TRAFFIC IMPACT ANALYSIS

for

Mattei Middle School – Princeton ISD

in Princeton, Texas

Prepared

For

Pogue Construction
and
Princeton ISD

December 14, 2021

By

By

STATE OF TEXAS
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BBI Project: 2100000370.000

TRAFFIC IMPACT ANALYSIS
for
Mattei Middle School – Princeton ISD
in Princeton, Texas

EXECUTIVE SUMMARY

The Princeton Independent School District (PISD) plans to construct a new middle school in the City of Princeton, Texas. The proposed school is generally located at the southeast corner of the intersection of CR 392 and Melody Lane.

It is intended that the school will be constructed in one phase and provide a capacity for 1,000 students. The project is anticipated to be completed by the Fall 2023 school year. This report analyzed the site, its proposed access points, and its surrounding area under the following conditions:

- Existing (2021)
- Full Build (2023)

The traffic impact analysis results are summarized in the following paragraphs:

INTERSECTION CAPACITY ANALYSIS

The intersections of CR 392 at CR 728/CR 447 and FM 982 at CR 392 are expected to operate at undesirable levels of service during the Full Build (2023) scenario for the AM Peak hour only. Mitigation scenarios were examined and discussed for these intersections.

All other intersection approaches are expected to operate at acceptable levels of service during the AM and PM Peak hours of all scenarios.

ACCESS CONNECTION SPACING

The access connection spacing analysis indicates that the proposed driveways on CR 728 do meet Collin County requirements.

SIGHT DISTANCE ANALYSES

The measured sight distances provide enough intersection sight distance and stopping sight distance per AASHTO guidelines.

RECOMMENDATIONS

Based on the results of the analyses and evaluations conducted as part of this study, we recommend the following items:

Roadway Improvements – Due to Development

CR 392 at CR 728/CR 447

- Convert the intersection from a two-way stop-control to an all-way stop-control.

FM 982 at CR 392

- Right-turn lanes should be provided on the eastbound and southbound approaches of this intersection.

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INTRODUCTION

The Princeton Independent School District (PISD) plans to construct a new middle school in the Princeton, Texas. The proposed school is generally located at the southeast corner of the intersection of CR 392 and Melody Lane.

It is intended that the school will be constructed in one phase and provide a capacity for 1,000 students. The project is anticipated to be completed by the Fall 2023 school year. This report analyzed the site, its proposed access points, and its surrounding area under the following conditions:

- Existing (2021)
- Full Build (2023)

EXISTING STUDY AREA

Provided below is a summary of the existing land uses near the school and descriptions of existing streets and intersections which encompass the study area.

AREA DEVELOPMENT

The proposed site for the school is located on the former site of the Lavon North Airport. The surrounding land uses are primarily residential and agricultural. Harper Elementary School is located approximately 1.5 miles north of the site.

STREETS AND INTERSECTIONS

CR 392 is a two-lane county roadway that generally runs east-west with a posted speed limit of 40 miles per hour. West of FM 546, CR 392 is designated as **CR 941**. CR 392 is classified as a "Major Arterial" under Collin County's Throughfare Plan.

CR 728 is a two-lane county roadway with a posted speed limit of 40 miles per hour. From its intersection with FM 546, the roadway generally runs east-west until it bends to run north-south and terminates its designation at CR 392. North of CR 392, CR 728 is designated as **CR 447** and the posted speed limit changes to 35 miles per hour. CR 728 and CR 447 are both classified as Major Arterials under Collin County's Throughfare plan.

Melody Lane is a local two-lane roadway that generally runs north-south with a posted speed limit of 30 miles per hour.

FM 546 is a two-lane roadway that generally runs north-south with a posted speed limit of 55 miles per hour and is under TxDOT jurisdiction. Near CR 728, the roadway has a curve with an advisory speed of 45 miles per hour. FM 546 is classified as a "Major Arterial" under Collin County's Throughfare Plan.

FM 982 is a two-lane roadway that generally runs north-south with a posted speed limit of 50 miles per hour and is under TxDOT jurisdiction. FM 982 is classified as a "Major Arterial" under Collin County's Throughfare Plan.

Driveway #1 will be a three-lane divided driveway that intersects with CR 728 and will run north-south into the proposed site. The driveway will be a full access driveway and is proposed to include exclusive left-turn and right-turn deceleration lanes.

Driveway #2 will be a three-lane divided driveway that intersects with CR 728 and will run east-west into the proposed site. The driveway will be a full access driveway and is proposed to include exclusive left-turn and right-turn deceleration lanes.

The proposed intersections included in this study are as follows:

- CR 392 at CR 728/CR 447 (existing; CR 728/CR 447 stop-controlled)
- CR 392 at Melody Lane (existing; Melody Lane stop-controlled)
- CR 728 at Melody Lane (existing; Melody Lane stop-controlled)
- FM 546 at CR 392/CR 941 (existing; CR 392/CR 941 stop-controlled)
- FM 546 at CR 728 (existing; CR 728 stop-controlled)
- FM 982 at CR 392 (existing; CR 392 stop-controlled)
- CR 728 at Driveway #1 (proposed; Driveway #1 stop-controlled)
- CR 728 at Driveway #2 (proposed; Driveway #2 stop-controlled)

See **Figure 1** for an aerial photograph of the area. A site plan of the proposed development with the proposed access points in provided in the Appendix.

Turning movement counts were collected at the study intersections during the AM Peak (7:00 – 9:00 AM) and the school PM Peak (2:00 – 4:00 PM) on Tuesday, November 2, 2021. The observed AM and PM Peak hours varied between study intersections. The individual peak hour for each intersection was used in analysis to conservatively assume the highest volumes for each intersection.

Figure 2 provides a summary of the existing observed peak hour volumes at the study intersections. The raw traffic count volume printouts are provided in the Appendix.

SITE LAYOUT

The Mattei Middle School site is proposed to consist of the school building, athletic fields, and parking lots. Two driveways are proposed on CR 728. Parents will enter the site using Driveway #2 to reach the drop-off/pick-up loop to drop-off/pick-up their student. Leaving the site, parent traffic will exit onto CR 728 via Driveway #2. It is expected that buses will enter via Driveway #1. Buses will continue to the western side of the school to a separate staging area and then exit the site onto CR 728 via Driveway #1. Staff will be able to enter and exit the site using either driveway.

Imagery ©2020 Google, Map data ©2021 Google

north

1000 ft

MATTEI MIDDLE SCHOOL
SITE LOCATION MAP

SCALE:	N/A	DATE:	DECEMBER 2021
JOB NO.:	2100000370.000	DWG. FILE:	FIGURE #1

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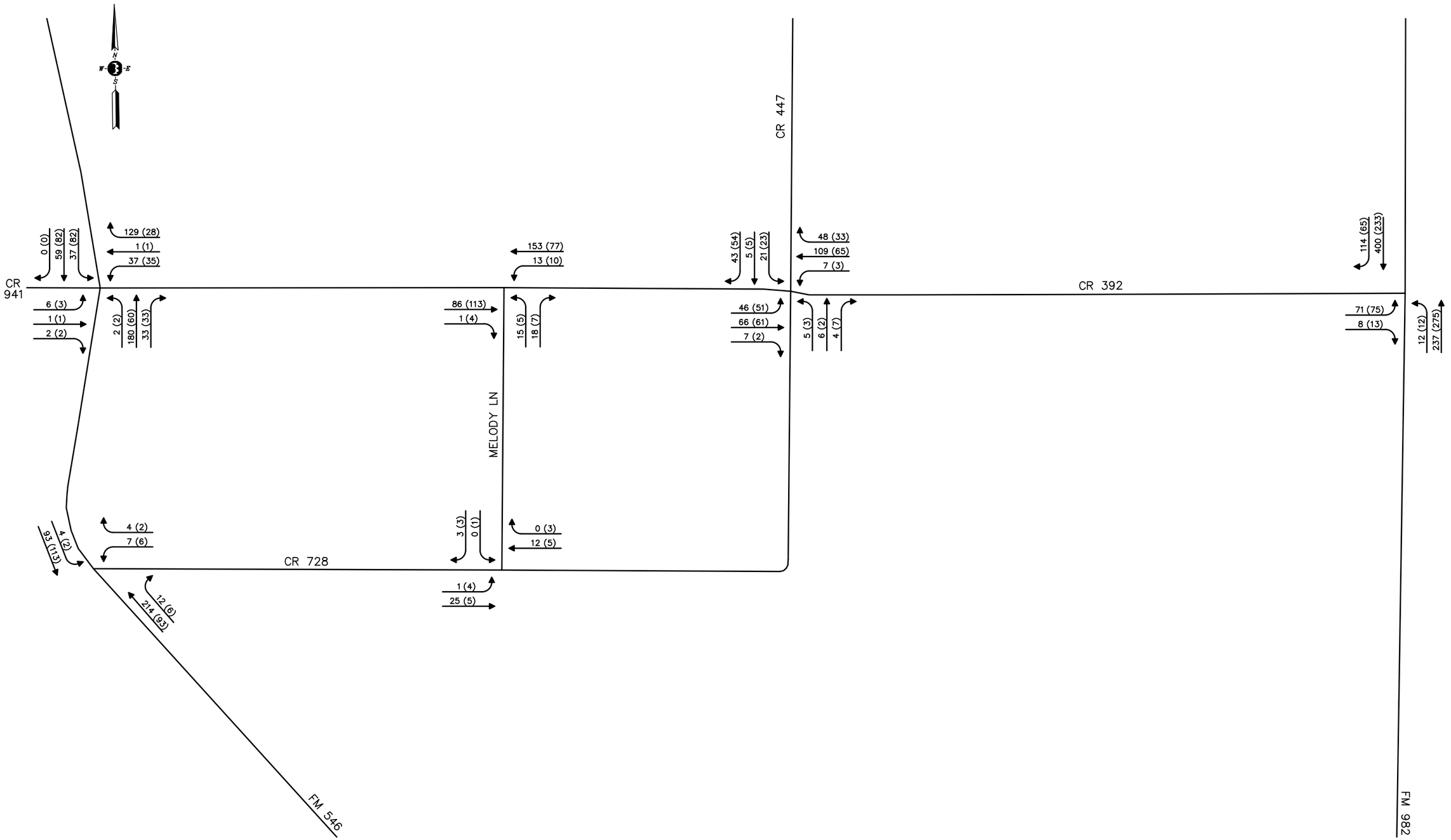

LEGEND
XXX A.M. PEAK HOUR
(XXX) P.M. PEAK HOUR

MATTEI MIDDLE SCHOOL
PEAK HOUR VOLUMES - EXISTING (2021)

SCALE:	N/A	DATE:	DECEMBER 2021
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PROPOSED DEVELOPMENT

This report addresses the development of Mattei Middle School in Princeton, Texas. The school has an anticipated maximum student capacity of 1,000 students and is expected to be complete by the Fall 2023 school year. **Table 1** summarizes the land use data.

Table 1. Land Use Data

Land Use	ITE Code	Units	Quantity
Middle School/Junior High School	522	Students	1,000

Based on Princeton ISD's current schedule, this middle school will have a 7:30 AM student arrival time and a 2:55 PM student dismissal time. The school proposes two access points on CR 728. Parents will be allowed to drop-off and pick-up students by entering Driveway #2 and will also exit using this driveway. Buses traveling to/from the school will use Driveway #1 to enter and exit the site. Faculty and Staff will be able to enter and exit the site using either Driveway #1 or Driveway #2.

Mattei Middle School intends to serve the southern portion of the Princeton ISD boundary and is centrally located within its attendance zone. The attendance zone map for the school is provided in the Appendix.

TRIP GENERATION

Estimated vehicle trip ends to and from the study area are calculated utilizing trip generation rates and characteristics collected and compiled by the Institute of Transportation Engineers (ITE) in the eleventh edition of the *Trip Generation Manual*.

Table 2 has been prepared to summarize the associated ITE trip generation data and the calculated trips that are anticipated to be generated by the proposed school during a typical weekday based on a student capacity of 1,000 students. Copies of the ITE data sheets used to develop **Table 2** have been included in the Appendix.

Table 2. Trip Generation: Middle School (ITE Land Use 522) – 1,000 Students

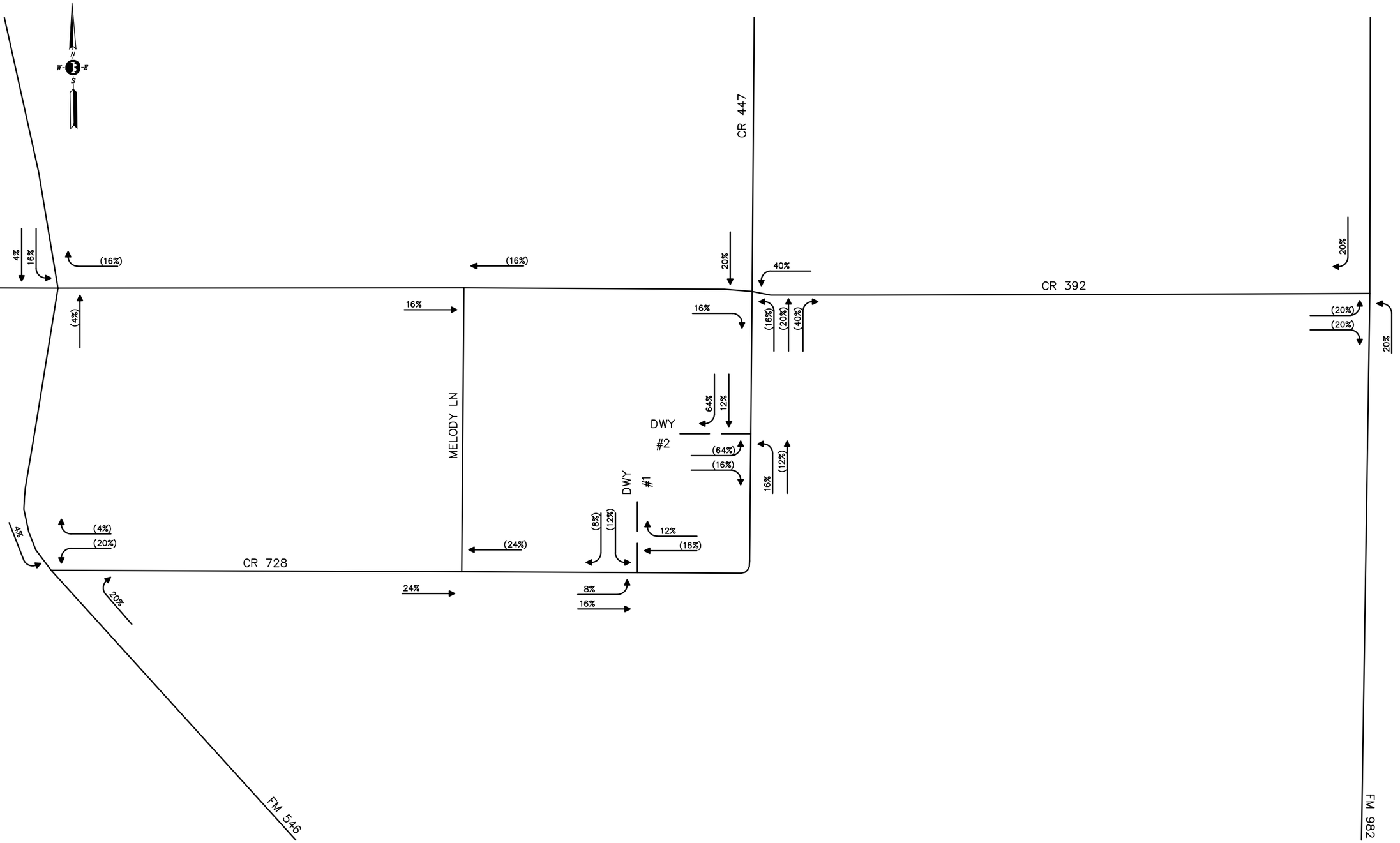
Year	Size	Weekday	AM Peak			PM Peak[2]		
			Total	Enter	Exit	Total	Enter	Exit
2023	1,000 Students	2,102	670	362	308	360	165	195

1. AM Peak uses the Peak Hour of Adjacent Street Traffic, PM Peak uses the Peak Hour of the Generator.
2. Fitted Curve Equation Used – T = 0.33 (X) + 29.58

TRIP DISTRIBUTION

The trip ends generated by the proposed land use addressed in this study were distributed to and from the study site based on its location with respect to area development, nearby major roadways, and existing traffic patterns. The trip distribution looked at origin/destination information relative to the likely thoroughfare routing to and from the school from throughout the attendance zone in addition to considering the locations of future planned subdivisions within the city.

The proposed distribution is shown in **Figure 3**. The attendance zone map for the school and a map depicting future planned subdivisions within the city are provided in the Appendix.



LEGEND
XX% INBOUND
(XX%) OUTBOUND

MATTEI MIDDLE SCHOOL
TRIP DISTRIBUTION

SCALE:	N/A	DATE:	DECEMBER 2021
JOB NO.:	2100000370.000	DWG. FILE:	FIGURE #3

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PROJECTED TRAFFIC VOLUMES

SITE GENERATED TRAFFIC VOLUMES

For this study, “site generated volumes” represent the traffic expected to be generated by the trips made by faculty, parents, and students. **Figure 4** depicts the “site volumes” that are anticipated to be distributed to and from the school during the Morning and Afternoon Peak hours.

BACKGROUND TRAFFIC VOLUMES

For this study, “background volumes” represent the traffic expected to occur along the area streets and roadways as a result of the increase in traffic volumes due to normal traffic growth in the area and due to trip generators other than the site. The background volumes used in the analysis represent the Existing (2021) volumes shown in **Figure 2** extrapolated to the analyses years with an annual 5.00% growth rate.

This growth rate was determined by examining volumes provided by the Texas Department of Transportation (TxDOT) Statewide Planning Map on roadways near the site. **Table 3** shows that traffic volumes on FM 546 have increased with an average annual growth rate of 3.48% over the past twenty years. The Statewide Planning Map Future Traffic projections show an annual growth rate of 1.70% for the next twenty years. To account for Princeton’s future development potential, an annual growth rate of 5.00% is proposed.

Table 3. Growth Rate – FM 546

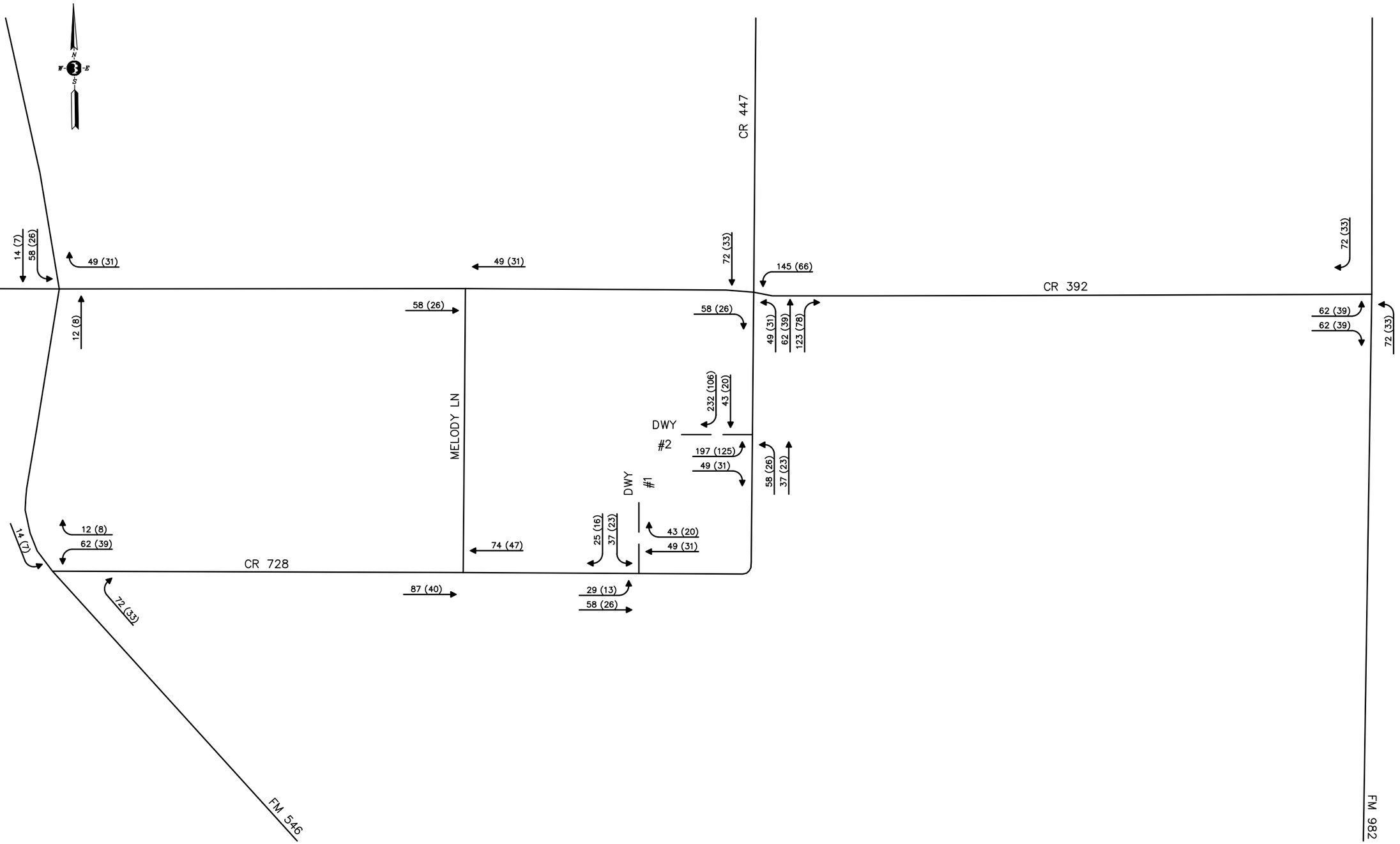
Year	AADT	i (X to 2019)
2001	2,300	1.07%
2002	2,500	0.64%
2003	2,300	1.21%
2004	2,100	1.90%
2005	2,330	1.29%
2006	2,000	2.59%
2007	2,100	2.39%
2008	2,100	2.61%
2009	2,100	2.87%
2010	2,200	2.66%
2011	2,100	3.60%
2012	1,900	5.63%
2013	2,198	4.04%
2014	1,684	10.60%
2015	1,995	8.72%
2016	2,806	-0.23%
2017	2,550	4.54%
2018	2,618	6.46%
2019	2,787	-
Average		**3.48%**

Source: TxDOT Statewide Planning Map

Figure 5 has been prepared to summarize the Background (2023) volumes.

TOTAL TRAFFIC VOLUMES

Figure 6 depict the “total volumes” anticipated to occur along the streets and roadways within the study area for the Full Build (2023) scenario. The total volumes depicted include the site generated volumes and background volumes.



LEGEND
XXX A.M. PEAK HOUR
(XXX) P.M. PEAK HOUR

MATTEI MIDDLE SCHOOL
PEAK HOUR VOLUMES - SITE GENERATED - FULL BUILD (2023)

SCALE:	N/A	DATE:	DECEMBER 2021
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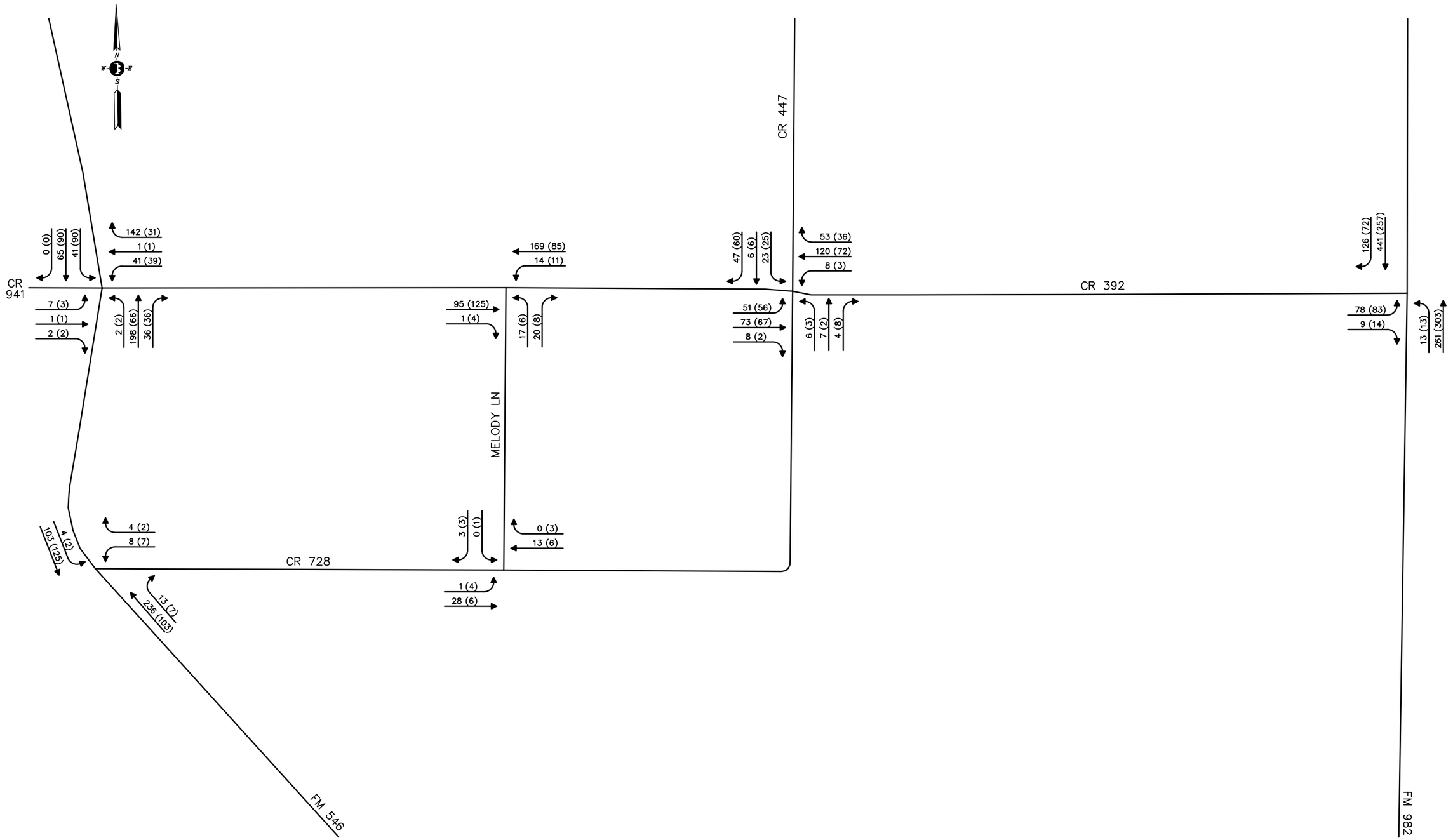

LEGEND
XXX A.M. PEAK HOUR
(XXX) P.M. PEAK HOUR

MATTEI MIDDLE SCHOOL
PEAK HOUR VOLUMES - BACKGROUND (2023)

SCALE:	N/A	DATE:	DECEMBER 2021
JOB NO.:	2100000370.000	DWG. FILE:	FIGURE #5

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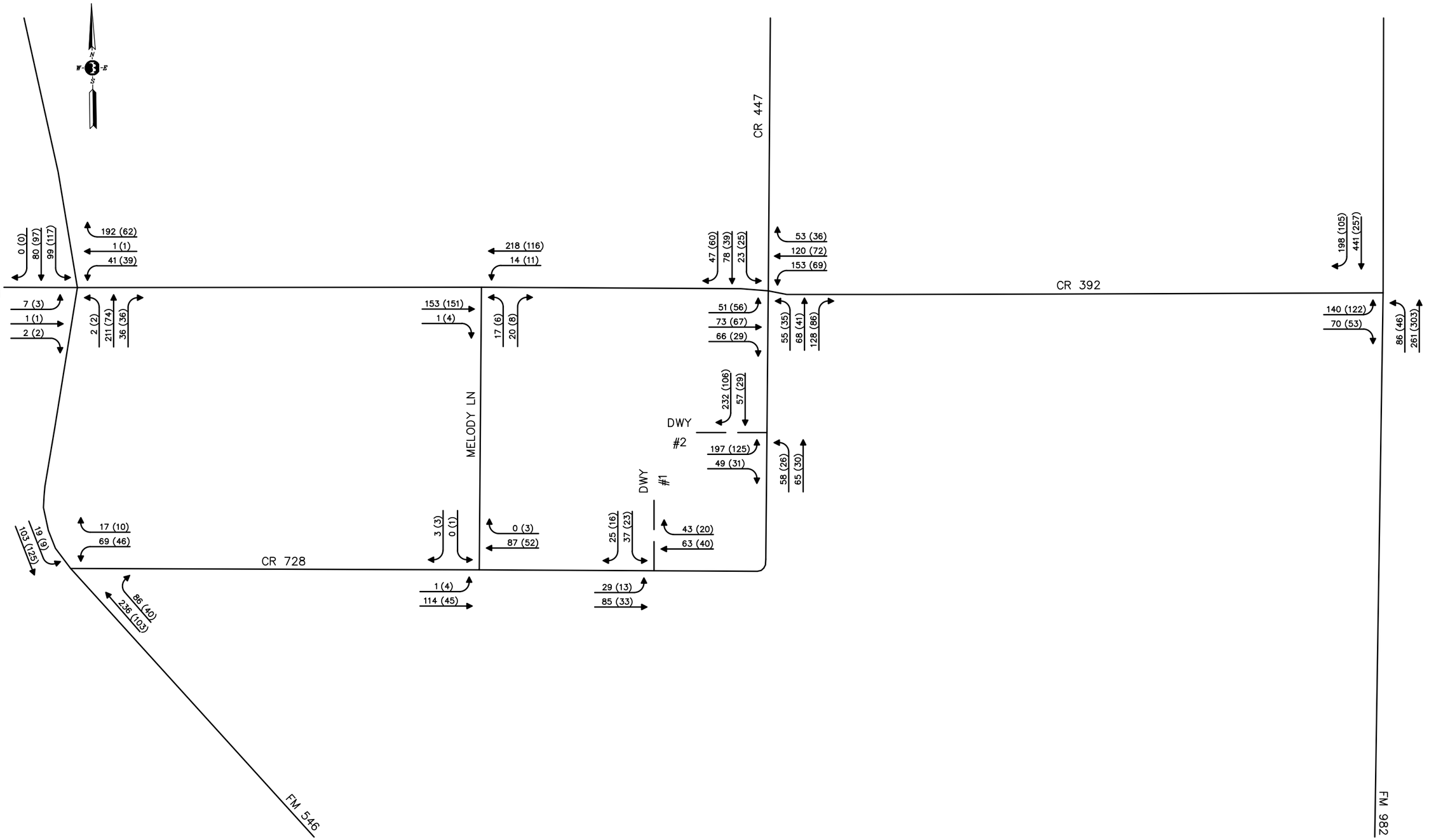

LEGEND
XXX A.M. PEAK HOUR
(XXX) P.M. PEAK HOUR

MATTEI MIDDLE SCHOOL
PEAK HOUR VOLUMES - FULL BUILD (2023)

SCALE:	N/A	DATE:	DECEMBER 2021
JOB NO.:	2100000370.000	DWG. FILE:	FIGURE #6

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INTERSECTION CAPACITY ANALYSIS

Level of Service (LOS) analyses of the traffic operations were performed at the existing intersections and proposed access points. Analyses of the intersections were conducted utilizing SYNCHRO software developed by the Trafficware Corporation to model the latest Highway Capacity Manual methodologies. The results of the capacity analyses for the intersections with the resulting delay and levels of service values are summarized by approach in the following tables:

- **Table 4.** AM Peak Hour Level of Service
- **Table 5.** PM Peak Hour Level of Service

Copies of the SYNCHRO computer printouts and a description of the various levels of service are included in the Appendix. Typically, the desirable levels of service are "A" through "D." levels of service "E" and "F" are undesirable.

Observed Peak Hour Factors (PHF) and percent heavy vehicles were used in the model at the study intersections. To better account for the short-term nature of the future school traffic, a PHF of 0.60 was used at each proposed driveway. Both driveways were modeled to include exclusive left-turn and right-turn deceleration lanes as indicated on the proposed site plan.

Observations from the evaluated scenarios are described below.

EXISTING (2021)

In the Existing (2021) condition, the intersection approaches were found to operate at acceptable levels of service during the AM and PM Peak hours.

BACKGROUND (2023)

In the Background (2023) condition, the intersection approaches were found to operate at acceptable levels of service during the AM and PM Peak hours.

FULL BUILD (2023)

The northbound and southbound approaches of the intersection of CR 392 at CR 728/CR 447 are expected to operate at an undesirable level of service during the Full Build (2023) scenario for the AM Peak hour only. Additionally, the eastbound approach of the intersection of FM 982 at CR 392 is expected to operate at an undesirable level of service during the Full Build (2023) scenario for the AM Peak hour only.

All other intersection approaches are expected to operate at an acceptable level of service during both the AM and PM Peak hours.

Table 4. AM Peak Hour Level of Service

Scenario		Eastbound			Westbound			Northbound			Southbound			INT
		LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT	
CR 392 at CR 728/CR 447														
Existing (2021)	LOS	A	-		A	-		B			A			-
	Delay	7.8			7.5			11.6			7.8			
Background (2023)	LOS	A	-		A	-		B			A			-
	Delay	7.9			7.5			12.2			8.0			
Full Build (2023)	LOS	A	-		A	-		**F**			**E**			-
	Delay	7.9			8.1			**93.9**			**40.3**			
CR 392 at Melody Lane														
Existing (2021)	LOS	-			A	-		A			-			-
	Delay				7.5			9.8						
Background (2023)	LOS	-			A	-		B			-			-
	Delay				7.5			10.0						
Full Build (2023)	LOS	-			A	-		B			-			-
	Delay				7.7			10.7						
CR 728 at Melody Lane														
Existing (2021)	LOS	A	-		-			-			A			-
	Delay	7.4									8.6			
Background (2023)	LOS	A	-		-			-			A			-
	Delay	7.4									8.6			
Full Build (2023)	LOS	A	-		-			-			A			-
	Delay	7.7									9.2			
FM 546 at CR 392/CR 941														
Existing (2021)	LOS	B			B			A	-		A	-		-
	Delay	12.4			11.4			7.4			7.8			
Background (2023)	LOS	B			B			A	-		A	-		-
	Delay	13.3			12.0			7.4			7.9			
Full Build (2023)	LOS	C			B			A	-		A	-		-
	Delay	17.2			13.7			7.4			8.1			
FM 546 at CR 728														
Existing (2021)	LOS	-			B			-			A	-		-
	Delay				10.4						7.8			
Background (2023)	LOS	-			B			-			A	-		-
	Delay				10.7						7.9			
Full Build (2023)	LOS	-			B			-			A	-		-
	Delay				12.6						8.1			
FM 982 at CR 392														
Existing (2021)	LOS	C			-			A	-		-			-
	Delay	17.9						8.7						
Background (2023)	LOS	C			-			A	-		-			-
	Delay	20.4						8.9						
Full Build (2023)	LOS	**F**			-			A	-		-			-
	Delay	**67.9**						9.6						

Note: First row letters are level of service and second row numbers are average seconds of delay per vehicle

Table 4. AM Peak Hour Level of Service (Continued)

Scenario		Eastbound			Westbound			Northbound			Southbound			INT
		LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT	
CR 728 at Driveway #1														
Full Build (2023)	LOS	A	-		-			-			B			-
	Delay	7.7									10.4			
CR 728 at Driveway #2														
Full Build (2023)	LOS	C			-			A	-		-			-
	Delay	18.3						8.7						

Note: First row letters are level of service and second row numbers are average seconds of delay per vehicle

Table 5. PM Peak Hour Level of Service

Scenario		Eastbound			Westbound			Northbound			Southbound			INT
		LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT	
CR 392 at CR 728/CR 447														
Existing (2021)	LOS	A	-		A	-		A			A			-
	Delay	7.6			7.4			9.9			7.7			
Background (2023)	LOS	A	-		A	-		B			A			-
	Delay	7.7			7.4			10.0			7.8			
Full Build (2023)	LOS	A	-		A	-		C			B			-
	Delay	7.7			7.6			15.5			11.8			
CR 392 at Melody Lane														
Existing (2021)	LOS	-			A	-		A			-			-
	Delay				7.5			9.4						
Background (2023)	LOS	-			A	-		A			-			-
	Delay				7.6			9.6						
Full Build (2023)	LOS	-			A	-		A			-			-
	Delay				7.6			9.9						
CR 728 at Melody Lane														
Existing (2021)	LOS	A	-		-			-			A			-
	Delay	7.3									8.5			
Background (2023)	LOS	A	-		-			-			A			-
	Delay	7.3									8.5			
Full Build (2023)	LOS	A	-		-			-			A			-
	Delay	7.4									8.9			
FM 546 at CR 392/CR 941														
Existing (2021)	LOS	B			B			A	-		A	-		-
	Delay	11.4			11.5			7.5			7.7			
Background (2023)	LOS	B			B			A	-		A	-		-
	Delay	11.9			12.1			7.5			7.7			
Full Build (2023)	LOS	B			B			A	-		A	-		-
	Delay	13.2			12.5			7.5			7.8			
FM 546 at CR 728														
Existing (2021)	LOS	-			A			-			A	-		-
	Delay				9.9						7.5			
Background (2023)	LOS	-			B			-			A	-		-
	Delay				10.2						7.5			
Full Build (2023)	LOS	-			B			-			A	-		-
	Delay				11.1						7.7			
FM 982 at CR 392														
Existing (2021)	LOS	B			-			A	-		-			-
	Delay	14.5						8.0						
Background (2023)	LOS	C			-			A	-		-			-
	Delay	15.8						8.1						
Full Build (2023)	LOS	C			-			A	-		-			-
	Delay	21.0						8.3						

Note: First row letters are level of service and second row numbers are average seconds of delay per vehicle

Table 5. PM Peak Hour Level of Service (Continued)

Scenario		Eastbound			Westbound			Northbound			Southbound			INT
		LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT	
CR 728 at Driveway #1														
Full Build (2023)	LOS	A	-		-			-			A			-
	Delay	7.4									9.3			
CR 728 at Driveway #2														
Full Build (2023)	LOS	B			-			A	-		-			-
	Delay	10.8						7.8						

Note: First row letters are level of service and second row numbers are average seconds of delay per vehicle

MITIGATION

Mitigation scenarios were examined to reduced vehicle delay and improve level of service at the study intersections experiencing undesirable levels of service. Mitigation scenarios were examined under the Full Build (2023) condition for the AM Peak hour only.

Observations from the evaluated scenarios are described below.

CR 392 AT CR 728/CR 447

At this intersection, the northbound and southbound approaches are expected to fail during the AM Peak hour in the Full Build (2023) scenario. As mitigation, the intersection was modeled as an all-way stop-control intersection instead of its existing two-way stop-control configuration.

The results of the capacity analyses for the intersection with the resulting delay and level of service values are summarized by approach in **Table 6** for the AM Peak hour. The results of the Background (2023) and Full Build (2023) conditions are provided for easy comparison.

Table 6. Mitigation – CR 392 at CR 728/CR 447 – AM Peak Hour

Scenario		Eastbound			Westbound			Northbound			Southbound			INT
		LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT	
CR 392 at CR 728/CR 447														
Background (2023)	LOS	A	-		A	-		B			A			-
	Delay	7.9			7.5			12.2			8.0			
Full Build (2023)	LOS	A	-		A	-		**F**			**E**			-
	Delay	7.9			8.1			**93.9**			**40.3**			
Mitigation (2023)	LOS	B			C			C			B			C
	Delay	14.0			22.1			16.5			13.2			17.4

As shown in **Table 6**, the northbound and southbound approaches of CR 392 at CR 728/CR 447 improve to LOS C or better during the AM Peak hour.

FM 982 AT CR 392

At this intersection, the eastbound approach is expected to fail during the AM Peak hour in the Full Build (2023) scenario. This is due to the difficulty eastbound left-turning vehicles will have finding an adequate gap in both northbound and southbound traffic flows. As mitigation, the intersection was modeled to include exclusive eastbound and southbound right-turn lanes.

The results of the capacity analyses for the intersection with the resulting delay and level of service values are summarized by approach in **Table 7** for the AM Peak hour. The results of the Background (2023) and Full Build (2023) conditions are provided for easy comparison.

Table 7. Mitigation – FM 982 at CR 392 – AM Peak Hour

Scenario		Eastbound			Westbound			Northbound			Southbound			INT
		LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT	
FM 982 at CR 392														
Background (2023)	LOS	C			-			A	-		-			-
	Delay	20.4						8.9						
Full Build (2023)	LOS	**F**			-			A	-		-			-
	Delay	**67.9**						9.6						
Mitigation (2023)	LOS	D			-			A	-		-			-
	Delay	31.0						9.6						

As shown in **Table 7**, the eastbound approach of FM 982 at CR 392 improves to LOS D during the AM Peak hour.

ACCESS CONNECTION SPACING

Collin County prescribes requirements for driveway access location and spacing in Section 1.04.E. of the *Collin County Roadway Standards* adopted in 2020. According to the standards, the minimum spacing between driveways shall be 40 feet from edge to edge. **Table 8** provides a summary of the driveway spacing analysis for the proposed access points on CR 728.

Table 8. Collin County – Access Connection Spacing

Access Connection	Nearest Driveway to the West/North	Nearest Driveway to the East/South	Required Spacing	Meets Requirements?
Driveway #1 at CR 728 (40 mph)	~745 ft Private Driveway	~876 ft CR 728 Bend	40 ft	Yes
Driveway #2 at CR 728 (40 mph)	~85 ft Private Driveway	~351 ft CR 728 Bend	40 ft	Yes

Based on the analysis presented in **Table 8**, Driveways #1 and #2 on CR 728 do meet the *Collin County Roadway Standards* access connection spacing requirements.

INTERSECTION SIGHT DISTANCE ANALYSIS

A sight distance analysis was performed based upon design guidelines and criteria developed and published by the American Association of State Highway and Transportation Officials (AASHTO). Intersection sight distance was measured and compared using the following criteria and assumptions:

- Terrain Type Level
- Eye Height 3.5’
- Vehicle Height 3.5’
- Speed Limit CR 728 – 40 mph

The three different sight distance circumstances, as outlined by AASHTO, were evaluated. Below is a summary of those three circumstances.

- Case B1: Left-turn from minor road
- Case B2: Right-turn from minor road
- Case F: Left-turn from major road

Table 9 provides a summary of the intersection sight distance analysis for the proposed accesses onto CR 728. The intersection sight distances for the proposed development are sufficient. Field Measurements were taken in the field at the proposed intersections. Recordings of the field measurement data are provided in the Appendix.

Table 9. Intersection Sight Distance Analysis

Vehicular Movement	Available Sight Distance	Required Sight Distance	Meets Criteria?
CR 728 at Driveway #1 (40 mph)			
Case B1: Left-turn from Site			
Looking Left (East)	1000+ ft	445 ft	Yes
Looking Right (West)	1000+ ft	445 ft	Yes
Case B2: Right-turn from Site			
Looking Left (East)	1000+ ft	385 ft	Yes
Case F: Left-turn from CR 728			
Looking Ahead (East)	1000+ ft	325 ft	Yes
CR 728 at Driveway #2 (40 mph)			
Case B1: Left-turn from Site			
Looking Left (North)	856 ft	445 ft	Yes
Looking Right (South)	500 ft	445 ft	Yes
Case B2: Right-turn from Site			
Looking Left (North)	856 ft	385 ft	Yes
Case F: Left-turn from BB Fielder Road			
Looking Ahead (North)	856 ft	325 ft	Yes

STOPPING SIGHT DISTANCE ANALYSIS

The analysis of stopping sight distance conditions along CR 728 were based upon design guidelines and criteria developed and published by the Association of American State Highway and Transportation Officials (AASHTO). The following criteria were applied to evaluate the stopping sight distance conditions at the proposed driveways:

- Terrain Type Level
- Eye Height 3.5'
- Object Height 2.0'
- Speed Limit CR 728 – 40 mph

Table 10 provides a summary of the stopping sight distance analysis for the proposed accesses onto CR 728. The stopping sight distances for the proposed development are sufficient. Field measurements were taken in the field at the proposed intersections. Recordings of the field measurement data are provided in the Appendix.

Table 10. Stopping Sight Distance Analysis

Vehicular Movement	Available Sight Distance	Required Sight Distance	Meets Criteria?
CR 728 at Driveway #1 (40 mph)			
Westbound	1000+ ft	305 ft	Yes
Eastbound	1000+ ft	305 ft	Yes
CR 728 at Driveway #2 (40 mph)			
Northbound	500 ft	305 ft	Yes
Southbound	766 ft	305 ft	Yes

SUMMARY OF FINDINGS

The traffic impact analysis results are summarized below.

INTERSECTION CAPACITY ANALYSIS

The intersections of CR 392 at CR 728/CR 447 and FM 982 at CR 392 are expected to operate at undesirable levels of service during the Full Build (2023) scenario for the AM Peak hour only. Mitigation scenarios were examined and discussed for these intersections.

All other intersection approaches are expected to operate at acceptable levels of service during the AM and PM Peak hours of all scenarios.

ACCESS CONNECTION SPACING

The access connection spacing analysis indicates that the proposed driveways on CR 728 do meet Collin County requirements.

SIGHT DISTANCE ANALYSES

The measured sight distances provide enough intersection sight distance and stopping sight distance per AASHTO guidelines.

RECOMMENDATIONS

Based on the results of the analyses and evaluations conducted as part of this study, we recommend the following items:

Roadway Improvements – Due to Development

CR 392 at CR 728/CR 447

- Convert the intersection from a two-way stop-control to an all-way stop-control.

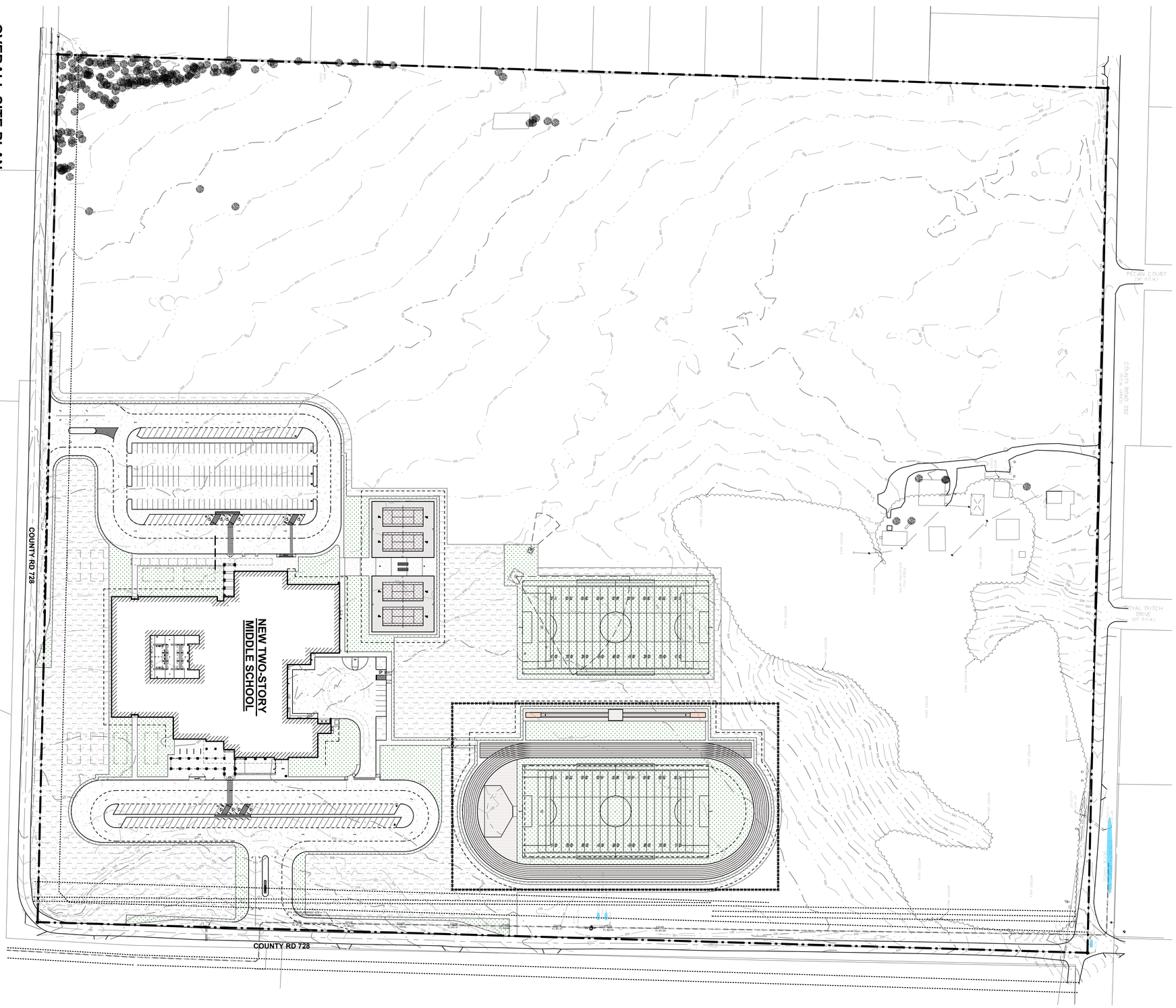
FM 982 at CR 392

- Right-turn lanes should be provided on the eastbound and southbound approaches of this intersection.

CLOSING

The analyses conducted in this study were based upon observations and data collected in 2021. The traffic counts were forecasted to a future year. The analysis methodology was intended to be conservative, but realistic. It is possible that actual growth in the area will differ from the assumptions of this TIA, causing the intersections to perform differently than shown in the report. If there are any questions concerning this report or its analyses, please contact our office.

APPENDIX



1 **OVERALL SITE PLAN**
SCALE: 1" = 80'-0"

NORTH
TRUE NORTH

1.01
SHEET NO.

CLAYCOMB
ASSOCIATES, ARCHITECTS
CLAYCOMB ASSOCIATES, ARCHITECTS * 6600 LBJ FREEWAY * SUITE 200
DALLAS, TEXAS 75240 * WWW.CLAYCOMB.NET

MATTEI MIDDLE SCHOOL

Princeton, Texas

Princeton
Independent
School
District

REGISTERED ARCHITECT
MARC RUIZ
2020
STATE OF TEXAS
03/18/21

DATE: 03/18/2021
ISSUE: BID ISSUE

JOB NO. 22019

GRAM Traffic NTX Inc.

1120 W. Lovers Lane

Arlington, Texas, United States 76013
817.265.8968

Count Name: CR 392 @ CR 728-CR 447
Site Code:
Start Date: 11/02/2021
Page No: 1

Turning Movement Data

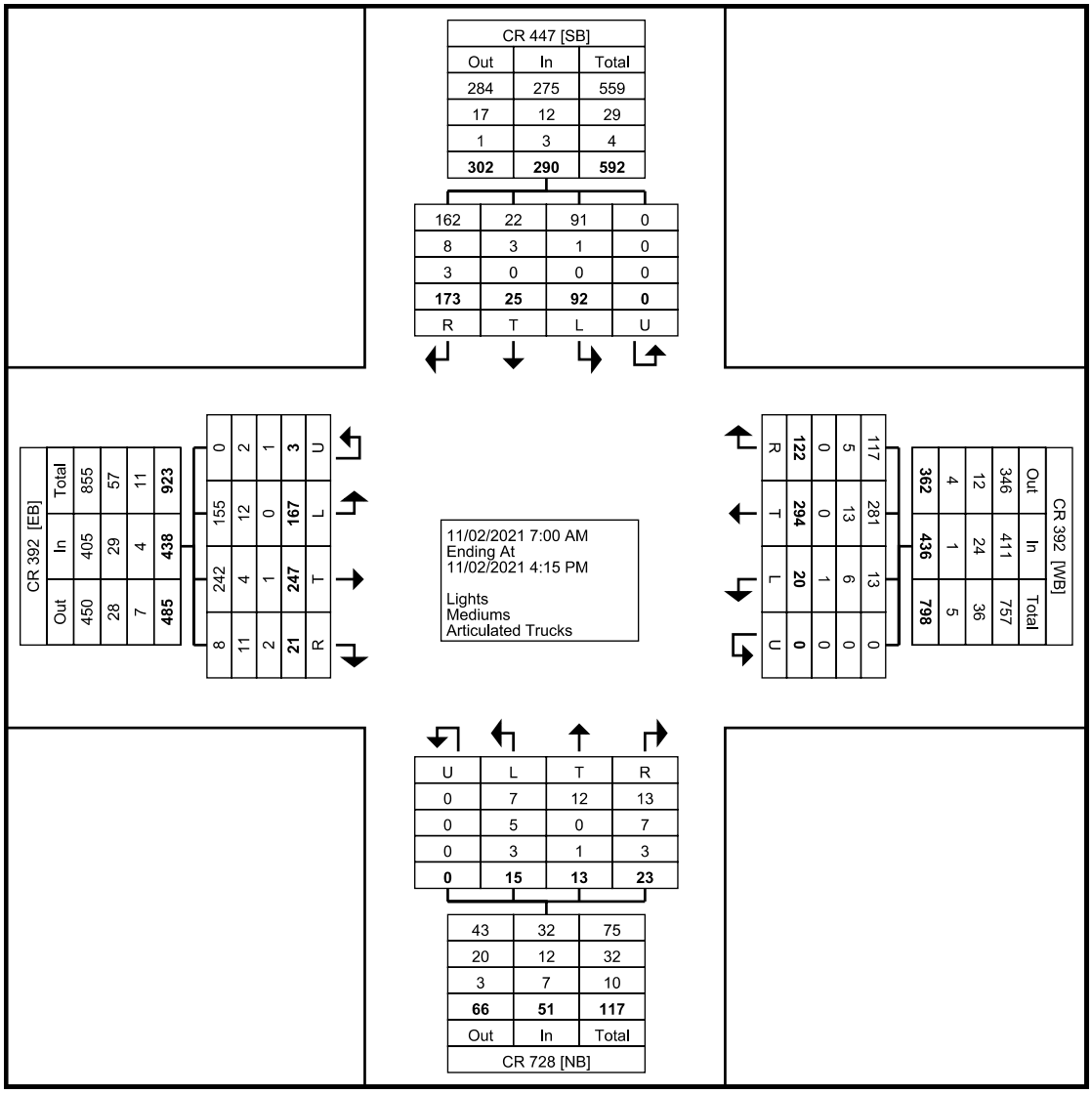
Start Time	CR 447 Southbound					CR 392 Westbound					CR 728 Northbound					CR 392 Eastbound					Int. Total
	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	
7:00 AM	4	2	10	0	16	2	20	5	0	27	1	0	4	0	5	11	19	1	0	31	79
7:15 AM	8	1	15	0	24	2	31	15	0	48	1	0	2	0	3	11	18	1	0	30	105
7:30 AM	1	1	11	0	13	3	27	3	0	33	0	0	1	0	1	6	16	0	0	22	69
7:45 AM	2	0	3	0	5	2	25	13	0	40	1	4	1	0	6	11	14	3	1	29	80
Hourly Total	15	4	39	0	58	9	103	36	0	148	3	4	8	0	15	39	67	5	1	112	333
8:00 AM	10	3	14	0	27	0	26	17	0	43	3	2	0	0	5	17	18	3	0	38	113
8:15 AM	19	0	16	0	35	0	18	21	0	39	0	0	1	0	1	14	13	3	0	30	105
8:30 AM	7	2	7	0	16	0	17	3	0	20	0	0	1	0	1	2	14	3	0	19	56
8:45 AM	0	0	6	0	6	2	18	1	0	21	2	1	0	0	3	3	8	2	0	13	43
Hourly Total	36	5	43	0	84	2	79	42	0	123	5	3	2	0	10	36	53	11	0	100	317
9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Hourly Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:00 PM	1	2	3	0	6	0	15	2	0	17	2	0	3	0	5	7	12	1	0	20	48
2:15 PM	10	4	14	0	28	3	17	1	0	21	0	1	1	0	2	6	18	1	2	27	78
2:30 PM	3	1	11	0	15	2	4	1	0	7	0	0	0	0	0	25	18	0	0	43	65
2:45 PM	4	4	9	0	17	1	11	7	0	19	2	3	2	0	7	3	18	1	0	22	65
Hourly Total	18	11	37	0	66	6	47	11	0	64	4	4	6	0	14	41	66	3	2	112	256
3:00 PM	2	1	11	0	14	2	16	8	0	26	0	0	2	0	2	7	15	1	0	23	65
3:15 PM	2	1	16	0	19	1	21	7	0	29	2	0	2	0	4	17	13	1	0	31	83
3:30 PM	2	1	13	0	16	0	11	4	0	15	0	1	2	0	3	14	18	0	0	32	66
3:45 PM	17	2	14	0	33	0	17	14	0	31	1	1	1	0	3	13	15	0	0	28	95
Hourly Total	23	5	54	0	82	3	65	33	0	101	3	2	7	0	12	51	61	2	0	114	309
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	92	25	173	0	290	20	294	122	0	436	15	13	23	0	51	167	247	21	3	438	1215
Approach %	31.7	8.6	59.7	0.0	-	4.6	67.4	28.0	0.0	-	29.4	25.5	45.1	0.0	-	38.1	56.4	4.8	0.7	-	-
Total %	7.6	2.1	14.2	0.0	23.9	1.6	24.2	10.0	0.0	35.9	1.2	1.1	1.9	0.0	4.2	13.7	20.3	1.7	0.2	36.0	-
Lights	91	22	162	0	275	13	281	117	0	411	7	12	13	0	32	155	242	8	0	405	1123
% Lights	98.9	88.0	93.6	-	94.8	65.0	95.6	95.9	-	94.3	46.7	92.3	56.5	-	62.7	92.8	98.0	38.1	0.0	92.5	92.4
Mediums	1	3	8	0	12	6	13	5	0	24	5	0	7	0	12	12	4	11	2	29	77
% Mediums	1.1	12.0	4.6	-	4.1	30.0	4.4	4.1	-	5.5	33.3	0.0	30.4	-	23.5	7.2	1.6	52.4	66.7	6.6	6.3
Articulated Trucks	0	0	3	0	3	1	0	0	0	1	3	1	3	0	7	0	1	2	1	4	15
% Articulated Trucks	0.0	0.0	1.7	-	1.0	5.0	0.0	0.0	-	0.2	20.0	7.7	13.0	-	13.7	0.0	0.4	9.5	33.3	0.9	1.2

GRAM Traffic NTX Inc.

1120 W. Lovers Lane

Arlington, Texas, United States 76013
817.265.8968

Count Name: CR 392 @ CR 728-CR 447
Site Code:
Start Date: 11/02/2021
Page No: 2



Turning Movement Data Plot

GRAM Traffic NTX Inc.

1120 W. Lovers Lane

Arlington, Texas, United States 76013
817.265.8968

Count Name: CR 392 @ CR 728-CR 447
Site Code:
Start Date: 11/02/2021

Turning Movement Peak Hour Data (7:15 AM)

Start Time	CR 447 Southbound					CR 392 Westbound					CR 728 Northbound					CR 392 Eastbound					
	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Int. Total
7:15 AM	8	1	15	0	24	2	31	15	0	48	1	0	2	0	3	11	18	1	0	30	105
7:30 AM	1	1	11	0	13	3	27	3	0	33	0	0	1	0	1	6	16	0	0	22	69
7:45 AM	2	0	3	0	5	2	25	13	0	40	1	4	1	0	6	11	14	3	1	29	80
8:00 AM	10	3	14	0	27	0	26	17	0	43	3	2	0	0	5	17	18	3	0	38	113
Total	21	5	43	0	69	7	109	48	0	164	5	6	4	0	15	45	66	7	1	119	367
Approach %	30.4	7.2	62.3	0.0	-	4.3	66.5	29.3	0.0	-	33.3	40.0	26.7	0.0	-	37.8	55.5	5.9	0.8	-	-
Total %	5.7	1.4	11.7	0.0	18.8	1.9	29.7	13.1	0.0	44.7	1.4	1.6	1.1	0.0	4.1	12.3	18.0	1.9	0.3	32.4	-
PHF	0.525	0.417	0.717	0.000	0.639	0.583	0.879	0.706	0.000	0.854	0.417	0.375	0.500	0.000	0.625	0.662	0.917	0.583	0.250	0.783	0.812
Lights	21	5	41	0	67	5	101	45	0	151	1	5	1	0	7	41	64	2	0	107	332
% Lights	100.0	100.0	95.3	-	97.1	71.4	92.7	93.8	-	92.1	20.0	83.3	25.0	-	46.7	91.1	97.0	28.6	0.0	89.9	90.5
Mediums	0	0	2	0	2	1	8	3	0	12	1	0	2	0	3	4	1	3	0	8	25
% Mediums	0.0	0.0	4.7	-	2.9	14.3	7.3	6.3	-	7.3	20.0	0.0	50.0	-	20.0	8.9	1.5	42.9	0.0	6.7	6.8
Articulated Trucks	0	0	0	0	0	1	0	0	0	1	3	1	1	0	5	0	1	2	1	4	10
% Articulated Trucks	0.0	0.0	0.0	-	0.0	14.3	0.0	0.0	-	0.6	60.0	16.7	25.0	-	33.3	0.0	1.5	28.6	100.0	3.4	2.7

GRAM Traffic NTX Inc.

1120 W. Lovers Lane

Arlington, Texas, United States 76013
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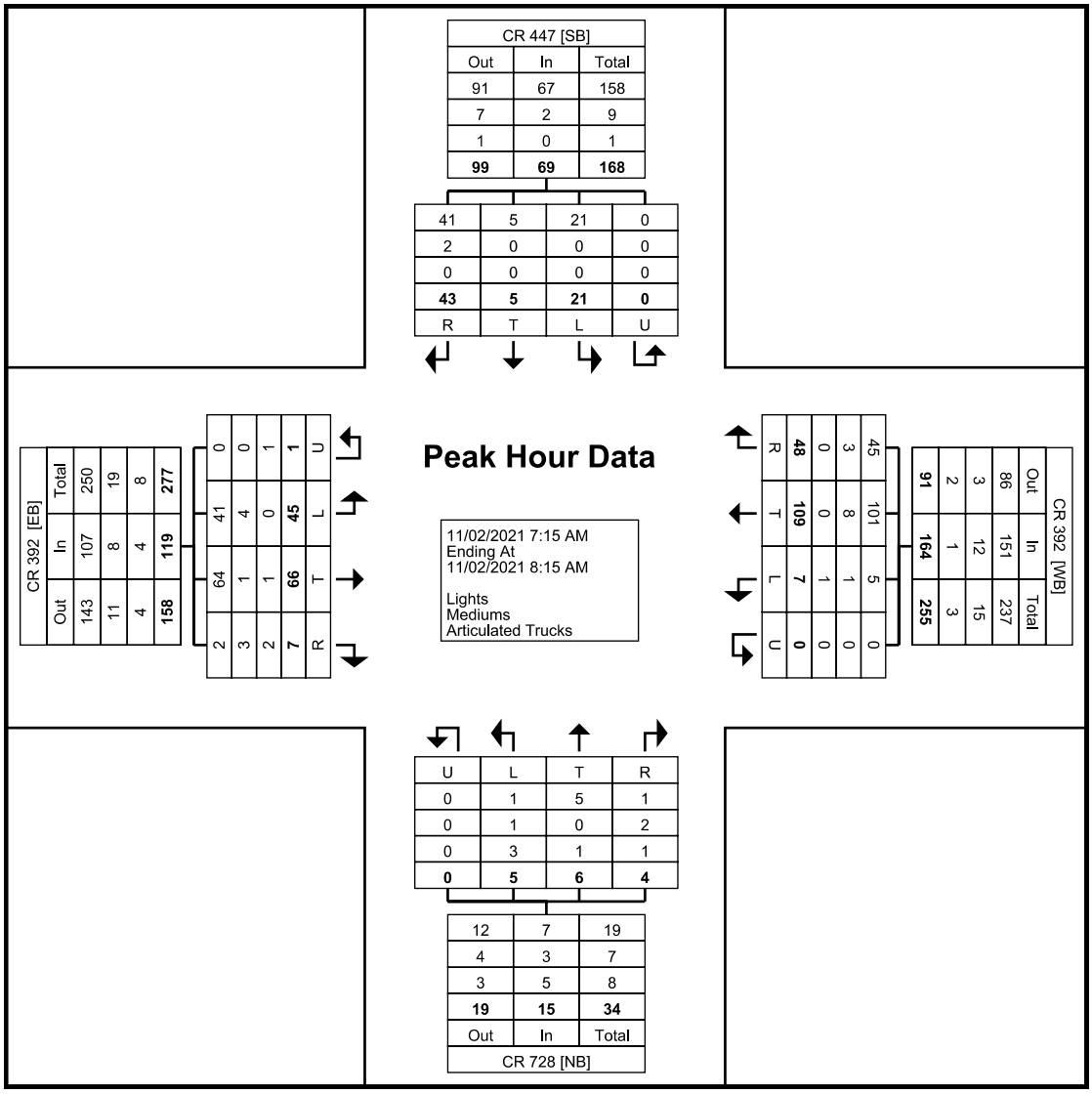
Count Name: CR 392 @ CR 728-CR 447
Site Code:
Start Date: 11/02/2021
Page No: 4



Turning Movement Peak Hour Data Plot (7:15 AM)

GRAM Traffic NTX Inc.

1120 W. Lovers Lane

Arlington, Texas, United States 76013
817.265.8968

Count Name: CR 392 @ CR 728-CR 447
Site Code:
Start Date: 11/02/2021

Turning Movement Peak Hour Data (3:00 PM)

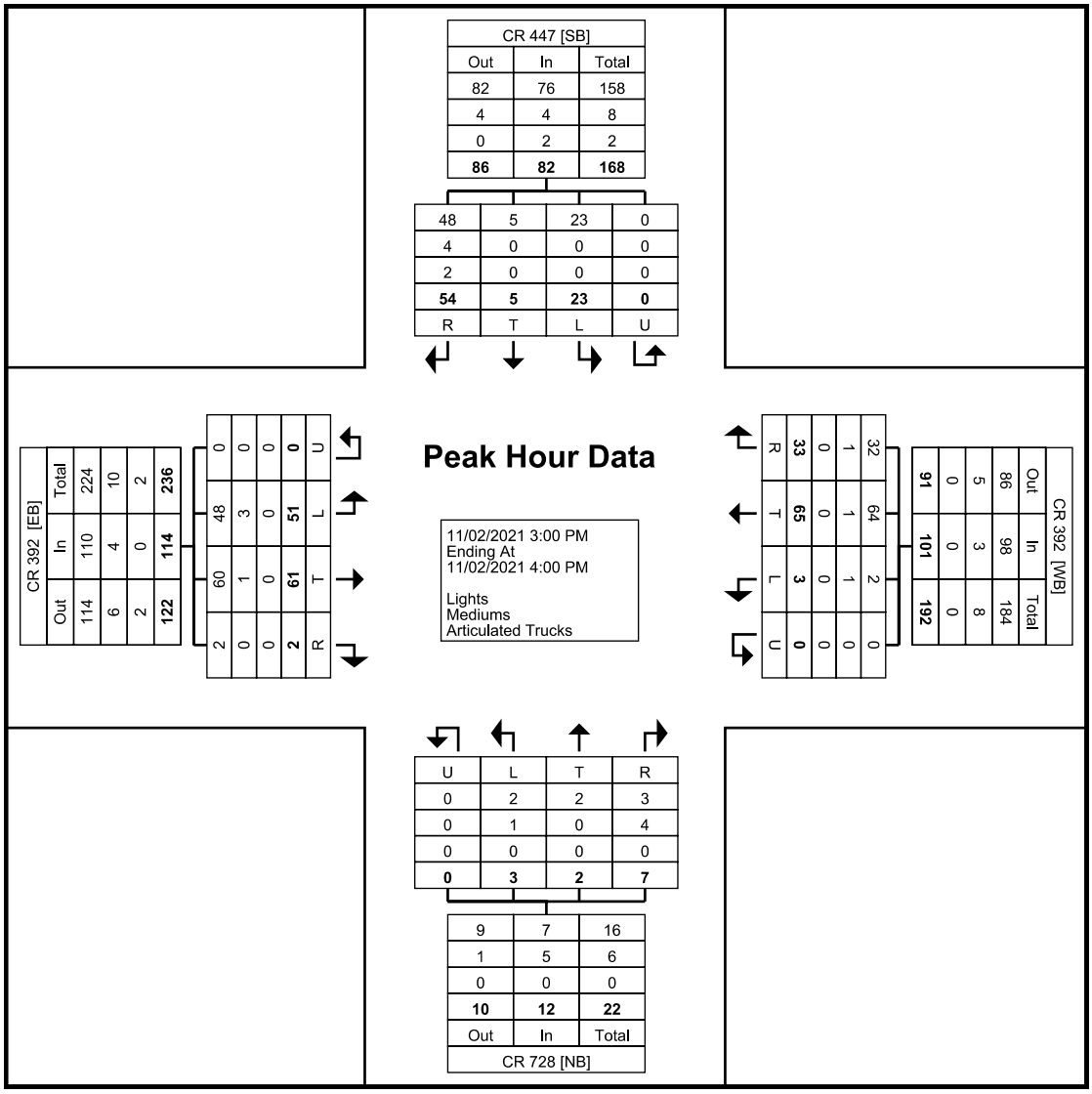
Start Time	CR 447 Southbound					CR 392 Westbound					CR 728 Northbound					CR 392 Eastbound					
	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Int. Total
3:00 PM	2	1	11	0	14	2	16	8	0	26	0	0	2	0	2	7	15	1	0	23	65
3:15 PM	2	1	16	0	19	1	21	7	0	29	2	0	2	0	4	17	13	1	0	31	83
3:30 PM	2	1	13	0	16	0	11	4	0	15	0	1	2	0	3	14	18	0	0	32	66
3:45 PM	17	2	14	0	33	0	17	14	0	31	1	1	1	0	3	13	15	0	0	28	95
Total	23	5	54	0	82	3	65	33	0	101	3	2	7	0	12	51	61	2	0	114	309
Approach %	28.0	6.1	65.9	0.0	-	3.0	64.4	32.7	0.0	-	25.0	16.7	58.3	0.0	-	44.7	53.5	1.8	0.0	-	-
Total %	7.4	1.6	17.5	0.0	26.5	1.0	21.0	10.7	0.0	32.7	1.0	0.6	2.3	0.0	3.9	16.5	19.7	0.6	0.0	36.9	-
PHF	0.338	0.625	0.844	0.000	0.621	0.375	0.774	0.589	0.000	0.815	0.375	0.500	0.875	0.000	0.750	0.750	0.847	0.500	0.000	0.891	0.813
Lights	23	5	48	0	76	2	64	32	0	98	2	2	3	0	7	48	60	2	0	110	291
% Lights	100.0	100.0	88.9	-	92.7	66.7	98.5	97.0	-	97.0	66.7	100.0	42.9	-	58.3	94.1	98.4	100.0	-	96.5	94.2
Mediums	0	0	4	0	4	1	1	1	0	3	1	0	4	0	5	3	1	0	0	4	16
% Mediums	0.0	0.0	7.4	-	4.9	33.3	1.5	3.0	-	3.0	33.3	0.0	57.1	-	41.7	5.9	1.6	0.0	-	3.5	5.2
Articulated Trucks	0	0	2	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
% Articulated Trucks	0.0	0.0	3.7	-	2.4	0.0	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.6

GRAM Traffic NTX Inc.

1120 W. Lovers Lane

Arlington, Texas, United States 76013
817.265.8968

Count Name: CR 392 @ CR 728-CR 447
Site Code:
Start Date: 11/02/2021
Page No: 6



Turning Movement Peak Hour Data Plot (3:00 PM)

GRAM Traffic NTX Inc.

1120 W. Lovers Lane

Arlington, Texas, United States 76013
817.265.8968

Count Name: CR 392 @ MELODY LN
Site Code:
Start Date: 11/02/2021
Page No: 1

Turning Movement Data

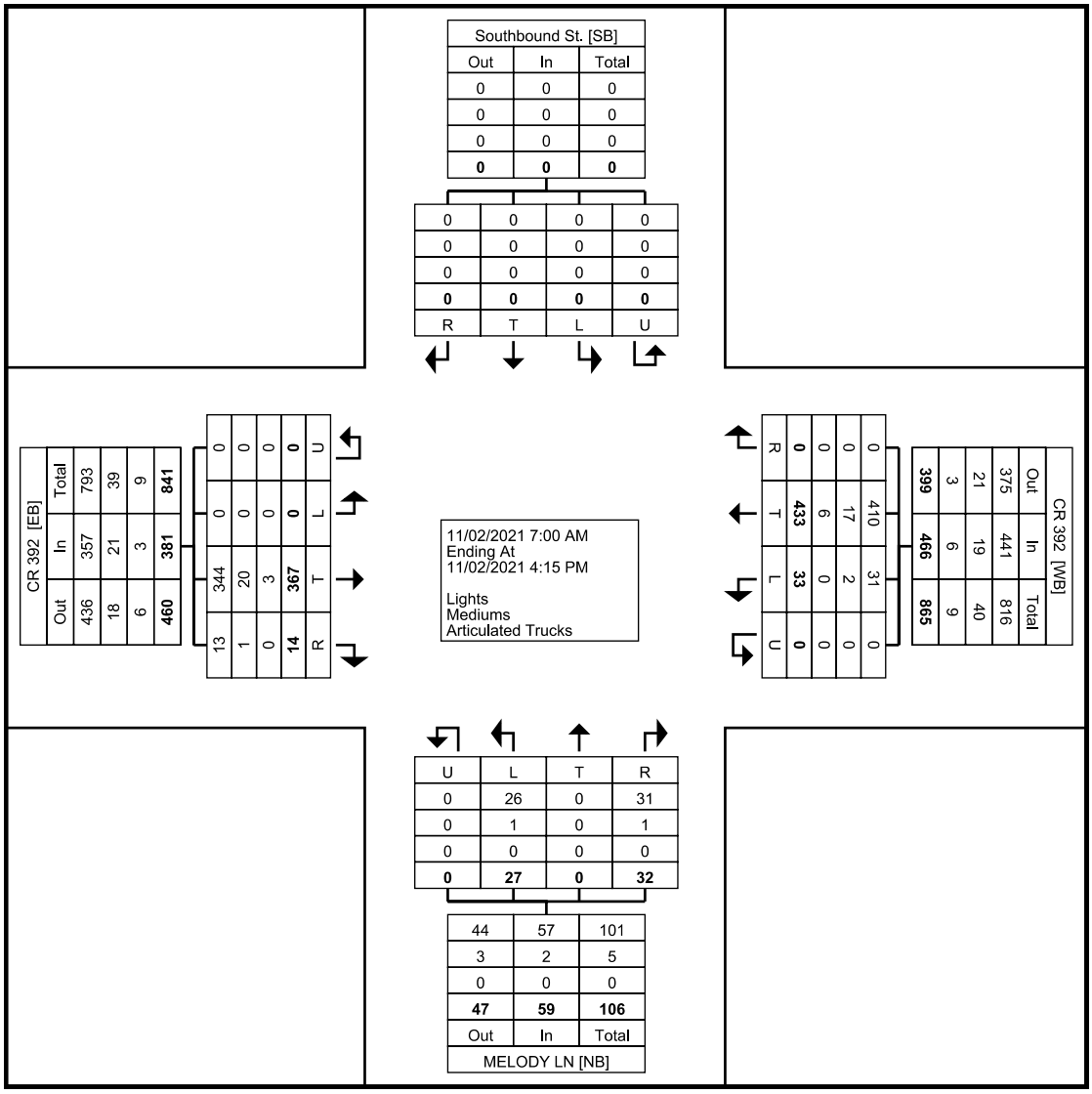
Start Time	Southbound St. Southbound					CR 392 Westbound					MELODY LN Northbound					CR 392 Eastbound					
	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Int. Total
7:00 AM	0	0	0	0	0	2	36	0	0	38	1	0	1	0	2	0	22	0	0	22	62
7:15 AM	0	0	0	0	0	3	36	0	0	39	1	0	2	0	3	0	25	0	0	25	67
7:30 AM	0	0	0	0	0	3	45	0	0	48	4	0	4	0	8	0	16	0	0	16	72
7:45 AM	0	0	0	0	0	2	32	0	0	34	3	0	4	0	7	0	23	1	0	24	65
Hourly Total	0	0	0	0	0	10	149	0	0	159	9	0	11	0	20	0	86	1	0	87	266
8:00 AM	0	0	0	0	0	5	40	0	0	45	7	0	8	0	15	0	22	0	0	22	82
8:15 AM	0	0	0	0	0	3	29	0	0	32	2	0	0	0	2	0	25	0	0	25	59
8:30 AM	0	0	0	0	0	1	30	0	0	31	1	0	1	0	2	0	18	0	0	18	51
8:45 AM	0	0	0	0	0	0	27	0	0	27	2	0	0	0	2	0	10	2	0	12	41
Hourly Total	0	0	0	0	0	9	126	0	0	135	12	0	9	0	21	0	75	2	0	77	233
9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Hourly Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:00 PM	0	0	0	0	0	0	16	0	0	16	1	0	0	0	1	0	19	1	0	20	37
2:15 PM	0	0	0	0	0	2	27	0	0	29	0	0	0	0	0	0	24	0	0	24	53
2:30 PM	0	0	0	0	0	1	13	0	0	14	3	0	3	0	6	0	41	0	0	41	61
2:45 PM	0	0	0	0	0	2	19	0	0	21	0	0	3	0	3	0	19	2	0	21	45
Hourly Total	0	0	0	0	0	5	75	0	0	80	4	0	6	0	10	0	103	3	0	106	196
3:00 PM	0	0	0	0	0	2	23	0	0	25	1	0	1	0	2	0	19	1	0	20	47
3:15 PM	0	0	0	0	0	5	22	0	0	27	1	0	0	0	1	0	34	1	0	35	63
3:30 PM	0	0	0	0	0	1	21	0	0	22	0	0	3	0	3	0	26	4	0	30	55
3:45 PM	0	0	0	0	0	1	17	0	0	18	0	0	2	0	2	0	24	2	0	26	46
Hourly Total	0	0	0	0	0	9	83	0	0	92	2	0	6	0	8	0	103	8	0	111	211
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	33	433	0	0	466	27	0	32	0	59	0	367	14	0	381	906
Approach %	0.0	0.0	0.0	0.0	-	7.1	92.9	0.0	0.0	-	45.8	0.0	54.2	0.0	-	0.0	96.3	3.7	0.0	-	-
Total %	0.0	0.0	0.0	0.0	0.0	3.6	47.8	0.0	0.0	51.4	3.0	0.0	3.5	0.0	6.5	0.0	40.5	1.5	0.0	42.1	-
Lights	0	0	0	0	0	31	410	0	0	441	26	0	31	0	57	0	344	13	0	357	855
% Lights	-	-	-	-	-	93.9	94.7	-	-	94.6	96.3	-	96.9	-	96.6	-	93.7	92.9	-	93.7	94.4
Mediums	0	0	0	0	0	2	17	0	0	19	1	0	1	0	2	0	20	1	0	21	42
% Mediums	-	-	-	-	-	6.1	3.9	-	-	4.1	3.7	-	3.1	-	3.4	-	5.4	7.1	-	5.5	4.6
Articulated Trucks	0	0	0	0	0	0	6	0	0	6	0	0	0	0	0	0	3	0	0	3	9
% Articulated Trucks	-	-	-	-	-	0.0	1.4	-	-	1.3	0.0	-	0.0	-	0.0	-	0.8	0.0	-	0.8	1.0

GRAM Traffic NTX Inc.

1120 W. Lovers Lane

Arlington, Texas, United States 76013
817.265.8968

Count Name: CR 392 @ MELODY LN
Site Code:
Start Date: 11/02/2021
Page No: 2



Turning Movement Data Plot

GRAM Traffic NTX Inc.

1120 W. Lovers Lane

Arlington, Texas, United States 76013
817.265.8968

Count Name: CR 392 @ MELODY LN
Site Code:
Start Date: 11/02/2021

Turning Movement Peak Hour Data (7:15 AM)

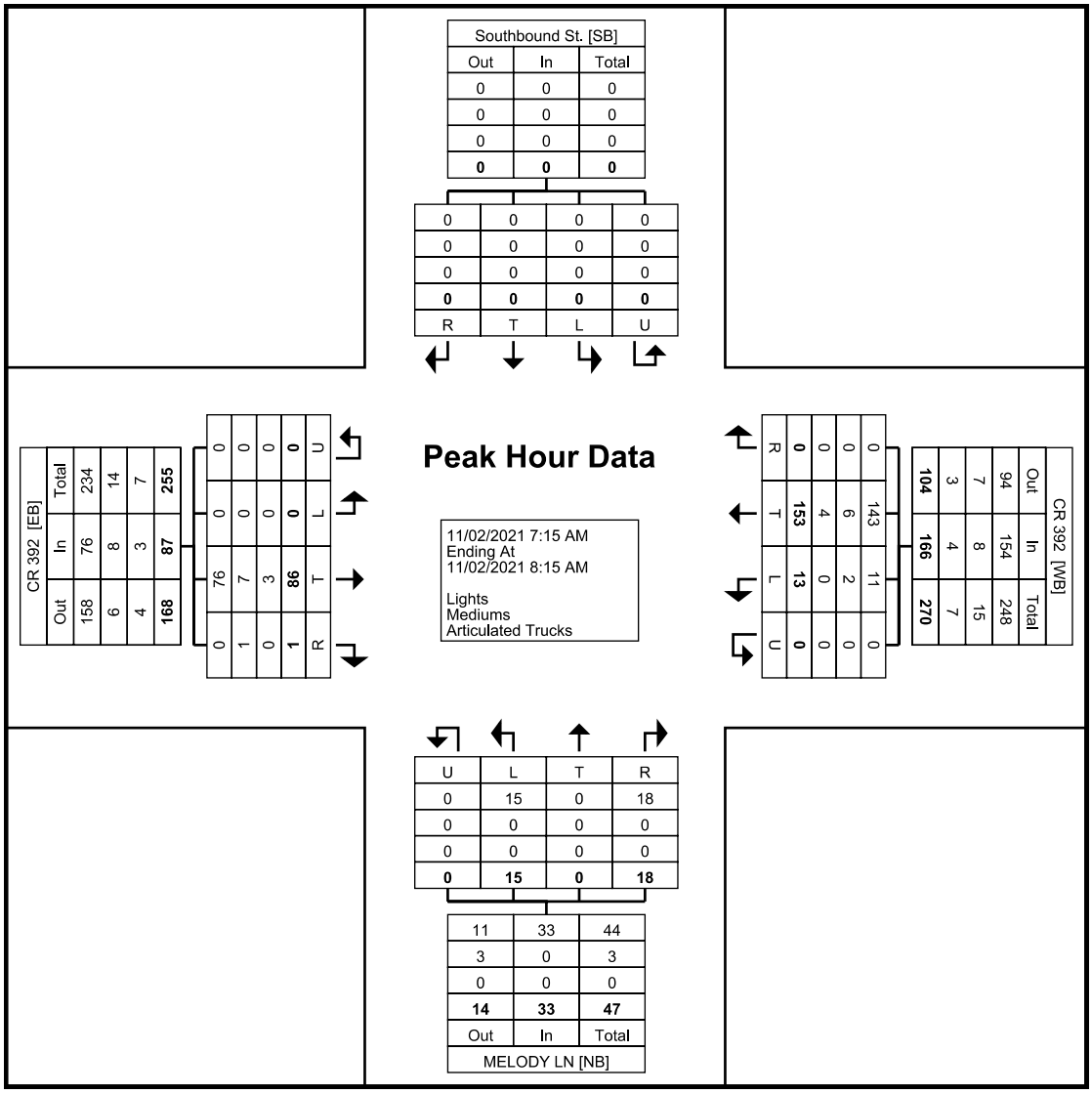
Start Time	Southbound St. Southbound					CR 392 Westbound					MELODY LN Northbound					CR 392 Eastbound					
	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Int. Total
7:15 AM	0	0	0	0	0	3	36	0	0	39	1	0	2	0	3	0	25	0	0	25	67
7:30 AM	0	0	0	0	0	3	45	0	0	48	4	0	4	0	8	0	16	0	0	16	72
7:45 AM	0	0	0	0	0	2	32	0	0	34	3	0	4	0	7	0	23	1	0	24	65
8:00 AM	0	0	0	0	0	5	40	0	0	45	7	0	8	0	15	0	22	0	0	22	82
Total	0	0	0	0	0	13	153	0	0	166	15	0	18	0	33	0	86	1	0	87	286
Approach %	0.0	0.0	0.0	0.0	-	7.8	92.2	0.0	0.0	-	45.5	0.0	54.5	0.0	-	0.0	98.9	1.1	0.0	-	-
Total %	0.0	0.0	0.0	0.0	0.0	4.5	53.5	0.0	0.0	58.0	5.2	0.0	6.3	0.0	11.5	0.0	30.1	0.3	0.0	30.4	-
PHF	0.000	0.000	0.000	0.000	0.000	0.650	0.850	0.000	0.000	0.865	0.536	0.000	0.563	0.000	0.550	0.000	0.860	0.250	0.000	0.870	0.872
Lights	0	0	0	0	0	11	143	0	0	154	15	0	18	0	33	0	76	0	0	76	263
% Lights	-	-	-	-	-	84.6	93.5	-	-	92.8	100.0	-	100.0	-	100.0	-	88.4	0.0	-	87.4	92.0
Mediums	0	0	0	0	0	2	6	0	0	8	0	0	0	0	0	0	7	1	0	8	16
% Mediums	-	-	-	-	-	15.4	3.9	-	-	4.8	0.0	-	0.0	-	0.0	-	8.1	100.0	-	9.2	5.6
Articulated Trucks	0	0	0	0	0	0	4	0	0	4	0	0	0	0	0	0	3	0	0	3	7
% Articulated Trucks	-	-	-	-	-	0.0	2.6	-	-	2.4	0.0	-	0.0	-	0.0	-	3.5	0.0	-	3.4	2.4

GRAM Traffic NTX Inc.

1120 W. Lovers Lane

Arlington, Texas, United States 76013
817.265.8968

Count Name: CR 392 @ MELODY LN
Site Code:
Start Date: 11/02/2021
Page No: 4



Turning Movement Peak Hour Data Plot (7:15 AM)

GRAM Traffic NTX Inc.

1120 W. Lovers Lane

Arlington, Texas, United States 76013
817.265.8968

Count Name: CR 392 @ MELODY LN
Site Code:
Start Date: 11/02/2021
Page No: 5

Turning Movement Peak Hour Data (2:30 PM)

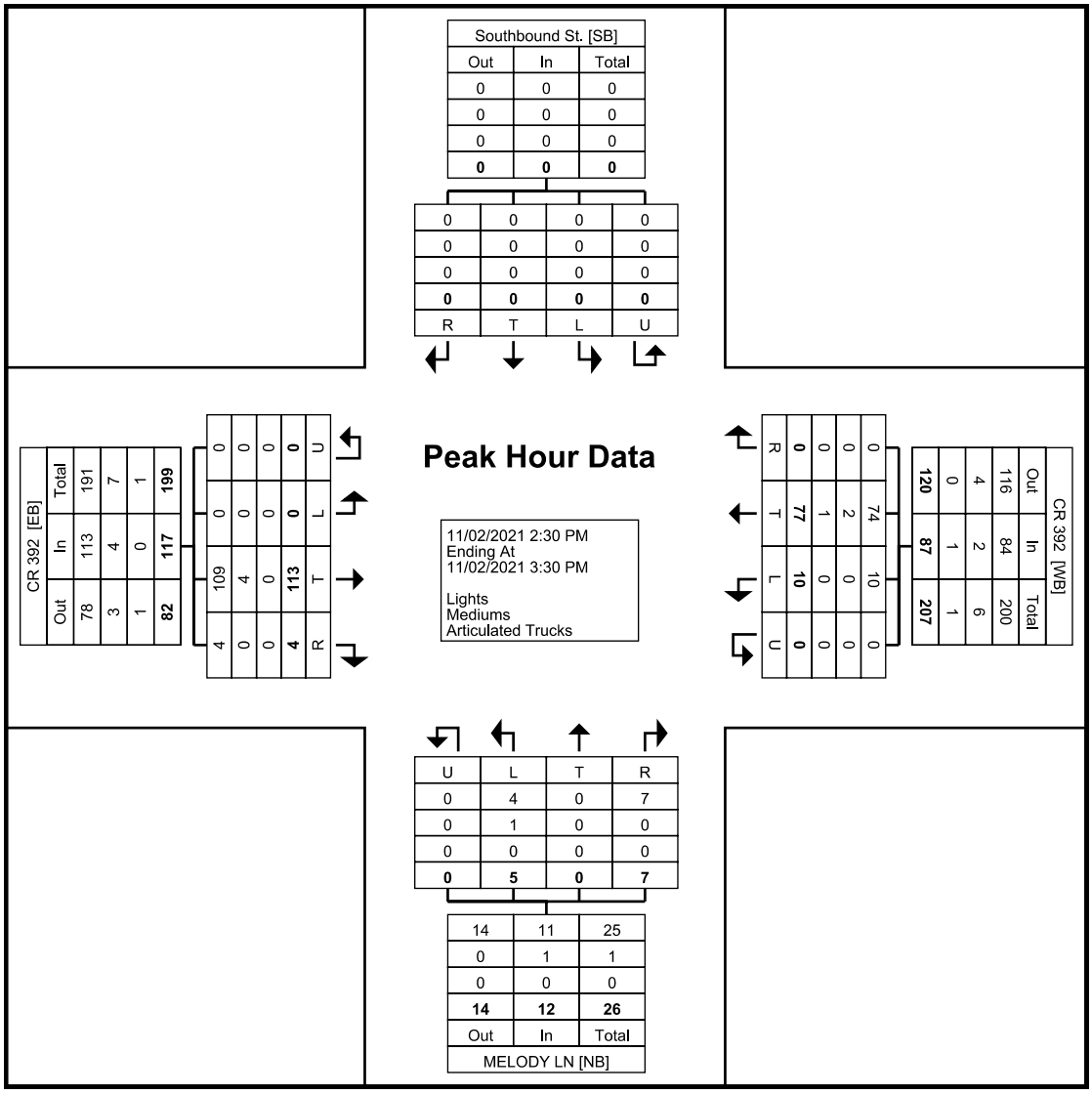
Start Time	Southbound St. Southbound					CR 392 Westbound					MELODY LN Northbound					CR 392 Eastbound					
	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Int. Total
2:30 PM	0	0	0	0	0	1	13	0	0	14	3	0	3	0	6	0	41	0	0	41	61
2:45 PM	0	0	0	0	0	2	19	0	0	21	0	0	3	0	3	0	19	2	0	21	45
3:00 PM	0	0	0	0	0	2	23	0	0	25	1	0	1	0	2	0	19	1	0	20	47
3:15 PM	0	0	0	0	0	5	22	0	0	27	1	0	0	0	1	0	34	1	0	35	63
Total	0	0	0	0	0	10	77	0	0	87	5	0	7	0	12	0	113	4	0	117	216
Approach %	0.0	0.0	0.0	0.0	-	11.5	88.5	0.0	0.0	-	41.7	0.0	58.3	0.0	-	0.0	96.6	3.4	0.0	-	-
Total %	0.0	0.0	0.0	0.0	0.0	4.6	35.6	0.0	0.0	40.3	2.3	0.0	3.2	0.0	5.6	0.0	52.3	1.9	0.0	54.2	-
PHF	0.000	0.000	0.000	0.000	0.000	0.500	0.837	0.000	0.000	0.806	0.417	0.000	0.583	0.000	0.500	0.000	0.689	0.500	0.000	0.713	0.857
Lights	0	0	0	0	0	10	74	0	0	84	4	0	7	0	11	0	109	4	0	113	208
% Lights	-	-	-	-	-	100.0	96.1	-	-	96.6	80.0	-	100.0	-	91.7	-	96.5	100.0	-	96.6	96.3
Mediums	0	0	0	0	0	0	2	0	0	2	1	0	0	0	1	0	4	0	0	4	7
% Mediums	-	-	-	-	-	0.0	2.6	-	-	2.3	20.0	-	0.0	-	8.3	-	3.5	0.0	-	3.4	3.2
Articulated Trucks	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	1
% Articulated Trucks	-	-	-	-	-	0.0	1.3	-	-	1.1	0.0	-	0.0	-	0.0	-	0.0	0.0	-	0.0	0.5

GRAM Traffic NTX Inc.

1120 W. Lovers Lane

Arlington, Texas, United States 76013
817.265.8968

Count Name: CR 392 @ MELODY LN
Site Code:
Start Date: 11/02/2021
Page No: 6



Turning Movement Peak Hour Data Plot (2:30 PM)

GRAM Traffic NTX Inc.

1120 W. Lovers Lane

Arlington, Texas, United States 76013
817.265.8968

Count Name: CR 728 @ MELODY LN
Site Code:
Start Date: 11/02/2021
Page No: 1

Turning Movement Data

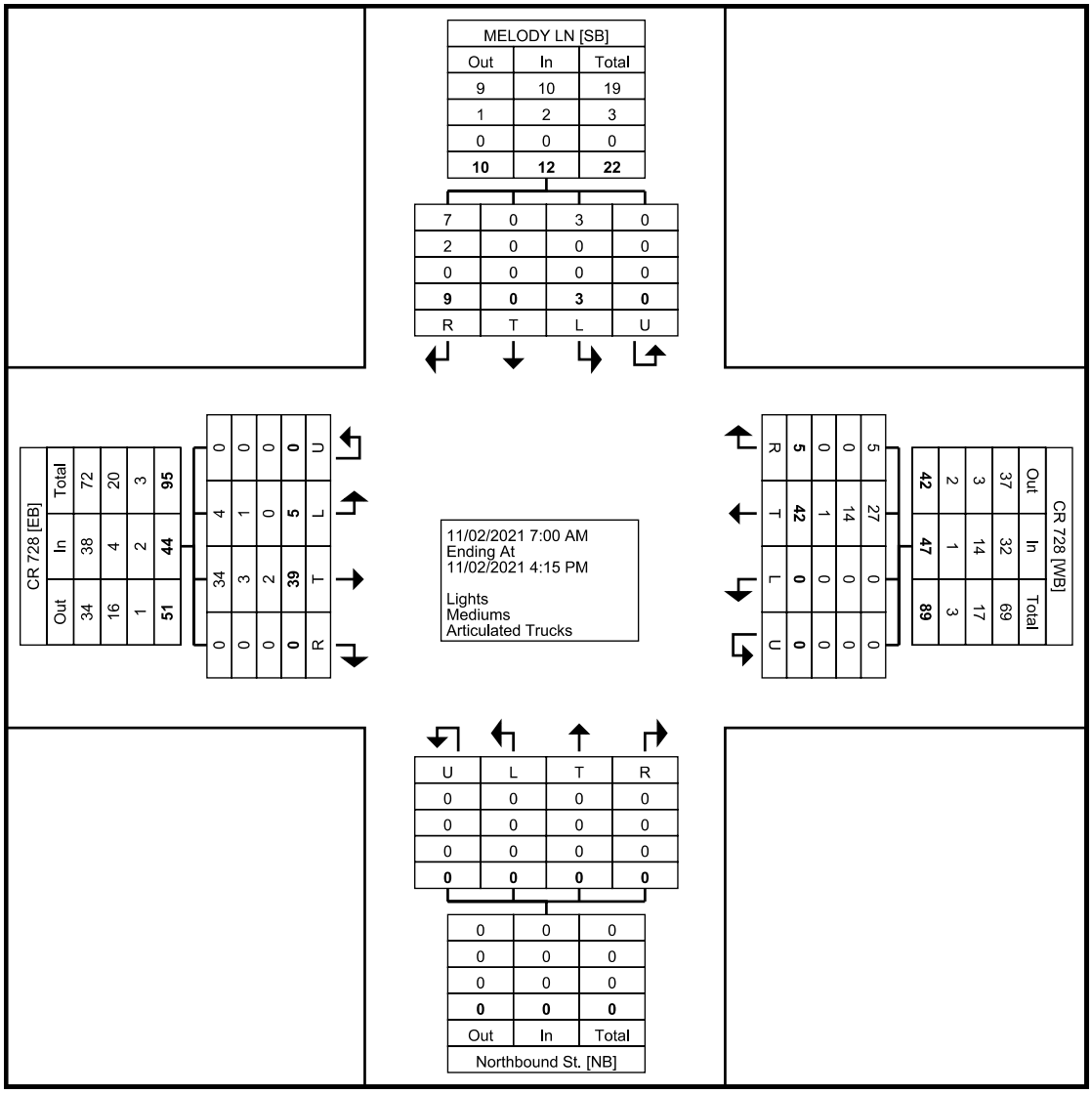
Start Time	MELODY LN Southbound					CR 728 Westbound					Northbound St. Northbound					CR 728 Eastbound					Int. Total
	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	
7:00 AM	0	0	1	0	1	0	3	0	0	3	0	0	0	0	0	0	13	0	0	13	17
7:15 AM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	1	3	0	0	4	5
7:30 AM	0	0	2	0	2	0	7	0	0	7	0	0	0	0	0	0	5	0	0	5	14
7:45 AM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	4	0	0	4	5
Hourly Total	0	0	3	0	3	0	12	0	0	12	0	0	0	0	0	1	25	0	0	26	41
8:00 AM	1	0	0	0	1	0	5	2	0	7	0	0	0	0	0	0	1	0	0	1	9
8:15 AM	0	0	1	0	1	0	6	0	0	6	0	0	0	0	0	0	1	0	0	1	8
8:30 AM	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	1	0	0	1	3
8:45 AM	0	0	1	0	1	0	7	0	0	7	0	0	0	0	0	0	4	0	0	4	12
Hourly Total	1	0	2	0	3	0	20	2	0	22	0	0	0	0	0	0	7	0	0	7	32
9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Hourly Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:00 PM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	1
2:15 PM	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	1	0	0	1	3
2:30 PM	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
2:45 PM	1	0	0	0	1	0	2	0	0	2	0	0	0	0	0	0	1	0	0	1	4
Hourly Total	1	0	1	0	2	0	5	0	0	5	0	0	0	0	0	0	2	0	0	2	9
3:00 PM	0	0	2	0	2	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1	4
3:15 PM	1	0	0	0	1	0	1	0	0	1	0	0	0	0	0	1	2	0	0	3	5
3:30 PM	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	2	0	0	0	2	4
3:45 PM	0	0	1	0	1	0	1	3	0	4	0	0	0	0	0	1	2	0	0	3	8
Hourly Total	1	0	3	0	4	0	5	3	0	8	0	0	0	0	0	4	5	0	0	9	21
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	3	0	9	0	12	0	42	5	0	47	0	0	0	0	0	5	39	0	0	44	103
Approach %	25.0	0.0	75.0	0.0	-	0.0	89.4	10.6	0.0	-	0.0	0.0	0.0	0.0	-	11.4	88.6	0.0	0.0	-	-
Total %	2.9	0.0	8.7	0.0	11.7	0.0	40.8	4.9	0.0	45.6	0.0	0.0	0.0	0.0	0.0	4.9	37.9	0.0	0.0	42.7	-
Lights	3	0	7	0	10	0	27	5	0	32	0	0	0	0	0	4	34	0	0	38	80
% Lights	100.0	-	77.8	-	83.3	-	64.3	100.0	-	68.1	-	-	-	-	-	80.0	87.2	-	-	86.4	77.7
Mediums	0	0	2	0	2	0	14	0	0	14	0	0	0	0	0	1	3	0	0	4	20
% Mediums	0.0	-	22.2	-	16.7	-	33.3	0.0	-	29.8	-	-	-	-	-	20.0	7.7	-	-	9.1	19.4
Articulated Trucks	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	2	0	0	2	3
% Articulated Trucks	0.0	-	0.0	-	0.0	-	2.4	0.0	-	2.1	-	-	-	-	-	0.0	5.1	-	-	4.5	2.9

GRAM Traffic NTX Inc.

1120 W. Lovers Lane

Arlington, Texas, United States 76013
817.265.8968

Count Name: CR 728 @ MELODY LN
Site Code:
Start Date: 11/02/2021
Page No: 2



Turning Movement Data Plot

GRAM Traffic NTX Inc.

1120 W. Lovers Lane

Arlington, Texas, United States 76013
817.265.8968

Count Name: CR 728 @ MELODY LN
Site Code:
Start Date: 11/02/2021

Turning Movement Peak Hour Data (7:00 AM)

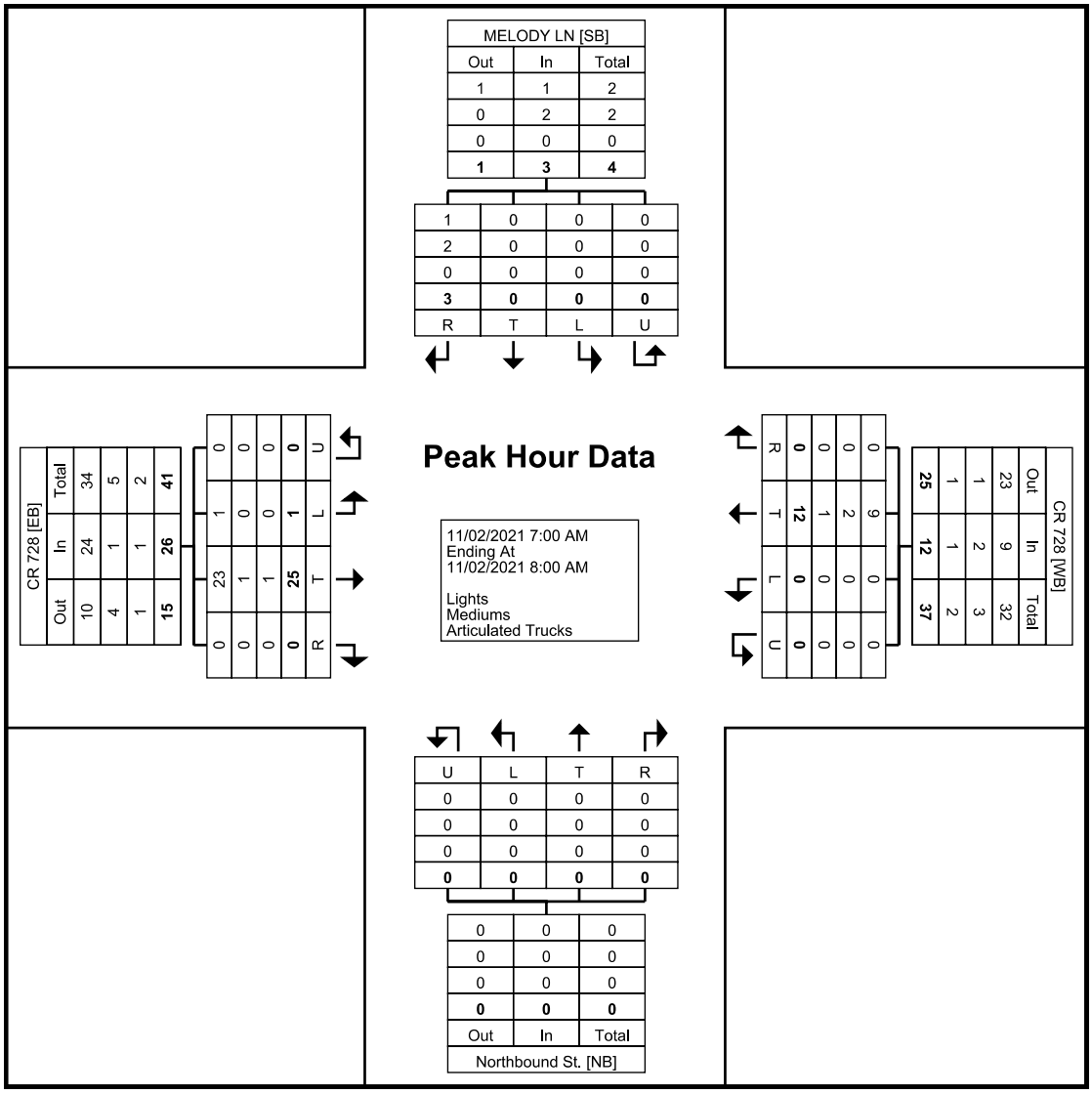
Start Time	MELODY LN Southbound					CR 728 Westbound					Northbound St. Northbound					CR 728 Eastbound					Int. Total
	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	
7:00 AM	0	0	1	0	1	0	3	0	0	3	0	0	0	0	0	0	13	0	0	13	17
7:15 AM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	1	3	0	0	4	5
7:30 AM	0	0	2	0	2	0	7	0	0	7	0	0	0	0	0	0	5	0	0	5	14
7:45 AM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	4	0	0	4	5
Total	0	0	3	0	3	0	12	0	0	12	0	0	0	0	0	1	25	0	0	26	41
Approach %	0.0	0.0	100.0	0.0	-	0.0	100.0	0.0	0.0	-	0.0	0.0	0.0	0.0	-	3.8	96.2	0.0	0.0	-	-
Total %	0.0	0.0	7.3	0.0	7.3	0.0	29.3	0.0	0.0	29.3	0.0	0.0	0.0	0.0	0.0	2.4	61.0	0.0	0.0	63.4	-
PHF	0.000	0.000	0.375	0.000	0.375	0.000	0.429	0.000	0.000	0.429	0.000	0.000	0.000	0.000	0.000	0.250	0.481	0.000	0.000	0.500	0.603
Lights	0	0	1	0	1	0	9	0	0	9	0	0	0	0	0	1	23	0	0	24	34
% Lights	-	-	33.3	-	33.3	-	75.0	-	-	75.0	-	-	-	-	-	100.0	92.0	-	-	92.3	82.9
Mediums	0	0	2	0	2	0	2	0	0	2	0	0	0	0	0	0	1	0	0	1	5
% Mediums	-	-	66.7	-	66.7	-	16.7	-	-	16.7	-	-	-	-	-	0.0	4.0	-	-	3.8	12.2
Articulated Trucks	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1	2
% Articulated Trucks	-	-	0.0	-	0.0	-	8.3	-	-	8.3	-	-	-	-	-	0.0	4.0	-	-	3.8	4.9

GRAM Traffic NTX Inc.

1120 W. Lovers Lane

Arlington, Texas, United States 76013
817.265.8968

Count Name: CR 728 @ MELODY LN
Site Code:
Start Date: 11/02/2021
Page No: 4



Turning Movement Peak Hour Data Plot (7:00 AM)

GRAM Traffic NTX Inc.

1120 W. Lovers Lane

Arlington, Texas, United States 76013
817.265.8968

Count Name: CR 728 @ MELODY LN
Site Code:
Start Date: 11/02/2021

Turning Movement Peak Hour Data (3:00 PM)

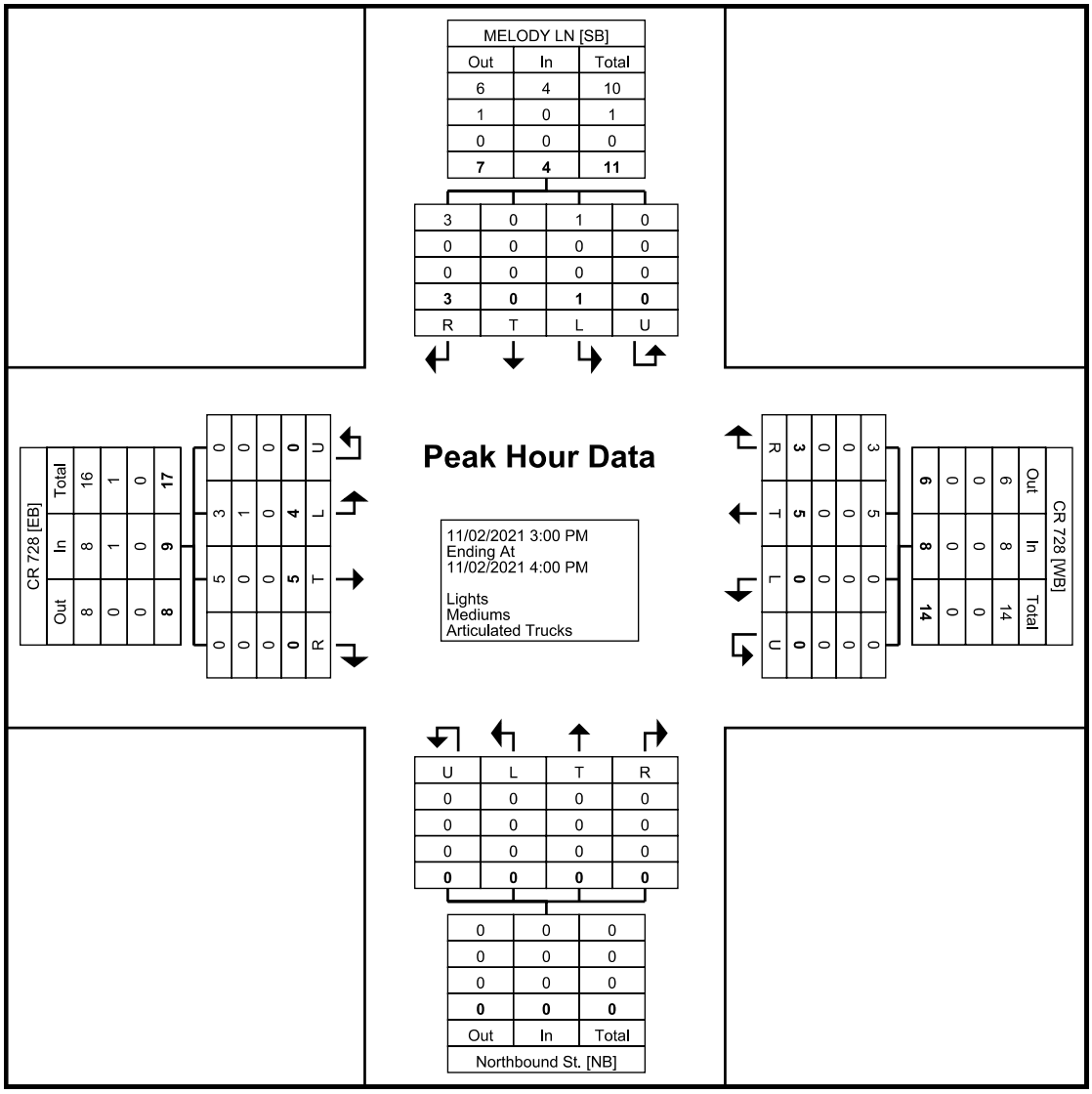
Start Time	MELODY LN Southbound					CR 728 Westbound					Northbound St. Northbound					CR 728 Eastbound					Int. Total
	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	
3:00 PM	0	0	2	0	2	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1	4
3:15 PM	1	0	0	0	1	0	1	0	0	1	0	0	0	0	0	1	2	0	0	3	5
3:30 PM	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	2	0	0	0	2	4
3:45 PM	0	0	1	0	1	0	1	3	0	4	0	0	0	0	0	1	2	0	0	3	8
Total	1	0	3	0	4	0	5	3	0	8	0	0	0	0	0	4	5	0	0	9	21
Approach %	25.0	0.0	75.0	0.0	-	0.0	62.5	37.5	0.0	-	0.0	0.0	0.0	0.0	-	44.4	55.6	0.0	0.0	-	-
Total %	4.8	0.0	14.3	0.0	19.0	0.0	23.8	14.3	0.0	38.1	0.0	0.0	0.0	0.0	0.0	19.0	23.8	0.0	0.0	42.9	-
PHF	0.250	0.000	0.375	0.000	0.500	0.000	0.625	0.250	0.000	0.500	0.000	0.000	0.000	0.000	0.000	0.500	0.625	0.000	0.000	0.750	0.656
Lights	1	0	3	0	4	0	5	3	0	8	0	0	0	0	0	3	5	0	0	8	20
% Lights	100.0	-	100.0	-	100.0	-	100.0	100.0	-	100.0	-	-	-	-	-	75.0	100.0	-	-	88.9	95.2
Mediums	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1
% Mediums	0.0	-	0.0	-	0.0	-	0.0	0.0	-	0.0	-	-	-	-	-	25.0	0.0	-	-	11.1	4.8
Articulated Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Articulated Trucks	0.0	-	0.0	-	0.0	-	0.0	0.0	-	0.0	-	-	-	-	-	0.0	0.0	-	-	0.0	0.0

GRAM Traffic NTX Inc.

1120 W. Lovers Lane

Arlington, Texas, United States 76013
817.265.8968

Count Name: CR 728 @ MELODY LN
Site Code:
Start Date: 11/02/2021
Page No: 6



Turning Movement Peak Hour Data Plot (3:00 PM)

GRAM Traffic NTX Inc.

1120 W. Lovers Lane

Arlington, Texas, United States 76013
817.265.8968

Count Name: FM 546 @ CR 392-CR 941
Site Code:
Start Date: 11/02/2021
Page No: 1

Turning Movement Data

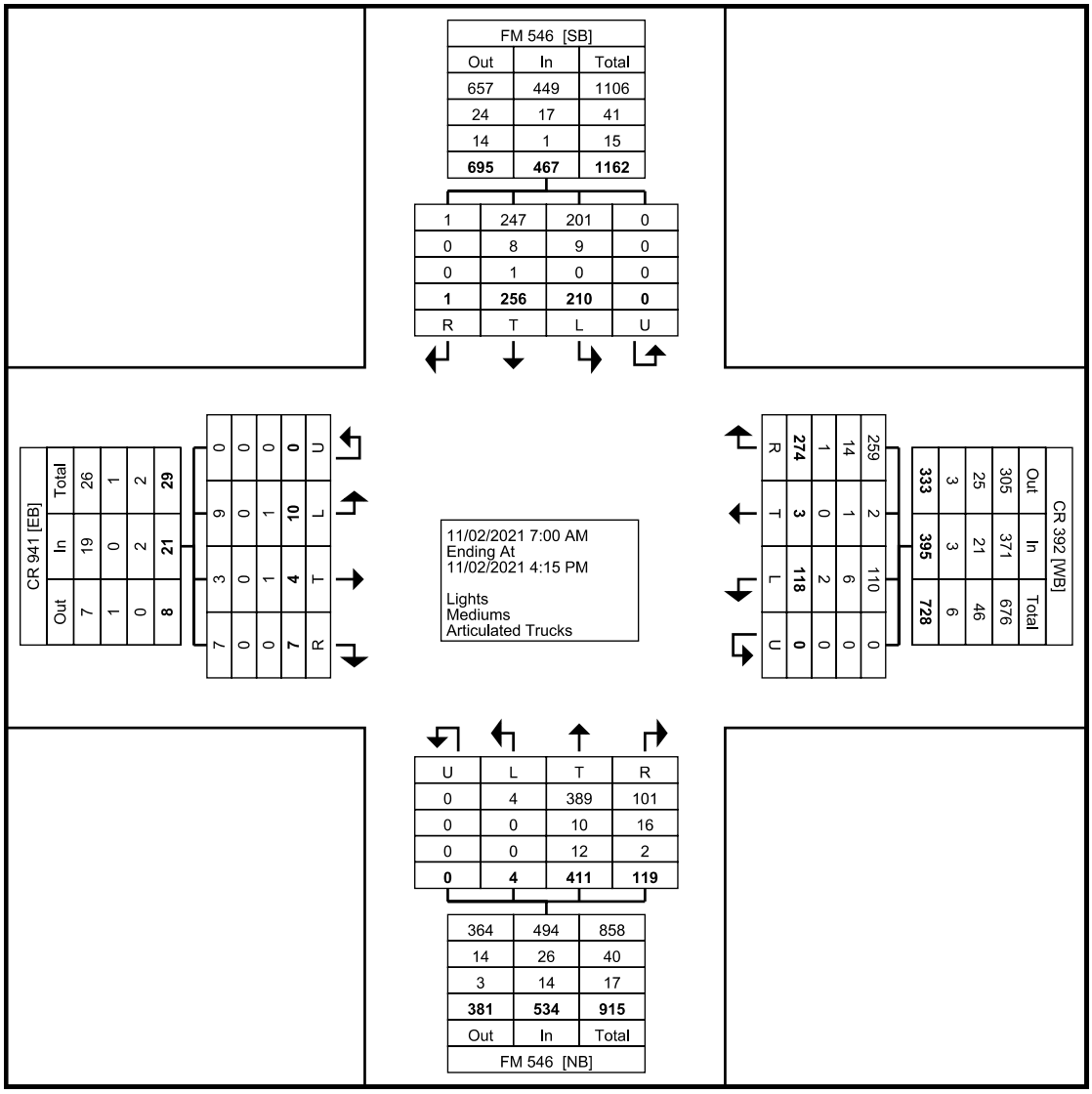
Start Time	FM 546 Southbound					CR 392 Westbound					FM 546 Northbound					CR 941 Eastbound					
	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Int. Total
7:00 AM	3	21	0	0	24	10	0	15	0	25	0	32	2	0	34	1	0	1	0	2	85
7:15 AM	8	13	0	0	21	6	0	30	0	36	0	52	7	0	59	1	1	1	0	3	119
7:30 AM	8	14	0	0	22	14	0	33	0	47	0	49	4	0	53	1	0	0	0	1	123
7:45 AM	10	18	0	0	28	7	1	31	0	39	0	40	11	0	51	2	0	0	0	2	120
Hourly Total	29	66	0	0	95	37	1	109	0	147	0	173	24	0	197	5	1	2	0	8	447
8:00 AM	11	14	0	0	25	10	0	35	0	45	2	39	11	0	52	2	0	1	0	3	125
8:15 AM	9	18	0	0	27	9	0	20	0	29	0	29	10	0	39	0	0	0	0	0	95
8:30 AM	7	11	0	0	18	6	0	19	0	25	0	34	7	0	41	0	1	0	0	1	85
8:45 AM	6	17	0	0	23	5	0	18	0	23	0	17	2	0	19	0	0	0	0	0	65
Hourly Total	33	60	0	0	93	30	0	92	0	122	2	119	30	0	151	2	1	1	0	4	370
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2:00 PM	9	15	1	0	25	2	1	12	0	15	0	19	8	0	27	0	1	0	0	1	68
2:15 PM	13	8	0	0	21	9	0	14	0	23	0	16	10	0	26	0	0	2	0	2	72
2:30 PM	26	10	0	0	36	4	0	10	0	14	0	10	11	0	21	0	0	0	0	0	71
2:45 PM	18	15	0	0	33	1	0	9	0	10	0	14	3	0	17	0	0	0	0	0	60
Hourly Total	66	48	1	0	115	16	1	45	0	62	0	59	32	0	91	0	1	2	0	3	271
3:00 PM	15	16	0	0	31	16	1	6	0	23	0	9	6	0	15	0	0	1	0	1	70
3:15 PM	18	13	0	0	31	5	0	11	0	16	1	17	12	0	30	0	1	0	0	1	78
3:30 PM	31	36	0	0	67	11	0	7	0	18	0	13	7	0	20	0	0	1	0	1	106
3:45 PM	18	17	0	0	35	3	0	4	0	7	1	21	8	0	30	3	0	0	0	3	75
Hourly Total	82	82	0	0	164	35	1	28	0	64	2	60	33	0	95	3	1	2	0	6	329
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	210	256	1	0	467	118	3	274	0	395	4	411	119	0	534	10	4	7	0	21	1417
Approach %	45.0	54.8	0.2	0.0	-	29.9	0.8	69.4	0.0	-	0.7	77.0	22.3	0.0	-	47.6	19.0	33.3	0.0	-	-
Total %	14.8	18.1	0.1	0.0	33.0	8.3	0.2	19.3	0.0	27.9	0.3	29.0	8.4	0.0	37.7	0.7	0.3	0.5	0.0	1.5	-
Lights	201	247	1	0	449	110	2	259	0	371	4	389	101	0	494	9	3	7	0	19	1333
% Lights	95.7	96.5	100.0	-	96.1	93.2	66.7	94.5	-	93.9	100.0	94.6	84.9	-	92.5	90.0	75.0	100.0	-	90.5	94.1
Mediums	9	8	0	0	17	6	1	14	0	21	0	10	16	0	26	0	0	0	0	0	64
% Mediums	4.3	3.1	0.0	-	3.6	5.1	33.3	5.1	-	5.3	0.0	2.4	13.4	-	4.9	0.0	0.0	0.0	-	0.0	4.5
Articulated Trucks	0	1	0	0	1	2	0	1	0	3	0	12	2	0	14	1	1	0	0	2	20
% Articulated Trucks	0.0	0.4	0.0	-	0.2	1.7	0.0	0.4	-	0.8	0.0	2.9	1.7	-	2.6	10.0	25.0	0.0	-	9.5	1.4

GRAM Traffic NTX Inc.

1120 W. Lovers Lane

Arlington, Texas, United States 76013
817.265.8968

Count Name: FM 546 @ CR 392-CR 941
Site Code:
Start Date: 11/02/2021
Page No: 2



Turning Movement Data Plot

GRAM Traffic NTX Inc.

1120 W. Lovers Lane

Arlington, Texas, United States 76013
817.265.8968

Count Name: FM 546 @ CR 392-CR 941
Site Code:
Start Date: 11/02/2021

Turning Movement Peak Hour Data (7:15 AM)

Start Time	FM 546 Southbound					CR 392 Westbound					FM 546 Northbound					CR 941 Eastbound					
	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Int. Total
7:15 AM	8	13	0	0	21	6	0	30	0	36	0	52	7	0	59	1	1	1	0	3	119
7:30 AM	8	14	0	0	22	14	0	33	0	47	0	49	4	0	53	1	0	0	0	1	123
7:45 AM	10	18	0	0	28	7	1	31	0	39	0	40	11	0	51	2	0	0	0	2	120
8:00 AM	11	14	0	0	25	10	0	35	0	45	2	39	11	0	52	2	0	1	0	3	125
Total	37	59	0	0	96	37	1	129	0	167	2	180	33	0	215	6	1	2	0	9	487
Approach %	38.5	61.5	0.0	0.0	-	22.2	0.6	77.2	0.0	-	0.9	83.7	15.3	0.0	-	66.7	11.1	22.2	0.0	-	-
Total %	7.6	12.1	0.0	0.0	19.7	7.6	0.2	26.5	0.0	34.3	0.4	37.0	6.8	0.0	44.1	1.2	0.2	0.4	0.0	1.8	-
PHF	0.841	0.819	0.000	0.000	0.857	0.661	0.250	0.921	0.000	0.888	0.250	0.865	0.750	0.000	0.911	0.750	0.250	0.500	0.000	0.750	0.974
Lights	34	58	0	0	92	34	0	122	0	156	2	170	25	0	197	6	1	2	0	9	454
% Lights	91.9	98.3	-	-	95.8	91.9	0.0	94.6	-	93.4	100.0	94.4	75.8	-	91.6	100.0	100.0	100.0	-	100.0	93.2
Mediums	3	0	0	0	3	2	1	7	0	10	0	1	6	0	7	0	0	0	0	0	20
% Mediums	8.1	0.0	-	-	3.1	5.4	100.0	5.4	-	6.0	0.0	0.6	18.2	-	3.3	0.0	0.0	0.0	-	0.0	4.1
Articulated Trucks	0	1	0	0	1	1	0	0	0	1	0	9	2	0	11	0	0	0	0	0	13
% Articulated Trucks	0.0	1.7	-	-	1.0	2.7	0.0	0.0	-	0.6	0.0	5.0	6.1	-	5.1	0.0	0.0	0.0	-	0.0	2.7

GRAM Traffic NTX Inc.

1120 W. Lovers Lane

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Count Name: FM 546 @ CR 392-CR 941
Site Code:
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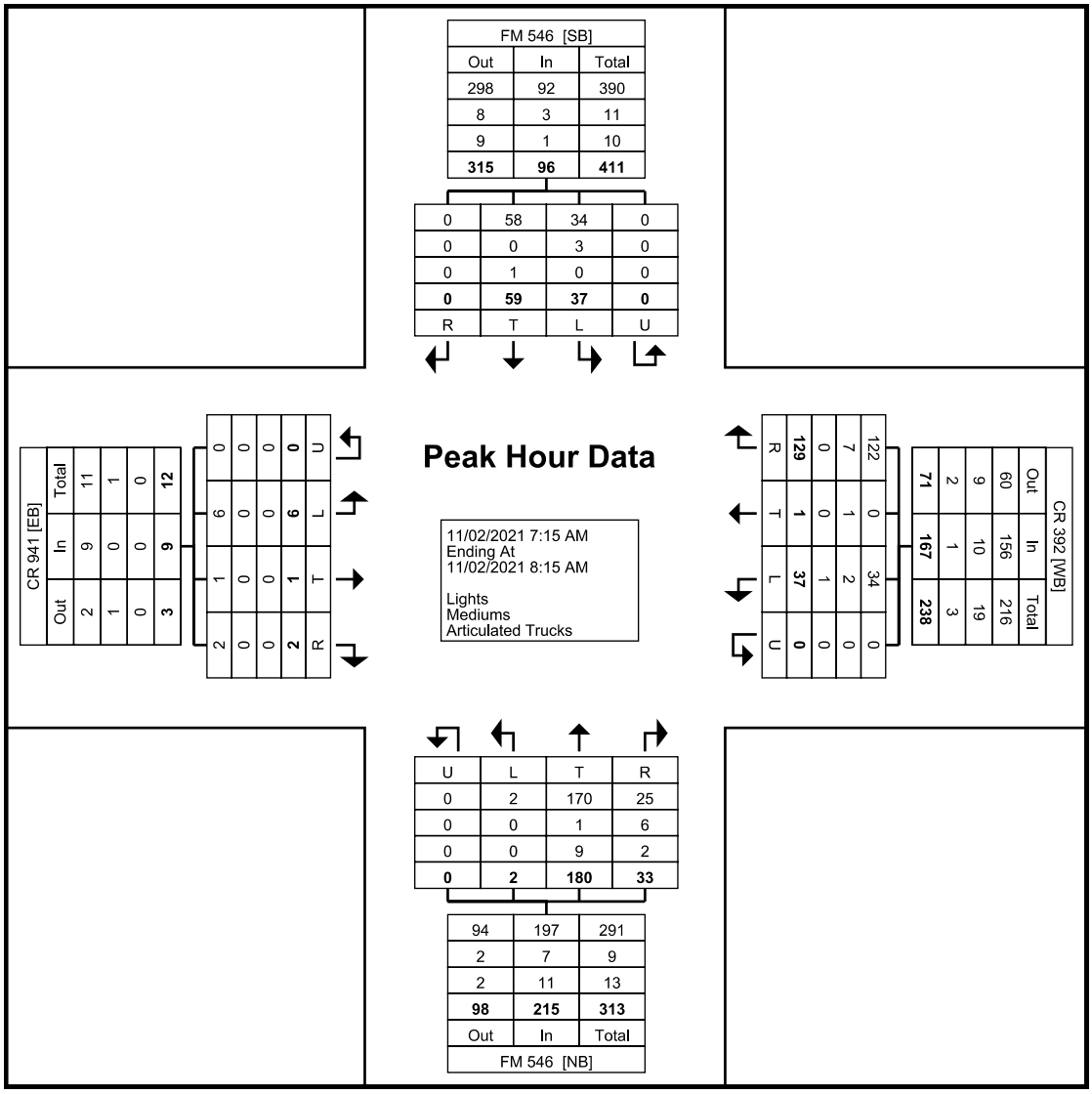
Page No: 4



Turning Movement Peak Hour Data Plot (7:15 AM)

GRAM Traffic NTX Inc.

1120 W. Lovers Lane

Arlington, Texas, United States 76013
817.265.8968

Count Name: FM 546 @ CR 392-CR 941
Site Code:
Start Date: 11/02/2021

Turning Movement Peak Hour Data (3:00 PM)

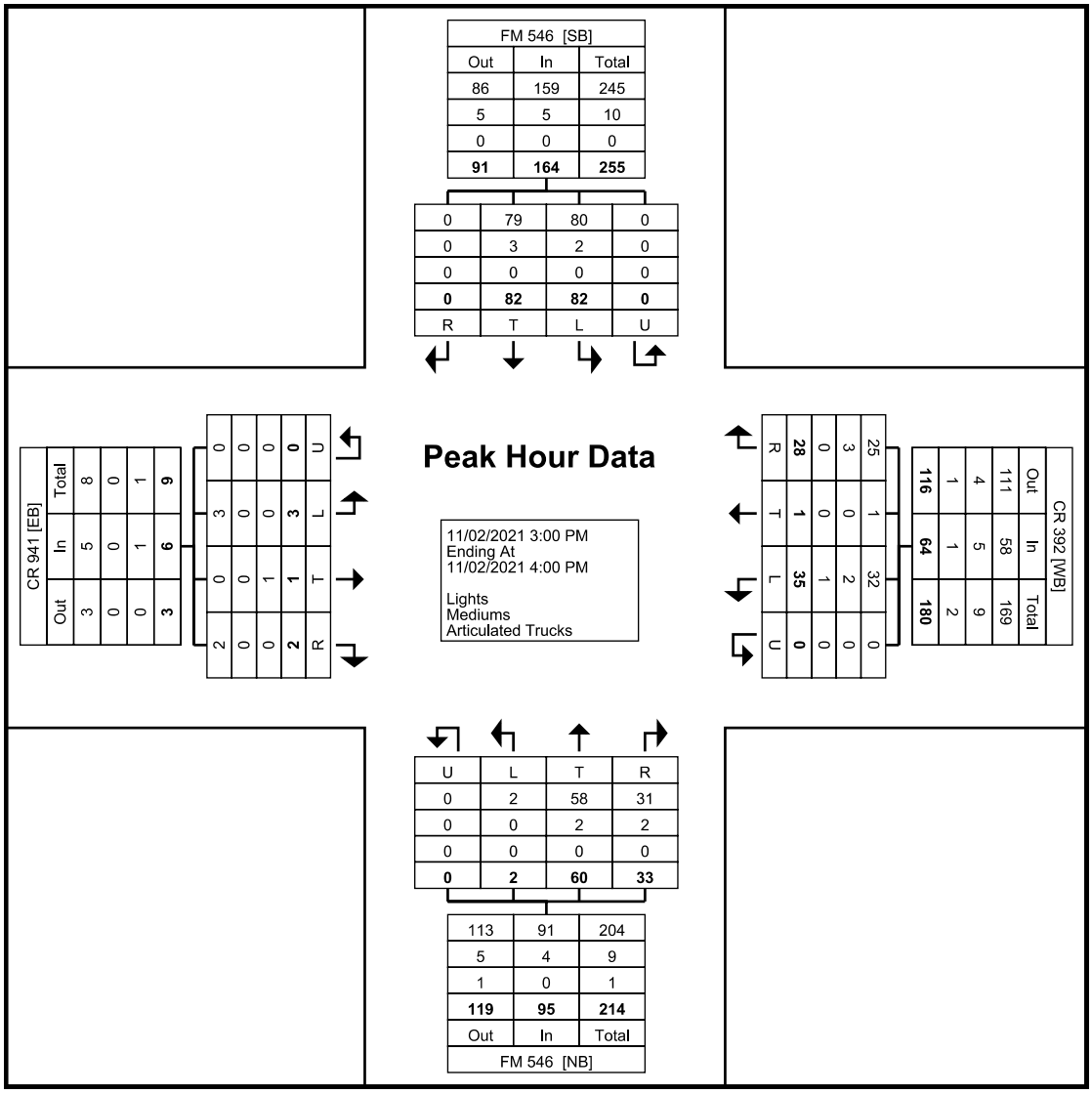
Start Time	FM 546 Southbound					CR 392 Westbound					FM 546 Northbound					CR 941 Eastbound					
	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Int. Total
3:00 PM	15	16	0	0	31	16	1	6	0	23	0	9	6	0	15	0	0	1	0	1	70
3:15 PM	18	13	0	0	31	5	0	11	0	16	1	17	12	0	30	0	1	0	0	1	78
3:30 PM	31	36	0	0	67	11	0	7	0	18	0	13	7	0	20	0	0	1	0	1	106
3:45 PM	18	17	0	0	35	3	0	4	0	7	1	21	8	0	30	3	0	0	0	3	75
Total	82	82	0	0	164	35	1	28	0	64	2	60	33	0	95	3	1	2	0	6	329
Approach %	50.0	50.0	0.0	0.0	-	54.7	1.6	43.8	0.0	-	2.1	63.2	34.7	0.0	-	50.0	16.7	33.3	0.0	-	-
Total %	24.9	24.9	0.0	0.0	49.8	10.6	0.3	8.5	0.0	19.5	0.6	18.2	10.0	0.0	28.9	0.9	0.3	0.6	0.0	1.8	-
PHF	0.661	0.569	0.000	0.000	0.612	0.547	0.250	0.636	0.000	0.696	0.500	0.714	0.688	0.000	0.792	0.250	0.250	0.500	0.000	0.500	0.776
Lights	80	79	0	0	159	32	1	25	0	58	2	58	31	0	91	3	0	2	0	5	313
% Lights	97.6	96.3	-	-	97.0	91.4	100.0	89.3	-	90.6	100.0	96.7	93.9	-	95.8	100.0	0.0	100.0	-	83.3	95.1
Mediums	2	3	0	0	5	2	0	3	0	5	0	2	2	0	4	0	0	0	0	0	14
% Mediums	2.4	3.7	-	-	3.0	5.7	0.0	10.7	-	7.8	0.0	3.3	6.1	-	4.2	0.0	0.0	0.0	-	0.0	4.3
Articulated Trucks	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	1	0	0	1	2
% Articulated Trucks	0.0	0.0	-	-	0.0	2.9	0.0	0.0	-	1.6	0.0	0.0	0.0	-	0.0	0.0	100.0	0.0	-	16.7	0.6

GRAM Traffic NTX Inc.

1120 W. Lovers Lane

Arlington, Texas, United States 76013
817.265.8968

Count Name: FM 546 @ CR 392-CR 941
Site Code:
Start Date: 11/02/2021
Page No: 6



Turning Movement Peak Hour Data Plot (3:00 PM)

GRAM Traffic NTX Inc.

1120 W. Lovers Lane

Arlington, Texas, United States 76013
817.265.8968

Count Name: FM 546 @ CR 728
Site Code:
Start Date: 11/02/2021

Turning Movement Data

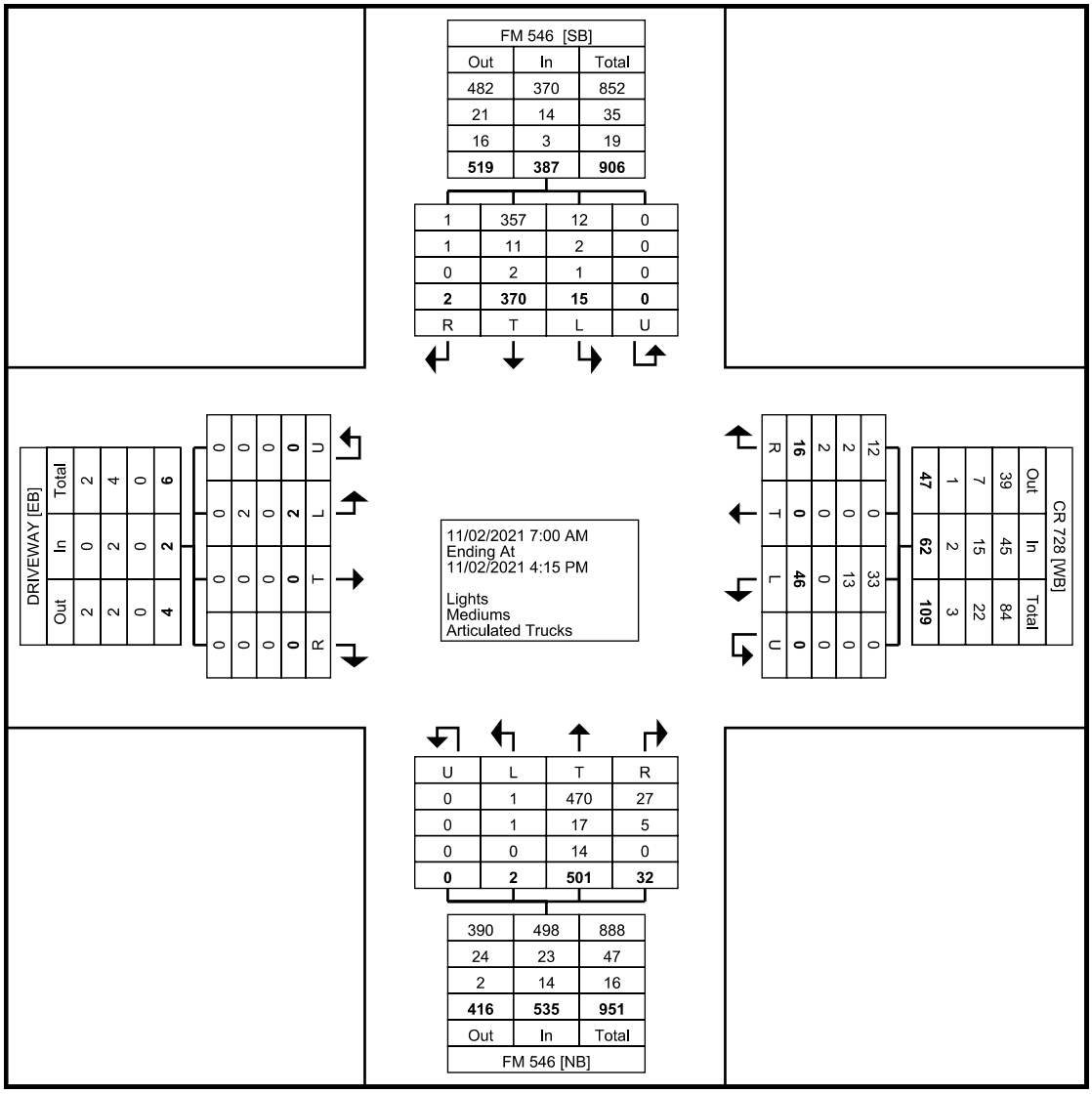
Start Time	FM 546 Southbound					CR 728 Westbound					FM 546 Northbound					DRIVEWAY Eastbound					
	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Int. Total
7:00 AM	5	28	0	0	33	6	0	1	0	7	0	25	5	0	30	0	0	0	0	0	70
7:15 AM	2	19	0	0	21	0	0	0	0	0	0	62	3	0	65	0	0	0	0	0	86
7:30 AM	2	26	0	0	28	2	0	2	0	4	0	51	2	0	53	0	0	0	0	0	85
7:45 AM	0	25	0	0	25	0	0	1	0	1	0	50	4	0	54	0	0	0	0	0	80
Hourly Total	9	98	0	0	107	8	0	4	0	12	0	188	14	0	202	0	0	0	0	0	321
8:00 AM	0	23	0	0	23	5	0	1	0	6	0	51	3	0	54	0	0	0	0	0	83
8:15 AM	2	32	0	0	34	6	0	1	0	7	0	36	0	0	36	0	0	0	0	0	77
8:30 AM	0	21	0	0	21	2	0	0	0	2	0	39	0	0	39	0	0	0	0	0	62
8:45 AM	1	20	0	0	21	6	0	0	0	6	0	19	3	0	22	0	0	0	0	0	49
Hourly Total	3	96	0	0	99	19	0	2	0	21	0	145	6	0	151	0	0	0	0	0	271
9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Hourly Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:00 PM	0	17	0	0	17	1	0	2	0	3	0	22	3	0	25	0	0	0	0	0	45
2:15 PM	0	17	1	0	18	3	0	2	0	5	0	21	2	0	23	0	0	0	0	0	46
2:30 PM	0	14	0	0	14	3	0	1	0	4	0	23	1	0	24	0	0	0	0	0	42
2:45 PM	1	16	0	0	17	6	0	3	0	9	0	11	0	0	11	0	0	0	0	0	37
Hourly Total	1	64	1	0	66	13	0	8	0	21	0	77	6	0	83	0	0	0	0	0	170
3:00 PM	1	29	0	0	30	1	0	0	0	1	1	14	1	0	16	0	0	0	0	0	47
3:15 PM	0	17	0	0	17	0	0	1	0	1	1	29	2	0	32	1	0	0	0	1	51
3:30 PM	0	45	1	0	46	5	0	1	0	6	0	20	2	0	22	1	0	0	0	1	75
3:45 PM	1	21	0	0	22	0	0	0	0	0	0	28	1	0	29	0	0	0	0	0	51
Hourly Total	2	112	1	0	115	6	0	2	0	8	2	91	6	0	99	2	0	0	0	2	224
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	15	370	2	0	387	46	0	16	0	62	2	501	32	0	535	2	0	0	0	2	986
Approach %	3.9	95.6	0.5	0.0	-	74.2	0.0	25.8	0.0	-	0.4	93.6	6.0	0.0	-	100.0	0.0	0.0	0.0	-	-
Total %	1.5	37.5	0.2	0.0	39.2	4.7	0.0	1.6	0.0	6.3	0.2	50.8	3.2	0.0	54.3	0.2	0.0	0.0	0.0	0.2	-
Lights	12	357	1	0	370	33	0	12	0	45	1	470	27	0	498	0	0	0	0	0	913
% Lights	80.0	96.5	50.0	-	95.6	71.7	-	75.0	-	72.6	50.0	93.8	84.4	-	93.1	0.0	-	-	-	0.0	92.6
Mediums	2	11	1	0	14	13	0	2	0	15	1	17	5	0	23	2	0	0	0	2	54
% Mediums	13.3	3.0	50.0	-	3.6	28.3	-	12.5	-	24.2	50.0	3.4	15.6	-	4.3	100.0	-	-	-	100.0	5.5
Articulated Trucks	1	2	0	0	3	0	0	2	0	2	0	14	0	0	14	0	0	0	0	0	19
% Articulated Trucks	6.7	0.5	0.0	-	0.8	0.0	-	12.5	-	3.2	0.0	2.8	0.0	-	2.6	0.0	-	-	-	0.0	1.9

GRAM Traffic NTX Inc.

1120 W. Lovers Lane

Arlington, Texas, United States 76013
817.265.8968

Count Name: FM 546 @ CR 728
Site Code:
Start Date: 11/02/2021
Page No: 2



Turning Movement Data Plot

GRAM Traffic NTX Inc.

1120 W. Lovers Lane

Arlington, Texas, United States 76013
817.265.8968

Count Name: FM 546 @ CR 728
Site Code:
Start Date: 11/02/2021

Turning Movement Peak Hour Data (7:15 AM)

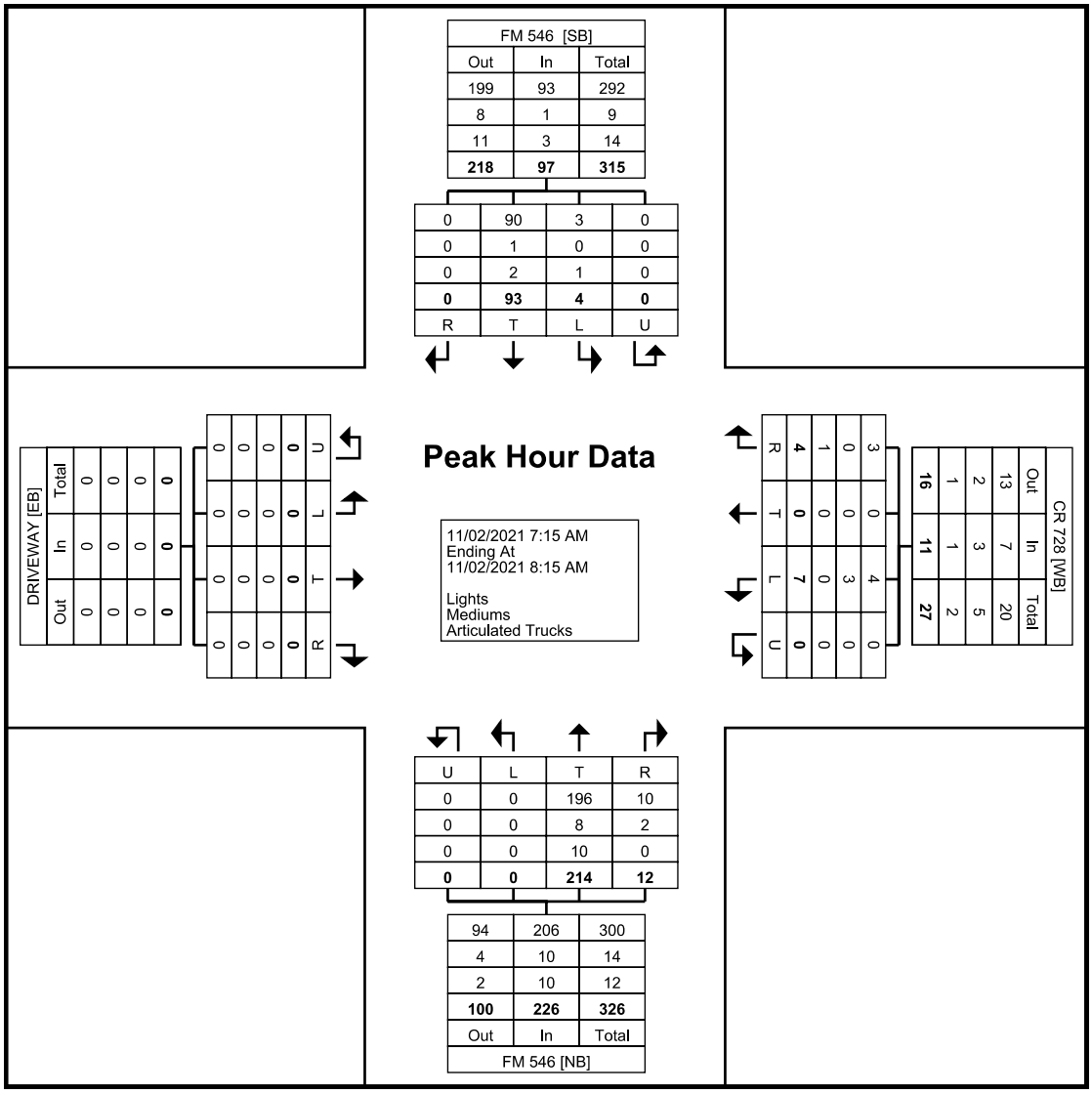
Start Time	FM 546 Southbound					CR 728 Westbound					FM 546 Northbound					DRIVEWAY Eastbound					
	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Int. Total
7:15 AM	2	19	0	0	21	0	0	0	0	0	0	62	3	0	65	0	0	0	0	0	86
7:30 AM	2	26	0	0	28	2	0	2	0	4	0	51	2	0	53	0	0	0	0	0	85
7:45 AM	0	25	0	0	25	0	0	1	0	1	0	50	4	0	54	0	0	0	0	0	80
8:00 AM	0	23	0	0	23	5	0	1	0	6	0	51	3	0	54	0	0	0	0	0	83
Total	4	93	0	0	97	7	0	4	0	11	0	214	12	0	226	0	0	0	0	0	334
Approach %	4.1	95.9	0.0	0.0	-	63.6	0.0	36.4	0.0	-	0.0	94.7	5.3	0.0	-	0.0	0.0	0.0	0.0	-	-
Total %	1.2	27.8	0.0	0.0	29.0	2.1	0.0	1.2	0.0	3.3	0.0	64.1	3.6	0.0	67.7	0.0	0.0	0.0	0.0	0.0	-
PHF	0.500	0.894	0.000	0.000	0.866	0.350	0.000	0.500	0.000	0.458	0.000	0.863	0.750	0.000	0.869	0.000	0.000	0.000	0.000	0.000	0.971
Lights	3	90	0	0	93	4	0	3	0	7	0	196	10	0	206	0	0	0	0	0	306
% Lights	75.0	96.8	-	-	95.9	57.1	-	75.0	-	63.6	-	91.6	83.3	-	91.2	-	-	-	-	-	91.6
Mediums	0	1	0	0	1	3	0	0	0	3	0	8	2	0	10	0	0	0	0	0	14
% Mediums	0.0	1.1	-	-	1.0	42.9	-	0.0	-	27.3	-	3.7	16.7	-	4.4	-	-	-	-	-	4.2
Articulated Trucks	1	2	0	0	3	0	0	1	0	1	0	10	0	0	10	0	0	0	0	0	14
% Articulated Trucks	25.0	2.2	-	-	3.1	0.0	-	25.0	-	9.1	-	4.7	0.0	-	4.4	-	-	-	-	-	4.2

GRAM Traffic NTX Inc.

1120 W. Lovers Lane

Arlington, Texas, United States 76013
817.265.8968

Count Name: FM 546 @ CR 728
Site Code:
Start Date: 11/02/2021
Page No: 4



Turning Movement Peak Hour Data Plot (7:15 AM)

GRAM Traffic NTX Inc.

1120 W. Lovers Lane

Arlington, Texas, United States 76013
817.265.8968

Count Name: FM 546 @ CR 728
Site Code:
Start Date: 11/02/2021

Turning Movement Peak Hour Data (3:00 PM)

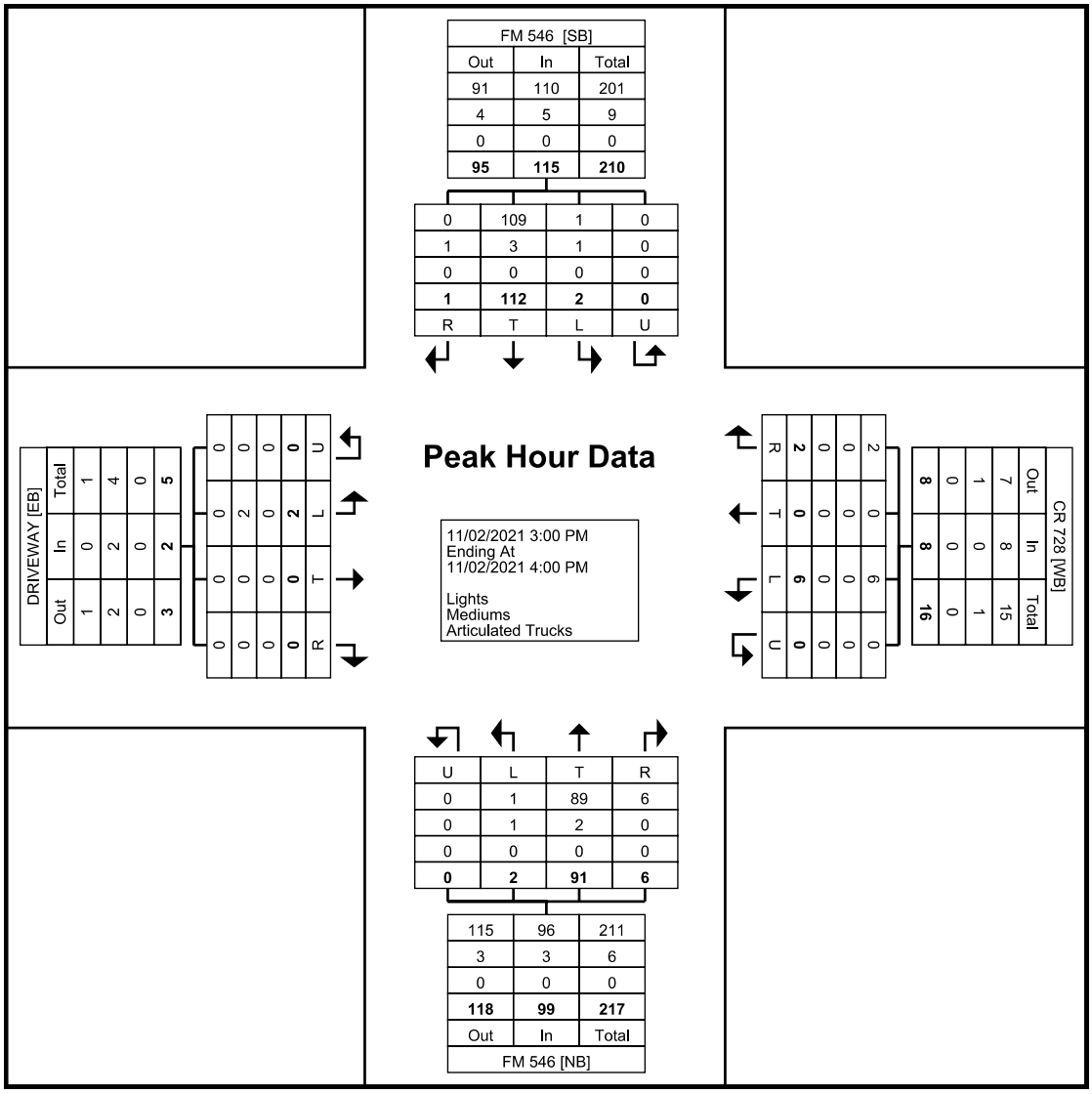
Start Time	FM 546 Southbound					CR 728 Westbound					FM 546 Northbound					DRIVEWAY Eastbound					
	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Int. Total
3:00 PM	1	29	0	0	30	1	0	0	0	1	1	14	1	0	16	0	0	0	0	0	47
3:15 PM	0	17	0	0	17	0	0	1	0	1	1	29	2	0	32	1	0	0	0	1	51
3:30 PM	0	45	1	0	46	5	0	1	0	6	0	20	2	0	22	1	0	0	0	1	75
3:45 PM	1	21	0	0	22	0	0	0	0	0	0	28	1	0	29	0	0	0	0	0	51
Total	2	112	1	0	115	6	0	2	0	8	2	91	6	0	99	2	0	0	0	2	224
Approach %	1.7	97.4	0.9	0.0	-	75.0	0.0	25.0	0.0	-	2.0	91.9	6.1	0.0	-	100.0	0.0	0.0	0.0	-	-
Total %	0.9	50.0	0.4	0.0	51.3	2.7	0.0	0.9	0.0	3.6	0.9	40.6	2.7	0.0	44.2	0.9	0.0	0.0	0.0	0.9	-
PHF	0.500	0.622	0.250	0.000	0.625	0.300	0.000	0.500	0.000	0.333	0.500	0.784	0.750	0.000	0.773	0.500	0.000	0.000	0.000	0.500	0.747
Lights	1	109	0	0	110	6	0	2	0	8	1	89	6	0	96	0	0	0	0	0	214
% Lights	50.0	97.3	0.0	-	95.7	100.0	-	100.0	-	100.0	50.0	97.8	100.0	-	97.0	0.0	-	-	-	0.0	95.5
Mediums	1	3	1	0	5	0	0	0	0	0	1	2	0	0	3	2	0	0	0	2	10
% Mediums	50.0	2.7	100.0	-	4.3	0.0	-	0.0	-	0.0	50.0	2.2	0.0	-	3.0	100.0	-	-	-	100.0	4.5
Articulated Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Articulated Trucks	0.0	0.0	0.0	-	0.0	0.0	-	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	-	-	-	0.0	0.0

GRAM Traffic NTX Inc.

1120 W. Lovers Lane

Arlington, Texas, United States 76013
817.265.8968

Count Name: FM 546 @ CR 728
Site Code:
Start Date: 11/02/2021
Page No: 6



Turning Movement Peak Hour Data Plot (3:00 PM)

GRAM Traffic NTX Inc.

1120 W. Lovers Lane

Arlington, Texas, United States 76013
817.265.8968

Count Name: CR 392-CR 744 @ FM 982
Site Code:
Start Date: 11/02/2021
Page No: 1

Turning Movement Data

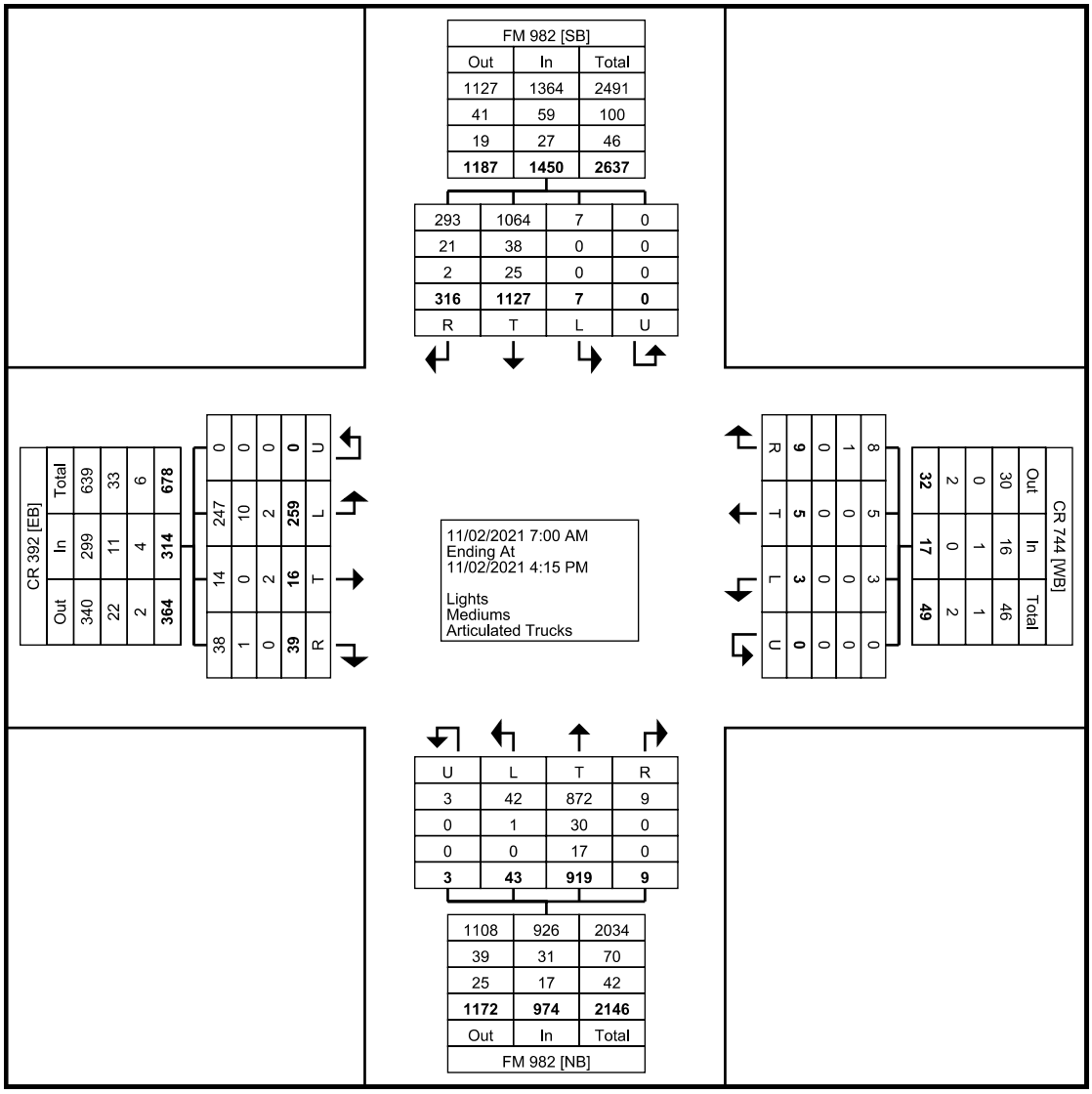
Start Time	FM 982 Southbound					CR 744 Westbound					FM 982 Northbound					CR 392 Eastbound					
	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Int. Total
7:00 AM	0	94	20	0	114	1	0	1	0	2	0	75	0	0	75	21	5	3	0	29	220
7:15 AM	1	94	28	0	123	1	1	3	0	5	5	62	1	0	68	17	1	3	0	21	217
7:30 AM	1	102	31	0	134	0	0	0	0	0	1	43	1	0	45	10	2	2	0	14	193
7:45 AM	0	108	34	0	142	0	0	0	0	0	6	55	0	0	61	14	1	0	0	15	218
Hourly Total	2	398	113	0	513	2	1	4	0	7	12	235	2	0	249	62	9	8	0	79	848
8:00 AM	1	76	28	0	105	0	0	1	0	1	4	50	3	0	57	19	0	2	0	21	184
8:15 AM	0	80	20	0	100	0	0	0	0	0	5	43	1	0	49	16	0	0	0	16	165
8:30 AM	0	64	15	0	79	0	0	0	0	0	0	44	1	0	45	14	0	5	0	19	143
8:45 AM	0	73	18	0	91	0	1	0	0	1	2	48	0	0	50	9	0	0	0	9	151
Hourly Total	1	293	81	0	375	0	1	1	0	2	11	185	5	0	201	58	0	7	0	65	643
9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Hourly Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:00 PM	3	46	18	0	67	0	0	2	0	2	1	54	0	2	57	15	2	0	0	17	143
2:15 PM	0	48	16	0	64	1	0	0	0	1	3	52	1	0	56	21	1	2	0	24	145
2:30 PM	0	53	8	0	61	0	0	0	0	0	1	54	1	1	57	19	0	1	0	20	138
2:45 PM	0	53	16	0	69	0	0	1	0	1	2	76	0	0	78	21	2	5	0	28	176
Hourly Total	3	200	58	0	261	1	0	3	0	4	7	236	2	3	248	76	5	8	0	89	602
3:00 PM	0	51	16	0	67	0	2	0	0	2	2	65	0	0	67	14	0	3	0	17	153
3:15 PM	0	68	20	0	88	0	1	0	0	1	3	65	0	0	68	19	1	3	0	23	180
3:30 PM	0	61	10	0	71	0	0	0	0	0	5	69	0	0	74	17	1	2	0	20	165
3:45 PM	1	56	18	0	75	0	0	1	0	1	3	64	0	0	67	13	0	8	0	21	164
Hourly Total	1	236	64	0	301	0	3	1	0	4	13	263	0	0	276	63	2	16	0	81	662
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	7	1127	316	0	1450	3	5	9	0	17	43	919	9	3	974	259	16	39	0	314	2755
Approach %	0.5	77.7	21.8	0.0	-	17.6	29.4	52.9	0.0	-	4.4	94.4	0.9	0.3	-	82.5	5.1	12.4	0.0	-	-
Total %	0.3	40.9	11.5	0.0	52.6	0.1	0.2	0.3	0.0	0.6	1.6	33.4	0.3	0.1	35.4	9.4	0.6	1.4	0.0	11.4	-
Lights	7	1064	293	0	1364	3	5	8	0	16	42	872	9	3	926	247	14	38	0	299	2605
% Lights	100.0	94.4	92.7	-	94.1	100.0	100.0	88.9	-	94.1	97.7	94.9	100.0	100.0	95.1	95.4	87.5	97.4	-	95.2	94.6
Mediums	0	38	21	0	59	0	0	1	0	1	1	30	0	0	31	10	0	1	0	11	102
% Mediums	0.0	3.4	6.6	-	4.1	0.0	0.0	11.1	-	5.9	2.3	3.3	0.0	0.0	3.2	3.9	0.0	2.6	-	3.5	3.7
Articulated Trucks	0	25	2	0	27	0	0	0	0	0	0	17	0	0	17	2	2	0	0	4	48
% Articulated Trucks	0.0	2.2	0.6	-	1.9	0.0	0.0	0.0	-	0.0	0.0	1.8	0.0	0.0	1.7	0.8	12.5	0.0	-	1.3	1.7

GRAM Traffic NTX Inc.

1120 W. Lovers Lane

Arlington, Texas, United States 76013
817.265.8968

Count Name: CR 392-CR 744 @ FM 982
Site Code:
Start Date: 11/02/2021
Page No: 2



Turning Movement Data Plot

GRAM Traffic NTX Inc.

1120 W. Lovers Lane

Arlington, Texas, United States 76013
817.265.8968

Count Name: CR 392-CR 744 @ FM 982
Site Code:
Start Date: 11/02/2021

Turning Movement Peak Hour Data (7:00 AM)

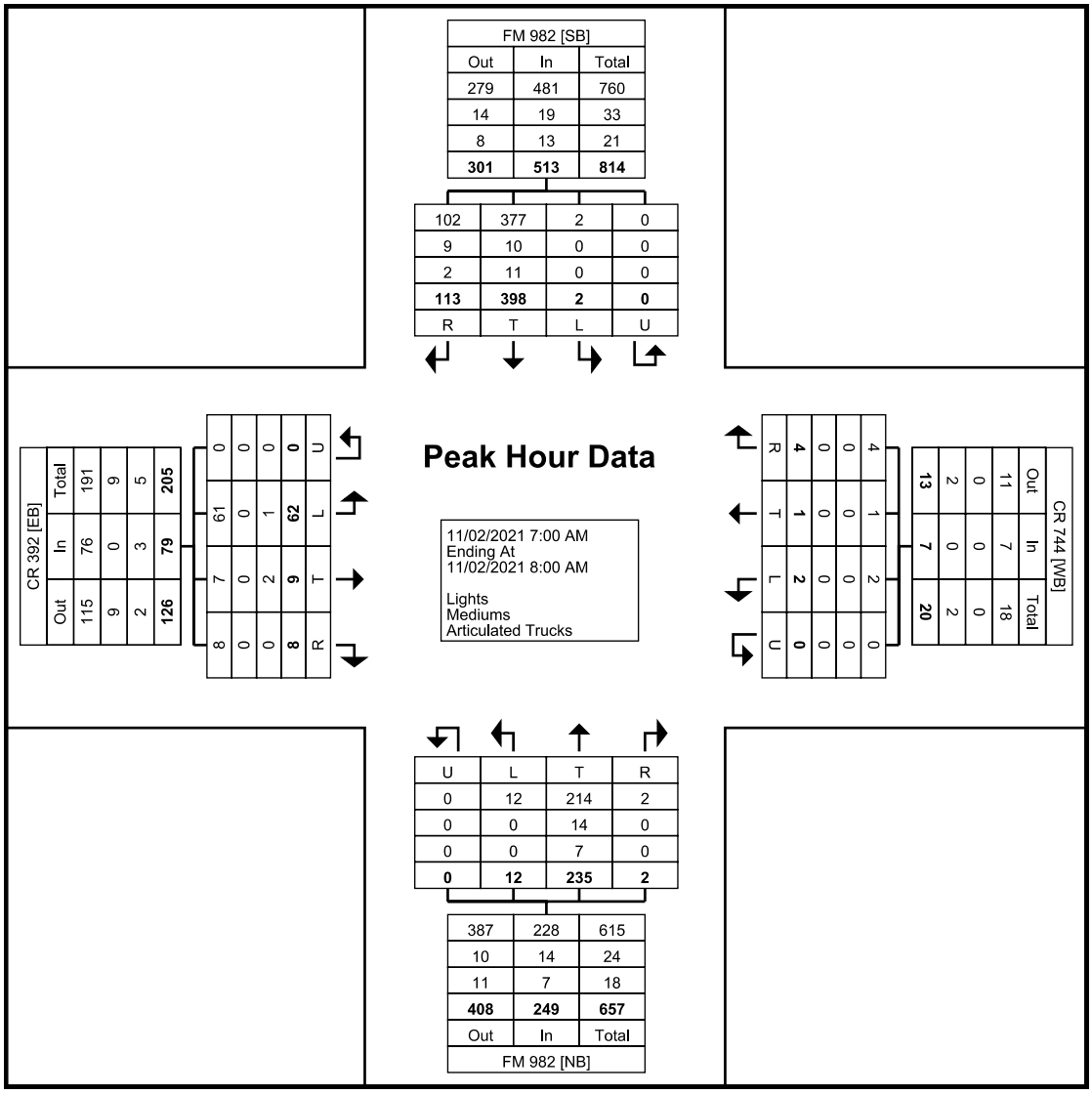
Start Time	FM 982 Southbound					CR 744 Westbound					FM 982 Northbound					CR 392 Eastbound					Int. Total
	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	
7:00 AM	0	94	20	0	114	1	0	1	0	2	0	75	0	0	75	21	5	3	0	29	220
7:15 AM	1	94	28	0	123	1	1	3	0	5	5	62	1	0	68	17	1	3	0	21	217
7:30 AM	1	102	31	0	134	0	0	0	0	0	1	43	1	0	45	10	2	2	0	14	193
7:45 AM	0	108	34	0	142	0	0	0	0	0	6	55	0	0	61	14	1	0	0	15	218
Total	2	398	113	0	513	2	1	4	0	7	12	235	2	0	249	62	9	8	0	79	848
Approach %	0.4	77.6	22.0	0.0	-	28.6	14.3	57.1	0.0	-	4.8	94.4	0.8	0.0	-	78.5	11.4	10.1	0.0	-	-
Total %	0.2	46.9	13.3	0.0	60.5	0.2	0.1	0.5	0.0	0.8	1.4	27.7	0.2	0.0	29.4	7.3	1.1	0.9	0.0	9.3	-
PHF	0.500	0.921	0.831	0.000	0.903	0.500	0.250	0.333	0.000	0.350	0.500	0.783	0.500	0.000	0.830	0.738	0.450	0.667	0.000	0.681	0.964
Lights	2	377	102	0	481	2	1	4	0	7	12	214	2	0	228	61	7	8	0	76	792
% Lights	100.0	94.7	90.3	-	93.8	100.0	100.0	100.0	-	100.0	100.0	91.1	100.0	-	91.6	98.4	77.8	100.0	-	96.2	93.4
Mediums	0	10	9	0	19	0	0	0	0	0	0	14	0	0	14	0	0	0	0	0	33
% Mediums	0.0	2.5	8.0	-	3.7	0.0	0.0	0.0	-	0.0	0.0	6.0	0.0	-	5.6	0.0	0.0	0.0	-	0.0	3.9
Articulated Trucks	0	11	2	0	13	0	0	0	0	0	0	7	0	0	7	1	2	0	0	3	23
% Articulated Trucks	0.0	2.8	1.8	-	2.5	0.0	0.0	0.0	-	0.0	0.0	3.0	0.0	-	2.8	1.6	22.2	0.0	-	3.8	2.7

GRAM Traffic NTX Inc.

1120 W. Lovers Lane

Arlington, Texas, United States 76013
817.265.8968

Count Name: CR 392-CR 744 @ FM 982
Site Code:
Start Date: 11/02/2021
Page No: 4



Turning Movement Peak Hour Data Plot (7:00 AM)

GRAM Traffic NTX Inc.

1120 W. Lovers Lane

Arlington, Texas, United States 76013
817.265.8968

Count Name: CR 392-CR 744 @ FM 982
Site Code:
Start Date: 11/02/2021

Turning Movement Peak Hour Data (2:45 PM)

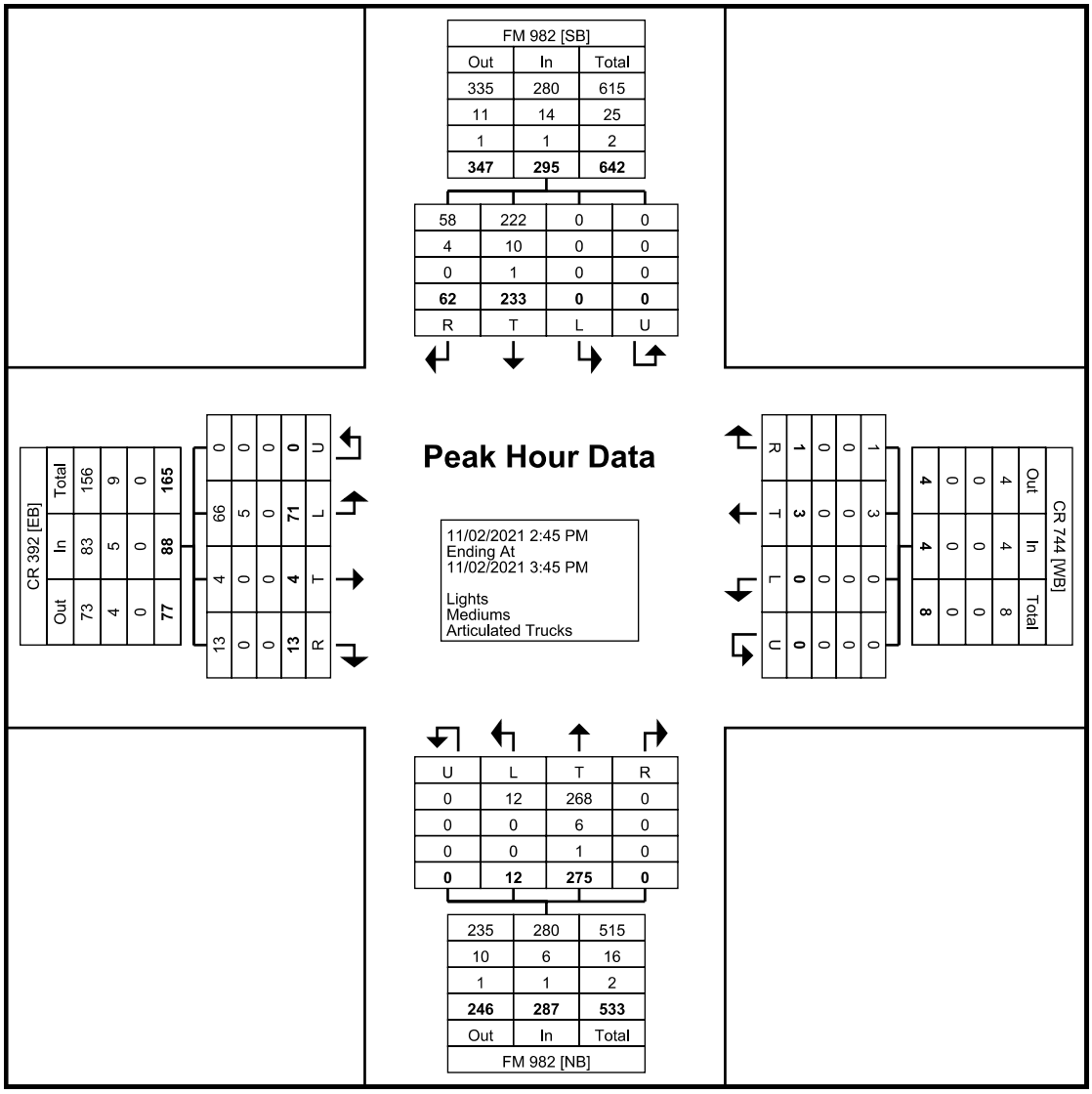
Start Time	FM 982 Southbound					CR 744 Westbound					FM 982 Northbound					CR 392 Eastbound					
	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Int. Total
2:45 PM	0	53	16	0	69	0	0	1	0	1	2	76	0	0	78	21	2	5	0	28	176
3:00 PM	0	51	16	0	67	0	2	0	0	2	2	65	0	0	67	14	0	3	0	17	153
3:15 PM	0	68	20	0	88	0	1	0	0	1	3	65	0	0	68	19	1	3	0	23	180
3:30 PM	0	61	10	0	71	0	0	0	0	0	5	69	0	0	74	17	1	2	0	20	165
Total	0	233	62	0	295	0	3	1	0	4	12	275	0	0	287	71	4	13	0	88	674
Approach %	0.0	79.0	21.0	0.0	-	0.0	75.0	25.0	0.0	-	4.2	95.8	0.0	0.0	-	80.7	4.5	14.8	0.0	-	-
Total %	0.0	34.6	9.2	0.0	43.8	0.0	0.4	0.1	0.0	0.6	1.8	40.8	0.0	0.0	42.6	10.5	0.6	1.9	0.0	13.1	-
PHF	0.000	0.857	0.775	0.000	0.838	0.000	0.375	0.250	0.000	0.500	0.600	0.905	0.000	0.000	0.920	0.845	0.500	0.650	0.000	0.786	0.936
Lights	0	222	58	0	280	0	3	1	0	4	12	268	0	0	280	66	4	13	0	83	647
% Lights	-	95.3	93.5	-	94.9	-	100.0	100.0	-	100.0	100.0	97.5	-	-	97.6	93.0	100.0	100.0	-	94.3	96.0
Mediums	0	10	4	0	14	0	0	0	0	0	0	6	0	0	6	5	0	0	0	5	25
% Mediums	-	4.3	6.5	-	4.7	-	0.0	0.0	-	0.0	0.0	2.2	-	-	2.1	7.0	0.0	0.0	-	5.7	3.7
Articulated Trucks	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	2
% Articulated Trucks	-	0.4	0.0	-	0.3	-	0.0	0.0	-	0.0	0.0	0.4	-	-	0.3	0.0	0.0	0.0	-	0.0	0.3

GRAM Traffic NTX Inc.

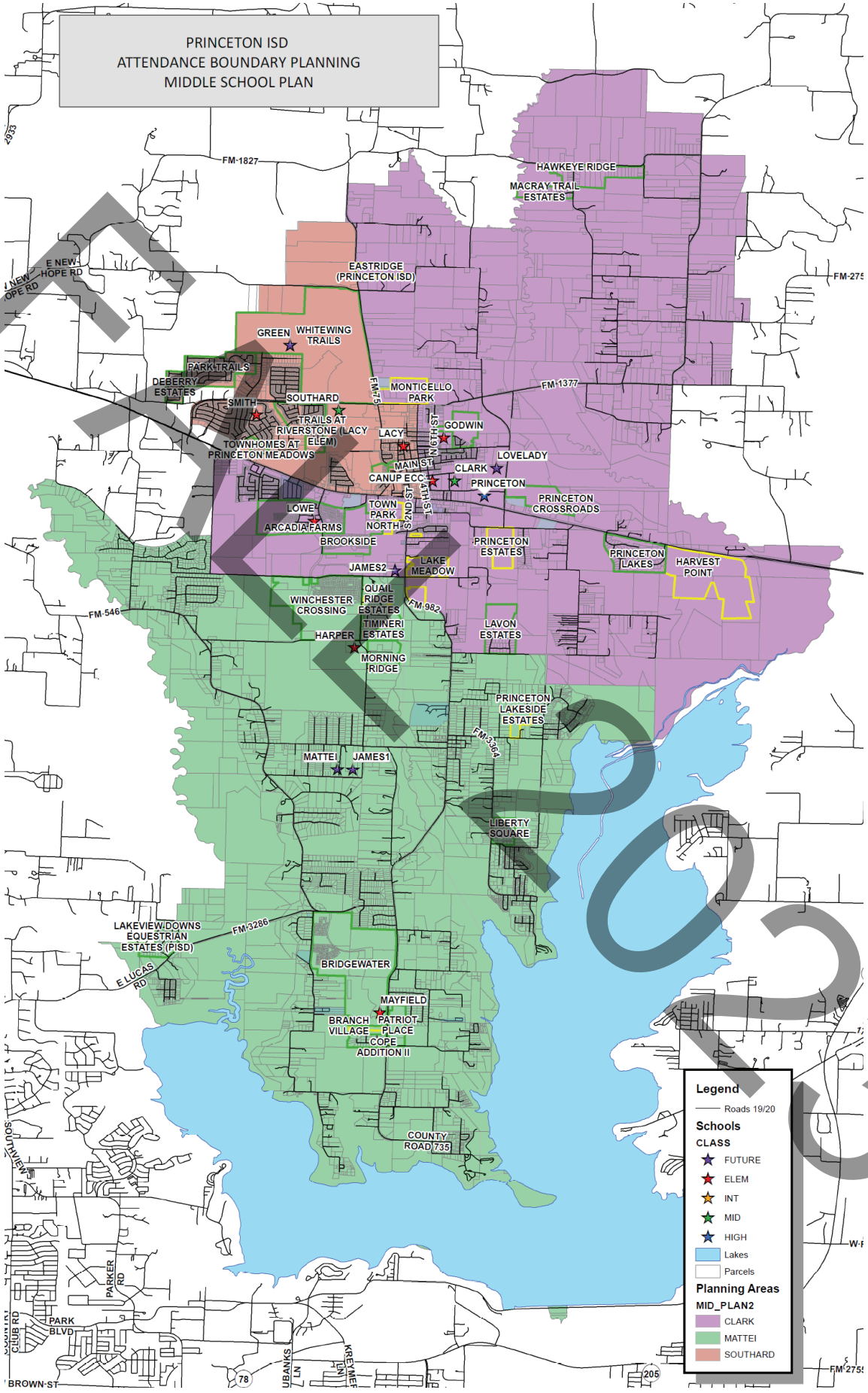
1120 W. Lovers Lane

Arlington, Texas, United States 76013
817.265.8968

Count Name: CR 392-CR 744 @ FM 982
Site Code:
Start Date: 11/02/2021
Page No: 6



Turning Movement Peak Hour Data Plot (2:45 PM)


PRINCETON ISD
ATTENDANCE BOUNDARY PLANNING
MIDDLE SCHOOL PLAN
FM-1827
HAWKEYE RIDGE
MACRAY TRAIL ESTATES
EASTRIDGE (PRINCETON ISD)
E NEW HOPE RD
FM-275
GREEN
WHITEWING TRAILS
PARK TRAILS
DEBERRY ESTATES
SMITH
SOUTHARD
TRAILS AT RIVERSTONE (LACY ELEM)
TOWNHOMES AT PRINCETON MEADOWS
FM-5
MONTICELLO PARK
FM-1377
LACY
1ST HIGH
GODWIN
MAIN ST
LOVELADY
CLARK
CANUP ECC
PRINCETON
4TH ST
1ST GRADE
PRINCETON CROSSROADS
LOWE
ARCADIA FARMS
TOWN PARK NORTH
BROOKSIDE
PRINCETON ESTATES
PRINCETON LAKES
HARVEST POINT
JAMES2
LAKE MEADOW
QUAIL RIDGE ESTATES
WINCHESTER CROSSING
FM-546
FM-982
TIMINERI ESTATES
LAVON ESTATES
HARPER
MORNING RIDGE
PRINCETON LAKESIDE ESTATES
FM-3364
MATTEI
JAMES1
LIBERTY SQUARE
LAKEVIEW DOWNS EQUESTRIAN ESTATES (PISD)
FM-3286
E LUCAS RD
BRIDGEWATER
MAYFIELD
BRANCH VILLAGE
PATRIOT PLACE
COPE ADDITION II
COUNTY ROAD 735
SOUTHVIEW
PARKER RD
PARK BLVD
CLUB RD
BROWN ST
78
205
FM-275
Legend
Roads 19/20
Schools
CLASS
FUTURE
ELEM
INT
MID
HIGH
Lakes
Parcels
Planning Areas
MID_PLAN2
CLARK
MATTEI
SOUTHARD

CCN Subdivision Map

Princeton, Texas
Updated: June 2021

Future Single-Family Units: 19,374
Total Single-Family Units: 27,630

Future Multi-Family Units: 5,476
Total Multi-Family Units: 6,106

0 2,000 4,000 Feet NORTH

**Parcel data from CollinCAD - Updated April 15, 2021*

Legend

- City Limit
- Princeton Sanitary Sewer CCN
- Existing Subdivision
- Proposed Subdivision
- ETJ
- Princeton Water CCN

Number	Subdivision	Status	Acreage	Single-Family Units	Multi-Family Units
1	Park Trails	Existing Subdivision	158	608	
2	Monte Carlo Subdivision	Existing Subdivision	147	60	
3	Hillside Addition	Existing Subdivision	40	20	
4	Abbey Crossing	Existing Subdivision	81	397	
5	Princeton West Meadows	Existing Subdivision	48	234	
6	Cypress Bend	Existing Subdivision	99	452	
7	Arcadia Farms	Existing Subdivision	217	951	
8	Princeton Place	Existing Subdivision	33	118	
9	Harper Springs	Proposed Subdivision	39	169	
9	Harper Springs	Existing Subdivision	20	78	
10	Avalon Addition	Existing Subdivision	39	34	
11	Princeton Lakes	Existing Subdivision	144	70	
12	Creekview Addition	Existing Subdivision	55	201	
13	Trails at Riverstone	Existing Subdivision	186	740	
14	Villas of Monte Carlo	Existing Subdivision	103	474	
15	Lavon Estates	Proposed Subdivision	60	28	
15	Lavon Estates	Existing Subdivision	53	37	
16	Ragon Estates	Existing Subdivision	44	39	
17	Greenfield Acres	Existing Subdivision	66	36	
18	White Wing Trails	Proposed Subdivision	950	2100	400
18	White Wing Trails	Existing Subdivision	96	366	
19	De Berry Estates	Existing Subdivision	43	205	
20	Princeton Luxury Apartments	Proposed Subdivision	15		306
21	Harvest Point	Proposed Subdivision	306	883	400
22	Princeton Business Park	Existing Subdivision	109		
23	Princeton Village	Existing Subdivision	38	193	
24	Princeton Crossroads	Existing Subdivision	88	354	
24	Princeton Crossroads	Proposed Subdivision	209	150	528
25	Winchester Estates	Existing Subdivision	232	949	
25	Winchester Estates	Proposed Subdivision	136	536	
26	Brookside	Existing Subdivision	145	438	
27	Princeton Parks	Existing Subdivision	10	39	
28	Princeton Timbers	Existing Subdivision	5	21	
29	Hazelwood Lofts	Existing Subdivision	2		32
30	Princeton Estates	Proposed Subdivision	85	297	
31	Timineri Estates	Existing Subdivision	51	108	
32	Princeton Heights Phase 2	Proposed Subdivision	64	317	
33	Princeton Meadows South	Existing Subdivision	19		156
34	Kingsbridge Addition	Existing Subdivision	15	31	
35	Princeton Residential	Proposed Subdivision	50	514	
36	Cypress Creek at Hazelwood	Existing Subdivision	13		180
37	Forest Grove	Existing Subdivision	34	166	
38	Quail Ridge Estates	Proposed Subdivision	20		116
39	Town Park	Proposed Subdivision	31	95	
40	South Park Meadow	Proposed Subdivision	25	122	
41	Lake Meadow	Proposed Subdivision	47	249	
42	Monticello Park	Existing Subdivision	60	298	
43	Northgate Apartments at Monticello	Proposed Subdivision	45		400
44	Townhomes at Monticello	Proposed Subdivision	10	82	
45	Eastridge	Proposed Subdivision	548	2410	
46	Juvvadi Tracts	Proposed Subdivsion	53	158	
46	Juvvadi Tracts	Proposed Subdivision	251	1058	
47	Bridgewater	Existing Subdivision	116	539	
47	Bridgewater	Proposed Subdivision	192	901	
48	Branch Village	Proposed Subdivision	14	78	
49	Tillage Farms	Proposed Subdivision	75	450	
50	Tim Bennett Tract	Proposed Subdivision	51	215	
51	FH Farm	Proposed Subdivision	146	425	
52	Lacy Tract	Proposed Subdivision	107	428	
53	Tillery Tract	Proposed Subdivision	108	495	
54	Griffin Tract	Proposed Subdivision	123	395	
55	Tillery Tract 2	Proposed Subdivision	50	120	
56	Megatel 313	Proposed Subdivision	313	1000	2000
57	Monticello Park Phases 3 & 4	Proposed Subdivision	47	188	
58	Peloton Tract	Proposed Subdivision	21		480
59	Forest Grove Apartments	Proposed Subdivision	25		390
60	Cypress Creek	Proposed Subdivision	132	560	
61	Simpson Tract	Proposed Subdivision	135	345	
62	Landmark at Lowry Crossing	Proposed Subdivision	110	413	
63	Dowell Tract	Proposed Subdivision	46	162	
64	AJE	Proposed Subdivision	97	388	
65	BGE	Proposed Subdivision	207	828	
66	Walton Tract	Proposed Subdivision	117	468	
67	Southgate	Proposed Subdivision	10		156
68	NRP Apartments	Proposed Subdivision	22		300
69	Avilla Towne Center	Proposed Subdivision	14	150	
70	Tillage West	Proposed Subdivision	166	574	
71	Forest Park	Proposed Subdivsion	53	160	
72	Buffalo Ridge Apartments	Existing Subdivision	2		16
73	Hazelwood Apartments	Existing Subdivision	2		40
74	Yorkshire Place Apartments	Existing Subdivision	4		64
75	Buffalo Run Apartments	Existing Subdivision	2		50
76	Parkview Heights Duplexes	Existing Subdivision	9		68
77	Prairie Creek Duplexes	Existing Subdivision	4		8
78	DL's Apartments	Existing Subdivision	2		16
79	Princeton Village	Proposed Subdivision	59	236	
80	Cypress Creek West	Proposed Subdivision	51	171	
81	Winchester West	Proposed Subdivision	141	742	

PRINCETON
TEXAS
Kimley»Horn

Land Use 522
Middle School/Junior High School

Description

A middle or junior high school is a public school that serves students who have completed elementary school and have not yet entered high school. Elementary school (Land Use 520), high school (Land Use 525), private school (K-8) (Land Use 530), private school (K-12) (Land Use 532), charter elementary school (Land Use 536), and charter school (K-12) (Land Use 538) are related uses.

Additional Data

The percentage of students at the sites who were transported to school via bus varied considerably. Due to the varied transit and school bus usage at these sites, it is desirable that future studies include additional detail on the percentage of students who were bused to school and the percentage that were dropped off and picked up.

The technical appendices provide supporting information on time-of-day distributions for this land use. The appendices can be accessed through either the ITETripGen web app or the trip generation resource page on the ITE website (https://www.ite.org/technical-resources/topics/trip-and-parking-generation/).

The sites were surveyed in the 1990s, the 2000s, and the 2010s in California, Connecticut, Delaware, Florida, Minnesota, Nebraska, Nevada, Oregon, Pennsylvania, Tennessee, Washington, and West Virginia.

Source Numbers

431, 444, 534, 536, 564, 579, 592, 611, 719, 867, 936, 940, 1039, 1049, 1067, 1083

Middle School/Junior High School
(522)

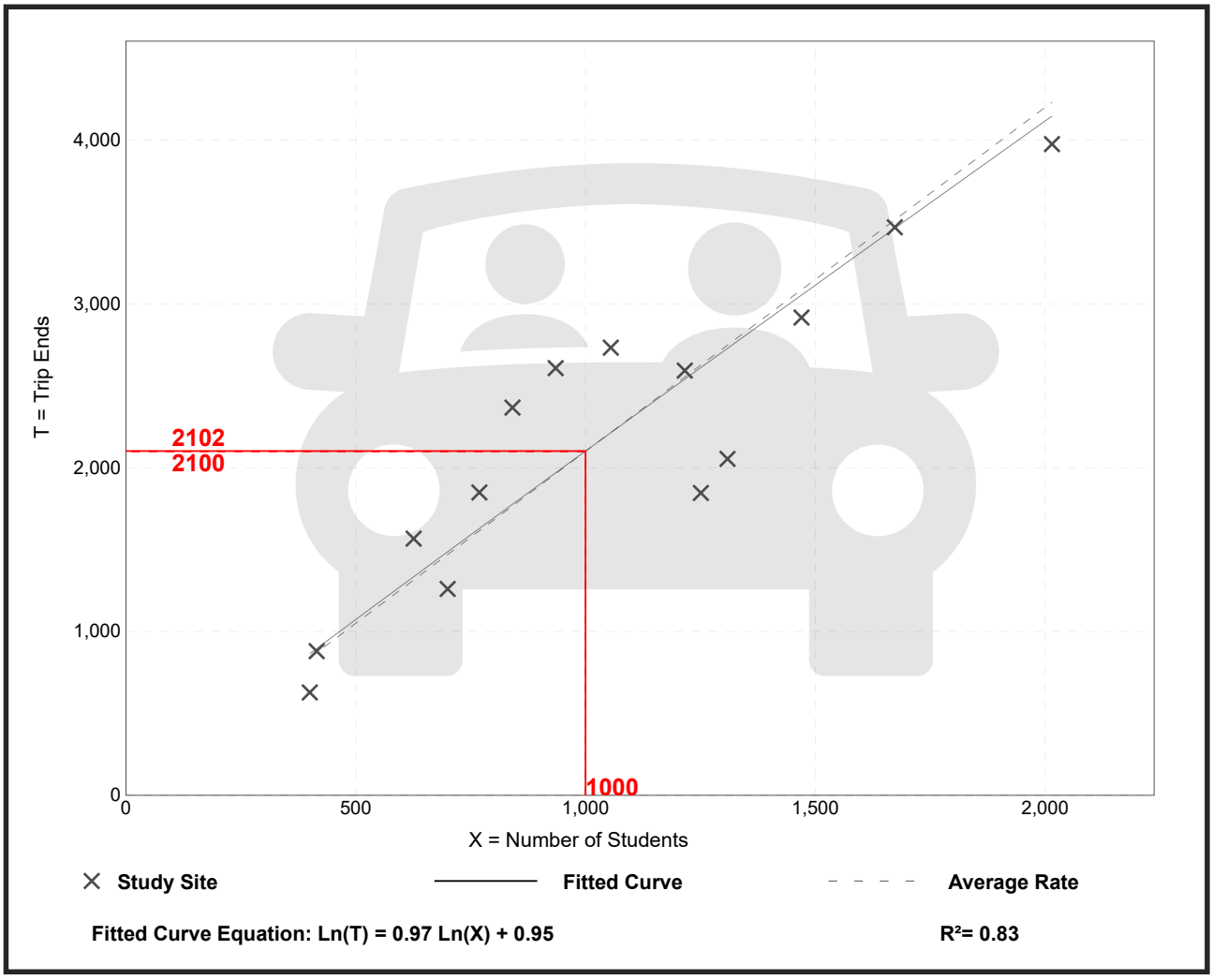
Vehicle Trip Ends vs: **Students**
On a: **Weekday**

Setting/Location: **General Urban/Suburban**
Number of Studies: 14
Avg. Num. of Students: 1048
Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per Student

Average Rate	Range of Rates	Standard Deviation
2.10	1.48 - 2.81	0.42

Data Plot and Equation



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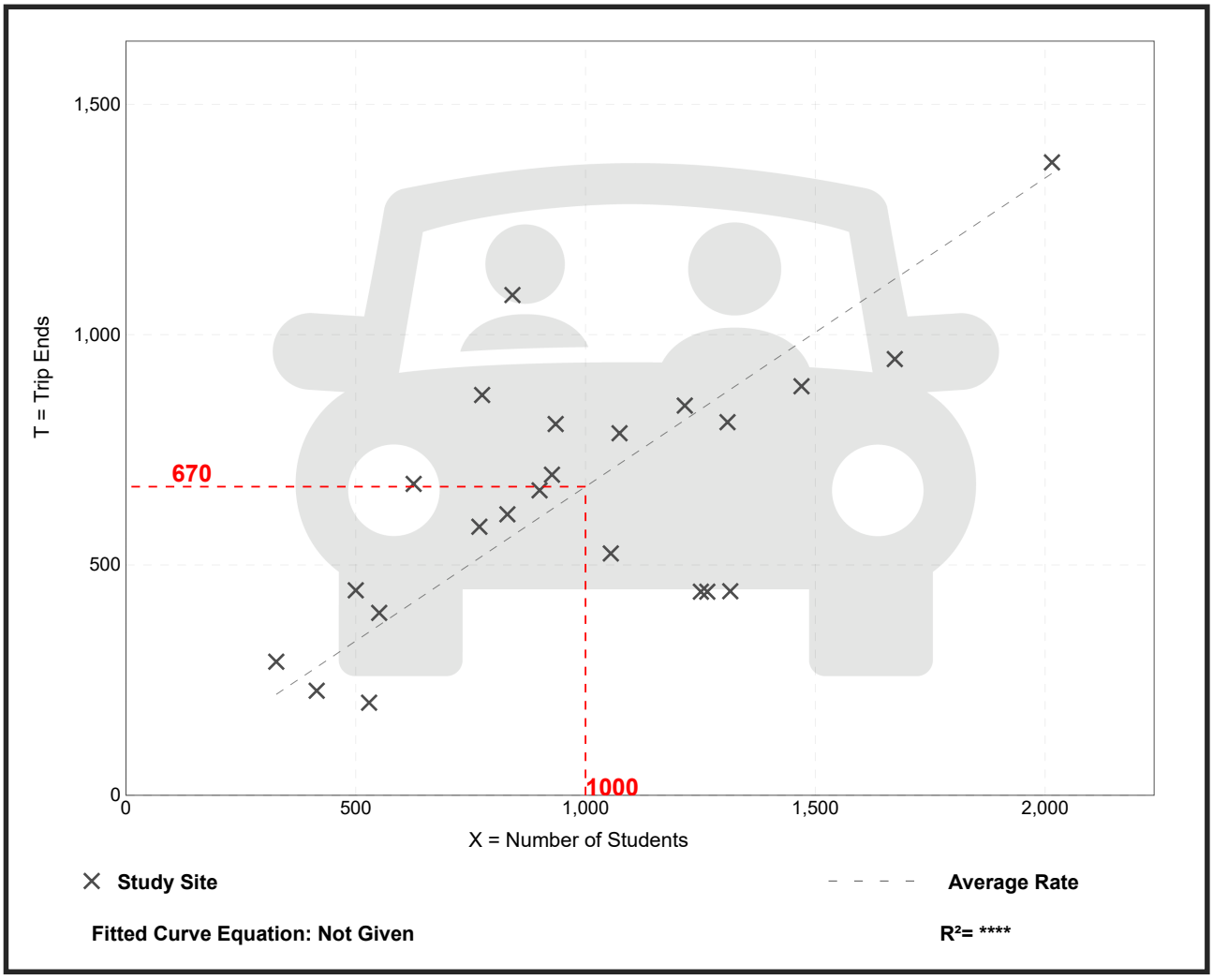
Middle School/Junior High School
(522)

Vehicle Trip Ends vs: **Students**
On a: **Weekday,**
Peak Hour of Adjacent Street Traffic,
One Hour Between 7 and 9 a.m.
Setting/Location: **General Urban/Suburban**
Number of Studies: 23
Avg. Num. of Students: 981
Directional Distribution: 54% entering, 46% exiting

Vehicle Trip Generation per Student

Average Rate	Range of Rates	Standard Deviation
0.67	0.34 - 1.29	0.24

Data Plot and Equation



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Middle School/Junior High School
(522)

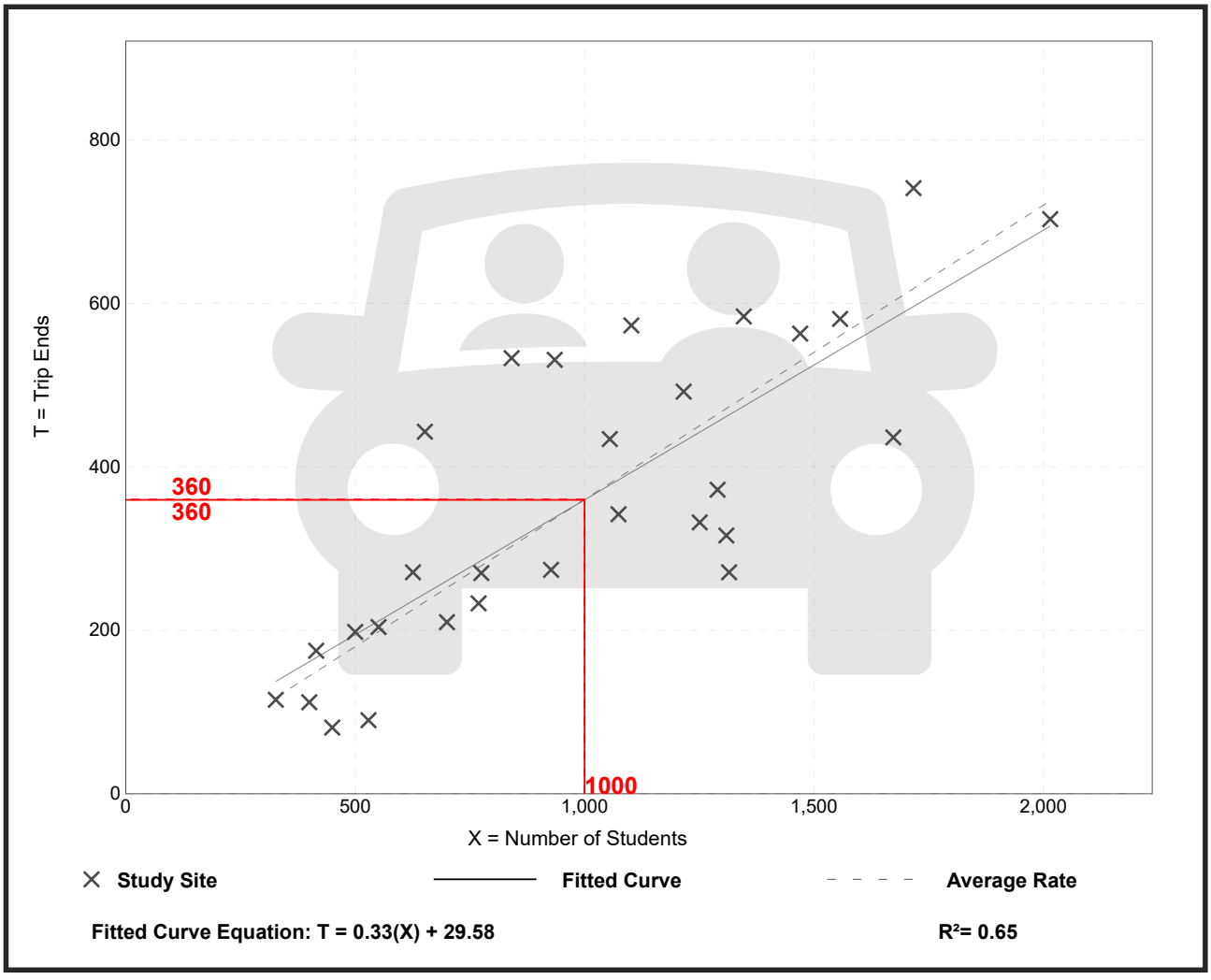
Vehicle Trip Ends vs: **Students**
On a: **Weekday,**
PM Peak Hour of Generator

Setting/Location: **General Urban/Suburban**
Number of Studies: 29
Avg. Num. of Students: 993
Directional Distribution: 46% entering, 54% exiting

Vehicle Trip Generation per Student

Average Rate	Range of Rates	Standard Deviation
0.36	0.17 - 0.68	0.11

Data Plot and Equation



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Intersection	
Int Delay, s/veh	3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	46	66	7	7	109	48	5	6	4	21	5	43
Future Vol, veh/h	46	66	7	7	109	48	5	6	4	21	5	43
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	Stop
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	81	81	81	81	81	81	81	81	81	81	81	81
Heavy Vehicles, %	10	10	10	10	10	10	10	10	10	10	10	10
Mvmt Flow	57	81	9	9	135	59	6	7	5	26	6	53

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	194	0	0	90	0	0	386	412	86	389	387	165
Stage 1	-	-	-	-	-	-	200	200	-	183	183	-
Stage 2	-	-	-	-	-	-	186	212	-	206	204	-
Critical Hdwy	4.2	-	-	4.2	-	-	7.2	6.6	6.3	7.2	6.6	6.3
Critical Hdwy Stg 1	-	-	-	-	-	-	6.2	5.6	-	6.2	5.6	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.2	5.6	-	6.2	5.6	-
Follow-up Hdwy	2.29	-	-	2.29	-	-	3.59	4.09	3.39	3.59	4.09	3.39
Pot Cap-1 Maneuver	1333	-	-	1456	-	-	558	518	951	556	535	859
Stage 1	-	-	-	-	-	-	784	721	-	800	733	-
Stage 2	-	-	-	-	-	-	798	712	-	778	718	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1333	-	-	1456	-	-	498	491	951	525	507	859
Mov Cap-2 Maneuver	-	-	-	-	-	-	498	491	-	525	507	-
Stage 1	-	-	-	-	-	-	749	689	-	764	728	-
Stage 2	-	-	-	-	-	-	737	707	-	731	686	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	3	0.3	11.6	7.8
HCM LOS			B	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	567	1333	-	-	1456	-	-	1378
HCM Lane V/C Ratio	0.033	0.043	-	-	0.006	-	-	0.062
HCM Control Delay (s)	11.6	7.8	0	-	7.5	0	-	7.8
HCM Lane LOS	B	A	A	-	A	A	-	A
HCM 95th %tile Q(veh)	0.1	0.1	-	-	0	-	-	0.2

Intersection	
Int Delay, s/veh	1.5

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	86	1	13	153	15	18
Future Vol, veh/h	86	1	13	153	15	18
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	87	87	87	87	87	87
Heavy Vehicles, %	8	8	8	8	8	8
Mvmt Flow	99	1	15	176	17	21

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	100	0	306	100
Stage 1	-	-	-	-	100	-
Stage 2	-	-	-	-	206	-
Critical Hdwy	-	-	4.18	-	6.48	6.28
Critical Hdwy Stg 1	-	-	-	-	5.48	-
Critical Hdwy Stg 2	-	-	-	-	5.48	-
Follow-up Hdwy	-	-	2.272	-	3.572	3.372
Pot Cap-1 Maneuver	-	-	1456	-	674	939
Stage 1	-	-	-	-	909	-
Stage 2	-	-	-	-	814	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1456	-	667	939
Mov Cap-2 Maneuver	-	-	-	-	667	-
Stage 1	-	-	-	-	909	-
Stage 2	-	-	-	-	805	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.6	9.8
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	792	-	-	1456	-
HCM Lane V/C Ratio	0.048	-	-	0.01	-
HCM Control Delay (s)	9.8	-	-	7.5	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0.2	-	-	0	-

Intersection	
Int Delay, s/veh	0.8

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	1	25	12	0	0	3
Future Vol, veh/h	1	25	12	0	0	3
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	60	60	60	60	60	60
Heavy Vehicles, %	17	17	17	17	17	17
Mvmt Flow	2	42	20	0	0	5

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	20	0	-	0	66	20
Stage 1	-	-	-	-	20	-
Stage 2	-	-	-	-	46	-
Critical Hdwy	4.27	-	-	-	6.57	6.37
Critical Hdwy Stg 1	-	-	-	-	5.57	-
Critical Hdwy Stg 2	-	-	-	-	5.57	-
Follow-up Hdwy	2.353	-	-	-	3.653	3.453
Pot Cap-1 Maneuver	1504	-	-	-	903	1016
Stage 1	-	-	-	-	965	-
Stage 2	-	-	-	-	939	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1504	-	-	-	902	1016
Mov Cap-2 Maneuver	-	-	-	-	902	-
Stage 1	-	-	-	-	964	-
Stage 2	-	-	-	-	939	-

Approach	EB	WB	SB
HCM Control Delay, s	0.3	0	8.6
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1504	-	-	-	1016
HCM Lane V/C Ratio	0.001	-	-	-	0.005
HCM Control Delay (s)	7.4	0	-	-	8.6
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0

Intersection	
Int Delay, s/veh	4.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	6	1	2	37	1	129	2	180	33	37	59	0
Future Vol, veh/h	6	1	2	37	1	129	2	180	33	37	59	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	7	7	7	7	7	7	7	7	7	7	7	7
Mvmt Flow	7	1	2	40	1	140	2	196	36	40	64	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	433	380	64	364	362	214	64	0	0	232	0	0
Stage 1	144	144	-	218	218	-	-	-	-	-	-	-
Stage 2	289	236	-	146	144	-	-	-	-	-	-	-
Critical Hdwy	7.17	6.57	6.27	7.17	6.57	6.27	4.17	-	-	4.17	-	-
Critical Hdwy Stg 1	6.17	5.57	-	6.17	5.57	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.17	5.57	-	6.17	5.57	-	-	-	-	-	-	-
Follow-up Hdwy	3.563	4.063	3.363	3.563	4.063	3.363	2.263	-	-	2.263	-	-
Pot Cap-1 Maneuver	524	545	986	583	557	814	1507	-	-	1307	-	-
Stage 1	847	768	-	773	713	-	-	-	-	-	-	-
Stage 2	708	701	-	845	768	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	422	526	986	566	538	814	1507	-	-	1307	-	-
Mov Cap-2 Maneuver	422	526	-	566	538	-	-	-	-	-	-	-
Stage 1	845	743	-	771	712	-	-	-	-	-	-	-
Stage 2	584	700	-	815	743	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	12.4	11.4	0.1	3
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1507	-	-	496	740	1307	-	-
HCM Lane V/C Ratio	0.001	-	-	0.02	0.245	0.031	-	-
HCM Control Delay (s)	7.4	0	-	12.4	11.4	7.8	0	-
HCM Lane LOS	A	A	-	B	B	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.1	1	0.1	-	-

Intersection	
Int Delay, s/veh	0.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	7	4	214	12	4	93
Future Vol, veh/h	7	4	214	12	4	93
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	8	8	8	8	8	8
Mvmt Flow	8	4	233	13	4	101

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	349	240	0	0	246	0
Stage 1	240	-	-	-	-	-
Stage 2	109	-	-	-	-	-
Critical Hdwy	6.48	6.28	-	-	4.18	-
Critical Hdwy Stg 1	5.48	-	-	-	-	-
Critical Hdwy Stg 2	5.48	-	-	-	-	-
Follow-up Hdwy	3.572	3.372	-	-	2.272	-
Pot Cap-1 Maneuver	636	784	-	-	1286	-
Stage 1	786	-	-	-	-	-
Stage 2	901	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	634	784	-	-	1286	-
Mov Cap-2 Maneuver	634	-	-	-	-	-
Stage 1	786	-	-	-	-	-
Stage 2	898	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10.4	0	0.3
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	681	1286	-
HCM Lane V/C Ratio	-	-	0.018	0.003	-
HCM Control Delay (s)	-	-	10.4	7.8	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.1	0	-

Intersection	
Int Delay, s/veh	1.8

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	71	8	12	237	400	114
Future Vol, veh/h	71	8	12	237	400	114
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	7	7	7	7	7	7
Mvmt Flow	77	9	13	258	435	124

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	781	497	559	0	-	0
Stage 1	497	-	-	-	-	-
Stage 2	284	-	-	-	-	-
Critical Hdwy	6.47	6.27	4.17	-	-	-
Critical Hdwy Stg 1	5.47	-	-	-	-	-
Critical Hdwy Stg 2	5.47	-	-	-	-	-
Follow-up Hdwy	3.563	3.363	2.263	-	-	-
Pot Cap-1 Maneuver	356	563	987	-	-	-
Stage 1	601	-	-	-	-	-
Stage 2	753	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	351	563	987	-	-	-
Mov Cap-2 Maneuver	351	-	-	-	-	-
Stage 1	592	-	-	-	-	-
Stage 2	753	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	17.9	0.4	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	987	-	365	-	-
HCM Lane V/C Ratio	0.013	-	0.235	-	-
HCM Control Delay (s)	8.7	0	17.9	-	-
HCM Lane LOS	A	A	C	-	-
HCM 95th %tile Q(veh)	0	-	0.9	-	-

Intersection	
Int Delay, s/veh	3.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	51	61	2	3	65	33	3	2	7	23	5	54
Future Vol, veh/h	51	61	2	3	65	33	3	2	7	23	5	54
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	Stop
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	81	81	81	81	81	81	81	81	81	81	81	81
Heavy Vehicles, %	6	6	6	6	6	6	6	6	6	6	6	6
Mvmt Flow	63	75	2	4	80	41	4	2	9	28	6	67

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	121	0	0	77	0	0	314	331	76	317	312	101
Stage 1	-	-	-	-	-	-	202	202	-	109	109	-
Stage 2	-	-	-	-	-	-	112	129	-	208	203	-
Critical Hdwy	4.16	-	-	4.16	-	-	7.16	6.56	6.26	7.16	6.56	6.26
Critical Hdwy Stg 1	-	-	-	-	-	-	6.16	5.56	-	6.16	5.56	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.16	5.56	-	6.16	5.56	-
Follow-up Hdwy	2.254	-	-	2.254	-	-	3.554	4.054	3.354	3.554	4.054	3.354
Pot Cap-1 Maneuver	1442	-	-	1497	-	-	631	582	974	628	596	943
Stage 1	-	-	-	-	-	-	791	727	-	887	797	-
Stage 2	-	-	-	-	-	-	883	782	-	785	726	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1442	-	-	1497	-	-	560	553	974	597	567	943
Mov Cap-2 Maneuver	-	-	-	-	-	-	560	553	-	597	567	-
Stage 1	-	-	-	-	-	-	755	694	-	846	795	-
Stage 2	-	-	-	-	-	-	812	780	-	740	693	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	3.4	0.2	9.9	7.7
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	743	1442	-	-	1497	-	-	1432
HCM Lane V/C Ratio	0.02	0.044	-	-	0.002	-	-	0.071
HCM Control Delay (s)	9.9	7.6	0	-	7.4	0	-	7.7
HCM Lane LOS	A	A	A	-	A	A	-	A
HCM 95th %tile Q(veh)	0.1	0.1	-	-	0	-	-	0.2

Intersection	
Int Delay, s/veh	0.9

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	113	4	10	77	5	7
Future Vol, veh/h	113	4	10	77	5	7
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	86	86	86	86	86	86
Heavy Vehicles, %	4	4	4	4	4	4
Mvmt Flow	131	5	12	90	6	8

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	136	0	248	134
Stage 1	-	-	-	-	134	-
Stage 2	-	-	-	-	114	-
Critical Hdwy	-	-	4.14	-	6.44	6.24
Critical Hdwy Stg 1	-	-	-	-	5.44	-
Critical Hdwy Stg 2	-	-	-	-	5.44	-
Follow-up Hdwy	-	-	2.236	-	3.536	3.336
Pot Cap-1 Maneuver	-	-	1436	-	736	910
Stage 1	-	-	-	-	887	-
Stage 2	-	-	-	-	906	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1436	-	729	910
Mov Cap-2 Maneuver	-	-	-	-	729	-
Stage 1	-	-	-	-	887	-
Stage 2	-	-	-	-	898	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.9	9.4
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	825	-	-	1436	-
HCM Lane V/C Ratio	0.017	-	-	0.008	-
HCM Control Delay (s)	9.4	-	-	7.5	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0	-

Intersection	
Int Delay, s/veh	3

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	4	5	5	3	1	3
Future Vol, veh/h	4	5	5	3	1	3
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	66	66	66	66	66	66
Heavy Vehicles, %	5	5	5	5	5	5
Mvmt Flow	6	8	8	5	2	5

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	13	0	-	0	31	11
Stage 1	-	-	-	-	11	-
Stage 2	-	-	-	-	20	-
Critical Hdwy	4.15	-	-	-	6.45	6.25
Critical Hdwy Stg 1	-	-	-	-	5.45	-
Critical Hdwy Stg 2	-	-	-	-	5.45	-
Follow-up Hdwy	2.245	-	-	-	3.545	3.345
Pot Cap-1 Maneuver	1586	-	-	-	975	1061
Stage 1	-	-	-	-	1004	-
Stage 2	-	-	-	-	995	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1586	-	-	-	971	1061
Mov Cap-2 Maneuver	-	-	-	-	971	-
Stage 1	-	-	-	-	1000	-
Stage 2	-	-	-	-	995	-

Approach	EB	WB	SB
HCM Control Delay, s	3.2	0	8.5
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1586	-	-	-	1037
HCM Lane V/C Ratio	0.004	-	-	-	0.006
HCM Control Delay (s)	7.3	0	-	-	8.5
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0

Intersection	
Int Delay, s/veh	4.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	3	1	2	35	1	28	2	60	33	82	82	0
Future Vol, veh/h	3	1	2	35	1	28	2	60	33	82	82	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	78	78	78	78	78	78	78	78	78	78	78	78
Heavy Vehicles, %	5	5	5	5	5	5	5	5	5	5	5	5
Mvmt Flow	4	1	3	45	1	36	3	77	42	105	105	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	438	440	105	421	419	98	105	0	0	119	0	0
Stage 1	315	315	-	104	104	-	-	-	-	-	-	-
Stage 2	123	125	-	317	315	-	-	-	-	-	-	-
Critical Hdwy	7.15	6.55	6.25	7.15	6.55	6.25	4.15	-	-	4.15	-	-
Critical Hdwy Stg 1	6.15	5.55	-	6.15	5.55	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.15	5.55	-	6.15	5.55	-	-	-	-	-	-	-
Follow-up Hdwy	3.545	4.045	3.345	3.545	4.045	3.345	2.245	-	-	2.245	-	-
Pot Cap-1 Maneuver	524	507	941	538	521	950	1468	-	-	1451	-	-
Stage 1	690	650	-	894	803	-	-	-	-	-	-	-
Stage 2	874	787	-	688	650	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	473	467	941	503	480	950	1468	-	-	1451	-	-
Mov Cap-2 Maneuver	473	467	-	503	480	-	-	-	-	-	-	-
Stage 1	689	600	-	892	801	-	-	-	-	-	-	-
Stage 2	838	785	-	632	600	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	11.4	11.5	0.2	3.8
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1468	-	-	566	633	1451	-	-
HCM Lane V/C Ratio	0.002	-	-	0.014	0.13	0.072	-	-
HCM Control Delay (s)	7.5	0	-	11.4	11.5	7.7	0	-
HCM Lane LOS	A	A	-	B	B	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0	0.4	0.2	-	-

Intersection	
Int Delay, s/veh	0.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	6	2	93	6	2	113
Future Vol, veh/h	6	2	93	6	2	113
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	75	75	75	75	75	75
Heavy Vehicles, %	5	5	5	5	5	5
Mvmt Flow	8	3	124	8	3	151

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	285	128	0	0	132	0
Stage 1	128	-	-	-	-	-
Stage 2	157	-	-	-	-	-
Critical Hdwy	6.45	6.25	-	-	4.15	-
Critical Hdwy Stg 1	5.45	-	-	-	-	-
Critical Hdwy Stg 2	5.45	-	-	-	-	-
Follow-up Hdwy	3.545	3.345	-	-	2.245	-
Pot Cap-1 Maneuver	699	914	-	-	1435	-
Stage 1	890	-	-	-	-	-
Stage 2	864	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	698	914	-	-	1435	-
Mov Cap-2 Maneuver	698	-	-	-	-	-
Stage 1	890	-	-	-	-	-
Stage 2	862	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9.9	0	0.1
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	742	1435	-
HCM Lane V/C Ratio	-	-	0.014	0.002	-
HCM Control Delay (s)	-	-	9.9	7.5	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0	0	-

Intersection	
Int Delay, s/veh	2

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	75	13	12	275	233	65
Future Vol, veh/h	75	13	12	275	233	65
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	4	4	4	4	4	4
Mvmt Flow	82	14	13	299	253	71

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	614	289	324	0	-	0
Stage 1	289	-	-	-	-	-
Stage 2	325	-	-	-	-	-
Critical Hdwy	6.44	6.24	4.14	-	-	-
Critical Hdwy Stg 1	5.44	-	-	-	-	-
Critical Hdwy Stg 2	5.44	-	-	-	-	-
Follow-up Hdwy	3.536	3.336	2.236	-	-	-
Pot Cap-1 Maneuver	452	745	1225	-	-	-
Stage 1	756	-	-	-	-	-
Stage 2	728	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	446	745	1225	-	-	-
Mov Cap-2 Maneuver	446	-	-	-	-	-
Stage 1	746	-	-	-	-	-
Stage 2	728	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	14.5	0.3	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1225	-	474	-	-
HCM Lane V/C Ratio	0.011	-	0.202	-	-
HCM Control Delay (s)	8	0	14.5	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0	-	0.7	-	-

Intersection	
Int Delay, s/veh	3.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	51	73	8	8	120	53	6	7	4	23	6	47
Future Vol, veh/h	51	73	8	8	120	53	6	7	4	23	6	47
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	Stop
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	81	81	81	81	81	81	81	81	81	81	81	81
Heavy Vehicles, %	10	10	10	10	10	10	10	10	10	10	10	10
Mvmt Flow	63	90	10	10	148	65	7	9	5	28	7	58

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	213	0	0	100	0	0	425	454	95	429	427	181
Stage 1	-	-	-	-	-	-	221	221	-	201	201	-
Stage 2	-	-	-	-	-	-	204	233	-	228	226	-
Critical Hdwy	4.2	-	-	4.2	-	-	7.2	6.6	6.3	7.2	6.6	6.3
Critical Hdwy Stg 1	-	-	-	-	-	-	6.2	5.6	-	6.2	5.6	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.2	5.6	-	6.2	5.6	-
Follow-up Hdwy	2.29	-	-	2.29	-	-	3.59	4.09	3.39	3.59	4.09	3.39
Pot Cap-1 Maneuver	1311	-	-	1444	-	-	526	490	940	523	508	841
Stage 1	-	-	-	-	-	-	764	706	-	783	720	-
Stage 2	-	-	-	-	-	-	780	697	-	757	702	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1311	-	-	1444	-	-	462	461	940	490	478	841
Mov Cap-2 Maneuver	-	-	-	-	-	-	462	461	-	490	478	-
Stage 1	-	-	-	-	-	-	725	670	-	743	714	-
Stage 2	-	-	-	-	-	-	713	691	-	705	666	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	3	0.3	12.2	8
HCM LOS			B	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	524	1311	-	-	1444	-	-	1278
HCM Lane V/C Ratio	0.04	0.048	-	-	0.007	-	-	0.073
HCM Control Delay (s)	12.2	7.9	0	-	7.5	0	-	8
HCM Lane LOS	B	A	A	-	A	A	-	A
HCM 95th %tile Q(veh)	0.1	0.2	-	-	0	-	-	0.2

Intersection	
Int Delay, s/veh	1.5

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	95	1	14	169	17	20
Future Vol, veh/h	95	1	14	169	17	20
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	87	87	87	87	87	87
Heavy Vehicles, %	8	8	8	8	8	8
Mvmt Flow	109	1	16	194	20	23

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	110	0	336	110
Stage 1	-	-	-	-	110	-
Stage 2	-	-	-	-	226	-
Critical Hdwy	-	-	4.18	-	6.48	6.28
Critical Hdwy Stg 1	-	-	-	-	5.48	-
Critical Hdwy Stg 2	-	-	-	-	5.48	-
Follow-up Hdwy	-	-	2.272	-	3.572	3.372
Pot Cap-1 Maneuver	-	-	1443	-	647	927
Stage 1	-	-	-	-	900	-
Stage 2	-	-	-	-	798	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1443	-	639	927
Mov Cap-2 Maneuver	-	-	-	-	639	-
Stage 1	-	-	-	-	900	-
Stage 2	-	-	-	-	788	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.6	10
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	768	-	-	1443	-
HCM Lane V/C Ratio	0.055	-	-	0.011	-
HCM Control Delay (s)	10	-	-	7.5	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.2	-	-	0	-

Intersection	
Int Delay, s/veh	0.8

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	1	28	13	0	0	3
Future Vol, veh/h	1	28	13	0	0	3
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	60	60	60	60	60	60
Heavy Vehicles, %	17	17	17	17	17	17
Mvmt Flow	2	47	22	0	0	5

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	22	0	-	0	73	22
Stage 1	-	-	-	-	22	-
Stage 2	-	-	-	-	51	-
Critical Hdwy	4.27	-	-	-	6.57	6.37
Critical Hdwy Stg 1	-	-	-	-	5.57	-
Critical Hdwy Stg 2	-	-	-	-	5.57	-
Follow-up Hdwy	2.353	-	-	-	3.653	3.453
Pot Cap-1 Maneuver	1501	-	-	-	895	1013
Stage 1	-	-	-	-	963	-
Stage 2	-	-	-	-	934	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1501	-	-	-	894	1013
Mov Cap-2 Maneuver	-	-	-	-	894	-
Stage 1	-	-	-	-	962	-
Stage 2	-	-	-	-	934	-

Approach	EB	WB	SB
HCM Control Delay, s	0.3	0	8.6
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1501	-	-	-	1013
HCM Lane V/C Ratio	0.001	-	-	-	0.005
HCM Control Delay (s)	7.4	0	-	-	8.6
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0

Intersection	
Int Delay, s/veh	5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	7	1	2	41	1	142	2	198	36	41	65	0
Future Vol, veh/h	7	1	2	41	1	142	2	198	36	41	65	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	7	7	7	7	7	7	7	7	7	7	7	7
Mvmt Flow	8	1	2	45	1	154	2	215	39	45	71	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	477	419	71	402	400	235	71	0	0	254	0	0
Stage 1	161	161	-	239	239	-	-	-	-	-	-	-
Stage 2	316	258	-	163	161	-	-	-	-	-	-	-
Critical Hdwy	7.17	6.57	6.27	7.17	6.57	6.27	4.17	-	-	4.17	-	-
Critical Hdwy Stg 1	6.17	5.57	-	6.17	5.57	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.17	5.57	-	6.17	5.57	-	-	-	-	-	-	-
Follow-up Hdwy	3.563	4.063	3.363	3.563	4.063	3.363	2.263	-	-	2.263	-	-
Pot Cap-1 Maneuver	490	518	978	550	531	792	1498	-	-	1282	-	-
Stage 1	829	755	-	753	698	-	-	-	-	-	-	-
Stage 2	685	685	-	827	755	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	382	498	978	532	510	792	1498	-	-	1282	-	-
Mov Cap-2 Maneuver	382	498	-	532	510	-	-	-	-	-	-	-
Stage 1	827	727	-	751	697	-	-	-	-	-	-	-
Stage 2	550	684	-	793	727	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	13.3	12	0.1	3.1
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1498	-	-	447	712	1282	-	-
HCM Lane V/C Ratio	0.001	-	-	0.024	0.281	0.035	-	-
HCM Control Delay (s)	7.4	0	-	13.3	12	7.9	0	-
HCM Lane LOS	A	A	-	B	B	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.1	1.2	0.1	-	-

Intersection	
Int Delay, s/veh	0.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	8	4	236	13	4	103
Future Vol, veh/h	8	4	236	13	4	103
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	8	8	8	8	8	8
Mvmt Flow	9	4	257	14	4	112

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	384	264	0	0	271	0
Stage 1	264	-	-	-	-	-
Stage 2	120	-	-	-	-	-
Critical Hdwy	6.48	6.28	-	-	4.18	-
Critical Hdwy Stg 1	5.48	-	-	-	-	-
Critical Hdwy Stg 2	5.48	-	-	-	-	-
Follow-up Hdwy	3.572	3.372	-	-	2.272	-
Pot Cap-1 Maneuver	607	760	-	-	1258	-
Stage 1	766	-	-	-	-	-
Stage 2	891	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	605	760	-	-	1258	-
Mov Cap-2 Maneuver	605	-	-	-	-	-
Stage 1	766	-	-	-	-	-
Stage 2	888	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10.7	0	0.3
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	649	1258	-
HCM Lane V/C Ratio	-	-	0.02	0.003	-
HCM Control Delay (s)	-	-	10.7	7.9	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.1	0	-

Intersection	
Int Delay, s/veh	2

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	78	9	13	261	441	126
Future Vol, veh/h	78	9	13	261	441	126
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	7	7	7	7	7	7
Mvmt Flow	85	10	14	284	479	137

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	860	548	616	0	-	0
Stage 1	548	-	-	-	-	-
Stage 2	312	-	-	-	-	-
Critical Hdwy	6.47	6.27	4.17	-	-	-
Critical Hdwy Stg 1	5.47	-	-	-	-	-
Critical Hdwy Stg 2	5.47	-	-	-	-	-
Follow-up Hdwy	3.563	3.363	2.263	-	-	-
Pot Cap-1 Maneuver	320	527	940	-	-	-
Stage 1	569	-	-	-	-	-
Stage 2	731	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	314	527	940	-	-	-
Mov Cap-2 Maneuver	314	-	-	-	-	-
Stage 1	559	-	-	-	-	-
Stage 2	731	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	20.4	0.4	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	940	-	328	-	-
HCM Lane V/C Ratio	0.015	-	0.288	-	-
HCM Control Delay (s)	8.9	0	20.4	-	-
HCM Lane LOS	A	A	C	-	-
HCM 95th %tile Q(veh)	0	-	1.2	-	-

Intersection	
Int Delay, s/veh	3.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	56	67	2	3	72	36	3	2	8	25	6	60
Future Vol, veh/h	56	67	2	3	72	36	3	2	8	25	6	60
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	Stop
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	81	81	81	81	81	81	81	81	81	81	81	81
Heavy Vehicles, %	6	6	6	6	6	6	6	6	6	6	6	6
Mvmt Flow	69	83	2	4	89	44	4	2	10	31	7	74

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	133	0	0	85	0	0	345	363	84	347	342	111
Stage 1	-	-	-	-	-	-	222	222	-	119	119	-
Stage 2	-	-	-	-	-	-	123	141	-	228	223	-
Critical Hdwy	4.16	-	-	4.16	-	-	7.16	6.56	6.26	7.16	6.56	6.26
Critical Hdwy Stg 1	-	-	-	-	-	-	6.16	5.56	-	6.16	5.56	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.16	5.56	-	6.16	5.56	-
Follow-up Hdwy	2.254	-	-	2.254	-	-	3.554	4.054	3.354	3.554	4.054	3.354
Pot Cap-1 Maneuver	1427	-	-	1487	-	-	602	558	964	600	574	931
Stage 1	-	-	-	-	-	-	771	712	-	876	790	-
Stage 2	-	-	-	-	-	-	872	772	-	766	712	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1427	-	-	1487	-	-	526	528	964	568	543	931
Mov Cap-2 Maneuver	-	-	-	-	-	-	526	528	-	568	543	-
Stage 1	-	-	-	-	-	-	732	676	-	831	788	-
Stage 2	-	-	-	-	-	-	793	770	-	717	676	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	3.4	0.2	10	7.8
HCM LOS			B	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	731	1427	-	-	1487	-	-	1412
HCM Lane V/C Ratio	0.022	0.048	-	-	0.002	-	-	0.08
HCM Control Delay (s)	10	7.7	0	-	7.4	0	-	7.8
HCM Lane LOS	B	A	A	-	A	A	-	A
HCM 95th %tile Q(veh)	0.1	0.2	-	-	0	-	-	0.3

Intersection	
Int Delay, s/veh	0.9

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	125	4	11	85	6	8
Future Vol, veh/h	125	4	11	85	6	8
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	86	86	86	86	86	86
Heavy Vehicles, %	4	4	4	4	4	4
Mvmt Flow	145	5	13	99	7	9

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	150	0	273	148
Stage 1	-	-	-	-	148	-
Stage 2	-	-	-	-	125	-
Critical Hdwy	-	-	4.14	-	6.44	6.24
Critical Hdwy Stg 1	-	-	-	-	5.44	-
Critical Hdwy Stg 2	-	-	-	-	5.44	-
Follow-up Hdwy	-	-	2.236	-	3.536	3.336
Pot Cap-1 Maneuver	-	-	1419	-	712	894
Stage 1	-	-	-	-	875	-
Stage 2	-	-	-	-	896	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1419	-	705	894
Mov Cap-2 Maneuver	-	-	-	-	705	-
Stage 1	-	-	-	-	875	-
Stage 2	-	-	-	-	887	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.9	9.6
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	802	-	-	1419	-
HCM Lane V/C Ratio	0.02	-	-	0.009	-
HCM Control Delay (s)	9.6	-	-	7.6	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0	-

Intersection	
Int Delay, s/veh	2.7

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	4	6	6	3	1	3
Future Vol, veh/h	4	6	6	3	1	3
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	66	66	66	66	66	66
Heavy Vehicles, %	5	5	5	5	5	5
Mvmt Flow	6	9	9	5	2	5

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	14	0	-	0	33	12
Stage 1	-	-	-	-	12	-
Stage 2	-	-	-	-	21	-
Critical Hdwy	4.15	-	-	-	6.45	6.25
Critical Hdwy Stg 1	-	-	-	-	5.45	-
Critical Hdwy Stg 2	-	-	-	-	5.45	-
Follow-up Hdwy	2.245	-	-	-	3.545	3.345
Pot Cap-1 Maneuver	1585	-	-	-	973	1060
Stage 1	-	-	-	-	1003	-
Stage 2	-	-	-	-	994	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1585	-	-	-	969	1060
Mov Cap-2 Maneuver	-	-	-	-	969	-
Stage 1	-	-	-	-	999	-
Stage 2	-	-	-	-	994	-

Approach	EB	WB	SB
HCM Control Delay, s	2.9	0	8.5
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1585	-	-	-	1036
HCM Lane V/C Ratio	0.004	-	-	-	0.006
HCM Control Delay (s)	7.3	0	-	-	8.5
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0

Intersection	
Int Delay, s/veh	4.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	3	1	2	39	1	31	2	66	36	90	90	0
Future Vol, veh/h	3	1	2	39	1	31	2	66	36	90	90	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	78	78	78	78	78	78	78	78	78	78	78	78
Heavy Vehicles, %	5	5	5	5	5	5	5	5	5	5	5	5
Mvmt Flow	4	1	3	50	1	40	3	85	46	115	115	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	480	482	115	461	459	108	115	0	0	131	0	0
Stage 1	345	345	-	114	114	-	-	-	-	-	-	-
Stage 2	135	137	-	347	345	-	-	-	-	-	-	-
Critical Hdwy	7.15	6.55	6.25	7.15	6.55	6.25	4.15	-	-	4.15	-	-
Critical Hdwy Stg 1	6.15	5.55	-	6.15	5.55	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.15	5.55	-	6.15	5.55	-	-	-	-	-	-	-
Follow-up Hdwy	3.545	4.045	3.345	3.545	4.045	3.345	2.245	-	-	2.245	-	-
Pot Cap-1 Maneuver	491	480	929	506	494	938	1455	-	-	1436	-	-
Stage 1	664	631	-	884	795	-	-	-	-	-	-	-
Stage 2	861	777	-	663	631	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	437	438	929	470	451	938	1455	-	-	1436	-	-
Mov Cap-2 Maneuver	437	438	-	470	451	-	-	-	-	-	-	-
Stage 1	663	577	-	882	793	-	-	-	-	-	-	-
Stage 2	822	775	-	603	577	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	11.9	12.1	0.1	3.9
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1455	-	-	531	600	1436	-	-
HCM Lane V/C Ratio	0.002	-	-	0.014	0.152	0.08	-	-
HCM Control Delay (s)	7.5	0	-	11.9	12.1	7.7	0	-
HCM Lane LOS	A	A	-	B	B	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0	0.5	0.3	-	-

Intersection	
Int Delay, s/veh	0.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	7	2	103	7	2	125
Future Vol, veh/h	7	2	103	7	2	125
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	75	75	75	75	75	75
Heavy Vehicles, %	5	5	5	5	5	5
Mvmt Flow	9	3	137	9	3	167

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	315	142	0	0	146	0
Stage 1	142	-	-	-	-	-
Stage 2	173	-	-	-	-	-
Critical Hdwy	6.45	6.25	-	-	4.15	-
Critical Hdwy Stg 1	5.45	-	-	-	-	-
Critical Hdwy Stg 2	5.45	-	-	-	-	-
Follow-up Hdwy	3.545	3.345	-	-	2.245	-
Pot Cap-1 Maneuver	672	898	-	-	1418	-
Stage 1	878	-	-	-	-	-
Stage 2	850	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	671	898	-	-	1418	-
Mov Cap-2 Maneuver	671	-	-	-	-	-
Stage 1	878	-	-	-	-	-
Stage 2	848	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10.2	0	0.1
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	711	1418	-
HCM Lane V/C Ratio	-	-	0.017	0.002	-
HCM Control Delay (s)	-	-	10.2	7.5	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.1	0	-

Intersection	
Int Delay, s/veh	2.2

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	83	14	13	303	257	72
Future Vol, veh/h	83	14	13	303	257	72
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	4	4	4	4	4	4
Mvmt Flow	90	15	14	329	279	78

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	675	318	357	0	-	0
Stage 1	318	-	-	-	-	-
Stage 2	357	-	-	-	-	-
Critical Hdwy	6.44	6.24	4.14	-	-	-
Critical Hdwy Stg 1	5.44	-	-	-	-	-
Critical Hdwy Stg 2	5.44	-	-	-	-	-
Follow-up Hdwy	3.536	3.336	2.236	-	-	-
Pot Cap-1 Maneuver	416	718	1191	-	-	-
Stage 1	733	-	-	-	-	-
Stage 2	704	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	410	718	1191	-	-	-
Mov Cap-2 Maneuver	410	-	-	-	-	-
Stage 1	723	-	-	-	-	-
Stage 2	704	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	15.8	0.3	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1191	-	437	-	-
HCM Lane V/C Ratio	0.012	-	0.241	-	-
HCM Control Delay (s)	8.1	0	15.8	-	-
HCM Lane LOS	A	A	C	-	-
HCM 95th %tile Q(veh)	0	-	0.9	-	-

Intersection	
Int Delay, s/veh	34.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	51	73	66	153	120	53	55	68	128	23	78	47
Future Vol, veh/h	51	73	66	153	120	53	55	68	128	23	78	47
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	Stop
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	81	81	81	81	81	81	81	81	81	81	81	81
Heavy Vehicles, %	10	10	10	10	10	10	10	10	10	10	10	10
Mvmt Flow	63	90	81	189	148	65	68	84	158	28	96	58

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	213	0	0	171	0	0	864	848	131	937	856	181
Stage 1	-	-	-	-	-	-	257	257	-	559	559	-
Stage 2	-	-	-	-	-	-	607	591	-	378	297	-
Critical Hdwy	4.2	-	-	4.2	-	-	7.2	6.6	6.3	7.2	6.6	6.3
Critical Hdwy Stg 1	-	-	-	-	-	-	6.2	5.6	-	6.2	5.6	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.2	5.6	-	6.2	5.6	-
Follow-up Hdwy	2.29	-	-	2.29	-	-	3.59	4.09	3.39	3.59	4.09	3.39
Pot Cap-1 Maneuver	1311	-	-	1359	-	-	266	290	898	237	287	841
Stage 1	-	-	-	-	-	-	730	680	-	500	498	-
Stage 2	-	-	-	-	-	-	470	482	-	628	653	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1311	-	-	1359	-	-	142	231	898	119	228	841
Mov Cap-2 Maneuver	-	-	-	-	-	-	142	231	-	119	228	-
Stage 1	-	-	-	-	-	-	691	643	-	473	419	-
Stage 2	-	-	-	-	-	-	283	405	-	426	618	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	2.1	3.8	93.9	40.3
HCM LOS			F	E

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	305	1311	-	-	1359	-	-	276
HCM Lane V/C Ratio	1.016	0.048	-	-	0.139	-	-	0.662
HCM Control Delay (s)	93.9	7.9	0	-	8.1	0	-	40.3
HCM Lane LOS	F	A	A	-	A	A	-	E
HCM 95th %tile Q(veh)	11.1	0.2	-	-	0.5	-	-	4.3

Intersection	
Int Delay, s/veh	1.2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	153	1	14	218	17	20
Future Vol, veh/h	153	1	14	218	17	20
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	87	87	87	87	87	87
Heavy Vehicles, %	8	8	8	8	8	8
Mvmt Flow	176	1	16	251	20	23

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	177	0	460	177
Stage 1	-	-	-	-	177	-
Stage 2	-	-	-	-	283	-
Critical Hdwy	-	-	4.18	-	6.48	6.28
Critical Hdwy Stg 1	-	-	-	-	5.48	-
Critical Hdwy Stg 2	-	-	-	-	5.48	-
Follow-up Hdwy	-	-	2.272	-	3.572	3.372
Pot Cap-1 Maneuver	-	-	1364	-	548	851
Stage 1	-	-	-	-	839	-
Stage 2	-	-	-	-	751	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1364	-	540	851
Mov Cap-2 Maneuver	-	-	-	-	540	-
Stage 1	-	-	-	-	839	-
Stage 2	-	-	-	-	740	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.5	10.7
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	673	-	-	1364	-
HCM Lane V/C Ratio	0.063	-	-	0.012	-
HCM Control Delay (s)	10.7	-	-	7.7	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.2	-	-	0	-

Intersection	
Int Delay, s/veh	0.2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	1	114	87	0	0	3
Future Vol, veh/h	1	114	87	0	0	3
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	60	60	60	60	60	60
Heavy Vehicles, %	17	17	17	17	17	17
Mvmt Flow	2	190	145	0	0	5

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	145	0	-	0	339	145
Stage 1	-	-	-	-	145	-
Stage 2	-	-	-	-	194	-
Critical Hdwy	4.27	-	-	-	6.57	6.37
Critical Hdwy Stg 1	-	-	-	-	5.57	-
Critical Hdwy Stg 2	-	-	-	-	5.57	-
Follow-up Hdwy	2.353	-	-	-	3.653	3.453
Pot Cap-1 Maneuver	1350	-	-	-	627	864
Stage 1	-	-	-	-	847	-
Stage 2	-	-	-	-	804	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1350	-	-	-	626	864
Mov Cap-2 Maneuver	-	-	-	-	626	-
Stage 1	-	-	-	-	845	-
Stage 2	-	-	-	-	804	-

Approach	EB	WB	SB
HCM Control Delay, s	0.1	0	9.2
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1350	-	-	-	864
HCM Lane V/C Ratio	0.001	-	-	-	0.006
HCM Control Delay (s)	7.7	0	-	-	9.2
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0

Intersection	
Int Delay, s/veh	6.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	7	1	2	41	1	192	2	211	36	99	80	0
Future Vol, veh/h	7	1	2	41	1	192	2	211	36	99	80	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	7	7	7	7	7	7	7	7	7	7	7	7
Mvmt Flow	8	1	2	45	1	209	2	229	39	108	87	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	661	575	87	558	556	249	87	0	0	268	0	0
Stage 1	303	303	-	253	253	-	-	-	-	-	-	-
Stage 2	358	272	-	305	303	-	-	-	-	-	-	-
Critical Hdwy	7.17	6.57	6.27	7.17	6.57	6.27	4.17	-	-	4.17	-	-
Critical Hdwy Stg 1	6.17	5.57	-	6.17	5.57	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.17	5.57	-	6.17	5.57	-	-	-	-	-	-	-
Follow-up Hdwy	3.563	4.063	3.363	3.563	4.063	3.363	2.263	-	-	2.263	-	-
Pot Cap-1 Maneuver	369	422	958	433	432	778	1478	-	-	1267	-	-
Stage 1	696	655	-	740	689	-	-	-	-	-	-	-
Stage 2	650	676	-	694	655	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	251	383	958	401	392	778	1478	-	-	1267	-	-
Mov Cap-2 Maneuver	251	383	-	401	392	-	-	-	-	-	-	-
Stage 1	695	596	-	739	688	-	-	-	-	-	-	-
Stage 2	474	675	-	629	596	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	17.2	13.7	0.1	4.5
HCM LOS	C	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1478	-	-	307	666	1267	-	-
HCM Lane V/C Ratio	0.001	-	-	0.035	0.382	0.085	-	-
HCM Control Delay (s)	7.4	0	-	17.2	13.7	8.1	0	-
HCM Lane LOS	A	A	-	C	B	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.1	1.8	0.3	-	-

Intersection	
Int Delay, s/veh	2.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	69	17	236	86	19	103
Future Vol, veh/h	69	17	236	86	19	103
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	8	8	8	8	8	8
Mvmt Flow	75	18	257	93	21	112

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	458	304	0	0	350	0
Stage 1	304	-	-	-	-	-
Stage 2	154	-	-	-	-	-
Critical Hdwy	6.48	6.28	-	-	4.18	-
Critical Hdwy Stg 1	5.48	-	-	-	-	-
Critical Hdwy Stg 2	5.48	-	-	-	-	-
Follow-up Hdwy	3.572	3.372	-	-	2.272	-
Pot Cap-1 Maneuver	550	722	-	-	1176	-
Stage 1	735	-	-	-	-	-
Stage 2	860	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	540	722	-	-	1176	-
Mov Cap-2 Maneuver	540	-	-	-	-	-
Stage 1	735	-	-	-	-	-
Stage 2	844	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	12.6	0	1.3
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	568	1176	-
HCM Lane V/C Ratio	-	-	0.165	0.018	-
HCM Control Delay (s)	-	-	12.6	8.1	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.6	0.1	-

Intersection	
Int Delay, s/veh	12.6

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	140	70	86	261	441	198
Future Vol, veh/h	140	70	86	261	441	198
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	7	7	7	7	7	7
Mvmt Flow	152	76	93	284	479	215

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1057	587	694	0	-	0
Stage 1	587	-	-	-	-	-
Stage 2	470	-	-	-	-	-
Critical Hdwy	6.47	6.27	4.17	-	-	-
Critical Hdwy Stg 1	5.47	-	-	-	-	-
Critical Hdwy Stg 2	5.47	-	-	-	-	-
Follow-up Hdwy	3.563	3.363	2.263	-	-	-
Pot Cap-1 Maneuver	244	500	879	-	-	-
Stage 1	546	-	-	-	-	-
Stage 2	619	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	213	500	879	-	-	-
Mov Cap-2 Maneuver	213	-	-	-	-	-
Stage 1	477	-	-	-	-	-
Stage 2	619	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	67.9	2.4	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	879	-	263	-	-
HCM Lane V/C Ratio	0.106	-	0.868	-	-
HCM Control Delay (s)	9.6	0	67.9	-	-
HCM Lane LOS	A	A	F	-	-
HCM 95th %tile Q(veh)	0.4	-	7.3	-	-

Intersection	
Int Delay, s/veh	3.1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	29	85	63	43	37	25
Future Vol, veh/h	29	85	63	43	37	25
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	100	-	-	275	0	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	60	60	60	60	60	60
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	48	142	105	72	62	42

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	177	0	-	0	343	105
Stage 1	-	-	-	-	105	-
Stage 2	-	-	-	-	238	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1399	-	-	-	653	949
Stage 1	-	-	-	-	919	-
Stage 2	-	-	-	-	802	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1399	-	-	-	631	949
Mov Cap-2 Maneuver	-	-	-	-	631	-
Stage 1	-	-	-	-	888	-
Stage 2	-	-	-	-	802	-

Approach	EB	WB	SB
HCM Control Delay, s	1.9	0	10.4
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1399	-	-	-	631	949
HCM Lane V/C Ratio	0.035	-	-	-	0.098	0.044
HCM Control Delay (s)	7.7	-	-	-	11.3	9
HCM Lane LOS	A	-	-	-	B	A
HCM 95th %tile Q(veh)	0.1	-	-	-	0.3	0.1

Intersection	
Int Delay, s/veh	7.6

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	197	49	58	65	57	232
Future Vol, veh/h	197	49	58	65	57	232
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	100	-	-	275
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	60	60	60	60	60	60
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	328	82	97	108	95	387

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	397	95	482	0	-	0
Stage 1	95	-	-	-	-	-
Stage 2	302	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	608	962	1081	-	-	-
Stage 1	929	-	-	-	-	-
Stage 2	750	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	553	962	1081	-	-	-
Mov Cap-2 Maneuver	553	-	-	-	-	-
Stage 1	845	-	-	-	-	-
Stage 2	750	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	18.3	4.1	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1081	-	553	962	-	-
HCM Lane V/C Ratio	0.089	-	0.594	0.085	-	-
HCM Control Delay (s)	8.7	-	20.6	9.1	-	-
HCM Lane LOS	A	-	C	A	-	-
HCM 95th %tile Q(veh)	0.3	-	3.9	0.3	-	-

Intersection	
Int Delay, s/veh	8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	56	67	29	69	72	36	35	41	86	25	39	60
Future Vol, veh/h	56	67	29	69	72	36	35	41	86	25	39	60
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	Stop
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	81	81	81	81	81	81	81	81	81	81	81	81
Heavy Vehicles, %	6	6	6	6	6	6	6	6	6	6	6	6
Mvmt Flow	69	83	36	85	89	44	43	51	106	31	48	74

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	133	0	0	119	0	0	544	542	101	599	538	111
Stage 1	-	-	-	-	-	-	239	239	-	281	281	-
Stage 2	-	-	-	-	-	-	305	303	-	318	257	-
Critical Hdwy	4.16	-	-	4.16	-	-	7.16	6.56	6.26	7.16	6.56	6.26
Critical Hdwy Stg 1	-	-	-	-	-	-	6.16	5.56	-	6.16	5.56	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.16	5.56	-	6.16	5.56	-
Follow-up Hdwy	2.254	-	-	2.254	-	-	3.554	4.054	3.354	3.554	4.054	3.354
Pot Cap-1 Maneuver	1427	-	-	1444	-	-	444	442	943	408	444	931
Stage 1	-	-	-	-	-	-	755	700	-	717	671	-
Stage 2	-	-	-	-	-	-	696	656	-	685	688	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1427	-	-	1444	-	-	339	392	943	299	394	931
Mov Cap-2 Maneuver	-	-	-	-	-	-	339	392	-	299	394	-
Stage 1	-	-	-	-	-	-	716	664	-	680	628	-
Stage 2	-	-	-	-	-	-	554	614	-	532	652	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	2.8	3	15.5	11.8
HCM LOS			C	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	542	1427	-	-	1444	-	-	679
HCM Lane V/C Ratio	0.369	0.048	-	-	0.059	-	-	0.225
HCM Control Delay (s)	15.5	7.7	0	-	7.6	0	-	11.8
HCM Lane LOS	C	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	1.7	0.2	-	-	0.2	-	-	0.9

Intersection	
Int Delay, s/veh	0.8

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	151	4	11	116	6	8
Future Vol, veh/h	151	4	11	116	6	8
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	86	86	86	86	86	86
Heavy Vehicles, %	4	4	4	4	4	4
Mvmt Flow	176	5	13	135	7	9

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	181	0	340	179
Stage 1	-	-	-	-	179	-
Stage 2	-	-	-	-	161	-
Critical Hdwy	-	-	4.14	-	6.44	6.24
Critical Hdwy Stg 1	-	-	-	-	5.44	-
Critical Hdwy Stg 2	-	-	-	-	5.44	-
Follow-up Hdwy	-	-	2.236	-	3.536	3.336
Pot Cap-1 Maneuver	-	-	1382	-	652	859
Stage 1	-	-	-	-	847	-
Stage 2	-	-	-	-	863	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1382	-	645	859
Mov Cap-2 Maneuver	-	-	-	-	645	-
Stage 1	-	-	-	-	847	-
Stage 2	-	-	-	-	854	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.7	9.9
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	752	-	-	1382	-
HCM Lane V/C Ratio	0.022	-	-	0.009	-
HCM Control Delay (s)	9.9	-	-	7.6	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0	-

Intersection	
Int Delay, s/veh	0.6

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	4	45	52	3	1	3
Future Vol, veh/h	4	45	52	3	1	3
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	66	66	66	66	66	66
Heavy Vehicles, %	5	5	5	5	5	5
Mvmt Flow	6	68	79	5	2	5

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	84	0	-	0	162	82
Stage 1	-	-	-	-	82	-
Stage 2	-	-	-	-	80	-
Critical Hdwy	4.15	-	-	-	6.45	6.25
Critical Hdwy Stg 1	-	-	-	-	5.45	-
Critical Hdwy Stg 2	-	-	-	-	5.45	-
Follow-up Hdwy	2.245	-	-	-	3.545	3.345
Pot Cap-1 Maneuver	1494	-	-	-	822	969
Stage 1	-	-	-	-	934	-
Stage 2	-	-	-	-	936	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1494	-	-	-	819	969
Mov Cap-2 Maneuver	-	-	-	-	819	-
Stage 1	-	-	-	-	930	-
Stage 2	-	-	-	-	936	-

Approach	EB	WB	SB
HCM Control Delay, s	0.6	0	8.9
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1494	-	-	-	927
HCM Lane V/C Ratio	0.004	-	-	-	0.007
HCM Control Delay (s)	7.4	0	-	-	8.9
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0

Intersection	
Int Delay, s/veh	5.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	3	1	2	39	1	62	2	74	36	117	97	0
Future Vol, veh/h	3	1	2	39	1	62	2	74	36	117	97	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	78	78	78	78	78	78	78	78	78	78	78	78
Heavy Vehicles, %	5	5	5	5	5	5	5	5	5	5	5	5
Mvmt Flow	4	1	3	50	1	79	3	95	46	150	124	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	588	571	124	550	548	118	124	0	0	141	0	0
Stage 1	424	424	-	124	124	-	-	-	-	-	-	-
Stage 2	164	147	-	426	424	-	-	-	-	-	-	-
Critical Hdwy	7.15	6.55	6.25	7.15	6.55	6.25	4.15	-	-	4.15	-	-
Critical Hdwy Stg 1	6.15	5.55	-	6.15	5.55	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.15	5.55	-	6.15	5.55	-	-	-	-	-	-	-
Follow-up Hdwy	3.545	4.045	3.345	3.545	4.045	3.345	2.245	-	-	2.245	-	-
Pot Cap-1 Maneuver	416	427	919	441	440	926	1444	-	-	1424	-	-
Stage 1	602	582	-	873	788	-	-	-	-	-	-	-
Stage 2	831	770	-	601	582	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	346	378	919	400	389	926	1444	-	-	1424	-	-
Mov Cap-2 Maneuver	346	378	-	400	389	-	-	-	-	-	-	-
Stage 1	601	516	-	871	786	-	-	-	-	-	-	-
Stage 2	757	768	-	530	516	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	13.2	12.5	0.1	4.3
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1444	-	-	445	611	1424	-	-
HCM Lane V/C Ratio	0.002	-	-	0.017	0.214	0.105	-	-
HCM Control Delay (s)	7.5	0	-	13.2	12.5	7.8	0	-
HCM Lane LOS	A	A	-	B	B	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.1	0.8	0.4	-	-

Intersection	
Int Delay, s/veh	2.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	46	10	103	40	9	125
Future Vol, veh/h	46	10	103	40	9	125
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	75	75	75	75	75	75
Heavy Vehicles, %	5	5	5	5	5	5
Mvmt Flow	61	13	137	53	12	167

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	355	164	0	0	190	0
Stage 1	164	-	-	-	-	-
Stage 2	191	-	-	-	-	-
Critical Hdwy	6.45	6.25	-	-	4.15	-
Critical Hdwy Stg 1	5.45	-	-	-	-	-
Critical Hdwy Stg 2	5.45	-	-	-	-	-
Follow-up Hdwy	3.545	3.345	-	-	2.245	-
Pot Cap-1 Maneuver	637	873	-	-	1366	-
Stage 1	858	-	-	-	-	-
Stage 2	834	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	631	873	-	-	1366	-
Mov Cap-2 Maneuver	631	-	-	-	-	-
Stage 1	858	-	-	-	-	-
Stage 2	826	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	11.1	0	0.5
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	664	1366	-
HCM Lane V/C Ratio	-	-	0.112	0.009	-
HCM Control Delay (s)	-	-	11.1	7.7	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.4	0	-

Intersection	
Int Delay, s/veh	4.6

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	122	53	46	303	257	105
Future Vol, veh/h	122	53	46	303	257	105
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	4	4	4	4	4	4
Mvmt Flow	133	58	50	329	279	114

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	765	336	393	0	-	0
Stage 1	336	-	-	-	-	-
Stage 2	429	-	-	-	-	-
Critical Hdwy	6.44	6.24	4.14	-	-	-
Critical Hdwy Stg 1	5.44	-	-	-	-	-
Critical Hdwy Stg 2	5.44	-	-	-	-	-
Follow-up Hdwy	3.536	3.336	2.236	-	-	-
Pot Cap-1 Maneuver	369	701	1155	-	-	-
Stage 1	719	-	-	-	-	-
Stage 2	652	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	349	701	1155	-	-	-
Mov Cap-2 Maneuver	349	-	-	-	-	-
Stage 1	681	-	-	-	-	-
Stage 2	652	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	21	1.1	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1155	-	412	-	-
HCM Lane V/C Ratio	0.043	-	0.462	-	-
HCM Control Delay (s)	8.3	0	21	-	-
HCM Lane LOS	A	A	C	-	-
HCM 95th %tile Q(veh)	0.1	-	2.4	-	-

Intersection	
Int Delay, s/veh	3.2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	13	33	40	20	23	16
Future Vol, veh/h	13	33	40	20	23	16
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	100	-	-	275	0	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	60	60	60	60	60	60
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	22	55	67	33	38	27

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	100	0	-	0	166	67
Stage 1	-	-	-	-	67	-
Stage 2	-	-	-	-	99	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1493	-	-	-	824	997
Stage 1	-	-	-	-	956	-
Stage 2	-	-	-	-	925	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1493	-	-	-	812	997
Mov Cap-2 Maneuver	-	-	-	-	812	-
Stage 1	-	-	-	-	942	-
Stage 2	-	-	-	-	925	-

Approach	EB	WB	SB
HCM Control Delay, s	2.1	0	9.3
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1493	-	-	-	812	997
HCM Lane V/C Ratio	0.015	-	-	-	0.047	0.027
HCM Control Delay (s)	7.4	-	-	-	9.7	8.7
HCM Lane LOS	A	-	-	-	A	A
HCM 95th %tile Q(veh)	0	-	-	-	0.1	0.1

Intersection	
Int Delay, s/veh	5.4

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	125	31	26	30	29	106
Future Vol, veh/h	125	31	26	30	29	106
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	100	-	-	275
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	60	60	60	60	60	60
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	208	52	43	50	48	177

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	184	48	225	0	-	0
Stage 1	48	-	-	-	-	-
Stage 2	136	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	805	1021	1344	-	-	-
Stage 1	974	-	-	-	-	-
Stage 2	890	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	779	1021	1344	-	-	-
Mov Cap-2 Maneuver	779	-	-	-	-	-
Stage 1	943	-	-	-	-	-
Stage 2	890	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	10.8	3.6	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1344	-	779	1021	-	-
HCM Lane V/C Ratio	0.032	-	0.267	0.051	-	-
HCM Control Delay (s)	7.8	-	11.3	8.7	-	-
HCM Lane LOS	A	-	B	A	-	-
HCM 95th %tile Q(veh)	0.1	-	1.1	0.2	-	-

Intersection	
Intersection Delay, s/veh	17.4
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	51	73	66	153	120	53	55	68	128	23	78	47
Future Vol, veh/h	51	73	66	153	120	53	55	68	128	23	78	47
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81
Heavy Vehicles, %	10	10	10	10	10	10	10	10	10	10	10	10
Mvmt Flow	63	90	81	189	148	65	68	84	158	28	96	58
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	14	22.1	16.5	13.2
HCM LOS	B	C	C	B

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	22%	27%	47%	16%
Vol Thru, %	27%	38%	37%	53%
Vol Right, %	51%	35%	16%	32%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	251	190	326	148
LT Vol	55	51	153	23
Through Vol	68	73	120	78
RT Vol	128	66	53	47
Lane Flow Rate	310	235	402	183
Geometry Grp	1	1	1	1
Degree of Util (X)	0.539	0.418	0.693	0.339
Departure Headway (Hd)	6.267	6.412	6.195	6.682
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	573	561	584	535
Service Time	4.324	4.474	4.246	4.748
HCM Lane V/C Ratio	0.541	0.419	0.688	0.342
HCM Control Delay	16.5	14	22.1	13.2
HCM Lane LOS	C	B	C	B
HCM 95th-tile Q	3.2	2.1	5.4	1.5

Intersection	
Int Delay, s/veh	6.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	140	70	86	261	441	198
Future Vol, veh/h	140	70	86	261	441	198
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	100	-	-	-	100
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	7	7	7	7	7	7
Mvmt Flow	152	76	93	284	479	215

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	949	479	694	0	-	0
Stage 1	479	-	-	-	-	-
Stage 2	470	-	-	-	-	-
Critical Hdwy	6.47	6.27	4.17	-	-	-
Critical Hdwy Stg 1	5.47	-	-	-	-	-
Critical Hdwy Stg 2	5.47	-	-	-	-	-
Follow-up Hdwy	3.563	3.363	2.263	-	-	-
Pot Cap-1 Maneuver	283	577	879	-	-	-
Stage 1	613	-	-	-	-	-
Stage 2	619	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	247	577	879	-	-	-
Mov Cap-2 Maneuver	247	-	-	-	-	-
Stage 1	536	-	-	-	-	-
Stage 2	619	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	31	2.4	0
HCM LOS	D		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	879	-	247	577	-	-
HCM Lane V/C Ratio	0.106	-	0.616	0.132	-	-
HCM Control Delay (s)	9.6	0	40.4	12.2	-	-
HCM Lane LOS	A	A	E	B	-	-
HCM 95th %tile Q(veh)	0.4	-	3.7	0.5	-	-

HIGHWAY CAPACITY MANUAL LEVEL OF SERVICE DESCRIPTIONS

Level of Service Criteria for Signalized Intersections

Level-of-Service (LOS)	Average Control Delay (seconds per vehicle)	Description
A	≤ 10.0	Very low vehicle delays, free flow, signal progression extremely favorable, most vehicles arrive during given signal phase.
B	10.1 - 20.0	Good signal progression, more vehicles stop and experience higher delays than for LOS A.
C	20.1 - 35.0	Stable flow, fair signal progression, significant number of vehicles stop at signals.
D	35.1 - 55.0	Congestion noticeable, longer delays and unfavorable signal progression, many vehicles stop at signals.
E	55.1 - 80.0	Limit of acceptable delay, unstable flow, poor signal progression, traffic near roadway capacity, frequent cycle failures.
F	> 80.0	Unacceptable delays, extremely unstable flow and congestion, traffic exceeds roadway capacity, stop-and-go conditions.

SOURCE: Highway Capacity Manual, HCM 2010, Transportation Research Board, 2010.

Level of Service Criteria for Unsignalized Intersections

Level-of-Service (LOS)	Average Control Delay (seconds per vehicle)	Description
A	≤ 10.0	No delays at intersections with continuous flow of traffic. Uncongested operations: high frequency of long gaps available for all left and right turning traffic. No observable queues.
B	10.1 - 15.0	No delays at intersections with continuous flow of traffic. Uncongested operations: high frequency of long gaps available for all left and right turning traffic. No observable queues.
C	15.1 - 25.0	Moderate delays at intersections with satisfactory to good traffic flow. Light congestion; infrequent backups on critical approaches.
D	25.1 - 35.0	Increased probability of delays along every approach. Significant congestion on critical approaches, but intersection functional. No standing long lines formed.
E	35.1 - 50.0	Heavy traffic flow condition. Heavy delays probable. No available gaps for cross-street traffic or main street turning traffic. Limit of stable flow.
F	> 50.0	Unstable traffic flow. Heavy congestion. Traffic moves in forced flow condition. Average delays greater than one minute highly probable. Total breakdown.

SOURCE: Highway Capacity Manual, HCM 2010, Transportation Research Board, 2010.

Nick

11-4-21

Minimum Required Sight Distance (ft)			
Design Speed (mph)	Case		
	B1	B2/B3	F
15	170	145	125
20	225	195	165
25	280	240	205
30	335	290	245
35	390	335	285
40	445	385	325
45	500	430	365
50	555	480	405
55	610	530	445
60	665	575	490
65	720	625	530
70	775	670	570
75	830	720	610
80	885	765	650

Sight

Case B2/B3
Object Location

1316 Ft.

14.5'

Stopping

Case B2/B3
Measured Distance
1316 Ft.

Case F
Driver Location

Case B1/B2/B3
Driver Location

Sight

Case F
Measured Distance
1454 Ft.

Stopping

Case B1
Measured Distance
1454 Ft.

North Arrow

Case B1/F
Object Location

Notes:

1. Case B1: Left-turn from minor road
   Case B2:- Right-turn from minor road
   Case B3: Crossing maneuver from minor road
   Case F: Left-turn from major road
2. Driver location for Case B1, B2, and B3 should be 14.5' from edge of major road travel way.
3. Driver eye height for passenger vehicle analysis is 3.5' (42"). Driver eye height for single-unit/combination truck analysis is 7.6' (7'7"). In cases where the minor road has not been constructed, assume the proposed roadway will be level with the existing major road and measure accordingly.
4. Object height = 3.5' (42").
5. Provided minimum sight distance measurements are from 2004 AASHTO Green Book. If the major roadway has a median, is wider than a two-lane highway, or has grades greater than three percent then the minimum required sight distances must be adjusted.
6. Case B1 and Case F may not have the same object location but are shown on diagram to be the same.
7. In cases where available sight distance is significantly greater than required minimums, only measurements 100' beyond required minimum are necessary.

Date: 11-4

Major Road: CR 728 East/West

Minor Road:

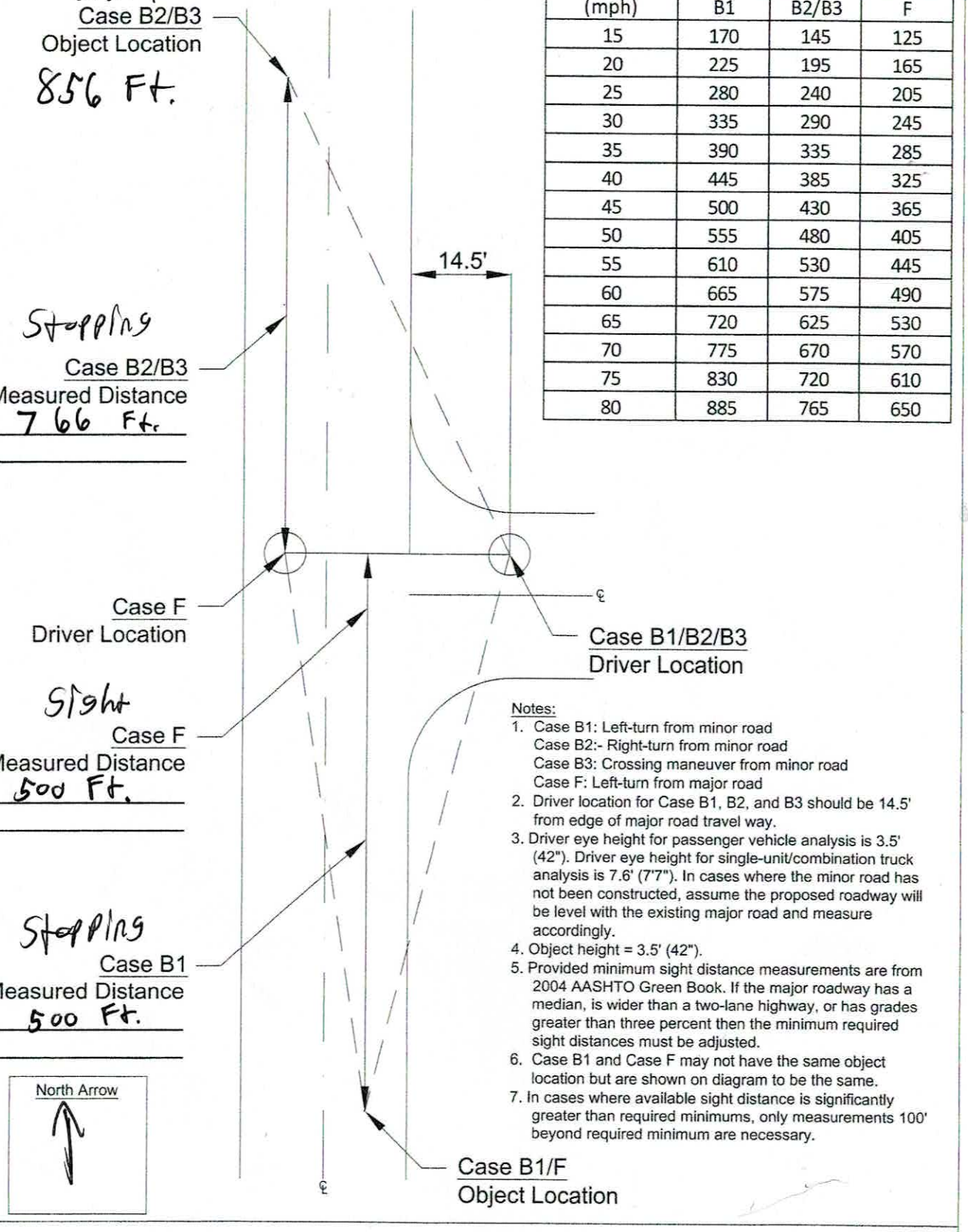
Major Road Posted Speed Limit: 40 MPH

Minor Road Posted Speed Limit:

Nick

11-4-21

Minimum Required Sight Distance (ft)			
Design Speed (mph)	Case		
	B1	B2/B3	F
15	170	145	125
20	225	195	165
25	280	240	205
30	335	290	245
35	390	335	285
40	445	385	325
45	500	430	365
50	555	480	405
55	610	530	445
60	665	575	490
65	720	625	530
70	775	670	570
75	830	720	610
80	885	765	650



Notes:

1. Case B1: Left-turn from minor road
   Case B2:- Right-turn from minor road
   Case B3: Crossing maneuver from minor road
   Case F: Left-turn from major road
2. Driver location for Case B1, B2, and B3 should be 14.5' from edge of major road travel way.
3. Driver eye height for passenger vehicle analysis is 3.5' (42"). Driver eye height for single-unit/combination truck analysis is 7.6' (7'7"). In cases where the minor road has not been constructed, assume the proposed roadway will be level with the existing major road and measure accordingly.
4. Object height = 3.5' (42").
5. Provided minimum sight distance measurements are from 2004 AASHTO Green Book. If the major roadway has a median, is wider than a two-lane highway, or has grades greater than three percent then the minimum required sight distances must be adjusted.
6. Case B1 and Case F may not have the same object location but are shown on diagram to be the same.
7. In cases where available sight distance is significantly greater than required minimums, only measurements 100' beyond required minimum are necessary.

Date: 11-4

Major Road: CR 728 north/south

Minor Road: _____

Major Road Posted Speed Limit: 40 MPH

Minor Road Posted Speed Limit: _____