

TRAFFIC IMPACT ANALYSIS

For

University Park Elementary School

In University Park, Texas

Prepared

For

Highland Park Independent School District

February 7, 2017



By



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TRAFFIC IMPACT ANALYSIS
For
University Park Elementary School
In University Park, Texas

EXECUTIVE SUMMARY

The purpose of conducting this Traffic Impact Analysis (TIA) was to assess existing conditions, and to identify what mitigations or modifications may be warranted to serve motorists and pedestrians (school children) traveling through the area adjacent to the newly constructed University Park Elementary School.

The Levels of Service were determined for existing conditions (2017) and for the construction of a parking garage that is proposed to be located between the recreation fields and the new elementary school adjacent to Dickens Avenue. The entrance and exits to the parking garage will be on Lovers Lane between Thackery Street and Dickens Avenue.

CAPACITY ANALYSIS FINDINGS

The analysis of the existing conditions (traffic controls and lane configurations), indicated that the overall intersection Level of Service was acceptable for all of the study intersections.

The key difference between the existing conditions and the future conditions would be the construction of a parking garage to accommodate teachers and auditorium parking. This parking is currently occurring on the streets surrounding the school and the traffic flows are more random and unpredictable.

RECOMMENDATIONS

Based on the results of the analyses and evaluations conducted as part of this TIA, the following recommendations are provided. These improvements are needed to accommodate existing traffic. Additional improvements are needed based on the various options which have been considered.

- Add signage indicating the location where the carpool lane is to begin and make sure parents move up to this point before entering the traffic flow after their children are dropped off in the Morning Peak Hour.
- Add crossing guard at mid-block crossing currently controlled by activated flashing beacon on Lovers Lane to coordinate with the traffic signal at Dickens Avenue.
- Children/parents should only cross in groups to avoid unnecessary delays to Lovers Lane traffic especially westbound Lovers traffic. The school crossing signal would be turned on and off by the crossing guard during school times to allow the crossing guard to monitor and control traffic on Lovers Lane and traffic entering and exiting the parking garage.
- School crossing guards are not permitted to direct traffic in University Park. It would be recommended to change this to permit them to direct traffic because this may clear up some traffic congestion caused by the all way stop control at some of the intersections.

Observations/Calculations

- The queue calculation for a future projection of 770 students indicates that there will be adequate queue spaces available for all students to discharge at one time in the afternoon period beginning at 3:15 PM.
- The parking provided in the parking garage (85 parking spaces) is more than adequate to accommodate the parking requirements (60 parking spaces).
- Additional parking is also available alongside Lovers Lane adjacent to the school (38 spaces) and adjacent to Curtis Park (43 parking spaces).
- Reducing the queue lane by one foot to increase the width of sidewalk by one foot (11.4 to 10.4 feet) along the north side of the school on Amherst Avenue does not affect vehicular traffic in the queue lane.

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INTRODUCTION

The purpose of conducting this Traffic Impact Analysis (TIA) was to assess existing conditions and evaluate renovation conditions including the construction of an underground parking garage with an entrance/exit to Lovers Lane for the University Park Elementary School (UPES).

- Existing – 2017
- Complete Reconstruction – 2018

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 school is predominately surrounded by single family detached housing units, with Curtis Park and Holmes Aquatic Center to the south along Lovers Lane.

STREETS

Lovers Lane is a two-lane divided arterial with a posted speed limit of 30 mph with a school speed zone with flashing beacons which is signed at 20 mph between the hours of 7:15 AM to 8:30 AM and 2:30 PM to 4:00 PM. There is a mid-block crossing connecting the school entrance to parking from the park and aquatic center for pedestrians from areas south of the school. This crossing is pedestrian actuated (by pushbutton) with flashing beacons.

Thackery Street is a two-lane undivided roadway with curb and gutters. It runs in a north-south direction. There is school zone on Thackery Street which is signed at 20 mph between the times of 7:15 AM to 8:30 AM and 2:30 PM to 4:00 PM. This street is closed by cones and barricades during school hours between Lovers Lane and Amherst Avenue.

Amherst Avenue is a two-lane, undivided residential roadway collector with curb and gutters with eastbound one way traffic. There is school zone which is signed at 20 mph between the times of 7:15 AM to 8:30 AM and 2:30 PM to 4:00 PM. There is a four car loading zone along the school property and ample room for vehicles to travel in a moving lane adjacent to the car loading zone. There is additional parking along the north side of Amherst across from the school. Currently, the car loading lane is approximately 11.4 feet and the moving lane is approximately 11 feet in width. The intersection at Dickens Avenue is closed off and all traffic is forced to turn right.

Dickens Avenue is a north-south street on the east side of the school. Dickens Avenue is approximately 35 feet wide between Lovers Lane and Amherst Avenue. There is school zone on Dickens Avenue which is signed at 20 mph between the times of 7:15 to 8:30 AM and 2:30 to 4:00 PM. The school zone stretches from just south of Lovers Lane to just north of Amherst Avenue. The posted speed limit on Dickens Avenue is 30 mph.

Dickens Avenue is operated with the school crossing guards as a one way street (southbound) from Amherst Avenue to Lovers Lane. There is currently a curb loading lane on the west side along the school property that is not being utilized. Parking is permitted on the east side of the roadway and there approximately two additional lanes.

Hillcrest Avenue is a north-south street east of the school. Hillcrest Avenue is four lanes undivided between Lovers Lane and Amherst Avenue. There is a school speed zone from Lovers Lane to Amherst Avenue which is signed at 20 mph between the times of 7:15 to 8:30 AM and 2:30 to 4:00 PM. The posted speed limit on Hillcrest Avenue is 35 mph.

INTERSECTIONS

Lovers Lane at Dickens Avenue is signalized with protected left-turns on the Lovers Lane approaches with exclusive left-turn only lanes provided. Dickens Avenue is one way southbound during school hours and operates with a left-turn only lane, a through lane, and a right-turn only lane.

Thackery Street at Lovers Lane is un-signalized with stop control on the Thackery Street approach. Thackery Street is closed during the school hours with a sign and traffic cones.

Amherst Avenue at Thackery Street is an all-way stop controlled intersection with single lanes on each approach; however, the south approach is closed with cones with a sign that prohibits southbound left-turns.

Amherst Avenue at Dickens Avenue is an all-way stop controlled intersection. Traffic cones are placed by the crossing guard from the northwest corner to the southeast corner. These cones direct eastbound Amherst Avenue traffic to turn right and continue southbound on Dickens Avenue. Southbound Dickens traffic is directed to turn left onto Amherst Avenue then to Hillcrest Avenue.

Amherst Avenue at Turtle Creek Blvd is an all-way stop controlled intersection with single lanes on each approach.

Amherst Avenue at Hillcrest Avenue is a two-way stop controlled intersection with Amherst Avenue being controlled by stop signs.

UPES Parking garage entrance/exit at Lovers Lane will be channelized with only right-turns in and right-turns out permitted. The entrance/exit will be located west of the current Lovers Lane Crosswalk which is controlled by a Flashing Yellow Beacon Sign.

Pedestrian Crossing of Lovers Lane includes a Flashing Yellow Sign activated by pedestrian push buttons that warns east and west traffic of crossing pedestrians.

See **Figure 1** for an aerial photograph of the area. Existing traffic volumes were collected on Tuesday, January 18, 2017. **Figure 2** provides a summary of the existing volumes at the study intersections.

PARKING

Currently the school has approximately 44 teacher parking spaces and three ADA parking spaces. These parking spaces are in the form of angle parking adjacent to the school along Lovers Lane. These parking spaces are difficult to exit due to traffic on Lovers Lane.

The parking garage would allow parking spaces for 85 vehicles. An additional 38 spaces will be available along Lovers Lane.

The "Site Data Summary Table" on the site layout indicates that 47 parking spaces are required for teachers and classrooms and 60 parking spaces would be required for the auditorium.

The number of parking spaces required would be the higher number of parking spaces required for either the classroom or auditorium parking requirements. Since 60 parking spaces are required for the auditorium, 60 parking spaces are required. See **Table 1** for a summary of this data.

Table 1. Parking Analysis Summary

Condition	On-street	Garage	Total
Existing	47*	-	47
Required	-	-	60
Proposed	38*	85	123

* On-street parking located along the north side of Lovers Lane

Note, there are an additional 43 existing parking spaces along the south side of Lovers Lane which will remain. These parking spaces provide a dual use in serving Curtis Park and UPES. These parking spaces are not included in the above analysis.

PARENTS DROP-OFF/PICK-UP PROGRAM

There are existing drop-off and pick-up operations at the school. Those operations are described below.

General Information

- Crossing guards are present at the following intersections
 - o Dickens Avenue and Amherst Avenue
 - o Dickens Avenue and Lovers Lane
 - o Amherst Avenue and Thackery Street

Morning Drop-off Operations

- Carpoolers are asked to only enter the carpool queue lane from Amherst Avenue during peak carpool times. More specifically, vehicles are to enter from the intersection of Amherst Avenue at Turtle Creek Boulevard.
- Carpoolers are requested move up to the end of the queue lane for the Morning Peak Hour carpool.
- After unloading at the rear of the school, vehicles are funneled south along Dickens Avenue to the intersection of Dickens Avenue and Lovers Lane.

There are other written instructions which address the proper method of using the carpool queue lanes and using marked crosswalks.

Afternoon Pick-up Operations

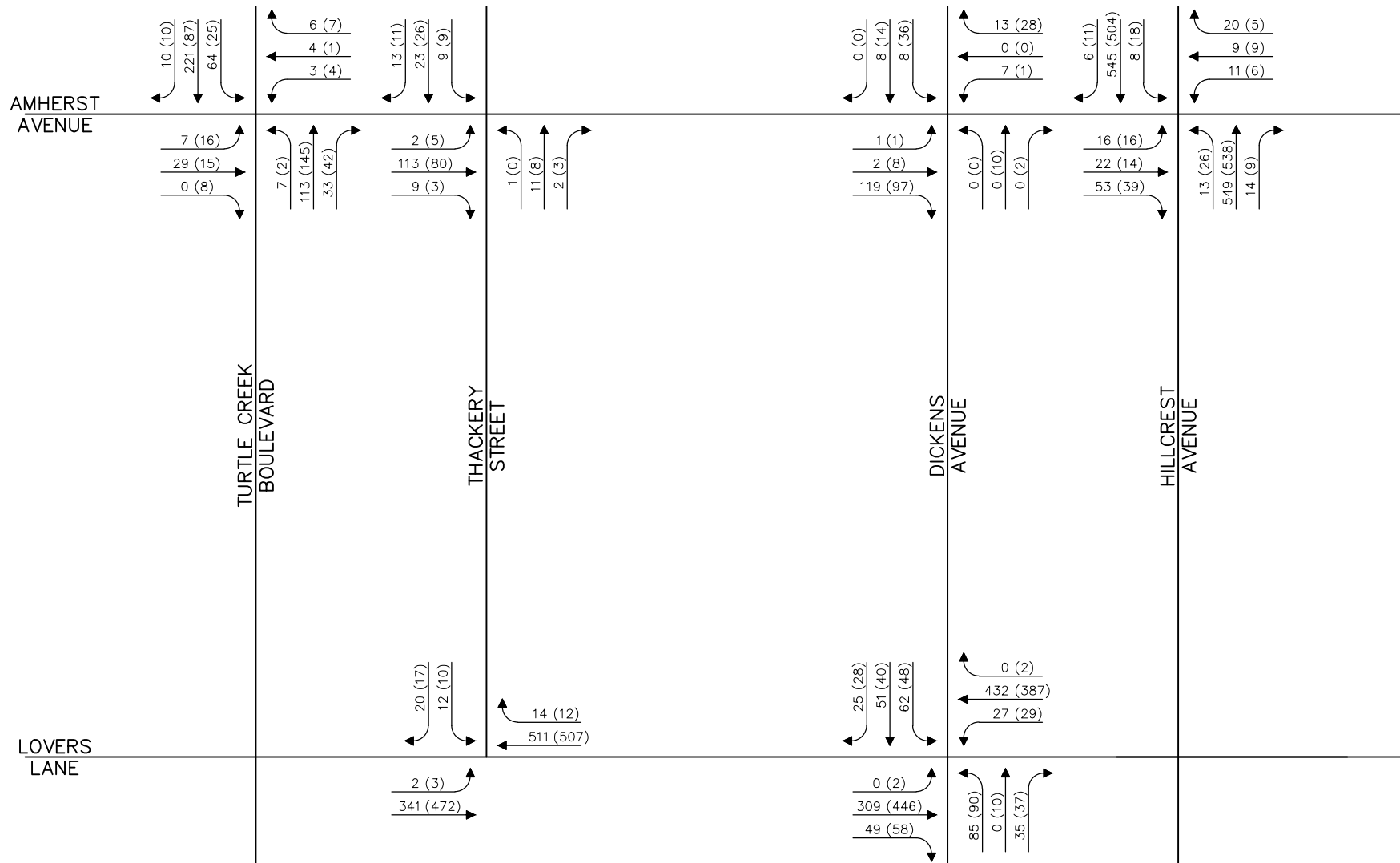
The same carpool entry and exit paths utilized in the Morning Peak Hour are utilized in the Afternoon Peak Hour. Teachers utilize bull horns to call out students names when their parents arrive. Each car had (or is directed to have) a placard indicating the child and the child's teacher.

Currently, all students are released at 3:15 PM. After the school is reopened, it is planned to continue the single release of all students at 3:15 PM.



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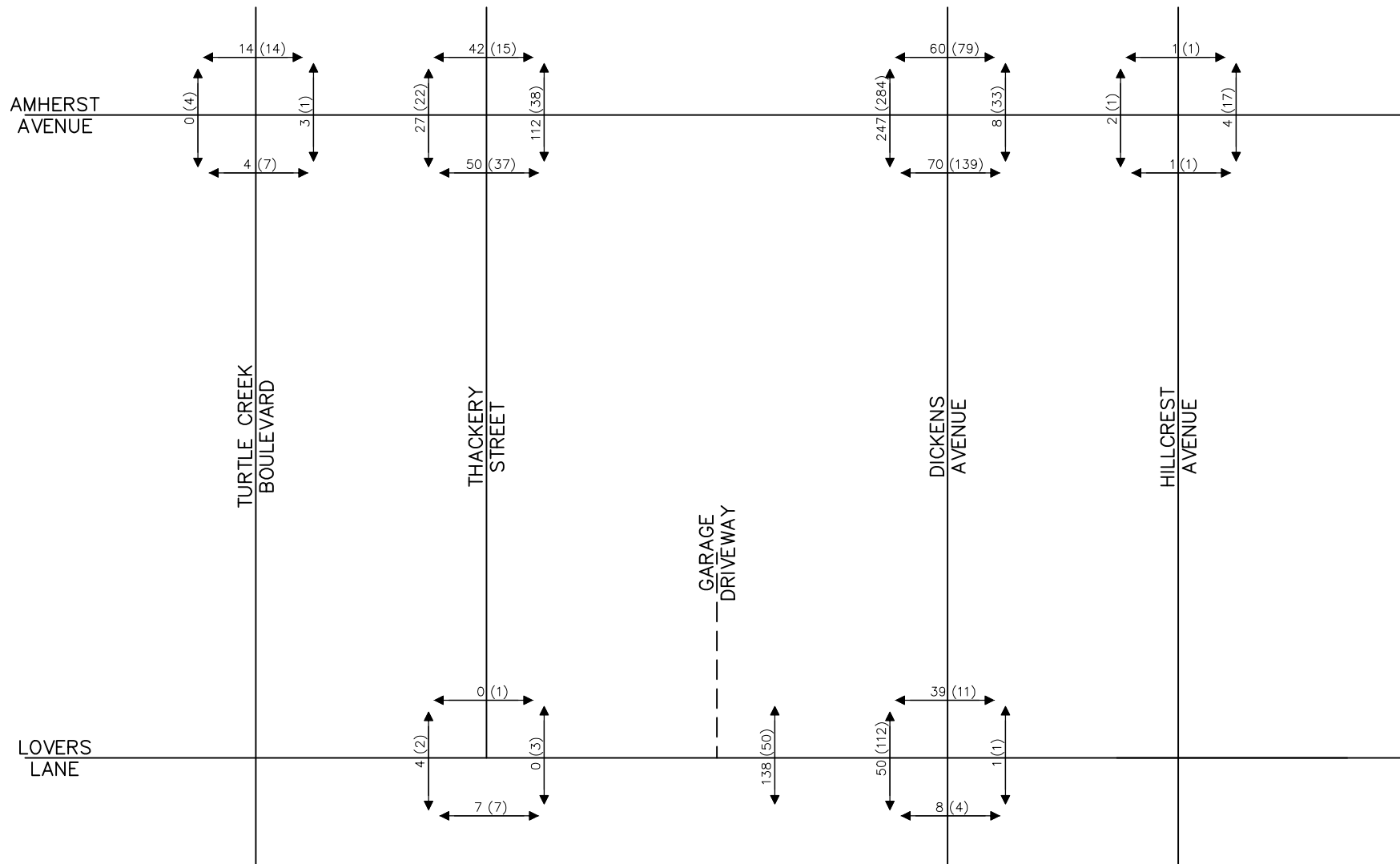
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LEGEND
XXX MORNING PEAK HOUR
(XXX) AFTERNOON PEAK HOUR

UNIVERSITY PARK ELEMENTARY SCHOOL TIA PEAK HOUR VOLUMES - EXISTING (2017)	
Scale: N/A	Date: JANUARY 2017
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*NOTE: VALUES SHOWN ARE THE ADDITION OF
PEDESTRIAN VOLUMES AND BICYCLE VOLUMES

LEGEND	
XXX	MORNING PEAK HOUR
(XXX)	AFTERNOON PEAK HOUR

UNIVERSITY PARK ELEMENTARY SCHOOL TIA PEAK HOUR PEDESTRIAN AND BICYCLE VOLUMES - EXISTING (2017)

Scale:	N/A	Date:	JANUARY 2017
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TRIP GENERATION

Part of analyzing the future growth is estimating vehicle trip ends to and from the school. These trip ends would be for teachers and volunteers that enter and exit the proposed underground parking garage with an exit/entrance on Lovers Lane. Since 85 parking spaces are available, this would represent the number of cars entering and exiting the site since there will be little carpooling. For the purpose of analysis, we used 100 vehicles entering and exiting the parking garage to account for the potential of additional students.

TRIP DISTRIBUTION

These trips entering and leaving the underground parking garage would be distributed by direction. All traffic would enter the parking garage by turning right into the parking garage in the westbound direction. In the afternoon, all traffic would exit the parking garage by turning right out of the parking garage. It is estimated that 70 % would travel to and from the east and 30 % would travel to and from the south.

Since these trips to and from the parking garage are teachers and volunteers, this turning traffic should not occur during the morning and afternoon drop-off/pick-up periods.

PROJECTED TRAFFIC VOLUMES

SITE TRAFFIC VOLUMES

For this study, “site volumes” represent the traffic expected to be generated by a teacher and volunteer parking garage. **Figure 3** has been prepared to depict the “site volumes” that are anticipated to be distributed to and from the school during the Morning and Afternoon Peak Hours for the proposed parking garage.

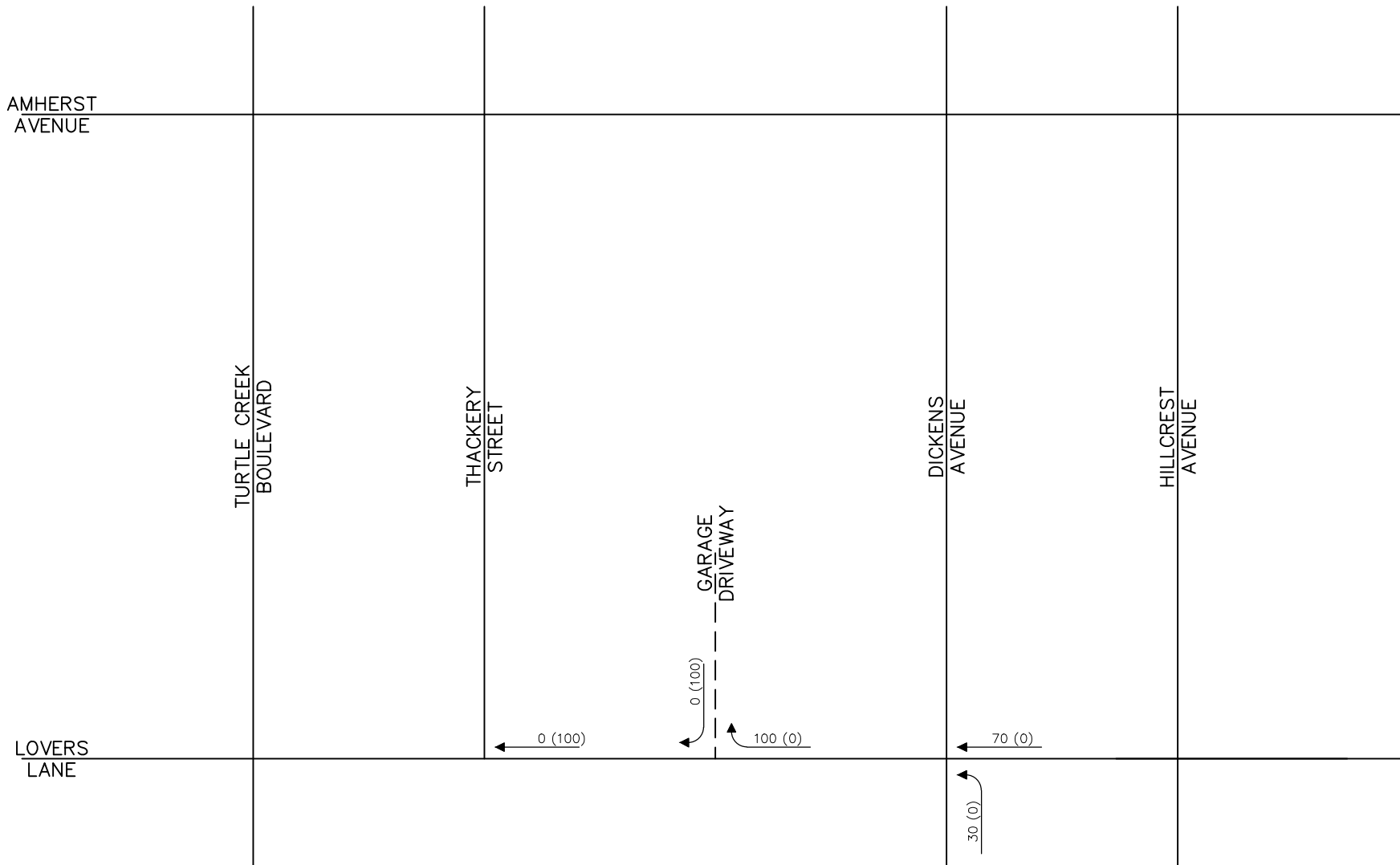
BACKGROUND TRAFFIC VOLUMES

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. **Figure 4** has been prepared to depict the “background volumes” that are anticipated to occur along the streets and roadways in the study area in 2018.

The background volumes in **Figure 4** reflect the current year 2017 volumes extrapolated to the year 2018 by applying an annual growth factor of 1.0%. This reflects the reality that the cities of University Park and Highland Park are completely built out with little room for additional major traffic generators. There would be infill construction (basically removing and replacing residential or multi-family housing). Widening of streets serving the two cities is not expected to occur due to the expected cost of additional Right of Way so additional traffic volumes in the area would use other roadway facilities.

TOTAL TRAFFIC VOLUMES

Figure 5 has been prepared to depict the “total volumes” anticipated to occur along the streets and roadways within the study area for the year 2018. The total volumes depicted include the parking garage generated volumes and the background volumes.



LEGEND
XXX MORNING PEAK HOUR
(XXX) AFTERNOON PEAK HOUR

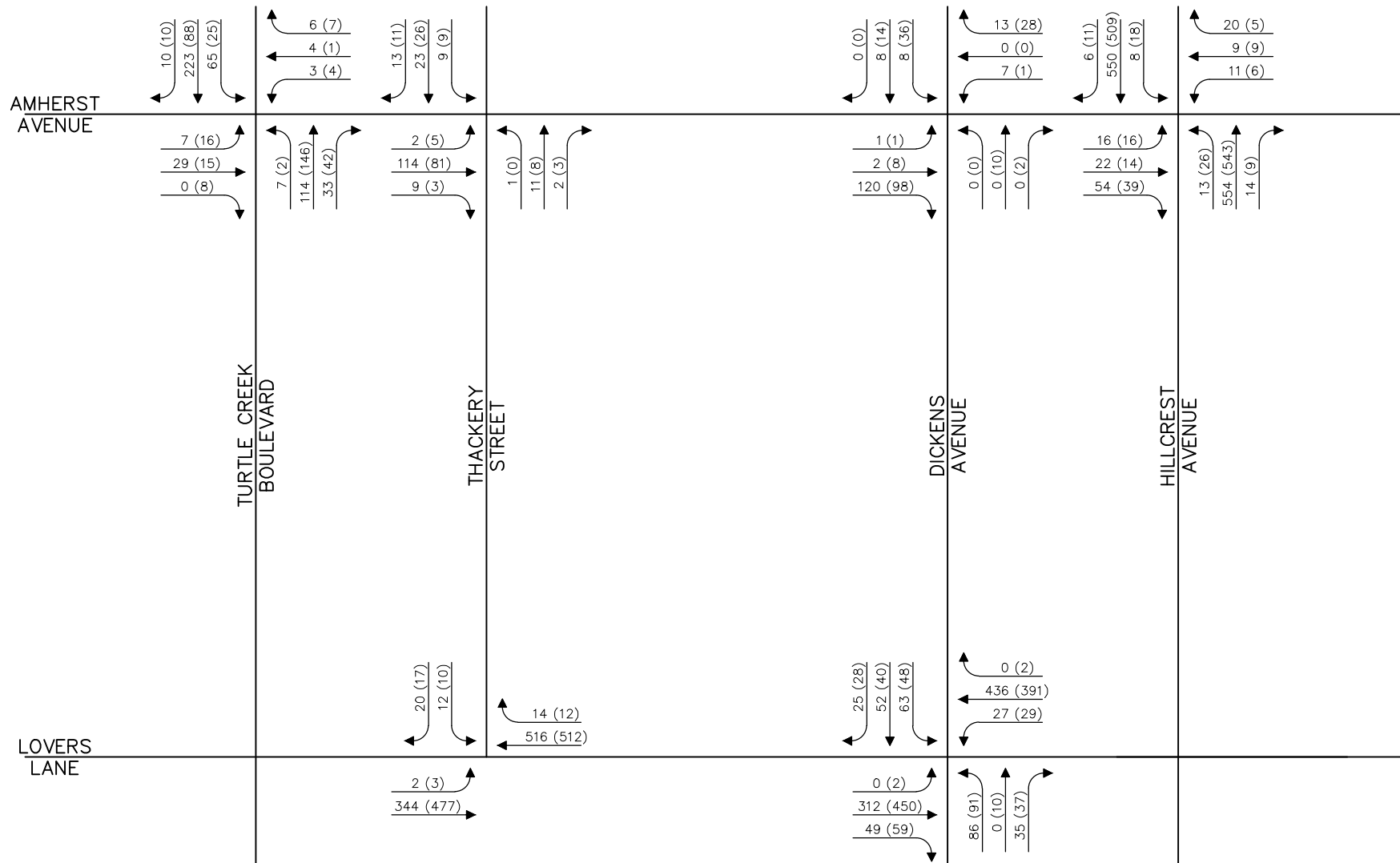
UNIVERSITY PARK ELEMENTARY SCHOOL TIA PEAK HOUR VOLUMES - SITE GENERATED GARAGE	
Scale: N/A	Date: JANUARY 2017
Job No.: BC170XX	Dwg. File: FIGURE 4

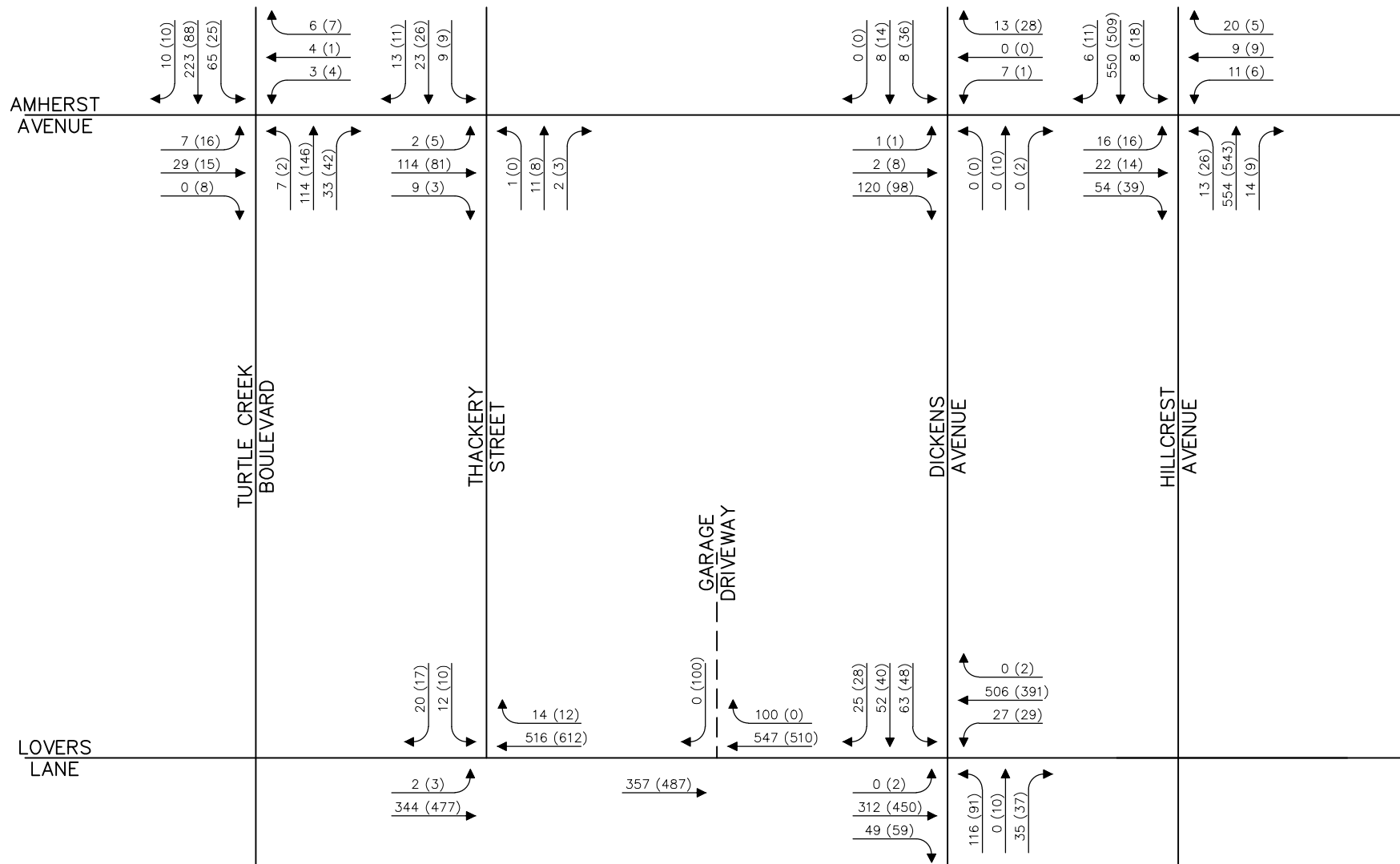


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INTERSECTION CAPACITY ANALYSIS

Level of Service (LOS) analyses of the traffic operations were performed at the existing signalized and un-signalized intersections. Analyses of the signalized and un-signalized intersections were conducted utilizing the SYNCHRO software which was developed by the Trafficware Corporation. The results of the capacity analyses for the signalized and un-signalized intersections with the resulting delay and levels of service values are summarized by approach in following tables as follows:

- **Table 2.** Morning Peak Hour Level of Service
- **Table 3.** Afternoon Peak Hour Level of Service

Copies of the SYNCHRO computer printouts as well as a description of the various levels of service have been included in the Appendix. Typically the desirable levels of service are "A" through "D" with "E" and "F" being undesirable. Existing signal timings were utilized for the existing and proposed signalized intersections.

Note: The Morning and Afternoon Peak Hours use the traffic volumes during the actual time periods when school is opening and ending and not necessarily the actual peak hours on the adjacent streets.

EXISTING – 2017

The analysis showed that the existing signalized intersection and stop controlled approaches are anticipated to operate at LOS D or better in the Morning and Afternoon Peak Hours on the adjacent streets.

FULL BUILD – 2018

In Full Build 2018, all signalized intersections and stop controlled approaches are anticipated to operate at LOS D or better in the Morning and Afternoon Peak Hours.

Note, it was assumed that access to the UPES garage on Lovers Lane would be impacted by the existing Lovers Lane crosswalk. Therefore, the entry/exit to the garage was modeled as a signalized intersection. A signal is not required at this location; however, in order to achieve the report results a crossing guard at the mid-block crossing would be needed. The crossing guard would be required to group pedestrians and only cross them when the Dickens Avenue southbound movement is green. This would provide pedestrians approximately 25 seconds of crossing time ever 90 to 95 seconds while also allowing garage exiting traffic 25 seconds to exit the garage. Westbound entry into the garage would correspond to the eastbound-westbound green time of the Lovers Lane at Dickens Avenue signalized intersection.

Table 2. Morning Peak Hour Level of Service

Scenario	Eastbound			Westbound			Northbound			Southbound			INT
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT	
Lovers Lane at Dickens Avenue													
Existing 2017	B			B			D			C			B
	11.1			11.3			37.9			31.9			16.8
Background 2018	B			B			D			C			C
	18.1			16.1			38.2			26.6			20.6
Full Build 2018	B			B			D			C			C
	11.5			17.6			48.9			27.1			20.9
Lovers Lane at Thackery Street													
Existing 2017	A		-	-	A		-			C		-	
	0.1		-	-	0.0		-			15.9		-	
Background 2018	A		-	-	A		-			B		-	
	0.0		-	-	0.0		-			14.8		-	
Full Build 2018	A		-	-	A		-			B		-	
	0.0		-	-	0.0		-			14.8		-	
Amherst Avenue at Turtle Creek Boulevard													
Existing 2017	A			A			A			A			-
	8.4			7.9			8.3			9.8			-
Background 2018	A			A			A			A			-
	8.4			7.9			8.3			9.8			-
Amherst Avenue at Thackery Street													
Existing 2017	A			-			A			A			-
	7.7			-			7.3			7.4			-
Background 2018	A			-			A			A			-
	7.8			-			7.3			7.4			-
Amherst Avenue at Dickens Avenue													
Existing 2017	A			A			A			A			-
	6.9			6.8			0.0			7.4			-
Background 2018	A			A			A			A			-
	6.9			6.8			0.0			7.4			-
Amherst Avenue at Hillcrest Avenue													
Existing 2017	C			C			A			A			-
	21.8			21.0			0.3			0.2			-
Background 2018	C			C			A			A			-
	22.0			21.2			0.3			0.2			-
Lovers Lane at Garage Driveway													
Full Build 2018	A		-	-	A		-			-		A	A
	4.1		-	-	3.5		-			-		0.0	3.7

Note: Letters are level of service, numbers are average seconds of delay per vehicle.

Table 3. Afternoon Peak Hour Level of Service

Scenario	Eastbound			Westbound			Northbound			Southbound			INT
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT	
Lovers Lane at Dickens Avenue													
Existing 2017	B			A			F			C			C
	11.3			8.4			90.1			28.1			21.1
Background 2018	B			A			E			C			B
	11.4			8.4			63.0			28.2			18.0
Full Build 2018	A			A			E			C			B
	6.2			8.4			63.0			28.2			15.7
Lovers Lane at Thackery Street													
Existing 2017	A		-	-	A		-			C		-	
	0.1		-	-	0.0		-			15.7		-	
Background 2018	A		-	-	A		-			C		-	
	0.1		-	-	0.0		-			15.8		-	
Full Build 2018	A		-	-	A		-			C		-	
	0.1		-	-	0.0		-			19.8		-	
Amherst Avenue at Turtle Creek Boulevard													
Existing 2017	A			A			A			A			-
	7.9			7.5			8.3			8.0			-
Background 2018	A			A			A			A			-
	7.9			7.5			8.3			8.0			-
Amherst Avenue at Thackery Street													
Existing 2017	A			-			A			A			-
	7.5			-			7.1			7.3			-
Background 2018	A			-			A			A			-
	7.5			-			7.1			7.3			-
Amherst Avenue at Dickens Avenue													
Existing 2017	A			A			A			A			-
	7.0			6.7			7.2			7.7			-
Background 2018	A			A			A			A			-
	7.0			6.7			7.2			7.7			-
Amherst Avenue at Hillcrest Avenue													
Existing 2017	C			C			A			A			-
	20.4			24.6			0.6			0.4			-
Background 2018	C			D			A			A			-
	20.7			25.1			0.6			0.4			-
Lovers Lane at Garage Driveway													
Full Build 2018	A		-	-	A		-			-		A	A
	4.6		-	-	4.3		-			-		0.8	4.1

Note: Letters are level of service, numbers are average seconds of delay per vehicle.

QUEUE CALCULATIONS

The afternoon pick-up operations create the largest queues around the campus. Utilizing a queue estimator developed by the North Carolina Department of Transportation estimates were made about the existing and future queues associated with the enrollment and pick-up times for University Park Elementary School. See **Table 4** for a summary of those estimates.

There are currently approximately 700 children attending University Park Elementary School with up to 770 potentially attending after reconstruction. Seven hundred and seventy (770) students are used to determine the approximate maximum queues for the afternoon period loading of vehicles in the carpool/queue lanes.

Table 4. Minimum Queue Length Calculations

Grades & Release Times	Number of Students	Total Vehicles	Calculated Minimum Queue Length (ft.) *	Existing Observed Queue Length (ft.)
Current Student Discharge (1 periods)				
All grades (3:15 PM)	770	126	1272	-

*School Traffic Calculator form North Carolina State University

There is approximately 700 feet of queue space along Amherst Avenue between Dickens Drive and Thackery Street. This is provided by a proposed 10.4 foot wide drop-off lane adjacent to UPES. There is approximately 550 feet on Amherst Avenue between Thackery Street and Turtle Creek Boulevard. Traffic would queue in the eastbound travel lane of Amherst Avenue in this area. These two areas combine would provide approximately 1,250 feet of queue space which should be adequate.

Additional parking queue is also available for some parking on Amherst Avenue east of Dickens Avenue where parents have been observed to drop off their children to use the crosswalk at Amherst Avenue and Dickens Avenue.

The 10.4 foot wide drop-off lane adjacent to UPES is more than adequate. The typical width of a passenger car/light truck is 6.5 feet and a car/light truck is typically allowed to stop or stand within 18" of the curb. This reflects the eight (8) standard parking space width required for cars parked on city streets.

Therefore reducing the current queue lane by one foot does not affect vehicular traffic in the queue lane.

SUMMARY OF FINDINGS

The traffic impact analysis results are summarized in the following paragraph.

INTERSECTION CAPACITY ANALYSIS FINDINGS

The analysis of the Existing 2017 and Full Build 2018 conditions (traffic controls and lane configurations), indicated that the overall intersection Level of Service was acceptable for all of the study intersections.

RECOMMENDATIONS

Based on the results of the analyses and evaluations conducted as part of this traffic impact analysis, the following recommendations are provided. These improvements are needed to accommodate existing traffic. Additional improvements are needed based on the various options which have been considered.

- Add signage indicating the location where the carpool lane is to begin and make sure parents move up to this point before entering the traffic flow after their children are dropped off in the Morning Peak Hour.
- Add crossing guard at mid-block crossing controlled by activated flashing beacon on Lovers Lane to coordinate crossing with the traffic signal at Dickens Avenue.
- Children/parents should only cross in groups to avoid unnecessary delays to Lovers Lane traffic especially westbound Lovers traffic. The school crossing signal would be turned on and off by the crossing guard during school times to allow the crossing guard to monitor and control traffic on Lovers Lane and traffic entering and exiting the parking garage.
- School crossing guards are not permitted to direct traffic in University Park. It would be recommended to change this to permit them to direct traffic because this may clear up some traffic congestion caused by the all way stop control at some of the intersections.

The key difference between the existing conditions and the future conditions would be the construction of a parking garage to accommodate teacher and auditorium parking. This parking is currently occurring on the streets surrounding the school. This type of parking causes traffic flows that are more random and unpredictable.

CLOSING

We have appreciated the opportunity to assist you in the preparation of this traffic impact analysis for Highland Park ISD. Please do not hesitate to contact our office should you have any questions or comments concerning this report.

APPENDIX

School Layout	1Page
CARPOOL INSTRUCTIONS	3 Pages
TRAFFIC COUNT SHEETS	42 Pages
SYNCHRO SHEETS	
Existing – 2017	18 Pages
Background – 2018.....	18 Pages
Full Build – 2018	20 Pages
DESCRIPTION OF LEVELS OF SERVICE.....	1 Page



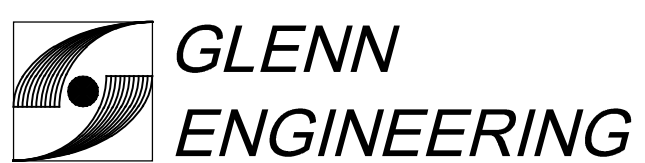
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Notes

Revision	By	Appd	YYYYMMDD
100% DD CHECK SET	RAH	CMG	2016.12.21
Issued	By	Appd	YYYYMMDD

Permit-Seal

THIS DOCUMENT IS RELEASED FOR THE PURPOSE OF INTERIM REVIEW UNDER THE AUTHORITY OF MIKE GLENN, P.E., 30505, ON December 21, 2016. IT IS NOT TO BE USED FOR CONSTRUCTION PURPOSES

Client/Project

Highland Park ISD

University Park ES Rebuild

3505 Amherst Ave
Dallas TX 75225

Title

OVERALL SITE PLAN

Project No.

214000361

Revision

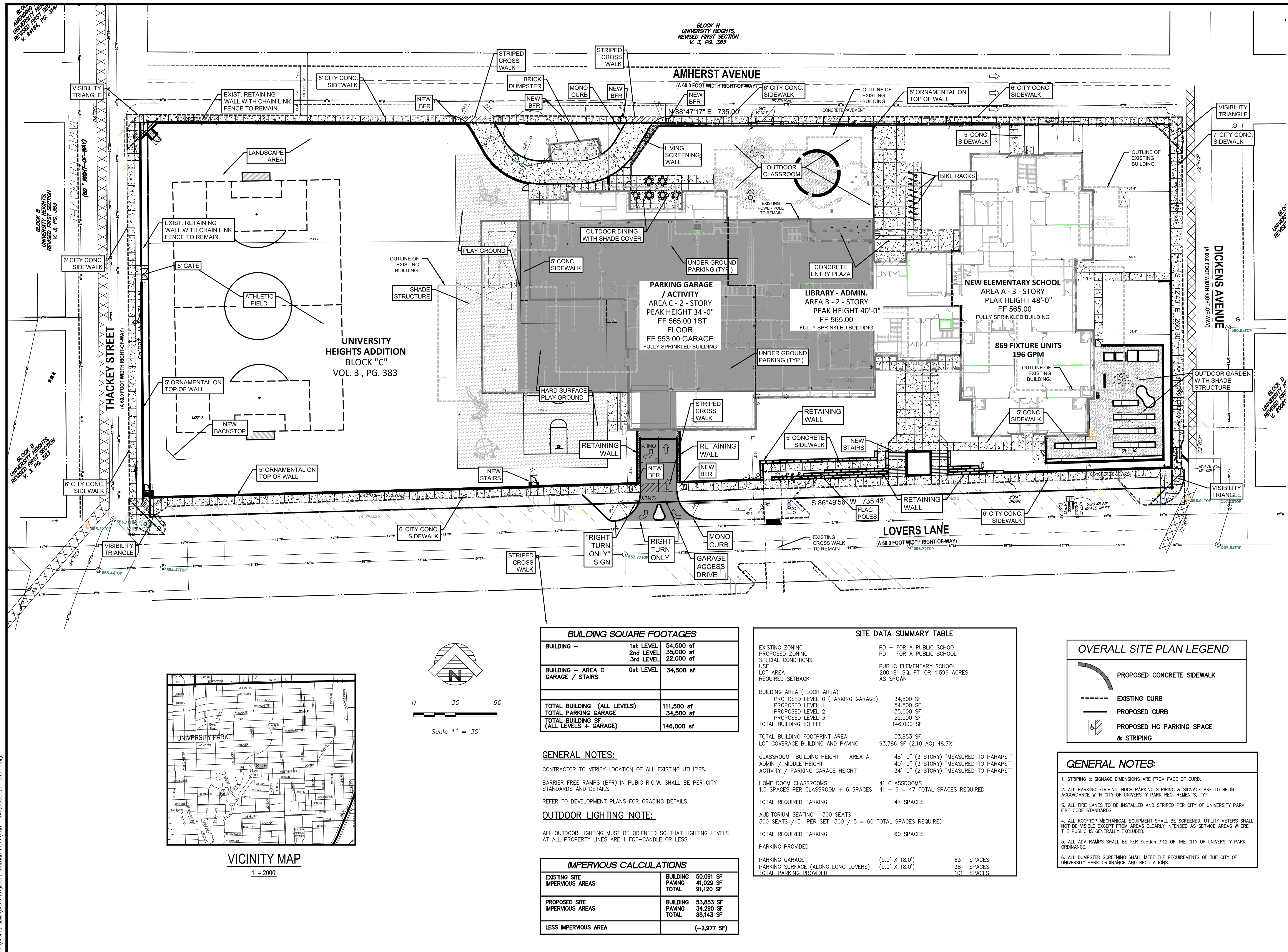
Drawing No.

Scale

AS SHOWN

Drawing No.

CS 1



Dec 21, 2016 - 11:26am User: Robert
C:\Users\Robert\Documents\Projects\University Park\UNIV PARK\BIDSET\UP ENG 4.dwg

NOTE: THE CITY OF UNIVERSITY PARK CONSTRUCTION STANDARDS APPLY, WHETHER INDICATED ON THESE PLANS OR NOT.

Amherst Carpool & Dismissal Instructions

All Grades 2014-2015

****For those parents or caregivers who walk to school or drive & park then walk up to pick up their children, please check page two for walker instructions.***

Please do not enter the building to pick up a child during regular carpool times.

This will enable the teacher to maintain an accurate count of their class during dismissal. This procedure also assists us in keeping the building secure.

*Thank you for your patience in this matter.**

In cases of inclement weather, carpool is always the best and safest bet for dismissing students. Walking up to pick up students in stormy weather is not advised.

Carpool is simple! Just follow these easy instructions!

PLACE YOUR CARPOOL SIGN IN THE DASH OF YOUR CAR WITH THE NAME OF EACH CHILD YOU ARE PICKING UP.

IN ORDER TO KEEP THE CARPOOL MOVING AS QUICKLY AS POSSIBLE, USE A SIGN EVEN IF YOU ONLY PICK UP ONE CHILD.

YOU WILL RECEIVE TWO OF THESE SIGNS IN YOUR FIRST DAY PACKET. (MORE AVAILABLE OUTSIDE THE ELEVATOR HALLWAY IF NEEDED)

1. Drive to your child's designated carpool location. **ENTER THE AMHERST CARPOOL LINE FROM AMHERST ONLY, THANKS FOR KEEPING OUR LINES SAFE AND MOVING AS QUICKLY AS POSSIBLE.** Remember the UP Police Department set up the traffic pattern and they take this very seriously. Their concern, as is ours, is safety of our children and our community.
2. **YIKES!** There should NEVER be any parking in the queue lanes. If you have to go into the building, park on Lovers Lane in front of the building and come on in!
3. Drive away! >>>>>> 

2:30 DISMISSAL: Kindergarten

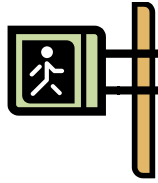
3:00 DISMISSAL: First and Second Grades

3:15 DISMISSAL: Third and Fourth Grades (do not arrive early for this carpool or you will have to circle around until the First & Second grade carpool is finished)

There is absolutely no pick up or drop off on Lovers.

****Attention all parents who have caregivers picking up children, please familiarize them with these procedures.****

Everyone working together will make carpool go smoothly! THANK YOU.



For parents or caregivers who walk to pick up children from school:

**Use the sidewalk from Dickens
(in between the custodial house and the new wing)
to the carpool holding area.**

**COME DOWN THE SIDEWALK AND THERE WILL BE A HOLDING AREA TO
WAIT UNTIL THE STUDENTS ARE BROUGHT OUTSIDE.**

(check the map for a visual)

**THIS IS THE ONLY ENTRANCE & EXIT
FOR PARENTS/CAREGIVERS TO USE WHEN
WALKING TO PICK UP and LEAVE WITH THEIR
STUDENT.**

**Once you pick up your student please exit back
through the sidewalk to Dickens.**

**Why? For safety reasons we limit the carpool exit &
sidewalk for students who have been called to be
placed in cars.**

ATTENTION MOMMIES, DADDIES, GRANNIES AND NANNIES!

WAITING FOR OTHER STUDENTS IN THE NEXT DISMISSAL TIME?

Once you pick up the first student, take the sidewalk back out towards Dickens and take a right on the grassy area to go around the new wing to the playground that is closest to the corner of Dickens and Lovers.

The picnic tables have been moved over to that location to offer additional seating along with the benches that were already in place around the playground.

You may wait here until the next carpool time and then walk back around to pick up your next student.

University Park School Carpool

AMHERST

Center Lane keeps moving....No double parking

Center lane keeps moving....No double parking

Pull up all the way....

4-Car Loading Zone

**Carpool
Exit
ONLY**

Waiting
Area for
Parents &
Caregivers
of walkers

Exit Door
for Carpool

Exit Door for
Carpool

Walker sidewalk

**Parent
Entrance**

Gym Door

FRONT OF SCHOOL

Playground to
use while
waiting

DICKENS

LOVERS LANE

8/13/14
9:55 AM

DO NOT ACCESS
CARPOOL FROM
THACKERY PER
POLICE

DO NOT ACCESS CARPOOL
FROM THACKERY PER
POLICE

GRAM Traffic NTX Inc.

1120 W. Lovers Lane

Arlington, Texas, United States 76013
817.265.8968

Count Name: 1 - LOVERS LN @
DICKENS AVE
Site Code:
Start Date: 01/18/2017
Page No: 1

Turning Movement Data

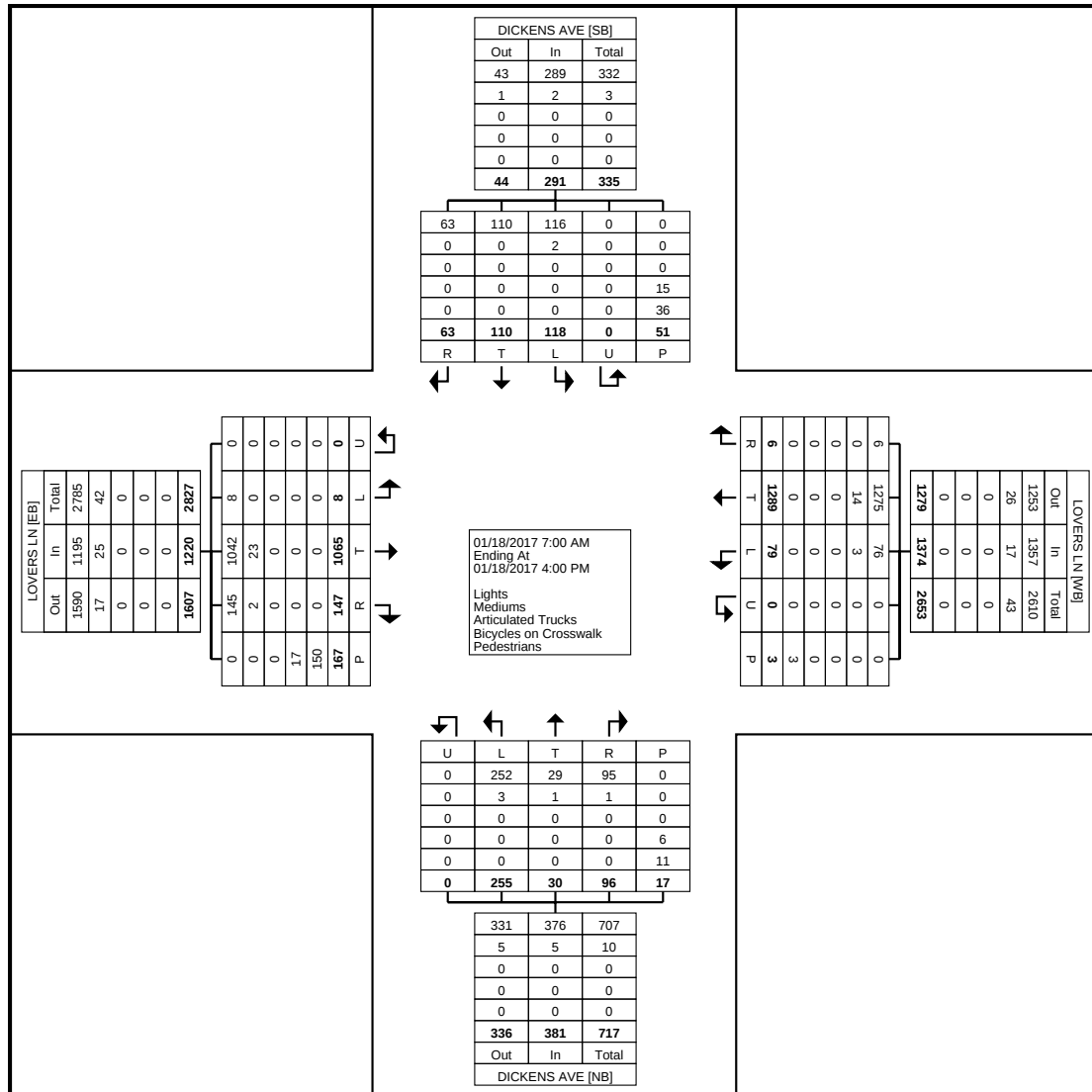
Start Time	DICKENS AVE Southbound						LOVERS LN Westbound						DICKENS AVE Northbound						LOVERS LN Eastbound						Int. Total
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	
7:00 AM	0	1	4	0	0	5	5	102	2	0	0	109	11	0	1	0	0	12	3	41	7	0	1	51	177
7:15 AM	3	5	2	0	0	10	4	149	0	0	0	153	16	0	3	0	1	19	0	58	7	0	2	65	247
7:30 AM	16	16	8	0	9	40	6	118	0	0	0	124	19	0	6	0	3	25	0	62	9	0	14	71	260
7:45 AM	33	21	9	0	30	63	6	83	0	0	0	89	32	0	3	0	4	35	0	78	14	0	32	92	279
Hourly Total	52	43	23	0	39	118	21	452	2	0	0	475	78	0	13	0	8	91	3	239	37	0	49	279	963
8:00 AM	9	8	4	0	0	21	8	94	0	0	0	102	21	0	15	0	1	36	0	81	19	0	4	100	259
8:15 AM	4	6	4	0	0	14	7	137	0	0	1	144	13	0	11	0	0	24	0	88	7	0	0	95	277
8:30 AM	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Hourly Total	13	14	8	0	0	35	15	232	0	0	1	247	34	0	26	0	1	60	0	169	26	0	4	195	537
2:30 PM	3	4	0	0	0	7	4	113	0	0	1	117	26	0	8	0	0	34	0	108	12	0	0	120	278
2:45 PM	1	0	1	0	1	2	9	100	0	0	0	109	21	0	8	0	0	29	0	114	9	0	2	123	263
Hourly Total	4	4	1	0	1	9	13	213	0	0	1	226	47	0	16	0	0	63	0	222	21	0	2	243	541
3:00 PM	9	8	6	0	1	23	10	111	0	0	0	121	29	0	13	0	1	42	1	110	13	0	75	124	310
3:15 PM	36	23	17	0	9	76	4	97	0	0	1	101	18	1	6	0	0	25	1	102	18	0	32	121	323
3:30 PM	2	9	4	0	0	15	6	79	2	0	0	87	22	9	10	0	3	41	0	120	18	0	3	138	281
3:45 PM	2	9	4	0	1	15	10	105	2	0	0	117	27	20	12	0	4	59	3	103	14	0	2	120	311
Hourly Total	49	49	31	0	11	129	30	392	4	0	1	426	96	30	41	0	8	167	5	435	63	0	112	503	1225
Grand Total	118	110	63	0	51	291	79	1289	6	0	3	1374	255	30	96	0	17	381	8	1065	147	0	167	1220	3266
Approach %	40.5	37.8	21.6	0.0	-	-	5.7	93.8	0.4	0.0	-	-	66.9	7.9	25.2	0.0	-	-	0.7	87.3	12.0	0.0	-	-	-
Total %	3.6	3.4	1.9	0.0	-	8.9	2.4	39.5	0.2	0.0	-	42.1	7.8	0.9	2.9	0.0	-	11.7	0.2	32.6	4.5	0.0	-	37.4	-
Lights	116	110	63	0	-	289	76	1275	6	0	-	1357	252	29	95	0	-	376	8	1042	145	0	-	1195	3217
% Lights	98.3	100.0	100.0	-	-	99.3	96.2	98.9	100.0	-	-	98.8	98.8	96.7	99.0	-	-	98.7	100.0	97.8	98.6	-	-	98.0	98.5
Mediums	2	0	0	0	-	2	3	14	0	0	-	17	3	1	1	0	-	5	0	23	2	0	-	25	49
% Mediums	1.7	0.0	0.0	-	-	0.7	3.8	1.1	0.0	-	-	1.2	1.2	3.3	1.0	-	-	1.3	0.0	2.2	1.4	-	-	2.0	1.5
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	0.0	-	-	0.0	0.0
Bicycles on Crosswalk	-	-	-	-	15	-	-	-	-	0	-	-	-	-	-	-	6	-	-	-	-	-	17	-	-
% Bicycles on Crosswalk	-	-	-	-	29.4	-	-	-	-	0.0	-	-	-	-	-	-	35.3	-	-	-	-	-	10.2	-	-
Pedestrians	-	-	-	-	36	-	-	-	-	3	-	-	-	-	-	-	11	-	-	-	-	-	150	-	-
% Pedestrians	-	-	-	-	70.6	-	-	-	-	100.0	-	-	-	-	-	-	64.7	-	-	-	-	-	89.8	-	-

GRAM Traffic NTX Inc.

1120 W. Lovers Lane

Arlington, Texas, United States 76013
817.265.8968

Count Name: 1 - LOVERS LN @
DICKENS AVE
Site Code:
Start Date: 01/18/2017
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: 1 - LOVERS LN @
DICKENS AVE
Site Code:
Start Date: 01/18/2017
Page No: 3

Turning Movement Peak Hour Data (7:30 AM)

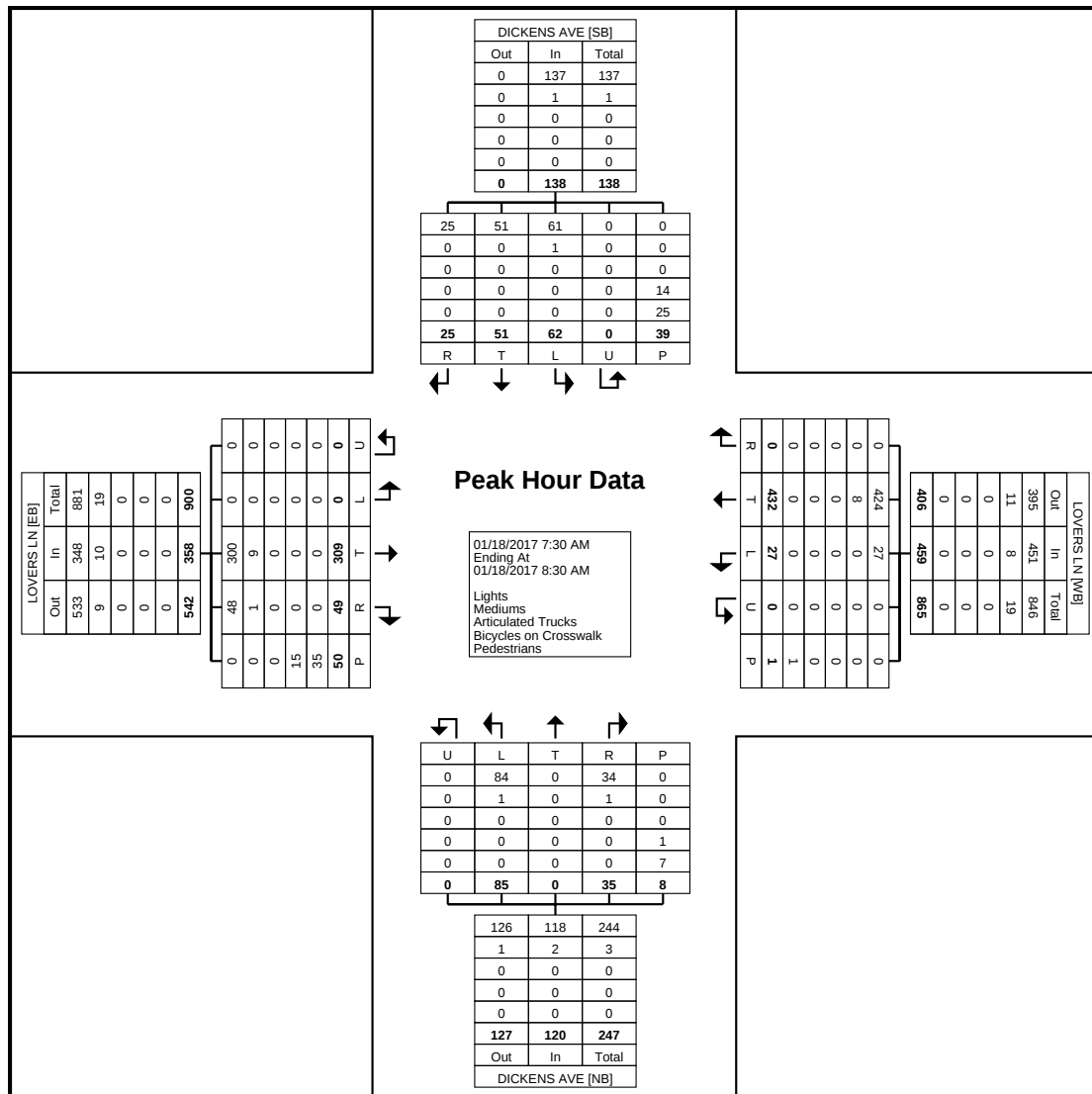
Start Time	DICKENS AVE Southbound						LOVERS LN Westbound						DICKENS AVE Northbound						LOVERS LN Eastbound						Int. Total
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	
7:30 AM	16	16	8	0	9	40	6	118	0	0	0	124	19	0	6	0	3	25	0	62	9	0	14	71	260
7:45 AM	33	21	9	0	30	63	6	83	0	0	0	89	32	0	3	0	4	35	0	78	14	0	32	92	279
8:00 AM	9	8	4	0	0	21	8	94	0	0	0	102	21	0	15	0	1	36	0	81	19	0	4	100	259
8:15 AM	4	6	4	0	0	14	7	137	0	0	1	144	13	0	11	0	0	24	0	88	7	0	0	95	277
Total	62	51	25	0	39	138	27	432	0	0	1	459	85	0	35	0	8	120	0	309	49	0	50	358	1075
Approach %	44.9	37.0	18.1	0.0	-	-	5.9	94.1	0.0	0.0	-	-	70.8	0.0	29.2	0.0	-	-	0.0	86.3	13.7	0.0	-	-	-
Total %	5.8	4.7	2.3	0.0	-	12.8	2.5	40.2	0.0	0.0	-	42.7	7.9	0.0	3.3	0.0	-	11.2	0.0	28.7	4.6	0.0	-	33.3	-
PHF	0.470	0.607	0.694	0.000	-	0.548	0.844	0.788	0.000	0.000	-	0.797	0.664	0.000	0.583	0.000	-	0.833	0.000	0.878	0.645	0.000	-	0.895	0.963
Lights	61	51	25	0	-	137	27	424	0	0	-	451	84	0	34	0	-	118	0	300	48	0	-	348	1054
% Lights	98.4	100.0	100.0	-	-	99.3	100.0	98.1	-	-	-	98.3	98.8	-	97.1	-	-	98.3	-	97.1	98.0	-	-	97.2	98.0
Mediums	1	0	0	0	-	1	0	8	0	0	-	8	1	0	1	0	-	2	0	9	1	0	-	10	21
% Mediums	1.6	0.0	0.0	-	-	0.7	0.0	1.9	-	-	-	1.7	1.2	-	2.9	-	-	1.7	-	2.9	2.0	-	-	2.8	2.0
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
Bicycles on Crosswalk	-	-	-	-	14	-	-	-	-	-	0	-	-	-	-	-	1	-	-	-	-	-	15	-	-
% Bicycles on Crosswalk	-	-	-	-	35.9	-	-	-	-	-	0.0	-	-	-	-	-	12.5	-	-	-	-	-	30.0	-	-
Pedestrians	-	-	-	-	25	-	-	-	-	-	1	-	-	-	-	-	7	-	-	-	-	-	35	-	-
% Pedestrians	-	-	-	-	64.1	-	-	-	-	-	100.0	-	-	-	-	-	87.5	-	-	-	-	-	70.0	-	-

GRAM Traffic NTX Inc.

1120 W. Lovers Lane

Arlington, Texas, United States 76013
817.265.8968

Count Name: 1 - LOVERS LN @
DICKENS AVE
Site Code:
Start Date: 01/18/2017
Page No: 4



GRAM Traffic NTX Inc.

1120 W. Lovers Lane

Arlington, Texas, United States 76013
817.265.8968

Count Name: 1 - LOVERS LN @
DICKENS AVE
Site Code:
Start Date: 01/18/2017
Page No: 5

Turning Movement Peak Hour Data (3:00 PM)

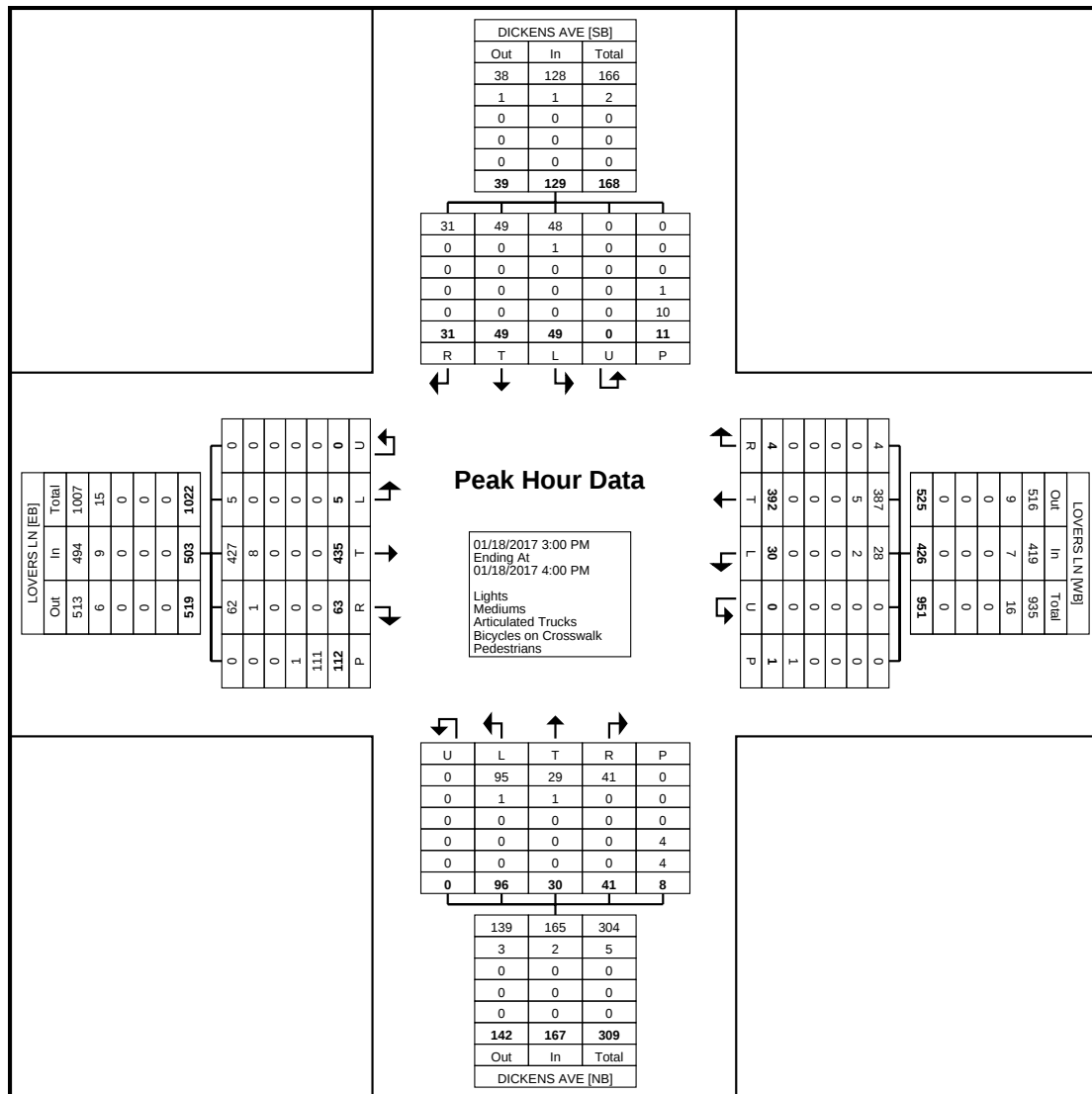
Start Time	DICKENS AVE Southbound						LOVERS LN Westbound						DICKENS AVE Northbound						LOVERS LN Eastbound						Int. Total
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	
3:00 PM	9	8	6	0	1	23	10	111	0	0	0	121	29	0	13	0	1	42	1	110	13	0	75	124	310
3:15 PM	36	23	17	0	9	76	4	97	0	0	1	101	18	1	6	0	0	25	1	102	18	0	32	121	323
3:30 PM	2	9	4	0	0	15	6	79	2	0	0	87	22	9	10	0	3	41	0	120	18	0	3	138	281
3:45 PM	2	9	4	0	1	15	10	105	2	0	0	117	27	20	12	0	4	59	3	103	14	0	2	120	311
Total	49	49	31	0	11	129	30	392	4	0	1	426	96	30	41	0	8	167	5	435	63	0	112	503	1225
Approach %	38.0	38.0	24.0	0.0	-	-	7.0	92.0	0.9	0.0	-	-	57.5	18.0	24.6	0.0	-	-	1.0	86.5	12.5	0.0	-	-	-
Total %	4.0	4.0	2.5	0.0	-	10.5	2.4	32.0	0.3	0.0	-	34.8	7.8	2.4	3.3	0.0	-	13.6	0.4	35.5	5.1	0.0	-	41.1	-
PHF	0.340	0.533	0.456	0.000	-	0.424	0.750	0.883	0.500	0.000	-	0.880	0.828	0.375	0.788	0.000	-	0.708	0.417	0.906	0.875	0.000	-	0.911	0.948
Lights	48	49	31	0	-	128	28	387	4	0	-	419	95	29	41	0	-	165	5	427	62	0	-	494	1206
% Lights	98.0	100.0	100.0	-	-	99.2	93.3	98.7	100.0	-	-	98.4	99.0	96.7	100.0	-	-	98.8	100.0	98.2	98.4	-	-	98.2	98.4
Mediums	1	0	0	0	-	1	2	5	0	0	-	7	1	1	0	0	-	2	0	8	1	0	-	9	19
% Mediums	2.0	0.0	0.0	-	-	0.8	6.7	1.3	0.0	-	-	1.6	1.0	3.3	0.0	-	-	1.2	0.0	1.8	1.6	-	-	1.8	1.6
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	0.0	-	-	0.0	0.0
Bicycles on Crosswalk	-	-	-	-	1	-	-	-	-	-	0	-	-	-	-	-	4	-	-	-	-	-	1	-	-
% Bicycles on Crosswalk	-	-	-	-	9.1	-	-	-	-	-	0.0	-	-	-	-	-	50.0	-	-	-	-	-	0.9	-	-
Pedestrians	-	-	-	-	10	-	-	-	-	-	1	-	-	-	-	-	4	-	-	-	-	-	111	-	-
% Pedestrians	-	-	-	-	90.9	-	-	-	-	-	100.0	-	-	-	-	-	50.0	-	-	-	-	-	99.1	-	-

GRAM Traffic NTX Inc.

1120 W. Lovers Lane

Arlington, Texas, United States 76013
817.265.8968

Count Name: 1 - LOVERS LN @
DICKENS AVE
Site Code:
Start Date: 01/18/2017
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: 1 - LOVERS LN @
DICKENS AVE
Site Code:
Start Date: 01/18/2017
Page No: 7

GRAM Traffic NTX Inc.

1120 W. Lovers Lane

Arlington, Texas, United States 76013
817.265.8968

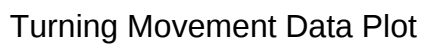
Count Name: 2 - LOVERS LN @
THACKERY ST
Site Code:
Start Date: 01/18/2017
Page No: 1

Turning Movement Data

Start Time	THACKERY ST Southbound						LOVERS LN Westbound						Northbound St. Northbound						LOVERS LN Eastbound						Int. Total
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	
7:00 AM	3	0	1	0	0	4	0	128	0	0	0	128	0	0	0	0	0	0	0	49	0	0	0	49	181
7:15 AM	1	0	1	0	0	2	0	136	0	0	0	136	0	0	0	0	1	0	0	67	0	0	1	67	205
7:30 AM	3	0	3	0	0	6	0	135	0	0	0	135	0	0	0	0	2	0	0	79	0	0	0	79	220
7:45 AM	3	0	12	0	0	15	0	112	0	0	0	112	0	0	0	0	2	0	1	91	0	0	1	92	219
Hourly Total	10	0	17	0	0	27	0	511	0	0	0	511	0	0	0	0	5	0	1	286	0	0	2	287	825
8:00 AM	4	0	3	0	0	7	0	127	5	0	0	132	0	0	0	0	2	0	0	81	0	0	2	81	220
8:15 AM	2	0	2	0	0	4	0	137	9	0	0	146	0	0	0	0	1	0	1	90	0	0	1	91	241
8:30 AM	0	0	0	0	0	0	0	2	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	2
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Hourly Total	6	0	5	0	0	11	0	266	14	0	0	280	0	0	0	0	3	0	1	171	0	0	3	172	463
2:30 PM	5	0	1	0	0	6	0	131	4	0	0	135	0	0	0	0	0	0	1	114	0	0	0	115	256
2:45 PM	1	0	1	0	0	2	0	120	0	0	0	120	0	0	0	0	0	0	0	115	0	0	0	115	237
Hourly Total	6	0	2	0	0	8	0	251	4	0	0	255	0	0	0	0	0	0	1	229	0	0	0	230	493
3:00 PM	2	0	4	0	1	6	0	152	1	0	0	153	0	0	0	0	0	0	0	120	0	0	0	120	279
3:15 PM	5	0	10	0	0	15	0	132	2	0	3	134	0	0	0	0	4	0	1	97	0	0	1	98	247
3:30 PM	2	0	2	0	0	4	0	103	9	0	0	112	0	0	0	0	3	0	2	140	0	0	1	142	258
3:45 PM	4	0	7	0	0	11	0	134	8	0	0	142	0	0	0	0	2	0	8	111	0	0	0	119	272
Hourly Total	13	0	23	0	1	36	0	521	20	0	3	541	0	0	0	0	9	0	11	468	0	0	2	479	1056
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1
Grand Total	35	0	47	0	1	82	0	1549	38	0	3	1587	0	0	0	0	17	0	14	1155	0	0	7	1169	2838
Approach %	42.7	0.0	57.3	0.0	-	-	0.0	97.6	2.4	0.0	-	-	NaN	NaN	NaN	NaN	-	-	1.2	98.8	0.0	0.0	-	-	-
Total %	1.2	0.0	1.7	0.0	-	2.9	0.0	54.6	1.3	0.0	-	55.9	0.0	0.0	0.0	0.0	-	0.0	0.5	40.7	0.0	0.0	-	41.2	-
Lights	33	0	47	0	-	80	0	1537	37	0	-	1574	0	0	0	0	-	0	14	1132	0	0	-	1146	2800
% Lights	94.3	-	100.0	-	-	97.6	-	99.2	97.4	-	-	99.2	-	-	-	-	-	-	100.0	98.0	-	-	-	98.0	98.7
Mediums	2	0	0	0	-	2	0	12	1	0	-	13	0	0	0	0	-	0	0	23	0	0	-	23	38
% Mediums	5.7	-	0.0	-	-	2.4	-	0.8	2.6	-	-	0.8	-	-	-	-	-	-	0.0	2.0	-	-	-	2.0	1.3
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
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	1	-	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-	-	-	-	5.9	-	-	-	-	-	0.0	-	-
Pedestrians	-	-	-	-	1	-	-	-	-	-	3	-	-	-	-	-	16	-	-	-	-	-	7	-	-
% Pedestrians	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	94.1	-	-	-	-	-	100.0	-	-

1120 W. Lovers Lane

Count Name: 2 - LOVERS LN @
THACKERY ST
Site Code:
Start Date: 01/18/2017
Page No: 2



GRAM Traffic NTX Inc.

1120 W. Lovers Lane

Arlington, Texas, United States 76013
817.265.8968

Count Name: 2 - LOVERS LN @
THACKERY ST
Site Code:
Start Date: 01/18/2017
Page No: 3

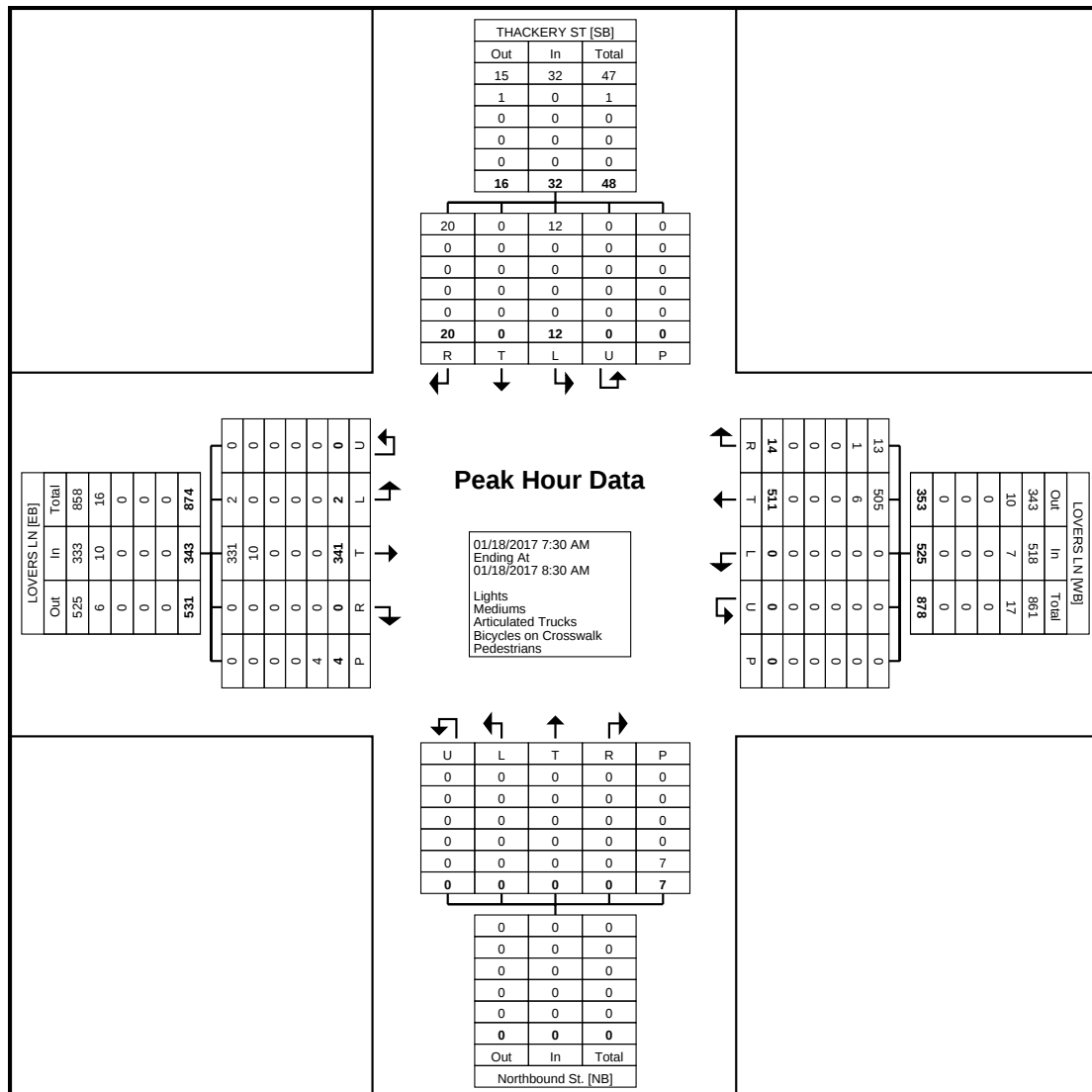
Turning Movement Peak Hour Data (7:30 AM)

Start Time	THACKERY ST Southbound						LOVERS LN Westbound						Northbound St. Northbound						LOVERS LN Eastbound						Int. Total
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	
7:30 AM	3	0	3	0	0	6	0	135	0	0	0	135	0	0	0	0	2	0	0	79	0	0	0	79	220
7:45 AM	3	0	12	0	0	15	0	112	0	0	0	112	0	0	0	0	2	0	1	91	0	0	1	92	219
8:00 AM	4	0	3	0	0	7	0	127	5	0	0	132	0	0	0	0	2	0	0	81	0	0	2	81	220
8:15 AM	2	0	2	0	0	4	0	137	9	0	0	146	0	0	0	0	1	0	1	90	0	0	1	91	241
Total	12	0	20	0	0	32	0	511	14	0	0	525	0	0	0	0	7	0	2	341	0	0	4	343	900
Approach %	37.5	0.0	62.5	0.0	-	-	0.0	97.3	2.7	0.0	-	-	NaN	NaN	NaN	NaN	-	-	0.6	99.4	0.0	0.0	-	-	-
Total %	1.3	0.0	2.2	0.0	-	3.6	0.0	56.8	1.6	0.0	-	58.3	0.0	0.0	0.0	0.0	-	0.0	0.2	37.9	0.0	0.0	-	38.1	-
PHF	0.750	0.000	0.417	0.000	-	0.533	0.000	0.932	0.389	0.000	-	0.899	0.000	0.000	0.000	0.000	-	0.000	0.500	0.937	0.000	0.000	-	0.932	0.934
Lights	12	0	20	0	-	32	0	505	13	0	-	518	0	0	0	0	-	0	2	331	0	0	-	333	883
% Lights	100.0	-	100.0	-	-	100.0	-	98.8	92.9	-	-	98.7	-	-	-	-	-	-	100.0	97.1	-	-	-	97.1	98.1
Mediums	0	0	0	0	-	0	0	6	1	0	-	7	0	0	0	0	-	0	0	10	0	0	-	10	17
% Mediums	0.0	-	0.0	-	-	0.0	-	1.2	7.1	-	-	1.3	-	-	-	-	-	-	0.0	2.9	-	-	-	2.9	1.9
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
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-
Pedestrians	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	7	-	-	-	-	-	4	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-

1120 W. Lovers Lane

Arlington, Texas, United States 76013
817.265.8968

Count Name: 2 - LOVERS LN @
THACKERY ST
Site Code:
Start Date: 01/18/2017
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Turning Movement Peak Hour Data Plot (7:30 AM)

GRAM Traffic NTX Inc.

1120 W. Lovers Lane

Arlington, Texas, United States 76013
817.265.8968

Count Name: 2 - LOVERS LN @
THACKERY ST
Site Code:
Start Date: 01/18/2017
Page No: 5

Turning Movement Peak Hour Data (3:00 PM)

Start Time	THACKERY ST Southbound						LOVERS LN Westbound						Northbound St. Northbound						LOVERS LN Eastbound						Int. Total
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	
3:00 PM	2	0	4	0	1	6	0	152	1	0	0	153	0	0	0	0	0	0	0	120	0	0	0	120	279
3:15 PM	5	0	10	0	0	15	0	132	2	0	3	134	0	0	0	0	4	0	1	97	0	0	1	98	247
3:30 PM	2	0	2	0	0	4	0	103	9	0	0	112	0	0	0	0	3	0	2	140	0	0	1	142	258
3:45 PM	4	0	7	0	0	11	0	134	8	0	0	142	0	0	0	0	2	0	8	111	0	0	0	119	272
Total	13	0	23	0	1	36	0	521	20	0	3	541	0	0	0	0	9	0	11	468	0	0	2	479	1056
Approach %	36.1	0.0	63.9	0.0	-	-	0.0	96.3	3.7	0.0	-	-	NaN	NaN	NaN	NaN	-	-	2.3	97.7	0.0	0.0	-	-	-
Total %	1.2	0.0	2.2	0.0	-	3.4	0.0	49.3	1.9	0.0	-	51.2	0.0	0.0	0.0	0.0	-	0.0	1.0	44.3	0.0	0.0	-	45.4	-
PHF	0.650	0.000	0.575	0.000	-	0.600	0.000	0.857	0.556	0.000	-	0.884	0.000	0.000	0.000	0.000	-	0.000	0.344	0.836	0.000	0.000	-	0.843	0.946
Lights	12	0	23	0	-	35	0	517	20	0	-	537	0	0	0	0	-	0	11	460	0	0	-	471	1043
% Lights	92.3	-	100.0	-	-	97.2	-	99.2	100.0	-	-	99.3	-	-	-	-	-	-	100.0	98.3	-	-	-	98.3	98.8
Mediums	1	0	0	0	-	1	0	4	0	0	-	4	0	0	0	0	-	0	0	8	0	0	-	8	13
% Mediums	7.7	-	0.0	-	-	2.8	-	0.8	0.0	-	-	0.7	-	-	-	-	-	-	0.0	1.7	-	-	-	1.7	1.2
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
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	1	-	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-	-	-	-	11.1	-	-	-	-	-	0.0	-	-
Pedestrians	-	-	-	-	1	-	-	-	-	-	3	-	-	-	-	-	8	-	-	-	-	-	2	-	-
% Pedestrians	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	88.9	-	-	-	-	-	100.0	-	-

1120 W. Lovers Lane

Count Name: 2 - LOVERS LN @
THACKERY ST
Site Code:
Start Date: 01/18/2017
Page No: 6



GRAM Traffic NTX Inc.

1120 W. Lovers Lane

Arlington, Texas, United States 76013
817.265.8968

Count Name: 2 - LOVERS LN @
THACKERY ST
Site Code:
Start Date: 01/18/2017
Page No: 7

GRAM Traffic NTX Inc.

1120 W. Lovers Lane

Arlington, Texas, United States 76013
817.265.8968

Count Name: 3 - AMHERST
AVE @ TURTLE CREEK BLVD
Site Code:
Start Date: 01/18/2017
Page No: 1

Turning Movement Data

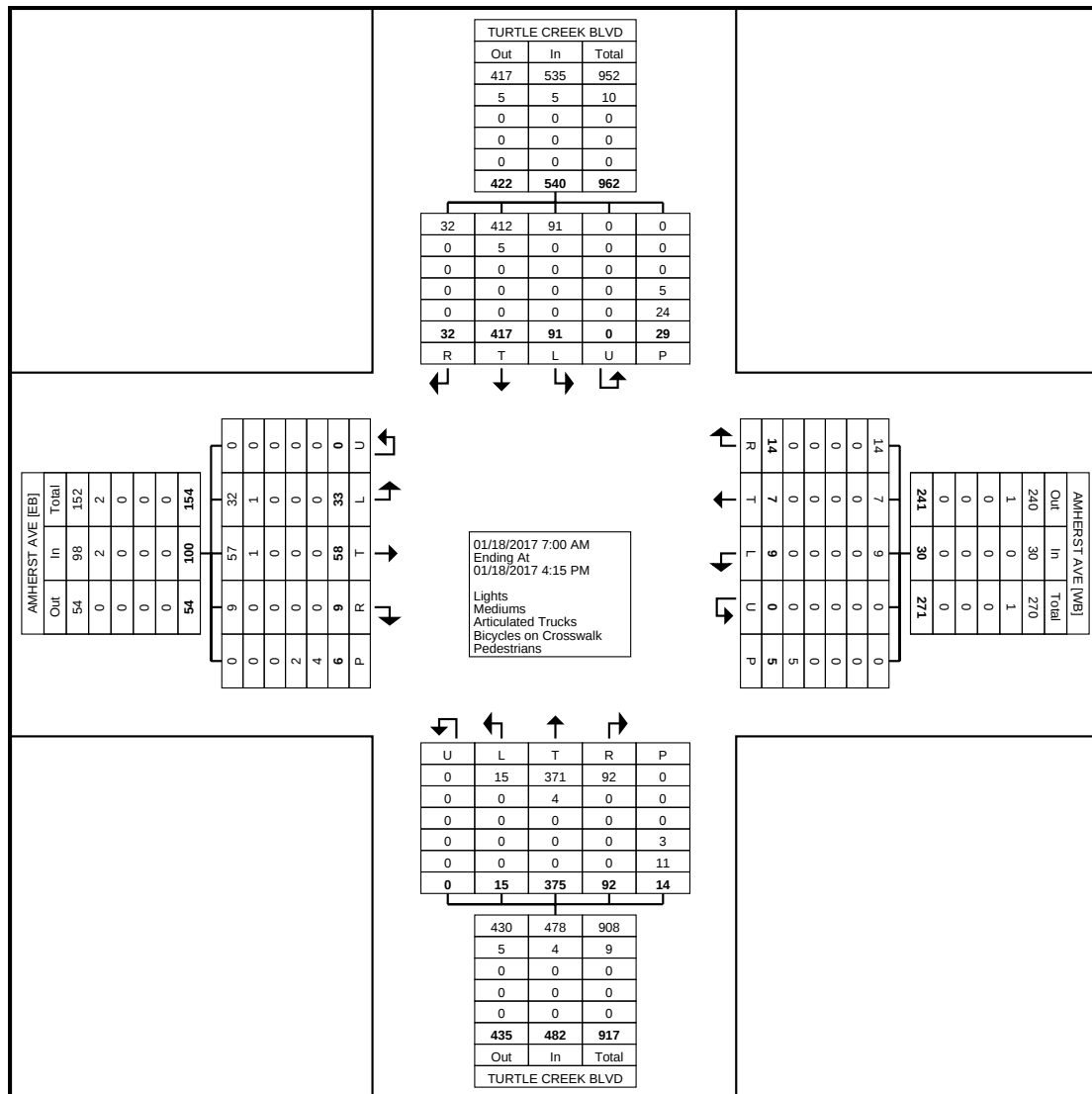
Start Time	TURTLE CREEK BLVD Southbound						AMHERST AVE Westbound						TURTLE CREEK BLVD Northbound						AMHERST AVE Eastbound						Int. Total
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	
7:00 AM	0	23	1	0	0	24	1	0	1	0	0	2	2	13	1	0	0	16	0	1	0	0	0	1	43
7:15 AM	2	43	8	0	1	53	0	2	0	0	0	2	1	13	8	0	3	22	0	5	0	0	2	5	82
7:30 AM	27	64	3	0	4	94	0	0	0	0	0	0	2	27	11	0	3	40	1	12	0	0	0	13	147
7:45 AM	36	76	4	0	3	116	0	4	1	0	2	5	1	31	21	0	0	53	3	15	0	0	0	18	192
Hourly Total	65	206	16	0	8	287	1	6	2	0	2	9	6	84	41	0	6	131	4	33	0	0	2	37	464
8:00 AM	1	45	1	0	5	47	1	0	3	0	1	4	3	37	0	0	1	40	0	1	0	0	0	1	92
8:15 AM	0	36	2	0	2	38	2	0	2	0	0	4	1	18	1	0	0	20	3	1	0	0	0	4	66
8:30 AM	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
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Hourly Total	1	81	3	0	7	85	3	0	5	0	1	8	4	55	1	0	1	60	3	2	0	0	0	5	158
2:30 PM	5	16	3	0	0	24	0	0	0	0	0	0	1	37	16	0	0	54	5	2	1	0	0	8	86
2:45 PM	10	17	4	0	0	31	2	0	0	0	1	2	1	31	15	0	0	47	4	4	2	0	0	10	90
Hourly Total	15	33	7	0	0	55	2	0	0	0	1	2	2	68	31	0	0	101	9	6	3	0	0	18	176
3:00 PM	6	23	0	0	3	29	0	0	1	0	0	1	0	28	6	0	1	34	2	4	2	0	0	8	72
3:15 PM	4	31	3	0	11	38	2	1	6	0	0	9	0	49	5	0	6	54	5	5	3	0	3	13	114
3:30 PM	0	18	1	0	0	19	0	0	0	0	0	0	2	43	4	0	0	49	6	3	0	0	1	9	77
3:45 PM	0	25	2	0	0	27	1	0	0	0	1	1	1	48	4	0	0	53	4	5	1	0	0	10	91
Hourly Total	10	97	6	0	14	113	3	1	7	0	1	11	3	168	19	0	7	190	17	17	6	0	4	40	354
4:00 PM	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
Grand Total	91	417	32	0	29	540	9	7	14	0	5	30	15	375	92	0	14	482	33	58	9	0	6	100	1152
Approach %	16.9	77.2	5.9	0.0	-	-	30.0	23.3	46.7	0.0	-	-	3.1	77.8	19.1	0.0	-	-	33.0	58.0	9.0	0.0	-	-	-
Total %	7.9	36.2	2.8	0.0	-	46.9	0.8	0.6	1.2	0.0	-	2.6	1.3	32.6	8.0	0.0	-	41.8	2.9	5.0	0.8	0.0	-	8.7	-
Lights	91	412	32	0	-	535	9	7	14	0	-	30	15	371	92	0	-	478	32	57	9	0	-	98	1141
% Lights	100.0	98.8	100.0	-	-	99.1	100.0	100.0	100.0	-	-	100.0	100.0	98.9	100.0	-	-	99.2	97.0	98.3	100.0	-	-	98.0	99.0
Mediums	0	5	0	0	-	5	0	0	0	0	-	0	0	4	0	0	-	4	1	1	0	0	-	2	11
% Mediums	0.0	1.2	0.0	-	-	0.9	0.0	0.0	0.0	-	-	0.0	0.0	1.1	0.0	-	-	0.8	3.0	1.7	0.0	-	-	2.0	1.0
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	0.0	-	-	0.0	0.0
Bicycles on Crosswalk	-	-	-	-	5	-	-	-	-	-	0	-	-	-	-	-	3	-	-	-	-	-	2	-	-
% Bicycles on Crosswalk	-	-	-	-	17.2	-	-	-	-	-	0.0	-	-	-	-	-	21.4	-	-	-	-	-	33.3	-	-
Pedestrians	-	-	-	-	24	-	-	-	-	-	5	-	-	-	-	-	11	-	-	-	-	-	4	-	-
% Pedestrians	-	-	-	-	82.8	-	-	-	-	-	100.0	-	-	-	-	-	78.6	-	-	-	-	-	66.7	-	-

GRAM Traffic NTX Inc.

1120 W. Lovers Lane

Arlington, Texas, United States 76013
817.265.8968

Count Name: 3 - AMHERST
AVE @ TURTLE CREEK BLVD
Site Code:
Start Date: 01/18/2017
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: 3 - AMHERST
AVE @ TURTLE CREEK BLVD
Site Code:
Start Date: 01/18/2017
Page No: 3

Turning Movement Peak Hour Data (7:15 AM)

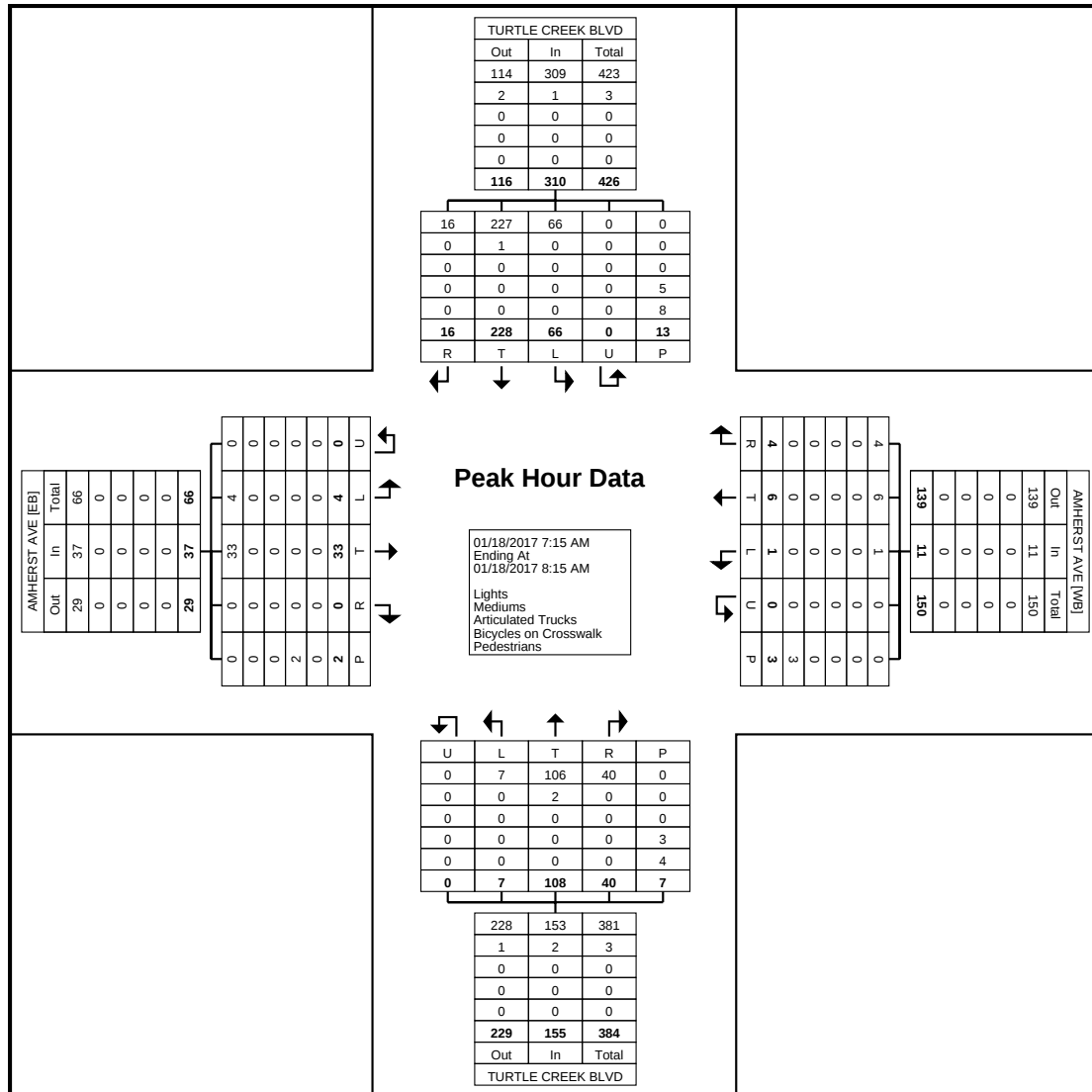
Start Time	TURTLE CREEK BLVD Southbound						AMHERST AVE Westbound						TURTLE CREEK BLVD Northbound						AMHERST AVE Eastbound						Int. Total
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	
7:15 AM	2	43	8	0	1	53	0	2	0	0	0	2	1	13	8	0	3	22	0	5	0	0	2	5	82
7:30 AM	27	64	3	0	4	94	0	0	0	0	0	0	2	27	11	0	3	40	1	12	0	0	0	13	147
7:45 AM	36	76	4	0	3	116	0	4	1	0	2	5	1	31	21	0	0	53	3	15	0	0	0	18	192
8:00 AM	1	45	1	0	5	47	1	0	3	0	1	4	3	37	0	0	1	40	0	1	0	0	0	1	92
Total	66	228	16	0	13	310	1	6	4	0	3	11	7	108	40	0	7	155	4	33	0	0	2	37	513
Approach %	21.3	73.5	5.2	0.0	-	-	9.1	54.5	36.4	0.0	-	-	4.5	69.7	25.8	0.0	-	-	10.8	89.2	0.0	0.0	-	-	-
Total %	12.9	44.4	3.1	0.0	-	60.4	0.2	1.2	0.8	0.0	-	2.1	1.4	21.1	7.8	0.0	-	30.2	0.8	6.4	0.0	0.0	-	7.2	-
PHF	0.458	0.750	0.500	0.000	-	0.668	0.250	0.375	0.333	0.000	-	0.550	0.583	0.730	0.476	0.000	-	0.731	0.333	0.550	0.000	0.000	-	0.514	0.668
Lights	66	227	16	0	-	309	1	6	4	0	-	11	7	106	40	0	-	153	4	33	0	0	-	37	510
% Lights	100.0	99.6	100.0	-	-	99.7	100.0	100.0	100.0	-	-	100.0	100.0	98.1	100.0	-	-	98.7	100.0	100.0	-	-	-	100.0	99.4
Mediums	0	1	0	0	-	1	0	0	0	0	-	0	0	2	0	0	-	2	0	0	0	0	-	0	3
% Mediums	0.0	0.4	0.0	-	-	0.3	0.0	0.0	0.0	-	-	0.0	0.0	1.9	0.0	-	-	1.3	0.0	0.0	-	-	-	0.0	0.6
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	-	-	-	0.0	0.0
Bicycles on Crosswalk	-	-	-	-	5	-	-	-	-	-	0	-	-	-	-	-	3	-	-	-	-	-	2	-	-
% Bicycles on Crosswalk	-	-	-	-	38.5	-	-	-	-	-	0.0	-	-	-	-	-	42.9	-	-	-	-	-	100.0	-	-
Pedestrians	-	-	-	-	8	-	-	-	-	-	3	-	-	-	-	-	4	-	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	61.5	-	-	-	-	-	100.0	-	-	-	-	-	57.1	-	-	-	-	-	0.0	-	-

GRAM Traffic NTX Inc.

1120 W. Lovers Lane

Arlington, Texas, United States 76013
817.265.8968

Count Name: 3 - AMHERST
AVE @ TURTLE CREEK BLVD
Site Code:
Start Date: 01/18/2017
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: 3 - AMHERST
AVE @ TURTLE CREEK BLVD
Site Code:
Start Date: 01/18/2017
Page No: 5

Turning Movement Peak Hour Data (2:30 PM)

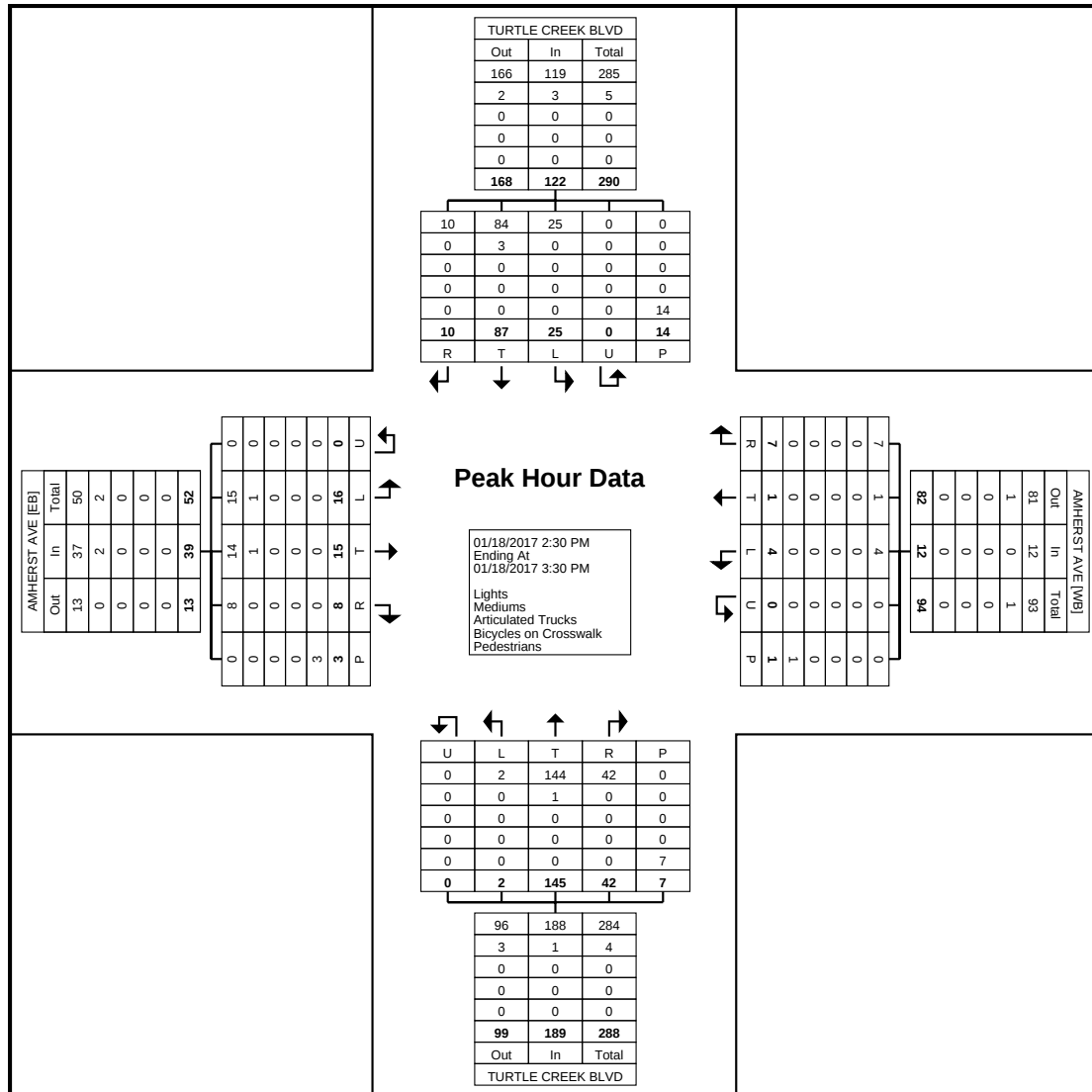
Start Time	TURTLE CREEK BLVD Southbound						AMHERST AVE Westbound						TURTLE CREEK BLVD Northbound						AMHERST AVE Eastbound						Int. Total
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	
2:30 PM	5	16	3	0	0	24	0	0	0	0	0	0	1	37	16	0	0	54	5	2	1	0	0	8	86
2:45 PM	10	17	4	0	0	31	2	0	0	0	1	2	1	31	15	0	0	47	4	4	2	0	0	10	90
3:00 PM	6	23	0	0	3	29	0	0	1	0	0	1	0	28	6	0	1	34	2	4	2	0	0	8	72
3:15 PM	4	31	3	0	11	38	2	1	6	0	0	9	0	49	5	0	6	54	5	5	3	0	3	13	114
Total	25	87	10	0	14	122	4	1	7	0	1	12	2	145	42	0	7	189	16	15	8	0	3	39	362
Approach %	20.5	71.3	8.2	0.0	-	-	33.3	8.3	58.3	0.0	-	-	1.1	76.7	22.2	0.0	-	-	41.0	38.5	20.5	0.0	-	-	-
Total %	6.9	24.0	2.8	0.0	-	33.7	1.1	0.3	1.9	0.0	-	3.3	0.6	40.1	11.6	0.0	-	52.2	4.4	4.1	2.2	0.0	-	10.8	-
PHF	0.625	0.702	0.625	0.000	-	0.803	0.500	0.250	0.292	0.000	-	0.333	0.500	0.740	0.656	0.000	-	0.875	0.800	0.750	0.667	0.000	-	0.750	0.794
Lights	25	84	10	0	-	119	4	1	7	0	-	12	2	144	42	0	-	188	15	14	8	0	-	37	356
% Lights	100.0	96.6	100.0	-	-	97.5	100.0	100.0	100.0	-	-	100.0	100.0	99.3	100.0	-	-	99.5	93.8	93.3	100.0	-	-	94.9	98.3
Mediums	0	3	0	0	-	3	0	0	0	0	-	0	0	1	0	0	-	1	1	1	0	0	-	2	6
% Mediums	0.0	3.4	0.0	-	-	2.5	0.0	0.0	0.0	-	-	0.0	0.0	0.7	0.0	-	-	0.5	6.3	6.7	0.0	-	-	5.1	1.7
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	0.0	-	-	0.0	0.0
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-
Pedestrians	-	-	-	-	14	-	-	-	-	-	1	-	-	-	-	-	7	-	-	-	-	-	3	-	-
% Pedestrians	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-

GRAM Traffic NTX Inc.

1120 W. Lovers Lane

Arlington, Texas, United States 76013
817.265.8968

Count Name: 3 - AMHERST
AVE @ TURTLE CREEK BLVD
Site Code:
Start Date: 01/18/2017
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: 3 - AMHERST
AVE @ TURTLE CREEK BLVD
Site Code:
Start Date: 01/18/2017
Page No: 7

GRAM Traffic NTX Inc.

1120 W. Lovers Lane

Arlington, Texas, United States 76013
817.265.8968

Count Name: 4 - AMHERST
AVE @ THACKERY ST
Site Code:
Start Date: 01/18/2017
Page No: 1

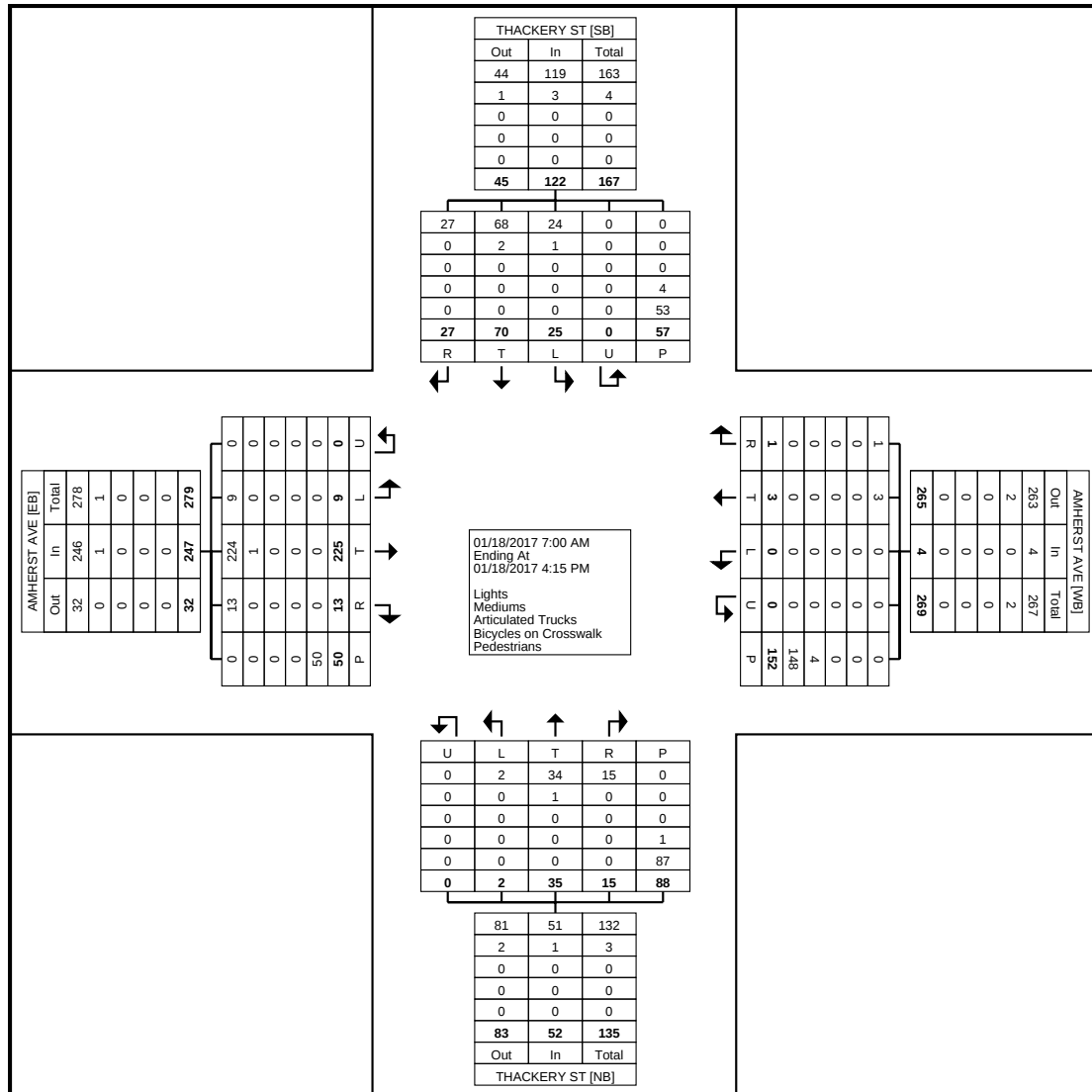
Turning Movement Data

Start Time	THACKERY ST Southbound						AMHERST AVE Westbound						THACKERY ST Northbound						AMHERST AVE Eastbound						Int. Total
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	
7:00 AM	0	5	2	0	0	7	0	1	0	0	0	1	0	0	0	0	0	0	0	1	0	0	1	1	9
7:15 AM	2	1	1	0	0	4	0	0	0	0	2	0	0	0	0	0	1	0	1	14	0	0	1	15	19
7:30 AM	5	8	1	0	11	14	0	0	0	0	38	0	0	0	0	7	0	0	1	50	2	0	1	53	67
7:45 AM	1	9	8	0	28	18	0	0	0	0	68	0	0	0	0	34	0	0	0	63	6	0	17	69	87
Hourly Total	8	23	12	0	39	43	0	1	0	0	108	1	0	0	0	42	0	0	2	128	8	0	19	138	182
8:00 AM	2	4	1	0	2	7	0	0	0	0	4	0	0	4	0	0	9	4	0	0	0	0	8	0	11
8:15 AM	1	2	3	0	1	6	0	0	0	0	2	0	1	8	2	0	0	11	1	0	1	0	1	2	19
8:30 AM	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Hourly Total	4	6	4	0	3	14	0	0	0	0	6	0	1	12	2	0	9	15	1	0	1	0	9	2	31
2:30 PM	2	5	1	0	0	8	0	0	0	0	0	0	0	3	2	0	0	5	2	18	0	0	0	20	33
2:45 PM	2	2	2	0	0	6	0	0	0	0	0	0	0	0	0	0	2	0	2	8	0	0	2	10	16
Hourly Total	4	7	3	0	0	14	0	0	0	0	0	0	0	3	2	0	2	5	4	26	0	0	2	30	49
3:00 PM	0	12	1	0	2	13	0	0	0	0	16	0	0	1	0	0	20	1	0	18	1	0	12	19	33
3:15 PM	5	8	7	0	12	20	0	0	0	0	22	0	0	4	1	0	15	5	1	37	2	0	8	40	65
3:30 PM	0	4	0	0	1	4	0	0	0	0	0	0	0	6	3	0	0	9	0	6	1	0	0	7	20
3:45 PM	4	10	0	0	0	14	0	2	1	0	0	3	1	9	7	0	0	17	1	10	0	0	0	11	45
Hourly Total	9	34	8	0	15	51	0	2	1	0	38	3	1	20	11	0	35	32	2	71	4	0	20	77	163
4:00 PM	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
Grand Total	25	70	27	0	57	122	0	3	1	0	152	4	2	35	15	0	88	52	9	225	13	0	50	247	425
Approach %	20.5	57.4	22.1	0.0	-	-	0.0	75.0	25.0	0.0	-	-	3.8	67.3	28.8	0.0	-	-	3.6	91.1	5.3	0.0	-	-	-
Total %	5.9	16.5	6.4	0.0	-	28.7	0.0	0.7	0.2	0.0	-	0.9	0.5	8.2	3.5	0.0	-	12.2	2.1	52.9	3.1	0.0	-	58.1	-
Lights	24	68	27	0	-	119	0	3	1	0	-	4	2	34	15	0	-	51	9	224	13	0	-	246	420
% Lights	96.0	97.1	100.0	-	-	97.5	-	100.0	100.0	-	-	100.0	100.0	97.1	100.0	-	-	98.1	100.0	99.6	100.0	-	-	99.6	98.8
Mediums	1	2	0	0	-	3	0	0	0	0	-	0	0	1	0	0	-	1	0	1	0	0	-	1	5
% Mediums	4.0	2.9	0.0	-	-	2.5	-	0.0	0.0	-	-	0.0	0.0	2.9	0.0	-	-	1.9	0.0	0.4	0.0	-	-	0.4	1.2
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	-	-	0.0	0.0
Bicycles on Crosswalk	-	-	-	-	4	-	-	-	-	-	4	-	-	-	-	-	1	-	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	7.0	-	-	-	-	-	2.6	-	-	-	-	-	1.1	-	-	-	-	-	0.0	-	-
Pedestrians	-	-	-	-	53	-	-	-	-	-	148	-	-	-	-	-	87	-	-	-	-	-	50	-	-
% Pedestrians	-	-	-	-	93.0	-	-	-	-	-	97.4	-	-	-	-	-	98.9	-	-	-	-	-	100.0	-	-

1120 W. Lovers Lane

Arlington, Texas, United States 76013
817.265.8968

Count Name: 4 - AMHERST
AVE @ THACKERY ST
Site Code:
Start Date: 01/18/2017
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: 4 - AMHERST
AVE @ THACKERY ST
Site Code:
Start Date: 01/18/2017
Page No: 3

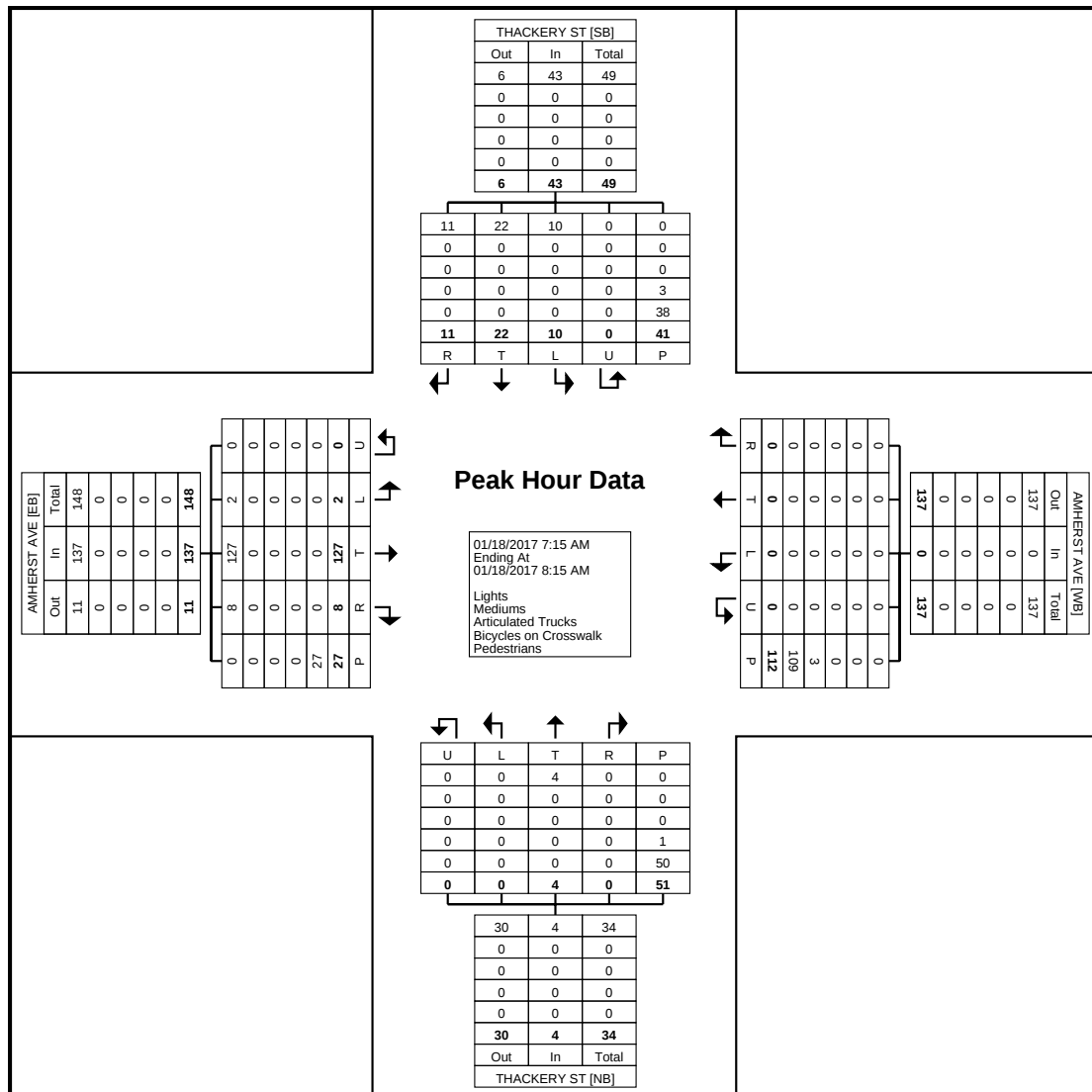
Turning Movement Peak Hour Data (7:15 AM)

Start Time	THACKERY ST Southbound						AMHERST AVE Westbound						THACKERY ST Northbound						AMHERST AVE Eastbound						Int. Total
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	
7:15 AM	2	1	1	0	0	4	0	0	0	0	2	0	0	0	0	0	1	0	1	14	0	0	1	15	19
7:30 AM	5	8	1	0	11	14	0	0	0	0	38	0	0	0	0	0	7	0	1	50	2	0	1	53	67
7:45 AM	1	9	8	0	28	18	0	0	0	0	68	0	0	0	0	0	34	0	0	63	6	0	17	69	87
8:00 AM	2	4	1	0	2	7	0	0	0	0	4	0	0	4	0	0	9	4	0	0	0	0	8	0	11
Total	10	22	11	0	41	43	0	0	0	0	112	0	0	4	0	0	51	4	2	127	8	0	27	137	184
Approach %	23.3	51.2	25.6	0.0	-	-	NaN	NaN	NaN	NaN	-	-	0.0	100.0	0.0	0.0	-	-	1.5	92.7	5.8	0.0	-	-	-
Total %	5.4	12.0	6.0	0.0	-	23.4	0.0	0.0	0.0	0.0	-	0.0	0.0	2.2	0.0	0.0	-	2.2	1.1	69.0	4.3	0.0	-	74.5	-
PHF	0.500	0.611	0.344	0.000	-	0.597	0.000	0.000	0.000	0.000	-	0.000	0.000	0.250	0.000	0.000	-	0.250	0.500	0.504	0.333	0.000	-	0.496	0.529
Lights	10	22	11	0	-	43	0	0	0	0	-	0	0	4	0	0	-	4	2	127	8	0	-	137	184
% Lights	100.0	100.0	100.0	-	-	100.0	-	-	-	-	-	-	-	100.0	-	-	-	100.0	100.0	100.0	100.0	-	-	100.0	100.0
Mediums	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Mediums	0.0	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
% Articulated Trucks	0.0	0.0	0.0	-	-	0.0	-	-	-	-	-	-	-	0.0	-	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0
Bicycles on Crosswalk	-	-	-	-	3	-	-	-	-	-	3	-	-	-	-	-	1	-	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	7.3	-	-	-	-	-	2.7	-	-	-	-	-	2.0	-	-	-	-	-	0.0	-	-
Pedestrians	-	-	-	-	38	-	-	-	-	-	109	-	-	-	-	-	50	-	-	-	-	-	27	-	-
% Pedestrians	-	-	-	-	92.7	-	-	-	-	-	97.3	-	-	-	-	-	98.0	-	-	-	-	-	100.0	-	-

1120 W. Lovers Lane

Arlington, Texas, United States 76013
817.265.8968

Count Name: 4 - AMHERST
AVE @ THACKERY ST
Site Code:
Start Date: 01/18/2017
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: 4 - AMHERST
AVE @ THACKERY ST
Site Code:
Start Date: 01/18/2017
Page No: 5

Turning Movement Peak Hour Data (3:00 PM)

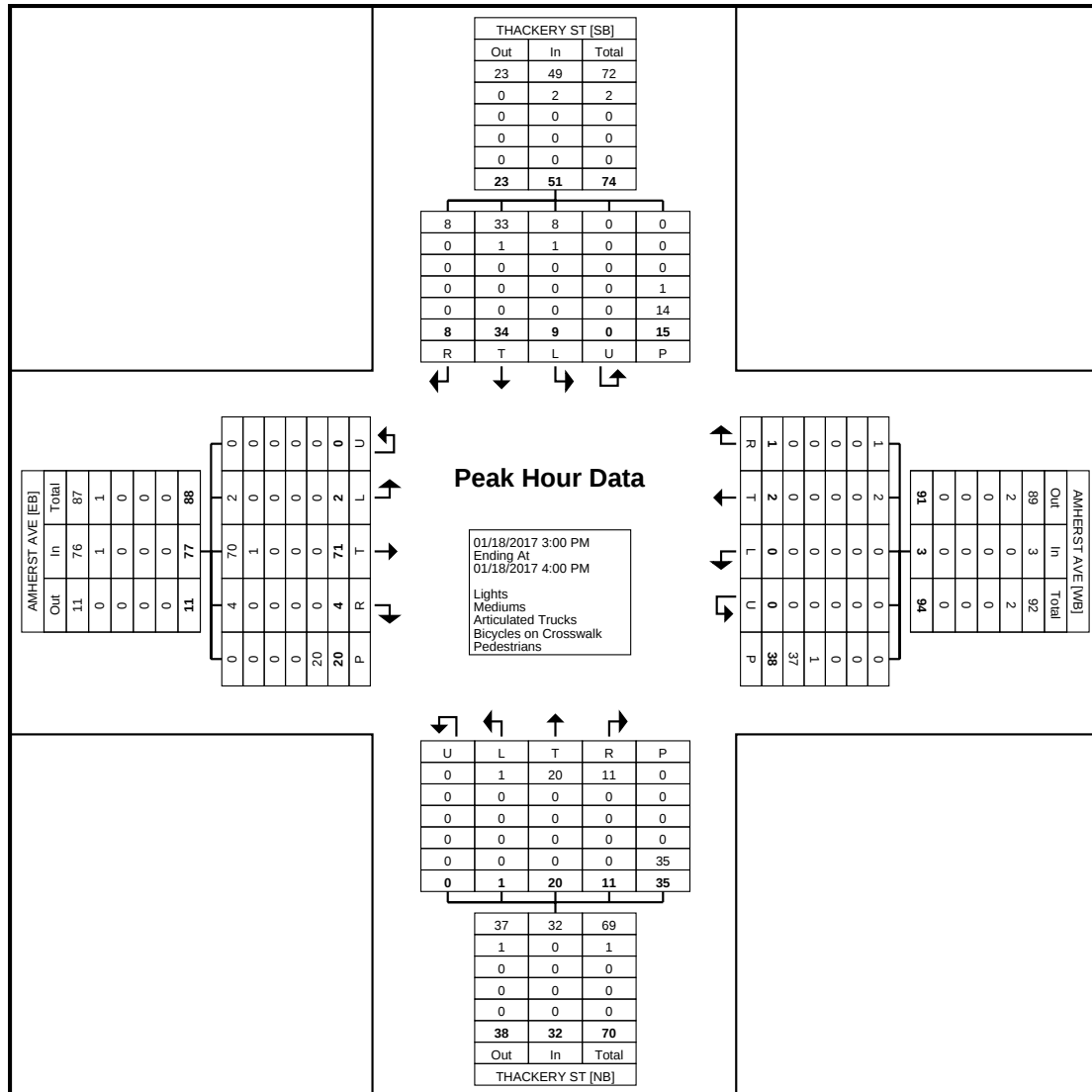
Start Time	THACKERY ST Southbound						AMHERST AVE Westbound						THACKERY ST Northbound						AMHERST AVE Eastbound						Int. Total
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	
3:00 PM	0	12	1	0	2	13	0	0	0	0	16	0	0	1	0	0	20	1	0	18	1	0	12	19	33
3:15 PM	5	8	7	0	12	20	0	0	0	0	22	0	0	4	1	0	15	5	1	37	2	0	8	40	65
3:30 PM	0	4	0	0	1	4	0	0	0	0	0	0	0	6	3	0	0	9	0	6	1	0	0	7	20
3:45 PM	4	10	0	0	0	14	0	2	1	0	0	3	1	9	7	0	0	17	1	10	0	0	0	11	45
Total	9	34	8	0	15	51	0	2	1	0	38	3	1	20	11	0	35	32	2	71	4	0	20	77	163
Approach %	17.6	66.7	15.7	0.0	-	-	0.0	66.7	33.3	0.0	-	-	3.1	62.5	34.4	0.0	-	-	2.6	92.2	5.2	0.0	-	-	-
Total %	5.5	20.9	4.9	0.0	-	31.3	0.0	1.2	0.6	0.0	-	1.8	0.6	12.3	6.7	0.0	-	19.6	1.2	43.6	2.5	0.0	-	47.2	-
PHF	0.450	0.708	0.286	0.000	-	0.638	0.000	0.250	0.250	0.000	-	0.250	0.250	0.556	0.393	0.000	-	0.471	0.500	0.480	0.500	0.000	-	0.481	0.627
Lights	8	33	8	0	-	49	0	2	1	0	-	3	1	20	11	0	-	32	2	70	4	0	-	76	160
% Lights	88.9	97.1	100.0	-	-	96.1	-	100.0	100.0	-	-	100.0	100.0	100.0	100.0	-	-	100.0	100.0	98.6	100.0	-	-	98.7	98.2
Mediums	1	1	0	0	-	2	0	0	0	0	-	0	0	0	0	0	-	0	0	1	0	0	-	1	3
% Mediums	11.1	2.9	0.0	-	-	3.9	-	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	1.4	0.0	-	-	1.3	1.8
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	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0
Bicycles on Crosswalk	-	-	-	-	1	-	-	-	-	-	1	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	6.7	-	-	-	-	-	2.6	-	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-
Pedestrians	-	-	-	-	14	-	-	-	-	-	37	-	-	-	-	-	35	-	-	-	-	-	20	-	-
% Pedestrians	-	-	-	-	93.3	-	-	-	-	-	97.4	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-

GRAM Traffic NTX Inc.

1120 W. Lovers Lane

Arlington, Texas, United States 76013
817.265.8968

Count Name: 4 - AMHERST
AVE @ THACKERY ST
Site Code:
Start Date: 01/18/2017
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: 4 - AMHERST
AVE @ THACKERY ST
Site Code:
Start Date: 01/18/2017
Page No: 7

GRAM Traffic NTX Inc.

1120 W. Lovers Lane

Arlington, Texas, United States 76013
817.265.8968

Count Name: 5 - AMHERST
AVE @ DICKENS AVE
Site Code:
Start Date: 01/18/2017
Page No: 1

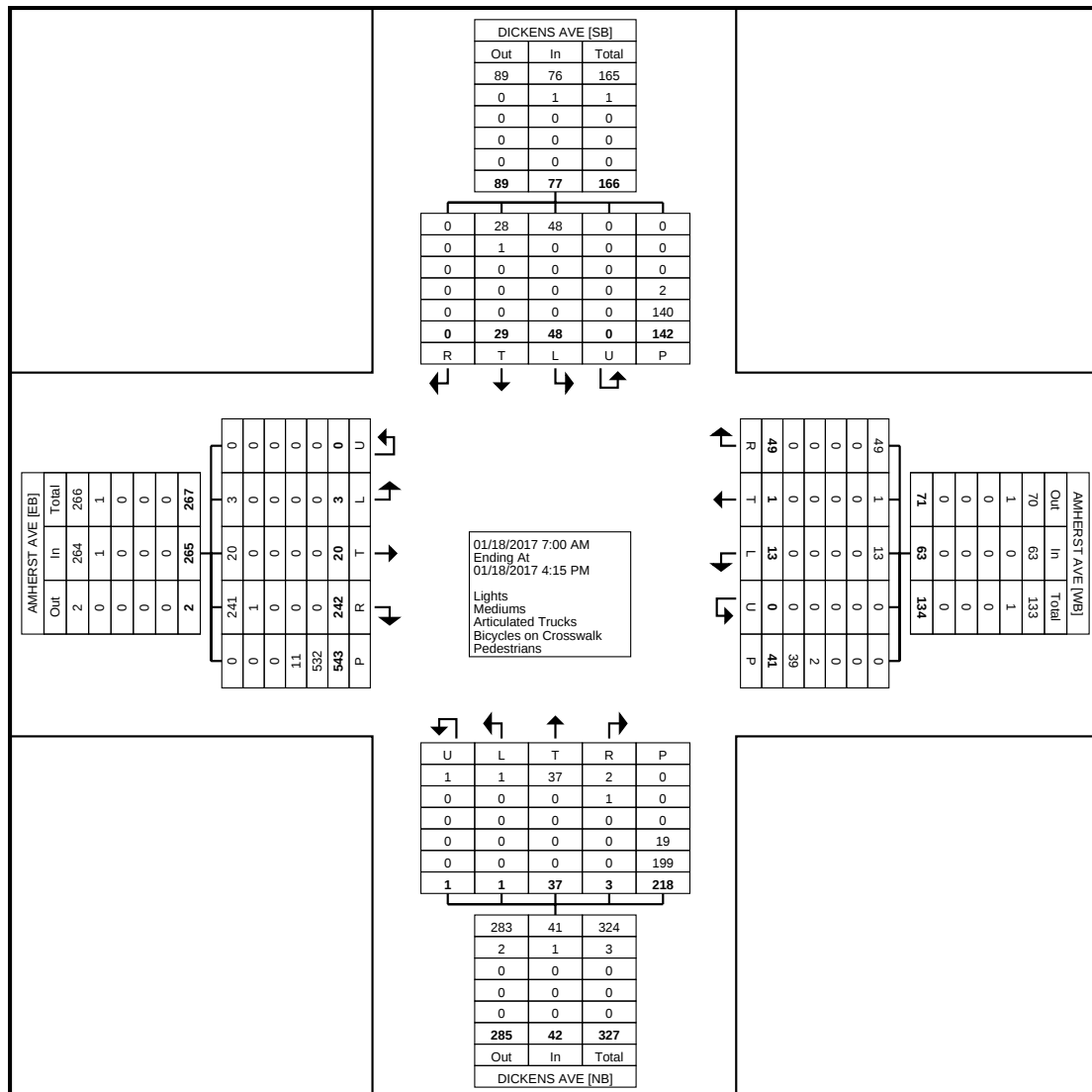
Turning Movement Data

Start Time	DICKENS AVE Southbound						AMHERST AVE Westbound						DICKENS AVE Northbound						AMHERST AVE Eastbound						Int. Total
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	
7:00 AM	0	3	0	0	0	3	0	0	3	0	0	3	0	5	0	0	2	5	0	0	2	0	3	2	13
7:15 AM	0	0	0	0	2	0	0	0	1	0	0	1	0	0	0	0	2	0	0	0	10	0	6	10	11
7:30 AM	0	0	0	0	7	0	0	0	1	0	0	1	0	0	0	0	6	0	0	0	41	0	20	41	42
7:45 AM	0	0	0	0	48	0	0	0	5	0	6	5	0	0	0	0	51	0	0	0	60	0	209	60	65
Hourly Total	0	3	0	0	57	3	0	0	10	0	6	10	0	5	0	0	61	5	0	0	113	0	238	113	131
8:00 AM	6	3	0	0	4	9	4	0	7	0	0	11	0	0	0	0	13	0	1	1	15	0	18	17	37
8:15 AM	2	5	0	0	1	7	3	0	0	0	2	3	0	0	0	0	0	0	0	1	3	0	0	4	14
8:30 AM	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
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Hourly Total	8	8	0	0	5	16	7	0	7	0	2	14	0	0	0	0	13	0	1	2	18	0	18	21	51
2:30 PM	3	2	0	0	1	5	2	0	0	0	0	2	0	0	0	0	4	0	0	1	4	0	2	5	12
2:45 PM	13	0	0	0	1	13	0	0	5	0	0	5	0	0	0	0	2	0	0	0	3	0	2	3	21
Hourly Total	16	2	0	0	2	18	2	0	5	0	0	7	0	0	0	0	6	0	0	1	7	0	4	8	33
3:00 PM	10	0	0	0	50	10	0	0	7	0	16	7	0	0	0	0	92	0	0	1	19	0	181	20	37
3:15 PM	12	3	0	0	26	15	0	0	13	0	17	13	0	2	0	0	43	2	1	1	68	0	97	70	100
3:30 PM	1	11	0	0	2	12	1	0	3	0	0	4	0	8	2	0	2	10	0	6	7	0	4	13	39
3:45 PM	1	2	0	0	0	3	3	1	4	0	0	8	1	22	1	1	1	25	1	9	10	0	1	20	56
Hourly Total	24	16	0	0	78	40	4	1	27	0	33	32	1	32	3	1	138	37	2	17	104	0	283	123	232
4:00 PM	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
Grand Total	48	29	0	0	142	77	13	1	49	0	41	63	1	37	3	1	218	42	3	20	242	0	543	265	447
Approach %	62.3	37.7	0.0	0.0	-	-	20.6	1.6	77.8	0.0	-	-	2.4	88.1	7.1	2.4	-	-	1.1	7.5	91.3	0.0	-	-	-
Total %	10.7	6.5	0.0	0.0	-	17.2	2.9	0.2	11.0	0.0	-	14.1	0.2	8.3	0.7	0.2	-	9.4	0.7	4.5	54.1	0.0	-	59.3	-
Lights	48	28	0	0	-	76	13	1	49	0	-	63	1	37	2	1	-	41	3	20	241	0	-	264	444
% Lights	100.0	96.6	-	-	-	98.7	100.0	100.0	100.0	-	-	100.0	100.0	100.0	66.7	100.0	-	97.6	100.0	100.0	99.6	-	-	99.6	99.3
Mediums	0	1	0	0	-	1	0	0	0	0	-	0	0	0	1	0	-	1	0	0	1	0	-	1	3
% Mediums	0.0	3.4	-	-	-	1.3	0.0	0.0	0.0	-	-	0.0	0.0	0.0	33.3	0.0	-	2.4	0.0	0.0	0.4	-	-	0.4	0.7
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	0.0	-	-	0.0	0.0
Bicycles on Crosswalk	-	-	-	-	2	-	-	-	-	-	2	-	-	-	-	-	19	-	-	-	-	-	11	-	-
% Bicycles on Crosswalk	-	-	-	-	1.4	-	-	-	-	-	4.9	-	-	-	-	-	8.7	-	-	-	-	-	2.0	-	-
Pedestrians	-	-	-	-	140	-	-	-	-	-	39	-	-	-	-	-	199	-	-	-	-	-	532	-	-
% Pedestrians	-	-	-	-	98.6	-	-	-	-	-	95.1	-	-	-	-	-	91.3	-	-	-	-	-	98.0	-	-

1120 W. Lovers Lane

Arlington, Texas, United States 76013
817.265.8968

Count Name: 5 - AMHERST
AVE @ DICKENS AVE
Site Code:
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Turning Movement Data Plot

GRAM Traffic NTX Inc.

1120 W. Lovers Lane

Arlington, Texas, United States 76013
817.265.8968

Count Name: 5 - AMHERST
AVE @ DICKENS AVE
Site Code:
Start Date: 01/18/2017
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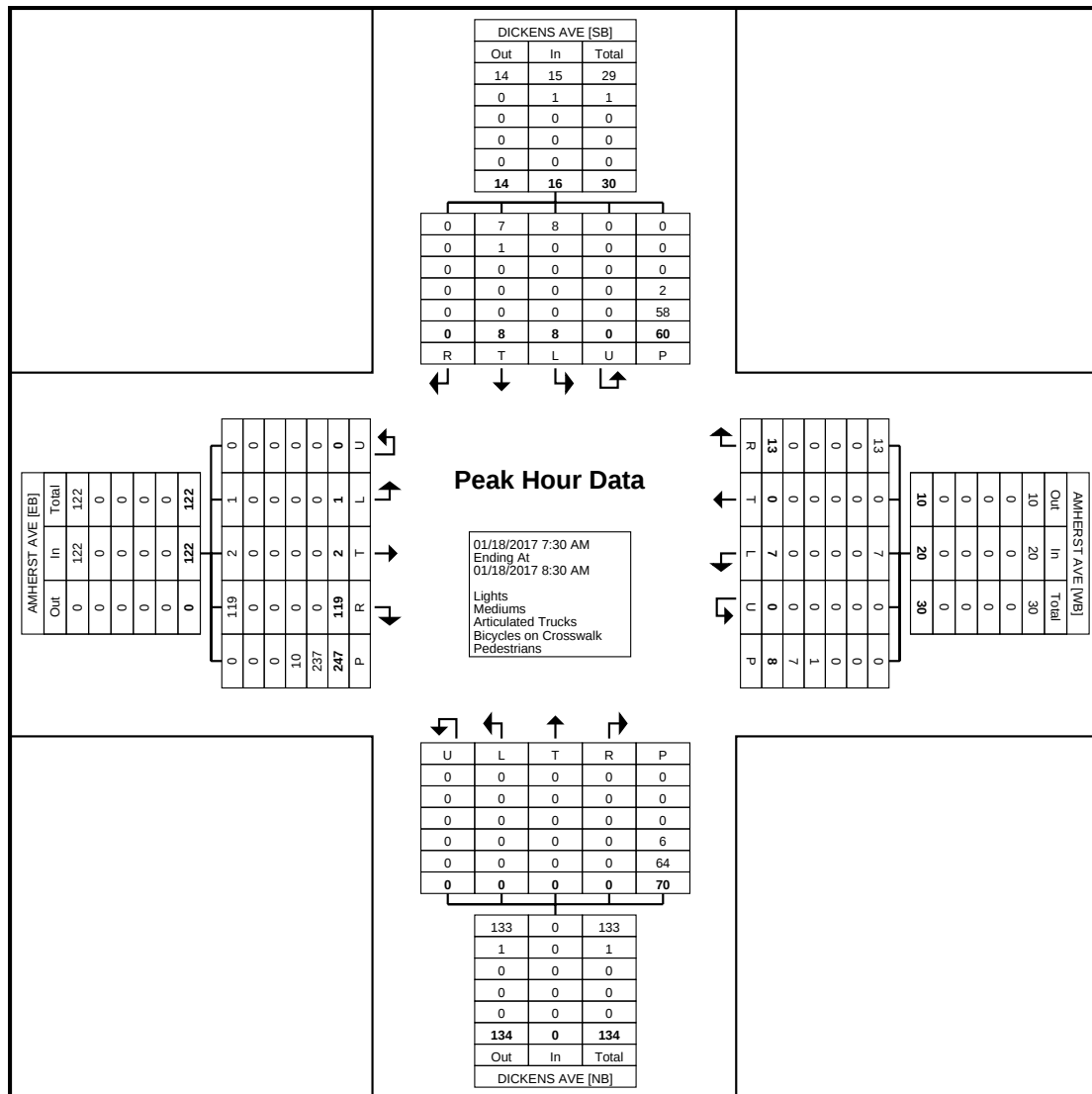
Turning Movement Peak Hour Data (7:30 AM)

Start Time	DICKENS AVE Southbound						AMHERST AVE Westbound						DICKENS AVE Northbound						AMHERST AVE Eastbound						Int. Total
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	
7:30 AM	0	0	0	0	7	0	0	0	1	0	0	1	0	0	0	0	6	0	0	0	41	0	20	41	42
7:45 AM	0	0	0	0	48	0	0	0	5	0	6	5	0	0	0	0	51	0	0	0	60	0	209	60	65
8:00 AM	6	3	0	0	4	9	4	0	7	0	0	11	0	0	0	0	13	0	1	1	15	0	18	17	37
8:15 AM	2	5	0	0	1	7	3	0	0	0	2	3	0	0	0	0	0	0	0	1	3	0	0	4	14
Total	8	8	0	0	60	16	7	0	13	0	8	20	0	0	0	0	70	0	1	2	119	0	247	122	158
Approach %	50.0	50.0	0.0	0.0	-	-	35.0	0.0	65.0	0.0	-	-	NaN	NaN	NaN	NaN	-	-	0.8	1.6	97.5	0.0	-	-	-
Total %	5.1	5.1	0.0	0.0	-	10.1	4.4	0.0	8.2	0.0	-	12.7	0.0	0.0	0.0	0.0	-	0.0	0.6	1.3	75.3	0.0	-	77.2	-
PHF	0.333	0.400	0.000	0.000	-	0.444	0.438	0.000	0.464	0.000	-	0.455	0.000	0.000	0.000	0.000	-	0.000	0.250	0.500	0.496	0.000	-	0.508	0.608
Lights	8	7	0	0	-	15	7	0	13	0	-	20	0	0	0	0	-	0	1	2	119	0	-	122	157
% Lights	100.0	87.5	-	-	-	93.8	100.0	-	100.0	-	-	100.0	-	-	-	-	-	-	100.0	100.0	100.0	-	-	100.0	99.4
Mediums	0	1	0	0	-	1	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	1
% Mediums	0.0	12.5	-	-	-	6.3	0.0	-	0.0	-	-	0.0	-	-	-	-	-	-	0.0	0.0	0.0	-	-	0.0	0.6
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
Bicycles on Crosswalk	-	-	-	-	2	-	-	-	-	-	1	-	-	-	-	-	6	-	-	-	-	-	10	-	-
% Bicycles on Crosswalk	-	-	-	-	3.3	-	-	-	-	-	12.5	-	-	-	-	-	8.6	-	-	-	-	-	4.0	-	-
Pedestrians	-	-	-	-	58	-	-	-	-	-	7	-	-	-	-	-	64	-	-	-	-	-	237	-	-
% Pedestrians	-	-	-	-	96.7	-	-	-	-	-	87.5	-	-	-	-	-	91.4	-	-	-	-	-	96.0	-	-

1120 W. Lovers Lane

Arlington, Texas, United States 76013
817.265.8968

Count Name: 5 - AMHERST
AVE @ DICKENS AVE
Site Code:
Start Date: 01/18/2017
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Turning Movement Peak Hour Data Plot (7:30 AM)

GRAM Traffic NTX Inc.

1120 W. Lovers Lane

Arlington, Texas, United States 76013
817.265.8968

Count Name: 5 - AMHERST
AVE @ DICKENS AVE
Site Code:
Start Date: 01/18/2017
Page No: 5

Turning Movement Peak Hour Data (3:00 PM)

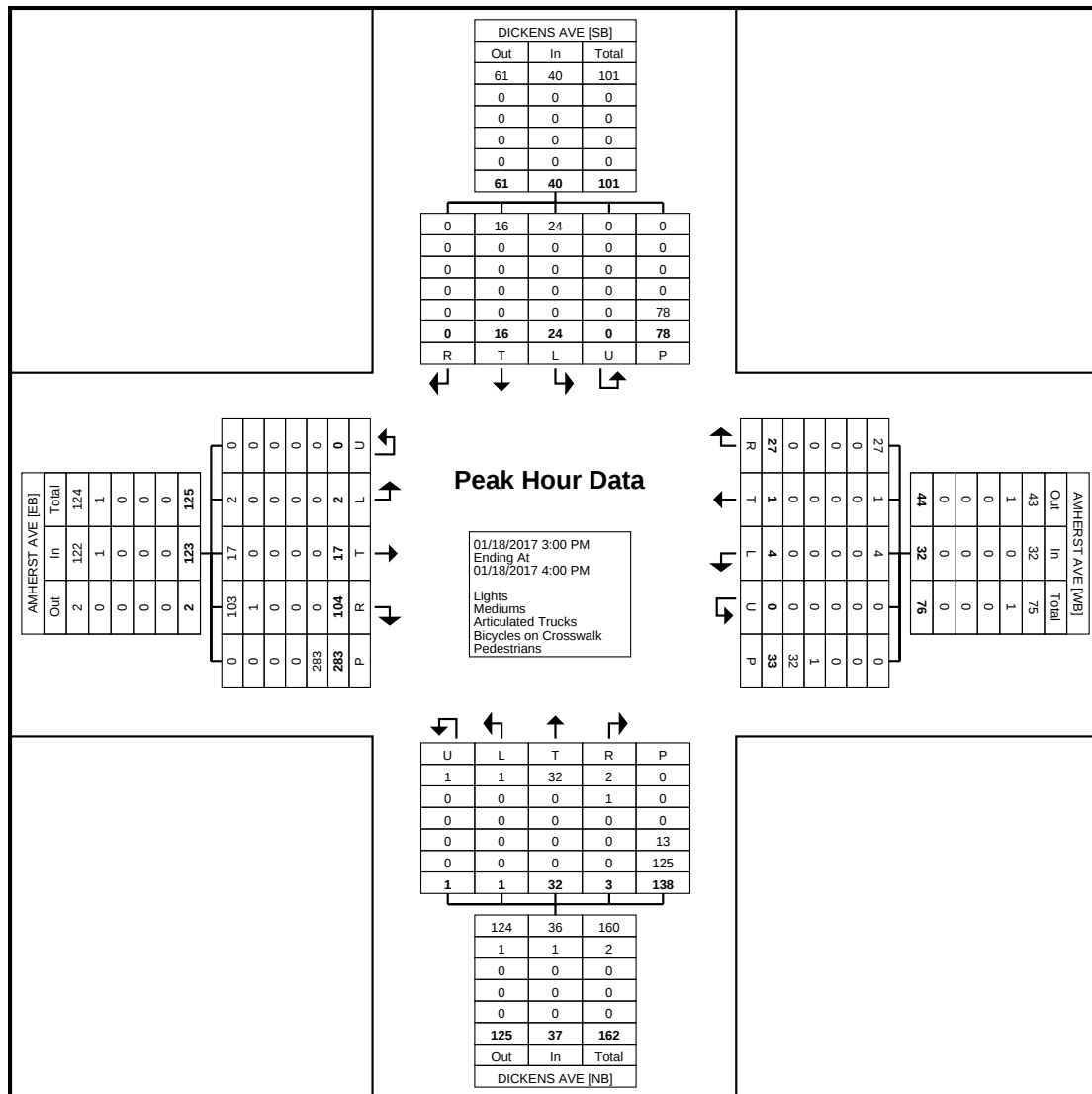
Start Time	DICKENS AVE Southbound						AMHERST AVE Westbound						DICKENS AVE Northbound						AMHERST AVE Eastbound						Int. Total
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	
3:00 PM	10	0	0	0	50	10	0	0	7	0	16	7	0	0	0	0	92	0	0	1	19	0	181	20	37
3:15 PM	12	3	0	0	26	15	0	0	13	0	17	13	0	2	0	0	43	2	1	1	68	0	97	70	100
3:30 PM	1	11	0	0	2	12	1	0	3	0	0	4	0	8	2	0	2	10	0	6	7	0	4	13	39
3:45 PM	1	2	0	0	0	3	3	1	4	0	0	8	1	22	1	1	1	25	1	9	10	0	1	20	56
Total	24	16	0	0	78	40	4	1	27	0	33	32	1	32	3	1	138	37	2	17	104	0	283	123	232
Approach %	60.0	40.0	0.0	0.0	-	-	12.5	3.1	84.4	0.0	-	-	2.7	86.5	8.1	2.7	-	-	1.6	13.8	84.6	0.0	-	-	-
Total %	10.3	6.9	0.0	0.0	-	17.2	1.7	0.4	11.6	0.0	-	13.8	0.4	13.8	1.3	0.4	-	15.9	0.9	7.3	44.8	0.0	-	53.0	-
PHF	0.500	0.364	0.000	0.000	-	0.667	0.333	0.250	0.519	0.000	-	0.615	0.250	0.364	0.375	0.250	-	0.370	0.500	0.472	0.382	0.000	-	0.439	0.580
Lights	24	16	0	0	-	40	4	1	27	0	-	32	1	32	2	1	-	36	2	17	103	0	-	122	230
% Lights	100.0	100.0	-	-	-	100.0	100.0	100.0	100.0	-	-	100.0	100.0	100.0	66.7	100.0	-	97.3	100.0	100.0	99.0	-	-	99.2	99.1
Mediums	0	0	0	0	-	0	0	0	0	0	-	0	0	0	1	0	-	1	0	0	1	0	-	1	2
% Mediums	0.0	0.0	-	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	33.3	0.0	-	2.7	0.0	0.0	1.0	-	-	0.8	0.9
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	0.0	-	-	0.0	0.0
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	1	-	-	-	-	-	13	-	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	0.0	-	-	-	-	-	3.0	-	-	-	-	-	9.4	-	-	-	-	-	0.0	-	-
Pedestrians	-	-	-	-	78	-	-	-	-	-	32	-	-	-	-	-	125	-	-	-	-	-	283	-	-
% Pedestrians	-	-	-	-	100.0	-	-	-	-	-	97.0	-	-	-	-	-	90.6	-	-	-	-	-	100.0	-	-

GRAM Traffic NTX Inc.

1120 W. Lovers Lane

Arlington, Texas, United States 76013
817.265.8968

Count Name: 5 - AMHERST
AVE @ DICKENS AVE
Site Code:
Start Date: 01/18/2017
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: 5 - AMHERST
AVE @ DICKENS AVE
Site Code:
Start Date: 01/18/2017
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GRAM Traffic NTX Inc.

1120 W. Lovers Lane

Arlington, Texas, United States 76013
817.265.8968

Count Name: 6 - AMHERST
AVE @ HILLCREST AVE
Site Code:
Start Date: 01/18/2017
Page No: 1

Turning Movement Data

Start Time	HILLCREST AVE Southbound						AMHERST AVE Westbound						HILLCREST AVE Northbound						AMHERST AVE Eastbound						Int. Total
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	
7:00 AM	0	65	0	0	0	65	2	1	2	0	0	5	1	62	0	0	0	63	0	0	2	0	0	2	135
7:15 AM	0	98	1	0	3	99	5	1	5	0	4	11	4	69	1	0	0	74	0	0	7	0	2	7	191
7:30 AM	1	156	0	0	0	157	5	1	6	0	3	12	3	125	4	0	1	132	1	2	10	0	2	13	314
7:45 AM	1	140	5	0	0	146	1	5	13	0	0	19	3	165	4	0	0	172	10	11	35	0	0	56	393
Hourly Total	2	459	6	0	3	467	13	8	26	0	7	47	11	421	9	0	1	441	11	13	54	0	4	78	1033
8:00 AM	3	117	0	0	1	120	1	1	1	0	1	3	5	159	3	0	0	167	5	7	5	0	0	17	307
8:15 AM	3	132	1	0	0	136	4	2	0	0	0	6	2	100	3	0	0	105	0	2	3	0	0	5	252
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	1
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Hourly Total	6	249	1	0	1	256	5	3	1	0	1	9	7	260	6	0	0	273	5	9	8	0	0	22	560
2:30 PM	2	100	0	0	0	102	2	0	0	0	0	2	2	100	3	0	0	105	4	0	3	0	0	7	216
2:45 PM	1	105	6	0	1	112	2	4	1	0	0	7	10	140	2	0	0	152	0	1	6	0	0	7	278
Hourly Total	3	205	6	0	1	214	4	4	1	0	0	9	12	240	5	0	0	257	4	1	9	0	0	14	494
3:00 PM	3	134	2	0	0	139	3	3	1	0	0	7	12	116	1	0	1	129	6	3	12	0	0	21	296
3:15 PM	9	139	2	0	0	150	0	1	2	0	16	3	3	152	4	0	0	159	6	8	18	0	0	32	344
3:30 PM	5	126	1	0	0	132	1	1	1	0	1	3	1	130	2	0	0	133	4	2	3	0	1	9	277
3:45 PM	1	128	1	0	0	130	1	2	2	0	3	5	4	213	5	0	0	222	3	3	8	0	0	14	371
Hourly Total	18	527	6	0	0	551	5	7	6	0	20	18	20	611	12	0	1	643	19	16	41	0	1	76	1288
Grand Total	29	1440	19	0	5	1488	27	22	34	0	28	83	50	1532	32	0	2	1614	39	39	112	0	5	190	3375
Approach %	1.9	96.8	1.3	0.0	-	-	32.5	26.5	41.0	0.0	-	-	3.1	94.9	2.0	0.0	-	-	20.5	20.5	58.9	0.0	-	-	-
Total %	0.9	42.7	0.6	0.0	-	44.1	0.8	0.7	1.0	0.0	-	2.5	1.5	45.4	0.9	0.0	-	47.8	1.2	1.2	3.3	0.0	-	5.6	-
Lights	29	1421	18	0	-	1468	27	22	34	0	-	83	50	1511	31	0	-	1592	38	39	111	0	-	188	3331
% Lights	100.0	98.7	94.7	-	-	98.7	100.0	100.0	100.0	-	-	100.0	100.0	98.6	96.9	-	-	98.6	97.4	100.0	99.1	-	-	98.9	98.7
Mediums	0	18	1	0	-	19	0	0	0	0	-	0	0	21	1	0	-	22	1	0	1	0	-	2	43
% Mediums	0.0	1.3	5.3	-	-	1.3	0.0	0.0	0.0	-	-	0.0	0.0	1.4	3.1	-	-	1.4	2.6	0.0	0.9	-	-	1.1	1.3
Articulated Trucks	0	1	0	0	-	1	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	1
% Articulated Trucks	0.0	0.1	0.0	-	-	0.1	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
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	8	-	-	-	-	-	0	-	-	-	-	-	3	-	-
% Bicycles on Crosswalk	-	-	-	-	0.0	-	-	-	-	-	28.6	-	-	-	-	-	0.0	-	-	-	-	-	60.0	-	-
Pedestrians	-	-	-	-	5	-	-	-	-	-	20	-	-	-	-	-	2	-	-	-	-	-	2	-	-
% Pedestrians	-	-	-	-	100.0	-	-	-	-	-	71.4	-	-	-	-	-	100.0	-	-	-	-	-	40.0	-	-

Count Name: 6 - AMHERST
AVE @ HILLCREST AVE
Site Code:
Start Date: 01/18/2017
Page No: 2

GRAM Traffic NTX Inc.

1120 W. Lovers Lane

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817.265.8968

Count Name: 6 - AMHERST
AVE @ HILLCREST AVE
Site Code:
Start Date: 01/18/2017
Page No: 3

Turning Movement Peak Hour Data (7:30 AM)

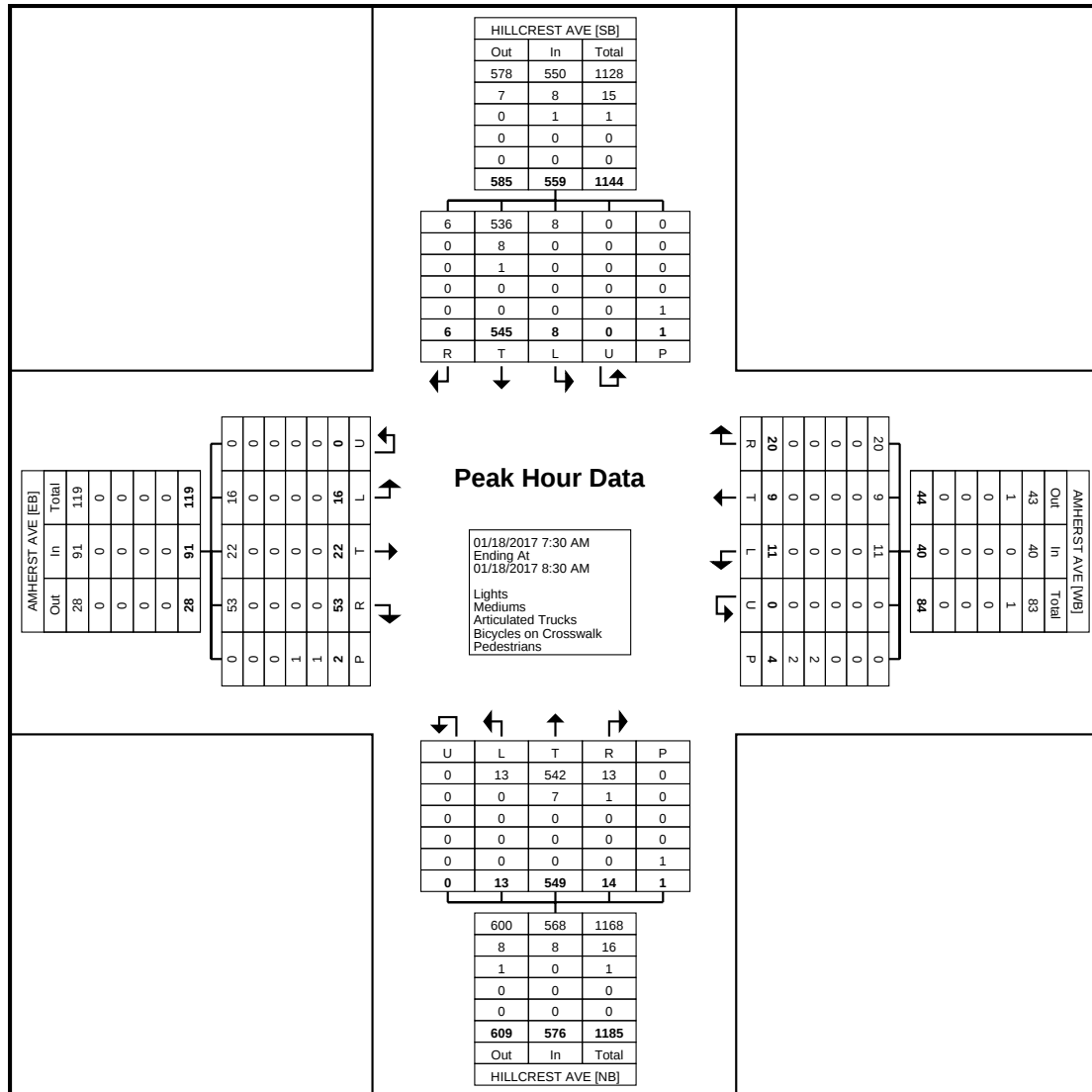
Start Time	HILLCREST AVE Southbound						AMHERST AVE Westbound						HILLCREST AVE Northbound						AMHERST AVE Eastbound						Int. Total
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	
7:30 AM	1	156	0	0	0	157	5	1	6	0	3	12	3	125	4	0	1	132	1	2	10	0	2	13	314
7:45 AM	1	140	5	0	0	146	1	5	13	0	0	19	3	165	4	0	0	172	10	11	35	0	0	56	393
8:00 AM	3	117	0	0	1	120	1	1	1	0	1	3	5	159	3	0	0	167	5	7	5	0	0	17	307
8:15 AM	3	132	1	0	0	136	4	2	0	0	0	6	2	100	3	0	0	105	0	2	3	0	0	5	252
Total	8	545	6	0	1	559	11	9	20	0	4	40	13	549	14	0	1	576	16	22	53	0	2	91	1266
Approach %	1.4	97.5	1.1	0.0	-	-	27.5	22.5	50.0	0.0	-	-	2.3	95.3	2.4	0.0	-	-	17.6	24.2	58.2	0.0	-	-	-
Total %	0.6	43.0	0.5	0.0	-	44.2	0.9	0.7	1.6	0.0	-	3.2	1.0	43.4	1.1	0.0	-	45.5	1.3	1.7	4.2	0.0	-	7.2	-
PHF	0.667	0.873	0.300	0.000	-	0.890	0.550	0.450	0.385	0.000	-	0.526	0.650	0.832	0.875	0.000	-	0.837	0.400	0.500	0.379	0.000	-	0.406	0.805
Lights	8	536	6	0	-	550	11	9	20	0	-	40	13	542	13	0	-	568	16	22	53	0	-	91	1249
% Lights	100.0	98.3	100.0	-	-	98.4	100.0	100.0	100.0	-	-	100.0	100.0	98.7	92.9	-	-	98.6	100.0	100.0	100.0	-	-	100.0	98.7
Mediums	0	8	0	0	-	8	0	0	0	0	-	0	0	7	1	0	-	8	0	0	0	0	-	0	16
% Mediums	0.0	1.5	0.0	-	-	1.4	0.0	0.0	0.0	-	-	0.0	0.0	1.3	7.1	-	-	1.4	0.0	0.0	0.0	-	-	0.0	1.3
Articulated Trucks	0	1	0	0	-	1	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	1
% Articulated Trucks	0.0	0.2	0.0	-	-	0.2	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.1
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	2	-	-	-	-	-	0	-	-	-	-	-	1	-	-
% Bicycles on Crosswalk	-	-	-	-	0.0	-	-	-	-	-	50.0	-	-	-	-	-	0.0	-	-	-	-	-	50.0	-	-
Pedestrians	-	-	-	-	1	-	-	-	-	-	2	-	-	-	-	-	1	-	-	-	-	-	1	-	-
% Pedestrians	-	-	-	-	100.0	-	-	-	-	-	50.0	-	-	-	-	-	100.0	-	-	-	-	-	50.0	-	-

GRAM Traffic NTX Inc.

1120 W. Lovers Lane

Arlington, Texas, United States 76013
817.265.8968

Count Name: 6 - AMHERST
AVE @ HILLCREST AVE
Site Code:
Start Date: 01/18/2017
Page No: 4



Turning Movement Peak Hour Data Plot (7:30 AM)

GRAM Traffic NTX Inc.

1120 W. Lovers Lane

Arlington, Texas, United States 76013
817.265.8968

Count Name: 6 - AMHERST
AVE @ HILLCREST AVE
Site Code:
Start Date: 01/18/2017
Page No: 5

Turning Movement Peak Hour Data (3:00 PM)

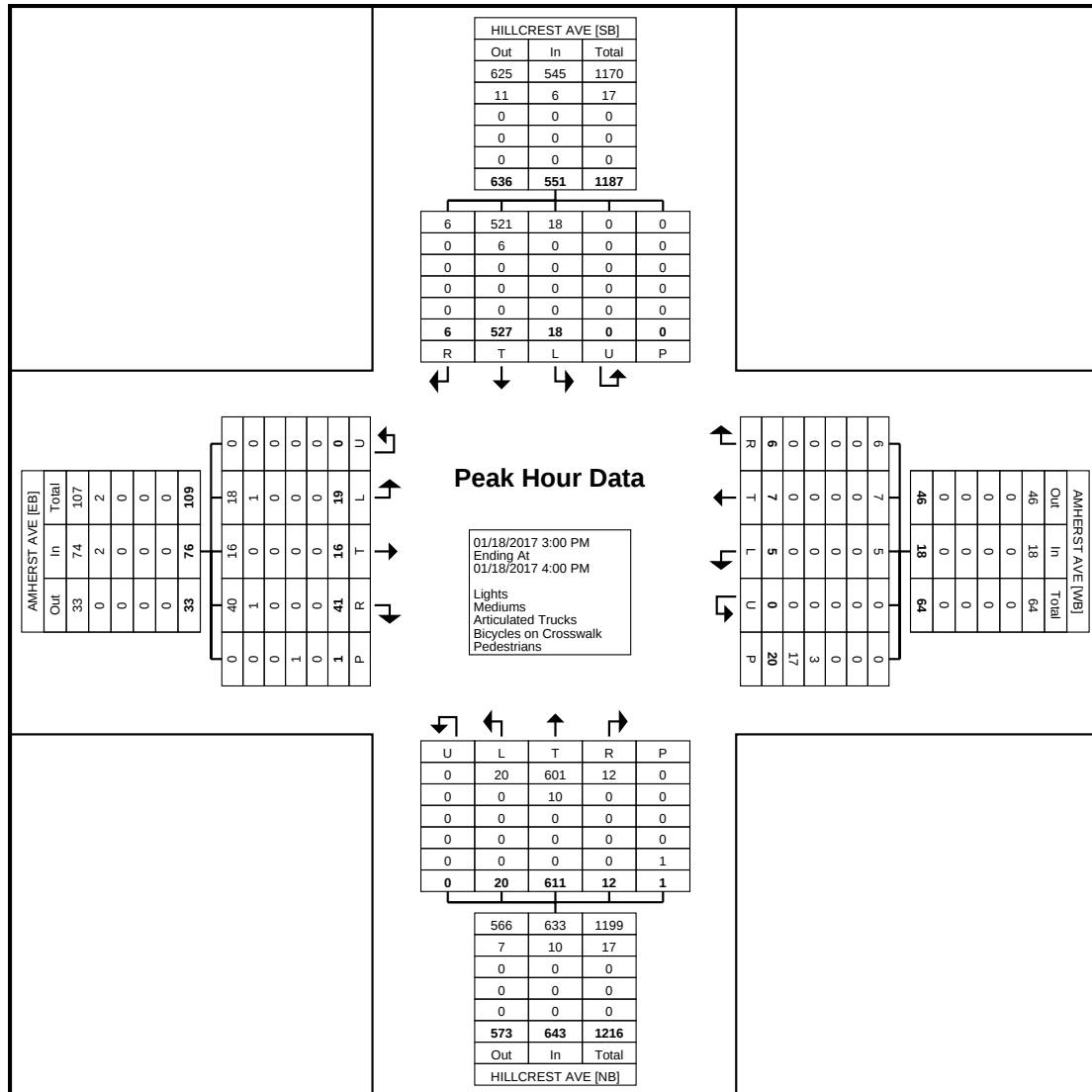
Start Time	HILLCREST AVE Southbound						AMHERST AVE Westbound						HILLCREST AVE Northbound						AMHERST AVE Eastbound						Int. Total
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	
3:00 PM	3	134	2	0	0	139	3	3	1	0	0	7	12	116	1	0	1	129	6	3	12	0	0	21	296
3:15 PM	9	139	2	0	0	150	0	1	2	0	16	3	3	152	4	0	0	159	6	8	18	0	0	32	344
3:30 PM	5	126	1	0	0	132	1	1	1	0	1	3	1	130	2	0	0	133	4	2	3	0	1	9	277
3:45 PM	1	128	1	0	0	130	1	2	2	0	3	5	4	213	5	0	0	222	3	3	8	0	0	14	371
Total	18	527	6	0	0	551	5	7	6	0	20	18	20	611	12	0	1	643	19	16	41	0	1	76	1288
Approach %	3.3	95.6	1.1	0.0	-	-	27.8	38.9	33.3	0.0	-	-	3.1	95.0	1.9	0.0	-	-	25.0	21.1	53.9	0.0	-	-	-
Total %	1.4	40.9	0.5	0.0	-	42.8	0.4	0.5	0.5	0.0	-	1.4	1.6	47.4	0.9	0.0	-	49.9	1.5	1.2	3.2	0.0	-	5.9	-
PHF	0.500	0.948	0.750	0.000	-	0.918	0.417	0.583	0.750	0.000	-	0.643	0.417	0.717	0.600	0.000	-	0.724	0.792	0.500	0.569	0.000	-	0.594	0.868
Lights	18	521	6	0	-	545	5	7	6	0	-	18	20	601	12	0	-	633	18	16	40	0	-	74	1270
% Lights	100.0	98.9	100.0	-	-	98.9	100.0	100.0	100.0	-	-	100.0	100.0	98.4	100.0	-	-	98.4	94.7	100.0	97.6	-	-	97.4	98.6
Mediums	0	6	0	0	-	6	0	0	0	0	-	0	0	10	0	0	-	10	1	0	1	0	-	2	18
% Mediums	0.0	1.1	0.0	-	-	1.1	0.0	0.0	0.0	-	-	0.0	0.0	1.6	0.0	-	-	1.6	5.3	0.0	2.4	-	-	2.6	1.4
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	0.0	-	-	0.0	0.0
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	3	-	-	-	-	-	0	-	-	-	-	-	1	-	-
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	15.0	-	-	-	-	-	0.0	-	-	-	-	-	100.0	-	-
Pedestrians	-	-	-	-	0	-	-	-	-	-	17	-	-	-	-	-	1	-	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	85.0	-	-	-	-	-	100.0	-	-	-	-	-	0.0	-	-

GRAM Traffic NTX Inc.

1120 W. Lovers Lane

Arlington, Texas, United States 76013
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Count Name: 6 - AMHERST
AVE @ HILLCREST AVE
Site Code:
Start Date: 01/18/2017
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Turning Movement Peak Hour Data Plot (3:00 PM)

GRAM Traffic NTX Inc.

1120 W. Lovers Lane

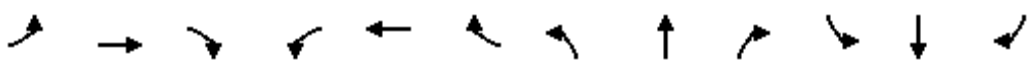
Arlington, Texas, United States 76013
817.265.8968

Count Name: 6 - AMHERST
AVE @ HILLCREST AVE
Site Code:
Start Date: 01/18/2017
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University Park Elementary
Existing (2017)

1: Dickens Avenue & Lovers Ln/Lovers Lane

AM Peak

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	309	49	27	432	0	85	0	35	62	51	25
Future Volume (vph)	0	309	49	27	432	0	85	0	35	62	51	25
Satd. Flow (prot)	1863	1825	0	1770	1863	0	1770	1583	0	1770	1863	1583
Flt Permitted				0.492			0.950			0.732		
Satd. Flow (perm)	1863	1825	0	916	1863	0	1770	1583	0	1364	1863	1583
Satd. Flow (RTOR)		13						480				80
Lane Group Flow (vph)	0	389	0	29	470	0	92	38	0	67	55	27
Turn Type	Perm	NA		Perm	NA		Prot	NA		Perm	NA	Perm
Protected Phases		6			2		7	4			8	
Permitted Phases	6			2						8		8
Total Split (s)	55.0	55.0		55.0	55.0		15.0	40.0		25.0	25.0	25.0
Total Lost Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	5.0
Act Effect Green (s)		63.4		63.4	63.4		9.0	24.7		13.0	13.0	13.0
Actuated g/C Ratio		0.67		0.67	0.67		0.09	0.26		0.14	0.14	0.14
v/c Ratio		0.32		0.05	0.38		0.55	0.05		0.36	0.22	0.10
Control Delay		10.3		9.7	11.4		53.6	0.1		40.9	36.3	0.7
Queue Delay		0.7		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay		11.1		9.7	11.4		53.6	0.1		40.9	36.3	0.7
LOS		B		A	B		D	A		D	D	A
Approach Delay		11.1			11.3			37.9			31.9	
Approach LOS		B			B			D			C	
Queue Length 50th (ft)		119		8	157		53	0		35	28	0
Queue Length 95th (ft)		182		21	233		103	0		75	62	0
Internal Link Dist (ft)		248			400			456			245	
Turn Bay Length (ft)				50								
Base Capacity (vph)		1222		612	1244		186	886		287	392	396
Starvation Cap Reductn		512		0	0		0	0		0	0	0
Spillback Cap Reductn		0		0	0		0	0		0	0	0
Storage Cap Reductn		0		0	0		0	0		0	0	0
Reduced v/c Ratio		0.55		0.05	0.38		0.49	0.04		0.23	0.14	0.07

Intersection Summary

Cycle Length: 95

Actuated Cycle Length: 95

Offset: 5 (5%), Referenced to phase 2:WBTL and 6:EBTL, Start of Green

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.55

Intersection Signal Delay: 16.8

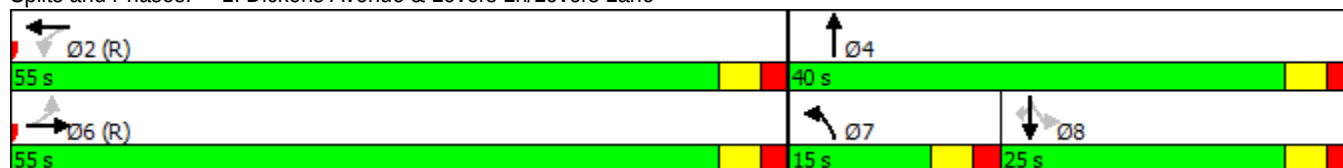
Intersection LOS: B

Intersection Capacity Utilization 44.1%

ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 1: Dickens Avenue & Lovers Ln/Lovers Lane



Intersection						
Int Delay, s/veh	0.6					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	2	341	511	14	12	20
Future Vol, veh/h	2	341	511	14	12	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	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	2	371	555	15	13	22
Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	571	0	-	0	938	563
Stage 1	-	-	-	-	563	-
Stage 2	-	-	-	-	375	-
Critical Hdwy	4.12	-	-	-	7.12	6.22
Critical Hdwy Stg 1	-	-	-	-	6.12	-
Critical Hdwy Stg 2	-	-	-	-	6.12	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1002	-	-	-	244	526
Stage 1	-	-	-	-	511	-
Stage 2	-	-	-	-	646	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1002	-	-	-	243	526
Mov Cap-2 Maneuver	-	-	-	-	243	-
Stage 1	-	-	-	-	509	-
Stage 2	-	-	-	-	644	-
Approach	EB		WB		SB	
HCM Control Delay, s	0.1		0		15.9	
HCM LOS					C	
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1002	-	-	-	366	
HCM Lane V/C Ratio	0.002	-	-	-	0.095	
HCM Control Delay (s)	8.6	0	-	-	15.9	
HCM Lane LOS	A	A	-	-	C	
HCM 95th %tile Q(veh)	0	-	-	-	0.3	

Intersection

Intersection Delay, s/veh	9.2
Intersection LOS	A

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Lane Configurations												
Traffic Vol, veh/h	0	7	29	0	0	3	4	6	0	7	113	33
Future Vol, veh/h	0	7	29	0	0	3	4	6	0	7	113	33
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	8	32	0	0	3	4	7	0	8	123	36
Number of Lanes	0	0	1	0	0	0	1	0	0	0	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	1	1	1
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	1	1	1
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	1	1	1
HCM Control Delay	8.4	7.9	8.3
HCM LOS	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	5%	19%	23%	22%
Vol Thru, %	74%	81%	31%	75%
Vol Right, %	22%	0%	46%	3%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	153	36	13	295
LT Vol	7	7	3	64
Through Vol	113	29	4	221
RT Vol	33	0	6	10
Lane Flow Rate	166	39	14	321
Geometry Grp	1	1	1	1
Degree of Util (X)	0.197	0.055	0.019	0.372
Departure Headway (Hd)	4.271	5.05	4.817	4.177
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	843	712	746	847
Service Time	2.28	3.06	2.829	2.272
HCM Lane V/C Ratio	0.197	0.055	0.019	0.379
HCM Control Delay	8.3	8.4	7.9	9.8
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.7	0.2	0.1	1.7

Intersection

Intersection Delay, s/veh

Intersection LOS

Movement	SBU	SBL	SBT	SBR
Lane Configurations				
Traffic Vol, veh/h	0	64	221	10
Future Vol, veh/h	0	64	221	10
Peak Hour Factor	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	70	240	11
Number of Lanes	0	0	1	0

Approach	SB
Opposing Approach	NB
Opposing Lanes	1
Conflicting Approach Left	WB
Conflicting Lanes Left	1
Conflicting Approach Right	EB
Conflicting Lanes Right	1
HCM Control Delay	9.8
HCM LOS	A

Intersection	
Intersection Delay, s/veh	7.6
Intersection LOS	A

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Lane Configurations												
Traffic Vol, veh/h	0	2	113	9	0	0	0	0	0	1	11	2
Future Vol, veh/h	0	2	113	9	0	0	0	0	0	1	11	2
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	2	123	10	0	0	0	0	0	1	12	2
Number of Lanes	0	0	1	0	0	0	0	0	0	0	1	0

Approach	EB	NB
Opposing Approach		SB
Opposing Lanes	0	1
Conflicting Approach Left	SB	EB
Conflicting Lanes Left	1	1
Conflicting Approach Right	NB	
Conflicting Lanes Right	1	0
HCM Control Delay	7.7	7.3
HCM LOS	A	A

Lane	NBLn1	EBLn1	SBLn1
Vol Left, %	7%	2%	20%
Vol Thru, %	79%	91%	51%
Vol Right, %	14%	7%	29%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	14	124	45
LT Vol	1	2	9
Through Vol	11	113	23
RT Vol	2	9	13
Lane Flow Rate	15	135	49
Geometry Grp	1	1	1
Degree of Util (X)	0.017	0.15	0.055
Departure Headway (Hd)	4.137	4.005	4.049
Convergence, Y/N	Yes	Yes	Yes
Cap	856	895	877
Service Time	2.208	2.034	2.111
HCM Lane V/C Ratio	0.018	0.151	0.056
HCM Control Delay	7.3	7.7	7.4
HCM Lane LOS	A	A	A
HCM 95th-tile Q	0.1	0.5	0.2

Intersection

Intersection Delay, s/veh

Intersection LOS

Movement	SBU	SBL	SBT	SBR
Lane Configurations				
Traffic Vol, veh/h	0	9	23	13
Future Vol, veh/h	0	9	23	13
Peak Hour Factor	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	10	25	14
Number of Lanes	0	0	1	0

Approach	SB
Opposing Approach	NB
Opposing Lanes	1
Conflicting Approach Left	
Conflicting Lanes Left	0
Conflicting Approach Right	EB
Conflicting Lanes Right	1
HCM Control Delay	7.4
HCM LOS	A

Intersection												
Intersection Delay, s/veh	6.9											
Intersection LOS	A											
Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Lane Configurations												
Traffic Vol, veh/h	0	1	2	119	0	7	0	13	0	0	0	0
Future Vol, veh/h	0	1	2	119	0	7	0	13	0	0	0	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	1	2	129	0	8	0	14	0	0	0	0
Number of Lanes	0	0	1	0	0	0	1	0	0	0	1	0
Approach	EB				WB						NB	
Opposing Approach	WB				EB						SB	
Opposing Lanes	1				1						1	
Conflicting Approach Left	SB				NB						EB	
Conflicting Lanes Left	1				1						1	
Conflicting Approach Right	NB				SB						WB	
Conflicting Lanes Right	1				1						1	
HCM Control Delay	6.9				6.8						0	
HCM LOS	A				A						-	
Lane	NBLn1	EBLn1	WBLn1	SBLn1								
Vol Left, %	0%	1%	35%	50%								
Vol Thru, %	100%	2%	0%	50%								
Vol Right, %	0%	98%	65%	0%								
Sign Control	Stop	Stop	Stop	Stop								
Traffic Vol by Lane	0	122	20	16								
LT Vol	0	1	7	8								
Through Vol	0	2	0	8								
RT Vol	0	119	13	0								
Lane Flow Rate	0	133	22	17								
Geometry Grp	1	1	1	1								
Degree of Util (X)	0	0.125	0.023	0.021								
Departure Headway (Hd)	4.214	3.396	3.742	4.3								
Convergence, Y/N	Yes	Yes	Yes	Yes								
Cap	0	1057	958	833								
Service Time	2.241	1.411	1.76	2.321								
HCM Lane V/C Ratio	0	0.126	0.023	0.02								
HCM Control Delay	7.2	6.9	6.8	7.4								
HCM Lane LOS	N	A	A	A								
HCM 95th-tile Q	0	0.4	0.1	0.1								

Intersection

Intersection Delay, s/veh

Intersection LOS

Movement	SBU	SBL	SBT	SBR
Lane Configurations				
Traffic Vol, veh/h	0	8	8	0
Future Vol, veh/h	0	8	8	0
Peak Hour Factor	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	9	9	0
Number of Lanes	0	0	1	0

Approach	SB
Opposing Approach	NB
Opposing Lanes	1
Conflicting Approach Left	WB
Conflicting Lanes Left	1
Conflicting Approach Right	EB
Conflicting Lanes Right	1
HCM Control Delay	7.4
HCM LOS	A

Intersection												
Int Delay, s/veh	2.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	16	22	53	11	9	20	13	549	14	8	545	6
Future Vol, veh/h	16	22	53	11	9	20	13	549	14	8	545	6
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, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	17	24	58	12	10	22	14	597	15	9	592	7
Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	945	1253	299	959	1249	306	599	0	0	612	0	0
Stage 1	613	613	-	633	633	-	-	-	-	-	-	-
Stage 2	332	640	-	326	616	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	217	171	697	211	172	690	974	-	-	963	-	-
Stage 1	446	481	-	434	472	-	-	-	-	-	-	-
Stage 2	655	468	-	661	480	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	195	165	697	167	166	690	974	-	-	963	-	-
Mov Cap-2 Maneuver	195	165	-	167	166	-	-	-	-	-	-	-
Stage 1	436	474	-	424	462	-	-	-	-	-	-	-
Stage 2	607	458	-	568	473	-	-	-	-	-	-	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	21.8			21			0.3			0.2		
HCM LOS	C			C								
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR				
Capacity (veh/h)	974	-	-	312	268	963	-	-				
HCM Lane V/C Ratio	0.015	-	-	0.317	0.162	0.009	-	-				
HCM Control Delay (s)	8.8	0.1	-	21.8	21	8.8	0.1	-				
HCM Lane LOS	A	A	-	C	C	A	A	-				
HCM 95th %tile O(veh)	0	-	-	1.3	0.6	0	-	-				

University Park Elementary
Existing (2017)

1: Dickens Avenue & Lovers Ln/Lovers Lane

PM Peak

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	2	446	58	29	387	2	90	10	37	48	40	28
Future Volume (vph)	2	446	58	29	387	2	90	10	37	48	40	28
Satd. Flow (prot)	1770	1831	0	1770	1861	0	1770	1643	0	1770	1863	1583
Flt Permitted	0.477			0.394			0.950			0.724		
Satd. Flow (perm)	889	1831	0	734	1861	0	1770	1643	0	1349	1863	1583
Satd. Flow (RTOR)		13						40				85
Lane Group Flow (vph)	2	548	0	32	423	0	98	51	0	52	43	30
Turn Type	Perm	NA		Perm	NA		Prot	NA		Perm	NA	Perm
Protected Phases		6			2		7	4			8	
Permitted Phases	6			2						8		8
Total Split (s)	60.0	60.0		60.0	60.0		10.0	30.0		20.0	20.0	20.0
Total Lost Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	5.0
Act Effect Green (s)	60.4	60.4		60.4	60.4		5.1	19.6		11.6	11.6	11.6
Actuated g/C Ratio	0.67	0.67		0.67	0.67		0.06	0.22		0.13	0.13	0.13
v/c Ratio	0.00	0.44		0.07	0.34		0.98	0.13		0.30	0.18	0.11
Control Delay	7.0	9.5		7.4	8.5		131.0	11.4		38.4	34.7	0.8
Queue Delay	0.0	1.9		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	7.0	11.3		7.4	8.5		131.0	11.4		38.4	34.7	0.8
LOS	A	B		A	A		F	B		D	C	A
Approach Delay		11.3			8.4			90.1			28.1	
Approach LOS		B			A			F			C	
Queue Length 50th (ft)	0	153		7	110		57	5		26	21	0
Queue Length 95th (ft)	3	230		19	167		#158	31		60	51	0
Internal Link Dist (ft)		248			400			456			245	
Turn Bay Length (ft)	50			50								
Base Capacity (vph)	597	1234		492	1249		100	485		224	310	334
Starvation Cap Reductn	0	505		0	0		0	0		0	0	0
Spillback Cap Reductn	0	0		0	0		0	0		0	0	0
Storage Cap Reductn	0	0		0	0		0	0		0	0	0
Reduced v/c Ratio	0.00	0.75		0.07	0.34		0.98	0.11		0.23	0.14	0.09

Intersection Summary

Cycle Length: 90

Actuated Cycle Length: 90

Offset: 0 (0%), Referenced to phase 2:WBTL, Start of Green

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.98

Intersection Signal Delay: 21.1

Intersection LOS: C

Intersection Capacity Utilization 47.0%

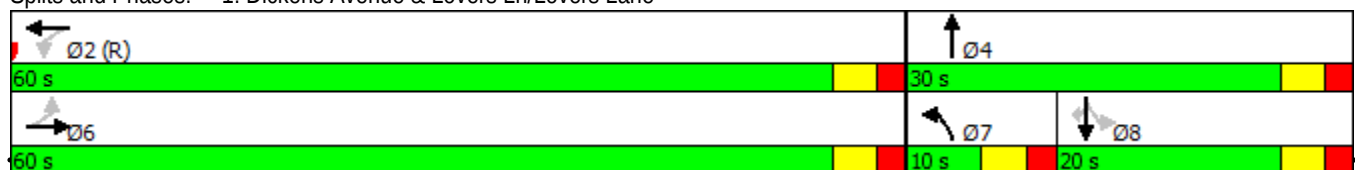
ICU Level of Service A

Analysis Period (min) 15

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 1: Dickens Avenue & Lovers Ln/Lovers Lane



BBI

01/26/2017

Synchro 9 Report

Intersection						
Int Delay, s/veh	0.5					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	3	472	507	12	10	17
Future Vol, veh/h	3	472	507	12	10	17
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	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	3	513	551	13	11	18
Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	564	0	-	0	1078	558
Stage 1	-	-	-	-	558	-
Stage 2	-	-	-	-	520	-
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	1008	-	-	-	242	529
Stage 1	-	-	-	-	573	-
Stage 2	-	-	-	-	597	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1008	-	-	-	241	529
Mov Cap-2 Maneuver	-	-	-	-	241	-
Stage 1	-	-	-	-	573	-
Stage 2	-	-	-	-	595	-
Approach	EB		WB		SB	
HCM Control Delay, s	0.1		0		15.7	
HCM LOS					C	
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1008	-	-	-	367	
HCM Lane V/C Ratio	0.003	-	-	-	0.08	
HCM Control Delay (s)	8.6	0	-	-	15.7	
HCM Lane LOS	A	A	-	-	C	
HCM 95th %tile Q(veh)	0	-	-	-	0.3	

Intersection	
Intersection Delay, s/veh	8.1
Intersection LOS	A

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Lane Configurations												
Traffic Vol, veh/h	0	16	15	8	0	4	1	7	0	2	145	42
Future Vol, veh/h	0	16	15	8	0	4	1	7	0	2	145	42
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	17	16	9	0	4	1	8	0	2	158	46
Number of Lanes	0	0	1	0	0	0	1	0	0	0	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	1	1	1
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	1	1	1
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	1	1	1
HCM Control Delay	7.9	7.5	8.3
HCM LOS	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	1%	41%	33%	20%
Vol Thru, %	77%	38%	8%	71%
Vol Right, %	22%	21%	58%	8%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	189	39	12	122
LT Vol	2	16	4	25
Through Vol	145	15	1	87
RT Vol	42	8	7	10
Lane Flow Rate	205	42	13	133
Geometry Grp	1	1	1	1
Degree of Util (X)	0.228	0.055	0.016	0.154
Departure Headway (Hd)	4.001	4.633	4.428	4.18
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	887	777	813	847
Service Time	2.074	2.634	2.43	2.261
HCM Lane V/C Ratio	0.231	0.054	0.016	0.157
HCM Control Delay	8.3	7.9	7.5	8
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.9	0.2	0	0.5

Intersection

Intersection Delay, s/veh

Intersection LOS

Movement	SBU	SBL	SBT	SBR
Lane Configurations				
Traffic Vol, veh/h	0	25	87	10
Future Vol, veh/h	0	25	87	10
Peak Hour Factor	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	27	95	11
Number of Lanes	0	0	1	0

Approach	SB
Opposing Approach	NB
Opposing Lanes	1
Conflicting Approach Left	WB
Conflicting Lanes Left	1
Conflicting Approach Right	EB
Conflicting Lanes Right	1
HCM Control Delay	8
HCM LOS	A

Intersection	
Intersection Delay, s/veh	7.4
Intersection LOS	A

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Lane Configurations												
Traffic Vol, veh/h	0	5	80	3	0	0	0	0	0	0	8	3
Future Vol, veh/h	0	5	80	3	0	0	0	0	0	0	8	3
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	5	87	3	0	0	0	0	0	0	9	3
Number of Lanes	0	0	1	0	0	0	0	0	0	0	1	0

Approach	EB	NB
Opposing Approach		SB
Opposing Lanes	0	1
Conflicting Approach Left	SB	EB
Conflicting Lanes Left	1	1
Conflicting Approach Right	NB	
Conflicting Lanes Right	1	0
HCM Control Delay	7.5	7.1
HCM LOS	A	A

Lane	NBLn1	EBLn1	SBLn1
Vol Left, %	0%	6%	20%
Vol Thru, %	73%	91%	57%
Vol Right, %	27%	3%	24%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	11	88	46
LT Vol	0	5	9
Through Vol	8	80	26
RT Vol	3	3	11
Lane Flow Rate	12	96	50
Geometry Grp	1	1	1
Degree of Util (X)	0.013	0.107	0.056
Departure Headway (Hd)	3.976	4.032	4.007
Convergence, Y/N	Yes	Yes	Yes
Cap	894	889	889
Service Time	2.03	2.059	2.052
HCM Lane V/C Ratio	0.013	0.108	0.056
HCM Control Delay	7.1	7.5	7.3
HCM Lane LOS	A	A	A
HCM 95th-tile Q	0	0.4	0.2

Intersection

Intersection Delay, s/veh

Intersection LOS

Movement	SBU	SBL	SBT	SBR
Lane Configurations				
Traffic Vol, veh/h	0	9	26	11
Future Vol, veh/h	0	9	26	11
Peak Hour Factor	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	10	28	12
Number of Lanes	0	0	1	0

Approach	SB
Opposing Approach	NB
Opposing Lanes	1
Conflicting Approach Left	
Conflicting Lanes Left	0
Conflicting Approach Right	EB
Conflicting Lanes Right	1
HCM Control Delay	7.3
HCM LOS	A

Intersection	
Intersection Delay, s/veh	7.1
Intersection LOS	A

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Lane Configurations												
Traffic Vol, veh/h	0	1	8	97	0	1	0	28	0	0	10	2
Future Vol, veh/h	0	1	8	97	0	1	0	28	0	0	10	2
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	1	9	105	0	1	0	30	0	0	11	2
Number of Lanes	0	0	1	0	0	0	1	0	0	0	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	1	1	1
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	1	1	1
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	1	1	1
HCM Control Delay	7	6.7	7.2
HCM LOS	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	0%	1%	3%	72%
Vol Thru, %	83%	8%	0%	28%
Vol Right, %	17%	92%	97%	0%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	12	106	29	50
LT Vol	0	1	1	36
Through Vol	10	8	0	14
RT Vol	2	97	28	0
Lane Flow Rate	13	115	32	54
Geometry Grp	1	1	1	1
Degree of Util (X)	0.015	0.113	0.031	0.066
Departure Headway (Hd)	4.129	3.527	3.565	4.342
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	863	1009	996	824
Service Time	2.173	1.571	1.617	2.372
HCM Lane V/C Ratio	0.015	0.114	0.032	0.066
HCM Control Delay	7.2	7	6.7	7.7
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0	0.4	0.1	0.2

Intersection

Intersection Delay, s/veh

Intersection LOS

Movement	SBU	SBL	SBT	SBR
Lane Configurations				
Traffic Vol, veh/h	0	36	14	0
Future Vol, veh/h	0	36	14	0
Peak Hour Factor	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	39	15	0
Number of Lanes	0	0	1	0

Approach	SB
Opposing Approach	NB
Opposing Lanes	1
Conflicting Approach Left	WB
Conflicting Lanes Left	1
Conflicting Approach Right	EB
Conflicting Lanes Right	1
HCM Control Delay	7.7
HCM LOS	A

Intersection												
Int Delay, s/veh	2.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	16	14	39	6	9	5	26	538	9	18	504	11
Future Vol, veh/h	16	14	39	6	9	5	26	538	9	18	504	11
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, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	17	15	42	7	10	5	28	585	10	20	548	12
Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	947	1244	280	967	1245	297	560	0	0	595	0	0
Stage 1	593	593	-	646	646	-	-	-	-	-	-	-
Stage 2	354	651	-	321	599	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	216	173	717	209	173	699	1007	-	-	977	-	-
Stage 1	459	492	-	427	465	-	-	-	-	-	-	-
Stage 2	636	463	-	665	489	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	193	161	717	173	161	699	1007	-	-	977	-	-
Mov Cap-2 Maneuver	193	161	-	173	161	-	-	-	-	-	-	-
Stage 1	440	477	-	409	445	-	-	-	-	-	-	-
Stage 2	591	444	-	588	474	-	-	-	-	-	-	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	20.4			24.6			0.6			0.4		
HCM LOS	C			C								
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR				
Capacity (veh/h)	1007	-	-	308	205	977	-	-				
HCM Lane V/C Ratio	0.028	-	-	0.244	0.106	0.02	-	-				
HCM Control Delay (s)	8.7	0.2	-	20.4	24.6	8.8	0.1	-				
HCM Lane LOS	A	A	-	C	C	A	A	-				
HCM 95th %tile Q(veh)	0.1	-	-	0.9	0.4	0.1	-	-				

University Park Elementary
Background (2018)

1: Dickens Avenue & Lovers Ln/Lovers Lane

AM Peak

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	312	49	27	436	0	86	0	35	63	52	25
Future Volume (vph)	0	312	49	27	436	0	86	0	35	63	52	25
Satd. Flow (prot)	1863	1825	0	1770	1863	0	1770	1583	0	1770	1863	1583
Flt Permitted				0.446			0.950			0.732		
Satd. Flow (perm)	1863	1825	0	831	1863	0	1770	1583	0	1364	1863	1583
Satd. Flow (RTOR)		13						476				80
Lane Group Flow (vph)	0	392	0	29	474	0	93	38	0	68	57	27
Turn Type	Perm	NA		Perm	NA		Prot	NA		Perm	NA	Perm
Protected Phases		6			2		7	4			8	
Permitted Phases	6			2						8		8
Total Split (s)	55.0	55.0		55.0	55.0		15.0	40.0		25.0	25.0	25.0
Total Lost Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	5.0
Act Effect Green (s)		50.0		50.0	50.0		9.0	35.0		23.3	23.3	23.3
Actuated g/C Ratio		0.53		0.53	0.53		0.09	0.37		0.25	0.25	0.25
v/c Ratio		0.41		0.07	0.48		0.56	0.04		0.20	0.12	0.06
Control Delay		14.6		11.7	16.4		53.8	0.1		33.0	31.5	0.2
Queue Delay		3.4		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay		18.1		11.7	16.4		53.8	0.1		33.0	31.5	0.2
LOS		B		B	B		D	A		C	C	A
Approach Delay		18.1			16.1			38.2			26.6	
Approach LOS		B			B			D			C	
Queue Length 50th (ft)		130		8	172		54	0		34	28	0
Queue Length 95th (ft)		198		23	255		105	0		73	61	0
Internal Link Dist (ft)		248			400			456			245	
Turn Bay Length (ft)				50								
Base Capacity (vph)		966		437	980		186	883		334	456	447
Starvation Cap Reductn		467		0	0		0	0		0	0	0
Spillback Cap Reductn		0		0	0		0	0		0	0	0
Storage Cap Reductn		0		0	0		0	0		0	0	0
Reduced v/c Ratio		0.79		0.07	0.48		0.50	0.04		0.20	0.13	0.06

Intersection Summary

Cycle Length: 95

Actuated Cycle Length: 95

Offset: 0 (0%), Referenced to phase 2:WBTL, Start of Green

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.56

Intersection Signal Delay: 20.6

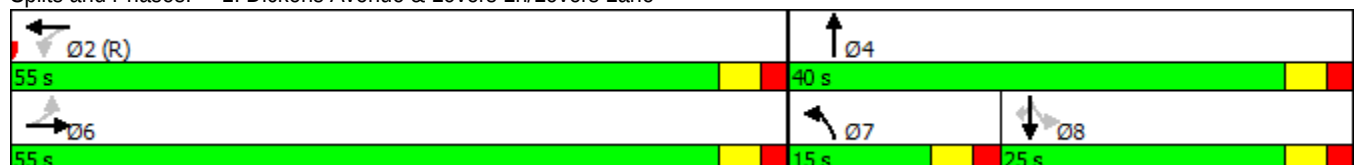
Intersection LOS: C

Intersection Capacity Utilization 44.4%

ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 1: Dickens Avenue & Lovers Ln/Lovers Lane



Intersection						
Int Delay, s/veh	0.5					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	2	344	516	14	12	20
Future Vol, veh/h	2	344	516	14	12	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	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	2	374	561	15	13	22
Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	576	0	-	0	946	568
Stage 1	-	-	-	-	568	-
Stage 2	-	-	-	-	378	-
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	997	-	-	-	290	522
Stage 1	-	-	-	-	567	-
Stage 2	-	-	-	-	693	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	997	-	-	-	289	522
Mov Cap-2 Maneuver	-	-	-	-	289	-
Stage 1	-	-	-	-	567	-
Stage 2	-	-	-	-	691	-
Approach	EB		WB		SB	
HCM Control Delay, s	0		0		14.8	
HCM LOS					B	
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	997	-	-	-	401	
HCM Lane V/C Ratio	0.002	-	-	-	0.087	
HCM Control Delay (s)	8.6	0	-	-	14.8	
HCM Lane LOS	A	A	-	-	B	
HCM 95th %tile Q(veh)	0	-	-	-	0.3	

Intersection

Intersection Delay, s/veh	9.2
Intersection LOS	A

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Lane Configurations												
Traffic Vol, veh/h	0	7	29	0	0	3	4	6	0	7	114	33
Future Vol, veh/h	0	7	29	0	0	3	4	6	0	7	114	33
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	8	32	0	0	3	4	7	0	8	124	36
Number of Lanes	0	0	1	0	0	0	1	0	0	0	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	1	1	1
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	1	1	1
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	1	1	1
HCM Control Delay	8.4	7.9	8.3
HCM LOS	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	5%	19%	23%	22%
Vol Thru, %	74%	81%	31%	75%
Vol Right, %	21%	0%	46%	3%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	154	36	13	298
LT Vol	7	7	3	65
Through Vol	114	29	4	223
RT Vol	33	0	6	10
Lane Flow Rate	167	39	14	324
Geometry Grp	1	1	1	1
Degree of Util (X)	0.199	0.055	0.019	0.376
Departure Headway (Hd)	4.275	5.059	4.826	4.179
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	844	711	744	849
Service Time	2.284	3.071	2.84	2.274
HCM Lane V/C Ratio	0.198	0.055	0.019	0.382
HCM Control Delay	8.3	8.4	7.9	9.8
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.7	0.2	0.1	1.8

Intersection

Intersection Delay, s/veh

Intersection LOS

Movement	SBU	SBL	SBT	SBR
Lane Configurations				
Traffic Vol, veh/h	0	65	223	10
Future Vol, veh/h	0	65	223	10
Peak Hour Factor	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	71	242	11
Number of Lanes	0	0	1	0

Approach	SB
Opposing Approach	NB
Opposing Lanes	1
Conflicting Approach Left	WB
Conflicting Lanes Left	1
Conflicting Approach Right	EB
Conflicting Lanes Right	1
HCM Control Delay	9.8
HCM LOS	A

Intersection	
Intersection Delay, s/veh	7.7
Intersection LOS	A

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Lane Configurations												
Traffic Vol, veh/h	0	2	114	9	0	0	0	0	0	1	11	2
Future Vol, veh/h	0	2	114	9	0	0	0	0	0	1	11	2
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	2	124	10	0	0	0	0	0	1	12	2
Number of Lanes	0	0	1	0	0	0	0	0	0	0	1	0

Approach	EB	NB
Opposing Approach		SB
Opposing Lanes	0	1
Conflicting Approach Left	SB	EB
Conflicting Lanes Left	1	1
Conflicting Approach Right	NB	
Conflicting Lanes Right	1	0
HCM Control Delay	7.8	7.3
HCM LOS	A	A

Lane	NBLn1	EBLn1	SBLn1
Vol Left, %	7%	2%	20%
Vol Thru, %	79%	91%	51%
Vol Right, %	14%	7%	29%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	14	125	45
LT Vol	1	2	9
Through Vol	11	114	23
RT Vol	2	9	13
Lane Flow Rate	15	136	49
Geometry Grp	1	1	1
Degree of Util (X)	0.017	0.151	0.055
Departure Headway (Hd)	4.139	4.005	4.051
Convergence, Y/N	Yes	Yes	Yes
Cap	855	894	876
Service Time	2.21	2.034	2.113
HCM Lane V/C Ratio	0.018	0.152	0.056
HCM Control Delay	7.3	7.8	7.4
HCM Lane LOS	A	A	A
HCM 95th-tile Q	0.1	0.5	0.2

Intersection

Intersection Delay, s/veh

Intersection LOS

Movement	SBU	SBL	SBT	SBR
Lane Configurations				
Traffic Vol, veh/h	0	9	23	13
Future Vol, veh/h	0	9	23	13
Peak Hour Factor	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	10	25	14
Number of Lanes	0	0	1	0

Approach	SB
Opposing Approach	NB
Opposing Lanes	1
Conflicting Approach Left	
Conflicting Lanes Left	0
Conflicting Approach Right	EB
Conflicting Lanes Right	1
HCM Control Delay	7.4
HCM LOS	A

Intersection

Intersection Delay, s/veh	6.9
Intersection LOS	A

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Lane Configurations												
Traffic Vol, veh/h	0	1	2	120	0	7	0	13	0	0	0	0
Future Vol, veh/h	0	1	2	120	0	7	0	13	0	0	0	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	1	2	130	0	8	0	14	0	0	0	0
Number of Lanes	0	0	1	0	0	0	1	0	0	0	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	1	1	1
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	1	1	1
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	1	1	1
HCM Control Delay	6.9	6.8	0
HCM LOS	A	A	-

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	0%	1%	35%	50%
Vol Thru, %	100%	2%	0%	50%
Vol Right, %	0%	98%	65%	0%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	0	123	20	16
LT Vol	0	1	7	8
Through Vol	0	2	0	8
RT Vol	0	120	13	0
Lane Flow Rate	0	134	22	17
Geometry Grp	1	1	1	1
Degree of Util (X)	0	0.126	0.023	0.021
Departure Headway (Hd)	4.216	3.396	3.743	4.302
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	0	1058	958	833
Service Time	2.243	1.411	1.761	2.323
HCM Lane V/C Ratio	0	0.127	0.023	0.02
HCM Control Delay	7.2	6.9	6.8	7.4
HCM Lane LOS	N	A	A	A
HCM 95th-tile Q	0	0.4	0.1	0.1

Intersection

Intersection Delay, s/veh

Intersection LOS

Movement	SBU	SBL	SBT	SBR
Lane Configurations				
Traffic Vol, veh/h	0	8	8	0
Future Vol, veh/h	0	8	8	0
Peak Hour Factor	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	9	9	0
Number of Lanes	0	0	1	0

Approach	SB
Opposing Approach	NB
Opposing Lanes	1
Conflicting Approach Left	WB
Conflicting Lanes Left	1
Conflicting Approach Right	EB
Conflicting Lanes Right	1
HCM Control Delay	7.4
HCM LOS	A

Intersection												
Int Delay, s/veh	2.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕↕			↕↕	
Traffic Vol, veh/h	16	22	54	11	9	20	13	554	14	8	550	6
Future Vol, veh/h	16	22	54	11	9	20	13	554	14	8	550	6
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, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	17	24	59	12	10	22	14	602	15	9	598	7
Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	952	1264	302	966	1260	309	604	0	0	617	0	0
Stage 1	618	618	-	638	638	-	-	-	-	-	-	-
Stage 2	334	646	-	328	622	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	214	168	694	209	169	687	970	-	-	959	-	-
Stage 1	443	479	-	431	469	-	-	-	-	-	-	-
Stage 2	653	465	-	659	477	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	192	162	694	165	163	687	970	-	-	959	-	-
Mov Cap-2 Maneuver	192	162	-	165	163	-	-	-	-	-	-	-
Stage 1	433	472	-	422	459	-	-	-	-	-	-	-
Stage 2	605	455	-	565	470	-	-	-	-	-	-	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	22			21.2			0.3			0.2		
HCM LOS	C			C								
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR				
Capacity (veh/h)	970	-	-	310	265	959	-	-				
HCM Lane V/C Ratio	0.015	-	-	0.323	0.164	0.009	-	-				
HCM Control Delay (s)	8.8	0.1	-	22	21.2	8.8	0.1	-				
HCM Lane LOS	A	A	-	C	C	A	A	-				
HCM 95th %tile O(veh)	0	-	-	1.4	0.6	0	-	-				

University Park Elementary
Background (2018)

1: Dickens Avenue & Lovers Ln/Lovers Lane

PM Peak

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	2	450	59	29	391	2	91	10	37	48	40	28
Future Volume (vph)	2	450	59	29	391	2	91	10	37	48	40	28
Satd. Flow (prot)	1770	1831	0	1770	1861	0	1770	1643	0	1770	1863	1583
Flt Permitted	0.475			0.391			0.950			0.724		
Satd. Flow (perm)	885	1831	0	728	1861	0	1770	1643	0	1349	1863	1583
Satd. Flow (RTOR)		13						40				73
Lane Group Flow (vph)	2	553	0	32	427	0	99	51	0	52	43	30
Turn Type	Perm	NA		Perm	NA		Prot	NA		Perm	NA	Perm
Protected Phases		6			2		7	4			8	
Permitted Phases	6			2						8		8
Total Split (s)	60.0	60.0		60.0	60.0		10.0	30.0		20.0	20.0	20.0
Total Lost Time (s)	5.0	5.0		5.0	5.0		4.0	5.0		5.0	5.0	5.0
Act Effect Green (s)	60.4	60.4		60.4	60.4		6.1	19.6		11.6	11.6	11.6
Actuated g/C Ratio	0.67	0.67		0.67	0.67		0.07	0.22		0.13	0.13	0.13
v/c Ratio	0.00	0.45		0.07	0.34		0.82	0.13		0.30	0.18	0.11
Control Delay	7.0	9.5		7.4	8.5		89.7	11.4		38.4	34.7	1.0
Queue Delay	0.0	1.9		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	7.0	11.4		7.4	8.5		89.7	11.4		38.4	34.7	1.0
LOS	A	B		A	A		F	B		D	C	A
Approach Delay		11.4			8.4			63.0			28.2	
Approach LOS		B			A			E			C	
Queue Length 50th (ft)	0	155		7	112		57	5		26	21	0
Queue Length 95th (ft)	3	233		19	169		#148	31		60	51	2
Internal Link Dist (ft)		248			400			456			245	
Turn Bay Length (ft)	50			50								
Base Capacity (vph)	594	1234		488	1249		120	485		224	310	324
Starvation Cap Reductn	0	502		0	0		0	0		0	0	0
Spillback Cap Reductn	0	0		0	0		0	0		0	0	0
Storage Cap Reductn	0	0		0	0		0	0		0	0	0
Reduced v/c Ratio	0.00	0.76		0.07	0.34		0.82	0.11		0.23	0.14	0.09

Intersection Summary

Cycle Length: 90

Actuated Cycle Length: 90

Offset: 0 (0%), Referenced to phase 2:WBTL, Start of Green

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.82

Intersection Signal Delay: 18.0

Intersection LOS: B

Intersection Capacity Utilization 47.3%

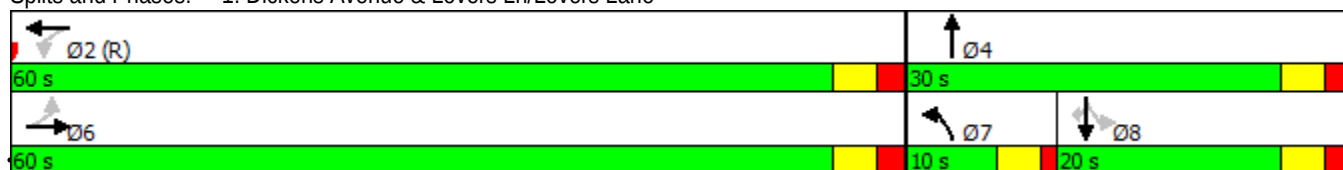
ICU Level of Service A

Analysis Period (min) 15

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 1: Dickens Avenue & Lovers Ln/Lovers Lane



BBI

01/26/2017

Synchro 9 Report

Intersection

Int Delay, s/veh 0.5

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	3	477	512	12	10	17
Future Vol, veh/h	3	477	512	12	10	17
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	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	3	518	557	13	11	18

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	570	0	1088
Stage 1	-	-	563
Stage 2	-	-	525
Critical Hdwy	4.12	-	6.42
Critical Hdwy Stg 1	-	-	5.42
Critical Hdwy Stg 2	-	-	5.42
Follow-up Hdwy	2.218	-	3.518
Pot Cap-1 Maneuver	1002	-	239
Stage 1	-	-	570
Stage 2	-	-	593
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	1002	-	238
Mov Cap-2 Maneuver	-	-	238
Stage 1	-	-	570
Stage 2	-	-	591

Approach	EB	WB	SB
HCM Control Delay, s	0.1	0	15.8
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1002	-	-	-	363
HCM Lane V/C Ratio	0.003	-	-	-	0.081
HCM Control Delay (s)	8.6	0	-	-	15.8
HCM Lane LOS	A	A	-	-	C
HCM 95th %tile Q(veh)	0	-	-	-	0.3

Intersection												
Intersection Delay, s/veh	8.1											
Intersection LOS	A											
Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Lane Configurations												
Traffic Vol, veh/h	0	16	15	8	0	4	1	7	0	2	146	42
Future Vol, veh/h	0	16	15	8	0	4	1	7	0	2	146	42
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	17	16	9	0	4	1	8	0	2	159	46
Number of Lanes	0	0	1	0	0	0	1	0	0	0	1	0
Approach	EB				WB				NB			
Opposing Approach	WB				EB				SB			
Opposing Lanes	1				1				1			
Conflicting Approach Left	SB				NB				EB			
Conflicting Lanes Left	1				1				1			
Conflicting Approach Right	NB				SB				WB			
Conflicting Lanes Right	1				1				1			
HCM Control Delay	7.9				7.5				8.3			
HCM LOS	A				A				A			
Lane	NBLn1	EBLn1	WBLn1	SBLn1								
Vol Left, %	1%	41%	33%	20%								
Vol Thru, %	77%	38%	8%	72%								
Vol Right, %	22%	21%	58%	8%								
Sign Control	Stop	Stop	Stop	Stop								
Traffic Vol by Lane	190	39	12	123								
LT Vol	2	16	4	25								
Through Vol	146	15	1	88								
RT Vol	42	8	7	10								
Lane Flow Rate	207	42	13	134								
Geometry Grp	1	1	1	1								
Degree of Util (X)	0.23	0.055	0.016	0.155								
Departure Headway (Hd)	4.003	4.638	4.434	4.181								
Convergence, Y/N	Yes	Yes	Yes	Yes								
Cap	886	777	812	846								
Service Time	2.076	2.639	2.436	2.263								
HCM Lane V/C Ratio	0.234	0.054	0.016	0.158								
HCM Control Delay	8.3	7.9	7.5	8								
HCM Lane LOS	A	A	A	A								
HCM 95th-tile Q	0.9	0.2	0	0.5								

Intersection

Intersection Delay, s/veh

Intersection LOS

Movement	SBU	SBL	SBT	SBR
Lane Configurations				
Traffic Vol, veh/h	0	25	88	10
Future Vol, veh/h	0	25	88	10
Peak Hour Factor	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	27	96	11
Number of Lanes	0	0	1	0

Approach	SB
Opposing Approach	NB
Opposing Lanes	1
Conflicting Approach Left	WB
Conflicting Lanes Left	1
Conflicting Approach Right	EB
Conflicting Lanes Right	1
HCM Control Delay	8
HCM LOS	A

Intersection	
Intersection Delay, s/veh	7.4
Intersection LOS	A

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Lane Configurations												
Traffic Vol, veh/h	0	5	81	3	0	0	0	0	0	0	8	3
Future Vol, veh/h	0	5	81	3	0	0	0	0	0	0	8	3
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	5	88	3	0	0	0	0	0	0	9	3
Number of Lanes	0	0	1	0	0	0	0	0	0	0	1	0

Approach	EB	NB
Opposing Approach		SB
Opposing Lanes	0	1
Conflicting Approach Left	SB	EB
Conflicting Lanes Left	1	1
Conflicting Approach Right	NB	
Conflicting Lanes Right	1	0
HCM Control Delay	7.5	7.1
HCM LOS	A	A

Lane	NBLn1	EBLn1	SBLn1
Vol Left, %	0%	6%	20%
Vol Thru, %	73%	91%	57%
Vol Right, %	27%	3%	24%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	11	89	46
LT Vol	0	5	9
Through Vol	8	81	26
RT Vol	3	3	11
Lane Flow Rate	12	97	50
Geometry Grp	1	1	1
Degree of Util (X)	0.013	0.108	0.056
Departure Headway (Hd)	3.978	4.032	4.009
Convergence, Y/N	Yes	Yes	Yes
Cap	893	888	889
Service Time	2.032	2.059	2.054
HCM Lane V/C Ratio	0.013	0.109	0.056
HCM Control Delay	7.1	7.5	7.3
HCM Lane LOS	A	A	A
HCM 95th-tile Q	0	0.4	0.2

Intersection

Intersection Delay, s/veh

Intersection LOS

Movement	SBU	SBL	SBT	SBR
Lane Configurations				
Traffic Vol, veh/h	0	9	26	11
Future Vol, veh/h	0	9	26	11
Peak Hour Factor	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	10	28	12
Number of Lanes	0	0	1	0

Approach	SB
Opposing Approach	NB
Opposing Lanes	1
Conflicting Approach Left	
Conflicting Lanes Left	0
Conflicting Approach Right	EB
Conflicting Lanes Right	1
HCM Control Delay	7.3
HCM LOS	A

Intersection

Intersection Delay, s/veh	7.1
Intersection LOS	A

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Lane Configurations												
Traffic Vol, veh/h	0	1	8	98	0	1	0	28	0	0	10	2
Future Vol, veh/h	0	1	8	98	0	1	0	28	0	0	10	2
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	1	9	107	0	1	0	30	0	0	11	2
Number of Lanes	0	0	1	0	0	0	1	0	0	0	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	1	1	1
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	1	1	1
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	1	1	1
HCM Control Delay	7	6.7	7.2
HCM LOS	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	0%	1%	3%	72%
Vol Thru, %	83%	7%	0%	28%
Vol Right, %	17%	92%	97%	0%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	12	107	29	50
LT Vol	0	1	1	36
Through Vol	10	8	0	14
RT Vol	2	98	28	0
Lane Flow Rate	13	116	32	54
Geometry Grp	1	1	1	1
Degree of Util (X)	0.015	0.114	0.031	0.066
Departure Headway (Hd)	4.131	3.527	3.566	4.344
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	862	1011	996	824
Service Time	2.175	1.57	1.617	2.374
HCM Lane V/C Ratio	0.015	0.115	0.032	0.066
HCM Control Delay	7.2	7	6.7	7.7
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0	0.4	0.1	0.2

Intersection

Intersection Delay, s/veh

Intersection LOS

Movement	SBU	SBL	SBT	SBR
Lane Configurations				
Traffic Vol, veh/h	0	36	14	0
Future Vol, veh/h	0	36	14	0
Peak Hour Factor	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	39	15	0
Number of Lanes	0	0	1	0

Approach	SB
Opposing Approach	NB
Opposing Lanes	1
Conflicting Approach Left	WB
Conflicting Lanes Left	1
Conflicting Approach Right	EB
Conflicting Lanes Right	1
HCM Control Delay	7.7
HCM LOS	A

Intersection												
Int Delay, s/veh	2.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	16	14	39	6	9	5	26	543	9	18	509	11
Future Vol, veh/h	16	14	39	6	9	5	26	543	9	18	509	11
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, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	17	15	42	7	10	5	28	590	10	20	553	12
Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	955	1255	283	975	1256	300	565	0	0	600	0	0
Stage 1	598	598	-	652	652	-	-	-	-	-	-	-
Stage 2	357	657	-	323	604	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	213	170	714	206	170	696	1003	-	-	973	-	-
Stage 1	456	489	-	423	462	-	-	-	-	-	-	-
Stage 2	633	460	-	663	486	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	191	158	714	170	158	696	1003	-	-	973	-	-
Mov Cap-2 Maneuver	191	158	-	170	158	-	-	-	-	-	-	-
Stage 1	437	474	-	405	443	-	-	-	-	-	-	-
Stage 2	588	441	-	586	471	-	-	-	-	-	-	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	20.7			25.1			0.6			0.4		
HCM LOS	C			D								
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR				
Capacity (veh/h)	1003	-	-	304	201	973	-	-				
HCM Lane V/C Ratio	0.028	-	-	0.247	0.108	0.02	-	-				
HCM Control Delay (s)	8.7	0.2	-	20.7	25.1	8.8	0.1	-				
HCM Lane LOS	A	A	-	C	D	A	A	-				
HCM 95th %tile O(veh)	0.1	-	-	1	0.4	0.1	-	-				

University Park Elementary
Garage (2018)

1: Dickens Avenue & Lovers Ln/Lovers Lane

AM Peak

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	312	49	27	506	0	116	0	35	63	52	25
Future Volume (vph)	0	312	49	27	506	0	116	0	35	63	52	25
Satd. Flow (prot)	1863	1825	0	1770	1863	0	1770	1583	0	1770	1863	1583
Flt Permitted				0.451			0.950			0.732		
Satd. Flow (perm)	1863	1825	0	840	1863	0	1770	1583	0	1364	1863	1583
Satd. Flow (RTOR)		13						476				80
Lane Group Flow (vph)	0	392	0	29	550	0	126	38	0	68	57	27
Turn Type	Perm	NA		Perm	NA		Prot	NA		Perm	NA	Perm
Protected Phases		6			2		7	4			8	
Permitted Phases	6			2						8		8
Total Split (s)	55.0	55.0		55.0	55.0		15.0	40.0		25.0	25.0	25.0
Total Lost Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	5.0
Act Effect Green (s)		50.0		50.0	50.0		9.6	35.0		20.4	20.4	20.4
Actuated g/C Ratio		0.53		0.53	0.53		0.10	0.37		0.21	0.21	0.21
v/c Ratio		0.41		0.07	0.56		0.71	0.04		0.23	0.14	0.07
Control Delay		11.0		11.6	17.9		63.6	0.1		33.7	31.8	0.3
Queue Delay		0.5		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay		11.5		11.6	17.9		63.6	0.1		33.7	31.8	0.3
LOS		B		B	B		E	A		C	C	A
Approach Delay		11.5			17.6			48.9			27.1	
Approach LOS		B			B			D			C	
Queue Length 50th (ft)		55		8	211		74	0		34	28	0
Queue Length 95th (ft)		81		23	310		#155	0		73	61	0
Internal Link Dist (ft)		248			400			456			245	
Turn Bay Length (ft)				50								
Base Capacity (vph)		966		442	980		186	883		293	401	403
Starvation Cap Reductn		251		0	0		0	0		0	0	0
Spillback Cap Reductn		0		0	0		0	0		0	0	0
Storage Cap Reductn		0		0	0		0	0		0	0	0
Reduced v/c Ratio		0.55		0.07	0.56		0.68	0.04		0.23	0.14	0.07

Intersection Summary

Cycle Length: 95

Actuated Cycle Length: 95

Offset: 0 (0%), Referenced to phase 2:WBTL, Start of Green

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.71

Intersection Signal Delay: 20.9

Intersection LOS: C

Intersection Capacity Utilization 49.7%

ICU Level of Service A

Analysis Period (min) 15

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 1: Dickens Avenue & Lovers Ln/Lovers Lane



BBI

01/27/2017

Synchro 9 Report

Intersection						
Int Delay, s/veh	0.5					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	2	344	516	14	12	20
Future Vol, veh/h	2	344	516	14	12	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	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	2	374	561	15	13	22
Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	576	0	-	0	946	568
Stage 1	-	-	-	-	568	-
Stage 2	-	-	-	-	378	-
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	997	-	-	-	290	522
Stage 1	-	-	-	-	567	-
Stage 2	-	-	-	-	693	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	997	-	-	-	289	522
Mov Cap-2 Maneuver	-	-	-	-	289	-
Stage 1	-	-	-	-	567	-
Stage 2	-	-	-	-	691	-
Approach	EB		WB		SB	
HCM Control Delay, s	0		0		14.8	
HCM LOS					B	
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	997	-	-	-	401	
HCM Lane V/C Ratio	0.002	-	-	-	0.087	
HCM Control Delay (s)	8.6	0	-	-	14.8	
HCM Lane LOS	A	A	-	-	B	
HCM 95th %tile Q(veh)	0	-	-	-	0.3	

Intersection	
Intersection Delay, s/veh	9.2
Intersection LOS	A

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Lane Configurations												
Traffic Vol, veh/h	0	7	29	0	0	3	4	6	0	7	114	33
Future Vol, veh/h	0	7	29	0	0	3	4	6	0	7	114	33
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	8	32	0	0	3	4	7	0	8	124	36
Number of Lanes	0	0	1	0	0	0	1	0	0	0	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	1	1	1
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	1	1	1
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	1	1	1
HCM Control Delay	8.4	7.9	8.3
HCM LOS	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	5%	19%	23%	22%
Vol Thru, %	74%	81%	31%	75%
Vol Right, %	21%	0%	46%	3%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	154	36	13	298
LT Vol	7	7	3	65
Through Vol	114	29	4	223
RT Vol	33	0	6	10
Lane Flow Rate	167	39	14	324
Geometry Grp	1	1	1	1
Degree of Util (X)	0.199	0.055	0.019	0.376
Departure Headway (Hd)	4.275	5.059	4.826	4.179
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	844	711	744	849
Service Time	2.284	3.071	2.84	2.274
HCM Lane V/C Ratio	0.198	0.055	0.019	0.382
HCM Control Delay	8.3	8.4	7.9	9.8
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.7	0.2	0.1	1.8

Intersection

Intersection Delay, s/veh

Intersection LOS

Movement	SBU	SBL	SBT	SBR
Lane Configurations				
Traffic Vol, veh/h	0	65	223	10
Future Vol, veh/h	0	65	223	10
Peak Hour Factor	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	71	242	11
Number of Lanes	0	0	1	0

Approach	SB
Opposing Approach	NB
Opposing Lanes	1
Conflicting Approach Left	WB
Conflicting Lanes Left	1
Conflicting Approach Right	EB
Conflicting Lanes Right	1
HCM Control Delay	9.8
HCM LOS	A

Intersection	
Intersection Delay, s/veh	7.7
Intersection LOS	A

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Lane Configurations												
Traffic Vol, veh/h	0	2	114	9	0	0	0	0	0	1	11	2
Future Vol, veh/h	0	2	114	9	0	0	0	0	0	1	11	2
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	2	124	10	0	0	0	0	0	1	12	2
Number of Lanes	0	0	1	0	0	0	0	0	0	0	1	0

Approach	EB	NB
Opposing Approach		SB
Opposing Lanes	0	1
Conflicting Approach Left	SB	EB
Conflicting Lanes Left	1	1
Conflicting Approach Right	NB	
Conflicting Lanes Right	1	0
HCM Control Delay	7.8	7.3
HCM LOS	A	A

Lane	NBLn1	EBLn1	SBLn1
Vol Left, %	7%	2%	20%
Vol Thru, %	79%	91%	51%
Vol Right, %	14%	7%	29%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	14	125	45
LT Vol	1	2	9
Through Vol	11	114	23
RT Vol	2	9	13
Lane Flow Rate	15	136	49
Geometry Grp	1	1	1
Degree of Util (X)	0.017	0.151	0.055
Departure Headway (Hd)	4.139	4.005	4.051
Convergence, Y/N	Yes	Yes	Yes
Cap	855	894	876
Service Time	2.21	2.034	2.113
HCM Lane V/C Ratio	0.018	0.152	0.056
HCM Control Delay	7.3	7.8	7.4
HCM Lane LOS	A	A	A
HCM 95th-tile Q	0.1	0.5	0.2

Intersection

Intersection Delay, s/veh

Intersection LOS

Movement	SBU	SBL	SBT	SBR
Lane Configurations				
Traffic Vol, veh/h	0	9	23	13
Future Vol, veh/h	0	9	23	13
Peak Hour Factor	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	10	25	14
Number of Lanes	0	0	1	0

Approach	SB
Opposing Approach	NB
Opposing Lanes	1
Conflicting Approach Left	
Conflicting Lanes Left	0
Conflicting Approach Right	EB
Conflicting Lanes Right	1
HCM Control Delay	7.4
HCM LOS	A

Intersection

Intersection Delay, s/veh	6.9
Intersection LOS	A

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Lane Configurations												
Traffic Vol, veh/h	0	1	2	120	0	7	0	13	0	0	0	0
Future Vol, veh/h	0	1	2	120	0	7	0	13	0	0	0	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	1	2	130	0	8	0	14	0	0	0	0
Number of Lanes	0	0	1	0	0	0	1	0	0	0	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	1	1	1
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	1	1	1
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	1	1	1
HCM Control Delay	6.9	6.8	0
HCM LOS	A	A	-

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	0%	1%	35%	50%
Vol Thru, %	100%	2%	0%	50%
Vol Right, %	0%	98%	65%	0%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	0	123	20	16
LT Vol	0	1	7	8
Through Vol	0	2	0	8
RT Vol	0	120	13	0
Lane Flow Rate	0	134	22	17
Geometry Grp	1	1	1	1
Degree of Util (X)	0	0.126	0.023	0.021
Departure Headway (Hd)	4.216	3.396	3.743	4.302
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	0	1058	958	833
Service Time	2.243	1.411	1.761	2.323
HCM Lane V/C Ratio	0	0.127	0.023	0.02
HCM Control Delay	7.2	6.9	6.8	7.4
HCM Lane LOS	N	A	A	A
HCM 95th-tile Q	0	0.4	0.1	0.1

Intersection

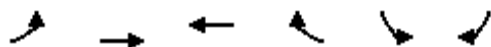
Intersection Delay, s/veh

Intersection LOS

Movement	SBU	SBL	SBT	SBR
Lane Configurations				
Traffic Vol, veh/h	0	8	8	0
Future Vol, veh/h	0	8	8	0
Peak Hour Factor	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	9	9	0
Number of Lanes	0	0	1	0

Approach	SB
Opposing Approach	NB
Opposing Lanes	1
Conflicting Approach Left	WB
Conflicting Lanes Left	1
Conflicting Approach Right	EB
Conflicting Lanes Right	1
HCM Control Delay	7.4
HCM LOS	A

Intersection												
Int Delay, s/veh	2.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	16	22	54	11	9	20	13	554	14	8	550	6
Future Vol, veh/h	16	22	54	11	9	20	13	554	14	8	550	6
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, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	17	24	59	12	10	22	14	602	15	9	598	7
Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	952	1264	302	966	1260	309	604	0	0	617	0	0
Stage 1	618	618	-	638	638	-	-	-	-	-	-	-
Stage 2	334	646	-	328	622	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	214	168	694	209	169	687	970	-	-	959	-	-
Stage 1	443	479	-	431	469	-	-	-	-	-	-	-
Stage 2	653	465	-	659	477	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	192	162	694	165	163	687	970	-	-	959	-	-
Mov Cap-2 Maneuver	192	162	-	165	163	-	-	-	-	-	-	-
Stage 1	433	472	-	422	459	-	-	-	-	-	-	-
Stage 2	605	455	-	565	470	-	-	-	-	-	-	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	22			21.2			0.3			0.2		
HCM LOS	C			C								
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR				
Capacity (veh/h)	970	-	-	310	265	959	-	-				
HCM Lane V/C Ratio	0.015	-	-	0.323	0.164	0.009	-	-				
HCM Control Delay (s)	8.8	0.1	-	22	21.2	8.8	0.1	-				
HCM Lane LOS	A	A	-	C	C	A	A	-				
HCM 95th %tile O(veh)	0	-	-	1.4	0.6	0	-	-				



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	Ø2	Ø6	Ø7
Lane Configurations		↶	↷			↶			
Traffic Volume (vph)	0	357	547	100	0	0			
Future Volume (vph)	0	357	547	100	0	0			
Satd. Flow (prot)	0	1863	1824	0	0	1863			
Flt Permitted									
Satd. Flow (perm)	0	1863	1824	0	0	1863			
Satd. Flow (RTOR)			22						
Lane Group Flow (vph)	0	388	704	0	0	0			
Turn Type		NA	NA			Prot			
Protected Phases		2 7	6 7			8	2	6	7
Permitted Phases	2 7								
Total Split (s)						25.0	55.0	55.0	15.0
Total Lost Time (s)						5.0			
Act Effect Green (s)		78.8	78.8						
Actuated g/C Ratio		0.83	0.83						
v/c Ratio		0.25	0.46						
Control Delay		4.1	3.4						
Queue Delay		0.0	0.1						
Total Delay		4.1	3.5						
LOS		A	A						
Approach Delay		4.1	3.5						
Approach LOS		A	A						
Queue Length 50th (ft)		72	54						
Queue Length 95th (ft)		108	80						
Internal Link Dist (ft)		393	248		148				
Turn Bay Length (ft)									
Base Capacity (vph)		1528	1500						
Starvation Cap Reductn		0	102						
Spillback Cap Reductn		0	0						
Storage Cap Reductn		0	0						
Reduced v/c Ratio		0.25	0.50						

Intersection Summary

Cycle Length: 95

Actuated Cycle Length: 95

Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBT, Start of Green

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.46

Intersection Signal Delay: 3.7

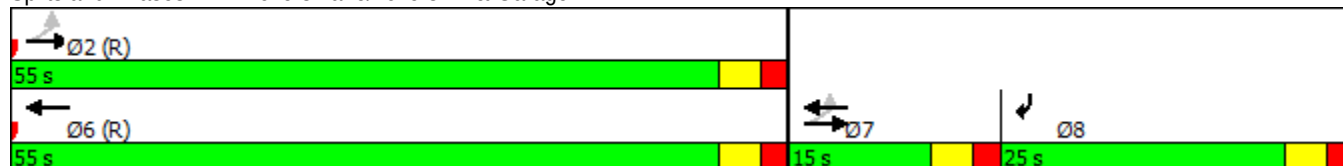
Intersection LOS: A

Intersection Capacity Utilization 39.0%

ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 7: Lovers Lane/Lovers Ln & Garage



University Park Elementary
Garage (2018)

1: Dickens Avenue & Lovers Ln/Lovers Lane

PM Peak

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	2	450	59	29	391	2	91	10	37	48	40	28
Future Volume (vph)	2	450	59	29	391	2	91	10	37	48	40	28
Satd. Flow (prot)	1770	1831	0	1770	1861	0	1770	1643	0	1770	1863	1583
Flt Permitted	0.475			0.391			0.950			0.724		
Satd. Flow (perm)	885	1831	0	728	1861	0	1770	1643	0	1349	1863	1583
Satd. Flow (RTOR)		13						40				73
Lane Group Flow (vph)	2	553	0	32	427	0	99	51	0	52	43	30
Turn Type	Perm	NA		Perm	NA		Prot	NA		Perm	NA	Perm
Protected Phases		6			2		7	4			8	
Permitted Phases	6			2						8		8
Total Split (s)	60.0	60.0		60.0	60.0		10.0	30.0		20.0	20.0	20.0
Total Lost Time (s)	5.0	5.0		5.0	5.0		4.0	5.0		5.0	5.0	5.0
Act Effect Green (s)	60.4	60.4		60.4	60.4		6.1	19.6		11.6	11.6	11.6
Actuated g/C Ratio	0.67	0.67		0.67	0.67		0.07	0.22		0.13	0.13	0.13
v/c Ratio	0.00	0.45		0.07	0.34		0.82	0.13		0.30	0.18	0.11
Control Delay	5.5	6.0		7.4	8.5		89.7	11.4		38.4	34.7	1.0
Queue Delay	0.0	0.2		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	5.5	6.2		7.4	8.5		89.7	11.4		38.4	34.7	1.0
LOS	A	A		A	A		F	B		D	C	A
Approach Delay		6.2			8.4			63.0			28.2	
Approach LOS		A			A			E			C	
Queue Length 50th (ft)	0	67		7	112		57	5		26	21	0
Queue Length 95th (ft)	m1	89		19	169		#148	31		60	51	2
Internal Link Dist (ft)		248			400			456			245	
Turn Bay Length (ft)	50			50								
Base Capacity (vph)	594	1234		488	1249		120	485		224	310	324
Starvation Cap Reductn	0	142		0	0		0	0		0	0	0
Spillback Cap Reductn	0	0		0	0		0	0		0	0	0
Storage Cap Reductn	0	0		0	0		0	0		0	0	0
Reduced v/c Ratio	0.00	0.51		0.07	0.34		0.82	0.11		0.23	0.14	0.09

Intersection Summary

Cycle Length: 90

Actuated Cycle Length: 90

Offset: 0 (0%), Referenced to phase 2:WBTL, Start of Green

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.82

Intersection Signal Delay: 15.7

Intersection LOS: B

Intersection Capacity Utilization 47.3%

ICU Level of Service A

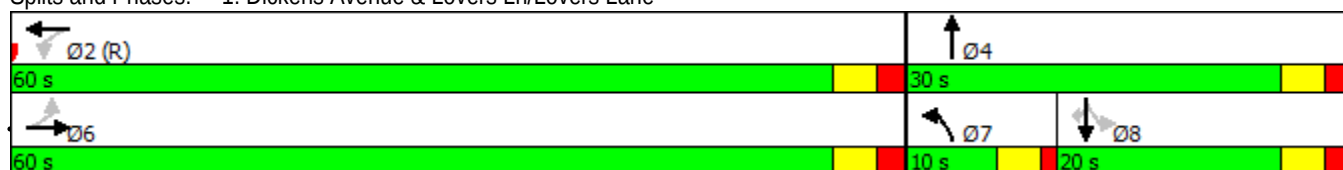
Analysis Period (min) 15

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 1: Dickens Avenue & Lovers Ln/Lovers Lane



01/26/2017

Intersection						
Int Delay, s/veh	0.5					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	3	477	612	12	10	17
Future Vol, veh/h	3	477	612	12	10	17
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	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	3	518	665	13	11	18
Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	678	0	-	0	1197	672
Stage 1	-	-	-	-	672	-
Stage 2	-	-	-	-	525	-
Critical Hdwy	4.12	-	-	-	7.12	6.22
Critical Hdwy Stg 1	-	-	-	-	6.12	-
Critical Hdwy Stg 2	-	-	-	-	6.12	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	914	-	-	-	163	456
Stage 1	-	-	-	-	445	-
Stage 2	-	-	-	-	536	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	914	-	-	-	162	456
Mov Cap-2 Maneuver	-	-	-	-	162	-
Stage 1	-	-	-	-	443	-
Stage 2	-	-	-	-	533	-
Approach	EB		WB		SB	
HCM Control Delay, s	0.1		0		19.8	
HCM LOS					C	
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	914	-	-	-	273	
HCM Lane V/C Ratio	0.004	-	-	-	0.108	
HCM Control Delay (s)	9	0	-	-	19.8	
HCM Lane LOS	A	A	-	-	C	
HCM 95th %tile Q(veh)	0	-	-	-	0.4	

Intersection	
Intersection Delay, s/veh	8.1
Intersection LOS	A

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Lane Configurations												
Traffic Vol, veh/h	0	16	15	8	0	4	1	7	0	2	146	42
Future Vol, veh/h	0	16	15	8	0	4	1	7	0	2	146	42
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	17	16	9	0	4	1	8	0	2	159	46
Number of Lanes	0	0	1	0	0	0	1	0	0	0	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	1	1	1
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	1	1	1
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	1	1	1
HCM Control Delay	7.9	7.5	8.3
HCM LOS	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	1%	41%	33%	20%
Vol Thru, %	77%	38%	8%	72%
Vol Right, %	22%	21%	58%	8%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	190	39	12	123
LT Vol	2	16	4	25
Through Vol	146	15	1	88
RT Vol	42	8	7	10
Lane Flow Rate	207	42	13	134
Geometry Grp	1	1	1	1
Degree of Util (X)	0.23	0.055	0.016	0.155
Departure Headway (Hd)	4.003	4.638	4.434	4.181
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	886	777	812	846
Service Time	2.076	2.639	2.436	2.263
HCM Lane V/C Ratio	0.234	0.054	0.016	0.158
HCM Control Delay	8.3	7.9	7.5	8
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.9	0.2	0	0.5

Intersection

Intersection Delay, s/veh

Intersection LOS

Movement	SBU	SBL	SBT	SBR
Lane Configurations				
Traffic Vol, veh/h	0	25	88	10
Future Vol, veh/h	0	25	88	10
Peak Hour Factor	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	27	96	11
Number of Lanes	0	0	1	0

Approach	SB
Opposing Approach	NB
Opposing Lanes	1
Conflicting Approach Left	WB
Conflicting Lanes Left	1
Conflicting Approach Right	EB
Conflicting Lanes Right	1
HCM Control Delay	8
HCM LOS	A

Intersection	
Intersection Delay, s/veh	7.4
Intersection LOS	A

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Lane Configurations												
Traffic Vol, veh/h	0	5	81	3	0	0	0	0	0	0	8	3
Future Vol, veh/h	0	5	81	3	0	0	0	0	0	0	8	3
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	5	88	3	0	0	0	0	0	0	9	3
Number of Lanes	0	0	1	0	0	0	0	0	0	0	1	0

Approach	EB	NB
Opposing Approach		SB
Opposing Lanes	0	1
Conflicting Approach Left	SB	EB
Conflicting Lanes Left	1	1
Conflicting Approach Right	NB	
Conflicting Lanes Right	1	0
HCM Control Delay	7.5	7.1
HCM LOS	A	A

Lane	NBLn1	EBLn1	SBLn1
Vol Left, %	0%	6%	20%
Vol Thru, %	73%	91%	57%
Vol Right, %	27%	3%	24%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	11	89	46
LT Vol	0	5	9
Through Vol	8	81	26
RT Vol	3	3	11
Lane Flow Rate	12	97	50
Geometry Grp	1	1	1
Degree of Util (X)	0.013	0.108	0.056
Departure Headway (Hd)	3.978	4.032	4.009
Convergence, Y/N	Yes	Yes	Yes
Cap	893	888	889
Service Time	2.032	2.059	2.054
HCM Lane V/C Ratio	0.013	0.109	0.056
HCM Control Delay	7.1	7.5	7.3
HCM Lane LOS	A	A	A
HCM 95th-tile Q	0	0.4	0.2

Intersection

Intersection Delay, s/veh

Intersection LOS

Movement	SBU	SBL	SBT	SBR
Lane Configurations				
Traffic Vol, veh/h	0	9	26	11
Future Vol, veh/h	0	9	26	11
Peak Hour Factor	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	10	28	12
Number of Lanes	0	0	1	0

Approach	SB
Opposing Approach	NB
Opposing Lanes	1
Conflicting Approach Left	
Conflicting Lanes Left	0
Conflicting Approach Right	EB
Conflicting Lanes Right	1
HCM Control Delay	7.3
HCM LOS	A

Intersection	
Intersection Delay, s/veh	7.1
Intersection LOS	A

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Lane Configurations												
Traffic Vol, veh/h	0	1	8	98	0	1	0	28	0	0	10	2
Future Vol, veh/h	0	1	8	98	0	1	0	28	0	0	10	2
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	1	9	107	0	1	0	30	0	0	11	2
Number of Lanes	0	0	1	0	0	0	1	0	0	0	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	1	1	1
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	1	1	1
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	1	1	1
HCM Control Delay	7	6.7	7.2
HCM LOS	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	0%	1%	3%	72%
Vol Thru, %	83%	7%	0%	28%
Vol Right, %	17%	92%	97%	0%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	12	107	29	50
LT Vol	0	1	1	36
Through Vol	10	8	0	14
RT Vol	2	98	28	0
Lane Flow Rate	13	116	32	54
Geometry Grp	1	1	1	1
Degree of Util (X)	0.015	0.114	0.031	0.066
Departure Headway (Hd)	4.131	3.527	3.566	4.344
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	862	1011	996	824
Service Time	2.175	1.57	1.617	2.374
HCM Lane V/C Ratio	0.015	0.115	0.032	0.066
HCM Control Delay	7.2	7	6.7	7.7
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0	0.4	0.1	0.2

Intersection

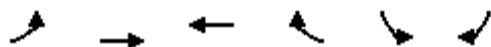
Intersection Delay, s/veh

Intersection LOS

Movement	SBU	SBL	SBT	SBR
Lane Configurations				
Traffic Vol, veh/h	0	36	14	0
Future Vol, veh/h	0	36	14	0
Peak Hour Factor	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	39	15	0
Number of Lanes	0	0	1	0

Approach	SB
Opposing Approach	NB
Opposing Lanes	1
Conflicting Approach Left	WB
Conflicting Lanes Left	1
Conflicting Approach Right	EB
Conflicting Lanes Right	1
HCM Control Delay	7.7
HCM LOS	A

Intersection												
Int Delay, s/veh	2.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	16	14	39	6	9	5	26	543	9	18	509	11
Future Vol, veh/h	16	14	39	6	9	5	26	543	9	18	509	11
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, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	17	15	42	7	10	5	28	590	10	20	553	12
Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	955	1255	283	975	1256	300	565	0	0	600	0	0
Stage 1	598	598	-	652	652	-	-	-	-	-	-	-
Stage 2	357	657	-	323	604	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	213	170	714	206	170	696	1003	-	-	973	-	-
Stage 1	456	489	-	423	462	-	-	-	-	-	-	-
Stage 2	633	460	-	663	486	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	191	158	714	170	158	696	1003	-	-	973	-	-
Mov Cap-2 Maneuver	191	158	-	170	158	-	-	-	-	-	-	-
Stage 1	437	474	-	405	443	-	-	-	-	-	-	-
Stage 2	588	441	-	586	471	-	-	-	-	-	-	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	20.7			25.1			0.6			0.4		
HCM LOS	C			D								
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR					
Capacity (veh/h)	1003	-	-	304	201	973	-	-				
HCM Lane V/C Ratio	0.028	-	-	0.247	0.108	0.02	-	-				
HCM Control Delay (s)	8.7	0.2	-	20.7	25.1	8.8	0.1	-				
HCM Lane LOS	A	A	-	C	D	A	A	-				
HCM 95th %tile Q(veh)	0.1	-	-	1	0.4	0.1	-	-				



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	Ø2	Ø6	Ø7
Lane Configurations		↶	↷			↷			
Traffic Volume (vph)	0	487	510	0	0	100			
Future Volume (vph)	0	487	510	0	0	100			
Satd. Flow (prot)	0	1863	1863	0	0	1611			
Flt Permitted									
Satd. Flow (perm)	0	1863	1863	0	0	1611			
Satd. Flow (RTOR)						405			
Lane Group Flow (vph)	0	529	554	0	0	109			
Turn Type		NA	NA			Prot			
Protected Phases		2 7	6 7			8	2	6	7
Permitted Phases	2 7								
Total Split (s)						20.0	60.0	60.0	10.0
Total Lost Time (s)						5.0			
Act Effect Green (s)		71.9	71.9			11.2			
Actuated g/C Ratio		0.80	0.80			0.12			
v/c Ratio		0.36	0.37			0.20			
Control Delay		4.6	4.1			0.8			
Queue Delay		0.0	0.2			0.0			
Total Delay		4.6	4.3			0.8			
LOS		A	A			A			
Approach Delay		4.6	4.3		0.8				
Approach LOS		A	A		A				
Queue Length 50th (ft)		98	67			0			
Queue Length 95th (ft)		145	m86			0			
Internal Link Dist (ft)		393	248		148				
Turn Bay Length (ft)									
Base Capacity (vph)		1488	1488			606			
Starvation Cap Reductn		0	290			0			
Spillback Cap Reductn		0	0			0			
Storage Cap Reductn		0	0			0			
Reduced v/c Ratio		0.36	0.46			0.18			

Intersection Summary

Cycle Length: 90

Actuated Cycle Length: 90

Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBT, Start of Green

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.37

Intersection Signal Delay: 4.1

Intersection LOS: A

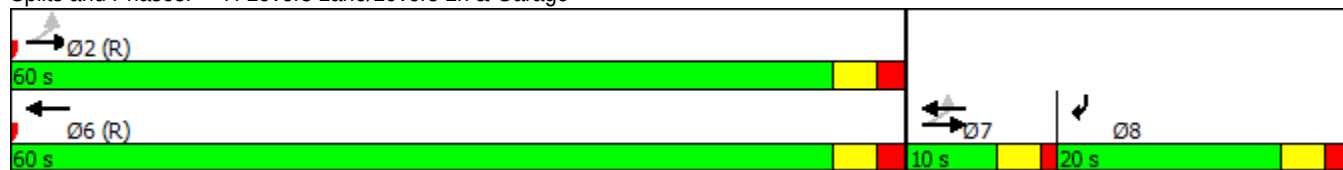
Intersection Capacity Utilization 41.4%

ICU Level of Service A

Analysis Period (min) 15

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 7: Lovers Lane/Lovers Ln & Garage



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.