving pedestrians occur at non-intersections (mid-block crossings). Most crashes occur during high traffic volumes such as morning and night; however, more crashes occur between 3:00pm-6:00pm when darkness and alcohol impairment play significant roles. Speed is a major contributing factor in all crash types. At high speeds, motorists are less likely to see a pedestrian or be able to stop in time to avoid a crash, according to the Pedestrian Safety Guide. **Figure 4** represents a pedestrian's chances of death if hit by a vehicle, based on the speed of the vehicle striking the pedestrian.



Source: U.K. Department of Transportation

Figure 4 – Fatalities Based on Speed of Vehicle

Based on the information provided in Figure 4 and the observed free-flow traffic speeds on US Highway 49, the pedestrian chances of death if struck by a vehicle are in excess of 85% (posted speed is 50 mph). Reducing the posted speed limit to 45 mph would have little impact on capacity, yet would provide some degree of potential for reducing injuries or chance of death to pedestrians in the corridor. Reduction of the posted speed limit to 45 mph is recommended in this section of US Highway 49.

3.2 Pedestrian Spatial Design

The amount of space that pedestrians require is a function of their size and movements. The Highway Capacity Manual, December 2010 edition (HCM) assigns a Level-of-Service (LOS) to pedestrian space. For circulation area for platoon flow, space less than 11 ft^2/person, or random flow space less than 8 ft^2/person is considered LOS F, with speed severely restricted and frequent contact with others. From an operational evaluation, our staff measured the amount of space required with two pedestrians standing next to one another, each holding a handbag in one hand and an umbrella in the other. The closest comfortable standing position, without contact, was approximately 2.5 ft x 2.5 ft per person, equating to 6.25 ft^2 per person. This standing area is less than the 8 ft^2/person outlined in the HCM for severely constricted circulation area.

The American Association of State Highway and Transportation Officials (AASHTO) *Guide for the Planning, Design, and Operation of Pedestrian Facilities,* identifies that two pedestrians walking side-by-side or passing one another generally require 4.67 ft of space. This value very closely approximates our operational analysis of 5 ft for two pedestrians, without a disability. Pedestrians with disabilities (wheelchair or white cane users), often require more space than pedestrians without disabilities. A pedestrian in a wheelchair was observed crossing US Highway 49 at Middle Drive, being pushed by another person. The two crossed from the Quality Inn east to Wal-Mart, then returned approximately 23 minutes later and crossed back to the Quality Inn (against the signal).

The lack of existing sidewalks and crosswalks do not accommodate the significant volume of pedestrian traffic that is currently traveling along/across US Highway 49. Sidewalks/multi-use paths are recommended on both sides of US Highway 49 to accommodate this significant movement of pedestrian and bicycle traffic.

3.3 Sidewalk Design Considerations

The (AASHTO) *Guide for the Planning, Design, and Operation of Pedestrian Facilities* identifies the attributes of well designed sidewalk includes:

Accessibility – A network of sidewalks must be accessibility to all users and meet ADA requirements.
Adequate Width – Two people should be able to walk side-by-side and pass a third person comfortably. In areas of intense pedestrian use, sidewalks should be wider to accommodate the greater volume of walkers.
Safety – Design features of the sidewalk should allow pedestrians to have a sense of security and predictability. Sidewalk users should not feel they are at risk due to the presence of adjacent traffic.
Continuity – Walking routes should be obvious and should not require pedestrians to travel out of their way unnecessarily.
Landscaping – Plantings and street trees within the roadside area should contribute to the visual comfort of users.
Social Space – Sidewalks should be more than areas to travel, they should provide places for people to interact.
Quality of Place – Sidewalks should contribute to the character of neighborhoods and business districts and strengthen their identity.

The (desirable) buffer width between the sidewalk and edge of traveled way is 5 ft to 6 ft for arterial routes per the (AASHTO) *Guide for the Planning, Design, and Operation of Pedestrian Facilities*. With a posted speed limit of 50 mph, a 5 ft-6 ft buffer is recommended. Due to the high operating speeds and volume of automobile traffic, a multi-use path is recommended over an in-street bike lane.

3.4 Crosswalks/Uniform Vehicle Code

Crosswalks serve as the pedestrian's right-of-way across a street. An intersection's crosswalk serves as the extension of the sidewalk across an intersection for the pedestrian. Marked crosswalks aid motorists in identifying pedestrian crossing locations and better inform pedestrians of legal crossing locations.

The traffic law enforcement issue in most communities is that motor vehicle operators do not stop for pedestrians in marked and unmarked crosswalks. The Uniform Vehicle Code (UVC) that many states use is the basis to providing uniformity to their laws. The UVC states that specific crosswalk guidance should include direction that calls for a motorist to stop, and remain stopped, to allow the pedestrian to cross the roadway within a marked or unmarked crosswalk at intersections. The MS Code closely follows the UVC stating the vehicles should stop for pedestrians at any marked or unmarked crosswalk at unsignalized intersections.

Crosswalks and pedestrian signal heads/push buttons are recommended to be installed at Airport Road, Middle Drive and Creosote Road. The spacing between these crossings is approximately:

950 ft	Creosote Road to Middle Drive
1,660 ft	Middle Drive to Airport Road

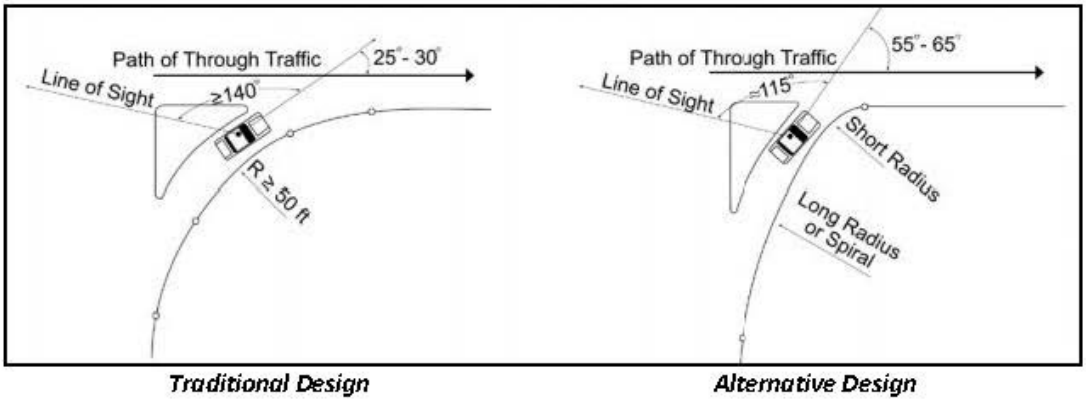
With this amount of space between crossings, a pedestrian crossing with a pedestrian hybrid beacon is recommended to be considered just south of the Wal-Mart right-in/right-out drive. This location is a midpoint between Middle Drive and Airport Road, approximately 800 ft south of Middle Drive and 800 ft north of Airport Road. A full-width median exists at this location, just north of the 650 ft southbound left turn lane storage at Airport Road.

3.5 Effect of Vehicular Turning Movements on Pedestrian Safety

Based on the Institute of Transportation Engineers (ITE) *Design and Safety of Pedestrian Facilities*, at signalized intersections, 37% of all vehicle-pedestrian collisions involve left or right turning vehicles. Mitigation factors can include:

-Providing accessible crossing islands and pedestrian signals,
-Shorten crossing distance and exposure time with curb extensions or other geometrics,
-Place signs to remind motorists of their duty to yield to pedestrians while turning left or right,
-Improve markings and visibility of crosswalks, and
-Provide well illuminated crossings.

The Creosote Road intersection with US Highway 49 had three turning crashes reported that involved two pedestrians and one bicyclist. Airport Road had one crash reported that involved a right turning vehicle that struck a disabled pedestrian in a power chair, in front of another pedestrian in a second power chair. All four of these turning conflicts occurred at signalized intersections. Lagging left turn phases for US Highway 49 left turns and modification of the channelized right turn lanes are recommended. Modifying the channelized right turn lanes from the traditional >140 degree angle for line of sight to approximately 115 degree line of sight is recommended to help reduce the pedestrian conflicts and also the rear-end crash potential within these channelized right turn lanes.



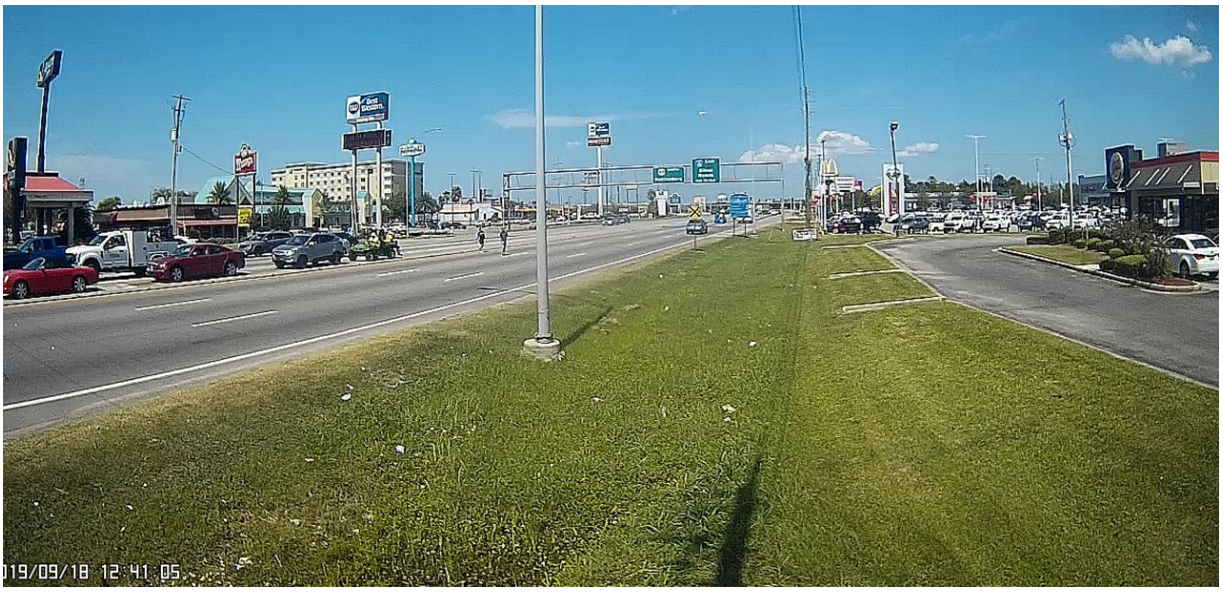
Traditional vs. alternative right-turn lane designs (Source: Gattis et al. 2009).

3.6 Elevated Pedestrian Walkways

Elevated walkways, skywalks, and skyways are sidewalks or walkways above ground level that are typically used to provide access to high pedestrian volumes across major arterial streets. These facilities can be freestanding or connected to adjacent buildings. Enclosed skyways are referred to as skywalks and are typically built one story above ground level to connect buildings. These types of pedestrian facilities are typically successfully used when connecting one concentrated pedestrian generator with another. The varied locations of crossings make an elevated crossing an alternate that is unlikely to be effective at removing at-grade crossings, primarily because the pedestrian activity does not appear to be concentrated at one location, unless an elevated crossing is constructed with a median barrier restricting crossings within this area.

3.7 Location of Sidewalk/Multi-Use Path

The width of right-of-way varies in the corridor; however, the section where the majority of the pedestrian incidents have occurred has 210 ft of right-of-way and approximately 108 ft of asphalt. The undeveloped portion of the right-of-way between the adjacent retail property and edge of pavement is primarily used as detention for stormwater. Locating a new sidewalk/multi-use path near the back of the right-of-way would provide a better buffer between thru traffic and pedestrians. Locating a new sidewalk/multi-use path closer to the edge of pavement could possibly get more use and draw more of the pedestrians/bicyclists off US Highway 49 on a new pedestrian/bicycle facility. Drainage impacts will need to be evaluated with the construction of a new sidewalk/multi-use path within the existing right-of-way.



Looking north along US Highway 49 at stormwater detention area and 2 pedestrians crossing.

The minimum offset from the edge of travelled way is recommended to be 6 ft to the edge of the proposed multi-use path.

3.8 Median Modifications

Design concepts evaluated multiple concepts for median modifications to restrict mid-block pedestrian crossings. The median on US Highway 49 narrows to a 12" slotted curb in many locations along left turn lanes. Installing a jersey barrier/concrete median barrier would be an obstacle that could ramp up from a low profile (to avoid being a fixed object in the clear zone that would require attenuators at each end). The standard barrier height ranges from 32"-42" and is 2 ft in width. This concept could be easily traversed by pedestrians. However, the addition of a fence above the barrier could further discourage mid-block crossings.

Above: 42” concrete barrier with 42” cyclone fence on top of barrier.
Below: 42” concrete barrier with 42” wrought iron fence on top of barrier.

The median barrier/fencing is recommended to extend from the south side of the railroad crossing right-of-way on US Highway 49 (just north of Creosote Road) south to Fisher Boulevard, just south of Airport Road – a distance of approximately 3,700 ft.

Signing is recommended to accompany the new sidewalk/multi-use path, median barrier and median fence, concurrent with the recommended pedestrian hybrid beacon at the Wal-Mart right-in/right-out driveway. Signing is recommended to include a message that it is illegal to cross mid-block. An offset is recommended at the pedestrian hybrid beacon between the crossings of northbound and southbound travel lanes, directing pedestrians to face oncoming traffic in the median to be more aware of approaching vehicles.

3.9 Pedestrian Accommodations at Existing Traffic Signals

The three signalized intersections (Airport Road, Middle Drive and Creosote Road) are recommended to be modified to include high-intensity pedestrian crosswalks, pedestrian push buttons, and pedestrian heads (Walk/Don't Walk). Additional improvements are recommended to include right turn lane modifications to the channelized right turn lane islands, to make pedestrians more visible to right turning traffic. Lagging left turning movements for US Highway 49 are recommended to help protect pedestrians in crosswalks from getting struck by left turning vehicles.

3.10 Existing Traffic - Level of Service Analysis

The capacity and level-of-service (LOS) of an intersection was evaluated based on the average vehicular delay during the peak hour periods. The vehicular delays are directly related to the turning movement volumes, traffic composition and roadway geometrics at the study intersections. The methodology used in this analysis is based on the *Highway Capacity Manual* (HCM). The level-of-service, as outlined in the HCM, is reported as a letter designation of LOS A through LOS F (A is least delay and F is most delay). The traffic volumes recorded at the study intersections were evaluated to determine the existing traffic levels-of-service based on the information provided in the HCM. The results of this analysis are shown in **Table 3**.

Table 3
Year 2019 Existing Traffic Levels-of-Service

Signalized Intersection	Time Period	Approach Level-of-Service				Intersection LOS
		Eastbound	Westbound	Northbound	Southbound	
US Hwy 49/ Creosote Rd	AM Peak	D	D	C	B	C
	PM Peak	**E**	**E**	C	C	C
US Hwy 49/ Middle Drive	AM Peak	D	D	A	A	B
	PM Peak	D	**E**	B	B	B
US Hwy 49/ Airport Rd	AM Peak	**E**	D	B	B	C
	PM Peak	**E**	D	C	B	C

Source: Neel-Schaffer, 2020.

The capacity analyses identify that the study intersections may be operating at capacity on minor street approaches during AM/PM peak hours. Volume balancing affects the LOS as the HCM doesn't evaluate shared lanes for turning movements. The HCS has some deficiencies in these shared lane scenarios that don't always reflect an accurate LOS, as there is ample time (40 sec) allocated to eastbound traffic at Airport Road that only has 55 vph on the approach during the AM Peak hour. This deficient LOS is likely an anomaly in the software capability.

Traffic on Middle Drive is affected by the concurrent east/west phasing, as the driveway for the Red Roof Inn has a much lower volume than Middle Drive, exiting Walmart:

Eastbound:	6 vph AM	10 vph PM
Westbound:	114 vph AM	236 vph PM

The signal at Middle Drive provides leading east/west left turn phasing and has a westbound shared thru/right turn lane. The thru volume westbound was 9 vehicles over the 7 hours counted. Providing a dedicated westbound right turn lane, with a right turn lane overlap phase is recommended, as the right turning traffic represents nearly 65% of the westbound traffic. The westbound left turn lane can be restriped as a shared thru/left turn lane and provide a leading left turn phase, with eastbound traffic having permissive phasing without a dedicated left turn arrow phase. This modification to the signal would allow more westbound right turns to move while serving north/south left turns, free from conflict.

Southbound right turning traffic at Creosote Road is over 345 vph in the AM, Mid-day and PM peak hours. Eastbound left turning traffic is 341 vph and 477 vph in the mid-day and PM peaks. Restriping this intersection is recommended to have dedicated eastbound dual left turn lanes and a single shared thru/right turn lane. This modification would allow east/west concurrent phasing. Additionally, the shared northern thru/left turn lane does not align with the receiving lane on the east side of the intersection. A southbound right turn overlap phase is also recommended to have this heavy southbound right turning movement be free-flow while the east/west dual left turns are moving.

3.11 Roadway Lighting Levels

The roadway lighting on US Highway 49 was designed $\pm$ 25 years ago, based on information provided by MDOT. The design calculations are not available. Construction of the existing lighting started in 1998. Per MDOT, the lighting assemblies are 40 ft mounting height with 12 ft arms and were 400 watt HPS fixtures. The HPS fixtures have been replaced with LED fixtures. Spacing is approximately 175-180 ft. The approximate lighting level was designed to approximately 1.0-1.2 footcandles (fc). Current design standards in the AASHTO Roadway Lighting Design Guide, 7th Edition, October 2018, for Principal Arterials with an asphalt surface in a commercial area requires Average Maintained Illuminance (E_{avg}) at 1.6 fc.

Roadway lighting has a significant impact on safety. Per the Lighting Design Guide, the Crash Modification Factor (CMF) for roadway lighting decreases nighttime crashes of all severities by 20% and nighttime injury and non-injury crashes by 28% and 17%, respectively. When lighting is installed at intersections, nighttime injury crashes are predicted to be reduced by 38% while nighttime pedestrian injury crashes are predicted to be reduced by 42%.

Twelve of the 22 bike/ped crashes (55%) and 4 of the 5 bike/ped fatalities (80%) occurred at night time/darkness. Improving the street lighting to meet current design standards (1.6 fc) is recommended to help drivers better identify pedestrians along the roadway or crossing the roadway at night. Lighting levels were measured (shown in Appendix Figure A1) and are shown to be deficient at each signalized intersection where crossings are allowed and proposed.

Vertical illumination calculations are recommended in the pedestrian crosswalk areas, along the centerline of the crosswalks to increase the visibility of pedestrians and provide a safe stopping sight distance. Consideration for positive contrast for pedestrians is recommended, with street light poles positioned in advance of the crosswalks. The advantage to providing positive contrast (lighting the approach side of the pedestrian in the crosswalk) is that the vehicle headlights help increase that contrast and improve the visibility of the pedestrian in the crosswalk (AASHTO Roadway Lighting Design Guide, 7th Edition, 2018).

3.12 Coast Transit Authority – Bus Stops/Hail Stops

The CTA public transportation operates bus routes in the study area with both set bus stops and with "Hail Stop" locations where they will pick up passengers (in shaded areas on graphic below) when requested in safe locations. The graphic shows that Three Rivers Road has multiple Hail Stop locations, a fixed stop at Walmart, Motel 6 on US Highway 49, CSL Plasma (north and south), and Raceway. Much of US Highway 49 between Motel 6 and Russell Blvd is a Hail Stop location for CTA.

CTA Bus Stops/Hail Stops, Source: CTA, 2020.

4.0 Preliminary Estimate of Cost

The cost estimate was developed for the entire corridor between Turkey Creek and Creosote Road. The cost estimate is separated into 5 phases, in order of priority. The five phases include upgrading the existing signalized intersections to mast-arm style mounted signal heads with pedestrian heads/crosswalks/ped push buttons. Each crossing of an existing driveway by the multi-use path would require meeting ADA compliance with a 2% or less cross slope. Each driveway could require reconstruction for the path crossing. Each public street intersection with the multi-use path would require sidewalk ramps with truncated domes.

The project is intended to be constructed in phases. The detail of the preliminary estimate of cost is provided in **Table 4**.

Table 4 - Preliminary Estimate of Cost

Phase 1 – Crosswalks/Ped Heads/Ped Push Buttons/Islands	Units	Quantity	Unit Price	Total
Maintenance of traffic	LS	1	$20,000	$25,000
Mobilization	LS	1	$20,000	$25,000
Thermoplastic Detail	LF	2,000	$5	$10,000
Thermoplastic Legend	SF	5,000	$8	$40,000
Thermoplastic Legend	LF	3,600	$3	$10,800
Concrete Median and/or Island Pavement	SY	1,000	$50	$50,000
Traffic signal equipment pole, Type VI, 8' Shaft	EA	17	$1,500	$25,500
Traffic signal head, Type VI	EA	26	$800	$20,800
Accessible pedestrian detection assembly	EA	26	$800	$20,800
Sidewalk Ramp w/ Truncated Domes	EA	33	$1,500	$49,500
			Subtotal	$277,400
		20%	Contingency	$56,000
			Total	**$333,400**

Source: Neel-Schaffer, 2020.

Table 4 - Preliminary Estimate of Cost (cont'd)

Phase 2A - 10 ft Multi-use Path (concrete) North of Airport Road	Units	Quantity	Unit Price	Total
Clearing and Grubbing	LS	1	$1,250	$1,250
Removal of Obstructions	LS	1	$12,500	$12,500
Removal of Concrete Driveways, All Depths	SY	980	$8	$7,840
Removal of Curb &/or Curb and Gutter, All Types	LF	590	$7	$4,130
Removal of Drainage Items	LS	1	$12,500	$12,500
Unclassified Excavation, FM, AH	CY	700	$10	$7,000
Borrow Excavation, AH, FME, Class B3	CY	4,500	$16	$72,000
Excess Excavation, LVM, AH	CY	2,700	$8	$21,600
Geotextile Stabilization, Type V	SY	5,300	$2	$10,600
Standard Ground Preparation	SY	10,000	$2	$20,000
Solid Sodding, Centipede	SY	5,000	$6	$30,000
Grassing	AC	1	$4,000	$4,000
Temporary Silt Fence	LF	10,000	$4	$40,000
Wattles, 12"	LF	1,000	$6	$6,000
Crushed Stone Base, AEA	CY	1,100	$90	$99,000
Class B Structural Concrete, Minor Structures	CY	180	$1,500	$270,000
Reinforcing Steel	LB	18,300	$3	$54,900
12" Reinforced Concrete Pipe, Class III	LF	20	$30	$600
15" Reinforced Concrete Pipe, Class III	LF	20	$35	$700
18" Reinforced Concrete Pipe, Class III	LF	1,160	$40	$46,400
24" Reinforced Concrete Pipe, Class III	LF	1,100	$60	$66,000
30" Reinforced Concrete Pipe, Class III	LF	1,090	$80	$87,200
54" Reinforced Concrete Pipe, Class III	LF	270	$220	$59,400
65" x 40" Concrete Arch Pipe, Class III	LF	530	$350	$185,500
Castings	LB	14,400	$4	$57,600
Gratings	LB	7,200	$4	$28,800
Size II Stabilizer Aggregate, Coarse	CY	900	$80	$72,000
Concrete Sidewalk, Without Reinforcement	SY	5,260	$65	$341,900
Combination Concrete Curb and Gutter, Type I	LF	588	$40	$23,520
Concrete Driveway, With Reinforcement	SY	980	$75	$73,500
Adjustment of Castings, Gratings, & Utility Appurtenances	LS	1	$12,500	$12,500

Phase 2A - 10 ft Multi-use Path (concrete) North of Airport Road - continued	Units	Quantity	Unit Price	Total
Sidewalk Ramp w/ Truncated Domes	EA	36	$1,000	$36,000
Maintenance of Traffic	LS	1	$25,000	$25,000
Mobilization	LS	1	$130,000	$130,000
Roadway Construction Stakes	LS	1	$12,500	$12,500
Utility Relocation (Conflict Resolution)	LS	1	$12,500	$12,500
Pavement Markings	LS	1	$12,500	$12,500
Roadway Signage	LS	1	$2,500	$2,500
			Subtotal	$1,984,240
		20% -	Contingency	$396,760
			Total	**$2,381,000**

Phase 2B - 10 ft Multi-use Path (concrete) South of Airport Road	Units	Quantity	Unit Price	Total
Clearing and Grubbing	LS	1	$1,250	$1,250
Removal of Obstructions	LS	1	$12,500	$12,500
Removal of Concrete Driveways, All Depths	SY	560	$8	$4,480
Removal of Curb &/or Curb and Gutter, All Types	LS	140	$7	$980
Removal of Drainage Items	LS	1	$12,500	$12,500
Unclassified Excavation, FM, AH	CY	1,000	$10	$10,000
Borrow Excavation, AH, FME, Class B3	CY	4,500	$16	$72,000
Excess Excavation, LVM, AH	CY	2,200	$8	$17,600
Geotextile Stabilization, Type V	SY	4,300	$2	$8,600
Standard Ground Preparation	SY	9,000	$2	$18,000
Solid Sodding, Centipede	SY	5,000	$6	$30,000
Grassing	AC	1	$4,000	$4,000
Temporary Silt Fence	LF	8,000	$4	$32,000
Wattles, 12”	LF	1,000	$6	$6,000
Crushed Stone Base, AEA	CY	900	$90	$81,000
Class B Structural Concrete, Minor Structures	CY	60	$1,500	$90,000
Reinforcing Steel	LB	5,660	$3	$16,980
12” Reinforced Concrete Pipe, Class III	LF	20	$30	$600
15” Reinforced Concrete Pipe, Class III	LF	310	$35	$10,850
18” Reinforced Concrete Pipe, Class III	LF	1,930	$40	$77,200
24” Reinforced Concrete Pipe, Class III	LF	440	$60	$26,400
36” Reinforced Concrete Pipe, Class III	LF	160	$120	$19,200
51” x 31” Concrete Arch Pipe, Class III	LF	20	$230	$4,600
58” x 36” Concrete Arch Pipe, Class III	LF	20	$300	$6,000
18” Concrete End Section	EA	1	$1,000	$1,000
58” x 36” Concrete Arch Pipe End Section	EA	1	$1,650	$1,650

Phase 2B - 10 ft Multi-use Path (concrete) South of Airport Road - continued	Units	Quantity	Unit Price	Total
Castings	LB	4,800	$4	$19,200
Gratings	LB	2,400	$4	$9,600
Size II Stabilizer Aggregate, Coarse	CY	500	$80	$40,000
Concrete Sidewalk, Without Reinforcement	SY	4,260	$65	$276,900
Combination Concrete Curb and Gutter, Type I	LF	140	$40	$5,600
Concrete Driveway, With Reinforcement	SY	560	$75	$42,000
Adjustment of Castings, Gratings, & Utility Appurtenances	LS	1	$12,500	$12,500
Sidewalk Ramp w/ Truncated Domes	EA	18	$1,000	$18,000
Maintenance of Traffic	LS	1	$25,000	$25,000
Mobilization	LS	1	$120,000	$120,000
Roadway Construction Stakes	LS	1	$12,500	$12,500
Utility Relocation (Conflict Resolution)	LS	1	$12,500	$12,500
Retaining Wall	SF	6,900	70	$483,000
Pedestrian Guardrail	LF	1,150	$120	$138,000
Pavement Markings	LS	1	$12,500	$12,500
Roadway Signage	LS	1	$2,500	$2,500
			Subtotal	$1,819,490
		20% -	Contingency	$363,510
			Total	**$2,183,000**

Phase 3 - Pedestrian Hybrid Beacon	Units	Quantity	Unit Price	Total
Pedestrian Hybrid Beacon	LS	1	$100,000	**$100,000**

Phase 4 - Median Barrier Construction	Units	Quantity	Unit Price	Total
Maintenance of traffic	LS	1	$40,000	$40,000
Mobilization	LS	1	$40,000	$40,000
42" Chain Link Fence	LF	2,600	$15	$39,000
Concrete Type I Cast-In-Place Median Barrier, 42" High	LF	3,000	$175	$525,000
Concrete Median and/or Island Pavement	SY	9,300	$50	$465,000
			Subtotal	$1,109,000
		20%	Contingency	$222,000
			Total	**$1,331,000**

Phase 5 - Signal Upgrade - mast arm style	Units	Quantity	Unit Price	Total
Traffic Signal, 30' Shaft, 50' Arm per Intersection	EA	3	$220,000	**$660,000**

TOTAL All Phases	**$6,988,400**

Source: Neel-Schaffer, 2021.

Total all phases with concrete multi-use path cost would be approximately $6,988,400. This estimate does include some possible drainage improvements/drainage modifications that may be needed for the installation of the multi-use path based on existing drainage pipe information. The construction of the proposed multi-use path would affect some of the drainage/detention areas in the right-of-way and drainage adjacent to the right-of-way. A hydraulic analysis was not part of this project scope and is necessary along with additional survey data to determine the full effect on the drainage and the final location of the multi-use path.

5.0 Recommendations and Conclusions

The volume of pedestrian/bicycle collisions with automobiles is significant for the 1-mile corridor of US Highway 49 south of I-10 between Creosote Road and Turkey Creek. Twenty-two bike/ped incidents occurred within the 8-year crash history, with 5 fatalities. The volume of pedestrians during the study period (6AM-7PM) identified more than 60-70 pedestrians traveling along/across US Highway 49 at multiple locations. The hotels, Walmart and CSL Plasma Center were identified to be major generators of pedestrian traffic. There are no pedestrian accommodations within the study corridor, other than a CTA bus bench/bus stop in front of the Motel 6. The corridor was observed to have many bicyclists, walking pedestrians, pedestrians in wheelchairs, and lawn mowers crossing on the day of the pedestrian inventory.

Based on information provided by NHTSA, most crashes occur when the pedestrian crosses a road, and most fatalities and serious injuries occur on roads designed with little attention for pedestrian safety. There has been a 53% increase (nationally) in pedestrian fatalities over the last 9 years. The lack of pedestrian facilities and low lighting levels, combined with high vehicular volumes and high vehicular speeds are likely contributors to this increased level of bicycle/ pedestrian crashes.

Reduction of the posted speed limit from 50 mph to 45 mph is recommended in this section of US Highway 49. The lack of existing sidewalks and crosswalks do not accommodate the significant volume of pedestrian traffic that is currently traveling along/across US Highway 49. Sidewalks/multi-use paths are recommended on both sides of US Highway 49 to accommodate this significant movement of pedestrian and bicycle traffic. With a posted speed limit of 50 mph (or 45 mph), a 5 ft-6 ft buffer is recommended. Due to the high operating speeds and volume of automobile traffic, a multi-use path is recommended over an in-street bike lane.

Locating a new sidewalk/multi-use path closer to the edge of pavement could possibly get more pedestrian use and draw more of the pedestrians/ bicyclists off US Highway 49 on a new pedestrian/bicycle facility. Locating a new sidewalk/multi-use path closer to the back of the right-of-way would provide a better buffer between the thru traffic and the pedestrians and bicyclists. Drainage impacts will need to be evaluated with the construction of a new sidewalk/multi-use path within the existing right-of-way to determine the location of the multi-use path. The location of a new sidewalk/multi-use path will almost certainly be a combination of the back of the right of way and closer to the highway due to the drainage impacts.

The analysis of the pedestrian/bicycle crashes geographically within the study corridor revealed that 10 of 22 bike/ped crashes (and 3 of 5 fatalities) occurred in the section of US Highway 49 between Airport Road and Middle Drive, a distance of approximately 1,700 ft.

A median barrier/fencing is recommended to extend from the south side of the railroad crossing right-of-way on US Highway 49 (just north of Creosote Road) south to Fisher Boulevard, just south of Airport Road – a distance of approximately 3,700 ft. A pedestrian crossing with a pedestrian hybrid beacon is recommended to be considered just south of the Wal-Mart right-in/right-out drive. This location is near the midpoint between Middle Drive and Airport Road, approximately 800 ft south of Middle Drive and 800 ft north of Airport Road.

Signing is recommended to accompany the new sidewalk/multi-use path, median barrier and median fence, concurrent with the recommended pedestrian hybrid beacon at the Wal-Mart right-in/right-out driveway. Signing is recommended to include a message that it is illegal to cross mid-block. An offset is recommended at the pedestrian hybrid beacon between the crossings of northbound and southbound travel lanes, directing pedestrians to face oncoming traffic in the median to be more aware of approaching vehicles.

The existing signalized intersections at Creosote Road, Middle Drive and Airport Road have no pedestrian accommodations. These signals are recommended to be modified to:

-Providing accessible crossing islands and pedestrian signals,
-Shorten crossing distance and exposure time with curb extensions or other geometrics,
-Place signs to remind motorists of their duty to yield to pedestrians while turning left or right,
-Provide high-intensity crosswalks, push buttons, ped heads, and
-Improve the street lighting to meet minimum design standards (1.6 fc) to help drivers better identify pedestrians along the roadway or crossing the roadway at night as the lighting in the median area and behind the asphalt is deficient, and
-Provide positive contrast in the lighting design in advance of the crosswalks through a lighting design and pedestrian lighting along the proposed multi-use paths.

Lagging left turn phases for US Highway 49 left turns and modification of the channelized right turn lanes are recommended. Modifying the channelized right turn lanes from the traditional >140-degree angle for line of sight to approximately 115 degree line of sight is recommended to help reduce the pedestrian conflicts by making pedestrians more visible to right turning traffic and also reducing the rear-end crash potential within these channelized right turn lanes. Lagging left turning movements for US Highway 49 at signalized intersections is recommended to help protect pedestrians in crosswalks from getting struck by left turning vehicles.

Providing a dedicated westbound right turn lane at Middle Drive/US Highway 49 with a right turn lane overlap phase is recommended, as the right turning traffic represents nearly 65% of the westbound traffic. The westbound left turn lane can be restriped as a shared thru/left turn lane and provide a leading left turn phase, with eastbound traffic having permissive phasing without a dedicated left turn arrow phase.

Restriping the intersection of Creosote Road/US Highway 49 is recommended to have dedicated eastbound dual left turn lanes and a single shared thru/right turn lane. This modification would allow east/west concurrent phasing. Additionally, the shared northern (eastbound) thru/left turn lane does not align with the receiving lane on the east side of the intersection. A southbound right turn overlap phase is also recommended to have this heavy southbound right turning movement be free flow while the east/west dual left turns are moving.

The location of the proposed multi-use paths, median barrier/fencing, pedestrian hybrid beacon and pedestrian intersection improvements are shown in **Figures 5A-B**. Drone imagery was not allowed to be flown (by FAA) due to the fact that this section of US Highway 49 is in the glide slope of Runway 14 at the Gulfport Airport and there was a Temporary Flight Restriction (TFR). Existing aerial imagery was used as the backdrop for the proposed improvements.

GRAPHIC SCALE

50 0 25 50 100

1 inch = 50 feet
(IN FEET)

TURKEY CREEK

Construct 10' multi-use path with crosswalks at cross streets and accessible crossings of private driveways

TINT WORLD

RUSSELL BLVD.

VACANT

COASTAL FAMILY HEALTH CENTER\ PHARMACY

COMFORT SUITES

MR. & MRS. CRAB

RACEWAY

LAFAYETTE STREET

RUS MOTORS

TREASURE HUNT

1. 75 ft buffer with slotted curb or raised curb median island.
2. 18 ft transition with median barrier from 6" to 42" w/o fence.
3. 42" height median barrier with 42" fence on top
4. Provide high intensity crosswalks, ped push buttons, sidewalk ramps, improve channelized right turn angles w/ striping, use lagging left turn phasing for major street to protect pedestrians in crosswalks from turning vehicles.

RACEWAY

SEASHELL NAIL & SPA

PHILLIP'S BUILDING SUPPLY

REDD PEST SOLUTIONS

SOUTHERN MS. PLANNING & DEVELOPMENT CENTER (VACANT)

CSL PLASMA

POOLE STREET

SHRIMP BASKET

C SPIRE

CRICKET WIRELESS

METRO BEAUTY SUPPLY

EVANS STREET

GRAY'S FURNITURE GALLERIES

FISHER BLVD.

BOOST MOBILE

MELENGER STREET

T-MOBILE

SPEEDY CASH

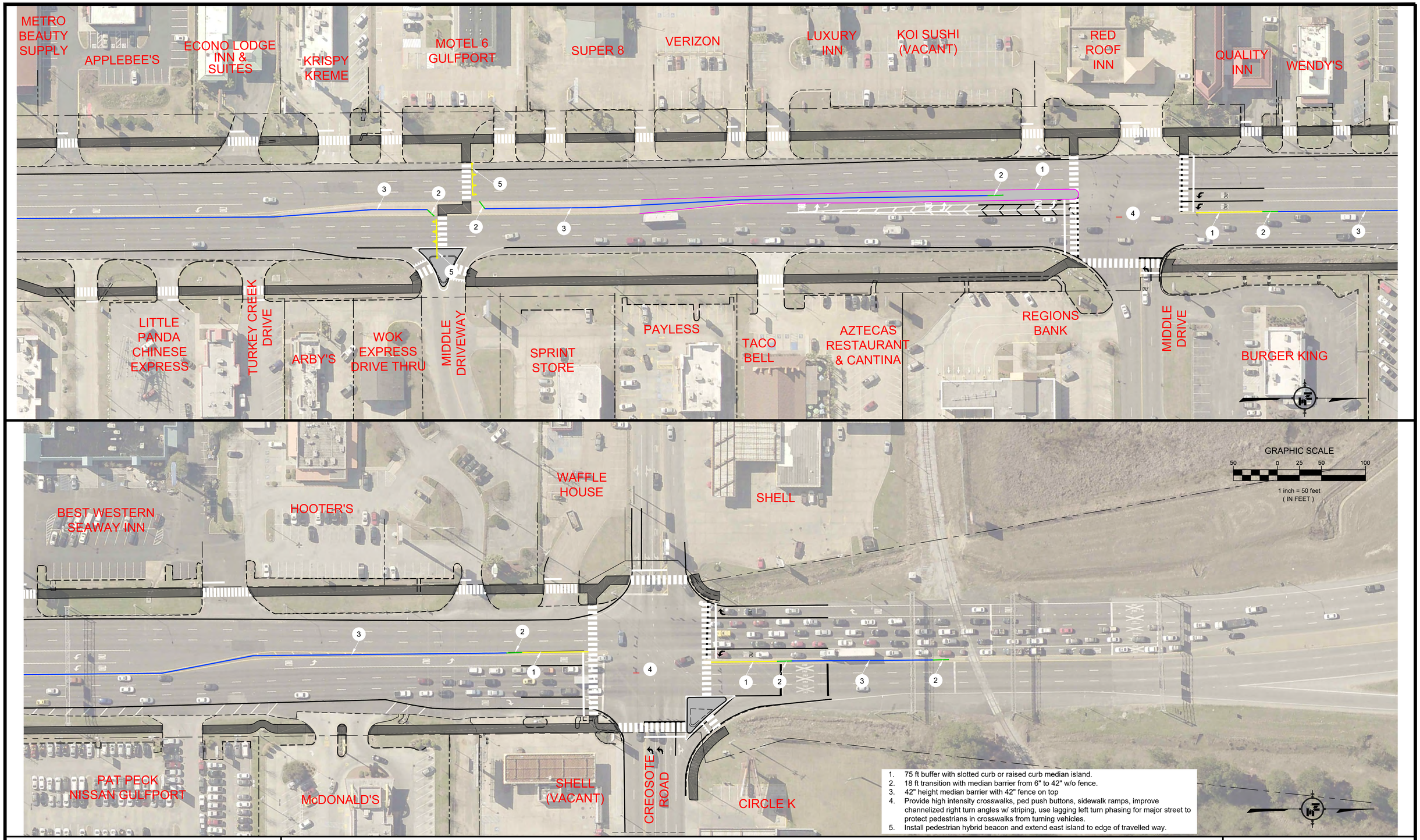
AIRPORT ROAD

BUTCH OUSTALET FORD

NEEL-SCHAFFER
Solutions you can build upon

US HIGHWAY 49 - RECOMMENDED IMPROVEMENTS

FIGURE
5A



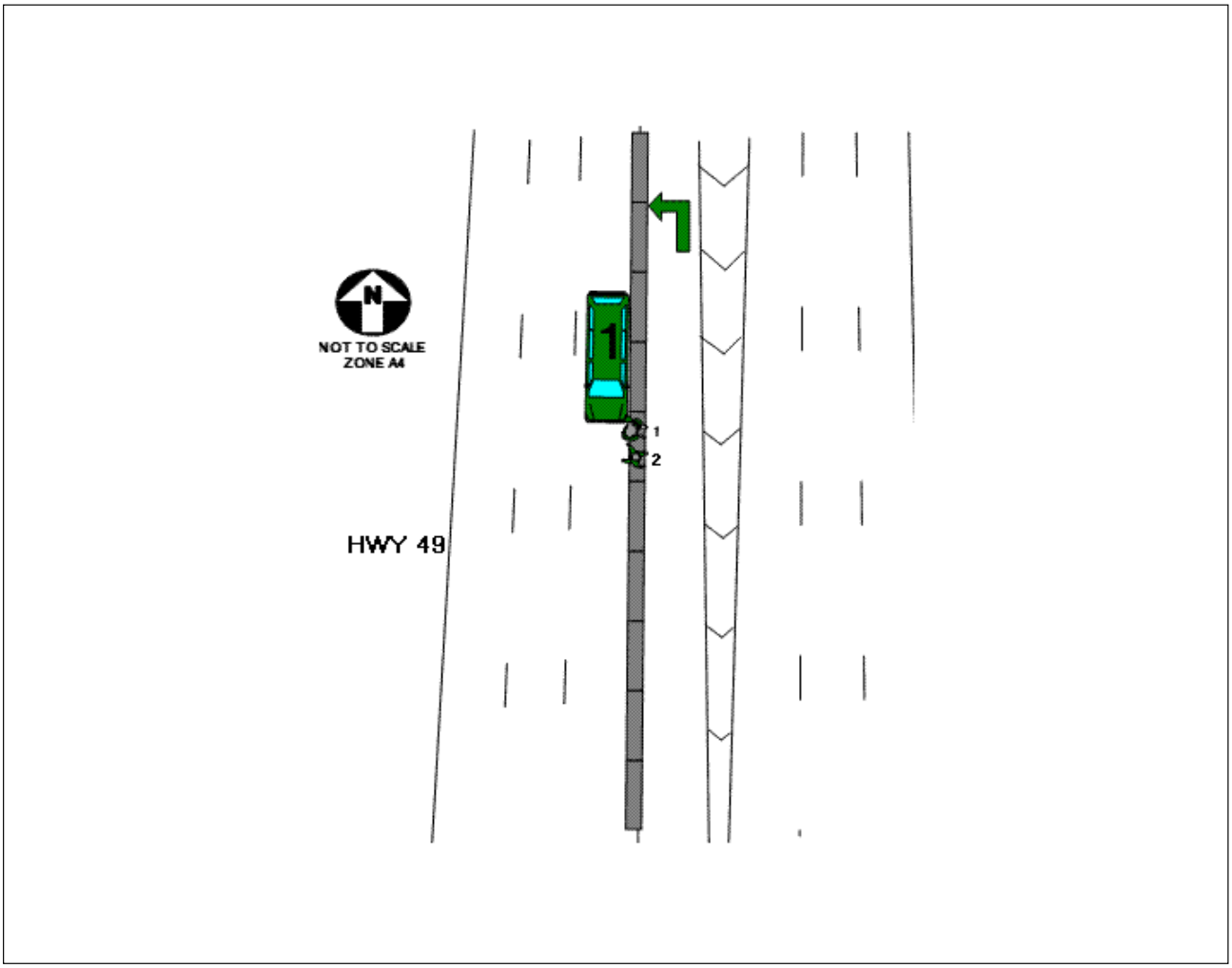
NEEL-SCHAFFER
Solutions you can build upon

US HIGHWAY 49 - RECOMMENDED IMPROVEMENTS

FIGURE
5B

Appendix

Agency ID: 2403 SAMS Crash ID: 634308 Case #: 12-008859



Narrative:

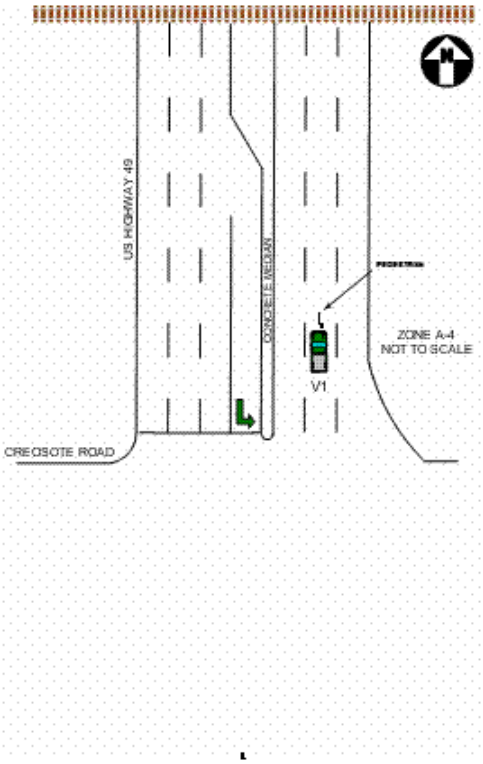
V1 WAS TRAVELING SOUTH ON HWY 49 SOUTH OF MIDDLE DRIVE IN THE FAR LEFT LANE. PEDESTRIAN 1 AND 2 WERE STANDING ON THE MIDDLE CONCRETE LEDGE OF HWY 49 BETWEEN NORTH AND SOUTHBOUND LANES OF TRAFFIC. PEDESTRIAN 1 LOST HER STEP AND FELL BACK INTO SOUTHBOUND LANES OF TRAVEL AND WAS COLLIDED BY THE DRIVER SIDE OF V1. V1 THEN BUMPED INTO PEDESTRIAN 2.

V1 DRIVER STATED HE WAS TRAVELING SOUTH ON HWY 49 AND SAW BOTH PEDESTRIANS CROSS HWY 49 AND STOPPED IN THE MIDDLE WAITING FOR NORTHBOUND LANES TO CLEAR. V1 DRIVER STATED AS HE WAS APPROACHING THE LOCATION OF PEDESTRIAN 1 AND 2, PEDESTRIAN 1 FELL BACK INTO HIS LANE OF TRAVEL CAUSING HIM TO HIT HER AND PEDESTRIAN 2.

PEDESTRIAN 1 STATED ALL SHE COULD REMEMBER WAS CROSSING HIGHWAY 49 AND STOPPING IN THE MIDDLE.

PEDESTRIAN 2 STATED HE WAS STANDING NEXT TO PEDESTRIAN 1 WHEN SHE WAS HIT BY V1 WHO WAS TRAVELING SOUTH ON HWY 49. PEDESTRIAN 2 STATED HE WAS HIT BY V1 DRIVER SIDE WHICH CAUSED HIM TO FALL TO THE GROUND.

Agency ID: 2403 SAMS Crash ID: 747058 Case #: 13-023935



Narrative:

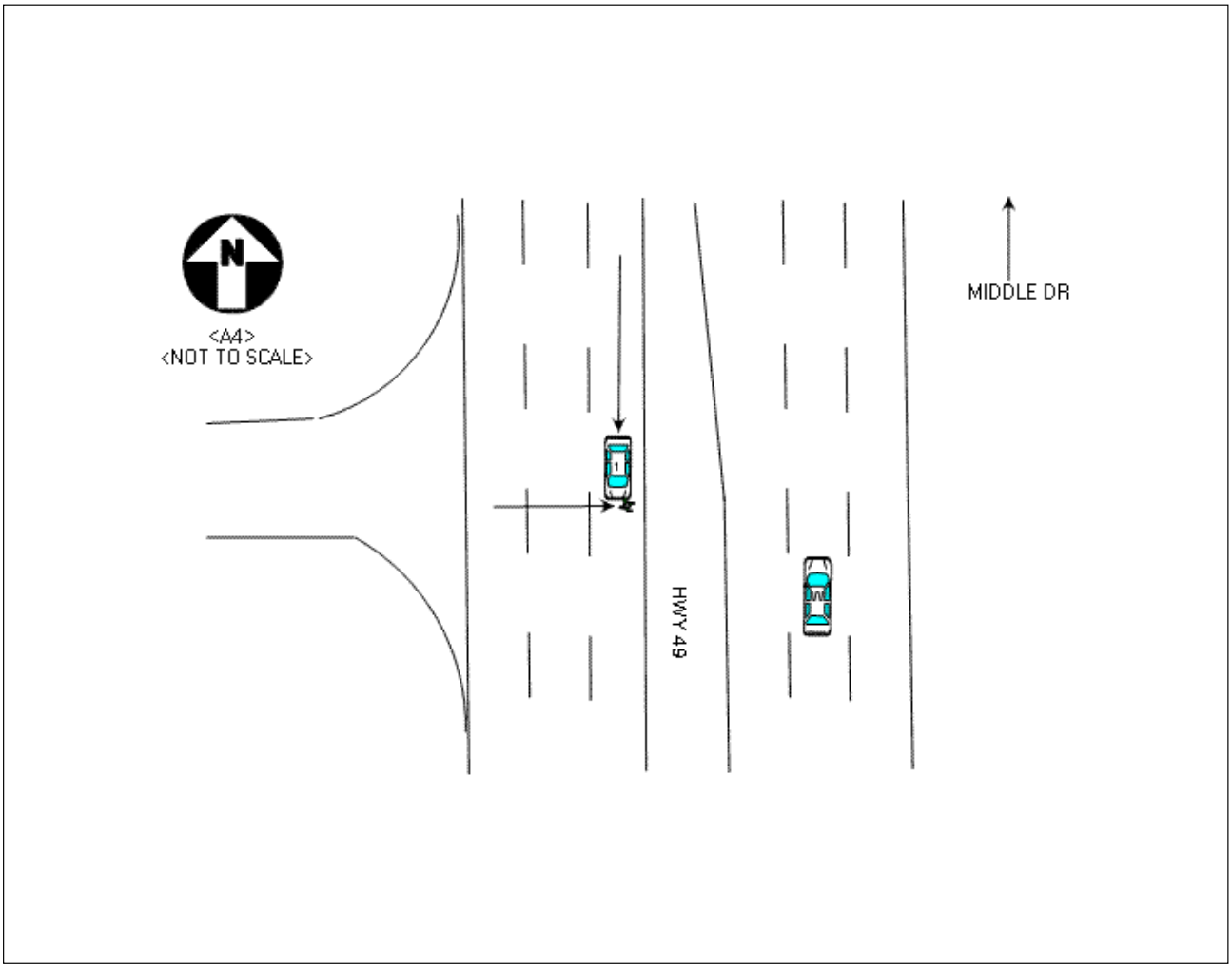
V1 WAS NORTHBOUND ON HWY 49 AFTER MAKING A LEFT TURN FROM CREOSOTE RD. WHILE COMPLETEING THE TURN, WHILE STILL IN HEAVY TRAFFIC, A PEDESTRIAN WALKED ACROSS THE ROADWAY IN TO HEAVY TRAFFIC. WHILE THE PEDESTRIAN WAS ATTEMPTING TO CROSS THE ONCOMING TRAFFIC HE WAS STRUCK BY V1.

THE DRIVER OF V1 STATED THAT HE WAS MAKING THE TURN IN HEAVY TRAFFIC AND DID NOT SEE THE PEDESTRIAN BEFORE STRIKING HIM.

THE PEDESTRIAN STATED THAT HE JUMPED OUT OF A VAN, AND ATTEMPTED TO CROSS TRAFFIC.

THE WITNESSES ALL STATED THAT THE PEDESTRIAN WAS STRUCK WHILE TRYING TO CROSS HWY 49 WHILE TRYING TO CROSS HEAVY TRAFFIC.

Agency ID: 2403 SAMS Crash ID: 837909 Case #: 14-029625



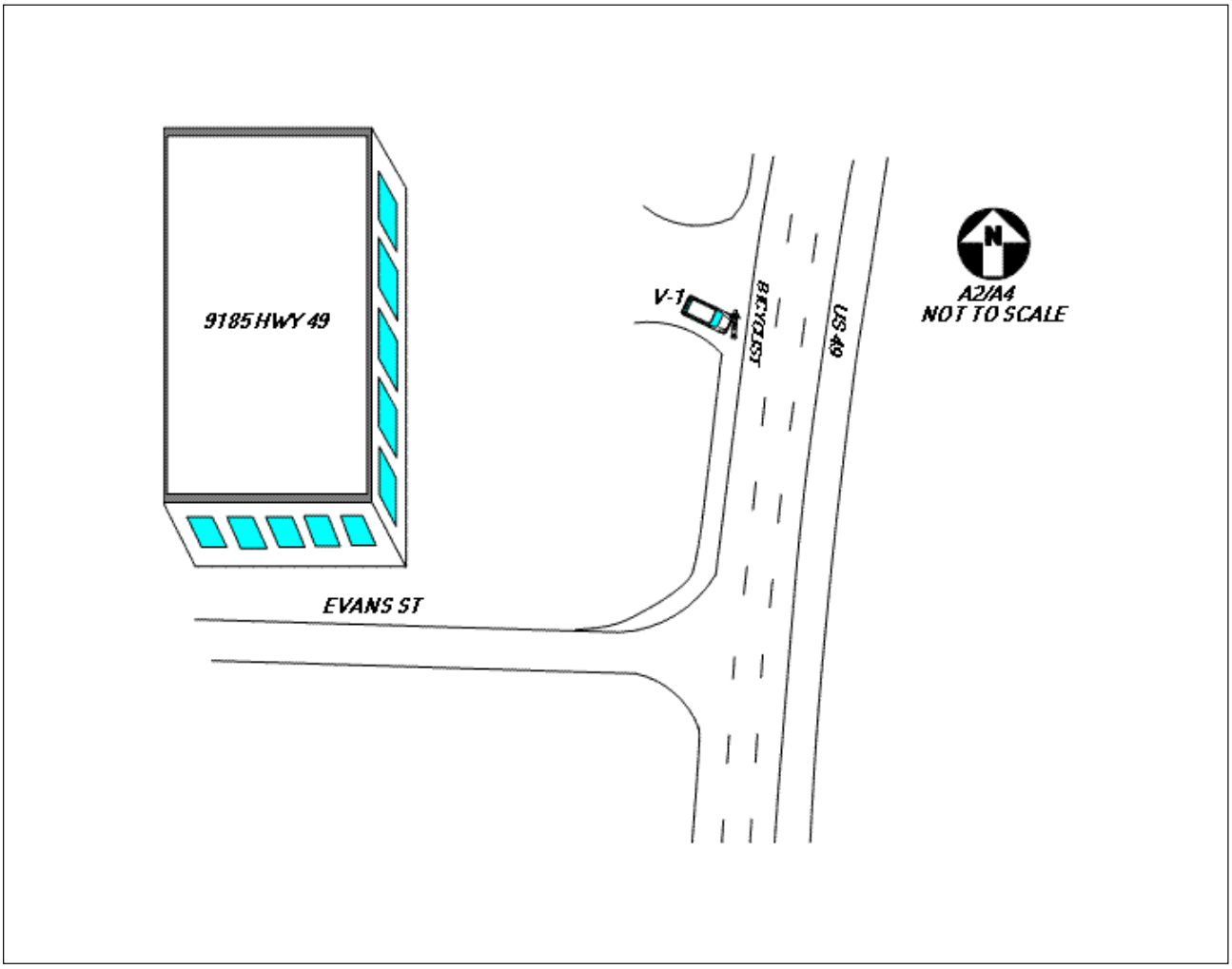
Narrative:

DRIVER SAID HE WAS SOUTHBOUND ON HWY 49 IN THE LEFT LANE. DRIVER SAID HE NEVER SAW THE PEDESTRIAN UNTIL HE HIT HIM AND SAW HIM COME UP OVER THE HOOD OF HIS VEHICLE.

WITNESS SAID SHE SAW PEDESTRIAN WALKING FROM WEST TO EAST TOWARDS WALMART ACROSS HWY 49 WHEN HE WAS STRUCK. WITNESS WAS NORTHBOUND IN THE MIDDLE LANE OF HWY 49.

V1 HAD DAMAGE TO THE FRONT DRIVERS CORNER OF THE BUMPER AND HOOD. PEDESTRIAN'S SHOES AND GLASSES WERE IN THE LEFT LANE OF HWY 49 IN FRONT OF THE VERIZON WIRELESS STORE AT 9385 HWY 49. PEDESTRIAN WAS TRANSPORTED BY AMR AND PRONOUNCED AT MEMORIAL HOSPITAL.

Agency ID: 2403 SAMS Crash ID: 871281 Case #: 15-011966



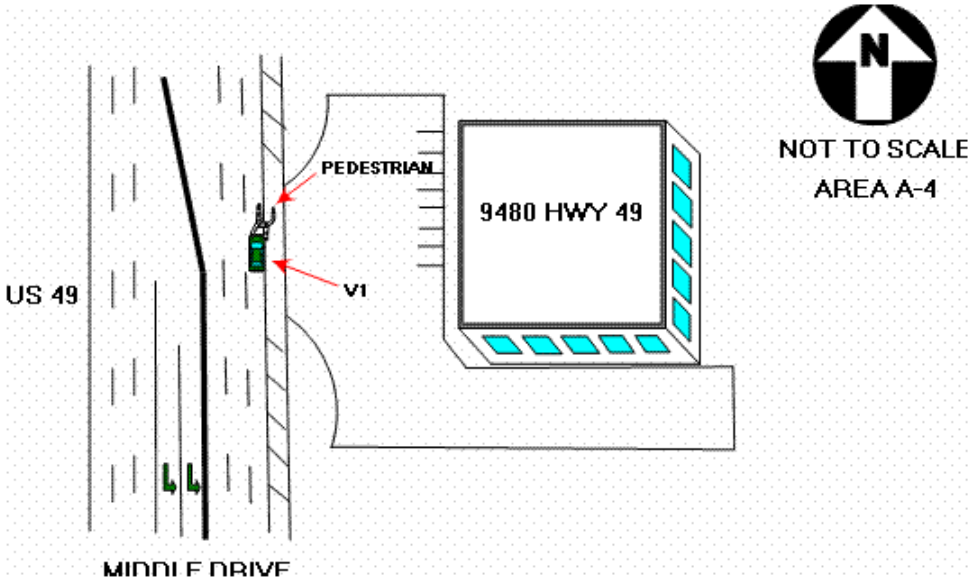
Narrative:

V-1 STATED THEY WERE LEAVING THE PARKING LOT 9185 HIGHWAY 49 (PHILLIP'S BUILDING SUPPLY) TURNING SOUTH ONTO US 49 WHEN THE BICYCLIST ROAD OUT IN FRONT OF HER AND SHE HIT HIM.

THE BICYCLIST STATED HE WAS RIDING NORTH ON THE OUTSIDE SHOULDER OF THE SOUTH BOUND US 49 TRAFFIC WHEN HE WAS HIT BY V-1 LEAVING THE PARKING LOT OF PHILLIPS BUILDING SUPPY. THE BICYCLIST STATED HE SAW V-1 AND THOUGHT SHE HAD STOPPED SO HE KEPT RIDING NORTH AND SHE HIT HIM.

I FIND THE BICYCLIST TO BE AT FAULT FOR THE ACCIDENT BY FAILING TO YIELD THE RIGHT OF WAY TO V-1 AND BY RIDING HIS BICYCLE AGAINST TRAFFIC RATHER THAN ON THE OPPOSITE SIDE OF US 49 RIDING WITH TRAFFIC.

Agency ID: 2403 SAMS Crash ID: 883419 Case #: 15-016356

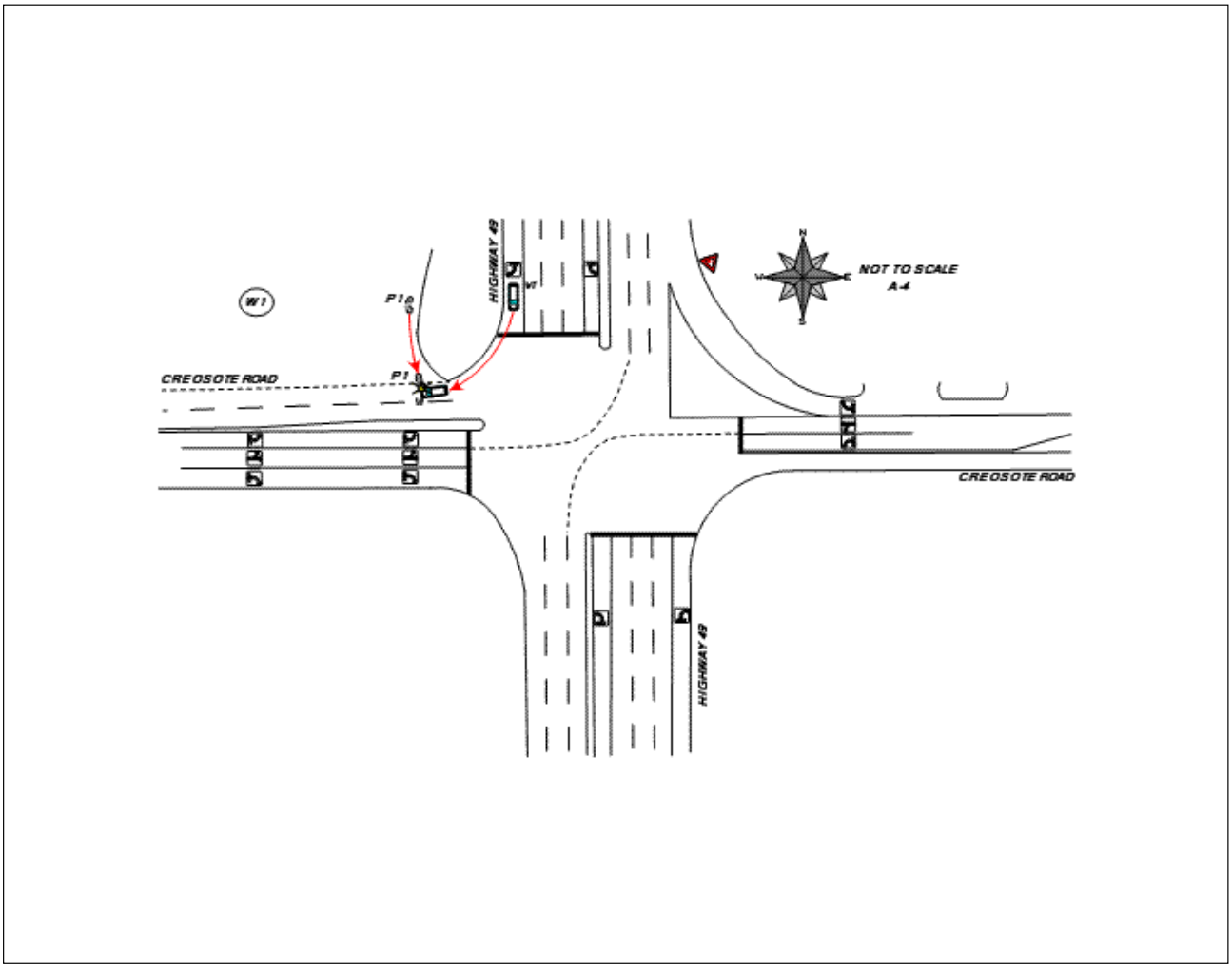


Narrative:

THE DRIVER OF V1 STRUCK THE PEDESTRIAN IN FRONT OF 9480 HWY 49. THE DRIVER OF V1 STOPPED, GAVE THE PEDESTRIAN A RIDE TO HER JOB, DROPPED HER OFF, AND LEFT THE SCENE.

THE PEDESTRIAN STATED THAT SHE WAS ATTEMPTING TO CROSS THE ROAD IN FRONT OF 9480 HWY 49 WHEN SHE NOTICED A GRAY NISSAN CAR COMING HER WAY, SO SHE TRIED TO RUN BACK OFF OF THE ROADWAY WHEN SHE WAS STRUCK BY V1. THE PEDESTRIAN STATED THAT THE DRIVER OF V1 STOPPED AND PROVIDED HER A RIDE TO HER JOB ACROSS THE STREET. THE PEDESTRIAN STATED THAT THE DRIVER OF V1 ASKED IF SHE WAS ALRIGHT; SHE STATED YES, AND THE DRIVER OF V1 LEFT THE SCENE.

Agency ID: 2403 SAMS Crash ID: 894834 Case #: 15-019813



Narrative:

VEHICLE 01 WAS TURNING RIGHT FROM THE SOUTHBOUND RIGHT LANE OF US 49 IN ORDER TO TRAVEL WESTBOUND ON CREOSOTE ROAD IN THE RIGHT LANE WHEN IT STRUCK PEDESTRIAN 01 WHO WAS CYCLING SOUTHBOUND ACROSS THE WESTBOUND LANES OF CREOSOTE ROAD FROM THE PARKING LOT OF 10015 US 49 (SHELL GAS STATION).

DRIVER OF VEHICLE 01 STATED SHE WAS MAKING A RIGHT TURN FROM SOUTHBOUND US 49 IN ORDER TO TRAVEL WESTBOUND ON CREOSOTE ROAD WHEN PEDESTRIAN 01 RODE HIS BICYCLE DIRECTLY IN FRONT OF HER FROM A PARKING LOT ON HER RIGHT SIDE.

PEDESTRIAN 01 STATED HE WAS CROSSING CREOSOTE ROAD SOUTHBOUND IN ORDER TO TRAVEL SOUTHBOUND ON US 49 AND DID NOT SEE VEHICLE 01 APPROACHING.

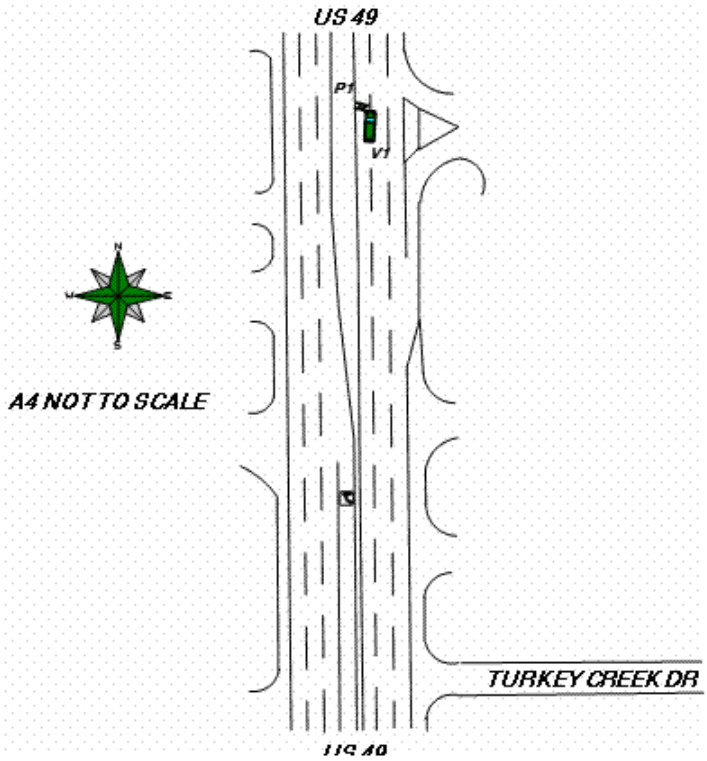
WITNESS 01 STATED HE WAS STOPPED IN THE PARKING LOT OF 10015 US 49 WHEN HE OBSERVED PEDESTRIAN 01 RIDING HIS BICYCLE FROM THE PARKING LOT ACROSS CREOSOTE ROAD WHERE HE WAS STRUCK BY VEHICLE 01. WITNESS 01 STATED IT DID NOT APPEAR TO HIM THAT PEDESTRIAN 01 SLOWED BEFORE ENTERING THE ROADWAY NOR DID HE APPEAR TO LOOK TO HIS LEFT TO CHECK FOR ONCOMING TRAFFIC PRIOR TO ENTERING THE ROADWAY.

I OBSERVED DAMAGE TO THE FRONT PASSENGER SIDE OF VEHICLE 01 FROM THE IMPACT WITH PEDESTRIAN 01. THIS DAMAGE APPEARED TO HAVE BEEN CAUSED BY A FORCE PERPENDICULAR TO THE PASSENGER SIDE OF VEHICLE 01. THERE WAS ALSO CONTACT DAMAGE SHOWING WHERE PEDESTRIAN 01 TRAVELED ACROSS THE FRONT OF VEHICLE 01'S HOOD.

I DID NOT OBSERVE ANY EVIDENCE OF THE COLLISION IN THE ROADWAY OTHER THAN THE FINAL REST OF PEDESTRIAN 01 AND HIS BICYCLE.

PEDESTRIAN 01 COMPLAINED OF PAIN TO HIS ANKLE.

Agency ID: 2403 SAMS Crash ID: 918815 Case #: 15-028814

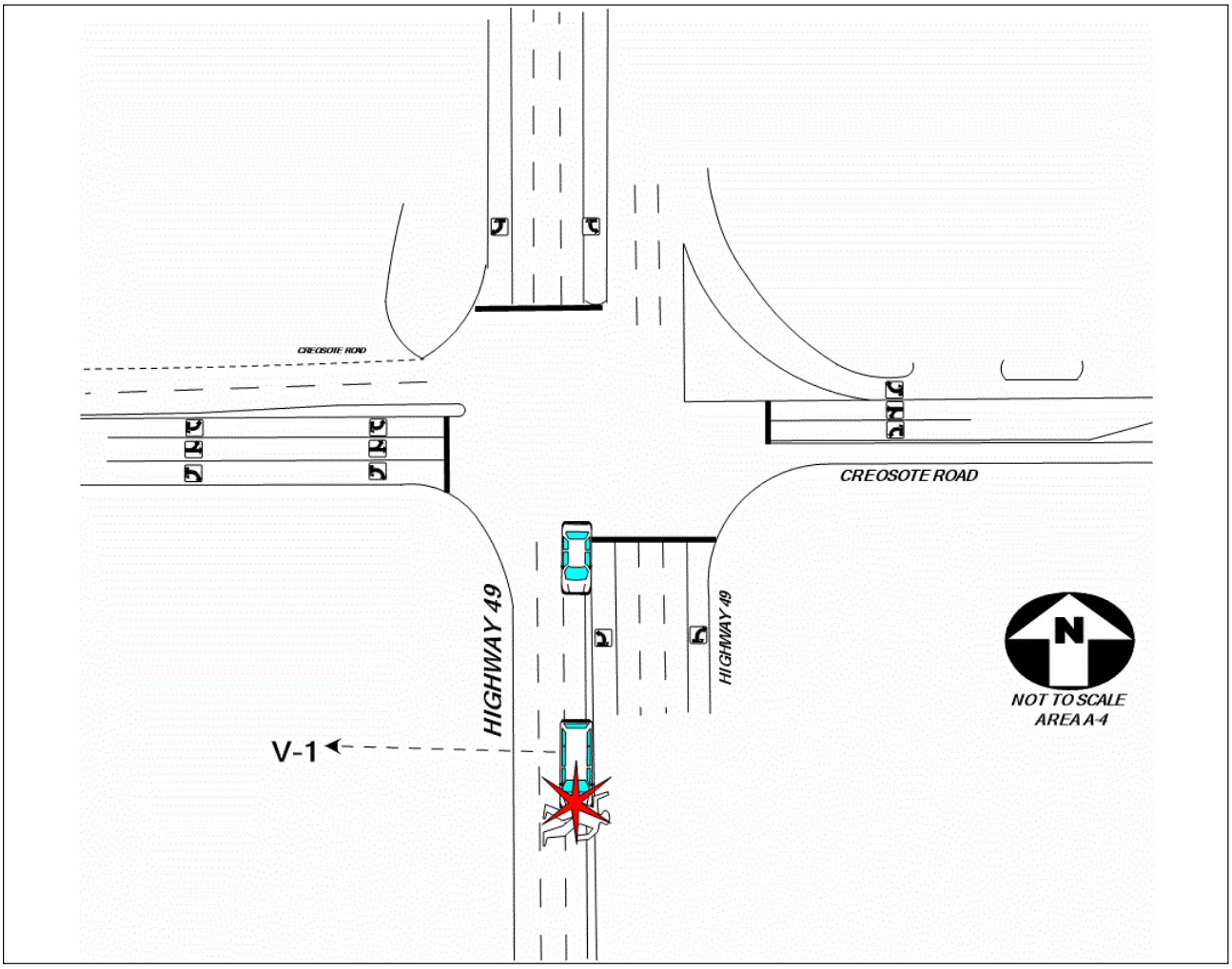


Narrative:

V1 STATED THAT WHILE TRAVELING NORTHBOUND ON US 49 NORTH OF TURKEY CREEK DRIVE HE OBSERVED P1 CROSSING US 49 FROM EAST TO WEST. V1 ATTEMPTED SWERVE TO THE RIGHT TO AVOID HIM HOWEVER, HE STRUCK P1 WITH THE DRIVER'S SIDE RUNNING BOARD OF HIS VEHICLE CAUSING A DEEP LACERATION TO THE RIGHT LEG OF P1.

P1 WAS IN A GREAT AMOUNT OF PAIN AND THE ONLY STATEMENT HE MADE WAS THAT HE WAS ATTEMPTING TO GET ACROSS THE ROAD. P1 WAS WEARING BLACK PANTS AND AN OLIVE COLORED JACKET.

Agency ID: 2403 SAMS Crash ID: 966577 Case #: 16-013444



Narrative:

ON 6/1/16 AT 2326 HOURS, I, OFFICER , RESPONDED NEAR THE INTERSECTION OF HWY 49 AND CREOSOTE ROAD IN REFERENCE TO AN ACCIDENT INVOLVING A PEDESTRIAN.

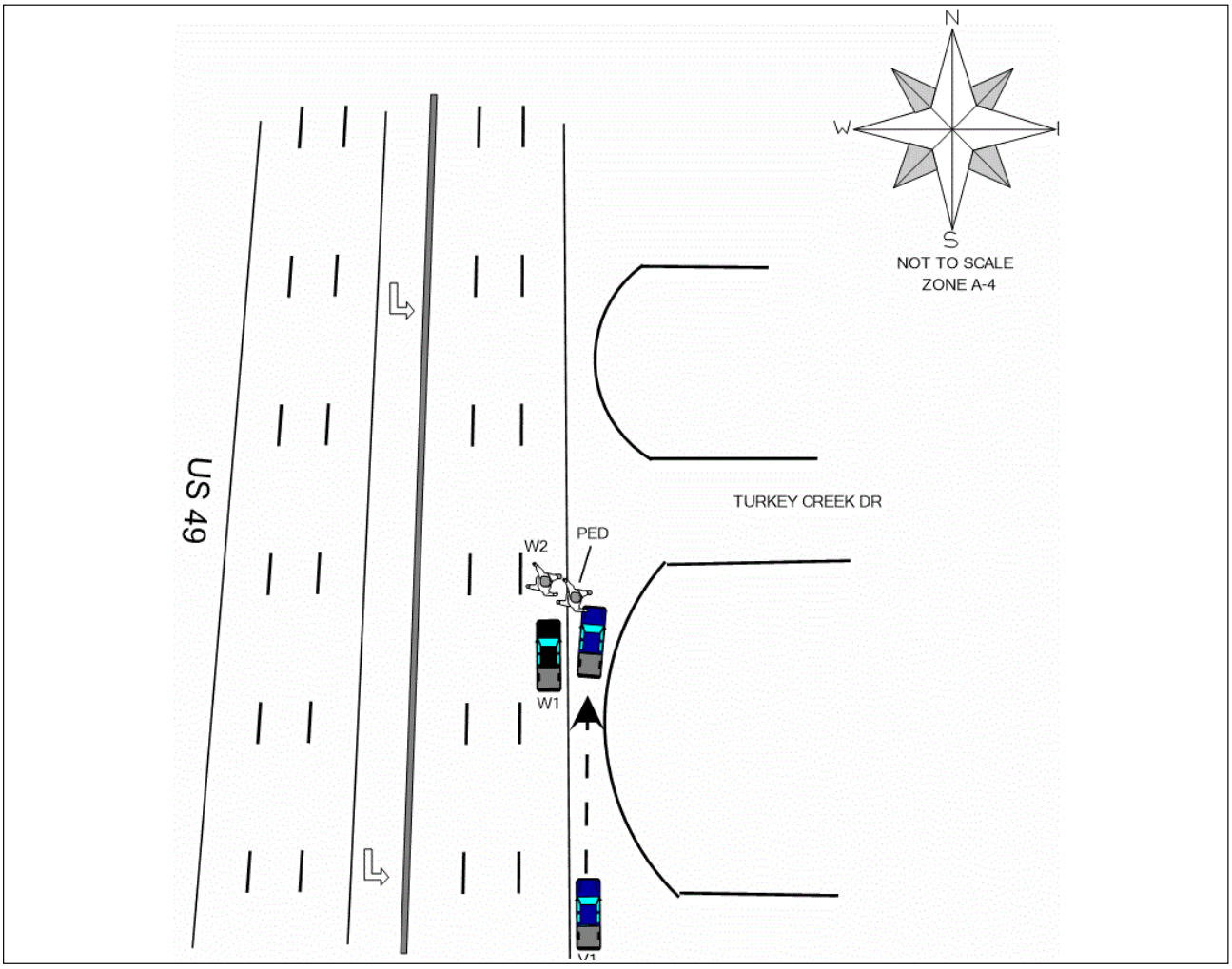
UPON ARRIVAL, I SPOKE WITH W/M WHO STATED A WHITE 2013 HONDA ODYSSEY (TAG#) STRUCK A W/F WHILE SHE WAS WALKING IN THE ROADWAY. STATED THE WHITE VAN WAS A FEW CARS AHEAD OF HIS VEHICLE. STATED THE WHITE VAN WAS TRAVELING IN THE FAR LEFT LANE HEADED SOUTHBOUND.

STATED THE VEHICLE STRUCK AND CONTINUED SOUTHBOUND ON HWY 49. STATED HE FOLLOWED THE VEHICLE ALL THE WAY TO 34TH STREET IN WHICH THE VEHICLE WENT EASTBOUND ON 34TH STREET FROM HWY 49. STATED HE LOST THE VEHICLE ONCE ON 34TH STREET.

I SPOKE WITH . WAS UNABLE TO PROVIDE ME AN ACCOUNT OF WHAT OCCURRED AND HOW SHE SUSTAINED HER INJURIES DUE TO HER BEING IN PAIN. I OBSERVED TO BE INTOXICATED. SUSTAINED INJURIES TO HER HEAD, LEFT ARM, AND BACK. WAS TRANSPORTED TO GARDEN PARK HOSPITAL. NOTHING FURTHER AT THIS TIME.

(8094)

Agency ID: 2403 SAMS Crash ID: 1002819 Case #: 16-027587



Narrative:

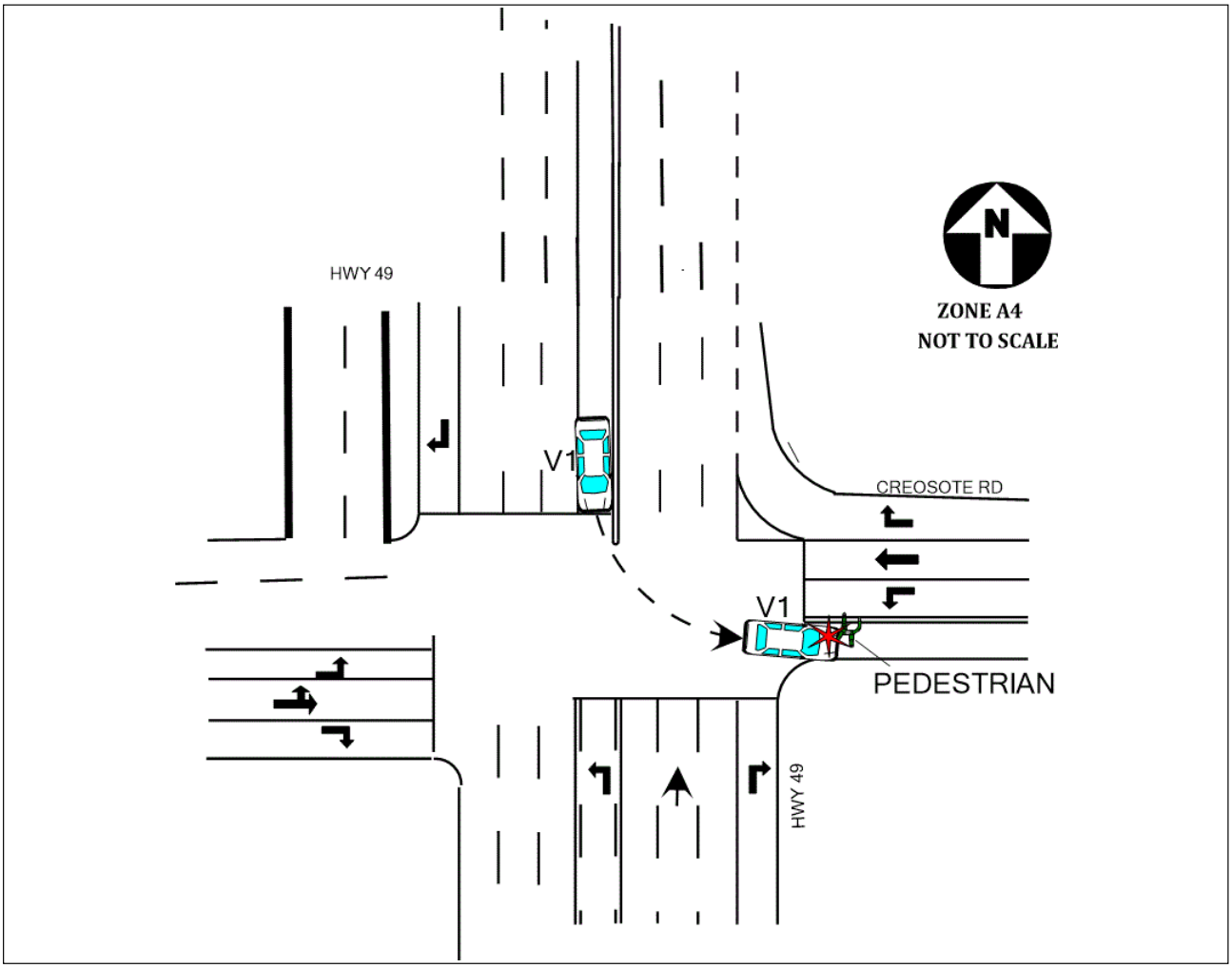
DRIVER OF V1 STATED SHE WAS NB IN THE TURNING LANE TO MAKE A RIGHT TURN ONTO TURKEY CREEK DR WHEN A PEDESTRIAN STEPPED OUT IN FRONT OF HER VEHICLE CAUSING HER TO STRIKE HIM ON HIS RIGHT SIDE AT APPROXIMATELY 15 MPH.

PEDESTRIAN STATED HE WAS CROSSING US 49 WHILE TRAFFIC WAS BACKED UP AND STOPPED, HE STATED WHEN HE WAS CROSSING THROUGH THE FAR RIGHT LANE HE WAS STRUCK BY V1.

W1 STATED SHE WAS STOPPED IN THE NB RIGHT LANE WHEN TWO PEDESTRIANS STARTED TO CROSS THE HWY IN FRONT OF HER. W1 STATED THE PEDESTRIAN CROSSED IN FRONT OF HER AND WAS THEN STRUCK BY V1 WHO WAS NB IN THE TURNING LANE.

W2 STATED HE WAS WALKING WITH THE PEDESTRIAN WHEN THEY CROSSED THE HWY THROUGH STOPPED TRAFFIC. W2 STATED THE PEDESTRIAN WAS A LITTLE AHEAD OF HIM. W2 STATED HE NOTICED THE TRUCK COMING NB IN THE TURNING LANE AND HE REACHED OUT TO GRAB THE PEDESTRIAN AS V1 STRUCK HIM.

Agency ID: 2403 SAMS Crash ID: 1008754 Case #: 16-029780

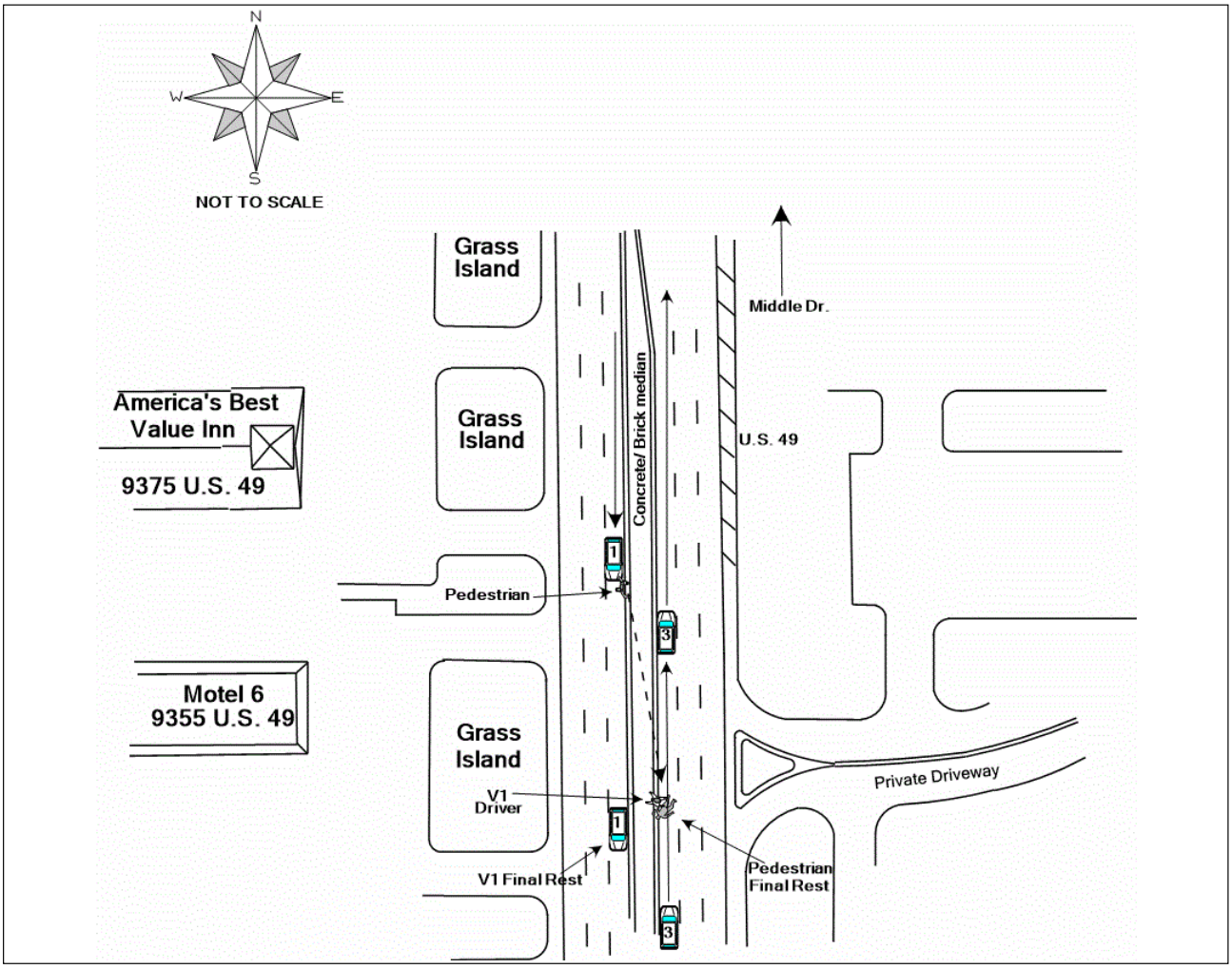


Narrative:

V1 DRIVER STATED SHE WAS MAKING A LEFT HAND TURN ONTO CREOSOTE RD WHEN A WHITE MALE RAN IN FRONT OF HER VEHICLE. V1 DRIVER STATED SHE WAS UNABLE TO STOP TO AVOID HITTING THE MALE.

THE PEDESTRIAN STATED HE WAS ATTEMPTED TO CROSS THE CREOSOTE RD AND THOUGHT THE ROADWAY WAS CLEAR. HE HAD COMPLAINTS OF PAIN ON SCENE.

Agency ID: 2403 SAMS Crash ID: 1021774 Case #: 17-001610



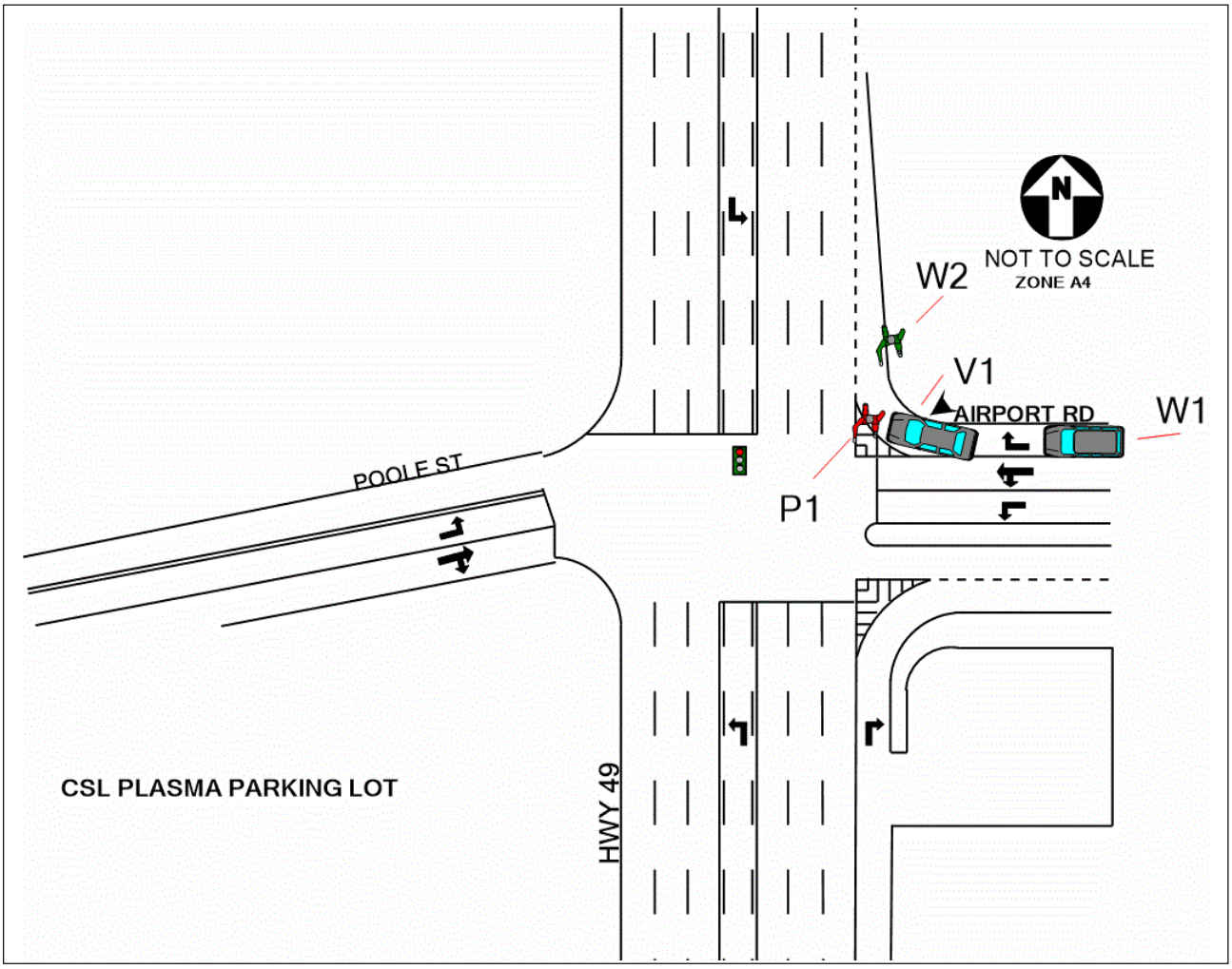
Narrative:

(ZONE A4) V1 WAS SOUTHBOUND IN THE LEFT LANE OF U.S. 49 IN THE AREA OF 9375 U.S. 49 (AMERICA'S BEST VALUE INN). AT THAT TIME, THE PEDESTRIAN ILLEGALLY CROSSED U.S. 49. THE PEDESTRIAN ENTERED U.S. 49 FROM THE WEST TOWARD THE CENTER MEDIAN. THE PEDESTRIAN CROSSED IN FRONT OF V1 AND WAS STRUCK WITH THE FRONT OF V1. THE PEDESTRIAN WAS THROWN SOUTHEAST TO THE LEFT NORTHBOUND LANE OF U.S. 49. V1 DRIVER AND THE PEDESTRIAN WERE LATER STRUCK IN THE NORTHBOUND LANE BY V3 AFTER V1 DRIVER STOPPED TO RENDER AID. V3 FLED THE SCENE NORTHBOUND ON U.S. 49.

V1 DRIVER SAID HE WAS SOUTH OF MIDDLE DRIVE TRAVELING SOUTHBOUND ON U.S. 49. WHILE SOUTHBOUND, THE PEDESTRIAN RAN EASTBOUND ACROSS U.S. 49 IN FRONT OF V1. V1 DRIVER DIDN'T HAVE TIME TO AVOID THE COLLISION AND STRUCK THE PEDESTRIAN. V1 DRIVER SAID HE DIDN'T SEE THE PEDESTRIAN UNTIL THE PEDESTRIAN WAS IN FRONT OF HIS VEHICLE. V1 DRIVER EXITED HIS VEHICLE TO RENDER AID TO THE PEDESTRIAN IN THE LEFT NORTHBOUND LANE OF U.S. 49.

V3 WAS NORTHBOUND IN THE LEFT LANE OF U.S. 49 WHEN IT STRUCK THE PEDESTRIAN AND V1 DRIVER. AFTER THE COLLISION, V3 FLED NORTHBOUND ON U.S. 49. V3 WAS DESCRIBED AS A BLUE COLORED SUV OR TRUCK.

Agency ID: 2403 SAMS Crash ID: 1130119 Case #: 18-009605



Narrative:

PEDESTRIAN 1 (P1) STATED HE WAS ROLLING IN POWER WHEELCHAIR S/B ON HWY 49 CROSSING AIRPORT RD. ON GREEN LIGHT WHEN HE WAS STRUCK BY V1 WHO WAS TURNING N/B ON HWY 49 FROM W/B AIRPORT RD. P1 STATED HE HAD MINOR PAIN (ABRASION) TO LEFT ELBOW AND HIP. NO DAMAGE TO HIS WHEELCHAIR. REFUSED TRANSPORT FROM AMR.

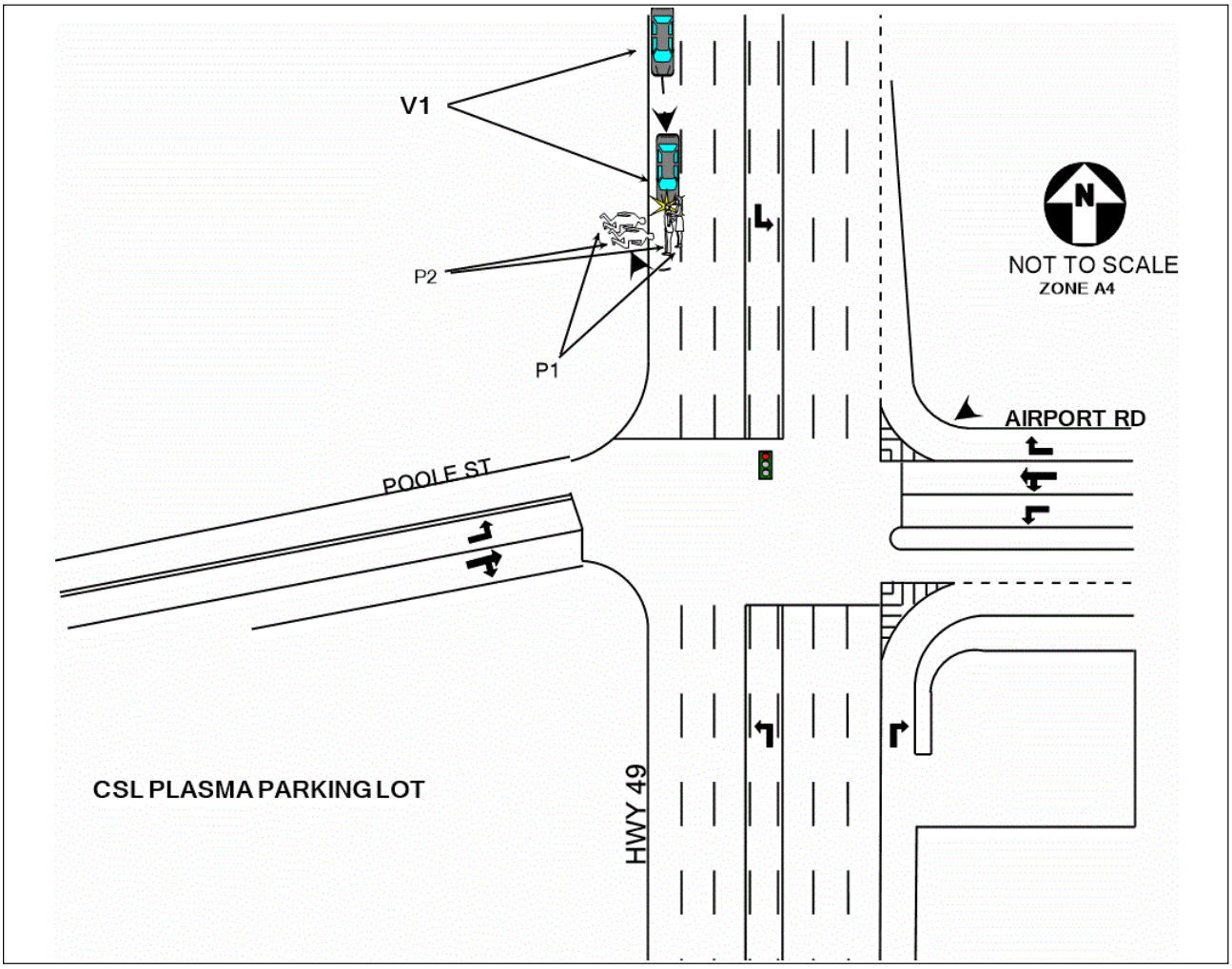
V1 STATED HE WAS MAKING N/B TURN ONTO HWY 49 FROM W/B AIRPORT RD. AND MADE SURE NO TRAFFIC WAS COMING FROM SOUTH, BUT DID NOT SEE P1 ON POWER WHEELCHAIR. V1 STATED HE STRUCK P1 WITH THE FRONT DRIVER'S SIDE OF HIS VEHICLE CAUSING MINOR DAMAGE TO FRONT BUMPER/QUARTER PANEL. NOT INJURED.

W1 STATED HE WAS THE VEHICLE DIRECTLY BEHIND V1 AND OBSERVED HIM STRIKE P1 WHO WAS TRAVELING S/B ON HWY 49 CROSSING AIRPORT RD. IN A POWER WHEELCHAIR.

W2 STATED SHE WAS ROLLING S/B ON HWY 49 IN HER POWER WHEELCHAIR A FEW YARDS BEHIND P1. W2 STATED SHE OBSERVED V1 STRIKE P1 WITH HIS VEHICLE AS DESCRIBED ABOVE.

BASED ON LOCATION OF DAMAGE, INJURIES AND STATEMENTS PROVIDED ON SCENE, V1 FAILED TO YIELD RIGHT OF WAY TO P1 WHO WAS TRAVELING S/B ON HWY 49 AND CROSSING AIRPORT RD. MINOR INJURIES.

Agency ID: 2403 SAMS Crash ID: 1141779 Case #: 18-013863



Narrative:

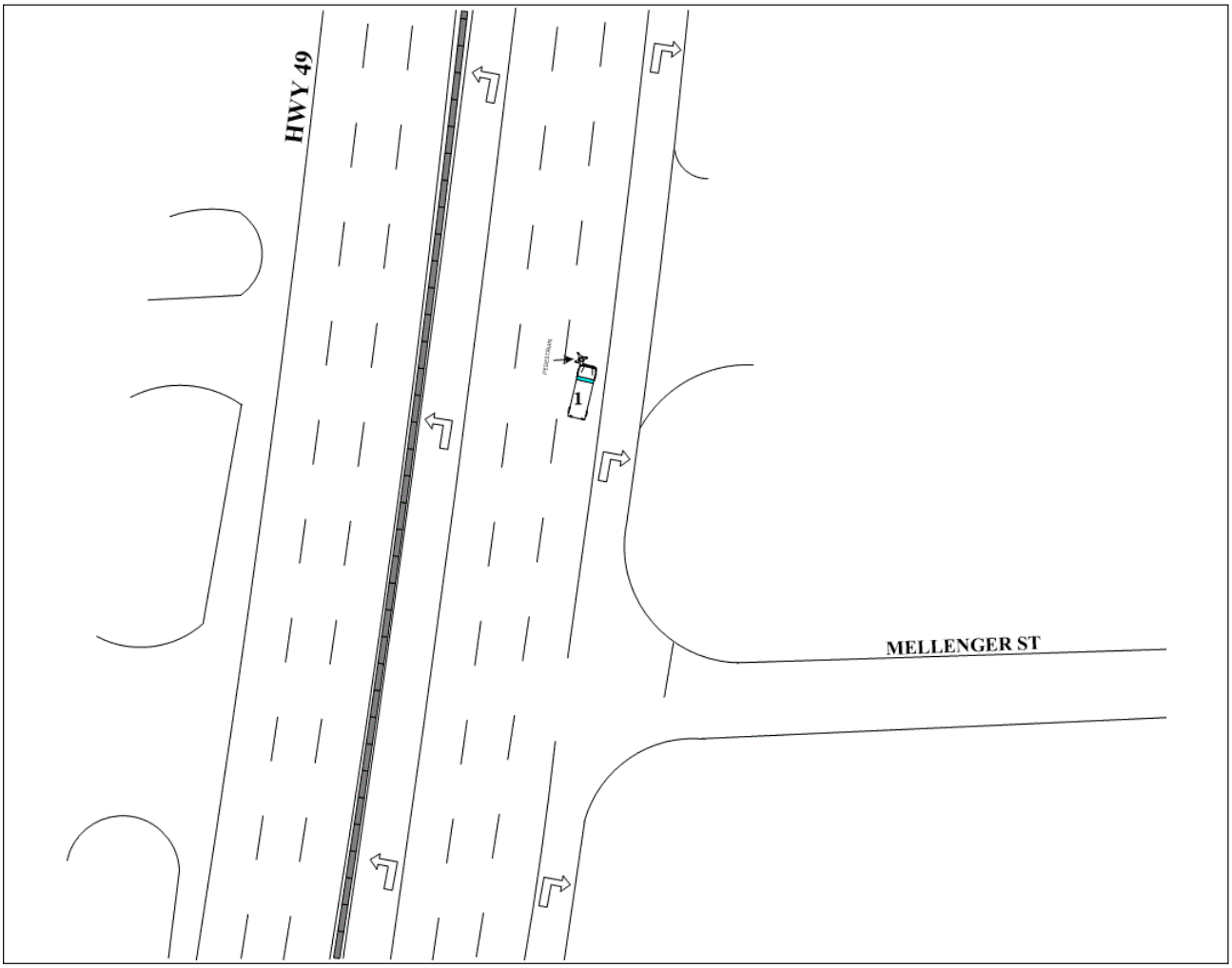
DRIVER OF V1 STATED SHE WAS TRAVELING SOUTHBOUND ON HWY 49 IN THE FAR RIGHT LANE WHEN SHE OBSERVED P2 CROSSING ALL LANES OF TRAVEL AND ATTEMPTED TO SLAM ON BRAKES. DRIVER OF V1 STATED SHE WAS UNABLE TO COME TO A COMPLETE STOP BEFORE STRIKING P2 WITH HER VEHICLE. DRIVER OF V1 STATED SHE NEVER OBSERVED P1 UNTIL AFTER THE CRASH WHEN SHE FELL ON HER HOOD.

P1 AND P2 WERE BOTH UNABLE TO PROVIDE STATEMENTS DUE TO THEM BEING TRANSPORTED VIA AMR AND BEING UNCOOPERATIVE.

PHOTOGRAPHS WERE OBTAINED AND UPLOADED TO VERIPIC.

VERY MINOR DAMAGE WAS OBSERVED TO THE HOOD OF V1.

Agency ID: 2403 SAMS Crash ID: 1147744 Case #: 18-016330



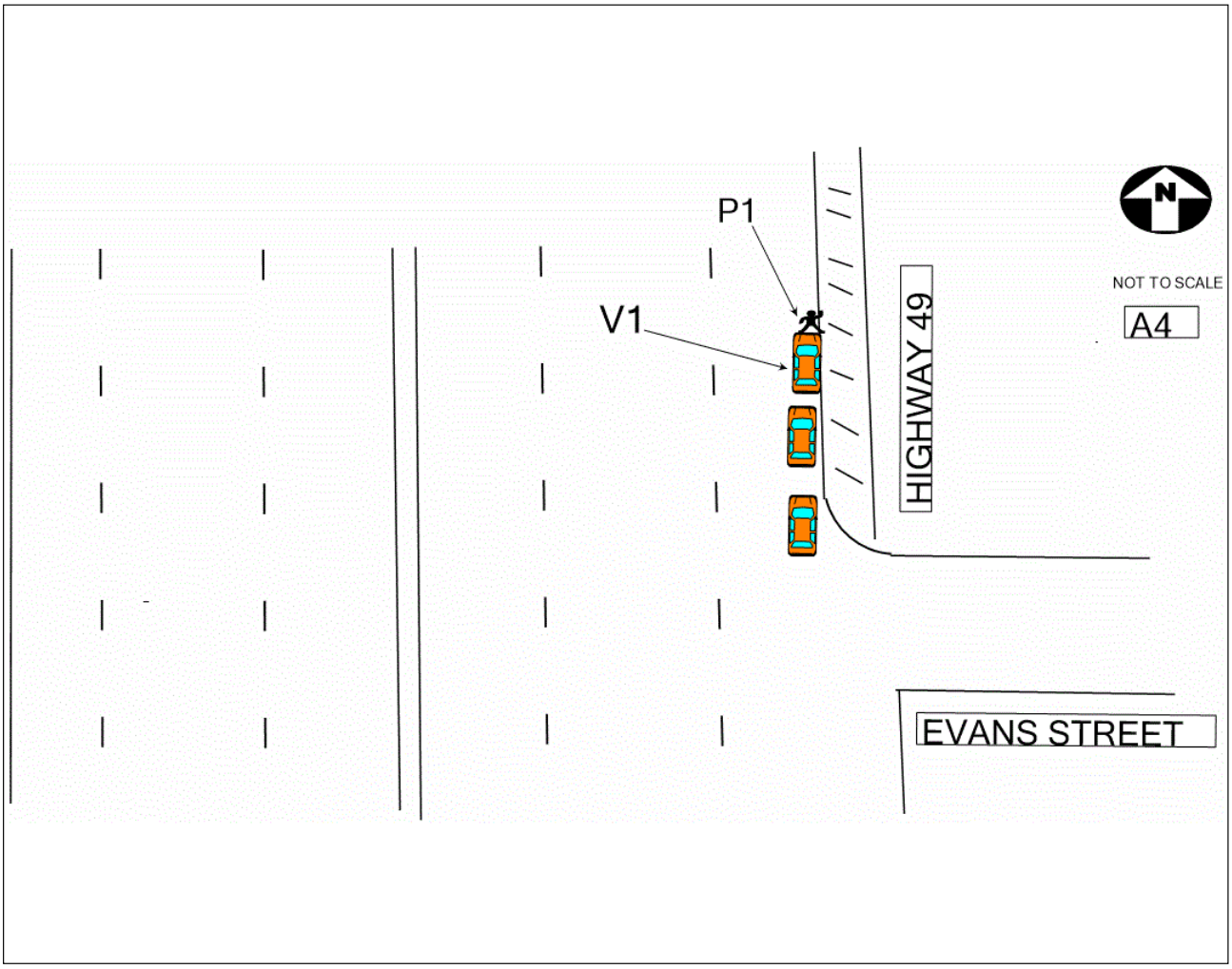
Narrative:

V1 WAS ATTEMPTING TO MOVE FROM THE ROADWAY FROM A CRASH HE WAS INVOLVED IN PRIOR TO THIS ACCIDENT. PEDESTRIAN WAS ATTEMPTING TO WALK OUT OF THE ROADWAY FROM A CRASH HE WAS INVOLVED IN PRIOR TO THIS ACCIDENT, INVOLVING PEDESTRIANS VEHICLE AND V1. (REFERENCE CASE # 18-016327). PEDESTRIAN WAS WALKING IN FRONT OF V1 WHILE DRIVER OF V1 WAS ATTEMPTING TO MOVE FROM THE ROADWAY. DRIVER OF V1 WAS INATTENTIVE TO THE PEDESTRIAN IN FRONT OF HIM BY LOOKING SOUTH TO CROSS THE RIGHT TURN LANE. V1 STRUCK THE PEDESTRIAN.

DRIVER OF V1 STATED HE WAS ATTEMPTING TO MOVE FROM THE ROADWAY WHEN HE STRUCK THE PEDESTRIAN. DRIVER OF V1 STATED HE DID NOT SEE THE PEDESTRIAN IN WALKING IN FRONT OF V1.

PEDESTRIAN STATED HE WAS ATTEMPTING TO WALK OUT OF THE ROADWAY WHEN V1 STRUCK HIM. PEDESTRIAN STATED WHILE HE WAS WALKING, V1 STRUCK HIM IN THE REAR, CAUSING HIM TO FALL ON HIS FACE.

Agency ID: 2403 SAMS Crash ID: 1155710 Case #: 18-018713

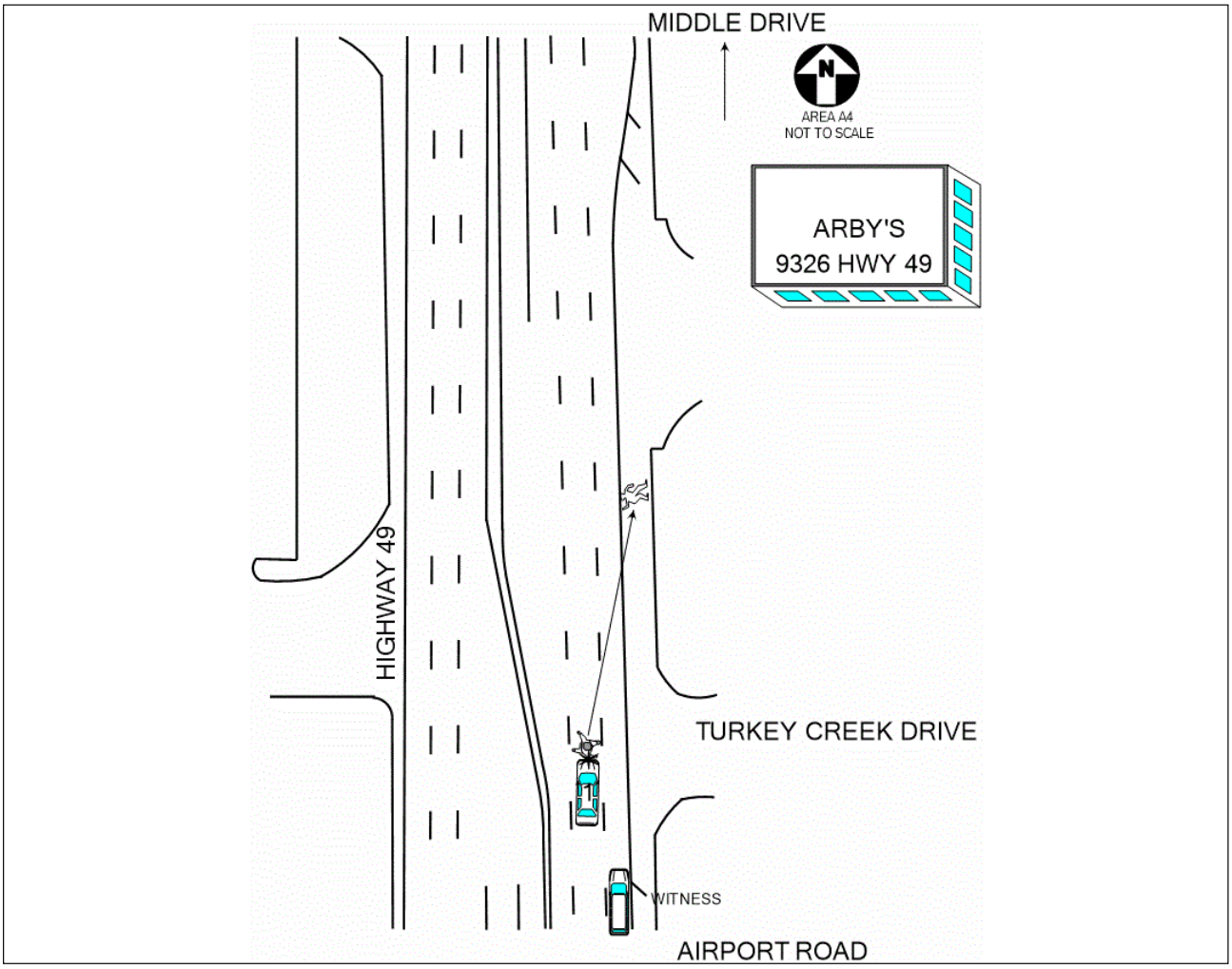


Narrative:

V1 WAS TRAVELING NORTHBOUND IN THE FAR RIGHT LANE OF TRAVEL ON HIGHWAY 49. V1 OBSERVED THE VEHICLE AHEAD OF HIM SWERVE TO AVOID THE PEDESTRIAN. V1 DID NOT HAVE TIME TO SWERVE TO AVOID THE PEDESTRIAN AND STRUCK THE PEDESTRIAN.

FROM OBSERVING THE SKID MARKS OF V1 THEY ALL APPEARED TO BE WITHIN THE LINES OF THE ROADWAY. IT APPEARED THAT THE PEDESTRIAN WAS WALKING IN THE ROADWAY AT THE TIME HE WAS STRUCK.

Agency ID: 2403 SAMS Crash ID: 1163802 Case #: 18-021581

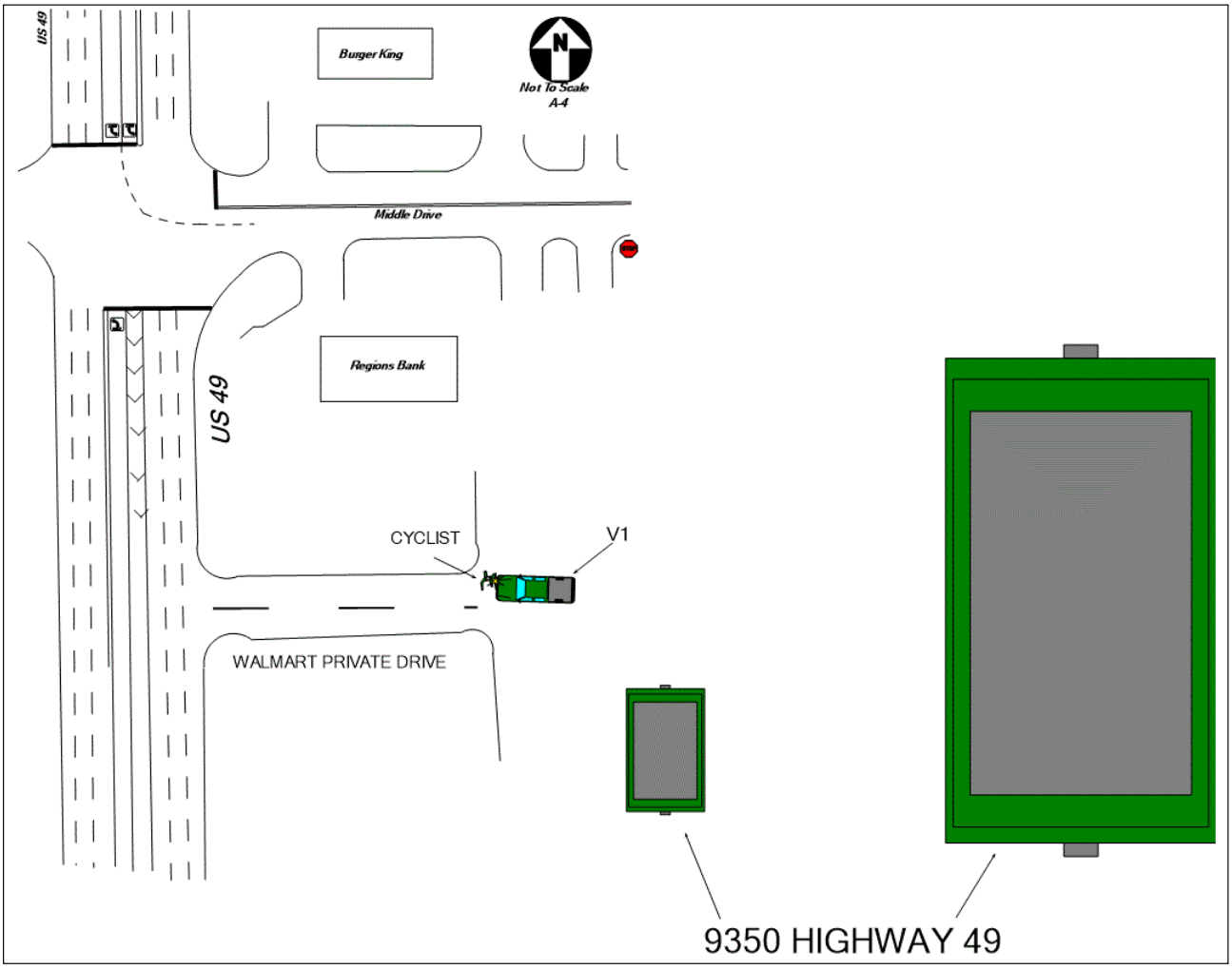


Narrative:

DRIVER OF V1 STATED HE WAS TRAVELING NORTHBOUND ON HIGHWAY 49 IN THE MIDDLE LANE NORTH OF AIRPORT ROAD AT APPROXIMATELY 40 MILES PER HOUR . DRIVER OF V1 STATED THAT THE VICTIM STEPPED OUT INTO TRAFFIC CAUSING THE FRONT OF V1 TO STRIKE THE VICTIM CAUSING DEATH.

WITNESS STATED HE WAS TRAVELING NORTHBOUND ON HIGHWAY 49 IN THE RIGHT LANE NORTH OF AIRPORT ROAD AT APPROXIMATELY 35 MILES PER HOUR. DUMAL SAID HE DID NOT SEE THE COLLISION BUT OBSERVED THE VICTIM ROLL OVER THE TOP OF V1 AFTER BEING STRUCK.

Agency ID: 2403 SAMS Crash ID: 1176044 Case #: 18-025601



Narrative:

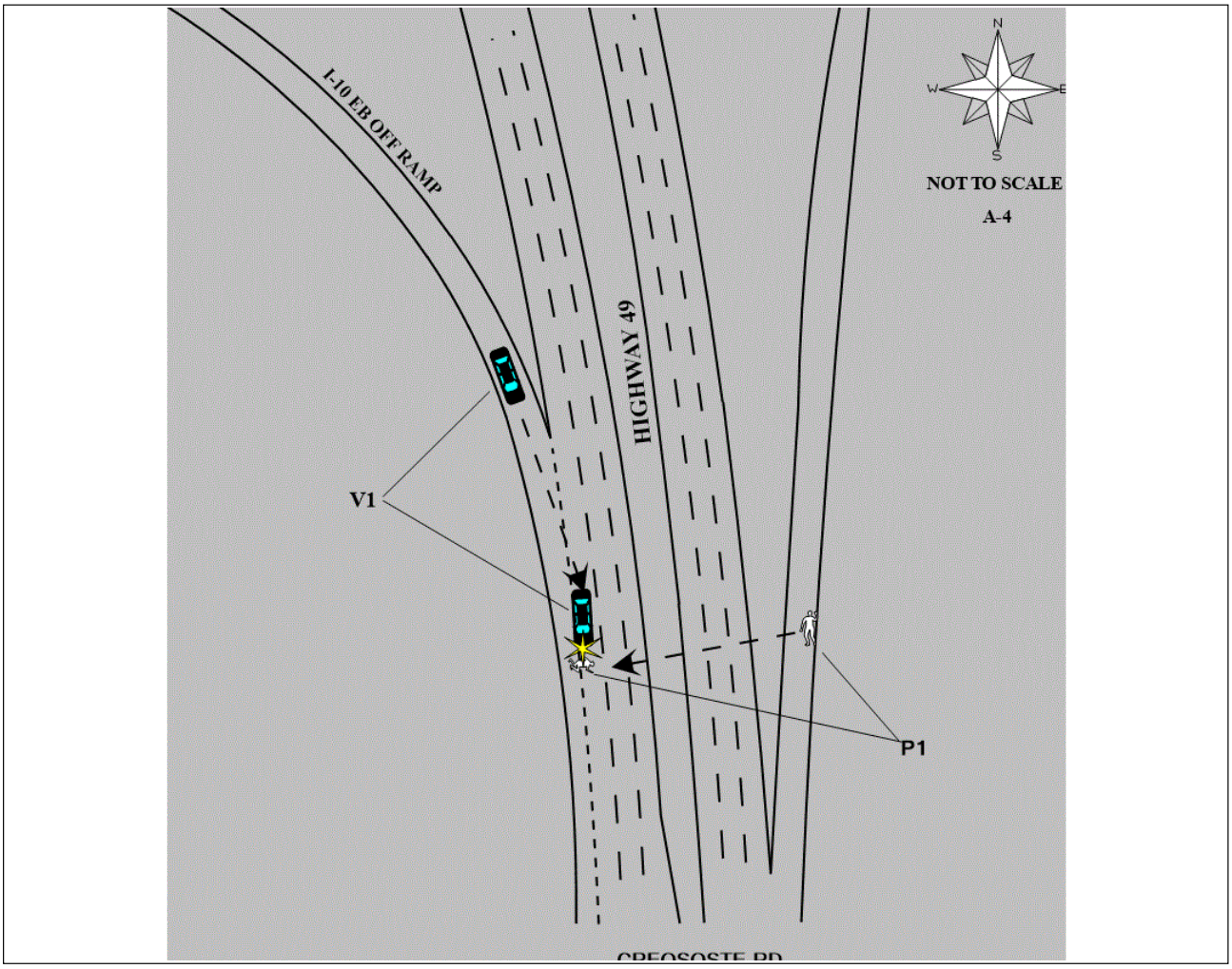
ON WEDNESDAY, DECEMBER 19, 2018 AT 1800 HOURS, OFFICER MCNAIR RESPONDED TO 9350 HIGHWAY 49 FOR A VEHICLE VERSUS CYCLIST ACCIDENT.

UPON ARRIVAL, OFFICER MCNAIR MADE CONTACT WITH THE CYCLIST. CYCLIST WAS LAYING ON THE GROUND WITH A BROKEN LEFT ANKLE. CYCLIST STATED HE WAS NOT SURE WHAT VEHICLE ONE WAS DOING, BUT HE DECIDED TO CROSS THE PRIVATE DRIVE ON HIS BICYCLE. CYCLIST SAID HE STARTED TO CROSS FROM NORTH TO SOUTH WHEN VEHICLE ONE STRUCK HIS LEFT SIDE THROWING HIM FROM THE BIKE. CYCLIST STATED THE DRIVER OF VEHICLE ONE DID NOT HIT HIM ON PURPOSE. CYCLIST WAS WEARING ALL DARK CLOTHES AND RIDING A DARK BIKE.

DRIVER OF VEHICLE ONE STATED HE WAS DRIVING OUT OF THE PARKING LOT OF 9350 HIGHWAY 49 TO HIGHWAY 49 ON THE PRIVATE DRIVE. DRIVER OF VEHICLE ONE SAID HE DID NOT SEE THE CYCLIST TILL HE HAD ALREADY HIT HIM WITH THE FRONT PASSENGER SIDE OF HIS TRUCK.

OFFICER MCNAIR 147 // 8287

Agency ID: 2403 SAMS Crash ID: 1195882 Case #: 19-005510



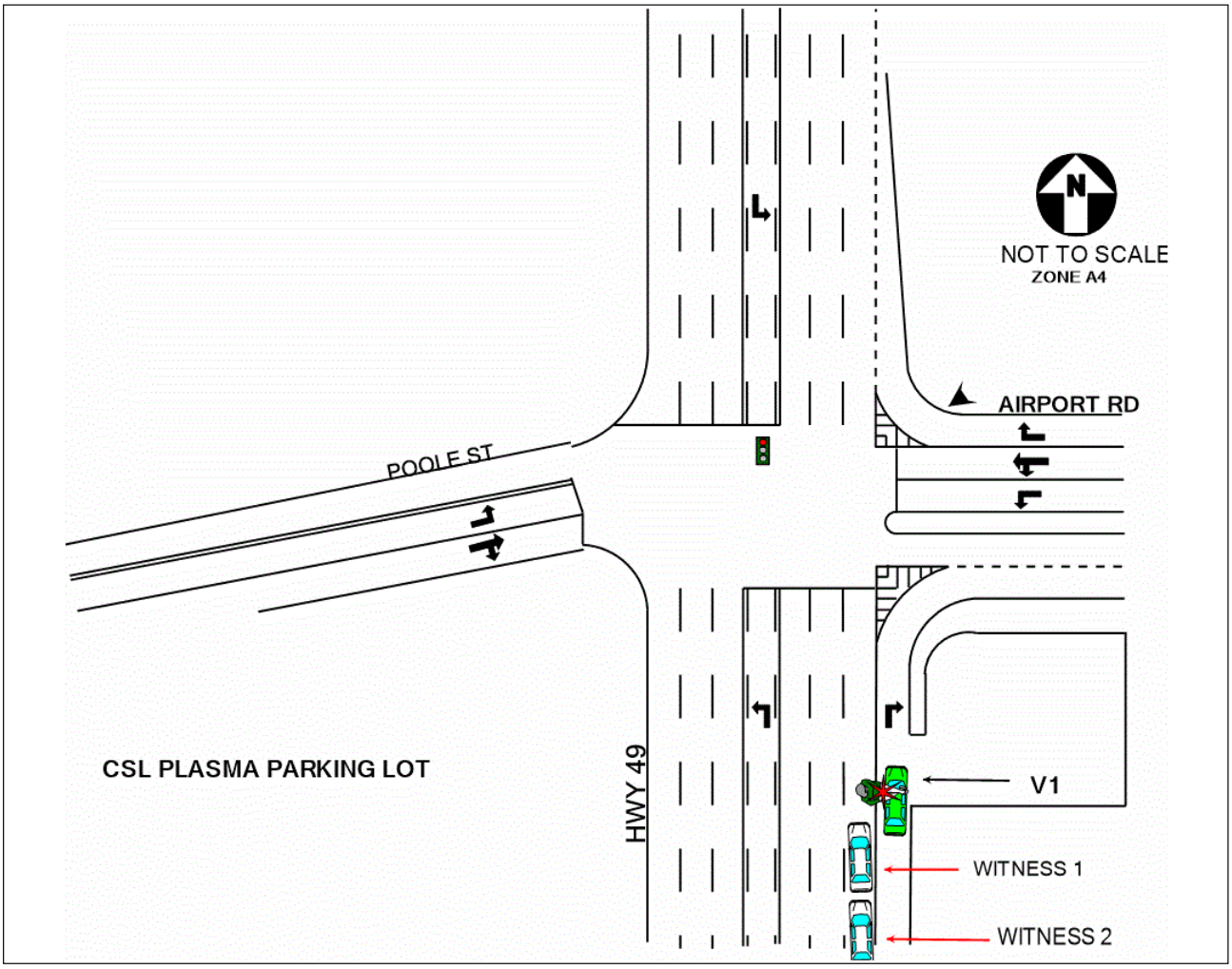
Narrative:

DRIVER OF V1 STATED HE WAS TRAVELING SOUTHBOUND ONTO HWY 49 FROM THE I-10 EXIT RAMP AT APPROXIMATELY 45 MPH WHEN HE LOOKED BACK TO MAKE SURE TRAFFIC WAS CLEAR HE STRUCK P1 WITH THE RIGHT SIDE OF HIS VEHICLE. DRIVER OF V1 STATED HE NEVER SAW P1.

P1 WAS UNABLE TO PROVIDE A STATEMENT DUE TO BEING TREATED BY MEDICAL STAFF. P1 WAS ONLY ABLE TO STATE THAT HE WAS IN PAIN.

WITNESS 1 STATED HIM AND P1 WERE CROSSING OVER ALL LANES OF TRAVEL ON HWY 49 FROM THE EAST SIDE TO THE WEST SIDE WHEN HE WALKED AHEAD OF P1 DUE TO HIM MOVING AT A SLOWER PACE. WITNESS 1 STATED HE HEARD THE COLLISION AND WHEN HE LOOKED BACK OBSERVED P1 ON THE GROUND IN FRONT OF V1.

Agency ID: 2403 SAMS Crash ID: 1209324 Case #: 19-009982



Narrative:

DRIVER OF V1 STATED SHE WAS NORTHBOUND ON HWY49 AT 20 MPH IN THE RIGHT TURNING LANE. DRIVER OF V1 STATED SHE DID NOT SEE THE PEDESTRIAN UNTIL SHE HEARD A NOISE AND SAW HER DRIVER SIDE MIRROR WAS BROKE. DRIVER OF V1 STATED THE PEDESTRIAN RAN OUT BETWEEN STOPPED VEHICLES FROM THE RIGHT NORTHBOUND LANE.

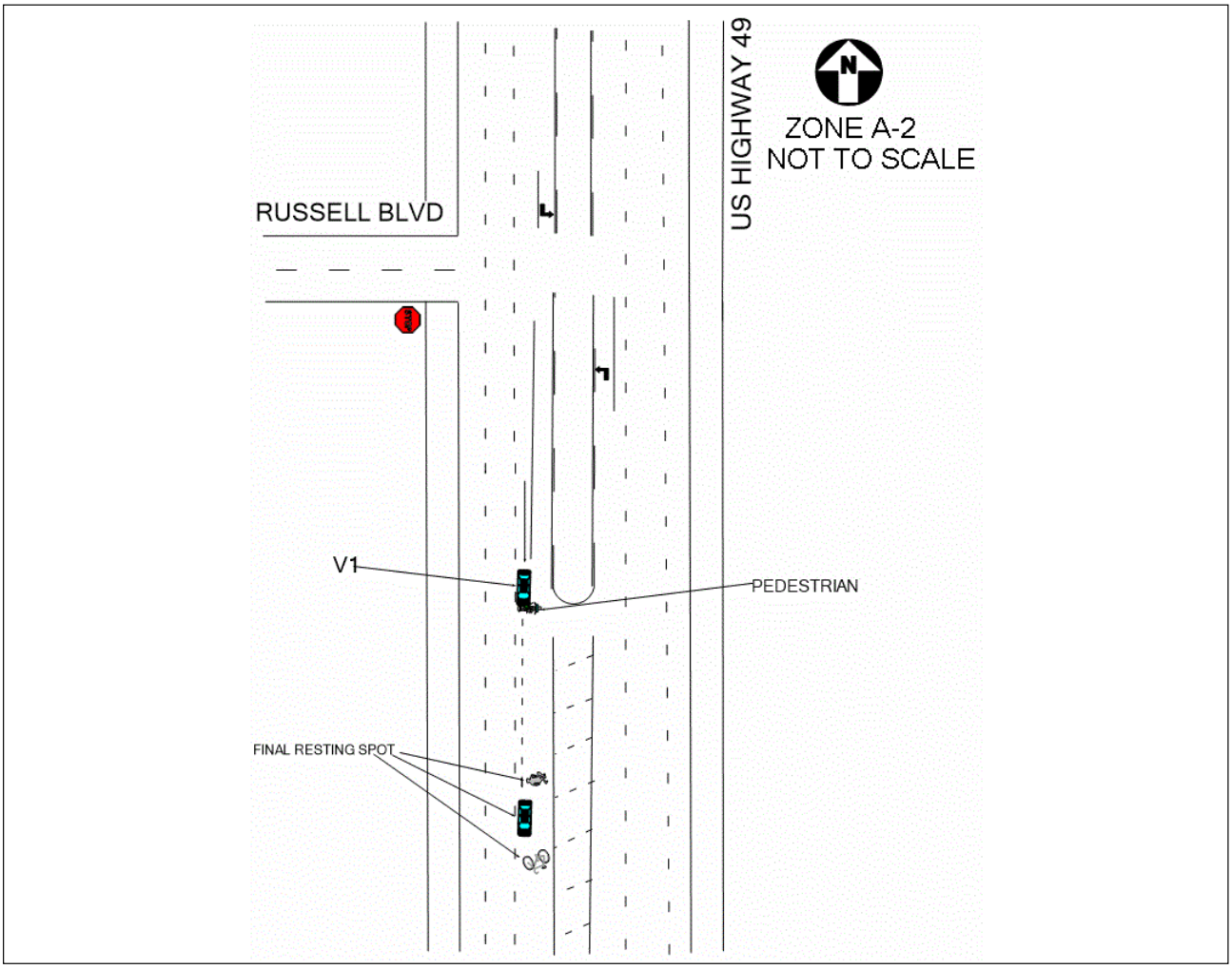
PEDESTRIAN STATED SHE WAS CROSSING HWY 49 EAST RUNNING BETWEEN STOPPED CARS AND DID NOT SEE V1 UNTIL SHE HIT THE DRIVERS DOOR. PEDESTRIAN STATED SHE HAD MINOR PAIN ON HER LEFT SIDE OF HER RIBS.

WITNESS 1 STATED SHE WAS SITTING IN THE RIGHT NORTHBOUND LANE OF HWY 49 STOPPED FOR THE RED LIGHT. WITNESS 1 STATED SHE SAW A WHITE FEMALE RUNNING BETWEEN STOPPED CARS EAST AND SAW HER RUN INTO THE SIDE OF V1. WITNESS 1 STATED THE WHITE FEMALE STATED SHE WAS FINE AND WAS GOING TO LEAVE. WITNESS 1 STATED SHE TOLD HER NOT TO LEAVE AND SHOULD BE CHECKED OUT FOR INJURIES.

WITNESS 2 STATED THEY WHERE STOPPED IN THE RIGHT NORTHBOUND LANE ON HWY 49 FOR THE RED LIGHT. WITNESS 2 STATED THEY SAW A WHITE FEMALE RUN BETWEEN CARS AND HIT V1 IN THE TURNING LANE.

I SAW TIRE MARKS ON THE LEFT LEG OF THE PEDESTRIAN AND DAMAGE TO THE DRIVERS SIDE MIRROR AND DOOR OF V1. PEDESTRIAN WAS TRANSPORTED TO GARDEN PARK TO BE CHECKED OUT FOR MINOR INJURIES.

Agency ID: 2403 SAMS Crash ID: 1214298 Case #: 19-010926



Narrative:

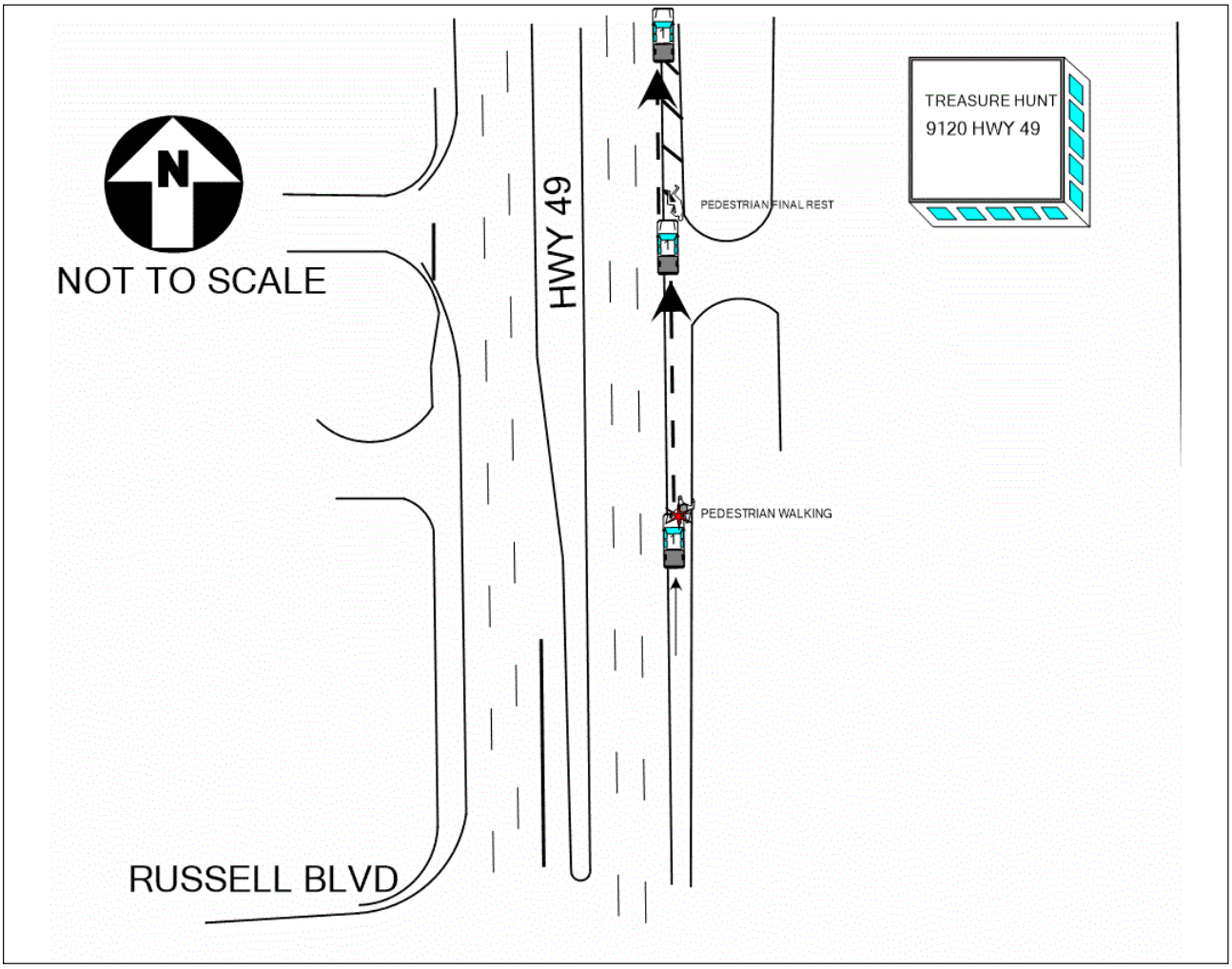
DRIVER OF V1 STATED WHILE TRAVELING SOUTHBOUND AT 40 MPH IN THE FAR LEFT LANE, HE WAS TOLD A JOKE BY HIS PASSENGER AND BEGAN LAUGHING AND SNEEZING, CAUSING HIM TO LOOK DOWN FROM THE ROADWAY. DRIVER ADVISED AT THAT TIME HIS FRONT SEAT PASSENGER YELLED "WATCH OUT" CAUSING DRIVER TO LOOK BACK UP. DRIVER ADVISED ONCE HE LOOKED UP HE STRUCK THE BICYCLIST. DRIVER ADVISED HE IMMEDIATELY STEPPED ON HIS BRAKES AND PARKED THE CAR.

PASSENGER OF V1 ADVISED WHILE TRAVELING SOUTHBOUND, HE TOLD DRIVER A JOKE CAUSING DRIVER TO LAUGH AND FACE AWAY FROM THE ROADWAY. PASSENGER ADVISED AT THAT POINT HE OBSERVED A BICYCLIST DIRECTLY INFRONT OF V1. PASSENGER ADVISED HE YELLED AT DRIVER TO "WATCH OUT" AND THEN THE VEHICLE STRUCK THE MALE.

WITNESS ADVISED WHILE TRAVELING NORTHBOUND, SHE HEARD A LOUD CRASH. WITNESS ADVISED SHE LOOKED TOWARDS THE SOUTHBOUND LANES AND OBSERVED THE BICYCLIST AND BICYCLE APPROXIMATELY 15 FEET IN THE AIR.

AFTER MY INVESTIGATION, IT APPEARED BICYCLIST WAS TRAVELING ACROSS HWY 49 FROM WEST TO EAST ON THE SOUTHBOUND SIDE OF HWY 49. BICYCLIST WAS THEN STRUCK IN THE FAR LEFT LANE NEAR A CUT IN THE MEDIAN BY V1 AND FLOWN APPROXIMATELY 60 FT SOUTH,LANDING IN THE SAME LANE, RESULTING IN HIS DEATH.

Agency ID: 2403 SAMS Crash ID: 1227229 Case #: 19-015206



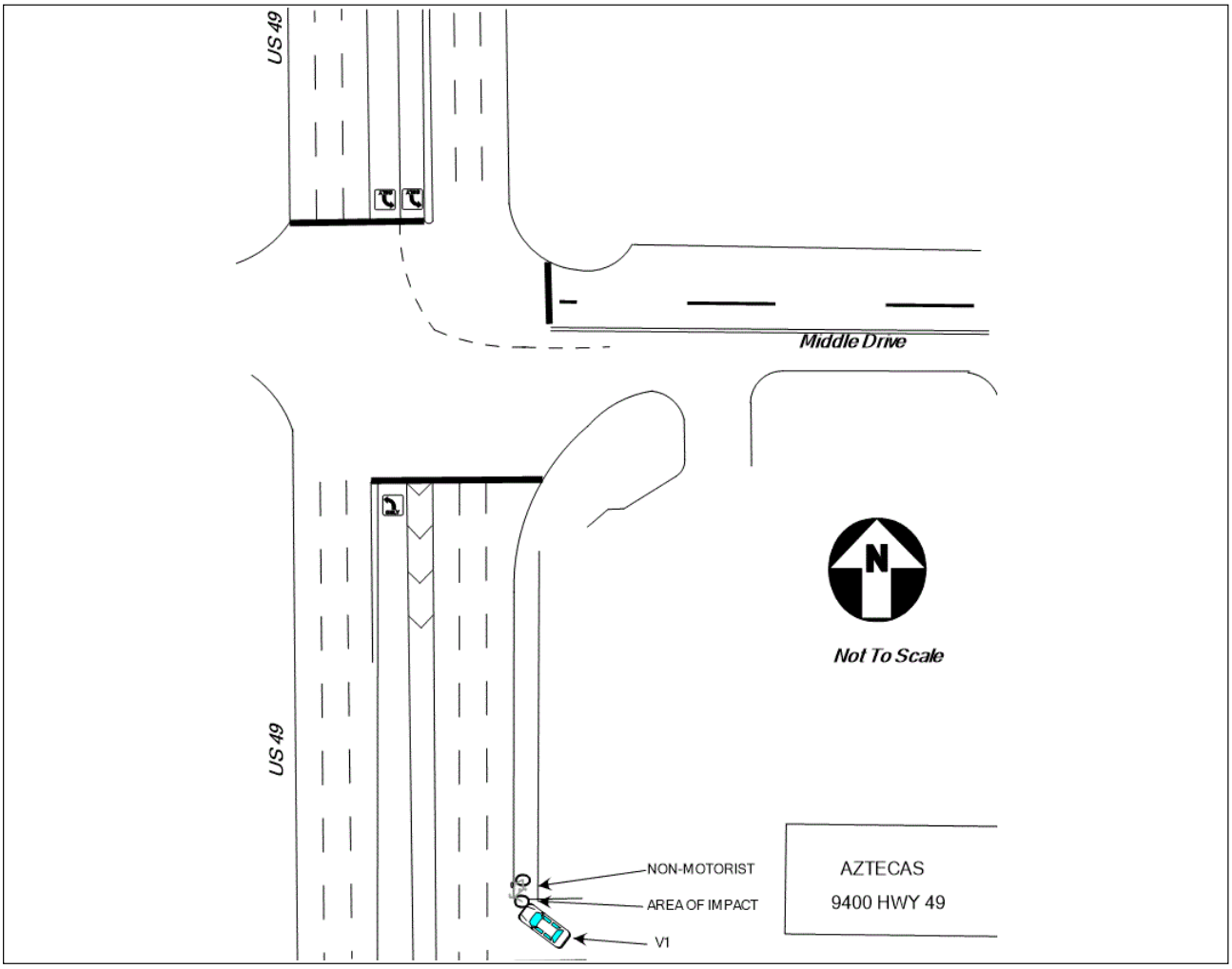
Narrative:

THE COLLISION OCCURRED ON THE SHOULDER OF NORTHBOUND HWY 49 NORTH OF RUSSELL BLVD. THE PEDESTRIAN WAS WALKING NORTHBOUND ON THE SHOULDER OF HWY 49. THE DRIVER OF V1 WAS TRAVELING NORTHBOUND ON HWY 49. THE DRIVER OF V1 WAS OPERATING A MOTOR VEHICLE UNDER THE INFLUENCE OF INTOXICATING LIQUORS AND FAILED TO MAINTAIN HIS PROPER LANE OF TRAVEL. THE DRIVER OF V1 STRUCK THE PEDESTRIAN WITH THE FRONT PASSENGER SIDE BUMPER OF HIS VEHICLE, KILLING THE PEDESTRIAN. THE DRIVER OF V1 CAME TO A HALT ON HWY 49 NEAR FISHER BLVD.

PHOTOGRAPHS WERE TAKEN AND UPLOADED TO VERIPIC.

BLOOD ALCOHOL CONTENT (BAC) PENDING CRIME LAB RESULTS.

Agency ID: 2403 SAMS Crash ID: 1229688 Case #: 19-016588

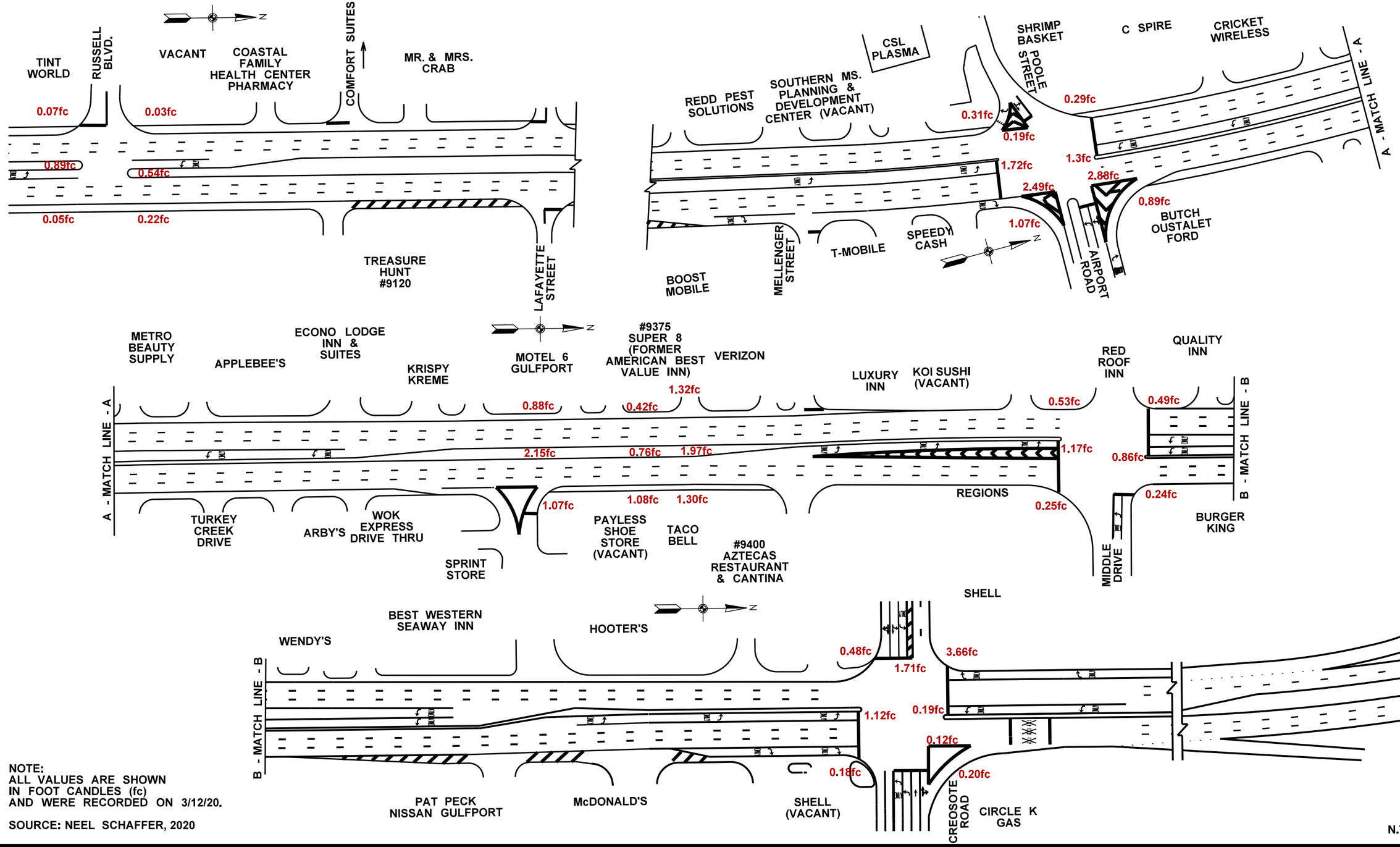


Narrative:

DRIVER OF V-1 PROCEEDED TO EXIT THE PARKING LOT OF 9400 HIGHWAY 49, TO TRAVEL NORTH ON HIGHWAY 49. DRIVER OF V-1 DID NOT SEE THE CYCLIST WHO TRAVELED SOUTH ON HIGHWAY 49. DRIVER OF V-1 ADVISED THE CYCLIST WAS ON THE SHOULDER OF THE NORTH TRAVEL LANES OF HIGHWAY 49. V-1 STRUCK THE CYCLIST WITH THE FRONT BUMPER. NO REPORTED DAMAGE.

CYCLIST ADVISED HE TRAVELED SOUTH ON HIGHWAY 49 IN THE SHOULDER OF THE NORTH BOUND LANES. CYCLIST ADVISED HE WAS STRUCK BY V-1. CYCLIST DID NOT REPORT ANY COMPLAINTS OF PAIN AT THE TIME OF THE ACCIDENT AND REFUSED MEDICAL. CYCLIST HAD DAMAGE TO THE FRONT WHEEL OF THE BICYCLE. CYCLIST REPORTED MINOR BRUISING TO HIS LEFT SHIN AND MINOR SCRAPE TO HIS RIGHT FOREARM.

CYCLIST FAILED TO TRAVEL IN THE CORRECT DIRECTION WITHIN THE CORRECT LANES OF HIGHWAY 49. CYCLIST TRAVELED SOUTH IN THE NORTH TRAVEL LANES OF HIGHWAY 49.



NOTE:
ALL VALUES ARE SHOWN IN FOOT CANDLES (fc) AND WERE RECORDED ON 3/12/20.

SOURCE: NEEL SCHAFFER, 2020

N.T.S.

NEEL-SCHAFFER
Solutions you can build upon

STREET LIGHTING MEASUREMENTS

A1

S:\Projects\15366-Hwy49-Ped-Study\cadd\streetlghtng.dgn

Neel-Schaffer
P.O. Box 22625
Jackson, MS 39225

Intersection: Creosote Rd/US Hwy 49
Counter: T. Kiser (Video)
City/State: Gulfport/MS
Weather: Clear/Dry

File Name : Creosote-Rd-Hwy49-2019
Site Code : 00000000
Start Date : 9/18/2019
Page No : 1

Groups Printed- Unshifted

	US HWY 49 Southbound					CREOSOTE RD Westbound					US HWY 49 Northbound					CREOSOTE RD Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
06:00 AM	19	243	24	0	286	6	3	22	0	31	5	91	16	0	112	12	7	5	0	24	453
06:15 AM	40	282	27	0	349	6	7	20	0	33	5	99	14	0	118	14	12	7	0	33	533
06:30 AM	103	383	53	0	539	11	8	30	0	49	2	128	18	0	148	14	13	8	0	35	771
06:45 AM	80	359	54	0	493	10	10	48	1	69	4	135	19	0	158	25	15	5	0	45	765
Total	242	1267	158	0	1667	33	28	120	1	182	16	453	67	0	536	65	47	25	0	137	2522
07:00 AM	64	377	53	0	494	12	12	61	0	85	6	142	14	0	162	29	17	14	0	60	801
07:15 AM	69	448	76	0	593	14	15	73	0	102	8	245	17	0	270	40	22	4	0	66	1031
07:30 AM	91	500	93	0	684	13	10	73	0	96	11	202	18	0	231	53	19	15	0	87	1098
07:45 AM	86	560	125	0	771	13	18	71	0	102	16	226	20	0	262	48	28	17	0	93	1228
Total	310	1885	347	0	2542	52	55	278	0	385	41	815	69	0	925	170	86	50	0	306	4158
08:00 AM	68	480	74	0	622	19	10	55	0	84	4	233	19	0	256	38	12	14	0	64	1026
08:15 AM	73	368	50	1	492	18	14	51	0	83	9	209	23	0	241	50	13	16	0	79	895
08:30 AM	51	360	59	0	470	17	14	57	0	88	12	216	25	0	253	43	18	12	0	73	884
08:45 AM	53	319	63	0	435	14	20	60	0	94	16	216	23	0	255	53	18	20	0	91	875
Total	245	1527	246	1	2019	68	58	223	0	349	41	874	90	0	1005	184	61	62	0	307	3680
09:00 AM	61	280	62	0	403	14	7	39	1	61	17	209	8	0	234	44	11	31	0	86	784
09:15 AM	53	357	75	1	486	20	8	55	0	83	16	264	12	0	292	40	11	30	0	81	942
09:30 AM	37	295	53	0	385	11	18	64	0	93	17	230	19	0	266	35	12	14	3	64	808
09:45 AM	52	317	75	1	445	18	24	64	2	108	24	234	16	0	274	55	19	13	1	88	915
Total	203	1249	265	2	1719	63	57	222	3	345	74	937	55	0	1066	174	53	88	4	319	3449
10:00 AM	51	328	75	0	454	21	15	64	3	103	22	240	20	0	282	42	23	26	0	91	930
10:15 AM	47	304	66	0	417	17	18	72	0	107	11	254	27	1	293	55	18	18	0	91	908
10:30 AM	50	311	85	0	446	25	19	62	0	106	26	282	17	0	325	62	17	31	0	110	987
10:45 AM	64	327	100	0	491	15	20	78	0	113	19	277	25	0	321	64	17	39	1	121	1046
Total	212	1270	326	0	1808	78	72	276	3	429	78	1053	89	1	1221	223	75	114	1	413	3871
11:00 AM	47	368	91	0	506	24	19	77	2	122	25	298	21	1	345	57	21	22	0	100	1073
11:15 AM	58	387	98	1	544	25	17	89	1	132	26	289	27	0	342	73	16	34	1	124	1142
11:30 AM	44	333	75	0	452	23	18	94	0	135	32	292	24	0	348	91	18	26	0	135	1070
11:45 AM	58	369	95	0	522	20	17	68	0	105	30	333	28	0	391	82	22	21	0	125	1143
Total	207	1457	359	1	2024	92	71	328	3	494	113	1212	100	1	1426	303	77	103	1	484	4428
12:00 PM	43	328	88	1	460	24	21	70	0	115	29	335	20	0	384	76	27	25	0	128	1087
12:15 PM	49	337	93	0	479	26	21	78	1	126	34	317	23	0	374	90	37	32	0	159	1138
12:30 PM	58	358	104	0	520	21	23	69	0	113	37	343	26	1	407	102	26	19	0	147	1187
12:45 PM	49	369	94	0	512	21	22	80	0	123	32	343	28	0	403	73	17	24	0	114	1152
Total	199	1392	379	1	1971	92	87	297	1	477	132	1338	97	1	1568	341	107	100	0	548	4564
01:00 PM	50	302	82	1	435	23	31	61	0	115	20	322	29	1	372	86	24	34	2	146	1068
01:15 PM	55	290	87	0	432	21	20	74	0	115	30	281	18	0	329	93	22	37	0	152	1028
01:30 PM	40	346	80	0	466	14	17	64	0	95	21	365	24	0	410	66	20	43	0	129	1100
01:45 PM	52	293	72	1	418	20	26	74	0	120	25	340	29	0	394	73	13	15	0	101	1033
Total	197	1231	321	2	1751	78	94	273	0	445	96	1308	100	1	1505	318	79	129	2	528	4229
02:00 PM	46	284	62	2	394	22	20	73	0	115	25	308	16	0	349	99	25	23	0	147	1005
02:15 PM	67	347	93	0	507	18	14	75	0	107	28	335	25	0	388	71	24	17	0	112	1114
02:30 PM	57	320	76	0	453	16	21	78	0	115	22	365	15	0	402	75	26	26	0	127	1097
02:45 PM	57	315	82	0	454	24	15	87	1	127	23	335	25	1	384	78	21	35	2	136	1101
Total	227	1266	313	2	1808	80	70	313	1	464	98	1343	81	1	1523	323	96	101	2	522	4317
03:00 PM	63	304	76	0	443	22	12	79	0	113	17	318	27	1	363	82	20	21	1	124	1043
03:15 PM	47	398	88	0	533	18	20	101	0	139	34	365	18	1	418	84	14	29	0	127	1217
03:30 PM	47	352	89	0	488	22	25	123	0	170	15	411	14	0	440	105	13	28	0	146	1244
03:45 PM	57	313	108	0	478	16	27	122	0	165	25	376	27	0	428	118	9	16	0	143	1214
Total	214	1367	361	0	1942	78	84	425	0	587	91	1470	86	2	1649	389	56	94	1	540	4718

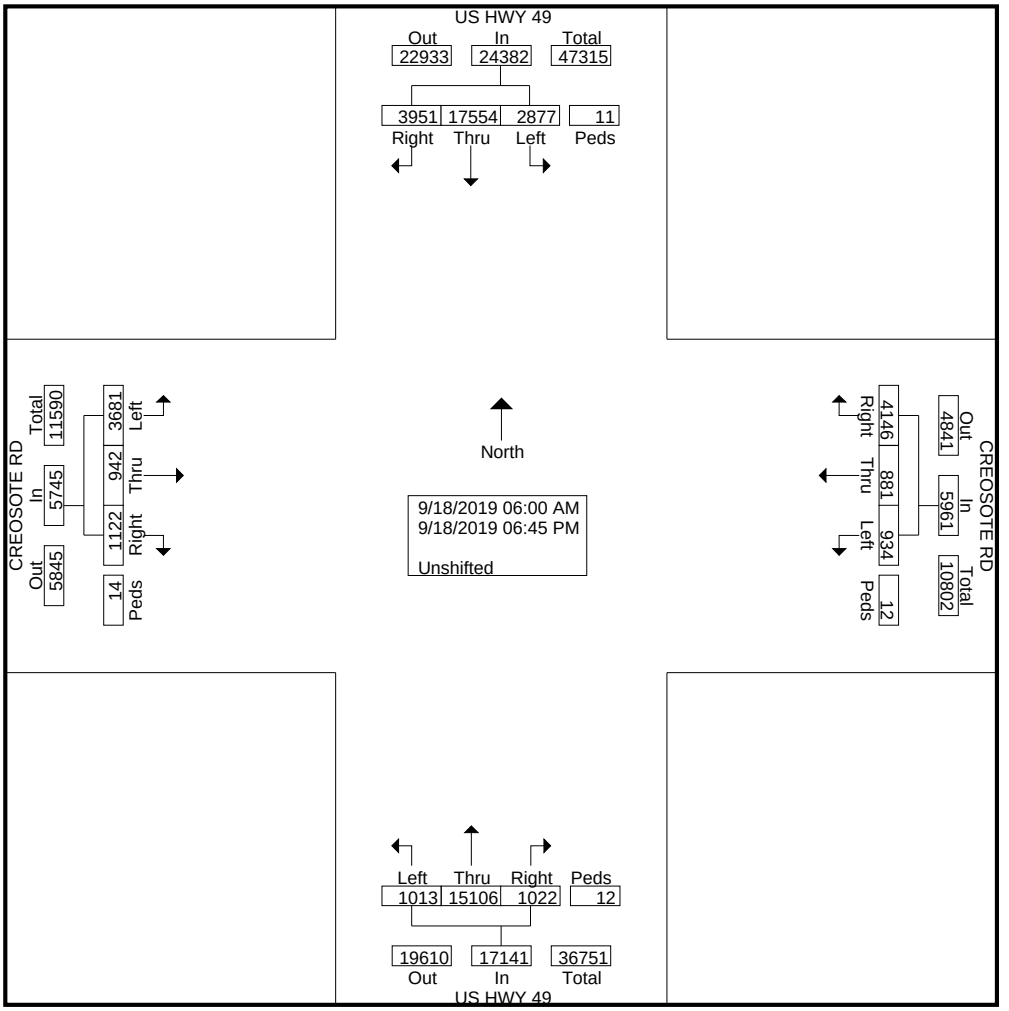
Neel-Schaffer
P.O. Box 22625
Jackson, MS 39225

Intersection: Creosote Rd/US Hwy 49
Counter: T. Kiser (Video)
City/State: Gulfport/MS
Weather: Clear/Dry

File Name : Creosote-Rd-Hwy49-2019
Site Code : 00000000
Start Date : 9/18/2019
Page No : 2

Groups Printed- Unshifted

	US HWY 49 Southbound					CREOSOTE RD Westbound					US HWY 49 Northbound					CREOSOTE RD Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
04:00 PM	71	301	70	0	442	10	15	123	0	148	23	380	19	0	422	81	22	29	0	132	1144
04:15 PM	55	350	72	0	477	26	18	101	0	145	19	402	13	0	434	84	15	22	0	121	1177
04:30 PM	50	285	81	0	416	24	21	187	0	232	16	368	15	3	402	101	23	21	1	146	1196
04:45 PM	66	314	100	0	480	16	21	160	0	197	22	370	20	0	412	119	15	13	1	148	1237
Total	242	1250	323	0	1815	76	75	571	0	722	80	1520	67	3	1670	385	75	85	2	547	4754
05:00 PM	59	358	81	0	498	14	25	165	0	204	28	427	12	0	467	131	20	16	0	167	1336
05:15 PM	59	289	84	1	433	37	27	139	0	203	13	397	9	1	420	126	17	23	0	166	1222
05:30 PM	58	275	85	0	418	23	16	133	0	172	20	353	16	1	390	127	15	12	1	155	1135
05:45 PM	49	362	83	0	494	15	16	101	0	132	19	410	15	0	444	97	15	35	0	147	1217
Total	225	1284	333	1	1843	89	84	538	0	711	80	1587	52	2	1721	481	67	86	1	635	4910
06:00 PM	39	305	66	0	410	17	15	78	0	110	18	378	20	0	416	76	16	18	0	110	1046
06:15 PM	46	281	56	0	383	19	13	74	0	106	17	239	14	0	270	111	22	19	0	152	911
06:30 PM	37	265	52	0	354	6	12	76	0	94	22	318	20	0	360	77	18	14	0	109	917
06:45 PM	32	258	46	1	337	13	6	54	0	73	16	261	15	0	292	61	7	34	0	102	804
Total	154	1109	220	1	1484	55	46	282	0	383	73	1196	69	0	1338	325	63	85	0	473	3678
Grand Total	2877	17554	3951	11	24393	934	881	4146	12	5973	1013	15106	1022	12	17153	3681	942	1122	14	5759	53278
Apprch %	11.8	72	16.2	0		15.6	14.7	69.4	0.2		5.9	88.1	6	0.1		63.9	16.4	19.5	0.2		
Total %	5.4	32.9	7.4	0	45.8	1.8	1.7	7.8	0	11.2	1.9	28.4	1.9	0	32.2	6.9	1.8	2.1	0	10.8	



Neel-Schaffer
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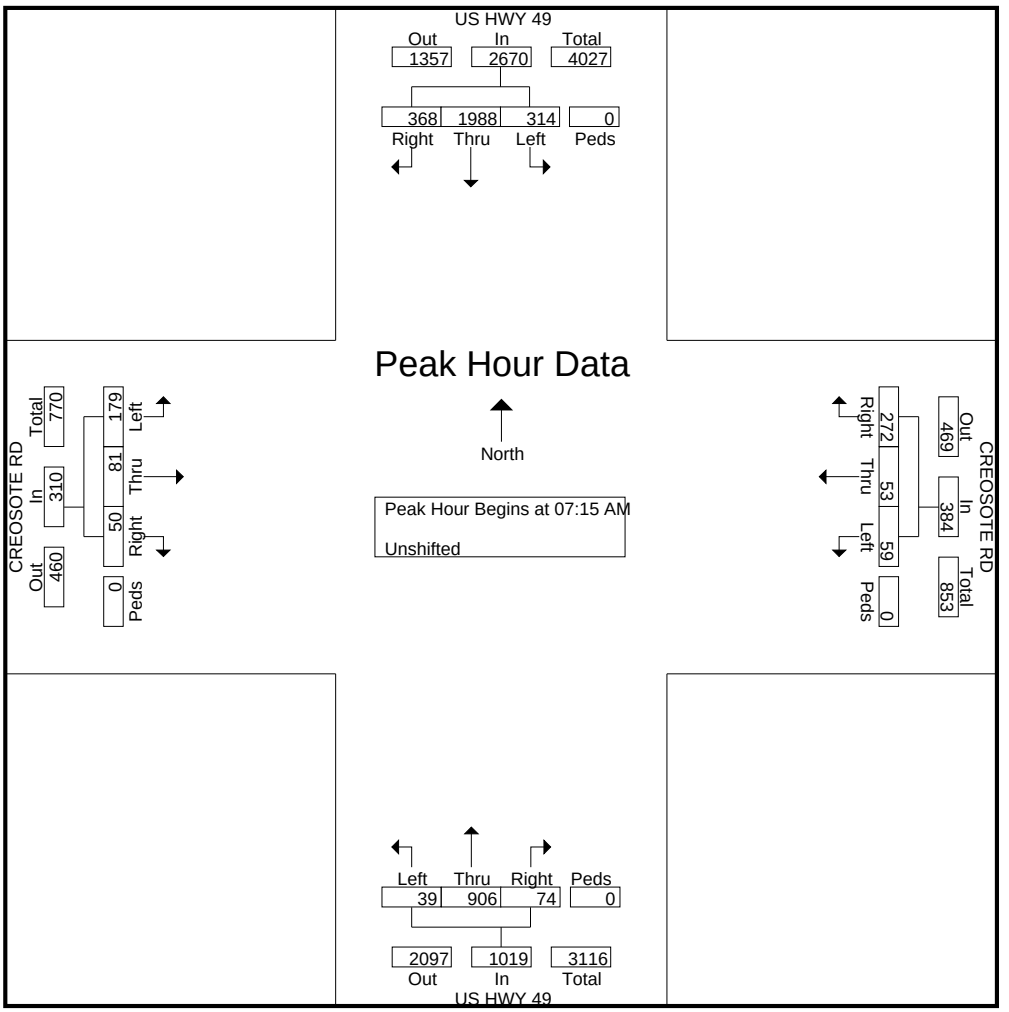
Jackson, MS 39225

Intersection: Creosote Rd/US Hwy 49
Counter: T. Kiser (Video)
City/State: Gulfport/MS
Weather: Clear/Dry

File Name : Creosote-Rd-Hwy49-2019
Site Code : 00000000
Start Date : 9/18/2019
Page No : 3

	US HWY 49 Southbound					CREOSOTE RD Westbound					US HWY 49 Northbound					CREOSOTE RD Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 06:00 AM to 09:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:15 AM																					
07:15 AM	69	448	76	0	593	14	15	73	0	102	8	245	17	0	270	40	22	4	0	66	1031
07:30 AM	91	500	93	0	684	13	10	73	0	96	11	202	18	0	231	53	19	15	0	87	1098
07:45 AM	86	560	125	0	771	13	18	71	0	102	16	226	20	0	262	48	28	17	0	93	1228
08:00 AM	68	480	74	0	622	19	10	55	0	84	4	233	19	0	256	38	12	14	0	64	1026
Total Volume	314	1988	368	0	2670	59	53	272	0	384	39	906	74	0	1019	179	81	50	0	310	4383
% App. Total	11.8	74.5	13.8	0		15.4	13.8	70.8	0		3.8	88.9	7.3	0		57.7	26.1	16.1	0		
PHF	.863	.888	.736	.000	.866	.776	.736	.932	.000	.941	.609	.924	.925	.000	.944	.844	.723	.735	.000	.833	.892



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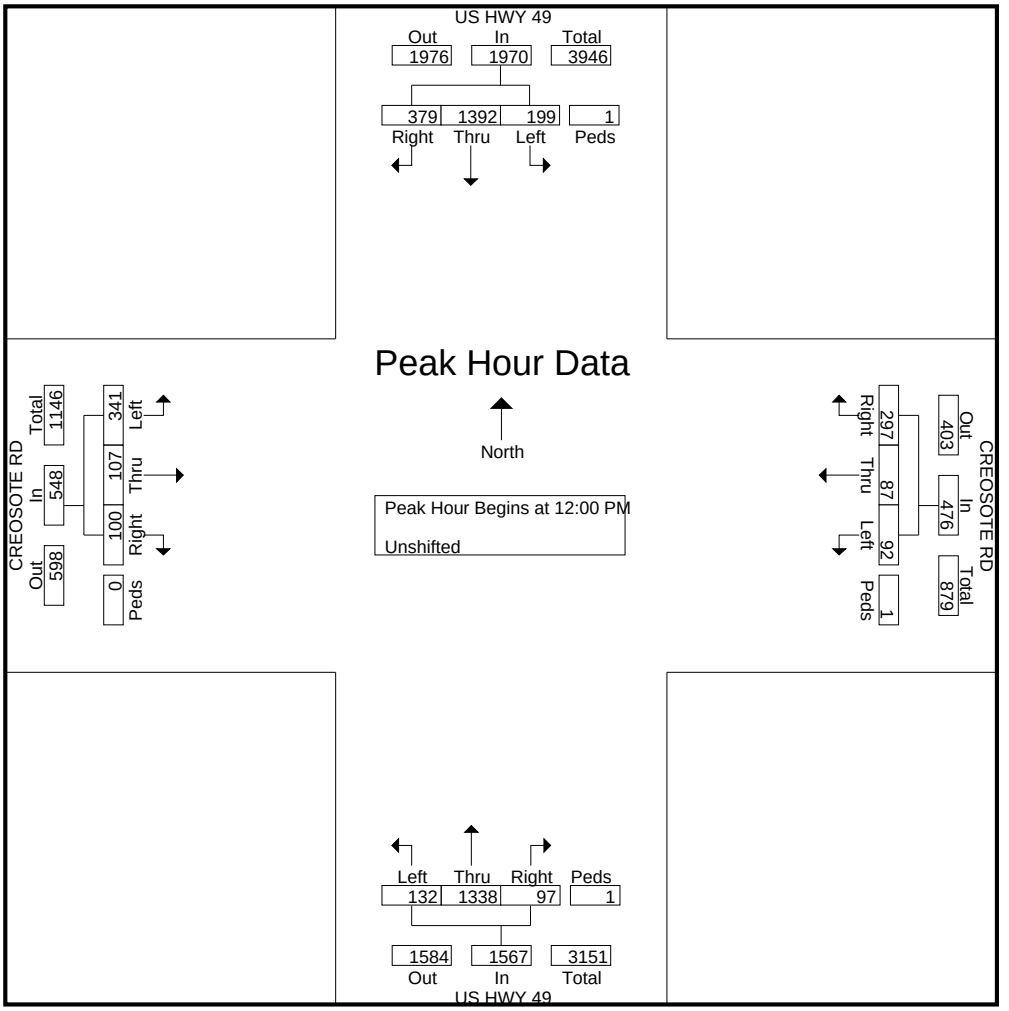
Intersection: Creosote Rd/US Hwy 49
Counter: T. Kiser (Video)
City/State: Gulfport/MS
Weather: Clear/Dry

File Name : Creosote-Rd-Hwy49-2019
Site Code : 00000000
Start Date : 9/18/2019
Page No : 4

	US HWY 49 Southbound					CREOSOTE RD Westbound					US HWY 49 Northbound					CREOSOTE RD Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 10:00 AM to 01:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 12:00 PM																					
12:00 PM	43	328	88	1	460	24	21	70	0	115	29	335	20	0	384	76	27	25	0	128	1087
12:15 PM	49	337	93	0	479	26	21	78	1	126	34	317	23	0	374	90	37	32	0	159	1138
12:30 PM	58	358	104	0	520	21	23	69	0	113	37	343	26	1	407	102	26	19	0	147	1187
12:45 PM	49	369	94	0	512	21	22	80	0	123	32	343	28	0	403	73	17	24	0	114	1152
Total Volume	199	1392	379	1	1971	92	87	297	1	477	132	1338	97	1	1568	341	107	100	0	548	4564
% App. Total	10.1	70.6	19.2	0.1		19.3	18.2	62.3	0.2		8.4	85.3	6.2	0.1		62.2	19.5	18.2	0		
PHF	.858	.943	.911	.250	.948	.885	.946	.928	.250	.946	.892	.975	.866	.250	.963	.836	.723	.781	.000	.862	.961



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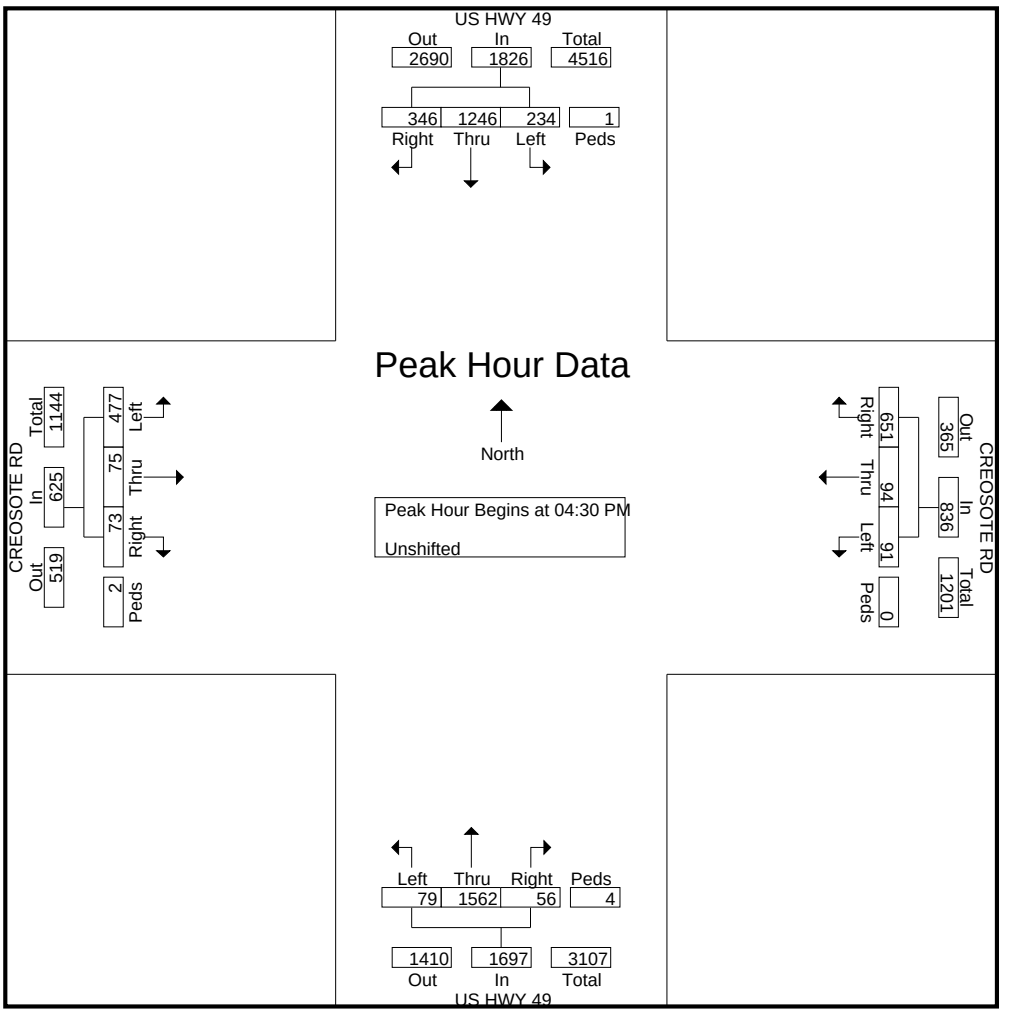
Intersection: Creosote Rd/US Hwy 49
Counter: T. Kiser (Video)
City/State: Gulfport/MS
Weather: Clear/Dry

File Name : Creosote-Rd-Hwy49-2019
Site Code : 00000000
Start Date : 9/18/2019
Page No : 5

	US HWY 49 Southbound					CREOSOTE RD Westbound					US HWY 49 Northbound					CREOSOTE RD Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 02:00 PM to 06:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:30 PM																					
04:30 PM	50	285	81	0	416	24	21	187	0	232	16	368	15	3	402	101	23	21	1	146	1196
04:45 PM	66	314	100	0	480	16	21	160	0	197	22	370	20	0	412	119	15	13	1	148	1237
05:00 PM	59	358	81	0	498	14	25	165	0	204	28	427	12	0	467	131	20	16	0	167	1336
05:15 PM	59	289	84	1	433	37	27	139	0	203	13	397	9	1	420	126	17	23	0	166	1222
Total Volume	234	1246	346	1	1827	91	94	651	0	836	79	1562	56	4	1701	477	75	73	2	627	4991
% App. Total	12.8	68.2	18.9	0.1		10.9	11.2	77.9	0		4.6	91.8	3.3	0.2		76.1	12	11.6	0.3		
PHF	.886	.870	.865	.250	.917	.615	.870	.870	.000	.901	.705	.915	.700	.333	.911	.910	.815	.793	.500	.939	.934



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Jackson, MS 39225

Intersection: Middle Dr/US Hwy 49
Counter: T. Kiser (Video)
City/State: Gulfport/MS
Weather: Clear/Dry

File Name : middle-dr-hwy49-2019
Site Code : 00000000
Start Date : 9/18/2019
Page No : 1

Groups Printed- Unshifted

	US HWY 49 Southbound					MIDDLE DR Westbound					US HWY 49 Northbound					QUALITY INN Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
06:00 AM	6	250	1	1	258	2	0	8	0	10	0	95	2	1	98	0	0	0	0	0	366
06:15 AM	8	309	1	0	318	7	0	1	0	8	6	116	2	0	124	0	0	2	0	2	452
06:30 AM	21	391	1	0	413	6	0	9	0	15	1	133	2	0	136	1	0	0	0	1	565
06:45 AM	26	363	1	0	390	9	0	10	0	19	1	148	4	0	153	0	0	1	0	1	563
Total	61	1313	4	1	1379	24	0	28	0	52	8	492	10	1	511	1	0	3	0	4	1946
07:00 AM	20	386	0	0	406	8	1	16	0	25	7	189	1	0	197	1	0	1	0	2	630
07:15 AM	23	466	0	0	489	9	0	16	0	25	9	217	7	1	234	1	0	1	0	2	750
07:30 AM	24	501	1	0	526	14	0	15	0	29	3	252	10	0	265	2	1	0	0	3	823
07:45 AM	32	560	0	0	592	9	0	19	0	28	5	247	8	0	260	1	0	0	0	1	881
Total	99	1913	1	0	2013	40	1	66	0	107	24	905	26	1	956	5	1	2	0	8	3084
08:00 AM	20	464	0	0	484	10	0	22	0	32	4	222	10	0	236	0	0	0	0	0	752
08:15 AM	29	368	1	0	398	11	0	18	0	29	12	204	8	2	226	3	0	1	0	4	657
08:30 AM	35	379	1	0	415	8	1	12	0	21	7	244	9	0	260	2	0	1	0	3	699
08:45 AM	44	318	0	0	362	12	1	18	1	32	10	225	12	0	247	0	0	1	0	1	642
Total	128	1529	2	0	1659	41	2	70	1	114	33	895	39	2	969	5	0	3	0	8	2750
*** BREAK ***																					
11:00 AM	44	346	1	0	391	13	0	35	0	48	13	292	14	1	320	1	0	0	0	1	760
11:15 AM	65	368	4	1	438	23	1	31	0	55	20	328	14	1	363	1	0	1	0	2	858
11:30 AM	51	360	3	0	414	18	0	37	0	55	21	322	16	0	359	4	2	1	0	7	835
11:45 AM	54	332	0	0	386	21	1	35	0	57	17	322	16	0	355	5	0	0	0	5	803
Total	214	1406	8	1	1629	75	2	138	0	215	71	1264	60	2	1397	11	2	2	0	15	3256
12:00 PM	39	360	0	1	400	24	0	35	0	59	19	370	10	0	399	1	0	0	2	3	861
12:15 PM	69	336	2	2	409	28	0	35	0	63	19	334	22	1	376	1	0	0	1	2	850
12:30 PM	47	346	1	3	397	27	1	46	0	74	16	369	17	1	403	5	0	0	0	5	879
12:45 PM	57	349	3	0	409	25	0	51	0	76	16	335	11	0	362	2	0	1	0	3	850
Total	212	1391	6	6	1615	104	1	167	0	272	70	1408	60	2	1540	9	0	1	3	13	3440
*** BREAK ***																					
04:00 PM	36	275	3	0	314	18	0	45	0	63	8	371	17	0	396	1	0	1	0	2	775
04:15 PM	38	371	3	0	412	21	1	19	0	41	9	394	14	1	418	0	1	1	0	2	873
04:30 PM	37	288	2	1	328	14	0	48	0	62	17	372	14	0	403	1	0	0	0	1	794
04:45 PM	26	302	3	5	336	22	0	34	0	56	10	407	10	1	428	4	0	1	2	7	827
Total	137	1236	11	6	1390	75	1	146	0	222	44	1544	55	2	1645	6	1	3	2	12	3269
05:00 PM	35	337	2	1	375	29	1	47	2	79	15	374	10	0	399	2	0	0	0	2	855
05:15 PM	33	310	2	0	345	24	0	51	0	75	12	388	6	0	406	2	0	0	0	2	828
05:30 PM	38	280	8	0	326	19	1	20	1	41	11	385	10	0	406	4	0	1	0	5	778
05:45 PM	32	340	6	0	378	16	0	44	0	60	13	378	16	0	407	0	0	0	0	0	845
Total	138	1267	18	1	1424	88	2	162	3	255	51	1525	42	0	1618	8	0	1	0	9	3306
Grand Total	989	10055	50	15	11109	447	9	777	4	1237	301	8033	292	10	8636	45	4	15	5	69	21051
Apprch %	8.9	90.5	0.5	0.1		36.1	0.7	62.8	0.3		3.5	93	3.4	0.1		65.2	5.8	21.7	7.2		
Total %	4.7	47.8	0.2	0.1	52.8	2.1	0	3.7	0	5.9	1.4	38.2	1.4	0	41	0.2	0	0.1	0	0.3	

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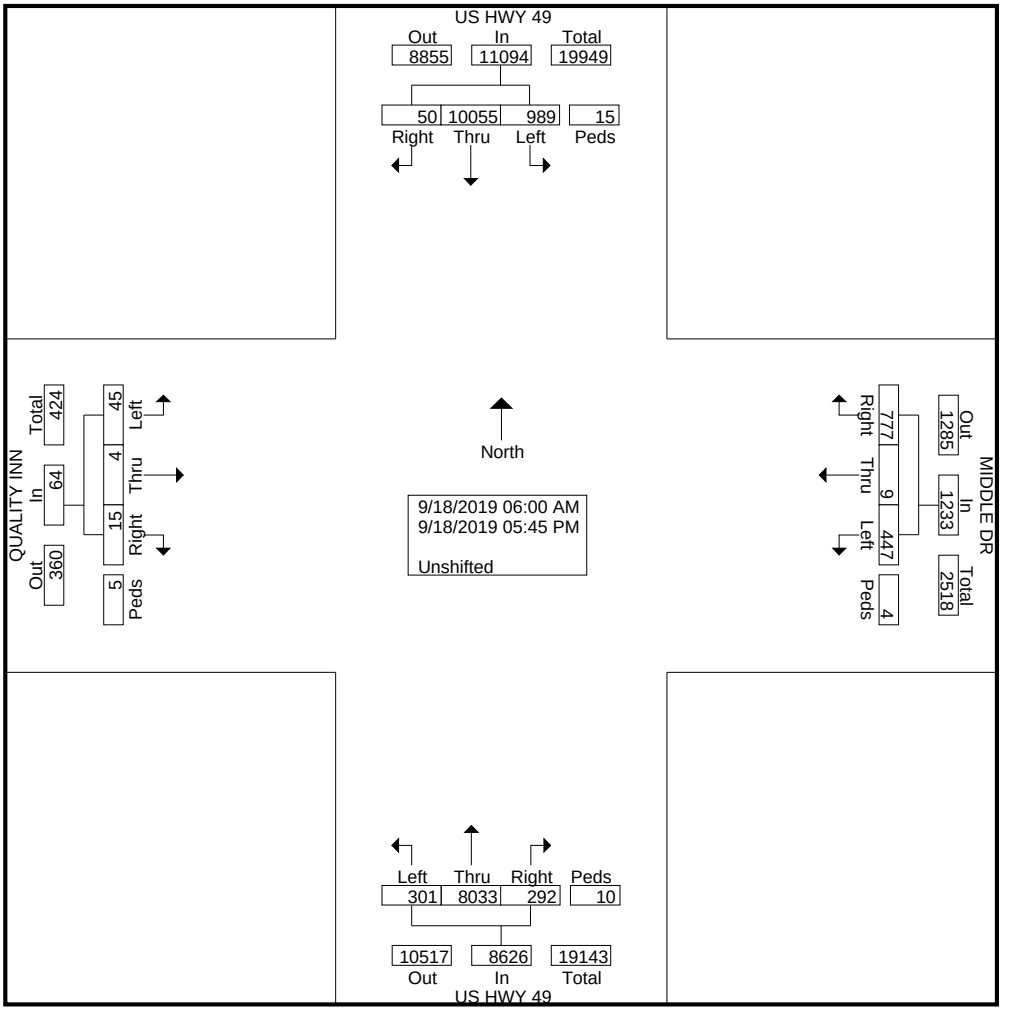
Jackson, MS 39225

Intersection: Middle Dr/US Hwy 49
Counter: T. Kiser (Video)
City/State: Gulfport/MS
Weather: Clear/Dry

File Name : middle-dr-hwy49-2019
Site Code : 00000000
Start Date : 9/18/2019
Page No : 2



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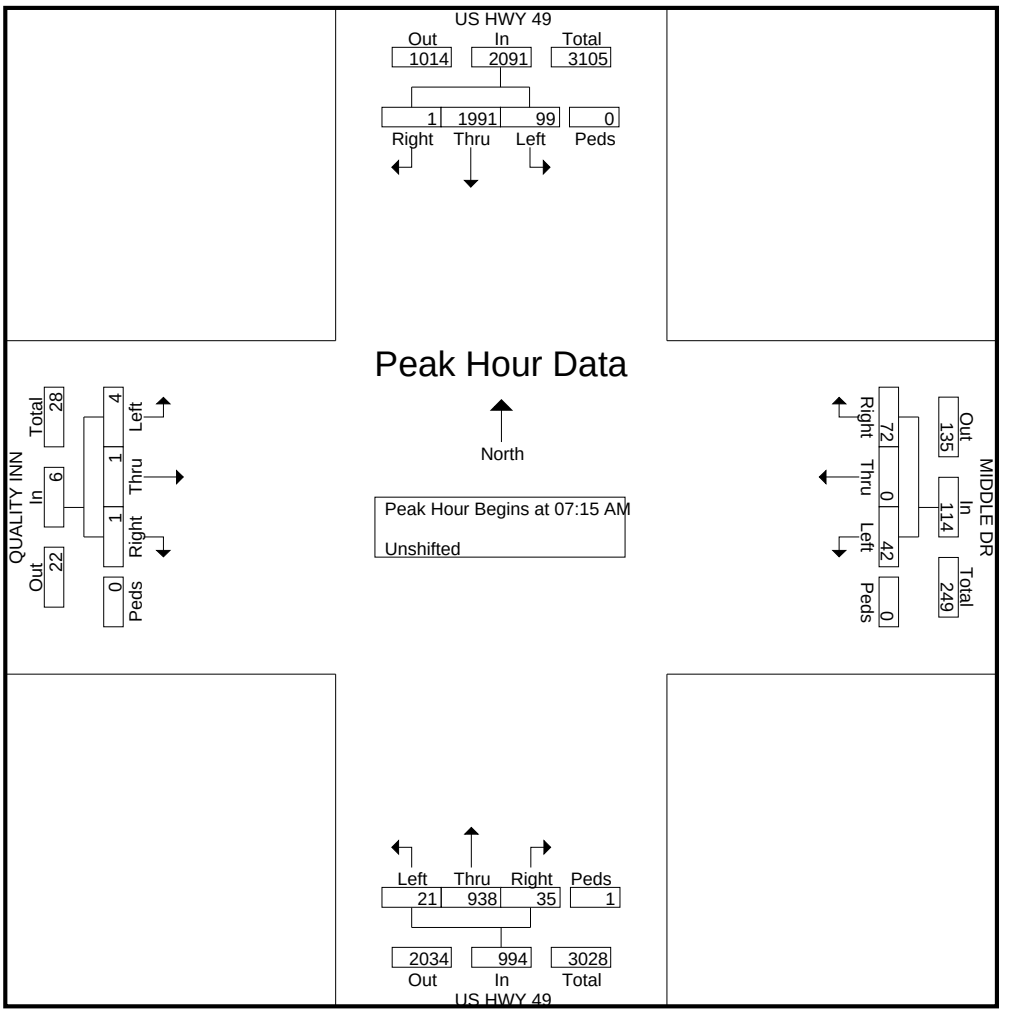
Intersection: Middle Dr/US Hwy 49
Counter: T. Kiser (Video)
City/State: Gulfport/MS
Weather: Clear/Dry

File Name : middle-dr-hwy49-2019
Site Code : 00000000
Start Date : 9/18/2019
Page No : 3

	US HWY 49 Southbound					MIDDLE DR Westbound					US HWY 49 Northbound					QUALITY INN Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 06:00 AM to 09:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:15 AM																					
07:15 AM	23	466	0	0	489	9	0	16	0	25	9	217	7	1	234	1	0	1	0	2	750
07:30 AM	24	501	1	0	526	14	0	15	0	29	3	252	10	0	265	2	1	0	0	3	823
07:45 AM	32	560	0	0	592	9	0	19	0	28	5	247	8	0	260	1	0	0	0	1	881
08:00 AM	20	464	0	0	484	10	0	22	0	32	4	222	10	0	236	0	0	0	0	0	752
Total Volume	99	1991	1	0	2091	42	0	72	0	114	21	938	35	1	995	4	1	1	0	6	3206
% App. Total	4.7	95.2	0	0		36.8	0	63.2	0		2.1	94.3	3.5	0.1		66.7	16.7	16.7	0		
PHF	.773	.889	.250	.000	.883	.750	.000	.818	.000	.891	.583	.931	.875	.250	.939	.500	.250	.250	.000	.500	.910



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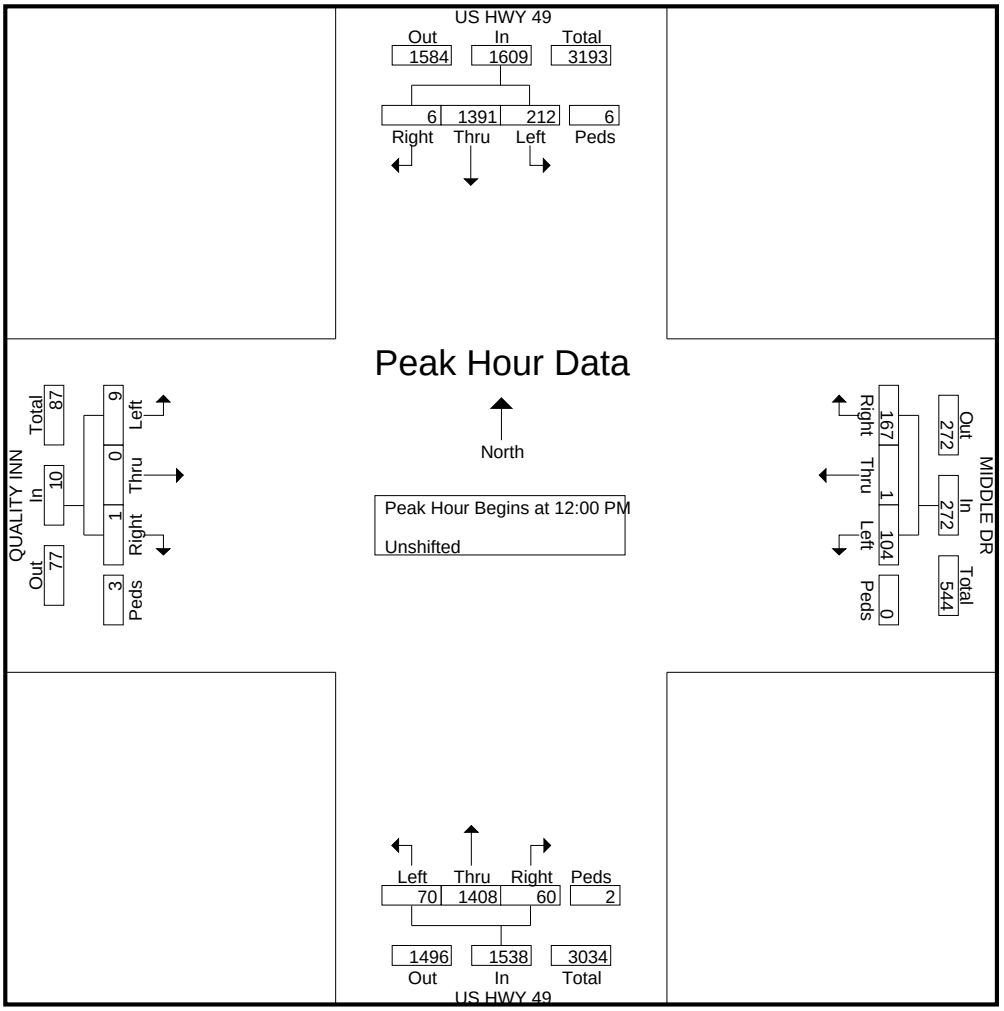
Intersection: Middle Dr/US Hwy 49
Counter: T. Kiser (Video)
City/State: Gulfport/MS
Weather: Clear/Dry

File Name : middle-dr-hwy49-2019
Site Code : 00000000
Start Date : 9/18/2019
Page No : 4

	US HWY 49 Southbound					MIDDLE DR Westbound					US HWY 49 Northbound					QUALITY INN Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 10:00 AM to 01:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 12:00 PM																					
12:00 PM	39	360	0	1	400	24	0	35	0	59	19	370	10	0	399	1	0	0	2	3	861
12:15 PM	69	336	2	2	409	28	0	35	0	63	19	334	22	1	376	1	0	0	1	2	850
12:30 PM	47	346	1	3	397	27	1	46	0	74	16	369	17	1	403	5	0	0	0	5	879
12:45 PM	57	349	3	0	409	25	0	51	0	76	16	335	11	0	362	2	0	1	0	3	850
Total Volume	212	1391	6	6	1615	104	1	167	0	272	70	1408	60	2	1540	9	0	1	3	13	3440
% App. Total	13.1	86.1	0.4	0.4		38.2	0.4	61.4	0		4.5	91.4	3.9	0.1		69.2	0	7.7	23.1		
PHF	.768	.966	.500	.500	.987	.929	.250	.819	.000	.895	.921	.951	.682	.500	.955	.450	.000	.250	.375	.650	.978



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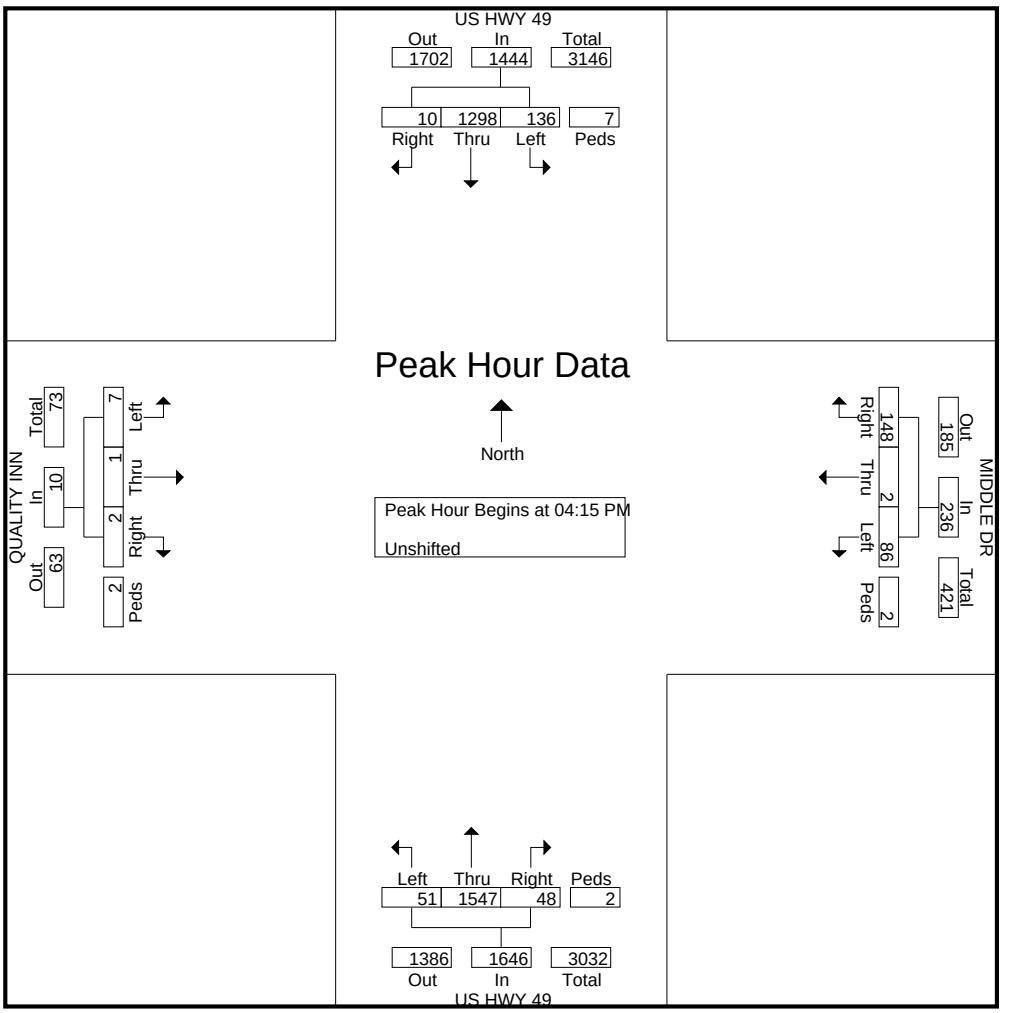
Intersection: Middle Dr/US Hwy 49
Counter: T. Kiser (Video)
City/State: Gulfport/MS
Weather: Clear/Dry

File Name : middle-dr-hwy49-2019
Site Code : 00000000
Start Date : 9/18/2019
Page No : 5

	US HWY 49 Southbound					MIDDLE DR Westbound					US HWY 49 Northbound					QUALITY INN Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 02:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:15 PM																					
04:15 PM	38	371	3	0	412	21	1	19	0	41	9	394	14	1	418	0	1	1	0	2	873
04:30 PM	37	288	2	1	328	14	0	48	0	62	17	372	14	0	403	1	0	0	0	1	794
04:45 PM	26	302	3	5	336	22	0	34	0	56	10	407	10	1	428	4	0	1	2	7	827
05:00 PM	35	337	2	1	375	29	1	47	2	79	15	374	10	0	399	2	0	0	0	2	855
Total Volume	136	1298	10	7	1451	86	2	148	2	238	51	1547	48	2	1648	7	1	2	2	12	3349
% App. Total	9.4	89.5	0.7	0.5		36.1	0.8	62.2	0.8		3.1	93.9	2.9	0.1		58.3	8.3	16.7	16.7		
PHF	.895	.875	.833	.350	.880	.741	.500	.771	.250	.753	.750	.950	.857	.500	.963	.438	.250	.500	.250	.429	.959



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Intersection: Walmart Dr/US Hwy 49
Counter: T. Kiser (Video)
City/State: Gulfport/MS
Weather: Clear/Dry

File Name : walmart-hwy49-2019
Site Code : 00000000
Start Date : 9/18/2019
Page No : 1

Groups Printed- Unshifted

	US HWY 49 Southbound					WALMART DR Westbound					US HWY 49 Northbound					N/A Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
07:00 AM	0	385	0	0	385	0	0	14	0	14	0	183	19	3	205	0	0	0	0	0	604
07:15 AM	0	496	0	0	496	0	0	7	1	8	0	226	22	0	248	0	0	0	0	0	752
07:30 AM	0	515	0	0	515	0	0	12	0	12	0	253	16	0	269	0	0	0	0	0	796
07:45 AM	0	569	0	0	569	0	0	12	0	12	0	248	31	0	279	0	0	0	2	2	862
Total	0	1965	0	0	1965	0	0	45	1	46	0	910	88	3	1001	0	0	0	2	2	3014
08:00 AM	0	474	0	0	474	0	0	13	2	15	0	223	13	2	238	0	0	0	2	2	729
08:15 AM	0	380	0	0	380	0	0	15	0	15	0	209	20	1	230	0	0	0	1	1	626
08:30 AM	0	388	0	0	388	0	0	13	0	13	0	247	23	0	270	0	0	0	0	0	671
08:45 AM	0	351	0	0	351	0	0	16	1	17	0	231	37	0	268	0	0	0	4	4	640
Total	0	1593	0	0	1593	0	0	57	3	60	0	910	93	3	1006	0	0	0	7	7	2666
*** BREAK ***																					
11:00 AM	0	369	0	0	369	0	0	21	1	22	0	323	47	0	370	0	0	0	0	0	761
11:15 AM	0	402	0	1	403	0	0	29	2	31	0	333	53	0	386	0	0	0	0	0	820
11:30 AM	0	379	0	0	379	0	0	21	0	21	0	328	42	0	370	0	0	0	1	1	771
11:45 AM	0	388	0	0	388	0	0	25	0	25	0	330	51	0	381	0	0	0	0	0	794
Total	0	1538	0	1	1539	0	0	96	3	99	0	1314	193	0	1507	0	0	0	1	1	3146
12:00 PM	0	384	0	0	384	0	0	28	0	28	0	391	54	0	445	0	0	0	0	0	857
12:15 PM	0	374	0	1	375	0	0	23	0	23	0	352	41	0	393	0	0	0	1	1	792
12:30 PM	0	403	0	1	404	0	0	35	1	36	0	367	51	1	419	0	0	0	0	0	859
12:45 PM	0	375	0	0	375	0	0	31	0	31	0	331	32	0	363	0	0	0	0	0	769
Total	0	1536	0	2	1538	0	0	117	1	118	0	1441	178	1	1620	0	0	0	1	1	3277
*** BREAK ***																					
04:00 PM	0	294	0	0	294	0	0	23	0	23	0	373	42	0	415	0	0	0	0	0	732
04:15 PM	0	393	0	0	393	0	0	27	1	28	0	390	33	0	423	0	0	0	0	0	844
04:30 PM	0	302	0	0	302	0	0	17	2	19	0	386	49	0	435	0	0	0	0	0	756
04:45 PM	0	325	0	1	326	0	0	20	0	20	0	407	58	1	466	0	0	0	0	0	812
Total	0	1314	0	1	1315	0	0	87	3	90	0	1556	182	1	1739	0	0	0	0	0	3144
05:00 PM	0	366	0	1	367	0	0	28	0	28	0	371	41	0	412	0	0	0	1	1	808
05:15 PM	0	334	0	0	334	0	0	9	0	9	0	397	49	1	447	0	0	0	0	0	790
05:30 PM	0	300	0	0	300	0	0	12	0	12	0	394	49	0	443	0	0	0	1	1	756
05:45 PM	0	356	0	0	356	0	0	20	0	20	0	387	62	0	449	0	0	0	2	2	827
Total	0	1356	0	1	1357	0	0	69	0	69	0	1549	201	1	1751	0	0	0	4	4	3181
Grand Total	0	9302	0	5	9307	0	0	471	11	482	0	7680	935	9	8624	0	0	0	15	15	18428
Apprch %	0	99.9	0	0.1		0	0	97.7	2.3		0	89.1	10.8	0.1		0	0	0	100		
Total %	0	50.5	0	0	50.5	0	0	2.6	0.1	2.6	0	41.7	5.1	0	46.8	0	0	0	0.1	0.1	

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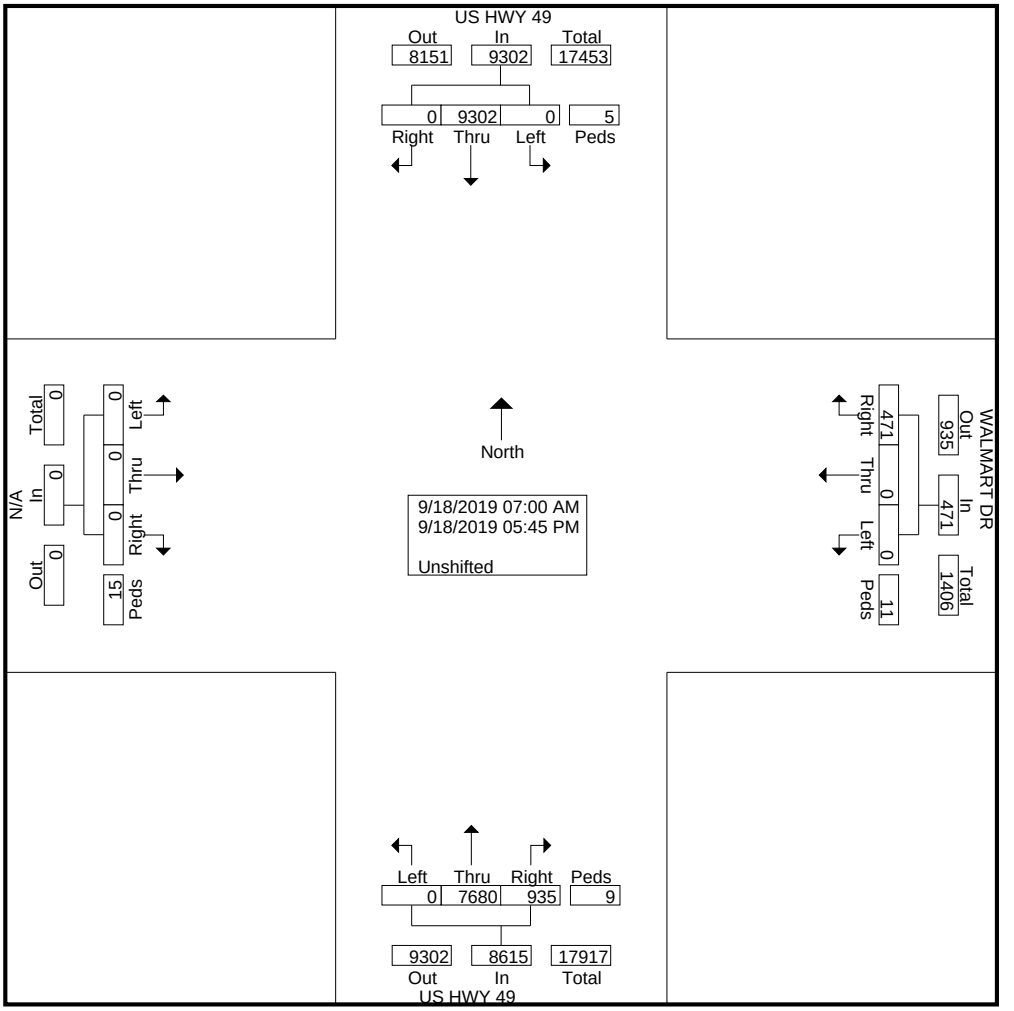
Intersection: Walmart Dr/US Hwy 49
Counter: T. Kiser (Video)
City/State: Gulfport/MS
Weather: Clear/Dry

File Name : walmart-hwy49-2019
Site Code : 00000000
Start Date : 9/18/2019
Page No : 2



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Intersection: Walmart Dr/US Hwy 49
Counter: T. Kiser (Video)
City/State: Gulfport/MS
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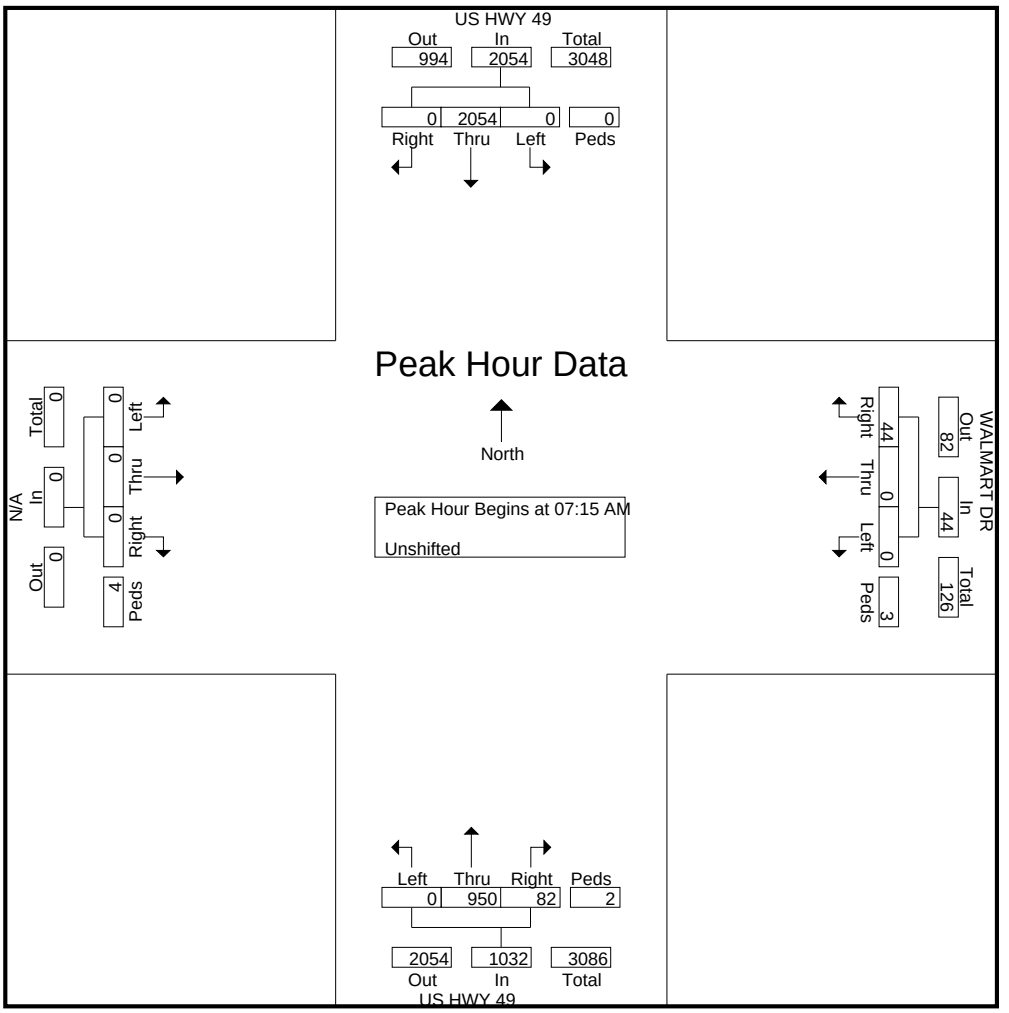
File Name : walmart-hwy49-2019
Site Code : 00000000
Start Date : 9/18/2019
Page No : 3

	US HWY 49 Southbound					WALMART DR Westbound					US HWY 49 Northbound					N/A Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 09:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:15 AM																					
07:15 AM	0	496	0	0	496	0	0	7	1	8	0	226	22	0	248	0	0	0	0	0	752
07:30 AM	0	515	0	0	515	0	0	12	0	12	0	253	16	0	269	0	0	0	0	0	796
07:45 AM	0	569	0	0	569	0	0	12	0	12	0	248	31	0	279	0	0	0	2	2	862
08:00 AM	0	474	0	0	474	0	0	13	2	15	0	223	13	2	238	0	0	0	2	2	729
Total Volume	0	2054	0	0	2054	0	0	44	3	47	0	950	82	2	1034	0	0	0	4	4	3139
% App. Total	0	100	0	0		0	0	93.6	6.4		0	91.9	7.9	0.2		0	0	0	100		
PHF	.000	.902	.000	.000	.902	.000	.000	.846	.375	.783	.000	.939	.661	.250	.927	.000	.000	.000	.500	.500	.910



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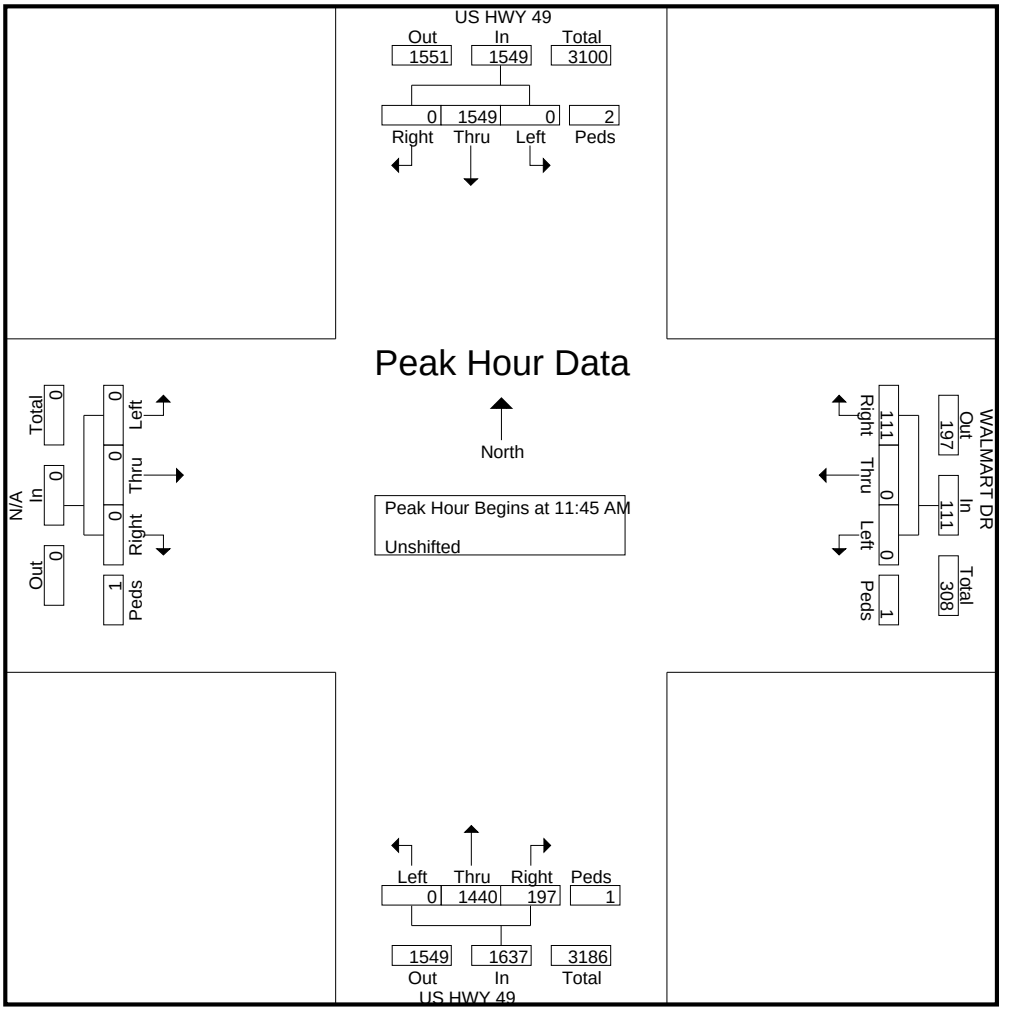
Intersection: Walmart Dr/US Hwy 49
Counter: T. Kiser (Video)
City/State: Gulfport/MS
Weather: Clear/Dry

File Name : walmart-hwy49-2019
Site Code : 00000000
Start Date : 9/18/2019
Page No : 4

	US HWY 49 Southbound					WALMART DR Westbound					US HWY 49 Northbound					N/A Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 10:00 AM to 01:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 11:45 AM																					
11:45 AM	0	388	0	0	388	0	0	25	0	25	0	330	51	0	381	0	0	0	0	0	794
12:00 PM	0	384	0	0	384	0	0	28	0	28	0	391	54	0	445	0	0	0	0	0	857
12:15 PM	0	374	0	1	375	0	0	23	0	23	0	352	41	0	393	0	0	0	1	1	792
12:30 PM	0	403	0	1	404	0	0	35	1	36	0	367	51	1	419	0	0	0	0	0	859
Total Volume	0	1549	0	2	1551	0	0	111	1	112	0	1440	197	1	1638	0	0	0	1	1	3302
% App. Total	0	99.9	0	0.1		0	0	99.1	0.9		0	87.9	12	0.1		0	0	0	100		
PHF	.000	.961	.000	.500	.960	.000	.000	.793	.250	.778	.000	.921	.912	.250	.920	.000	.000	.000	.250	.250	.961



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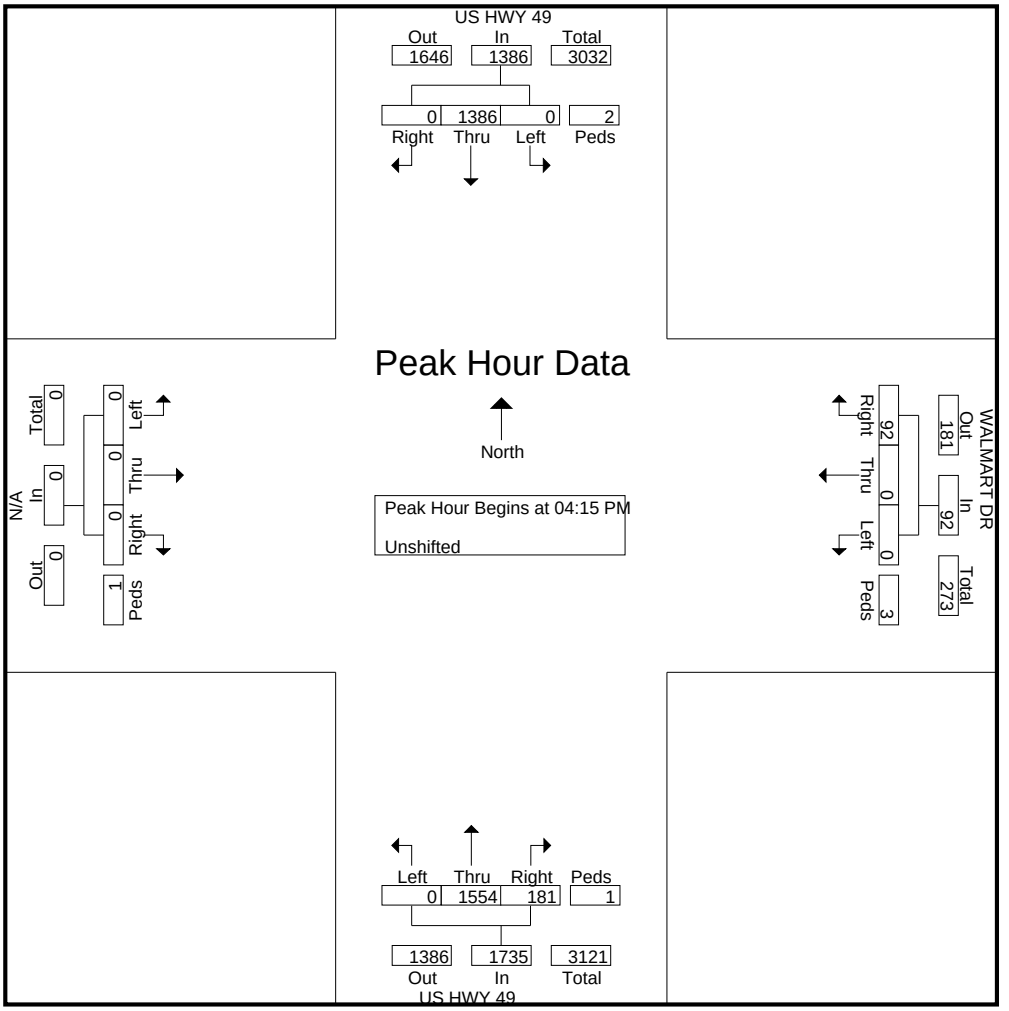
Intersection: Walmart Dr/US Hwy 49
Counter: T. Kiser (Video)
City/State: Gulfport/MS
Weather: Clear/Dry

File Name : walmart-hwy49-2019
Site Code : 00000000
Start Date : 9/18/2019
Page No : 5

	US HWY 49 Southbound					WALMART DR Westbound					US HWY 49 Northbound					N/A Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 02:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:15 PM																					
04:15 PM	0	393	0	0	393	0	0	27	1	28	0	390	33	0	423	0	0	0	0	0	844
04:30 PM	0	302	0	0	302	0	0	17	2	19	0	386	49	0	435	0	0	0	0	0	756
04:45 PM	0	325	0	1	326	0	0	20	0	20	0	407	58	1	466	0	0	0	0	0	812
05:00 PM	0	366	0	1	367	0	0	28	0	28	0	371	41	0	412	0	0	0	1	1	808
Total Volume	0	1386	0	2	1388	0	0	92	3	95	0	1554	181	1	1736	0	0	0	1	1	3220
% App. Total	0	99.9	0	0.1		0	0	96.8	3.2		0	89.5	10.4	0.1		0	0	0	100		
PHF	.000	.882	.000	.500	.883	.000	.000	.821	.375	.848	.000	.955	.780	.250	.931	.000	.000	.000	.250	.250	.954



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Intersection: Airport Rd/US Hwy 49
Counter: T. Kiser (Video)
City/State: Gulfport/MS
Weather: Clear/Dry

File Name : Airport-Hwy49-2019
Site Code : 00000000
Start Date : 9/18/2019
Page No : 1

Groups Printed- Unshifted

	US HWY 49 Southbound					AIRPORT RD Westbound					US HWY 49 Northbound					AIRPORT RD Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
06:00 AM	25	189	4	0	218	67	1	15	0	83	1	88	17	0	106	1	1	0	0	2	409
06:15 AM	41	301	5	0	347	76	3	17	0	96	2	102	29	1	134	4	1	0	0	5	582
06:30 AM	40	280	3	0	323	91	2	16	0	109	2	128	28	0	158	4	6	2	0	12	602
06:45 AM	63	370	8	3	444	61	2	14	0	77	1	149	31	0	181	7	4	2	0	13	715
Total	169	1140	20	3	1332	295	8	62	0	365	6	467	105	1	579	16	12	4	0	32	2308
07:00 AM	53	323	3	1	380	95	3	12	0	110	2	169	33	3	207	5	6	0	0	11	708
07:15 AM	67	434	7	0	508	96	3	21	0	120	2	207	37	0	246	7	5	1	0	13	887
07:30 AM	48	475	4	0	527	97	2	22	0	121	4	240	53	0	297	9	4	2	0	15	960
07:45 AM	59	492	7	0	558	103	2	21	0	126	5	238	59	0	302	9	9	1	0	19	1005
Total	227	1724	21	1	1973	391	10	76	0	477	13	854	182	3	1052	30	24	4	0	58	3560
08:00 AM	66	411	4	0	481	60	3	23	0	86	5	202	57	0	264	4	3	1	0	8	839
08:15 AM	41	333	5	0	379	75	2	17	0	94	2	199	43	0	244	5	5	1	0	11	728
08:30 AM	46	345	5	0	396	66	7	20	0	93	6	236	51	0	293	10	6	1	0	17	799
08:45 AM	55	303	3	0	361	89	7	22	0	118	8	220	57	0	285	8	2	1	1	12	776
Total	208	1392	17	0	1617	290	19	82	0	391	21	857	208	0	1086	27	16	4	1	48	3142
*** BREAK ***																					
11:00 AM	61	306	7	0	374	62	5	23	0	90	10	335	58	0	403	5	4	3	0	12	879
11:15 AM	56	330	11	1	398	89	3	22	0	114	15	329	51	0	395	15	4	4	0	23	930
11:30 AM	65	293	13	0	371	76	8	30	0	114	12	298	52	0	362	9	5	4	1	19	866
11:45 AM	79	309	11	0	399	68	9	26	0	103	11	332	55	1	399	9	2	4	0	15	916
Total	261	1238	42	1	1542	295	25	101	0	421	48	1294	216	1	1559	38	15	15	1	69	3591
12:00 PM	49	312	15	0	376	66	7	37	0	110	10	373	65	0	448	21	7	5	0	33	967
12:15 PM	67	305	12	0	384	109	10	48	0	167	5	320	63	0	388	15	8	2	0	25	964
12:30 PM	61	347	5	1	414	80	4	47	0	131	10	334	46	2	392	6	4	6	2	18	955
12:45 PM	46	333	9	1	389	86	3	27	0	116	12	328	61	1	402	15	8	2	1	26	933
Total	223	1297	41	2	1563	341	24	159	0	524	37	1355	235	3	1630	57	27	15	3	102	3819
*** BREAK ***																					
04:00 PM	52	266	8	0	326	87	6	24	0	117	12	392	65	1	470	11	3	6	0	20	933
04:15 PM	54	302	10	1	367	81	1	23	0	105	7	399	92	0	498	6	14	4	0	24	994
04:30 PM	44	269	9	0	322	105	9	32	0	146	9	386	60	0	455	9	8	3	0	20	943
04:45 PM	62	284	6	0	352	94	12	27	0	133	10	378	88	3	479	12	5	1	1	19	983
Total	212	1121	33	1	1367	367	28	106	0	501	38	1555	305	4	1902	38	30	14	1	83	3853
05:00 PM	49	292	14	1	356	107	7	24	1	139	6	431	65	0	502	14	12	2	0	28	1025
05:15 PM	43	288	13	0	344	119	6	34	0	159	10	419	98	0	527	14	6	4	0	24	1054
05:30 PM	43	252	9	1	305	104	7	66	0	177	12	337	77	2	428	10	11	2	0	23	933
05:45 PM	63	303	10	0	376	85	6	37	0	128	6	314	59	2	381	13	7	2	0	22	907
Total	198	1135	46	2	1381	415	26	161	1	603	34	1501	299	4	1838	51	36	10	0	97	3919
Grand Total	1498	9047	220	10	10775	2394	140	747	1	3282	197	7883	1550	16	9646	257	160	66	6	489	24192
Apprch %	13.9	84	2	0.1		72.9	4.3	22.8	0		2	81.7	16.1	0.2		52.6	32.7	13.5	1.2		
Total %	6.2	37.4	0.9	0	44.5	9.9	0.6	3.1	0	13.6	0.8	32.6	6.4	0.1	39.9	1.1	0.7	0.3	0	2	

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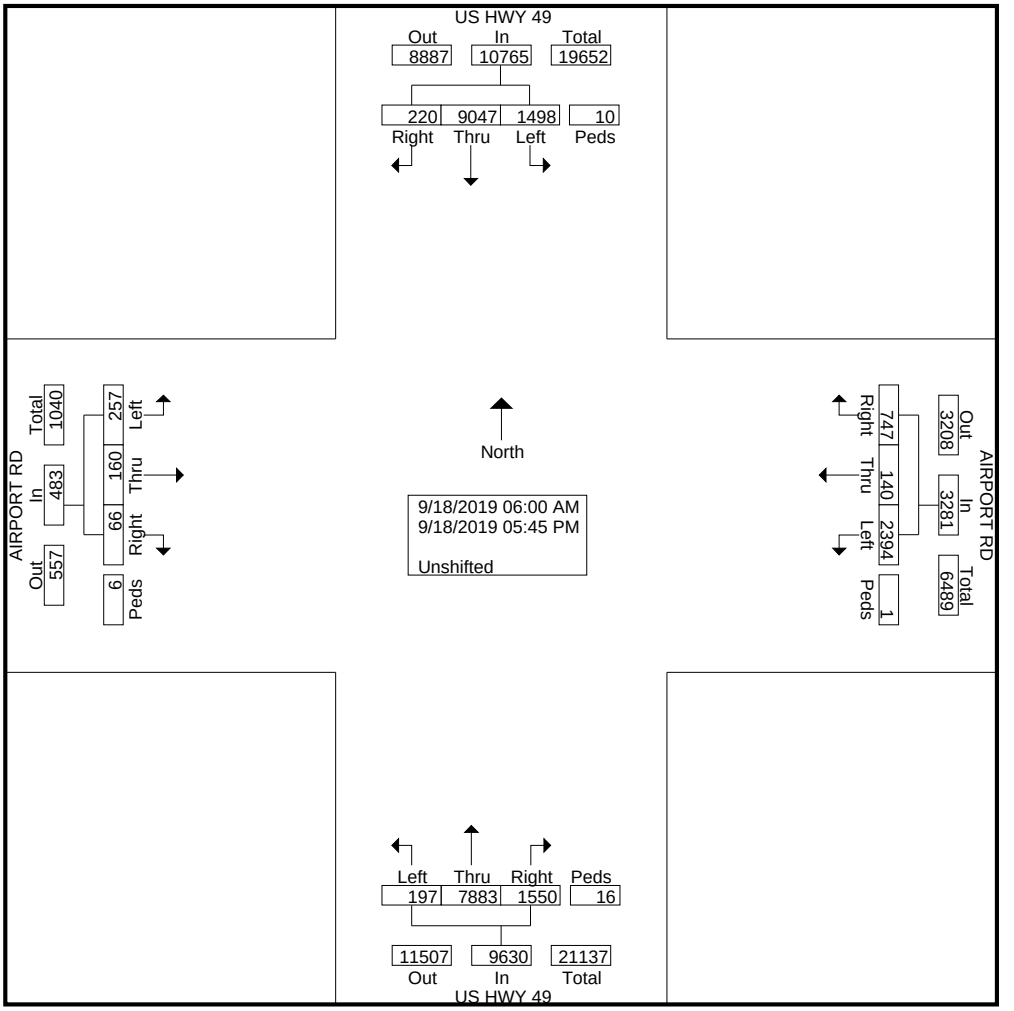
Jackson, MS 39225

Intersection: Airport Rd/US Hwy 49
Counter: T. Kiser (Video)
City/State: Gulfport/MS
Weather: Clear/Dry

File Name : Airport-Hwy49-2019
Site Code : 00000000
Start Date : 9/18/2019
Page No : 2



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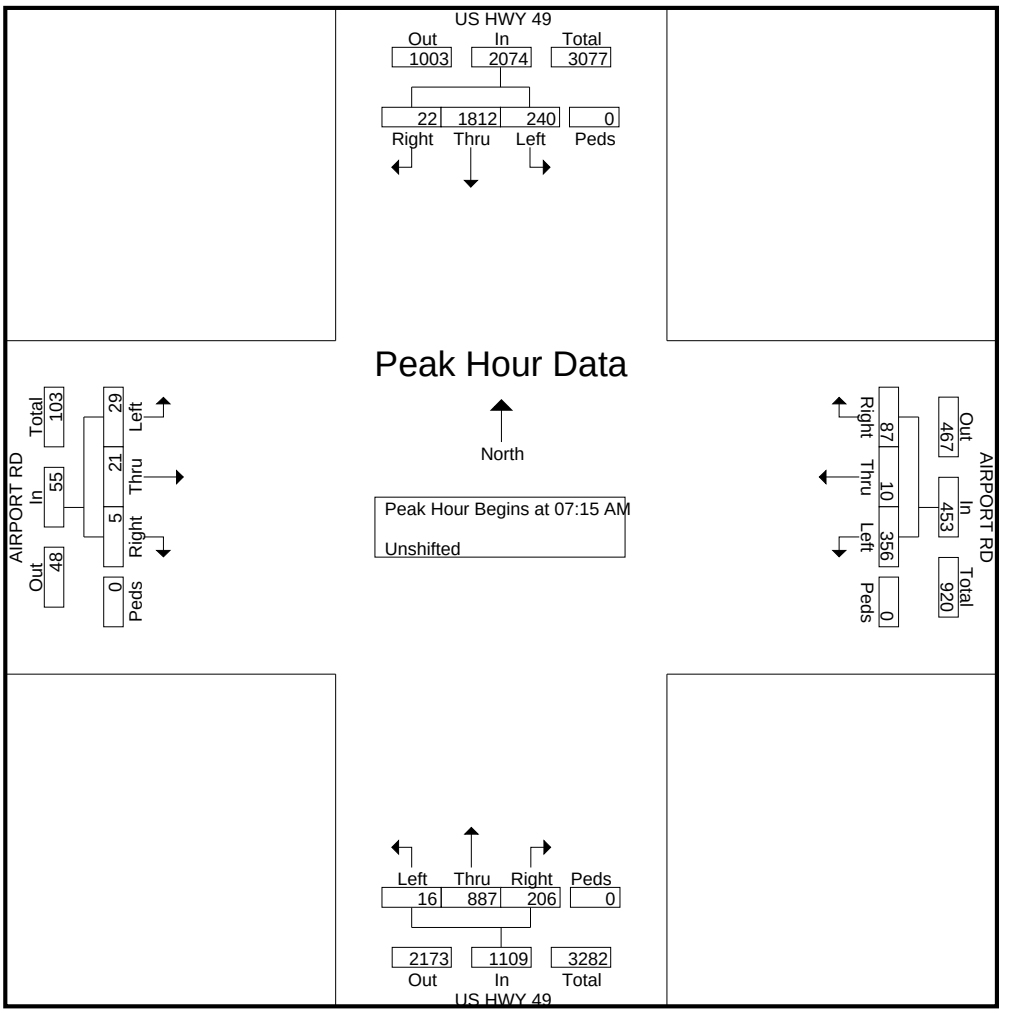
File Name : Airport-Hwy49-2019
Site Code : 00000000
Start Date : 9/18/2019
Page No : 3

	US HWY 49 Southbound					AIRPORT RD Westbound					US HWY 49 Northbound					AIRPORT RD Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 06:00 AM to 09:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:15 AM																					
07:15 AM	67	434	7	0	508	96	3	21	0	120	2	207	37	0	246	7	5	1	0	13	887
07:30 AM	48	475	4	0	527	97	2	22	0	121	4	240	53	0	297	9	4	2	0	15	960
07:45 AM	59	492	7	0	558	103	2	21	0	126	5	238	59	0	302	9	9	1	0	19	1005
08:00 AM	66	411	4	0	481	60	3	23	0	86	5	202	57	0	264	4	3	1	0	8	839
Total Volume	240	1812	22	0	2074	356	10	87	0	453	16	887	206	0	1109	29	21	5	0	55	3691
% App. Total	11.6	87.4	1.1	0		78.6	2.2	19.2	0		1.4	80	18.6	0		52.7	38.2	9.1	0		
PHF	.896	.921	.786	.000	.929	.864	.833	.946	.000	.899	.800	.924	.873	.000	.918	.806	.583	.625	.000	.724	.918



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Intersection: Airport Rd/US Hwy 49
Counter: T. Kiser (Video)
City/State: Gulfport/MS
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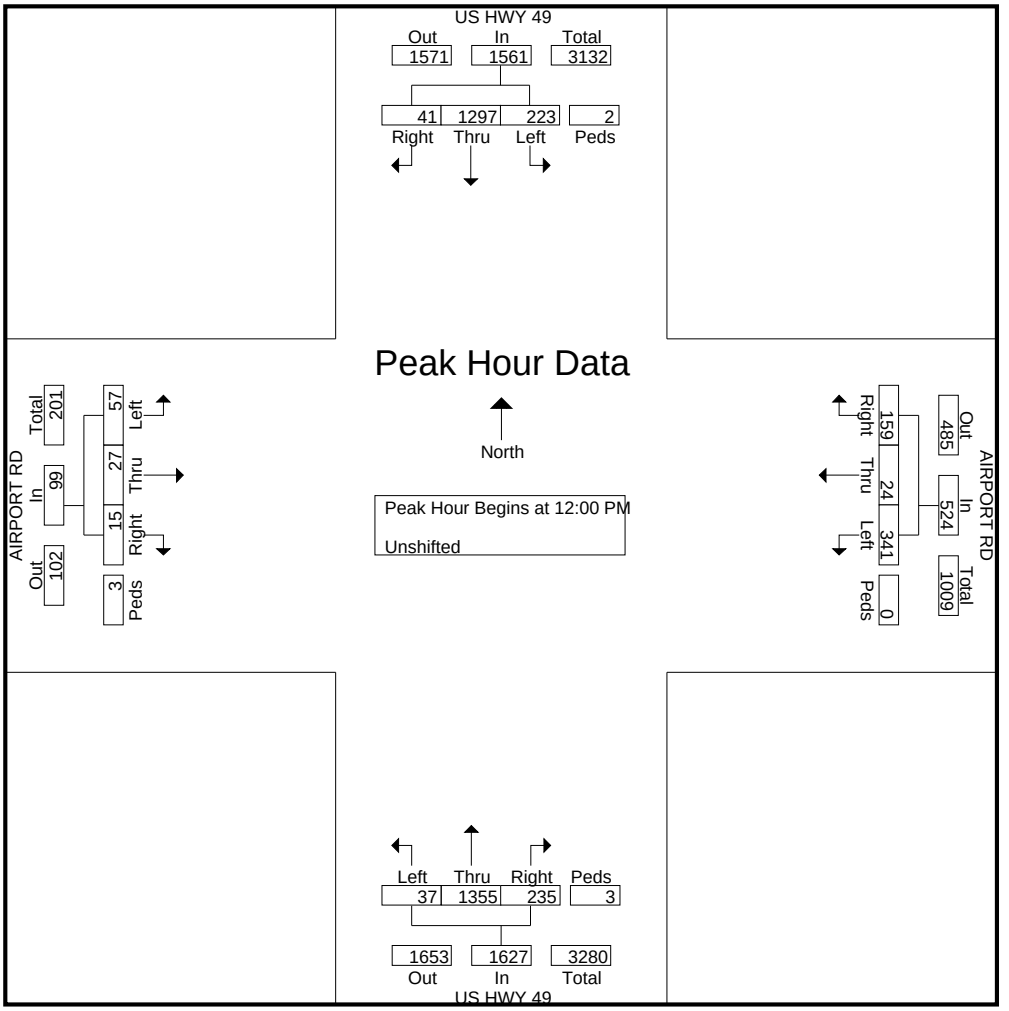
File Name : Airport-Hwy49-2019
Site Code : 00000000
Start Date : 9/18/2019
Page No : 4

	US HWY 49 Southbound					AIRPORT RD Westbound					US HWY 49 Northbound					AIRPORT RD Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 10:00 AM to 01:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 12:00 PM																					
12:00 PM	49	312	15	0	376	66	7	37	0	110	10	373	65	0	448	21	7	5	0	33	967
12:15 PM	67	305	12	0	384	109	10	48	0	167	5	320	63	0	388	15	8	2	0	25	964
12:30 PM	61	347	5	1	414	80	4	47	0	131	10	334	46	2	392	6	4	6	2	18	955
12:45 PM	46	333	9	1	389	86	3	27	0	116	12	328	61	1	402	15	8	2	1	26	933
Total Volume	223	1297	41	2	1563	341	24	159	0	524	37	1355	235	3	1630	57	27	15	3	102	3819
% App. Total	14.3	83	2.6	0.1		65.1	4.6	30.3	0		2.3	83.1	14.4	0.2		55.9	26.5	14.7	2.9		
PHF	.832	.934	.683	.500	.944	.782	.600	.828	.000	.784	.771	.908	.904	.375	.910	.679	.844	.625	.375	.773	.987



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Intersection: Airport Rd/US Hwy 49
Counter: T. Kiser (Video)
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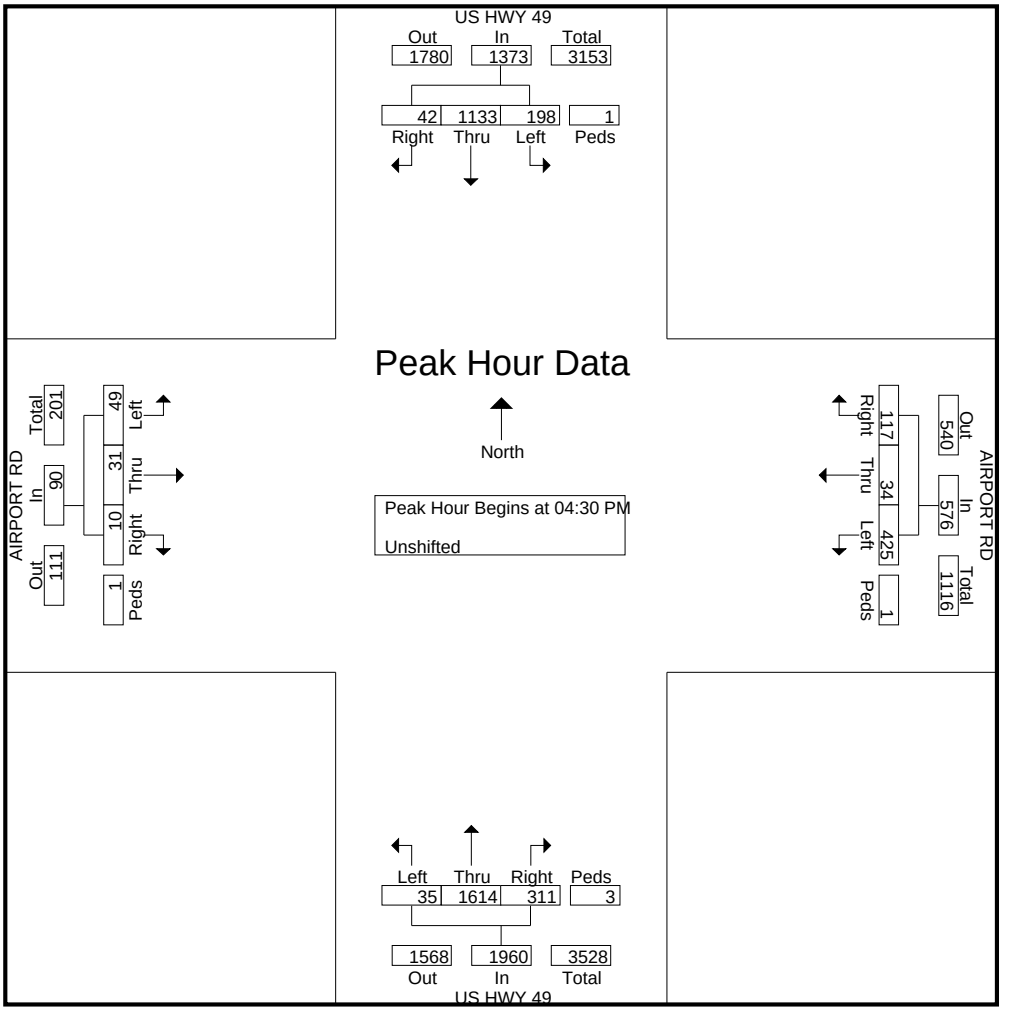
File Name : Airport-Hwy49-2019
Site Code : 00000000
Start Date : 9/18/2019
Page No : 5

	US HWY 49 Southbound					AIRPORT RD Westbound					US HWY 49 Northbound					AIRPORT RD Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 02:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:30 PM																					
04:30 PM	44	269	9	0	322	105	9	32	0	146	9	386	60	0	455	9	8	3	0	20	943
04:45 PM	62	284	6	0	352	94	12	27	0	133	10	378	88	3	479	12	5	1	1	19	983
05:00 PM	49	292	14	1	356	107	7	24	1	139	6	431	65	0	502	14	12	2	0	28	1025
05:15 PM	43	288	13	0	344	119	6	34	0	159	10	419	98	0	527	14	6	4	0	24	1054
Total Volume	198	1133	42	1	1374	425	34	117	1	577	35	1614	311	3	1963	49	31	10	1	91	4005
% App. Total	14.4	82.5	3.1	0.1		73.7	5.9	20.3	0.2		1.8	82.2	15.8	0.2		53.8	34.1	11	1.1		
PHF	.798	.970	.750	.250	.965	.893	.708	.860	.250	.907	.875	.936	.793	.250	.931	.875	.646	.625	.250	.813	.950



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	29	21	5	356	10	87	16	887	206	240	1812	22
Future Volume (veh/h)	29	21	5	356	10	87	16	887	206	240	1812	22
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	32	23	0	395	0	0	17	964	0	261	1970	24
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	43	31		496	0		34	2364		302	3189	39
Arrive On Green	0.04	0.04	0.00	0.14	0.00	0.00	0.02	0.46	0.00	0.17	0.61	0.61
Sat Flow, veh/h	1057	760	1585	3563	0	1585	1781	5106	1585	1781	5200	63
Grp Volume(v), veh/h	55	0	0	395	0	0	17	964	0	261	1289	705
Grp Sat Flow(s),veh/h/ln	1817	0	1585	1781	0	1585	1781	1702	1585	1781	1702	1859
Q Serve(g_s), s	2.9	0.0	0.0	10.3	0.0	0.0	0.9	12.0	0.0	13.7	22.6	22.7
Cycle Q Clear(g_c), s	2.9	0.0	0.0	10.3	0.0	0.0	0.9	12.0	0.0	13.7	22.6	22.7
Prop In Lane	0.58		1.00	1.00		1.00	1.00		1.00	1.00		0.03
Lane Grp Cap(c), veh/h	75	0		496	0		34	2364		302	2088	1140
V/C Ratio(X)	0.74	0.00		0.80	0.00		0.50	0.41		0.86	0.62	0.62
Avail Cap(c_a), veh/h	672	0		835	0		95	2364		510	2088	1140
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	45.5	0.0	0.0	40.0	0.0	0.0	46.7	17.1	0.0	38.8	11.6	11.6
Incr Delay (d2), s/veh	13.2	0.0	0.0	3.0	0.0	0.0	11.1	0.5	0.0	7.9	1.4	2.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.6	0.0	0.0	4.7	0.0	0.0	0.5	4.6	0.0	6.6	8.1	9.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	58.8	0.0	0.0	43.0	0.0	0.0	57.7	17.6	0.0	46.7	12.9	14.1
LnGrp LOS	E	A		D	A		E	B		D	B	B
Approach Vol, veh/h		55	A		395	A		981	A		2255	
Approach Delay, s/veh		58.8			43.0			18.3			17.2	
Approach LOS		E			D			B			B	

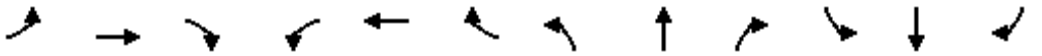
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	20.8	49.0		8.4	6.3	63.4		17.9				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	27.5	36.5		35.5	5.1	58.9		22.5				
Max Q Clear Time (g_c+I1), s	15.7	14.0		4.9	2.9	24.7		12.3				
Green Ext Time (p_c), s	0.6	7.2		0.2	0.0	20.6		1.1				

Intersection Summary		
HCM 6th Ctrl Delay		20.9
HCM 6th LOS		C

Notes

User approved volume balancing among the lanes for turning movement.

Unsignalized Delay for [NBR, EBR, WBR] is excluded from calculations of the approach delay and intersection delay.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	4	1	1	42	0	72	21	938	35	99	1991	1
Future Volume (veh/h)	4	1	1	42	0	72	21	938	35	99	1991	1
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	4	1	1	46	0	79	23	1031	38	109	2188	1
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	104	36	36	185	0	113	41	3596	132	167	3885	2
Arrive On Green	0.01	0.04	0.04	0.03	0.00	0.07	0.02	0.71	0.71	0.05	0.74	0.74
Sat Flow, veh/h	1781	858	858	1781	0	1585	1781	5055	186	3456	5272	2
Grp Volume(v), veh/h	4	0	2	46	0	79	23	694	375	109	1413	776
Grp Sat Flow(s),veh/h/ln	1781	0	1716	1781	0	1585	1781	1702	1837	1728	1702	1870
Q Serve(g_s), s	0.2	0.0	0.1	2.7	0.0	5.4	1.4	8.1	8.1	3.4	20.5	20.5
Cycle Q Clear(g_c), s	0.2	0.0	0.1	2.7	0.0	5.4	1.4	8.1	8.1	3.4	20.5	20.5
Prop In Lane	1.00		0.50	1.00		1.00	1.00		0.10	1.00		0.00
Lane Grp Cap(c), veh/h	104	0	72	185	0	113	41	2422	1307	167	2508	1378
V/C Ratio(X)	0.04	0.00	0.03	0.25	0.00	0.70	0.56	0.29	0.29	0.65	0.56	0.56
Avail Cap(c_a), veh/h	184	0	406	245	0	404	122	2422	1307	330	2508	1378
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	50.0	0.0	50.5	47.5	0.0	49.9	53.2	5.7	5.8	51.4	6.5	6.5
Incr Delay (d2), s/veh	0.1	0.0	0.2	0.7	0.0	7.6	11.6	0.3	0.6	4.2	0.9	1.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.0	0.1	1.2	0.0	2.4	0.8	2.7	3.0	1.6	6.5	7.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	50.2	0.0	50.6	48.2	0.0	57.5	64.7	6.0	6.3	55.6	7.4	8.2
LnGrp LOS	D	A	D	D	A	E	E	A	A	E	A	A
Approach Vol, veh/h		6			125			1092			2298	
Approach Delay, s/veh		50.3			54.1			7.4			10.0	
Approach LOS		D			D			A			A	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.8	82.7	8.3	9.1	7.0	85.5	5.1	12.3
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	10.5	78.0	7.5	26.0	7.5	81.0	5.5	28.0
Max Q Clear Time (g_c+I1), s	5.4	10.1	4.7	2.1	3.4	22.5	2.2	7.4
Green Ext Time (p_c), s	0.1	9.5	0.0	0.0	0.0	31.8	0.0	0.4

Intersection Summary	
HCM 6th Ctrl Delay	10.8
HCM 6th LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	179	81	50	59	53	272	39	906	74	314	1988	368
Future Volume (veh/h)	179	81	50	59	53	272	39	906	74	314	1988	368
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	225	57	56	66	60	0	44	1018	83	353	2234	413
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	323	78	77	151	155		59	2481	770	391	3432	1066
Arrive On Green	0.09	0.09	0.09	0.04	0.04	0.00	0.03	0.49	0.49	0.22	0.67	0.67
Sat Flow, veh/h	3563	866	851	3456	3647	0	1781	5106	1585	1781	5106	1585
Grp Volume(v), veh/h	225	0	113	66	60	0	44	1018	83	353	2234	413
Grp Sat Flow(s),veh/h/ln	1781	0	1717	1728	1777	0	1781	1702	1585	1781	1702	1585
Q Serve(g_s), s	6.9	0.0	7.2	2.1	1.8	0.0	2.7	14.4	3.2	21.7	28.6	13.0
Cycle Q Clear(g_c), s	6.9	0.0	7.2	2.1	1.8	0.0	2.7	14.4	3.2	21.7	28.6	13.0
Prop In Lane	1.00		0.50	1.00		0.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	323	0	156	151	155		59	2481	770	391	3432	1066
V/C Ratio(X)	0.70	0.00	0.73	0.44	0.39		0.74	0.41	0.11	0.90	0.65	0.39
Avail Cap(c_a), veh/h	587	0	283	569	585		151	2481	770	658	3432	1066
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	49.6	0.0	49.7	52.4	52.2	0.0	53.8	18.5	15.7	42.7	10.7	8.2
Incr Delay (d2), s/veh	2.7	0.0	6.3	2.0	1.6	0.0	16.6	0.5	0.3	9.5	1.0	1.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.2	0.0	3.4	0.9	0.9	0.0	1.5	5.7	1.2	10.5	10.1	4.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	52.3	0.0	56.0	54.4	53.8	0.0	70.4	19.0	15.9	52.2	11.7	9.2
LnGrp LOS	D	A	E	D	D		E	B	B	D	B	A
Approach Vol, veh/h		338			126	A		1145			3000	
Approach Delay, s/veh		53.5			54.1			20.8			16.1	
Approach LOS		D			D			C			B	

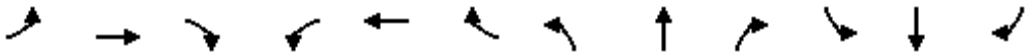
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	29.2	59.1		14.7	8.2	80.0		9.4				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	41.5	43.5		18.5	9.5	75.5		18.5				
Max Q Clear Time (g_c+I1), s	23.7	16.4		9.2	4.7	30.6		4.1				
Green Ext Time (p_c), s	1.0	8.6		1.0	0.0	32.7		0.4				

Intersection Summary			
HCM 6th Ctrl Delay		21.1	
HCM 6th LOS		C	

Notes

User approved volume balancing among the lanes for turning movement.

Unsignalized Delay for [WBR] is excluded from calculations of the approach delay and intersection delay.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	49	31	10	425	34	117	35	1614	311	198	1133	42
Future Volume (veh/h)	49	31	10	425	34	117	35	1614	311	198	1133	42
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	52	33	0	473	0	0	37	1699	0	208	1193	44
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	70	45		565	0		56	2377		245	2889	107
Arrive On Green	0.06	0.06	0.00	0.16	0.00	0.00	0.03	0.47	0.00	0.14	0.57	0.57
Sat Flow, veh/h	1110	705	1585	3563	0	1585	1781	5106	1585	1781	5055	186
Grp Volume(v), veh/h	85	0	0	473	0	0	37	1699	0	208	803	434
Grp Sat Flow(s),veh/h/ln	1815	0	1585	1781	0	1585	1781	1702	1585	1781	1702	1837
Q Serve(g_s), s	4.7	0.0	0.0	13.3	0.0	0.0	2.1	27.5	0.0	11.7	13.6	13.6
Cycle Q Clear(g_c), s	4.7	0.0	0.0	13.3	0.0	0.0	2.1	27.5	0.0	11.7	13.6	13.6
Prop In Lane	0.61		1.00	1.00		1.00	1.00		1.00	1.00		0.10
Lane Grp Cap(c), veh/h	115	0		565	0		56	2377		245	1946	1050
V/C Ratio(X)	0.74	0.00		0.84	0.00		0.66	0.71		0.85	0.41	0.41
Avail Cap(c_a), veh/h	625	0		778	0		88	2377		475	1946	1050
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	47.4	0.0	0.0	42.1	0.0	0.0	49.3	22.1	0.0	43.4	12.4	12.4
Incr Delay (d2), s/veh	8.9	0.0	0.0	5.8	0.0	0.0	12.1	1.9	0.0	7.9	0.6	1.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.4	0.0	0.0	6.2	0.0	0.0	1.1	10.9	0.0	5.7	5.1	5.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	56.3	0.0	0.0	47.9	0.0	0.0	61.5	23.9	0.0	51.3	13.0	13.6
LnGrp LOS	E	A		D	A		E	C		D	B	B
Approach Vol, veh/h		85	A		473	A		1736	A		1445	
Approach Delay, s/veh		56.3			47.9			24.7			18.7	
Approach LOS		E			D			C			B	

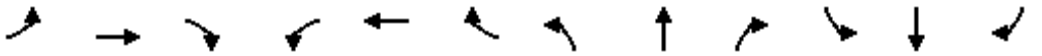
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	18.7	52.5		11.0	7.8	63.4		20.9				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	27.5	36.5		35.5	5.1	58.9		22.5				
Max Q Clear Time (g_c+I1), s	13.7	29.5		6.7	4.1	15.6		15.3				
Green Ext Time (p_c), s	0.5	5.5		0.4	0.0	11.3		1.1				

Intersection Summary		
HCM 6th Ctrl Delay		26.0
HCM 6th LOS		C

Notes

User approved volume balancing among the lanes for turning movement.

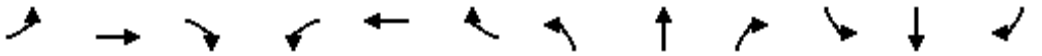
Unsignalized Delay for [NBR, EBR, WBR] is excluded from calculations of the approach delay and intersection delay.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	7	1	2	86	2	148	51	1547	48	136	1298	10
Future Volume (veh/h)	7	1	2	86	2	148	51	1547	48	136	1298	10
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	7	1	2	90	2	154	53	1611	50	142	1352	10
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	104	38	76	260	2	186	68	3373	105	200	3568	26
Arrive On Green	0.01	0.07	0.07	0.06	0.12	0.12	0.04	0.66	0.66	0.06	0.68	0.68
Sat Flow, veh/h	1781	557	1113	1781	20	1568	1781	5088	158	3456	5229	39
Grp Volume(v), veh/h	7	0	3	90	0	156	53	1078	583	142	880	482
Grp Sat Flow(s),veh/h/ln	1781	0	1670	1781	0	1588	1781	1702	1842	1728	1702	1863
Q Serve(g_s), s	0.4	0.0	0.2	5.4	0.0	11.4	3.5	18.5	18.5	4.8	13.1	13.1
Cycle Q Clear(g_c), s	0.4	0.0	0.2	5.4	0.0	11.4	3.5	18.5	18.5	4.8	13.1	13.1
Prop In Lane	1.00		0.67	1.00		0.99	1.00		0.09	1.00		0.02
Lane Grp Cap(c), veh/h	104	0	114	260	0	189	68	2257	1221	200	2323	1272
V/C Ratio(X)	0.07	0.00	0.03	0.35	0.00	0.83	0.78	0.48	0.48	0.71	0.38	0.38
Avail Cap(c_a), veh/h	171	0	366	268	0	375	113	2257	1221	306	2323	1272
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	50.9	0.0	51.6	45.8	0.0	51.1	56.6	9.9	9.9	54.9	8.1	8.1
Incr Delay (d2), s/veh	0.3	0.0	0.1	0.8	0.0	8.8	16.9	0.7	1.3	4.6	0.5	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.0	0.1	2.5	0.0	5.0	1.9	6.7	7.5	2.2	4.7	5.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	51.1	0.0	51.7	46.6	0.0	59.9	73.4	10.6	11.2	59.6	8.5	8.9
LnGrp LOS	D	A	D	D	A	E	E	B	B	E	A	A
Approach Vol, veh/h		10			246			1714			1504	
Approach Delay, s/veh		51.3			55.0			12.7			13.5	
Approach LOS		D			E			B			B	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.4	83.2	11.5	12.6	9.1	85.5	5.5	18.6
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	10.5	78.0	7.5	26.0	7.5	81.0	5.5	28.0
Max Q Clear Time (g_c+I1), s	6.8	20.5	7.4	2.2	5.5	15.1	2.4	13.4
Green Ext Time (p_c), s	0.1	19.3	0.0	0.0	0.0	13.9	0.0	0.7

Intersection Summary	
HCM 6th Ctrl Delay	16.2
HCM 6th LOS	B



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	477	75	73	91	94	651	79	1562	56	234	1246	346
Future Volume (veh/h)	477	75	73	91	94	651	79	1562	56	234	1246	346
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	513	81	78	98	101	0	85	1680	60	252	1340	372
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	524	129	124	170	175		107	2556	793	285	3066	952
Arrive On Green	0.15	0.15	0.15	0.05	0.05	0.00	0.06	0.50	0.50	0.16	0.60	0.60
Sat Flow, veh/h	3563	876	843	3456	3647	0	1781	5106	1585	1781	5106	1585
Grp Volume(v), veh/h	513	0	159	98	101	0	85	1680	60	252	1340	372
Grp Sat Flow(s),veh/h/ln	1781	0	1719	1728	1777	0	1781	1702	1585	1781	1702	1585
Q Serve(g_s), s	18.0	0.0	10.9	3.5	3.5	0.0	5.9	30.8	2.5	17.4	17.9	15.4
Cycle Q Clear(g_c), s	18.0	0.0	10.9	3.5	3.5	0.0	5.9	30.8	2.5	17.4	17.9	15.4
Prop In Lane	1.00		0.49	1.00		0.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	524	0	253	170	175		107	2556	793	285	3066	952
V/C Ratio(X)	0.98	0.00	0.63	0.58	0.58		0.80	0.66	0.08	0.88	0.44	0.39
Avail Cap(c_a), veh/h	524	0	253	509	523		135	2556	793	588	3066	952
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	53.4	0.0	50.4	58.5	58.5	0.0	58.3	23.4	16.3	51.7	13.6	13.1
Incr Delay (d2), s/veh	33.7	0.0	4.9	3.1	3.0	0.0	22.3	1.3	0.2	8.9	0.5	1.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	10.5	0.0	5.1	1.6	1.6	0.0	3.3	12.5	0.9	8.5	6.8	5.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	87.1	0.0	55.3	61.6	61.5	0.0	80.7	24.7	16.5	60.6	14.1	14.3
LnGrp LOS	F	A	E	E	E		F	C	B	E	B	B
Approach Vol, veh/h		672			199	A		1825			1964	
Approach Delay, s/veh		79.6			61.5			27.0			20.1	
Approach LOS		E			E			C			C	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	24.6	67.4		23.0	12.0	80.0		10.7				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	41.5	43.5		18.5	9.5	75.5		18.5				
Max Q Clear Time (g_c+I1), s	19.4	32.8		20.0	7.9	19.9		5.5				
Green Ext Time (p_c), s	0.7	8.0		0.0	0.0	17.5		0.7				

Intersection Summary			
HCM 6th Ctrl Delay		33.2	
HCM 6th LOS		C	

Notes

User approved volume balancing among the lanes for turning movement.

Unsignalized Delay for [WBR] is excluded from calculations of the approach delay and intersection delay.