

January 1, 2012

OFFICE USE ONLY

Date Received: _____
RZN# _____
CUP# _____

TOWN OF BLACKSBURG
VDOT TRAFFIC IMPACT ANALYSIS (TIA) SUPPLEMENTAL APPLICATION

This application, appropriate fee, and accompanying documentation must be submitted in conjunction with the corresponding rezoning, conditional use permit, or comprehensive plan amendment before any application can be reviewed by staff. If you have any questions, please contact the Planning and Building Department.

Name of Development: WHIPPLE DRIVE TOWNHOMES
Address/Location: 1800-1806 WHIPPLE DRIVE
Tax Map Parcel: 197-150A, SIC, S; 197-151B, E, S; 197-151A, S, S; 147-2453A; 197-146A
Size of Site: 3.08 ACRES
Proposed Use: RESIDENTIAL TOWNHOMES
Current Zoning District: R-5
Existing Future Land Use Classification: MEDIUM DENSITY RESIDENTIAL

This application is submitted in conjunction with a

- Rezoning Application. Proposed Zoning District: PLANNED RESIDENTIAL
- Conditional Use Permit Application. Proposed Conditional Use: _____
- Comprehensive Plan Amendment. Proposed Future Land Use: _____

This is the first, second, third or subsequent submission of the TIA for review by VDOT.

A traffic impact analysis is is not required for the proposed project:

1. Yes or No, the site is located 2630 feet along the vehicle path of traffic which is less than 3,000 feet from VDOT maintained roadways, or is within 3,000 feet of a non-limited access state controlled highway, or is within 3,000 feet of a connection to a state limited access highway.
2. **If the answer to question #1 is Yes, complete the following:**
 - a. Yes or No, the proposed development generates 390 vpd which is greater than the VDOT requirement of 5,000 vehicles per day.
3. Yes or No, the proposed comprehensive plan amendment results in substantial impact of 5,000 additional vehicle trips per day or results in substantial changes to the existing transportation network and infrastructure of state controlled highways.
4. No, a new TIA study is not required because a previously submitted TIA is still applicable for the project site. (Note: the appropriate documentation must be attached to this application)
5. Yes or No, a VDOT Scope of work meeting has been held.

If a TIA is required, please provide the following information:

Name of Property Owner(s): _____
Address: N/A
Phone: _____ Fax: _____
Email address: _____

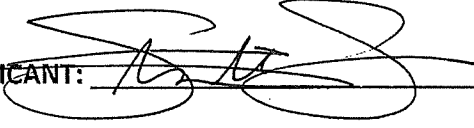
Applicant to whom review comments will be sent: N/A
Address: _____
Phone: _____ Fax: _____
Email address: _____

Project Engineer who prepared TIA (if different from applicant): N/A
Address: _____
Phone: _____ Fax: _____
Email address: _____

Please check all applicable boxes of information submitted with this application:

1. **Review Fee Check made payable to VDOT for**
First, Second or Third review by VDOT
 - Rezoning or Conditional Use Permit request
 - Low volume road submission 24VAC30-155-40 A 3: \$250
 - All other submissions: \$1000
 - Comprehensive Plan Amendments: \$1000
2. **For the Town of Blacksburg, please provide a digital submission of the following:**
 - a. **One signed copy** of the Town's VDOT Supplemental TIA application.
 - b. **One complete copy** of the TIA submitted to VDOT including a completed checklist of information and signed scope of work meeting agreement.
 - c. **One copy** of the VDOT review fee check.
 - d. **One copy** of letter and supporting information documenting why a new or updated TIA is not required for this project.
3. **For VDOT, three paper copies** of the complete Traffic Impact Analysis. Forms and additional information can be found at <http://www.virginiadot.org/projects/chapter527/default.asp>

By signing below, I acknowledge that all information on this application and included in the supporting documentation is correct and accurate, and has been prepared by an appropriate licensed professional.

SIGNATURE OF APPLICANT:  Date: 6/1/22

For Staff Use Only:

First Submission Second Submission Third or Subsequent Submission

Reviewed and Accepted as complete by _____ Date _____
TIA forwarded to VDOT by _____ Date _____

Rejected by _____ Date _____
Reason for rejection: _____

Town of Blacksburg, Planning & Building Department
300 South Main Street • PO Box 90003, Blacksburg, VA 24060-9003
Phone: (540) 951-1126 • Fax: (540) 951-0672 • www.blacksburg.gov

May 31, 2022

Mr. Joshua Middleton
Town Engineer
400 South Main Street
Blacksburg, Virginia 24060
Phone: (540) 443-1353

Reference: **Whipple Drive Residential** – Traffic Impact Analysis (TIA)
Town of Blacksburg, Virginia

Dear Mr. Middleton,

JJB Properties, LLC is proposing to construct a residential development on the east side of Whipple Drive, just south of Givens Lane. The development plan includes 34 townhome units (98 bedrooms) with a one-way loop driveway provided via a single entrance only access and a single exit only access on Whipple Drive. If approved, the proposed neighborhood is expected to be built-out by 2023.

Ramey Kemp & Associates, Inc. (RKA) has performed this Traffic Impact Analysis (TIA) based on discussions with the Town. Figure 1 shows the site location and study intersections, and Figure 2 shows the preliminary site plan.

Existing Roadway Conditions

Main Street is a four-lane Minor Arterial with an average daily traffic (ADT) volume of approximately 6,500 vehicles per day (vpd) and a posted speed limit of 35 miles per hour (mph) in the vicinity of the site

Whipple Drive is a local roadway with an ADT volume of approximately 1,500 vpd and a posted speed limit of 25 mph in the vicinity of the site.

Figure 3 shows the existing roadway laneage at the study intersection.

Existing Traffic Volumes

The AM peak hour (7:00 to 9:00 AM) and PM peak hour (4:00 to 6:00 PM) turning movement counts were conducted by Burns Services, Inc. at the following intersections during the week of April 12:

- N Main Street and Whipple Drive
- N Main Street and Givens Lane
- Whipple Drive and Givens Lane

Based on coordination with the Town, due to low existing traffic volumes, the only analyzed intersection was N Main Street and Whipple Drive.

Although the existing traffic volumes on Main Street were similar, if not higher than the historical traffic data available, a conservative approach was taken in which the 2022 traffic volumes were increased by 5%. This methodology is like one used for traffic studies performed during the heart of the COVID-19 pandemic to

account for potentially low volumes due to irregularity in school schedules and a greater population working from home. Based on traffic trends, traffic patterns have nearly returned to ‘pre-COVID’ levels, however this conservative approach was utilized to emphasize the negligible impact of the proposed development. The traffic count data is enclosed, and the inflated existing 2022 volumes are shown in Figure 4.

Approved Developments

Based on discussion with the Town, no approved developments were included in this TIA.

Background Traffic Growth

Based on discussion with the Town, the 2022 peak hour traffic volumes were grown by an annual rate of 2.5% for one year to estimate the no-build 2023 peak hour traffic volumes which are shown in Figure 5.

Trip Generation

Table 1 shows the trip generation potential of the proposed community based on the Institute of Transportation Engineers (ITE) *Trip Generation Manual – 11th Edition*.

Table 1: ITE Trip Generation – Weekday – 11th Edition

Land Use (ITE Land Use Code)	Size	Weekday Daily Traffic (vpd)		AM Peak Hour (vph)		PM Peak Hour (vph)	
		Enter	Exit	Enter	Exit	Enter	Exit
Off-Campus Student Housing (225)	98 bedrooms	195	195	4	12	15	15

Based on information contained within the Trip Generation Manual, the development could be expected to generate approximately 390 trips on a typical weekday with 16 trips (4 entering and 12 exiting) generated during the AM peak hour [less than 1 car every 3 minutes] and 30 trips (15 entering and 15 exiting) generated during the PM peak hour [approximately 1 car every 2 minutes]. It should be noted that due to proximity to campus and existing near-by bus stops, it is expected that a percentage of traffic would utilize alternate modes of transportation (i.e. Blacksburg Transit), however, to provide a conservative approach, no reductions were applied.

Site Trip Distribution

The following site trip distribution was applied based on a review of the existing traffic volumes, the adjacent roadway network, and engineering judgement:

- 10% to / from the north on N Main Street
- 60% to / from the south on N Main Street
- 30% to / from the west on Givens Lane

Figure 6 shows the site trip distribution, Figure 7 shows the site trip assignment, and Figure 8 shows the build 2023 peak hour traffic volumes.



VDOT Turn Lane Warrant Analysis

The projected build-out AM and PM peak hour traffic volumes at the proposed entrance were compared to the turn lane warrants in the Virginia Department of Transportation (VDOT) *Access Management Design Standards for Entrances and Intersections*. Due to low existing and projected traffic volumes along Whipple Drive, turn lanes are not warranted.

Traffic Capacity Analysis

Traffic capacity analysis for the study intersections was performed using Synchro 10, which is a comprehensive software package that allows the user to model signalized and unsignalized intersections to determine levels-of-service based on the thresholds specified in the Highway Capacity Manual (HCM) – 6th Edition.

Table 2 summarizes the capacity analysis results for the unsignalized intersection of N Main Street at Whipple Drive and the Synchro outputs are enclosed for reference.

Table 2: Level-of-Service Summary for N Main Street at Whipple Drive

CONDITION	LANE GROUP	AM PEAK HOUR				PM PEAK HOUR			
		Lane LOS	Lane Delay (sec)	Lane Queue (ft)	Overall LOS (Delay)	Lane LOS	Lane Delay (sec)	Lane Queue (ft)	Overall LOS (Delay)
Existing (2022) Conditions	EBL/T/R ¹	B	11	10	N/A ³	B	12	10	N/A ³
	WBL/T/R ¹	C	16	3		D	32	15	
	NBL/T ²	A	9	3		A	9	5	
	NBT/R	-	-	-		-	-	-	
	SBL/T ²	A	8	0		A	9	0	
	SBT/R	-	-	-		-	-	-	
No-Build (2023) Conditions	EBL/T/R ¹	B	11	10	N/A ³	B	12	10	N/A ³
	WBL/T/R ¹	C	17	3		D	34	18	
	NBL/T ²	A	9	3		A	9	5	
	NBT/R	-	-	-		-	-	-	
	SBL/T ²	A	8	0		A	9	0	
	SBT/R	-	-	-		-	-	-	
Build (2023) Conditions	EBL/T/R ¹	B	11	13	N/A ³	B	12	13	N/A ³
	WBL/T/R ¹	C	17	3		E	36	18	
	NBL/T ²	A	9	3		A	9	8	
	NBT/R	-	-	-		-	-	-	
	SBL/T ²	A	8	0		A	9	0	
	SBT/R	-	-	-		-	-	-	

1. Level of service for minor approach
2. Level of service for major-street left-turn movement
3. HCM methodology does not provide lane group or overall LOS, delay, and queue lengths for major street through movements or right turns at unsignalized intersections.

Capacity analysis indicates that the minor-street approaches are expected to operate at LOS B during the AM peak hour and LOS E or better during the PM peak hour. The major street left-turn movement is expected to operate at LOS A during the AM and PM peak hours for all traffic conditions. The site trips will increase the total approach volume at this intersection by less than 2% during the AM and PM peak hours. While the westbound approach is expected to degrade one level-of-service during the PM peak hour, the delay is only expected to increase by 2 seconds.



As requested by the Town, a signal warrant analysis for the intersection of N Main Street and Whipple Drive was included. Based on the MUTCD signal warrants, no signal is warranted, nor is a signal recommended. No improvements are warranted or recommended at this intersection at build-out of the proposed community.

Table 3 summarizes the capacity analysis results for the proposed intersections of Whipple Drive at the Site Entrance/Exit and the Synchro outputs are enclosed for reference.

Table 3: Level-of-Service Summary for Whipple Drive at Site Driveways

INTERSECTION	CONDITION	LANE GROUP	AM PEAK HOUR				PM PEAK HOUR			
			Lane LOS	Lane Delay (sec)	Lane Queue (ft)	Overall LOS (Delay)	Lane LOS	Lane Delay (sec)	Lane Queue (ft)	Overall LOS (Delay)
Whipple Drive & Site Entrance	Build (2023) Conditions	NBT/R SBL/T ²	- A	- 0	- 0	N/A ³	- A	- 1	- 0	N/A ³
Whipple Drive & Site Exit	Build (2023) Conditions	WBL/R ¹ NBT SBT	A - -	9 - -	0 - -	N/A ³	A - -	9 - -	0 - -	N/A ³

1. Level of service for minor approach
2. Level of service for major-street left-turn movement
3. HCM methodology does not provide lane group or overall LOS, delay, and queue lengths for major street through movements or right turns at unsignalized intersections.

Under build conditions, the minor street left-turn movement is expected to operate with short delays (less than 9 seconds) during the AM and PM peak hours with minimum expected queues.

Recommendations

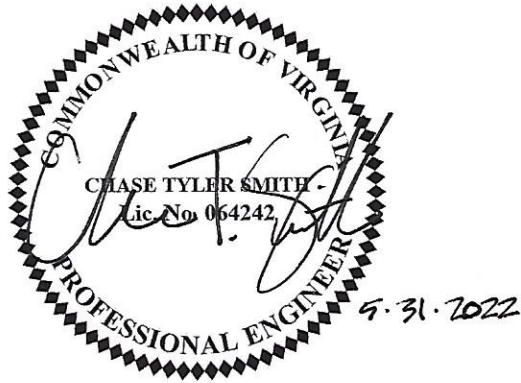
Based on the traffic capacity analysis, both study intersections will function at an acceptable overall level-of-service at build out of the proposed community. Refer to Figure 9 for an illustration of the recommended lane configurations for the study intersections.

As requested by the Town, additional analysis was completed for the intersection of N Main Street and Givens Lane. Based on the project build traffic conditions, the minor-street approaches are expected to operate at LOS C during the AM and PM peak hours and the major-street left turn movement is expected to operate at LOS A during the weekday AM and PM peak hours. The site trips will increase the total approach volume at this intersection by less than 0.5% during the AM and PM peak hours.



We appreciate your attention to this matter. Please contact me at (336) 714-0112 if you have any questions about this report.

Sincerely yours,
Ramey Kemp & Associates, Inc.



Chase Smith, P.E.

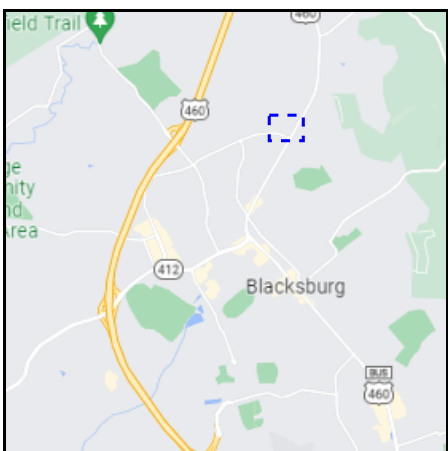
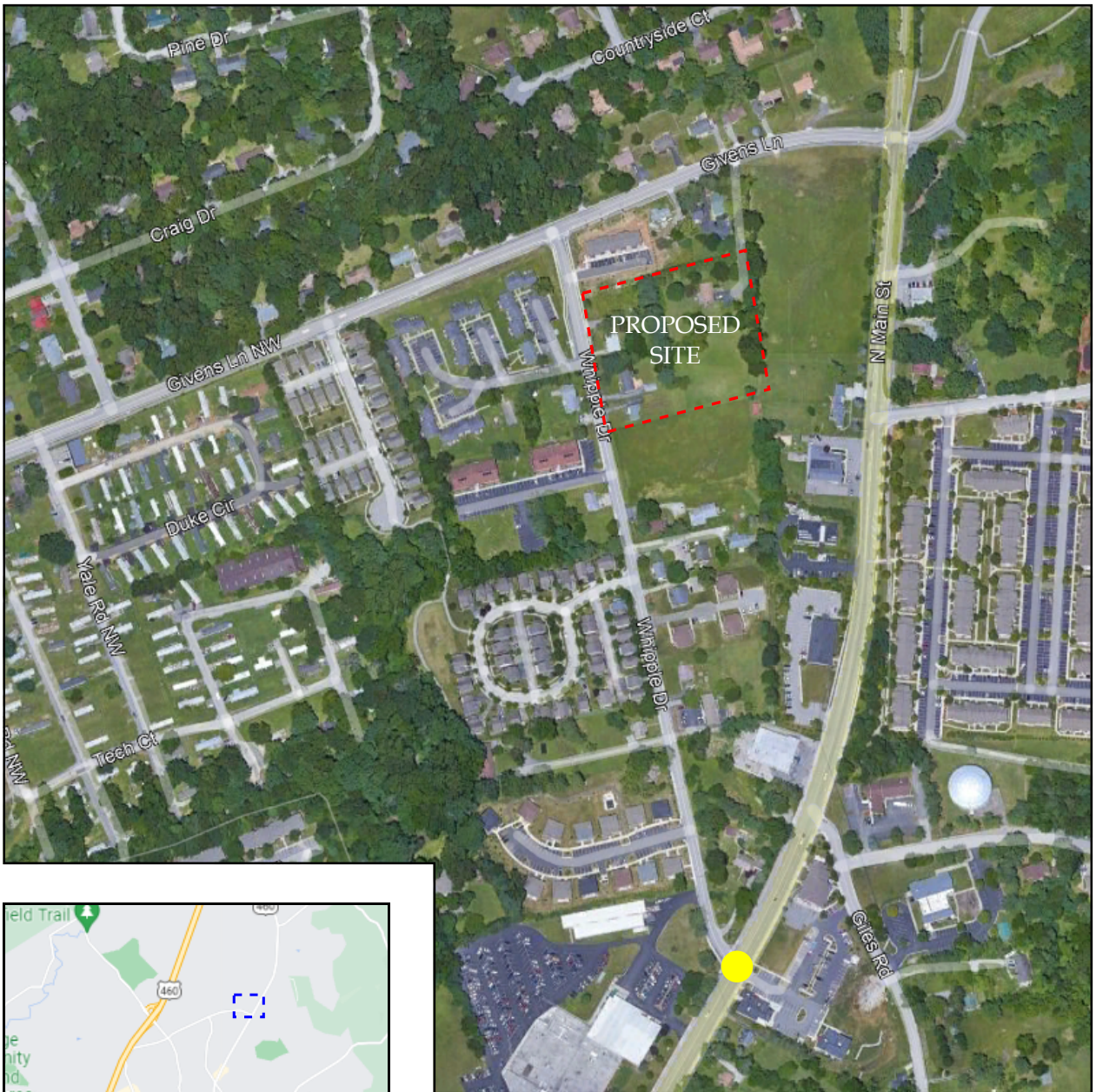
Enclosures: Figures, Traffic count data, Synchro output

Copy to: Mr. Steven Semones, Balzer & Associates

TECHNICAL APPENDIX

APPENDIX A

FIGURES



LEGEND

- Proposed Site Location
- Study Intersection
- Study Area



Whipple Drive Townhomes
Blacksburg, VA

Site Location Map	
Scale: Not to Scale	Figure 1



BALZER & ASSOCIATES
 PLANNERS / ARCHITECTS
 ENGINEERS / SURVEYORS

Roanoke / Richmond
 Shenandoah Valley
 New River Valley / Lynchburg

www.balzer.cc

80 College Street
 Suite H
 Christiansburg, VA 24073
 540.381.4290

WHIPPLE TOWNHOMES

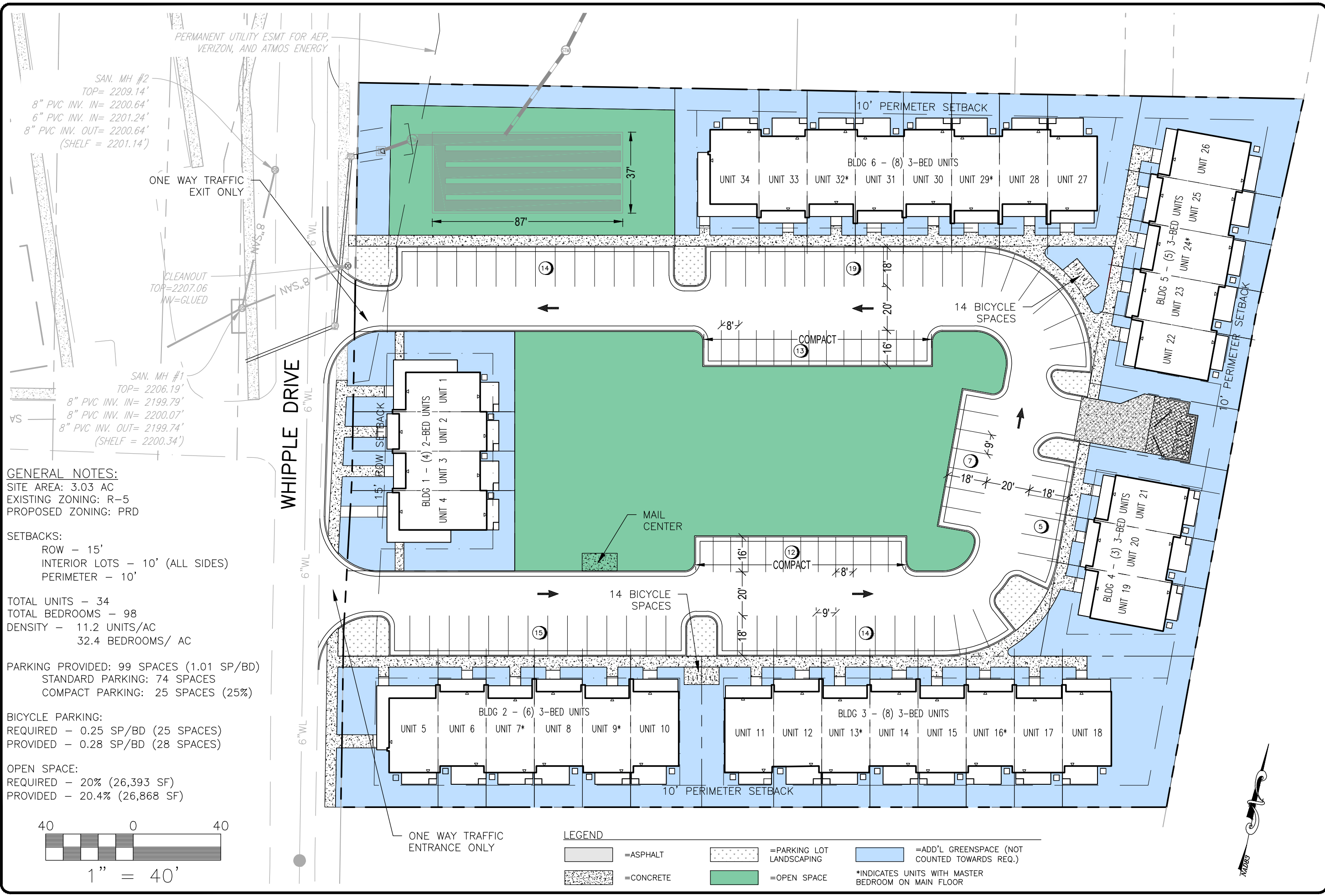
MASTER PLAN

PRICES FORK MAGISTERIAL DISTRICT
 TOWN OF BLACKSBURG

DATE 3/21/22
 SCALE 1" = 40'
 REVISIONS

Z3

PROJECT NO 24210126.00



GENERAL NOTES:
 SITE AREA: 3.03 AC
 EXISTING ZONING: R-5
 PROPOSED ZONING: PRD

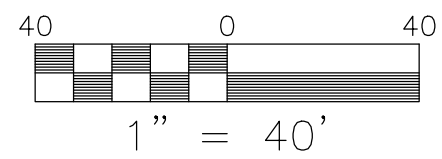
SETBACKS:
 ROW - 15'
 INTERIOR LOTS - 10' (ALL SIDES)
 PERIMETER - 10'

TOTAL UNITS - 34
TOTAL BEDROOMS - 98
DENSITY - 11.2 UNITS/AC
32.4 BEDROOMS/ AC

PARKING PROVIDED: 99 SPACES (1.01 SP/BD)
 STANDARD PARKING: 74 SPACES
 COMPACT PARKING: 25 SPACES (25%)

BICYCLE PARKING:
 REQUIRED - 0.25 SP/BD (25 SPACES)
 PROVIDED - 0.28 SP/BD (28 SPACES)

OPEN SPACE:
 REQUIRED - 20% (26,393 SF)
 PROVIDED - 20.4% (26,868 SF)

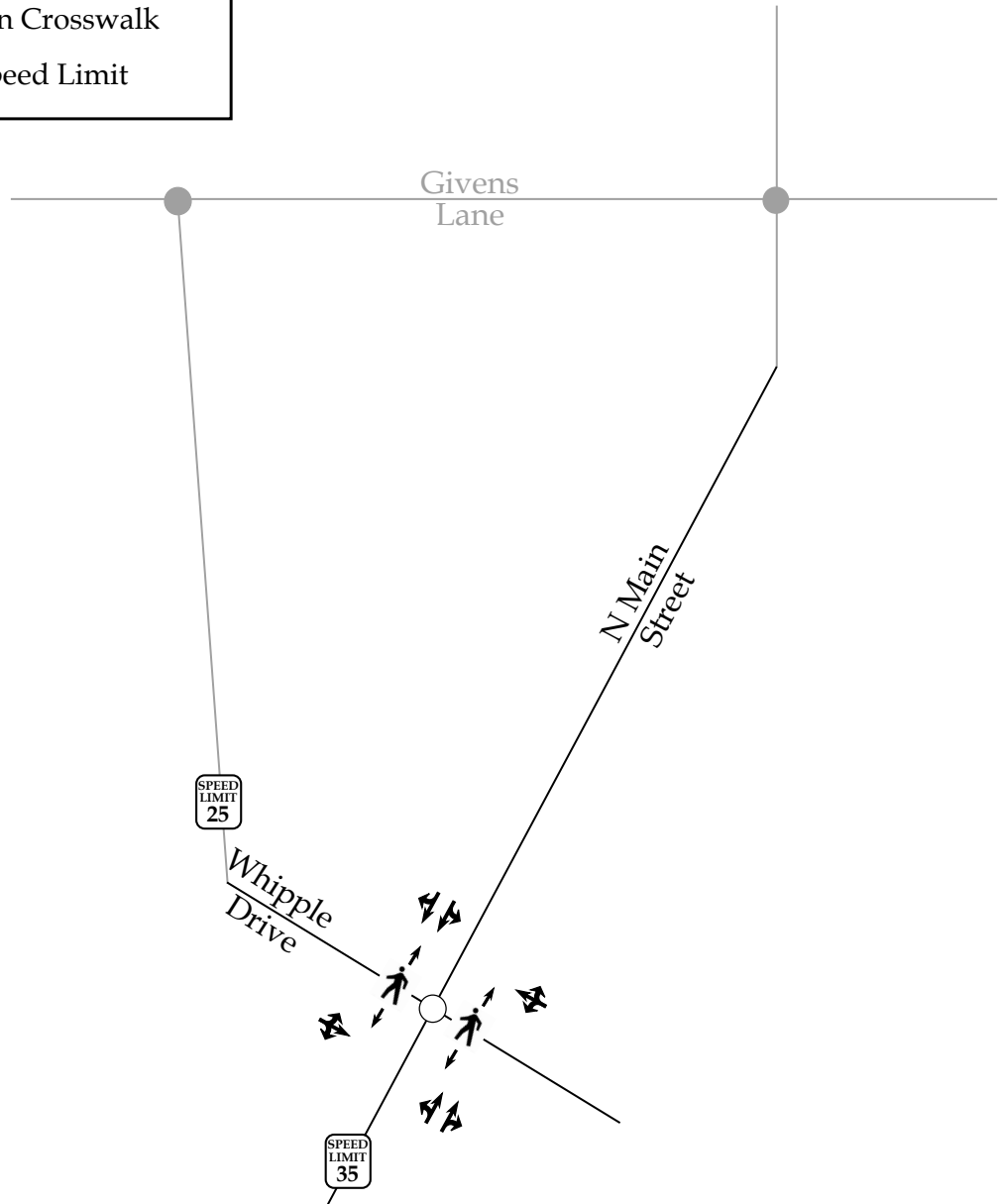


LEGEND

- = ASPHALT
- = CONCRETE
- = PARKING LOT LANDSCAPING
- = OPEN SPACE
- = ADD'L GREENSPACE (NOT COUNTED TOWARDS REQ.)
- *INDICATES UNITS WITH MASTER BEDROOM ON MAIN FLOOR

LEGEND

- Unsignalized Intersection
- Unanalyzed Intersection
- ➔ Existing Lane
- x' Storage (In Feet)
- ↔ [Pedestrian Icon] ↔ Pedestrian Crosswalk
- [Speed Limit XX] Posted Speed Limit



Whipple Drive Townhomes
Blacksburg, VA

2022 Existing
Lane Configurations

Scale: Not to Scale | Figure 3

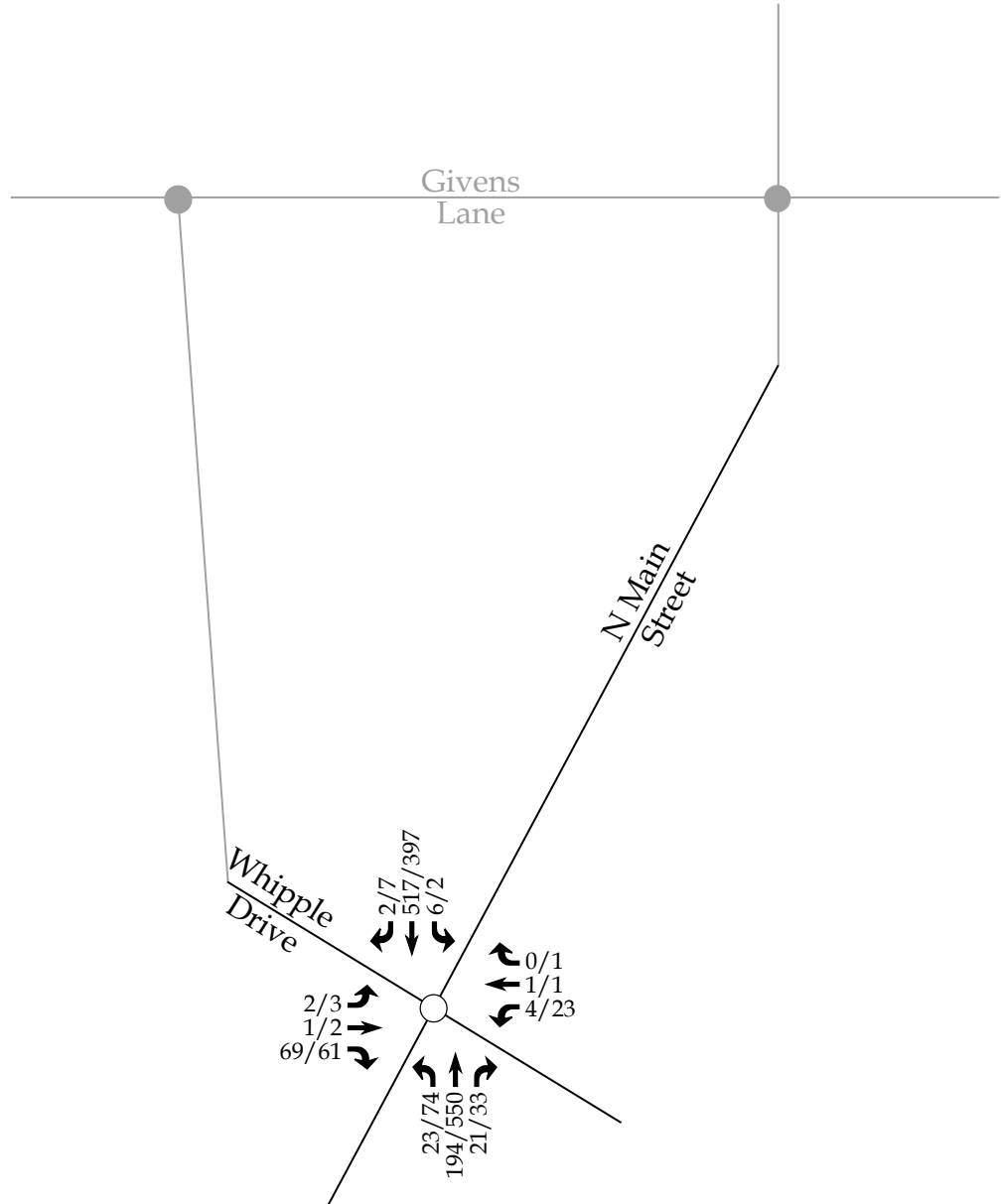


LEGEND

○ Unsignalized Intersection

● Unanalyzed Intersection

X/Y → Weekday AM / PM Peak Hour Traffic



Whipple Drive Townhomes
Blacksburg, VA

2022 Existing
Peak Hour Traffic

Scale: Not to Scale

Figure 4

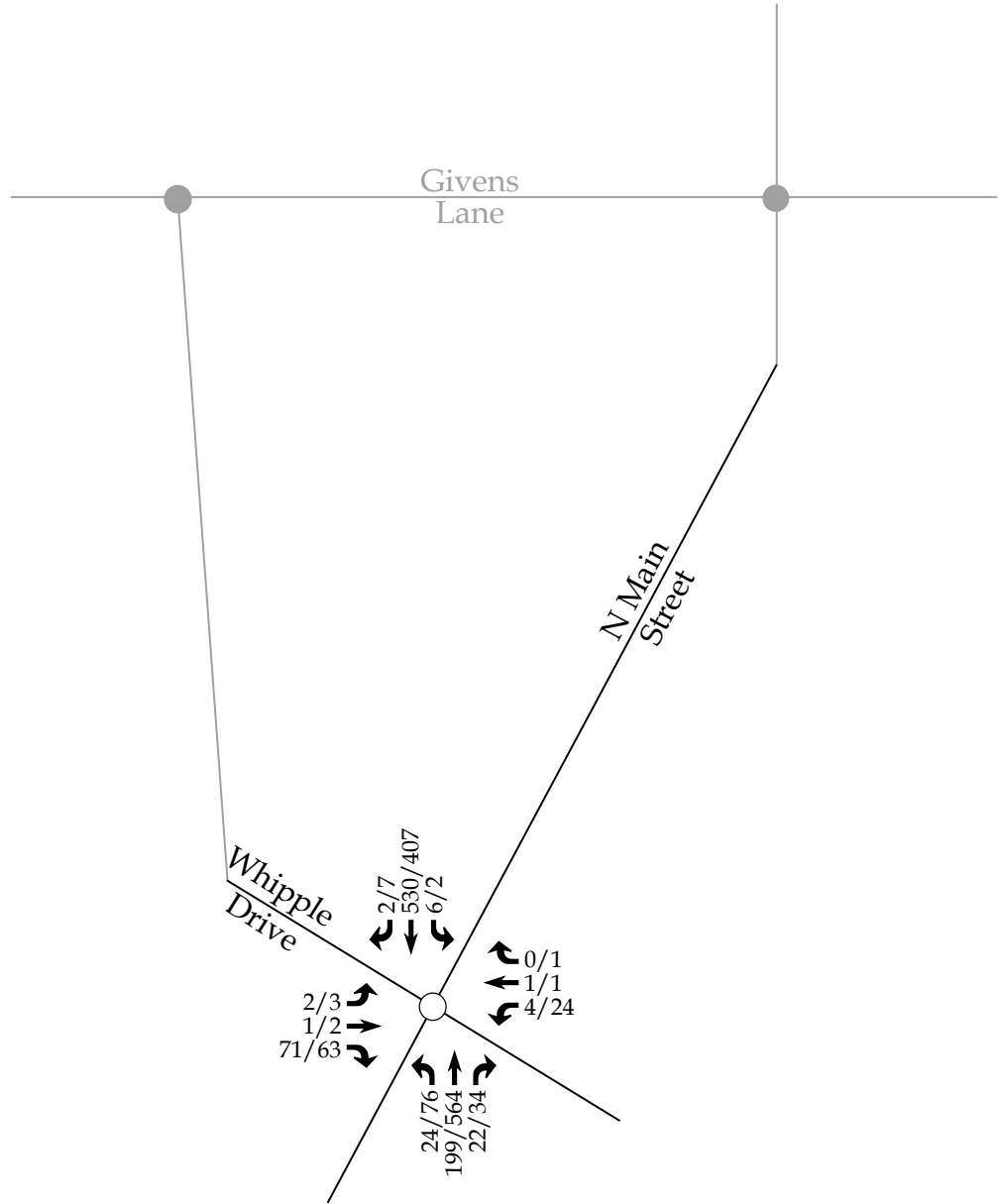


LEGEND

○ Unsignalized Intersection

● Unanalyzed Intersection

X/Y → Weekday AM / PM Peak Hour Traffic



Whipple Drive Townhomes
Blacksburg, VA

2023 No-Build
Peak Hour Traffic

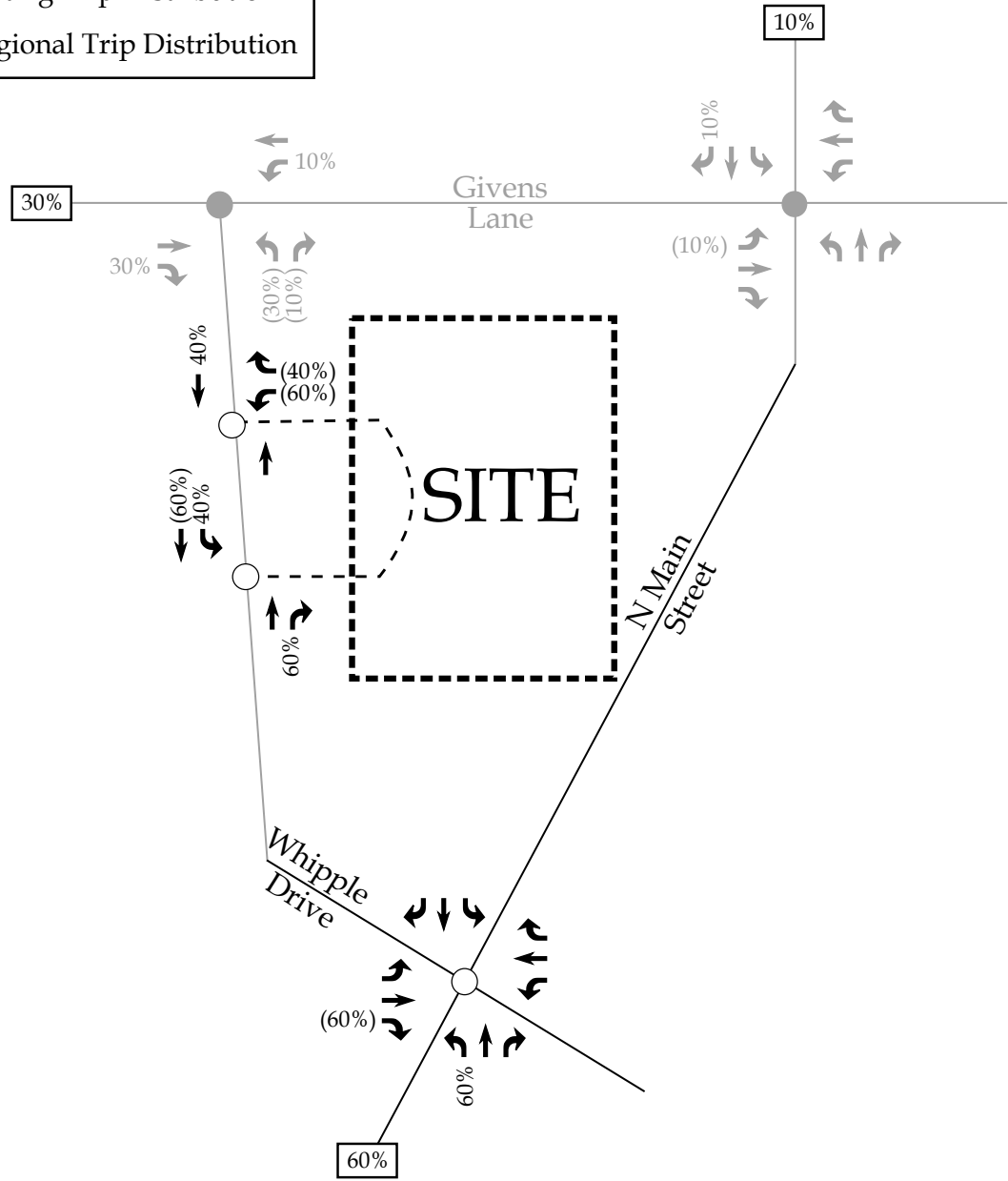
Scale: Not to Scale

Figure 5



LEGEND

- Unsignalized Intersection
- Unanalyzed Intersection
- X% → Entering Trip Distribution
- (Y%) → Exiting Trip Distribution
- XX% Regional Trip Distribution



Whipple Drive Townhomes
Blacksburg, VA

Site Trip Distribution

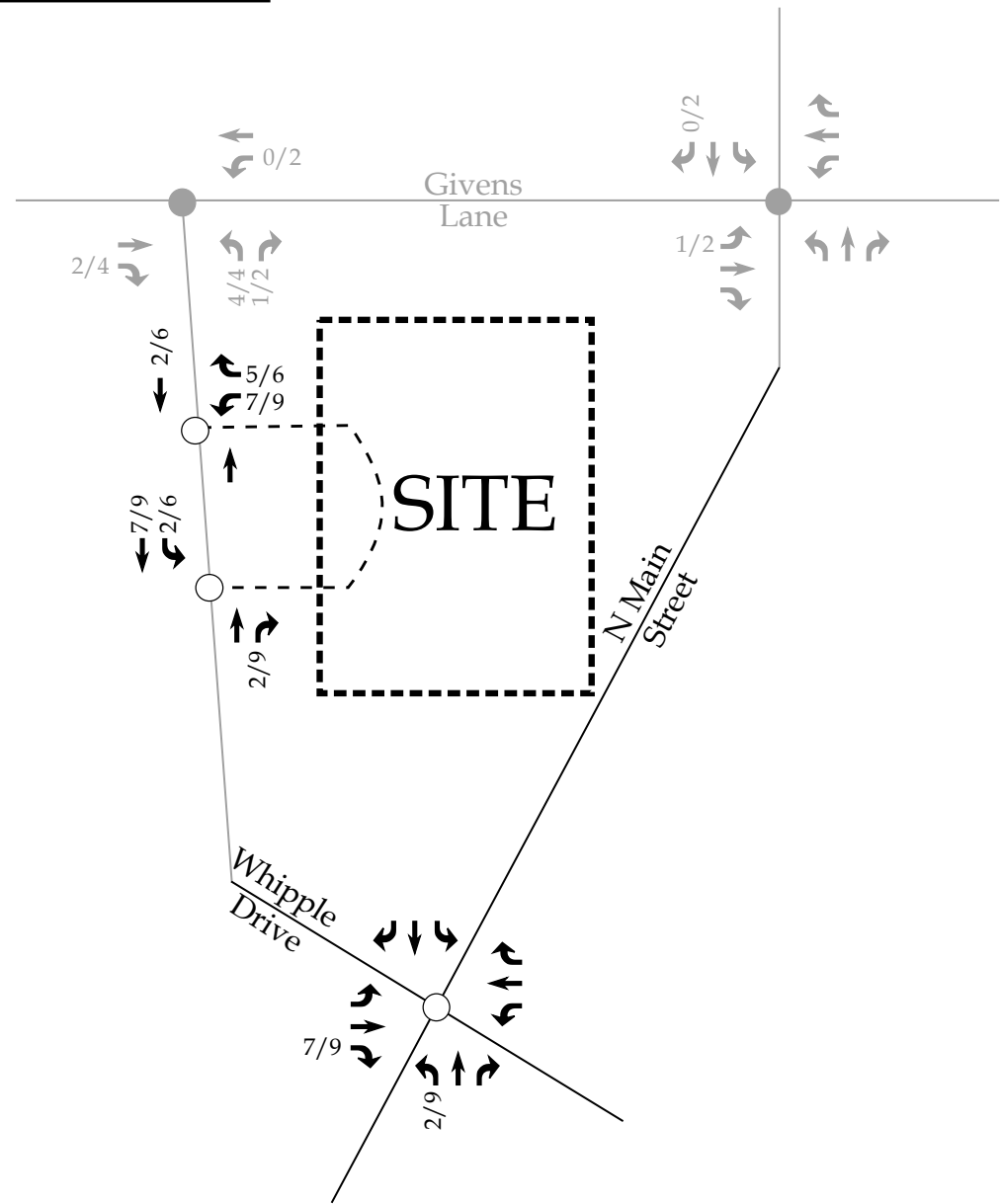
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Figure 6



LEGEND

- Unsignalized Intersection
- Unanalyzed Intersection
- X/Y → Weekday AM / PM Peak Hour Site Trips



Whipple Drive Townhomes
Blacksburg, VA

Site Trip Assignment

Scale: Not to Scale

Figure 7

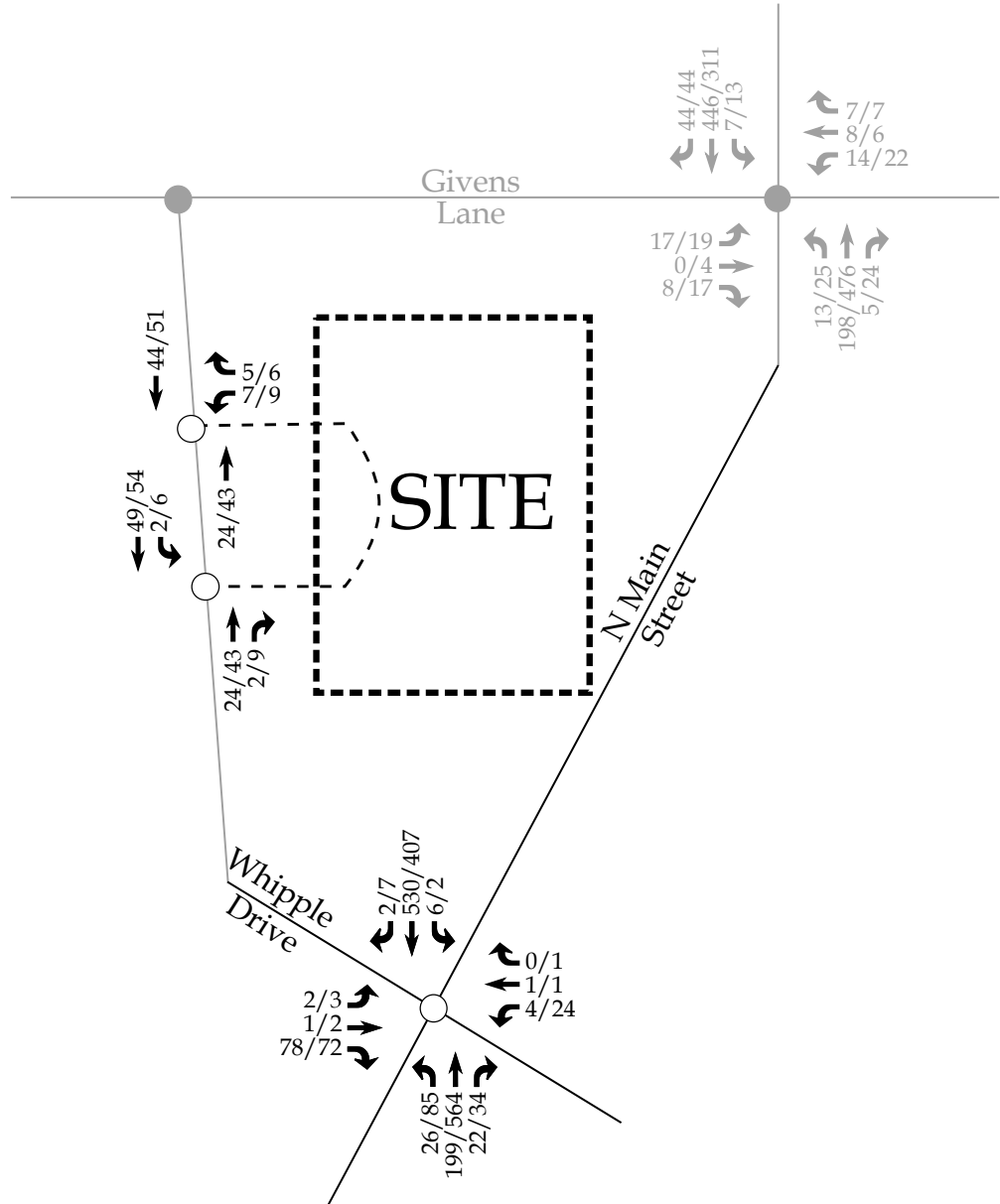


LEGEND

○ Unsignalized Intersection

● Unanalyzed Intersection

X/Y → Weekday AM / PM Peak Hour Traffic



Whipple Drive Townhomes
Blacksburg, VA

2023 Build
Peak Hour Traffic

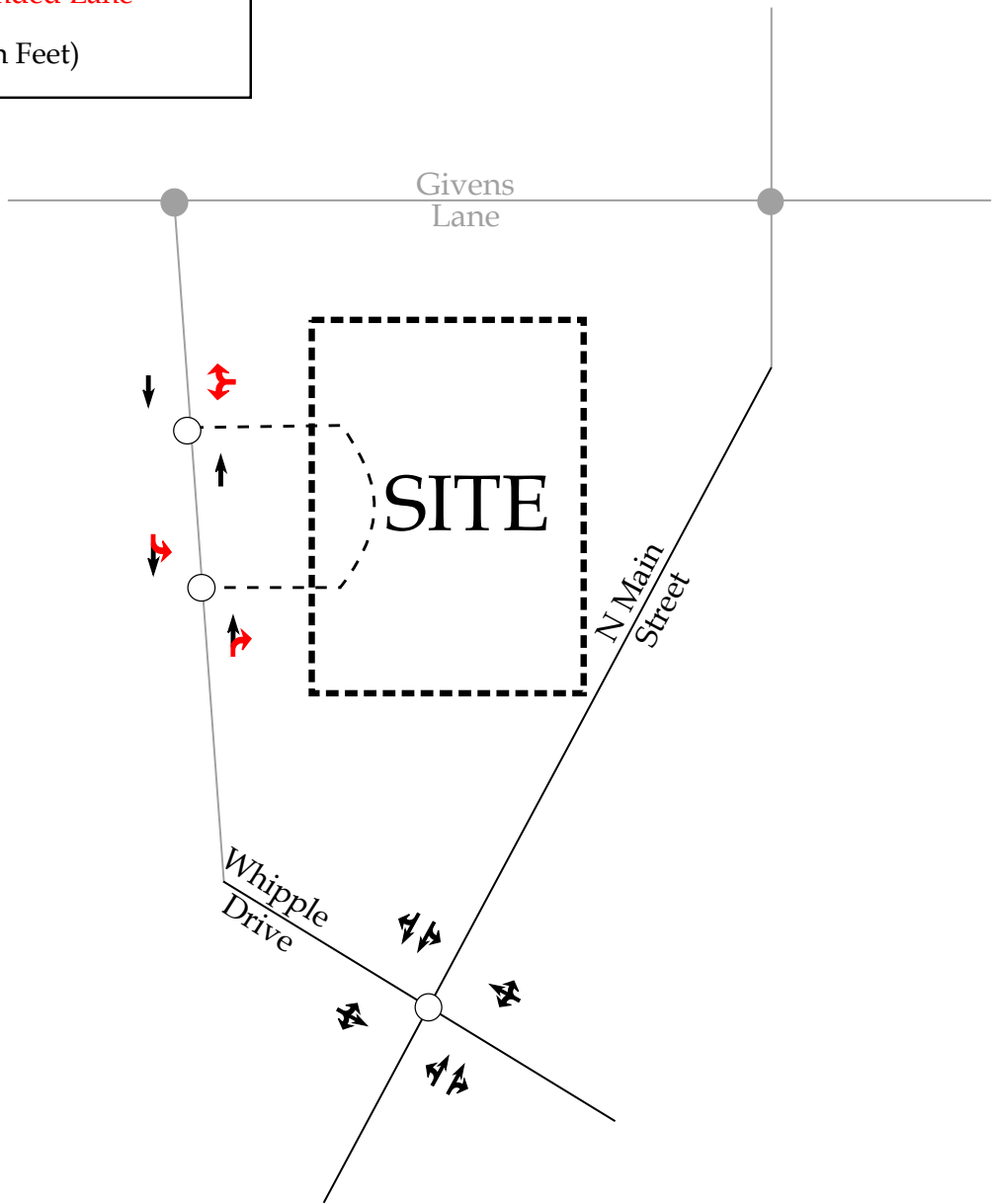
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Figure 8



LEGEND

- Unsignalized Intersection
- Unanalyzed Intersection
- Existing Lane
- Recommended Lane
- x' Storage (In Feet)



Whipple Drive Townhomes
Blacksburg, VA

Recommended Lane
Configurations

Scale: Not to Scale | Figure 9

APPENDIX B

COUNT DATA



TRAFFIC DATA COLLECTION

File Name : Blacksburg(Main and Givens) Day 1

Site Code :

Start Date : 4/12/2022

Page No : 2

Groups Printed- Trucks

Start Time	N Main Street Southbound		Mountain Breeze Drive Westbound		N Main Street Northbound		Givens Lane Eastbound		Int. Total
	Bikes	App. Total	Bikes	App. Total	Bikes	App. Total	Bikes	App. Total	
02:45 PM	0	0	0	0	0	0	0	0	0
Total	0	0	1	1	0	0	0	0	1
03:00 PM	0	0	0	0	0	0	0	0	0
03:15 PM	0	0	0	0	0	0	0	0	0
03:30 PM	0	0	0	0	0	0	0	0	0
03:45 PM	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0
04:00 PM	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0
05:00 PM	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0
06:00 PM	0	0	0	0	0	0	0	0	0
06:15 PM	0	0	0	0	0	0	0	0	0
06:30 PM	0	0	0	0	0	0	0	0	0
06:45 PM	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0
Grand Total	1	1	1	1	0	0	0	0	2
Apprch %	100		100		0		0		
Total %	50	50	50	50	0	0	0	0	



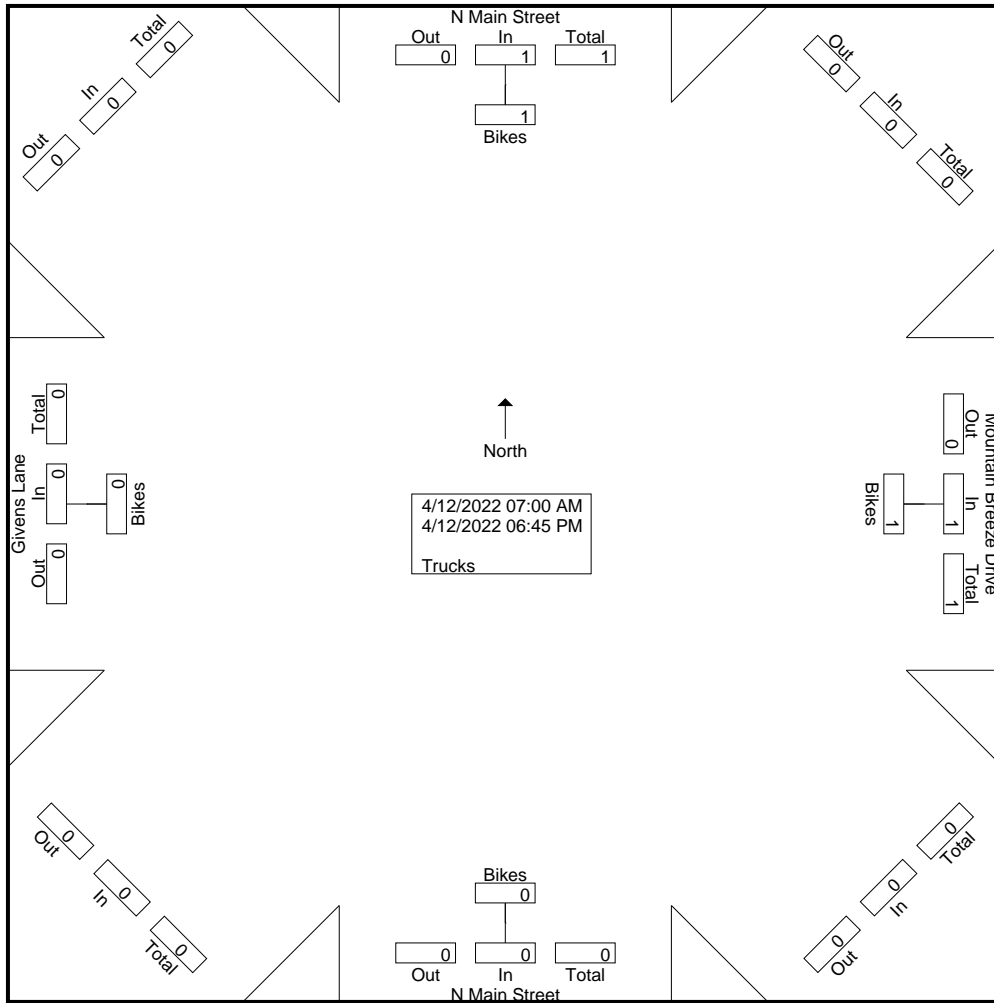
TRAFFIC DATA COLLECTION

File Name : Blacksburg(Main and Givens) Day 1

Site Code :

Start Date : 4/12/2022

Page No : 3





TRAFFIC DATA COLLECTION

File Name : Blacksburg(Main and Givens) Day 1
 Site Code :
 Start Date : 4/12/2022
 Page No : 1

Groups Printed- Cars +

Start Time	N Main Street Southbound		Mountain Breeze Drive Westbound		N Main Street Northbound		Givens Lane Eastbound		Int. Total
	Peds	App. Total	Peds	App. Total	Peds	App. Total	Peds	App. Total	
07:00 AM	0	0	0	0	0	0	0	0	0
07:15 AM	0	0	3	3	0	0	0	0	3
07:30 AM	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	0	0	0
Total	0	0	3	3	0	0	0	0	3
08:00 AM	0	0	1	1	0	0	0	0	1
08:15 AM	1	1	1	1	0	0	0	0	2
08:30 AM	2	2	0	0	0	0	0	0	2
08:45 AM	2	2	0	0	0	0	0	0	2
Total	5	5	2	2	0	0	0	0	7
09:00 AM	2	2	0	0	0	0	0	0	2
09:15 AM	0	0	0	0	0	0	0	0	0
09:30 AM	0	0	0	0	0	0	0	0	0
09:45 AM	1	1	4	4	0	0	0	0	5
Total	3	3	4	4	0	0	0	0	7
10:00 AM	0	0	0	0	0	0	0	0	0
10:15 AM	0	0	1	1	1	1	0	0	2
10:30 AM	0	0	0	0	0	0	0	0	0
10:45 AM	1	1	0	0	0	0	0	0	1
Total	1	1	1	1	1	1	0	0	3
11:00 AM	0	0	0	0	0	0	0	0	0
11:15 AM	0	0	1	1	0	0	0	0	1
11:30 AM	0	0	0	0	1	1	0	0	1
11:45 AM	1	1	1	1	0	0	0	0	2
Total	1	1	2	2	1	1	0	0	4
12:00 PM	0	0	0	0	0	0	1	1	1
12:15 PM	2	2	0	0	0	0	0	0	2
12:30 PM	0	0	3	3	0	0	0	0	3
12:45 PM	2	2	0	0	2	2	0	0	4
Total	4	4	3	3	2	2	1	1	10
01:00 PM	0	0	1	1	0	0	1	1	2
01:15 PM	0	0	2	2	0	0	0	0	2
01:30 PM	1	1	0	0	0	0	0	0	1
01:45 PM	0	0	0	0	0	0	0	0	0
Total	1	1	3	3	0	0	1	1	5
02:00 PM	0	0	0	0	0	0	0	0	0
02:15 PM	1	1	0	0	0	0	0	0	1
02:30 PM	2	2	0	0	0	0	1	1	3



TRAFFIC DATA COLLECTION

File Name : Blacksburg(Main and Givens) Day 1

Site Code :

Start Date : 4/12/2022

Page No : 2

Groups Printed- Cars +

Start Time	N Main Street Southbound		Mountain Breeze Drive Westbound		N Main Street Northbound		Givens Lane Eastbound		Int. Total
	Peds	App. Total	Peds	App. Total	Peds	App. Total	Peds	App. Total	
02:45 PM	0	0	0	0	0	0	0	0	0
Total	3	3	0	0	0	0	1	1	4
03:00 PM	1	1	3	3	1	1	0	0	5
03:15 PM	0	0	1	1	0	0	0	0	1
03:30 PM	2	2	1	1	0	0	3	3	6
03:45 PM	1	1	0	0	0	0	0	0	1
Total	4	4	5	5	1	1	3	3	13
04:00 PM	1	1	1	1	1	1	1	1	4
04:15 PM	0	0	1	1	0	0	0	0	1
04:30 PM	0	0	0	0	0	0	0	0	0
04:45 PM	1	1	0	0	1	1	1	1	3
Total	2	2	2	2	2	2	2	2	8
05:00 PM	0	0	1	1	0	0	0	0	1
05:15 PM	1	1	2	2	0	0	0	0	3
05:30 PM	1	1	0	0	0	0	2	2	3
05:45 PM	3	3	2	2	0	0	0	0	5
Total	5	5	5	5	0	0	2	2	12
06:00 PM	0	0	1	1	0	0	0	0	1
06:15 PM	1	1	2	2	0	0	0	0	3
06:30 PM	0	0	0	0	0	0	0	0	0
06:45 PM	1	1	0	0	1	1	0	0	2
Total	2	2	3	3	1	1	0	0	6
Grand Total	31	31	33	33	8	8	10	10	82
Apprch %	100		100		100		100		
Total %	37.8	37.8	40.2	40.2	9.8	9.8	12.2	12.2	



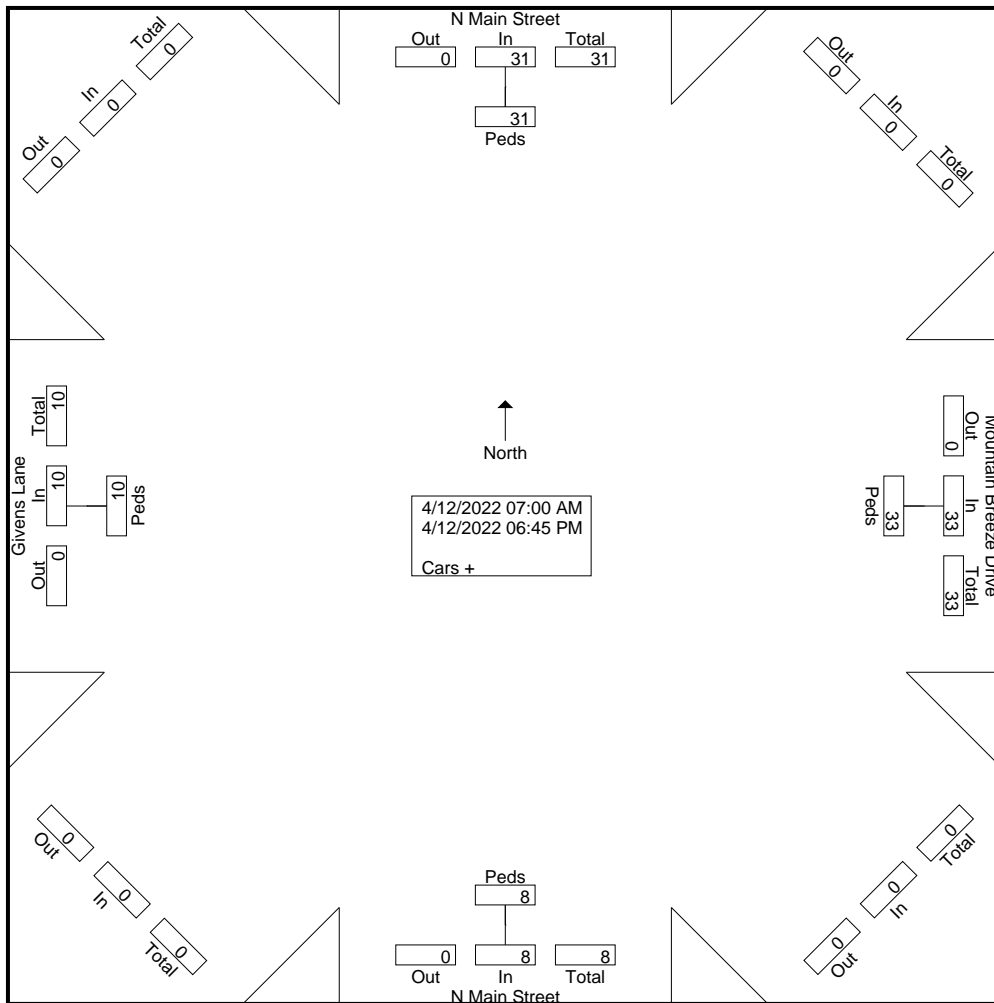
TRAFFIC DATA COLLECTION

File Name : Blacksburg(Main and Givens) Day 1

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TRAFFIC DATA COLLECTION

File Name : Blacksburg(Main and Givens) Day 1

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Groups Printed- Cars + - Trucks

Start Time	N Main Street Southbound						Mountain Breeze Drive Westbound						N Main Street Northbound						Givens Lane Eastbound						Int. Total
	Right	Thru	Left	UTrn	Peds	App. Total	Right	Thru	Left	UTrn	Peds	App. Total	Right	Thru	Left	UTrn	Peds	App. Total	Right	Thru	Left	UTrn	Peds	App. Total	
07:00 AM	6	55	1	0	0	62	0	0	1	0	0	1	3	11	2	0	0	16	0	1	1	0	0	2	81
07:15 AM	7	97	1	0	0	105	2	4	3	0	3	12	2	11	2	0	0	15	1	0	0	0	0	1	133
07:30 AM	9	112	2	0	0	123	0	7	8	0	0	15	1	14	3	0	0	18	5	0	5	0	0	10	166
07:45 AM	8	124	2	0	0	134	3	4	8	0	0	15	1	17	3	0	0	21	2	0	0	0	0	2	172
Total	30	388	6	0	0	424	5	15	20	0	3	43	7	53	10	0	0	70	8	1	6	0	0	15	552
08:00 AM	9	78	3	0	0	90	0	2	0	0	1	3	2	33	2	0	0	37	1	0	1	0	0	2	132
08:15 AM	6	78	0	0	1	85	0	2	0	0	1	3	0	33	2	0	0	35	0	0	3	0	0	3	126
08:30 AM	12	132	3	0	2	149	1	3	2	0	0	6	0	23	3	0	0	26	3	0	2	0	0	5	186
08:45 AM	12	119	0	0	2	133	4	3	3	0	0	10	1	46	4	0	0	51	3	1	3	0	0	7	201
Total	39	407	6	0	5	457	5	10	5	0	2	22	3	135	11	0	0	149	7	1	9	0	0	17	645
09:00 AM	5	92	4	0	3	104	0	1	3	0	0	4	1	46	4	0	0	51	1	0	4	0	0	5	164
09:15 AM	8	79	2	0	0	89	1	2	3	0	0	6	4	35	1	0	0	40	1	0	1	0	0	2	137
09:30 AM	5	52	0	0	0	57	0	0	0	0	0	0	1	33	4	0	0	38	1	0	7	0	0	8	103
09:45 AM	1	58	3	0	1	63	0	2	3	0	4	9	1	29	2	0	0	32	3	0	0	0	0	3	107
Total	19	281	9	0	4	313	1	5	9	0	4	19	7	143	11	0	0	161	6	0	12	0	0	18	511
10:00 AM	8	47	0	0	0	55	1	2	2	0	0	5	0	36	6	0	0	42	3	0	2	0	0	5	107
10:15 AM	2	44	1	1	0	48	0	1	0	0	1	2	1	29	2	0	1	33	0	0	2	0	0	2	85
10:30 AM	3	60	1	0	0	64	1	0	2	0	0	3	1	34	2	1	0	38	2	1	3	0	0	6	111
10:45 AM	4	59	0	0	1	64	1	0	0	0	0	1	1	35	6	0	0	42	2	0	0	0	0	2	109
Total	17	210	2	1	1	231	3	3	4	0	1	11	3	134	16	1	1	155	7	1	7	0	0	15	412
11:00 AM	2	53	1	0	0	56	1	0	0	0	0	1	0	55	2	0	0	57	0	0	0	0	0	0	114
11:15 AM	12	65	1	0	0	78	1	1	1	0	1	4	1	44	4	0	0	49	0	1	2	0	0	3	134
11:30 AM	8	62	2	0	0	72	2	1	2	0	0	5	4	45	4	0	1	54	3	0	3	0	0	6	137
11:45 AM	3	45	2	0	1	51	0	1	3	0	1	5	3	51	5	0	0	59	2	0	4	0	0	6	121
Total	25	225	6	0	1	257	4	3	6	0	2	15	8	195	15	0	1	219	5	1	9	0	0	15	506
12:00 PM	7	81	0	0	0	88	0	1	1	0	0	2	2	43	2	0	0	47	2	0	0	0	1	3	140
12:15 PM	6	46	0	0	2	54	1	2	0	0	0	3	2	52	6	0	0	60	1	0	1	0	0	2	119
12:30 PM	6	51	0	0	0	57	2	0	3	0	3	8	0	49	5	0	0	54	2	1	3	0	0	6	125
12:45 PM	2	69	1	0	2	74	0	0	4	0	0	4	3	55	3	0	2	63	1	0	1	0	0	2	143
Total	21	247	1	0	4	273	3	3	8	0	3	17	7	199	16	0	2	224	6	1	5	0	1	13	527
01:00 PM	7	64	0	0	0	71	3	0	2	0	1	6	5	46	1	0	0	52	0	1	3	0	1	5	134
01:15 PM	3	65	0	0	0	68	0	0	0	0	2	2	2	43	4	0	0	49	0	0	4	0	0	4	123
01:30 PM	5	51	2	0	1	59	0	2	4	0	0	6	2	47	2	0	0	51	3	1	2	0	0	6	122
01:45 PM	5	47	0	0	0	52	0	2	1	0	0	3	1	44	2	0	0	47	1	0	3	0	0	4	106
Total	20	227	2	0	1	250	3	4	7	0	3	17	10	180	9	0	0	199	4	2	12	0	1	19	485



TRAFFIC DATA COLLECTION

File Name : Blacksburg(Main and Givens) Day 1
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Groups Printed- Cars + - Trucks

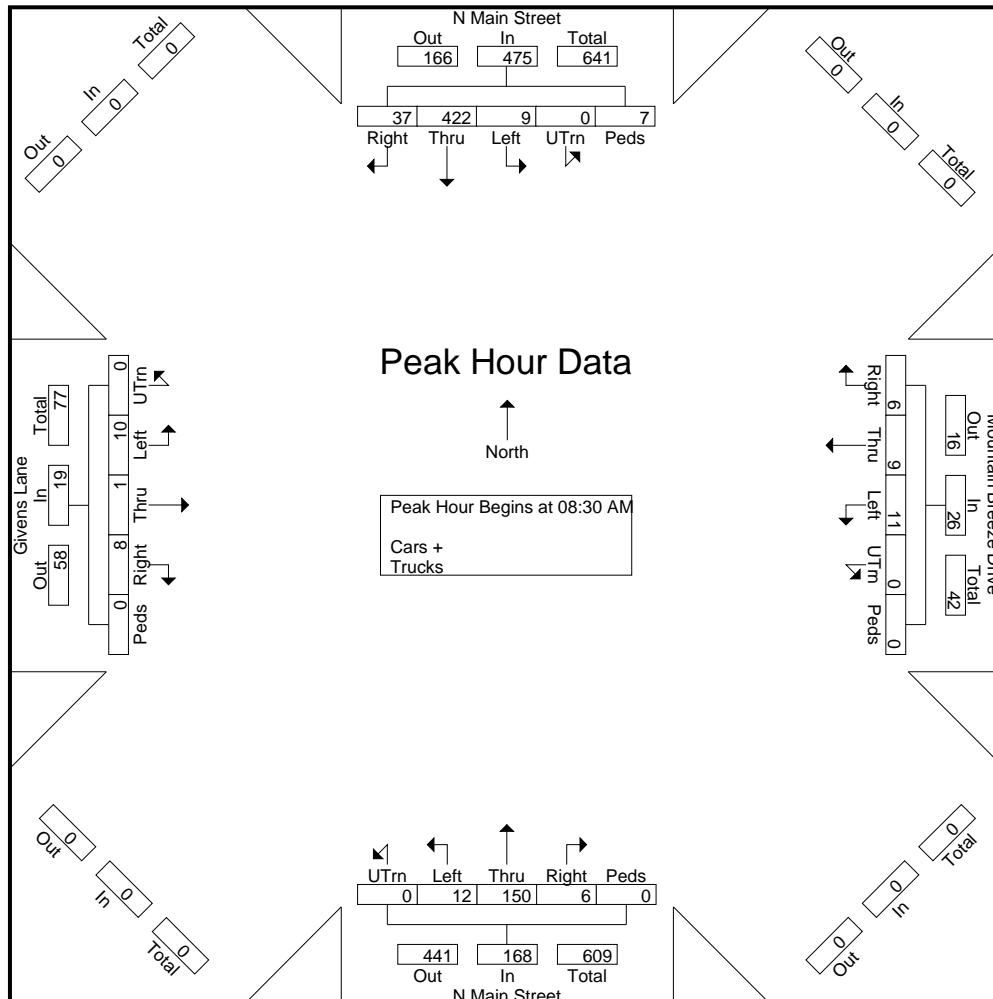
Start Time	N Main Street Southbound						Mountain Breeze Drive Westbound						N Main Street Northbound						Givens Lane Eastbound						Int. Total
	Right	Thru	Left	UTrn	Peds	App. Total	Right	Thru	Left	UTrn	Peds	App. Total	Right	Thru	Left	UTrn	Peds	App. Total	Right	Thru	Left	UTrn	Peds	App. Total	
02:00 PM	9	39	2	0	0	50	0	4	1	0	0	5	3	54	2	0	0	59	2	0	1	0	0	3	117
02:15 PM	5	41	0	0	1	47	0	2	3	0	1	6	1	47	3	0	0	51	1	0	0	0	0	1	105
02:30 PM	6	40	0	0	2	48	0	1	1	0	0	2	1	52	4	0	0	57	2	1	1	0	1	5	112
02:45 PM	8	49	1	0	0	58	1	2	3	0	0	6	3	60	4	0	0	67	1	0	1	0	0	2	133
Total	28	169	3	0	3	203	1	9	8	0	1	19	8	213	13	0	0	234	6	1	3	0	1	11	467
03:00 PM	9	65	4	0	1	79	1	1	3	0	3	8	1	56	3	0	1	61	3	2	3	0	0	8	156
03:15 PM	11	52	4	0	0	67	3	1	1	0	1	6	2	70	3	0	0	75	0	0	2	0	0	2	150
03:30 PM	8	61	7	0	2	78	1	0	2	0	1	4	3	110	3	0	0	116	3	0	3	0	3	9	207
03:45 PM	9	53	2	0	1	65	0	2	1	0	0	3	2	92	7	0	0	101	6	0	5	0	0	11	180
Total	37	231	17	0	4	289	5	4	7	0	5	21	8	328	16	0	1	353	12	2	13	0	3	30	693
04:00 PM	3	63	2	0	1	69	2	1	2	0	1	6	2	99	6	0	1	108	5	1	5	0	1	12	195
04:15 PM	8	55	2	0	0	65	1	3	4	0	1	9	2	95	3	0	0	100	3	0	4	0	0	7	181
04:30 PM	9	67	1	0	0	77	1	1	3	0	0	5	4	104	2	0	0	110	3	1	7	0	0	11	203
04:45 PM	7	77	3	0	1	88	1	2	1	0	0	4	6	88	7	0	1	102	1	1	2	0	1	5	199
Total	27	262	8	0	2	299	5	7	10	0	2	24	14	386	18	0	2	420	12	3	18	0	2	35	778
05:00 PM	13	63	2	0	0	78	2	4	5	0	1	12	6	124	6	0	0	136	2	0	5	0	0	7	233
05:15 PM	7	73	5	0	1	86	1	0	5	0	2	8	7	113	2	0	0	122	3	1	2	0	0	6	222
05:30 PM	16	74	3	0	1	94	2	1	1	0	0	4	3	95	5	0	0	103	2	1	7	0	2	12	213
05:45 PM	7	78	2	0	3	90	0	2	5	0	2	9	1	96	5	0	0	102	4	0	2	0	0	6	207
Total	43	288	12	0	5	348	5	7	16	0	5	33	17	428	18	0	0	463	11	2	16	0	2	31	875
06:00 PM	10	57	3	0	0	70	1	1	5	0	1	8	5	88	5	0	0	98	2	2	4	0	0	8	184
06:15 PM	6	54	2	0	1	63	2	1	2	0	2	7	2	59	5	0	0	66	3	1	3	0	0	7	143
06:30 PM	3	45	2	0	0	50	0	3	3	0	0	6	2	66	1	0	0	69	5	0	4	0	0	9	134
06:45 PM	6	57	3	0	1	67	1	0	0	0	0	1	7	64	3	0	1	75	4	1	5	0	0	10	153
Total	25	213	10	0	2	250	4	5	10	0	3	22	16	277	14	0	1	308	14	4	16	0	0	34	614
Grand Total	331	3148	82	1	32	3594	44	75	110	0	34	263	108	2671	167	1	8	2955	98	19	126	0	10	253	7065
Apprch %	9.2	87.6	2.3	0	0.9		16.7	28.5	41.8	0	12.9		3.7	90.4	5.7	0	0.3		38.7	7.5	49.8	0	4		
Total %	4.7	44.6	1.2	0	0.5	50.9	0.6	1.1	1.6	0	0.5	3.7	1.5	37.8	2.4	0	0.1	41.8	1.4	0.3	1.8	0	0.1	3.6	
Cars +	311	3093	76	1	31	3512	41	71	106	0	33	251	105	2643	107	1	8	2864	96	18	119	0	10	243	6870
% Cars +	94	98.3	92.7	100	96.9	97.7	93.2	94.7	96.4	0	97.1	95.4	97.2	99	64.1	100	100	96.9	98	94.7	94.4	0	100	96	97.2
Trucks	20	55	6	0	1	82	3	4	4	0	1	12	3	28	60	0	0	91	2	1	7	0	0	10	195
% Trucks	6	1.7	7.3	0	3.1	2.3	6.8	5.3	3.6	0	2.9	4.6	2.8	1	35.9	0	0	3.1	2	5.3	5.6	0	0	4	2.8



TRAFFIC DATA COLLECTION

File Name : Blacksburg(Main and Givens) Day 1
 Site Code :
 Start Date : 4/12/2022
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Start Time	N Main Street Southbound						Mountain Breeze Drive Westbound						N Main Street Northbound						Givens Lane Eastbound						Int. Total
	Right	Thru	Left	UTrn	Peds	App. Total	Right	Thru	Left	UTrn	Peds	App. Total	Right	Thru	Left	UTrn	Peds	App. Total	Right	Thru	Left	UTrn	Peds	App. Total	
Peak Hour Analysis From 07:00 AM to 11:45 AM - Peak 1 of 1																									
Peak Hour for Entire Intersection Begins at 08:30 AM																									
08:30 AM	12	132	3	0	2	149	1	3	2	0	0	6	0	23	3	0	0	26	3	0	2	0	0	5	186
08:45 AM	12	119	0	0	2	133	4	3	3	0	0	10	1	46	4	0	0	51	3	1	3	0	0	7	201
09:00 AM	5	92	4	0	3	104	0	1	3	0	0	4	1	46	4	0	0	51	1	0	4	0	0	5	164
09:15 AM	8	79	2	0	0	89	1	2	3	0	0	6	4	35	1	0	0	40	1	0	1	0	0	2	137
Total Volume	37	422	9	0	7	475	6	9	11	0	0	26	6	150	12	0	0	168	8	1	10	0	0	19	688
% App. Total	7.8	88.8	1.9	0	1.5		23.1	34.6	42.3	0	0		3.6	89.3	7.1	0	0		42.1	5.3	52.6	0	0		
PHF	.771	.799	.563	.000	.583	.797	.375	.750	.917	.000	.000	.650	.375	.815	.750	.000	.000	.824	.667	.250	.625	.000	.000	.679	.856

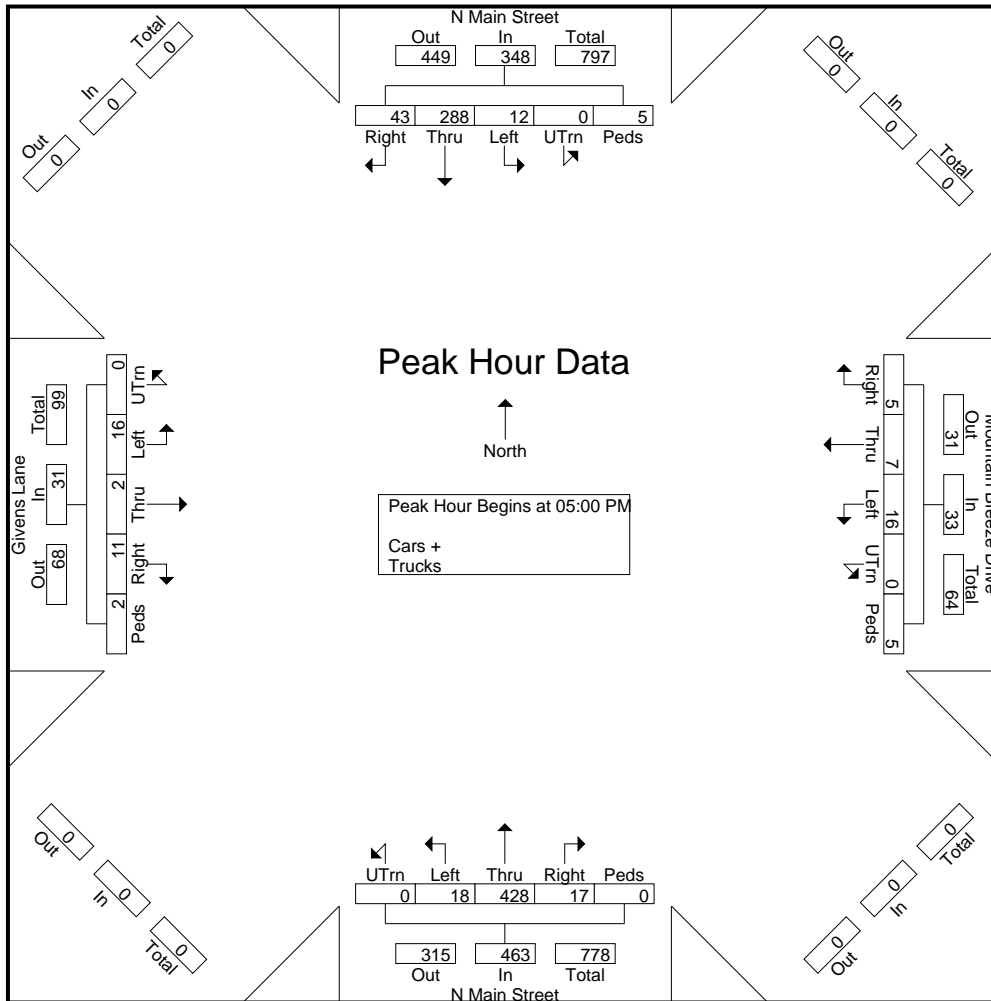




TRAFFIC DATA COLLECTION

File Name : Blacksburg(Main and Givens) Day 1
 Site Code :
 Start Date : 4/12/2022
 Page No : 4

Start Time	N Main Street Southbound						Mountain Breeze Drive Westbound						N Main Street Northbound						Givens Lane Eastbound						Int. Total
	Right	Thru	Left	UTrn	Peds	App. Total	Right	Thru	Left	UTrn	Peds	App. Total	Right	Thru	Left	UTrn	Peds	App. Total	Right	Thru	Left	UTrn	Peds	App. Total	
Peak Hour Analysis From 12:00 PM to 06:45 PM - Peak 1 of 1																									
Peak Hour for Entire Intersection Begins at 05:00 PM																									
05:00 PM	13	63	2	0	0	78	2	4	5	0	1	12	6	124	6	0	0	136	2	0	5	0	0	7	233
05:15 PM	7	73	5	0	1	86	1	0	5	0	2	8	7	113	2	0	0	122	3	1	2	0	0	6	222
05:30 PM	16	74	3	0	1	94	2	1	1	0	0	4	3	95	5	0	0	103	2	1	7	0	2	12	213
05:45 PM	7	78	2	0	3	90	0	2	5	0	2	9	1	96	5	0	0	102	4	0	2	0	0	6	207
Total Volume	43	288	12	0	5	348	5	7	16	0	5	33	17	428	18	0	0	463	11	2	16	0	2	31	875
% App. Total	12.4	82.8	3.4	0	1.4		15.2	21.2	48.5	0	15.2		3.7	92.4	3.9	0	0		35.5	6.5	51.6	0	6.5		
PHF	.672	.923	.600	.000	.417	.926	.625	.438	.800	.000	.625	.688	.607	.863	.750	.000	.000	.851	.688	.500	.571	.000	.250	.646	.939





TRAFFIC DATA COLLECTION

File Name : Blacksburg(Main and Givens) Day 2

Site Code :

Start Date : 4/13/2022

Page No : 2

Groups Printed- Trucks

Start Time	N Main Street Southbound		Mountain Breeze Drive Westbound		N Main Street Northbound		Givens Lane Eastbound		Int. Total
	Bikes	App. Total	Bikes	App. Total	Bikes	App. Total	Bikes	App. Total	
02:45 PM	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0
03:00 PM	0	0	0	0	0	0	0	0	0
03:15 PM	0	0	0	0	1	1	0	0	1
03:30 PM	0	0	0	0	0	0	0	0	0
03:45 PM	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	1	1	0	0	1
04:00 PM	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0
05:00 PM	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0
06:00 PM	0	0	0	0	0	0	0	0	0
06:15 PM	0	0	0	0	0	0	0	0	0
06:30 PM	0	0	0	0	0	0	0	0	0
06:45 PM	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0
Grand Total	2	2	0	0	1	1	0	0	3
Apprch %	100		0		100		0		
Total %	66.7	66.7	0	0	33.3	33.3	0	0	



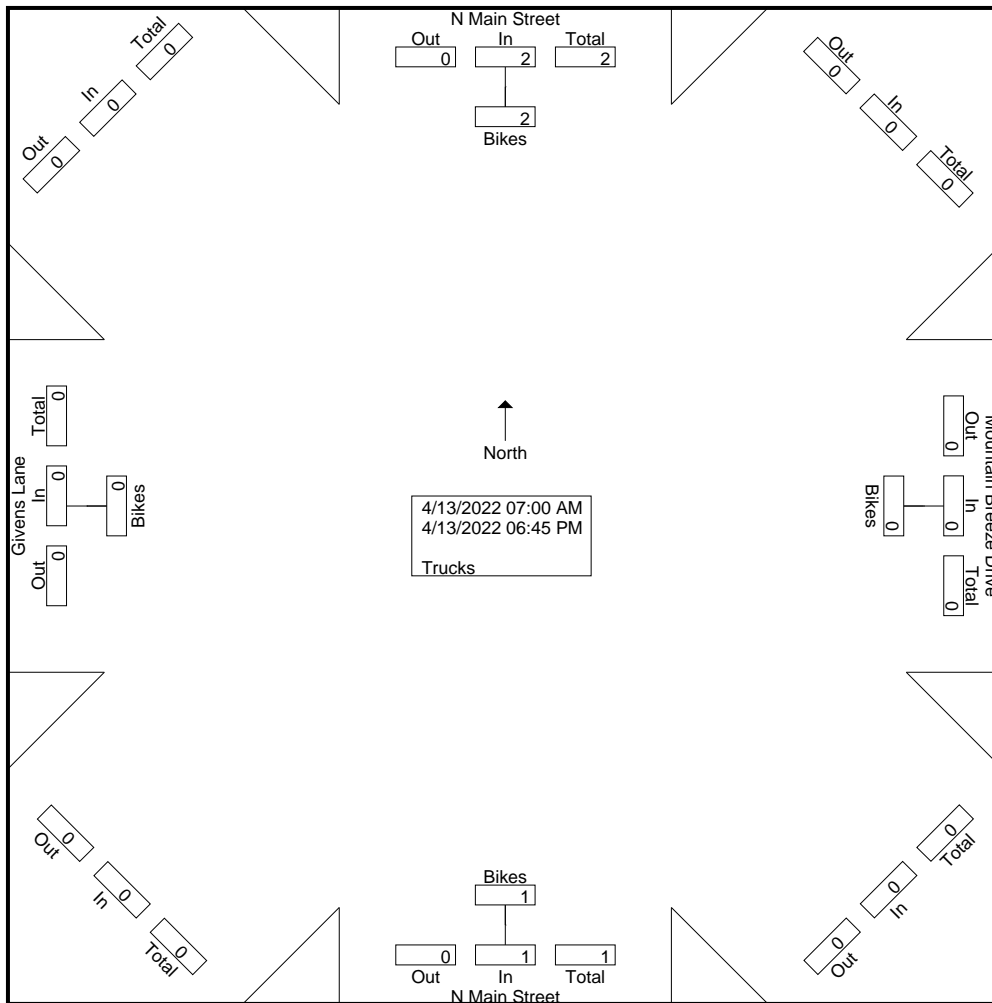
TRAFFIC DATA COLLECTION

File Name : Blacksburg(Main and Givens) Day 2

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TRAFFIC DATA COLLECTION

File Name : Blacksburg(Main and Givens) Day 2
 Site Code :
 Start Date : 4/13/2022
 Page No : 1

Groups Printed- Cars +

Start Time	N Main Street Southbound		Mountain Breeze Drive Westbound		N Main Street Northbound		Givens Lane Eastbound		Int. Total
	Peds	App. Total	Peds	App. Total	Peds	App. Total	Peds	App. Total	
07:00 AM	0	0	1	1	1	1	0	0	2
07:15 AM	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	1	1	1
07:45 AM	0	0	1	1	1	1	0	0	2
Total	0	0	2	2	2	2	1	1	5
08:00 AM	0	0	0	0	0	0	0	0	0
08:15 AM	0	0	2	2	0	0	1	1	3
08:30 AM	0	0	4	4	1	1	0	0	5
08:45 AM	0	0	2	2	1	1	0	0	3
Total	0	0	8	8	2	2	1	1	11
09:00 AM	4	4	3	3	1	1	1	1	9
09:15 AM	0	0	3	3	0	0	1	1	4
09:30 AM	0	0	2	2	1	1	1	1	4
09:45 AM	0	0	0	0	1	1	2	2	3
Total	4	4	8	8	3	3	5	5	20
10:00 AM	0	0	1	1	0	0	1	1	2
10:15 AM	1	1	5	5	3	3	2	2	11
10:30 AM	0	0	0	0	0	0	2	2	2
10:45 AM	1	1	0	0	0	0	0	0	1
Total	2	2	6	6	3	3	5	5	16
11:00 AM	0	0	0	0	0	0	0	0	0
11:15 AM	0	0	0	0	0	0	0	0	0
11:30 AM	0	0	1	1	0	0	0	0	1
11:45 AM	1	1	0	0	0	0	1	1	2
Total	1	1	1	1	0	0	1	1	3
12:00 PM	0	0	2	2	1	1	0	0	3
12:15 PM	1	1	0	0	0	0	0	0	1
12:30 PM	0	0	0	0	0	0	0	0	0
12:45 PM	2	2	0	0	0	0	1	1	3
Total	3	3	2	2	1	1	1	1	7
01:00 PM	0	0	0	0	0	0	0	0	0
01:15 PM	0	0	0	0	0	0	0	0	0
01:30 PM	0	0	0	0	0	0	0	0	0
01:45 PM	1	1	0	0	0	0	0	0	1
Total	1	1	0	0	0	0	0	0	1
02:00 PM	0	0	0	0	0	0	0	0	0
02:15 PM	0	0	0	0	0	0	0	0	0
02:30 PM	0	0	2	2	2	2	0	0	4



TRAFFIC DATA COLLECTION

File Name : Blacksburg(Main and Givens) Day 2

Site Code :

Start Date : 4/13/2022

Page No : 2

Groups Printed- Cars +

Start Time	N Main Street Southbound		Mountain Breeze Drive Westbound		N Main Street Northbound		Givens Lane Eastbound		Int. Total
	Peds	App. Total	Peds	App. Total	Peds	App. Total	Peds	App. Total	
02:45 PM	0	0	0	0	0	0	0	0	0
Total	0	0	2	2	2	2	0	0	4
03:00 PM	0	0	0	0	0	0	0	0	0
03:15 PM	0	0	4	4	4	4	0	0	8
03:30 PM	0	0	0	0	0	0	0	0	0
03:45 PM	1	1	0	0	0	0	0	0	1
Total	1	1	4	4	4	4	0	0	9
04:00 PM	0	0	1	1	0	0	0	0	1
04:15 PM	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	1	1	0	0	0	0	1
04:45 PM	3	3	1	1	0	0	0	0	4
Total	3	3	3	3	0	0	0	0	6
05:00 PM	1	1	0	0	0	0	0	0	1
05:15 PM	2	2	0	0	0	0	0	0	2
05:30 PM	2	2	0	0	0	0	0	0	2
05:45 PM	1	1	0	0	0	0	0	0	1
Total	6	6	0	0	0	0	0	0	6
06:00 PM	0	0	2	2	0	0	0	0	2
06:15 PM	3	3	1	1	0	0	0	0	4
06:30 PM	0	0	3	3	1	1	0	0	4
06:45 PM	0	0	1	1	0	0	1	1	2
Total	3	3	7	7	1	1	1	1	12
Grand Total	24	24	43	43	18	18	15	15	100
Apprch %	100		100		100		100		
Total %	24	24	43	43	18	18	15	15	



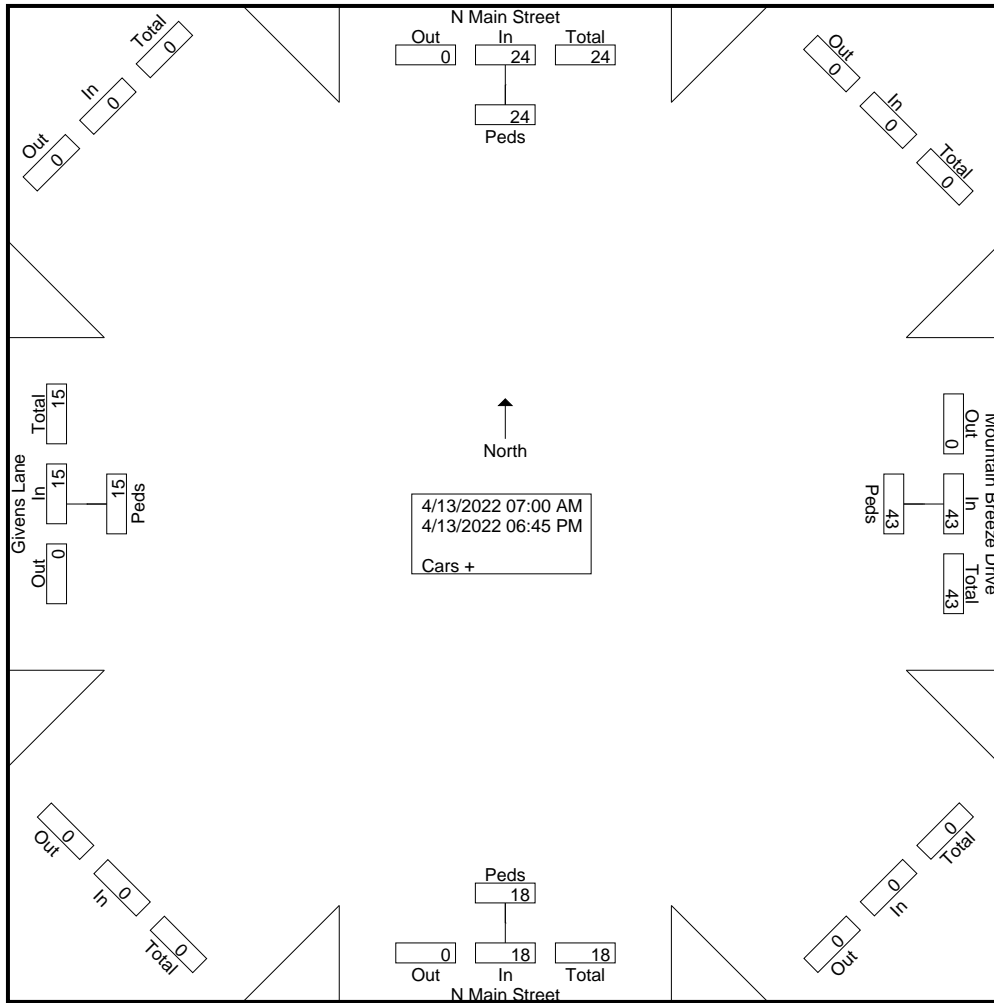
TRAFFIC DATA COLLECTION

File Name : Blacksburg(Main and Givens) Day 2

Site Code :

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TRAFFIC DATA COLLECTION

File Name : Blacksburg(Main and Givens) Day 2
 Site Code :
 Start Date : 4/13/2022
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Groups Printed- Cars + - Trucks

Start Time	N Main Street Southbound						Mountain Breeze Drive Westbound						N Main Street Northbound						Givens Lane Eastbound						Int. Total
	Right	Thru	Left	UTrn	Peds	App. Total	Right	Thru	Left	UTrn	Peds	App. Total	Right	Thru	Left	UTrn	Peds	App. Total	Right	Thru	Left	UTrn	Peds	App. Total	
07:00 AM	5	60	1	0	0	66	1	1	2	0	1	5	3	16	4	0	1	24	0	0	1	0	0	1	96
07:15 AM	6	97	0	0	0	103	2	4	1	0	0	7	1	13	3	0	0	17	3	0	1	0	0	4	131
07:30 AM	10	119	2	0	0	131	0	6	6	0	0	12	0	19	3	0	0	22	3	1	3	0	1	8	173
07:45 AM	14	123	1	0	0	138	2	3	5	0	1	11	0	27	4	0	1	32	2	0	0	0	0	2	183
Total	35	399	4	0	0	438	5	14	14	0	2	35	4	75	14	0	2	95	8	1	5	0	1	15	583
08:00 AM	9	87	2	0	0	98	0	2	2	0	0	4	1	36	2	0	0	39	1	0	5	0	0	6	147
08:15 AM	9	83	0	0	0	92	0	1	4	0	2	7	3	26	2	0	0	31	1	1	1	0	1	4	134
08:30 AM	9	128	0	0	0	137	2	3	1	0	4	10	2	46	2	0	1	51	3	0	4	0	0	7	205
08:45 AM	15	122	2	0	0	139	2	3	4	0	2	11	1	52	3	0	1	57	4	0	6	0	0	10	217
Total	42	420	4	0	0	466	4	9	11	0	8	32	7	160	9	0	2	178	9	1	16	0	1	27	703
09:00 AM	12	88	3	0	5	108	0	1	5	0	3	9	2	47	4	0	1	54	1	0	1	0	1	3	174
09:15 AM	5	76	2	0	0	83	3	1	3	0	3	10	0	39	3	0	0	42	0	0	4	0	1	5	140
09:30 AM	7	55	0	0	0	62	0	1	2	0	2	5	0	54	6	0	1	61	2	0	1	0	1	4	132
09:45 AM	3	52	0	0	0	55	0	1	2	0	0	3	2	30	4	0	1	37	0	0	2	0	2	4	99
Total	27	271	5	0	5	308	3	4	12	0	8	27	4	170	17	0	3	194	3	0	8	0	5	16	545
10:00 AM	3	60	0	0	0	63	0	2	1	0	1	4	2	26	1	1	0	30	4	2	1	0	1	8	105
10:15 AM	4	45	4	0	1	54	1	1	2	0	5	9	1	41	2	0	3	47	3	0	0	0	2	5	115
10:30 AM	8	57	0	0	0	65	1	0	2	0	0	3	0	45	2	0	0	47	2	0	0	0	2	4	119
10:45 AM	9	60	0	0	1	70	0	3	2	0	0	5	2	32	4	0	0	38	1	1	5	0	0	7	120
Total	24	222	4	0	2	252	2	6	7	0	6	21	5	144	9	1	3	162	10	3	6	0	5	24	459
11:00 AM	8	79	3	0	0	90	0	0	1	0	0	1	5	42	3	0	0	50	3	0	5	0	0	8	149
11:15 AM	11	57	0	0	0	68	0	0	3	0	0	3	2	43	2	0	0	47	4	0	4	0	0	8	126
11:30 AM	4	61	0	0	0	65	0	0	5	0	1	6	1	45	4	0	0	50	5	1	4	0	0	10	131
11:45 AM	4	74	2	0	2	82	2	2	4	0	0	8	1	65	6	0	0	72	5	0	1	0	1	7	169
Total	27	271	5	0	2	305	2	2	13	0	1	18	9	195	15	0	0	219	17	1	14	0	1	33	575
12:00 PM	8	73	0	0	0	81	0	0	4	0	2	6	3	71	2	0	1	77	6	0	2	0	0	8	172
12:15 PM	5	58	1	0	1	65	0	0	3	0	0	3	2	46	2	0	0	50	0	2	1	0	0	3	121
12:30 PM	8	57	2	0	0	67	0	0	0	0	0	0	0	63	4	0	0	67	0	0	1	0	0	1	135
12:45 PM	5	59	2	0	2	68	1	0	3	0	0	4	0	49	5	0	0	54	4	1	1	0	1	7	133
Total	26	247	5	0	3	281	1	0	10	0	2	13	5	229	13	0	1	248	10	3	5	0	1	19	561
01:00 PM	4	56	1	0	0	61	0	1	3	0	0	4	5	63	4	0	0	72	2	1	2	0	0	5	142
01:15 PM	5	53	1	0	0	59	1	1	2	0	0	4	3	50	1	0	0	54	1	0	1	0	0	2	119
01:30 PM	6	53	0	0	0	59	0	0	3	0	0	3	6	45	1	0	0	52	2	0	2	0	0	4	118
01:45 PM	3	50	1	0	1	55	1	1	6	0	0	8	2	48	3	0	0	53	5	1	2	0	0	8	124
Total	18	212	3	0	1	234	2	3	14	0	0	19	16	206	9	0	0	231	10	2	7	0	0	19	503



TRAFFIC DATA COLLECTION

File Name : Blacksburg(Main and Givens) Day 2

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Groups Printed- Cars + - Trucks

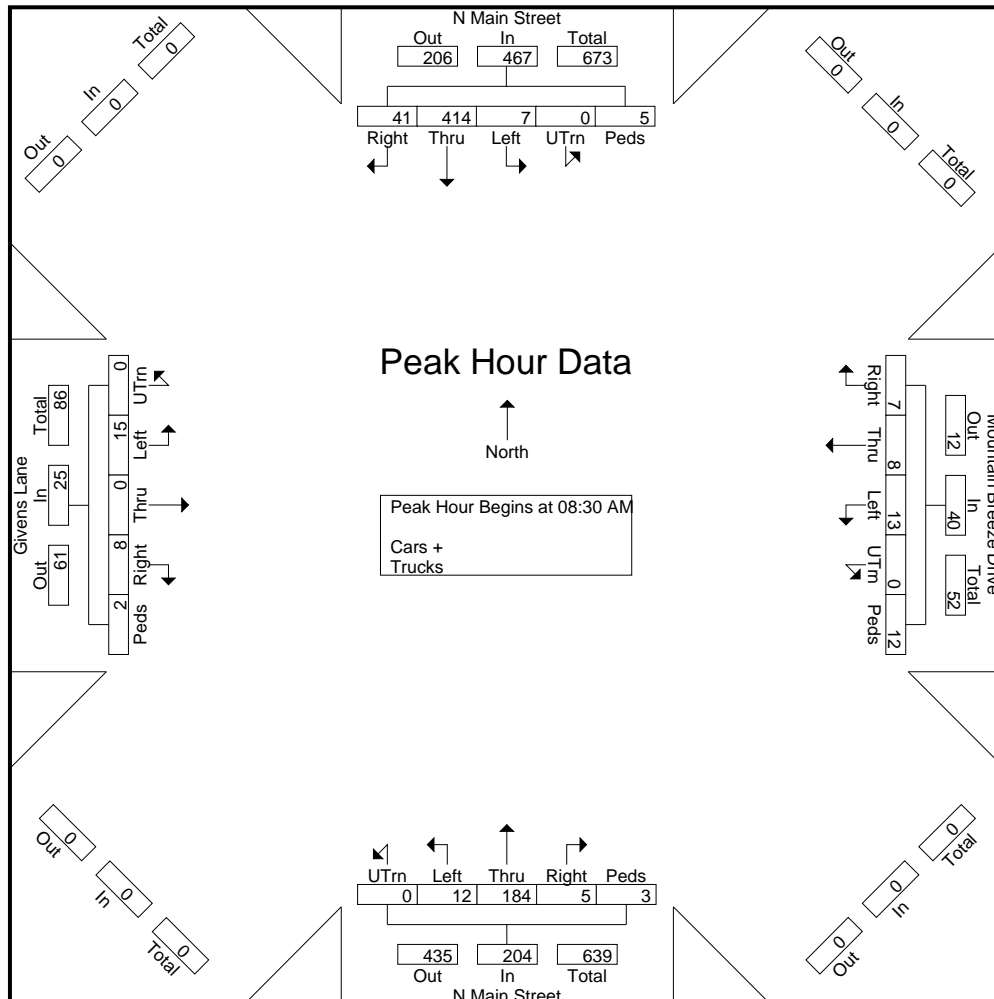
Start Time	N Main Street Southbound						Mountain Breeze Drive Westbound						N Main Street Northbound						Givens Lane Eastbound						Int. Total
	Right	Thru	Left	UTrn	Peds	App. Total	Right	Thru	Left	UTrn	Peds	App. Total	Right	Thru	Left	UTrn	Peds	App. Total	Right	Thru	Left	UTrn	Peds	App. Total	
02:00 PM	3	46	1	0	0	50	1	0	5	0	0	6	3	56	4	0	0	63	5	1	0	0	0	6	125
02:15 PM	8	62	1	0	0	71	0	1	3	0	0	4	0	56	2	0	0	58	1	0	3	0	0	4	137
02:30 PM	9	42	1	0	0	52	1	3	4	0	2	10	4	49	3	0	2	58	0	0	2	0	0	2	122
02:45 PM	6	33	1	0	0	40	2	1	0	0	0	3	1	76	5	0	0	82	2	2	0	0	0	4	129
Total	26	183	4	0	0	213	4	5	12	0	2	23	8	237	14	0	2	261	8	3	5	0	0	16	513
03:00 PM	6	59	2	0	0	67	1	1	1	0	0	3	2	74	1	0	0	77	1	0	1	0	0	2	149
03:15 PM	10	75	2	0	0	87	1	0	3	0	4	8	3	73	2	0	5	83	1	0	7	0	0	8	186
03:30 PM	8	88	2	0	0	98	1	0	4	0	0	5	1	126	6	0	0	133	4	2	2	0	0	8	244
03:45 PM	5	56	3	0	1	65	3	2	2	0	0	7	2	105	3	0	0	110	1	1	1	0	0	3	185
Total	29	278	9	0	1	317	6	3	10	0	4	23	8	378	12	0	5	403	7	3	11	0	0	21	764
04:00 PM	12	67	1	0	0	80	2	5	2	0	1	10	4	110	6	0	0	120	3	0	3	0	0	6	216
04:15 PM	3	55	2	0	0	60	0	4	2	0	0	6	5	96	8	0	0	109	6	0	6	0	0	12	187
04:30 PM	9	66	4	0	0	79	0	3	1	0	1	5	1	122	10	0	0	133	0	1	8	0	0	9	226
04:45 PM	11	67	0	0	3	81	2	5	3	0	1	11	2	75	5	0	0	82	3	1	3	0	0	7	181
Total	35	255	7	0	3	300	4	17	8	0	3	32	12	403	29	0	0	444	12	2	20	0	0	34	810
05:00 PM	11	77	2	0	1	91	0	2	4	0	0	6	2	112	7	0	0	121	2	2	4	0	0	8	226
05:15 PM	7	56	2	0	2	67	3	1	2	0	0	6	4	125	4	0	0	133	4	2	3	0	0	9	215
05:30 PM	13	73	5	0	2	93	3	1	8	0	0	12	8	104	5	0	0	117	7	0	4	0	0	11	233
05:45 PM	8	83	3	0	1	95	1	2	6	0	0	9	8	101	7	0	0	116	3	0	5	0	0	8	228
Total	39	289	12	0	6	346	7	6	20	0	0	33	22	442	23	0	0	487	16	4	16	0	0	36	902
06:00 PM	13	56	2	0	0	71	1	3	1	0	2	7	5	81	4	0	0	90	3	1	2	0	0	6	174
06:15 PM	4	66	3	0	3	76	1	1	4	0	1	7	2	66	2	0	0	70	5	0	3	0	0	8	161
06:30 PM	7	38	2	0	0	47	1	1	1	0	3	6	2	59	1	0	1	63	1	0	2	0	0	3	119
06:45 PM	7	48	2	0	0	57	0	1	1	0	1	3	5	60	3	0	0	68	1	0	1	0	1	3	131
Total	31	208	9	0	3	251	3	6	7	0	7	23	14	266	10	0	1	291	10	1	8	0	1	20	585
Grand Total	359	3255	71	0	26	3711	43	75	138	0	43	299	114	2905	174	1	19	3213	120	24	121	0	15	280	7503
Apprch %	9.7	87.7	1.9	0	0.7		14.4	25.1	46.2	0	14.4		3.5	90.4	5.4	0	0.6		42.9	8.6	43.2	0	5.4		
Total %	4.8	43.4	0.9	0	0.3	49.5	0.6	1	1.8	0	0.6	4	1.5	38.7	2.3	0	0.3	42.8	1.6	0.3	1.6	0	0.2	3.7	
Cars +	343	3196	70	0	24	3633	40	74	137	0	43	294	114	2848	114	1	18	3095	113	21	119	0	15	268	7290
% Cars +	95.5	98.2	98.6	0	92.3	97.9	93	98.7	99.3	0	100	98.3	100	98	65.5	100	94.7	96.3	94.2	87.5	98.3	0	100	95.7	97.2
Trucks	16	59	1	0	2	78	3	1	1	0	0	5	0	57	60	0	1	118	7	3	2	0	0	12	213
% Trucks	4.5	1.8	1.4	0	7.7	2.1	7	1.3	0.7	0	0	1.7	0	2	34.5	0	5.3	3.7	5.8	12.5	1.7	0	0	4.3	2.8



TRAFFIC DATA COLLECTION

File Name : Blacksburg(Main and Givens) Day 2
 Site Code :
 Start Date : 4/13/2022
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Start Time	N Main Street Southbound						Mountain Breeze Drive Westbound						N Main Street Northbound						Givens Lane Eastbound						Int. Total
	Right	Thru	Left	UTrn	Peds	App. Total	Right	Thru	Left	UTrn	Peds	App. Total	Right	Thru	Left	UTrn	Peds	App. Total	Right	Thru	Left	UTrn	Peds	App. Total	
Peak Hour Analysis From 07:00 AM to 11:45 AM - Peak 1 of 1																									
Peak Hour for Entire Intersection Begins at 08:30 AM																									
08:30 AM	9	128	0	0	0	137	2	3	1	0	4	10	2	46	2	0	1	51	3	0	4	0	0	7	205
08:45 AM	15	122	2	0	0	139	2	3	4	0	2	11	1	52	3	0	1	57	4	0	6	0	0	10	217
09:00 AM	12	88	3	0	5	108	0	1	5	0	3	9	2	47	4	0	1	54	1	0	1	0	1	3	174
09:15 AM	5	76	2	0	0	83	3	1	3	0	3	10	0	39	3	0	0	42	0	0	4	0	1	5	140
Total Volume	41	414	7	0	5	467	7	8	13	0	12	40	5	184	12	0	3	204	8	0	15	0	2	25	736
% App. Total	8.8	88.7	1.5	0	1.1		17.5	20	32.5	0	30		2.5	90.2	5.9	0	1.5		32	0	60	0	8		
PHF	.683	.809	.583	.000	.250	.840	.583	.667	.650	.000	.750	.909	.625	.885	.750	.000	.750	.895	.500	.000	.625	.000	.500	.625	.848

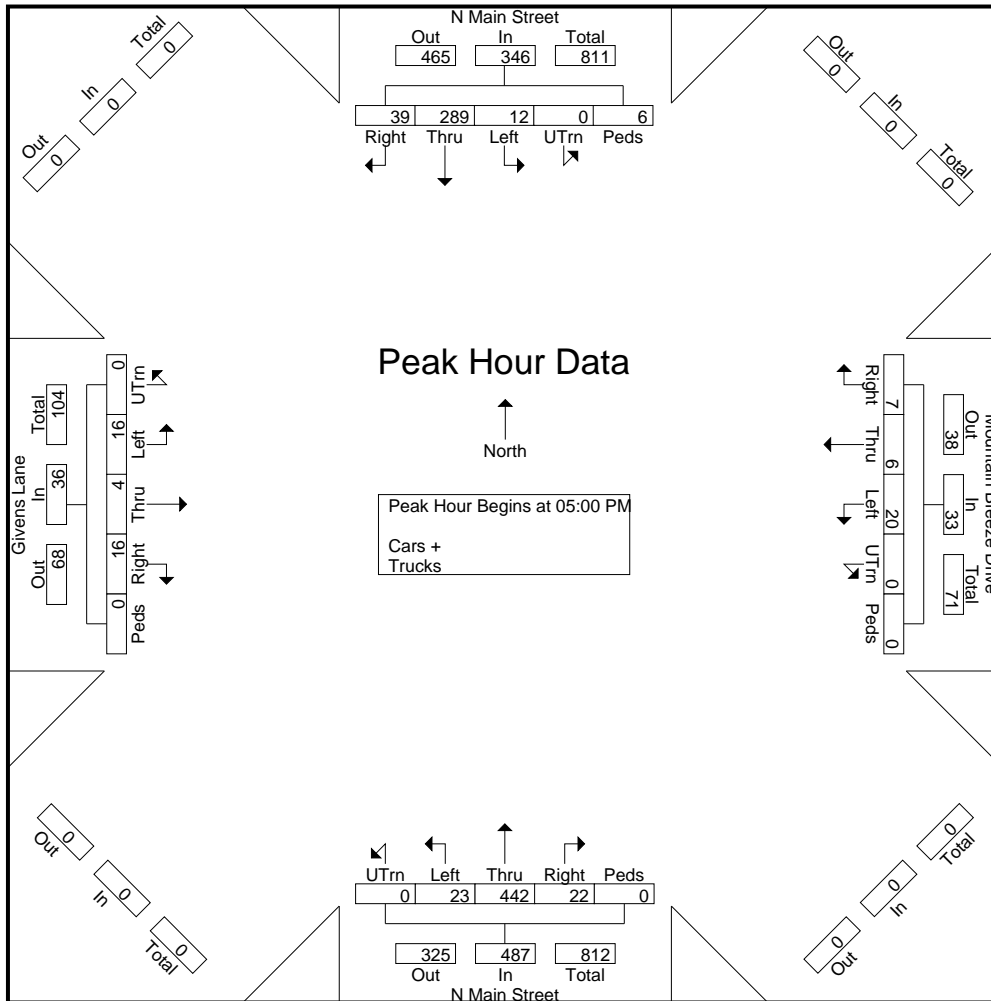




TRAFFIC DATA COLLECTION

File Name : Blacksburg(Main and Givens) Day 2
 Site Code :
 Start Date : 4/13/2022
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Start Time	N Main Street Southbound					Mountain Breeze Drive Westbound					N Main Street Northbound					Givens Lane Eastbound					Int. Total				
	Right	Thru	Left	UTrn	Peds	App. Total	Right	Thru	Left	UTrn	Peds	App. Total	Right	Thru	Left	UTrn	Peds	App. Total	Right	Thru		Left	UTrn	Peds	App. Total
Peak Hour Analysis From 12:00 PM to 06:45 PM - Peak 1 of 1																									
Peak Hour for Entire Intersection Begins at 05:00 PM																									
05:00 PM	11	77	2	0	1	91	0	2	4	0	0	6	2	112	7	0	0	121	2	2	4	0	0	8	226
05:15 PM	7	56	2	0	2	67	3	1	2	0	0	6	4	125	4	0	0	133	4	2	3	0	0	9	215
05:30 PM	13	73	5	0	2	93	3	1	8	0	0	12	8	104	5	0	0	117	7	0	4	0	0	11	233
05:45 PM	8	83	3	0	1	95	1	2	6	0	0	9	8	101	7	0	0	116	3	0	5	0	0	8	228
Total Volume	39	289	12	0	6	346	7	6	20	0	0	33	22	442	23	0	0	487	16	4	16	0	0	36	902
% App. Total	11.3	83.5	3.5	0	1.7		21.2	18.2	60.6	0	0		4.5	90.8	4.7	0	0		44.4	11.1	44.4	0	0		
PHF	.750	.870	.600	.000	.750	.911	.583	.750	.625	.000	.000	.688	.688	.884	.821	.000	.000	.915	.571	.500	.800	.000	.000	.818	.968





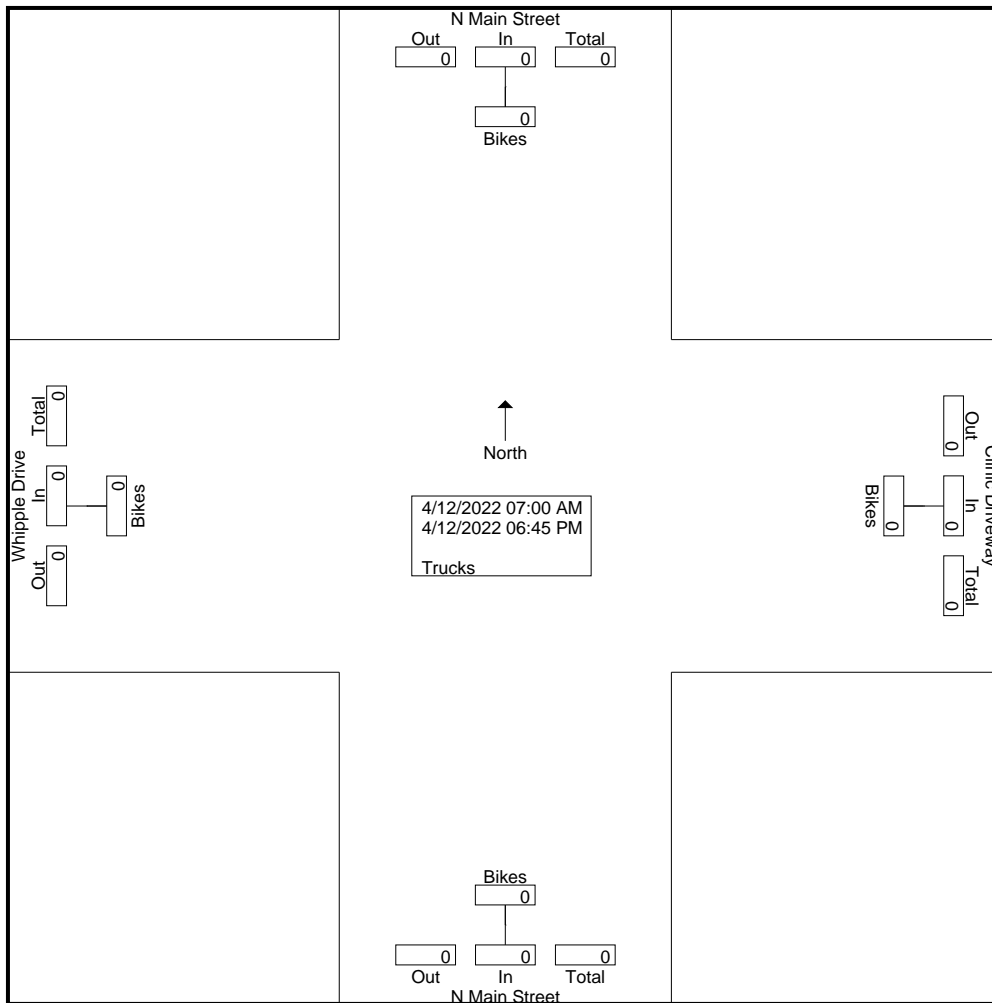
TRAFFIC DATA COLLECTION

File Name : Blacksburg(Main and Whipple) Day 1

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TRAFFIC DATA COLLECTION

File Name : Blacksburg(Main and Whipple) Day 1

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Groups Printed- Cars +

Start Time	N Main Street Southbound		Clinic Driveway Westbound		N Main Street Northbound		Whipple Drive Eastbound		Int. Total
	Peds	App. Total	Peds	App. Total	Peds	App. Total	Peds	App. Total	
02:45 PM	0	0	0	0	0	0	1	1	1
Total	0	0	1	1	1	1	1	1	3
03:00 PM	0	0	1	1	0	0	0	0	1
03:15 PM	1	1	1	1	0	0	1	1	3
03:30 PM	1	1	1	1	0	0	0	0	2
03:45 PM	0	0	1	1	0	0	0	0	1
Total	2	2	4	4	0	0	1	1	7
04:00 PM	1	1	2	2	0	0	1	1	4
04:15 PM	0	0	2	2	1	1	1	1	4
04:30 PM	0	0	3	3	0	0	2	2	5
04:45 PM	0	0	1	1	0	0	3	3	4
Total	1	1	8	8	1	1	7	7	17
05:00 PM	2	2	4	4	0	0	2	2	8
05:15 PM	0	0	2	2	4	4	6	6	12
05:30 PM	0	0	6	6	0	0	2	2	8
05:45 PM	0	0	1	1	0	0	0	0	1
Total	2	2	13	13	4	4	10	10	29
06:00 PM	1	1	4	4	0	0	1	1	6
06:15 PM	1	1	7	7	8	8	0	0	16
06:30 PM	0	0	2	2	0	0	2	2	4
06:45 PM	1	1	3	3	0	0	0	0	4
Total	3	3	16	16	8	8	3	3	30
Grand Total	11	11	64	64	20	20	31	31	126
Apprch %	100		100		100		100		
Total %	8.7	8.7	50.8	50.8	15.9	15.9	24.6	24.6	



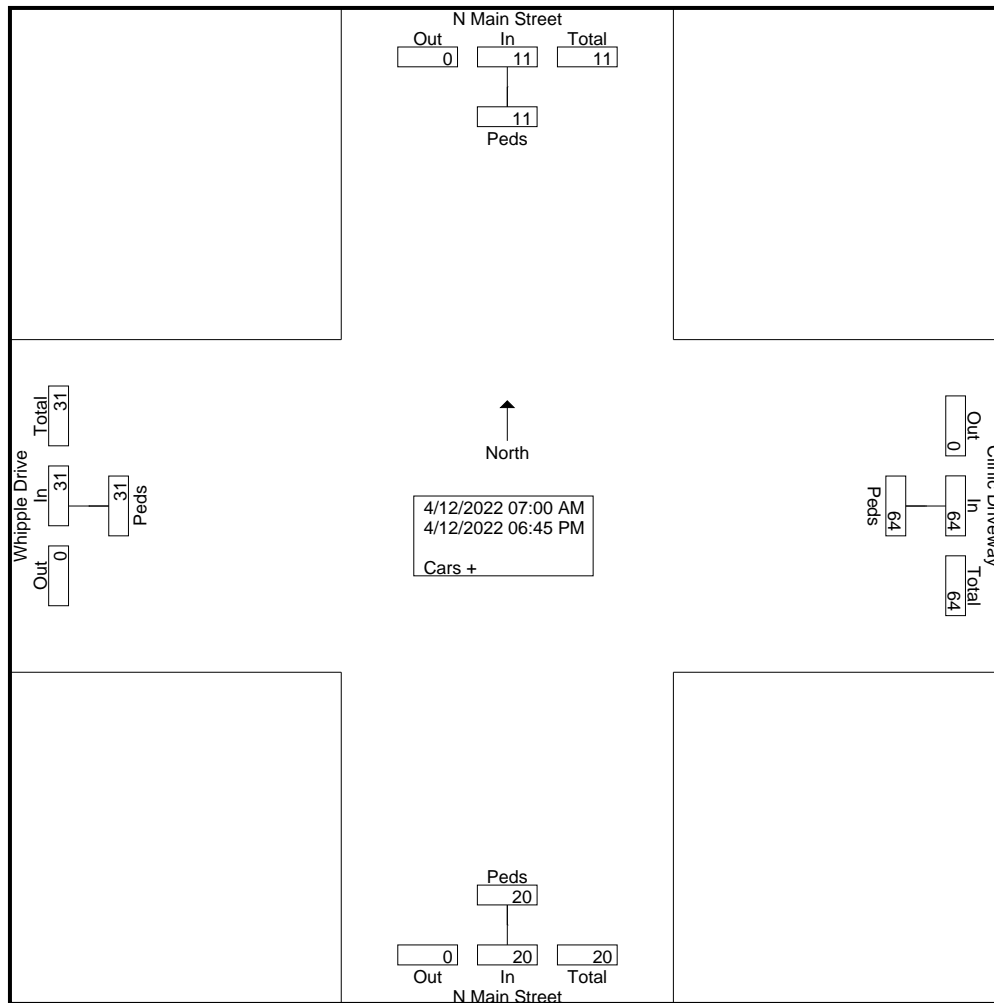
TRAFFIC DATA COLLECTION

File Name : Blacksburg(Main and Whipple) Day 1

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TRAFFIC DATA COLLECTION

File Name : Blacksburg(Main and Whipple) Day 1
 Site Code :
 Start Date : 4/12/2022
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Groups Printed- Cars + - Trucks

Start Time	N Main Street Southbound					Clinic Driveway Westbound					N Main Street Northbound					Whipple Drive Eastbound					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
07:00 AM	0	62	0	0	62	0	0	0	0	0	1	15	2	0	18	8	0	0	0	8	88
07:15 AM	2	107	1	0	110	0	0	0	0	0	0	13	2	0	15	12	0	0	0	12	137
07:30 AM	1	172	1	0	174	1	0	2	0	3	2	22	4	0	28	5	0	0	0	5	210
07:45 AM	0	160	2	0	162	0	1	1	0	2	1	27	7	0	35	27	0	0	0	27	226
Total	3	501	4	0	508	1	1	3	0	5	4	77	15	0	96	52	0	0	0	52	661
08:00 AM	0	86	0	0	86	0	0	1	0	1	1	43	8	0	52	5	0	0	0	5	144
08:15 AM	1	89	0	1	91	0	1	0	5	6	1	38	7	1	47	13	0	0	0	13	157
08:30 AM	0	144	0	0	144	0	0	0	1	1	2	27	5	0	34	10	1	0	0	11	190
08:45 AM	0	139	1	0	140	0	0	1	5	6	5	50	1	0	56	22	0	1	0	23	225
Total	1	458	1	1	461	0	1	2	11	14	9	158	21	1	189	50	1	1	0	52	716
09:00 AM	1	131	1	0	133	1	0	1	0	2	7	50	7	0	64	17	0	0	0	17	216
09:15 AM	0	93	0	0	93	0	0	4	0	4	1	53	11	0	65	13	0	1	0	14	176
09:30 AM	0	60	0	0	60	0	0	0	0	0	1	47	7	0	55	15	0	0	1	16	131
09:45 AM	0	82	1	0	83	0	0	1	0	1	3	41	2	0	46	10	0	0	1	11	141
Total	1	366	2	0	369	1	0	6	0	7	12	191	27	0	230	55	0	1	2	58	664
10:00 AM	0	51	0	0	51	0	0	1	0	1	0	40	6	0	46	11	0	0	0	11	109
10:15 AM	0	56	2	0	58	2	0	4	2	8	1	49	10	0	60	12	0	0	0	12	138
10:30 AM	0	94	0	0	94	1	0	5	1	7	2	40	4	0	46	17	0	2	0	19	166
10:45 AM	0	81	0	0	81	0	0	0	0	0	3	59	9	0	71	10	0	1	0	11	163
Total	0	282	2	0	284	3	0	10	3	16	6	188	29	0	223	50	0	3	0	53	576
11:00 AM	0	75	0	1	76	1	0	2	1	4	0	80	12	0	92	10	0	0	2	12	184
11:15 AM	1	69	0	0	70	1	0	1	1	3	2	49	8	1	60	9	1	0	0	10	143
11:30 AM	0	81	1	0	82	0	0	2	0	2	2	66	8	1	77	15	0	0	0	15	176
11:45 AM	1	66	1	0	68	2	0	3	0	5	9	59	11	1	80	18	0	1	0	19	172
Total	2	291	2	1	296	4	0	8	2	14	13	254	39	3	309	52	1	1	2	56	675
12:00 PM	0	114	0	0	114	0	0	7	1	8	1	61	12	0	74	13	0	0	1	14	210
12:15 PM	0	60	0	0	60	0	0	1	1	2	5	64	16	1	86	8	0	0	1	9	157
12:30 PM	0	63	2	0	65	2	0	1	1	4	4	74	12	0	90	11	0	0	1	12	171
12:45 PM	0	76	1	0	77	0	0	2	0	2	3	70	7	0	80	17	0	0	0	17	176
Total	0	313	3	0	316	2	0	11	3	16	13	269	47	1	330	49	0	0	3	52	714
01:00 PM	1	79	2	0	82	0	0	11	1	12	5	72	9	1	87	9	0	0	1	10	191
01:15 PM	2	83	4	0	89	0	0	2	0	2	5	57	8	0	70	19	0	0	1	20	181
01:30 PM	0	99	0	1	100	1	0	3	1	5	7	63	9	0	79	14	0	0	0	14	198
01:45 PM	1	69	1	0	71	0	0	3	1	4	3	67	17	0	87	18	0	0	0	18	180
Total	4	330	7	1	342	1	0	19	3	23	20	259	43	1	323	60	0	0	2	62	750
02:00 PM	1	55	0	0	56	0	0	1	0	1	4	79	14	1	98	13	0	0	0	13	168
02:15 PM	1	51	1	0	53	0	0	1	1	2	3	53	13	0	69	10	0	0	0	10	134
02:30 PM	0	57	0	0	57	1	0	2	0	3	3	60	11	0	74	11	0	0	0	11	145



TRAFFIC DATA COLLECTION

File Name : Blacksburg(Main and Whipple) Day 1

Site Code :

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Groups Printed- Cars + - Trucks

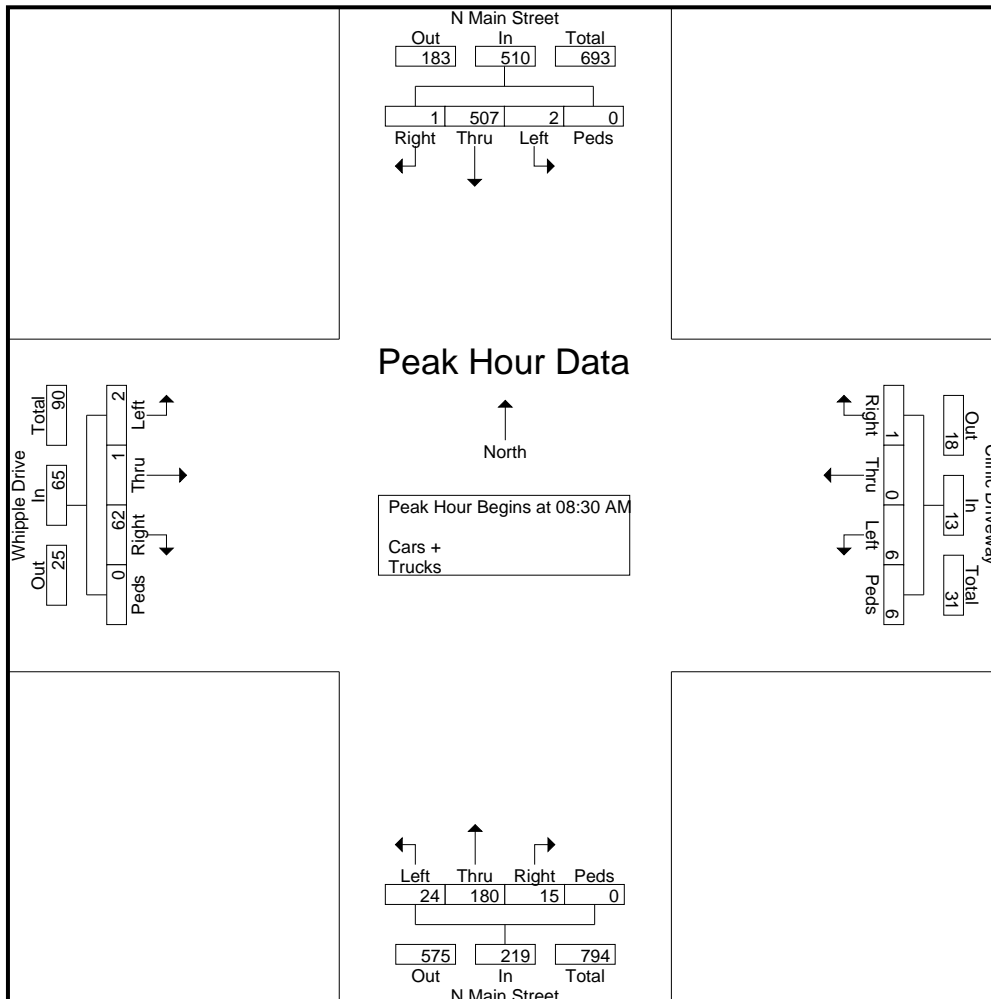
Start Time	N Main Street Southbound					Clinic Driveway Westbound					N Main Street Northbound					Whipple Drive Eastbound					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
02:45 PM	1	75	0	0	76	0	0	4	0	4	5	66	10	0	81	16	0	0	1	17	178
Total	3	238	1	0	242	1	0	8	1	10	15	258	48	1	322	50	0	0	1	51	625
03:00 PM	0	79	0	0	79	1	0	2	1	4	2	70	14	0	86	12	0	0	0	12	181
03:15 PM	0	77	1	1	79	1	0	4	1	6	5	112	9	0	126	16	0	0	1	17	228
03:30 PM	1	66	1	1	69	1	0	2	1	4	0	128	23	0	151	10	0	4	0	14	238
03:45 PM	1	79	0	0	80	1	0	1	1	3	3	118	14	0	135	14	0	1	0	15	233
Total	2	301	2	2	307	4	0	9	4	17	10	428	60	0	498	52	0	5	1	58	880
04:00 PM	1	73	0	1	75	0	0	1	2	3	5	100	14	0	119	14	0	2	1	17	214
04:15 PM	0	77	1	0	78	0	0	2	2	4	8	106	15	1	130	14	0	2	1	17	229
04:30 PM	1	82	1	0	84	1	0	2	3	6	1	126	9	0	136	23	0	1	2	26	252
04:45 PM	1	97	0	0	98	0	0	3	1	4	6	101	16	0	123	18	0	2	3	23	248
Total	3	329	2	1	335	1	0	8	8	17	20	433	54	1	508	69	0	7	7	83	943
05:00 PM	1	79	0	2	82	0	0	3	4	7	4	158	27	0	189	17	0	0	2	19	297
05:15 PM	1	110	0	0	111	1	0	9	2	12	5	140	13	4	162	21	0	0	6	27	312
05:30 PM	1	88	1	0	90	0	0	8	6	14	7	122	20	0	149	10	1	1	2	14	267
05:45 PM	1	94	1	0	96	2	0	4	1	7	15	114	17	0	146	12	0	0	0	12	261
Total	4	371	2	2	379	3	0	24	13	40	31	534	77	4	646	60	1	1	10	72	1137
06:00 PM	0	100	0	1	101	0	0	8	4	12	2	105	15	0	122	20	0	0	1	21	256
06:15 PM	1	84	0	1	86	1	0	5	7	13	3	102	15	8	128	14	0	0	0	14	241
06:30 PM	1	81	0	0	82	0	1	3	2	6	3	94	21	0	118	22	0	0	2	24	230
06:45 PM	1	92	0	1	94	0	0	3	3	6	3	99	18	0	120	17	0	1	0	18	238
Total	3	357	0	3	363	1	1	19	16	37	11	400	69	8	488	73	0	1	3	77	965
Grand Total	26	4137	28	11	4202	22	3	127	64	216	164	3449	529	20	4162	672	3	20	31	726	9306
Apprch %	0.6	98.5	0.7	0.3		10.2	1.4	58.8	29.6		3.9	82.9	12.7	0.5		92.6	0.4	2.8	4.3		
Total %	0.3	44.5	0.3	0.1	45.2	0.2	0	1.4	0.7	2.3	1.8	37.1	5.7	0.2	44.7	7.2	0	0.2	0.3	7.8	
Cars +	25	4073	28	11	4137	22	3	125	64	214	164	3353	523	20	4060	605	3	20	31	659	9070
% Cars +	96.2	98.5	100	100	98.5	100	100	98.4	100	99.1	100	97.2	98.9	100	97.5	90	100	100	100	90.8	97.5
Trucks	1	64	0	0	65	0	0	2	0	2	0	96	6	0	102	67	0	0	0	67	236
% Trucks	3.8	1.5	0	0	1.5	0	0	1.6	0	0.9	0	2.8	1.1	0	2.5	10	0	0	0	9.2	2.5



TRAFFIC DATA COLLECTION

File Name : Blacksburg(Main and Whipple) Day 1
 Site Code :
 Start Date : 4/12/2022
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	N Main Street Southbound					Clinic Driveway Westbound					N Main Street Northbound					Whipple Drive Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 11:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 08:30 AM																					
08:30 AM	0	144	0	0	144	0	0	0	1	1	2	27	5	0	34	10	1	0	0	11	190
08:45 AM	0	139	1	0	140	0	0	1	5	6	5	50	1	0	56	22	0	1	0	23	225
09:00 AM	1	131	1	0	133	1	0	1	0	2	7	50	7	0	64	17	0	0	0	17	216
09:15 AM	0	93	0	0	93	0	0	4	0	4	1	53	11	0	65	13	0	1	0	14	176
Total Volume	1	507	2	0	510	1	0	6	6	13	15	180	24	0	219	62	1	2	0	65	807
% App. Total	0.2	99.4	0.4	0		7.7	0	46.2	46.2		6.8	82.2	11	0		95.4	1.5	3.1	0		897
PHF	.250	.880	.500	.000	.885	.250	.000	.375	.300	.542	.536	.849	.545	.000	.842	.705	.250	.500	.000	.707	.897

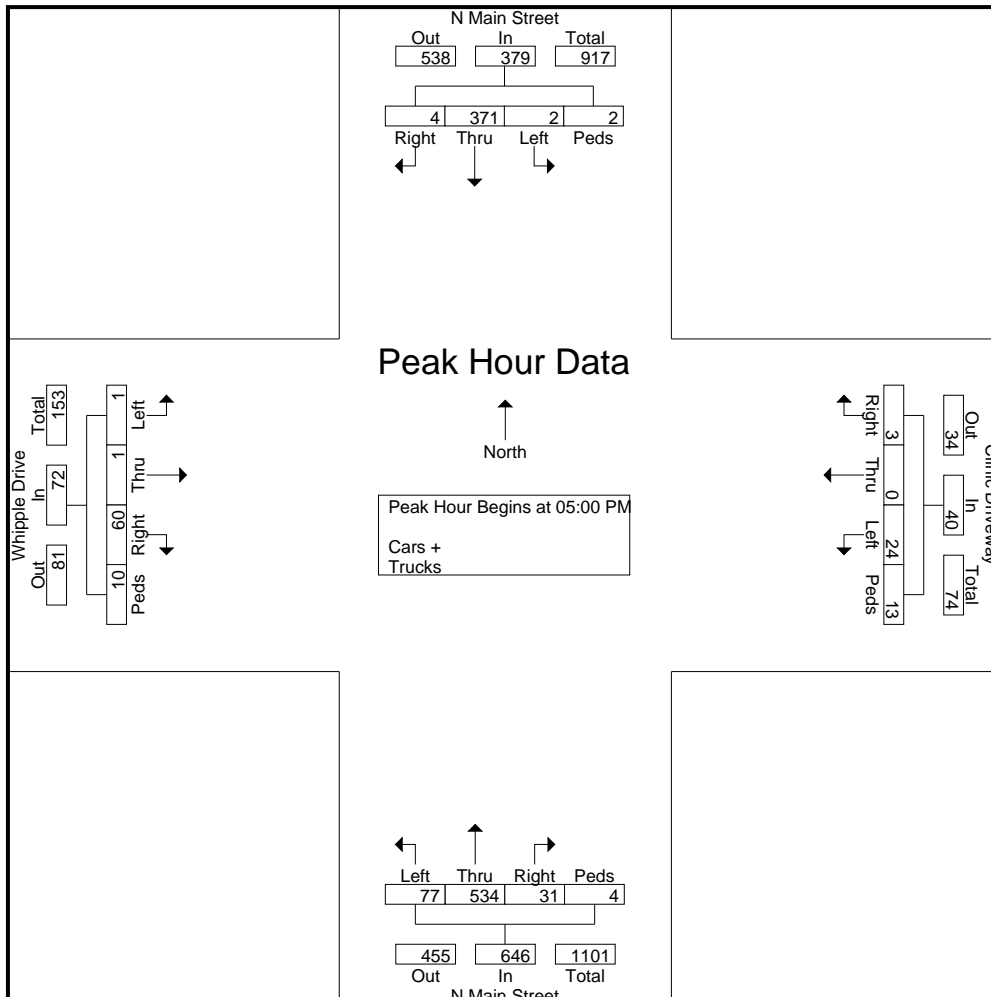




TRAFFIC DATA COLLECTION

File Name : Blacksburg(Main and Whipple) Day 1
 Site Code :
 Start Date : 4/12/2022
 Page No : 4

Start Time	N Main Street Southbound					Clinic Driveway Westbound					N Main Street Northbound					Whipple Drive Eastbound					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
Peak Hour Analysis From 12:00 PM to 06:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 05:00 PM																					
05:00 PM	1	79	0	2	82	0	0	3	4	7	4	158	27	0	189	17	0	0	2	19	297
05:15 PM	1	110	0	0	111	1	0	9	2	12	5	140	13	4	162	21	0	0	6	27	312
05:30 PM	1	88	1	0	90	0	0	8	6	14	7	122	20	0	149	10	1	1	2	14	267
05:45 PM	1	94	1	0	96	2	0	4	1	7	15	114	17	0	146	12	0	0	0	12	261
Total Volume	4	371	2	2	379	3	0	24	13	40	31	534	77	4	646	60	1	1	10	72	1137
% App. Total	1.1	97.9	0.5	0.5		7.5	0	60	32.5		4.8	82.7	11.9	0.6		83.3	1.4	1.4	13.9		
PHF	1.0 0	.843	.500	.250	.854	.375	.000	.667	.542	.714	.517	.845	.713	.250	.854	.714	.250	.250	.417	.667	.911





TRAFFIC DATA COLLECTION

File Name : Blacksburg(Main and Whipple) Day 2

Site Code :

Start Date : 4/13/2022

Page No : 2

Groups Printed- Trucks

Start Time	N Main Street Southbound		Clinic Driveway Westbound		N Main Street Northbound		Whipple Drive Eastbound		Int. Total
	Bikes	App. Total	Bikes	App. Total	Bikes	App. Total	Bikes	App. Total	
02:45 PM	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	1	1	1
03:00 PM	0	0	0	0	0	0	0	0	0
03:15 PM	0	0	0	0	0	0	0	0	0
03:30 PM	0	0	0	0	0	0	0	0	0
03:45 PM	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0
04:00 PM	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0
05:00 PM	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0
06:00 PM	0	0	0	0	0	0	0	0	0
06:15 PM	0	0	0	0	0	0	0	0	0
06:30 PM	0	0	0	0	0	0	0	0	0
06:45 PM	0	0	1	1	0	0	0	0	1
Total	0	0	1	1	0	0	0	0	1
Grand Total	0	0	6	6	0	0	1	1	7
Apprch %	0		100		0		100		
Total %	0	0	85.7	85.7	0	0	14.3	14.3	



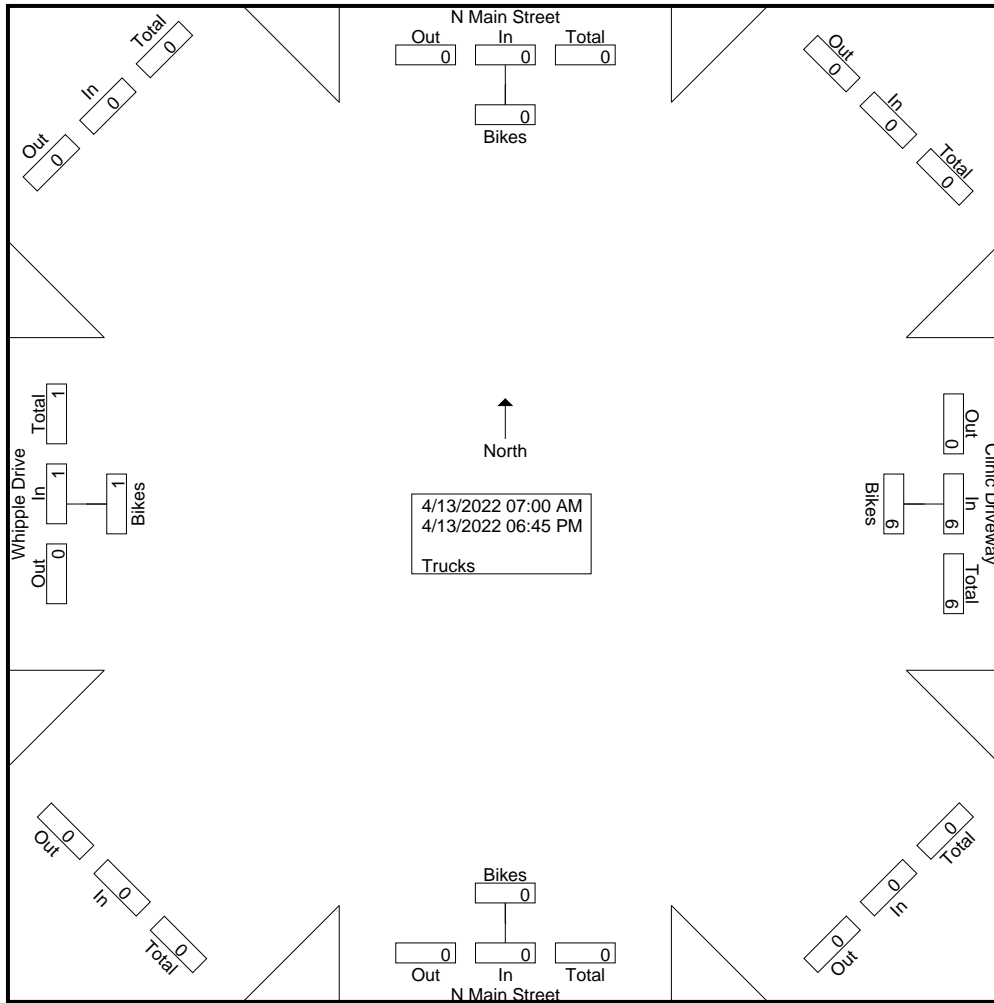
TRAFFIC DATA COLLECTION

File Name : Blacksburg(Main and Whipple) Day 2

Site Code :

Start Date : 4/13/2022

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TRAFFIC DATA COLLECTION

File Name : Blacksburg(Main and Whipple) Day 2
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Groups Printed- Cars +

Start Time	N Main Street Southbound		Clinic Driveway Westbound		N Main Street Northbound		Whipple Drive Eastbound		Int. Total
	Peds	App. Total	Peds	App. Total	Peds	App. Total	Peds	App. Total	
07:00 AM	0	0	3	3	0	0	1	1	4
07:15 AM	0	0	3	3	0	0	0	0	3
07:30 AM	1	1	2	2	0	0	0	0	3
07:45 AM	0	0	2	2	0	0	1	1	3
Total	1	1	10	10	0	0	2	2	13
08:00 AM	0	0	2	2	0	0	0	0	2
08:15 AM	0	0	0	0	2	2	0	0	2
08:30 AM	0	0	0	0	0	0	1	1	1
08:45 AM	0	0	1	1	0	0	0	0	1
Total	0	0	3	3	2	2	1	1	6
09:00 AM	0	0	0	0	0	0	0	0	0
09:15 AM	0	0	0	0	0	0	0	0	0
09:30 AM	0	0	0	0	0	0	0	0	0
09:45 AM	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0
10:00 AM	0	0	1	1	0	0	2	2	3
10:15 AM	0	0	1	1	0	0	2	2	3
10:30 AM	0	0	1	1	0	0	0	0	1
10:45 AM	0	0	1	1	0	0	0	0	1
Total	0	0	4	4	0	0	4	4	8
11:00 AM	0	0	3	3	0	0	0	0	3
11:15 AM	0	0	0	0	0	0	0	0	0
11:30 AM	0	0	0	0	0	0	1	1	1
11:45 AM	0	0	2	2	0	0	1	1	3
Total	0	0	5	5	0	0	2	2	7
12:00 PM	0	0	0	0	0	0	0	0	0
12:15 PM	0	0	0	0	0	0	0	0	0
12:30 PM	0	0	1	1	0	0	0	0	1
12:45 PM	0	0	2	2	0	0	0	0	2
Total	0	0	3	3	0	0	0	0	3
01:00 PM	0	0	1	1	0	0	1	1	2
01:15 PM	0	0	0	0	0	0	1	1	1
01:30 PM	0	0	1	1	0	0	0	0	1
01:45 PM	0	0	3	3	0	0	0	0	3
Total	0	0	5	5	0	0	2	2	7
02:00 PM	0	0	0	0	0	0	6	6	6
02:15 PM	0	0	0	0	0	0	1	1	1
02:30 PM	0	0	1	1	1	1	7	7	9



TRAFFIC DATA COLLECTION

File Name : Blacksburg(Main and Whipple) Day 2

Site Code :

Start Date : 4/13/2022

Page No : 2

Groups Printed- Cars +

Start Time	N Main Street Southbound		Clinic Driveway Westbound		N Main Street Northbound		Whipple Drive Eastbound		Int. Total
	Peds	App. Total	Peds	App. Total	Peds	App. Total	Peds	App. Total	
02:45 PM	0	0	1	1	0	0	0	0	1
Total	0	0	2	2	1	1	14	14	17
03:00 PM	0	0	1	1	0	0	0	0	1
03:15 PM	0	0	1	1	0	0	1	1	2
03:30 PM	0	0	2	2	0	0	2	2	4
03:45 PM	0	0	0	0	0	0	1	1	1
Total	0	0	4	4	0	0	4	4	8
04:00 PM	0	0	1	1	1	1	2	2	4
04:15 PM	0	0	3	3	3	3	0	0	6
04:30 PM	0	0	1	1	0	0	0	0	1
04:45 PM	0	0	0	0	0	0	0	0	0
Total	0	0	5	5	4	4	2	2	11
05:00 PM	1	1	2	2	0	0	0	0	3
05:15 PM	1	1	0	0	0	0	2	2	3
05:30 PM	1	1	3	3	2	2	3	3	9
05:45 PM	1	1	0	0	0	0	2	2	3
Total	4	4	5	5	2	2	7	7	18
06:00 PM	1	1	3	3	1	1	1	1	6
06:15 PM	0	0	7	7	1	1	0	0	8
06:30 PM	0	0	1	1	0	0	0	0	1
06:45 PM	0	0	1	1	0	0	0	0	1
Total	1	1	12	12	2	2	1	1	16
Grand Total	6	6	58	58	11	11	39	39	114
Apprch %	100		100		100		100		
Total %	5.3	5.3	50.9	50.9	9.6	9.6	34.2	34.2	



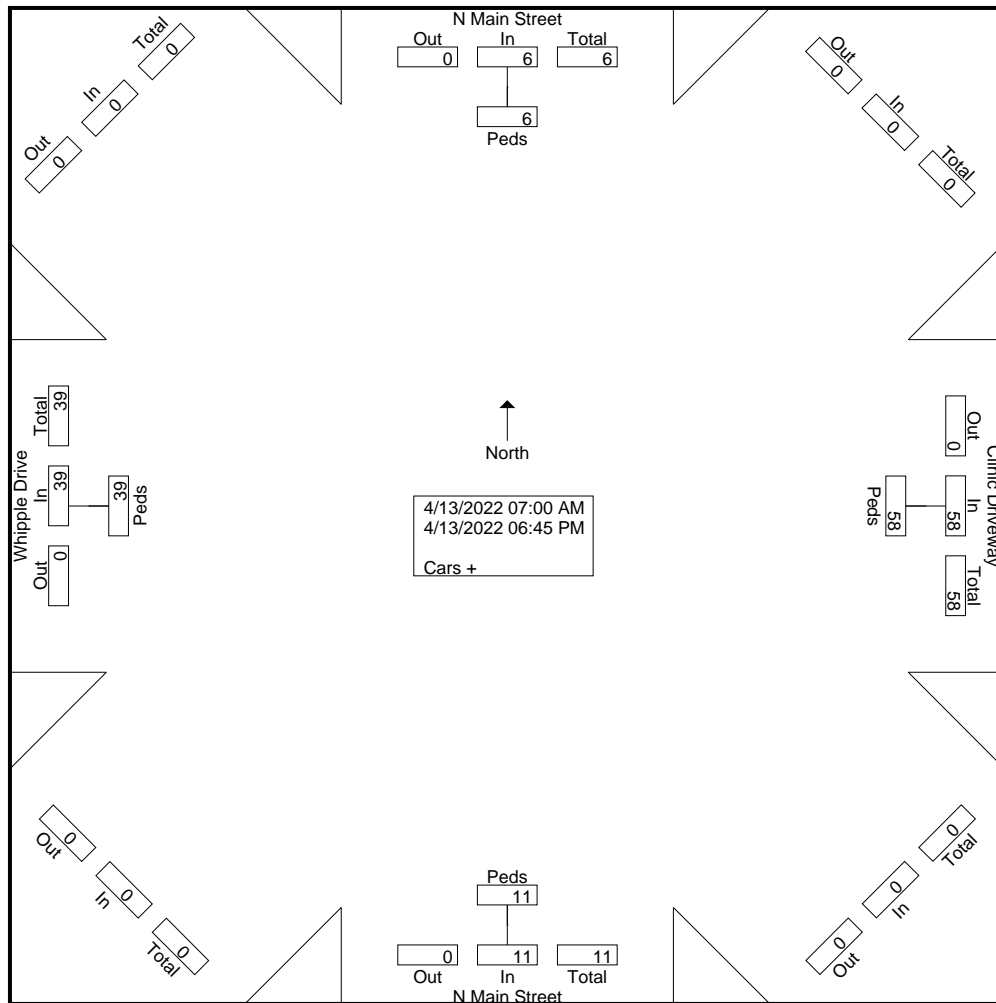
TRAFFIC DATA COLLECTION

File Name : Blacksburg(Main and Whipple) Day 2

Site Code :

Start Date : 4/13/2022

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TRAFFIC DATA COLLECTION

File Name : Blacksburg(Main and Whipple) Day 2
 Site Code :
 Start Date : 4/13/2022
 Page No : 1

Groups Printed- Cars + - Trucks

Start Time	N Main Street Southbound						Clinic Driveway Westbound						N Main Street Northbound						Whipple Drive Eastbound						Int. Total
	Right	Thru	Left	UTrn	Peds	App. Total	Right	Thru	Left	UTrn	Peds	App. Total	Right	Thru	Left	UTrn	Peds	App. Total	Right	Thru	Left	UTrn	Peds	App. Total	
07:00 AM	1	62	0	0	0	63	0	0	0	0	3	3	0	29	6	0	0	35	8	0	0	0	1	9	110
07:15 AM	2	103	1	0	0	106	0	0	0	0	3	3	0	20	2	0	0	22	8	0	0	0	0	8	139
07:30 AM	0	142	0	0	1	143	0	0	4	0	2	6	1	19	1	0	0	21	8	0	1	0	0	9	179
07:45 AM	0	143	0	0	0	143	0	0	1	0	2	3	1	34	8	0	0	43	26	0	0	0	1	27	216
Total	3	450	1	0	1	455	0	0	5	0	10	15	2	102	17	0	0	121	50	0	1	0	2	53	644
08:00 AM	0	108	0	0	0	108	0	0	2	0	2	4	0	42	7	0	0	49	10	1	0	0	0	11	172
08:15 AM	1	110	1	0	0	112	0	1	1	0	3	5	1	44	5	0	2	52	14	0	0	0	0	14	183
08:30 AM	1	140	1	0	0	142	0	0	2	0	0	2	5	39	5	0	0	49	24	1	0	0	1	26	219
08:45 AM	0	138	2	0	0	140	0	0	1	0	2	3	8	49	4	0	0	61	19	0	1	0	0	20	224
Total	2	496	4	0	0	502	0	1	6	0	7	14	14	174	21	0	2	211	67	2	1	0	1	71	798
09:00 AM	0	104	2	0	0	106	0	0	0	0	1	1	6	53	8	0	0	67	9	0	1	0	0	10	184
09:15 AM	0	90	0	0	0	90	0	0	3	0	0	3	3	53	8	0	0	64	7	0	1	0	0	8	165
09:30 AM	1	83	0	0	0	84	1	0	0	0	0	1	1	65	6	0	0	72	15	0	0	0	0	15	172
09:45 AM	1	83	1	0	0	85	0	0	0	0	0	0	2	41	9	0	0	52	22	1	0	0	0	23	160
Total	2	360	3	0	0	365	1	0	3	0	1	5	12	212	31	0	0	255	53	1	2	0	0	56	681
10:00 AM	0	75	0	0	0	75	0	0	2	0	1	3	3	41	13	0	0	57	14	0	0	0	2	16	151
10:15 AM	1	67	1	0	0	69	0	0	10	0	1	11	0	50	3	0	0	53	8	0	0	0	2	10	143
10:30 AM	1	78	0	0	0	79	0	0	3	0	1	4	4	57	6	0	0	67	8	0	0	0	0	8	158
10:45 AM	0	88	1	0	0	89	0	0	5	0	1	6	6	43	6	0	0	55	15	0	1	0	0	16	166
Total	2	308	2	0	0	312	0	0	20	0	4	24	13	191	28	0	0	232	45	0	1	0	4	50	618
11:00 AM	0	95	0	0	0	95	3	0	2	0	3	8	2	57	14	0	0	73	12	0	0	0	0	12	188
11:15 AM	0	77	0	0	0	77	0	0	0	0	0	0	1	55	11	0	0	67	11	0	0	0	0	11	155
11:30 AM	1	91	0	0	0	92	0	0	2	0	0	2	5	65	7	0	0	77	11	0	1	0	1	13	184
11:45 AM	1	104	2	0	0	107	1	0	1	0	2	4	2	84	5	0	0	91	18	0	0	0	1	19	221
Total	2	367	2	0	0	371	4	0	5	0	5	14	10	261	37	0	0	308	52	0	1	0	2	55	748
12:00 PM	2	95	0	0	0	97	3	0	3	0	0	6	4	73	14	0	0	91	19	0	1	0	0	20	214
12:15 PM	0	74	1	0	0	75	0	0	2	0	0	2	1	66	9	0	0	76	16	0	0	0	0	16	169
12:30 PM	0	73	0	0	0	73	1	0	1	0	1	3	4	84	15	0	0	103	8	0	0	0	0	8	187
12:45 PM	0	78	0	0	0	78	0	0	5	0	2	7	2	66	12	0	0	80	12	0	0	0	0	12	177
Total	2	320	1	0	0	323	4	0	11	0	3	18	11	289	50	0	0	350	55	0	1	0	0	56	747
01:00 PM	1	82	0	0	0	83	0	0	3	0	1	4	5	77	11	0	0	93	10	0	0	0	1	11	191
01:15 PM	0	67	0	0	0	67	0	0	7	0	0	7	4	69	11	0	0	84	16	0	0	0	1	17	175
01:30 PM	3	76	0	0	0	79	0	0	2	0	1	3	2	71	12	0	0	85	12	0	0	0	0	12	179
01:45 PM	1	79	1	0	0	81	0	0	4	0	3	7	2	67	10	0	0	79	18	0	0	0	0	18	185
Total	5	304	1	0	0	310	0	0	16	0	5	21	13	284	44	0	0	341	56	0	0	0	2	58	730



TRAFFIC DATA COLLECTION

File Name : Blacksburg(Main and Whipple) Day 2

Site Code :

Start Date : 4/13/2022

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Groups Printed- Cars + - Trucks

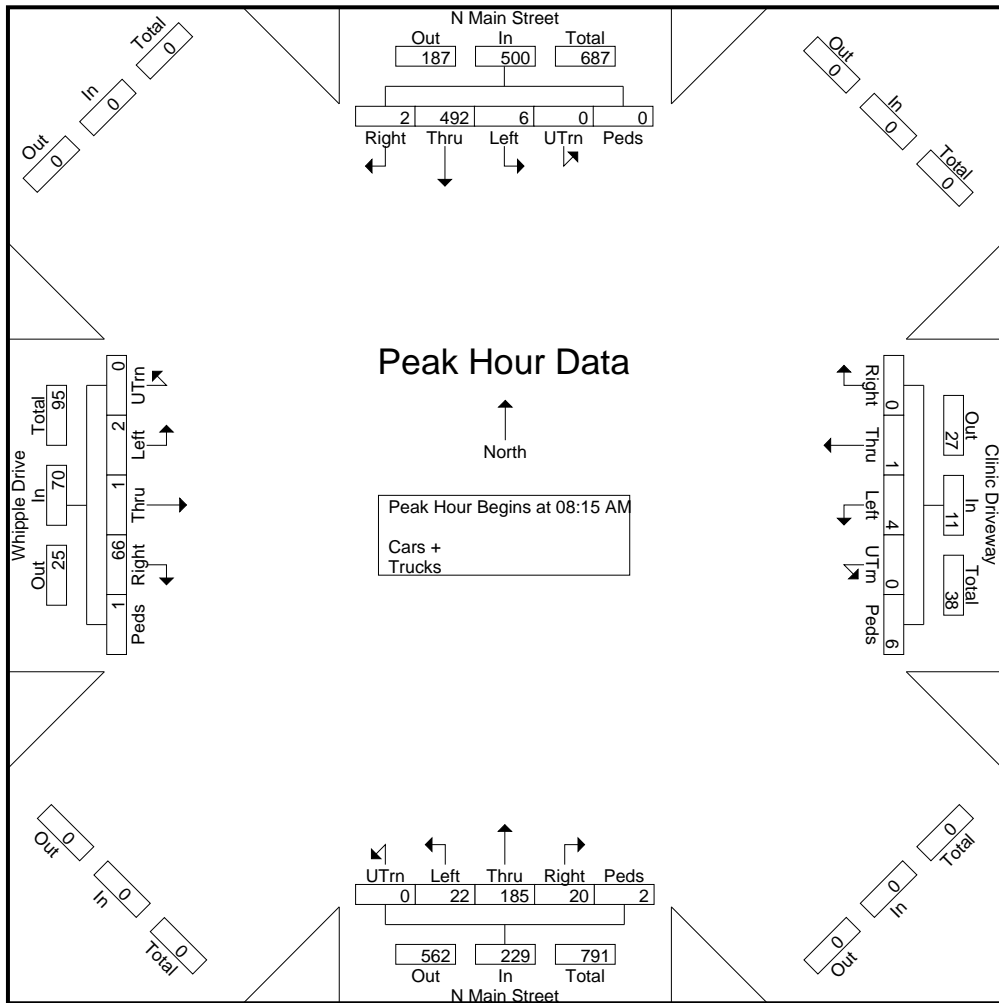
Start Time	N Main Street Southbound						Clinic Driveway Westbound						N Main Street Northbound						Whipple Drive Eastbound						Int. Total
	Right	Thru	Left	UTrn	Peds	App. Total	Right	Thru	Left	UTrn	Peds	App. Total	Right	Thru	Left	UTrn	Peds	App. Total	Right	Thru	Left	UTrn	Peds	App. Total	
02:00 PM	1	96	0	0	0	97	0	0	0	0	0	0	1	78	5	1	0	85	12	0	0	0	6	18	200
02:15 PM	0	73	0	0	0	73	1	1	2	0	0	4	3	61	10	0	0	74	13	0	1	0	2	16	167
02:30 PM	0	64	1	0	0	65	0	0	2	0	1	3	5	81	11	0	1	98	11	0	1	0	7	19	185
02:45 PM	0	51	0	0	0	51	0	0	3	0	1	4	1	96	17	0	0	114	16	0	1	0	0	17	186
Total	1	284	1	0	0	286	1	1	7	0	2	11	10	316	43	1	1	371	52	0	3	0	15	70	738
03:00 PM	0	74	1	0	0	75	0	0	3	0	1	4	2	96	17	0	0	115	10	0	2	0	0	12	206
03:15 PM	0	80	1	0	0	81	0	0	1	0	1	2	0	94	8	0	0	102	13	0	2	0	1	16	201
03:30 PM	0	115	1	0	0	116	2	0	2	0	2	6	2	146	7	0	0	155	12	1	4	0	2	19	296
03:45 PM	0	75	3	0	0	78	1	1	0	0	0	2	4	133	16	0	0	153	22	0	0	0	1	23	256
Total	0	344	6	0	0	350	3	1	6	0	4	14	8	469	48	0	0	525	57	1	8	0	4	70	959
04:00 PM	1	82	1	0	0	84	0	0	1	0	1	2	5	143	22	0	1	171	14	1	3	0	2	20	277
04:15 PM	0	77	0	0	0	77	1	0	5	0	3	9	13	124	25	0	3	165	16	0	0	0	0	16	267
04:30 PM	0	82	0	0	0	82	1	0	5	0	1	7	4	138	16	0	0	158	19	0	1	0	0	20	267
04:45 PM	0	110	0	0	0	110	1	0	2	0	0	3	5	93	14	0	0	112	24	0	1	0	0	25	250
Total	1	351	1	0	0	353	3	0	13	0	5	21	27	498	77	0	4	606	73	1	5	0	2	81	1061
05:00 PM	2	98	0	0	1	101	0	0	6	0	2	8	5	123	19	0	0	147	13	0	2	0	0	15	271
05:15 PM	1	87	1	0	1	90	1	0	4	0	0	5	5	129	15	0	0	149	14	1	0	0	2	17	261
05:30 PM	3	103	1	0	1	108	0	1	5	0	3	9	8	148	18	0	2	176	15	0	1	0	3	19	312
05:45 PM	1	90	0	0	1	92	0	0	7	0	0	7	13	124	18	0	0	155	16	1	0	0	2	19	273
Total	7	378	2	0	4	391	1	1	22	0	5	29	31	524	70	0	2	627	58	2	3	0	7	70	1117
06:00 PM	0	81	0	0	1	82	2	1	4	0	3	10	4	100	17	0	1	122	19	0	0	0	1	20	234
06:15 PM	0	94	2	0	0	96	1	0	3	0	7	11	1	89	20	0	1	111	20	0	0	0	0	20	238
06:30 PM	0	85	2	0	0	87	0	2	4	0	1	7	6	94	24	0	0	124	16	0	1	0	0	17	235
06:45 PM	3	75	0	0	0	78	2	0	2	0	2	6	2	98	13	0	0	113	22	0	0	0	0	22	219
Total	3	335	4	0	1	343	5	3	13	0	13	34	13	381	74	0	2	470	77	0	1	0	1	79	926
Grand Total	30	4297	28	0	6	4361	22	7	127	0	64	220	164	3701	540	1	11	4417	695	7	27	0	40	769	9767
Apprch %	0.7	98.5	0.6	0	0.1		10	3.2	57.7	0	29.1		3.7	83.8	12.2	0	0.2		90.4	0.9	3.5	0	5.2		
Total %	0.3	44	0.3	0	0.1	44.7	0.2	0.1	1.3	0	0.7	2.3	1.7	37.9	5.5	0	0.1	45.2	7.1	0.1	0.3	0	0.4	7.9	
Cars +	29	4221	28	0	6	4284	22	7	127	0	58	214	164	3586	538	1	11	4300	621	7	26	0	39	693	9491
% Cars +	96.7	98.2	100	0	100	98.2	100	100	100	0	90.6	97.3	100	96.9	99.6	100	100	97.4	89.4	100	96.3	0	97.5	90.1	97.2
Trucks	1	76	0	0	0	77	0	0	0	0	6	6	0	115	2	0	0	117	74	0	1	0	1	76	276
% Trucks	3.3	1.8	0	0	0	1.8	0	0	0	0	9.4	2.7	0	3.1	0.4	0	0	2.6	10.6	0	3.7	0	2.5	9.9	2.8



TRAFFIC DATA COLLECTION

File Name : Blacksburg(Main and Whipple) Day 2
 Site Code :
 Start Date : 4/13/2022
 Page No : 3

Start Time	N Main Street Southbound						Clinic Driveway Westbound						N Main Street Northbound						Whipple Drive Eastbound						Int. Total
	Right	Thru	Left	UTrn	Peds	App. Total	Right	Thru	Left	UTrn	Peds	App. Total	Right	Thru	Left	UTrn	Peds	App. Total	Right	Thru	Left	UTrn	Peds	App. Total	
Peak Hour Analysis From 07:00 AM to 11:45 AM - Peak 1 of 1																									
Peak Hour for Entire Intersection Begins at 08:15 AM																									
08:15 AM	1	110	1	0	0	112	0	1	1	0	3	5	1	44	5	0	2	52	14	0	0	0	0	14	183
08:30 AM	1	140	1	0	0	142	0	0	2	0	0	2	5	39	5	0	0	49	24	1	0	0	1	26	219
08:45 AM	0	138	2	0	0	140	0	0	1	0	2	3	8	49	4	0	0	61	19	0	1	0	0	20	224
09:00 AM	0	104	2	0	0	106	0	0	0	0	1	1	6	53	8	0	0	67	9	0	1	0	0	10	184
Total Volume	2	492	6	0	0	500	0	1	4	0	6	11	20	185	22	0	2	229	66	1	2	0	1	70	810
% App. Total	0.4	98.4	1.2	0	0		0	9.1	36.4	0	54.5		8.7	80.8	9.6	0	0.9		94.3	1.4	2.9	0	1.4		
PHF	.500	.879	.750	.000	.000	.880	.000	.250	.500	.000	.500	.550	.625	.873	.688	.000	.250	.854	.688	.250	.500	.000	.250	.673	.904

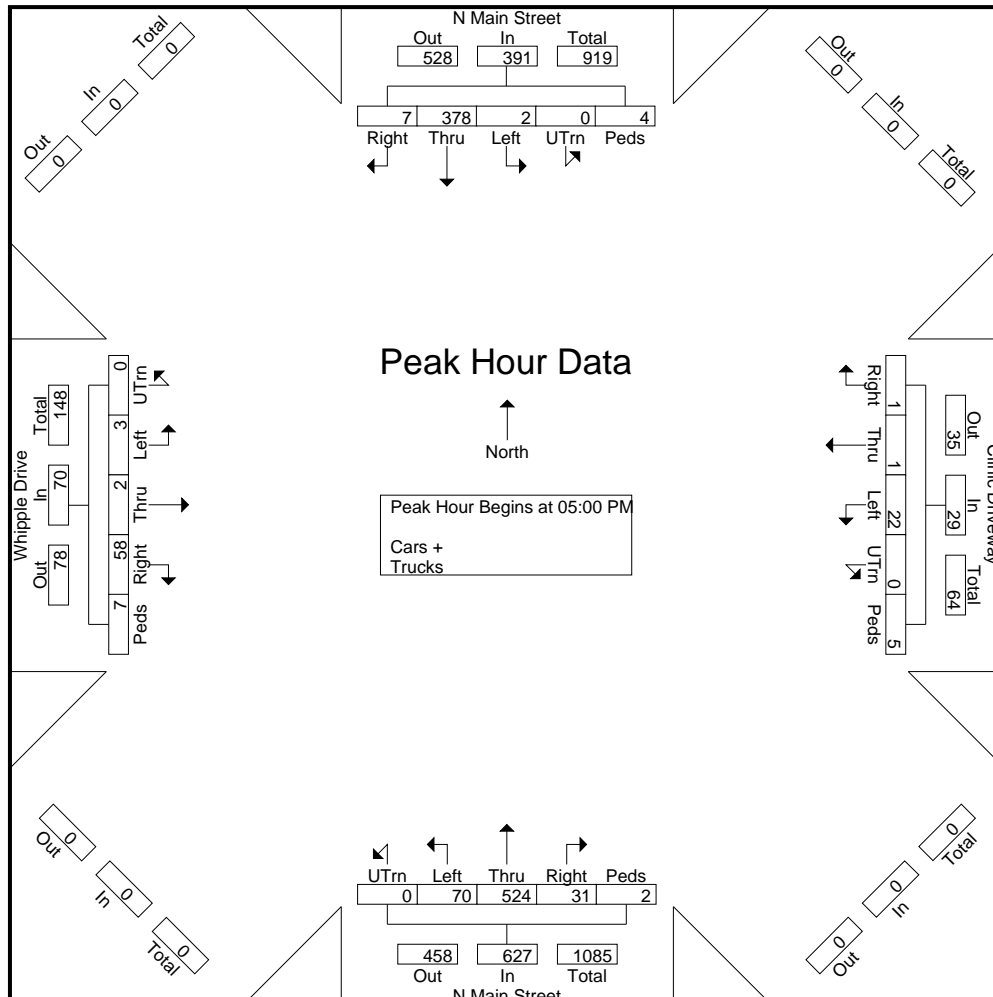




TRAFFIC DATA COLLECTION

File Name : Blacksburg(Main and Whipple) Day 2
 Site Code :
 Start Date : 4/13/2022
 Page No : 4

Start Time	N Main Street Southbound						Clinic Driveway Westbound						N Main Street Northbound						Whipple Drive Eastbound						Int. Total
	Right	Thru	Left	UTrn	Peds	App. Total	Right	Thru	Left	UTrn	Peds	App. Total	Right	Thru	Left	UTrn	Peds	App. Total	Right	Thru	Left	UTrn	Peds	App. Total	
Peak Hour Analysis From 12:00 PM to 06:45 PM - Peak 1 of 1																									
Peak Hour for Entire Intersection Begins at 05:00 PM																									
05:00 PM	2	98	0	0	1	101	0	0	6	0	2	8	5	123	19	0	0	147	13	0	2	0	0	15	271
05:15 PM	1	87	1	0	1	90	1	0	4	0	0	5	5	129	15	0	0	149	14	1	0	0	2	17	261
05:30 PM	3	103	1	0	1	108	0	1	5	0	3	9	8	148	18	0	2	176	15	0	1	0	3	19	312
05:45 PM	1	90	0	0	1	92	0	0	7	0	0	7	13	124	18	0	0	155	16	1	0	0	2	19	273
Total Volume	7	378	2	0	4	391	1	1	22	0	5	29	31	524	70	0	2	627	58	2	3	0	7	70	1117
% App. Total	1.8	96.7	0.5	0	1		3.4	3.4	75.9	0	17.2		4.9	83.6	11.2	0	0.3		82.9	2.9	4.3	0	10		
PHF	.583	.917	.500	.000	1.0	.905	.250	.250	.786	.000	.417	.806	.596	.885	.921	.000	.250	.891	.906	.500	.375	.000	.583	.921	.895





TRAFFIC DATA COLLECTION

File Name : Blacksburg(Whipple and Givens) Day 1
 Site Code :
 Start Date : 4/12/2022
 Page No : 1

Groups Printed- Trucks

Start Time	Givens Ln Westbound		Whipple Dr Northbound		Givens Ln Eastbound		Int. Total
	Bikes	App. Total	Bikes	App. Total	Bikes	App. Total	
07:00 AM	0	0	0	0	0	0	0
07:15 AM	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0
08:00 AM	0	0	0	0	0	0	0
08:15 AM	0	0	0	0	0	0	0
08:30 AM	0	0	0	0	0	0	0
08:45 AM	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0
09:00 AM	0	0	0	0	0	0	0
09:15 AM	0	0	0	0	0	0	0
09:30 AM	0	0	0	0	0	0	0
09:45 AM	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0
10:00 AM	0	0	0	0	0	0	0
10:15 AM	0	0	0	0	0	0	0
10:30 AM	0	0	0	0	0	0	0
10:45 AM	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0
11:00 AM	0	0	0	0	0	0	0
11:15 AM	0	0	0	0	0	0	0
11:30 AM	0	0	0	0	0	0	0
11:45 AM	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0
12:00 PM	0	0	0	0	0	0	0
12:15 PM	0	0	0	0	0	0	0
12:30 PM	0	0	0	0	0	0	0
12:45 PM	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0
01:00 PM	0	0	0	0	0	0	0
01:15 PM	0	0	0	0	0	0	0
01:30 PM	0	0	0	0	0	0	0
01:45 PM	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0
02:00 PM	0	0	0	0	0	0	0
02:15 PM	0	0	0	0	0	0	0
02:30 PM	0	0	0	0	0	0	0



TRAFFIC DATA COLLECTION

File Name : Blacksburg(Whipple and Givens) Day 1

Site Code :

Start Date : 4/12/2022

Page No : 2

Groups Printed- Trucks

Start Time	Givens Ln Westbound		Whipple Dr Northbound		Givens Ln Eastbound		Int. Total
	Bikes	App. Total	Bikes	App. Total	Bikes	App. Total	
02:45 PM	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0
03:00 PM	0	0	0	0	0	0	0
03:15 PM	0	0	0	0	0	0	0
03:30 PM	0	0	0	0	0	0	0
03:45 PM	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0
04:00 PM	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0
05:00 PM	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0
06:00 PM	0	0	0	0	0	0	0
06:15 PM	0	0	0	0	0	0	0
06:30 PM	0	0	0	0	0	0	0
06:45 PM	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0
Aprch %	0		0		0		
Total %							



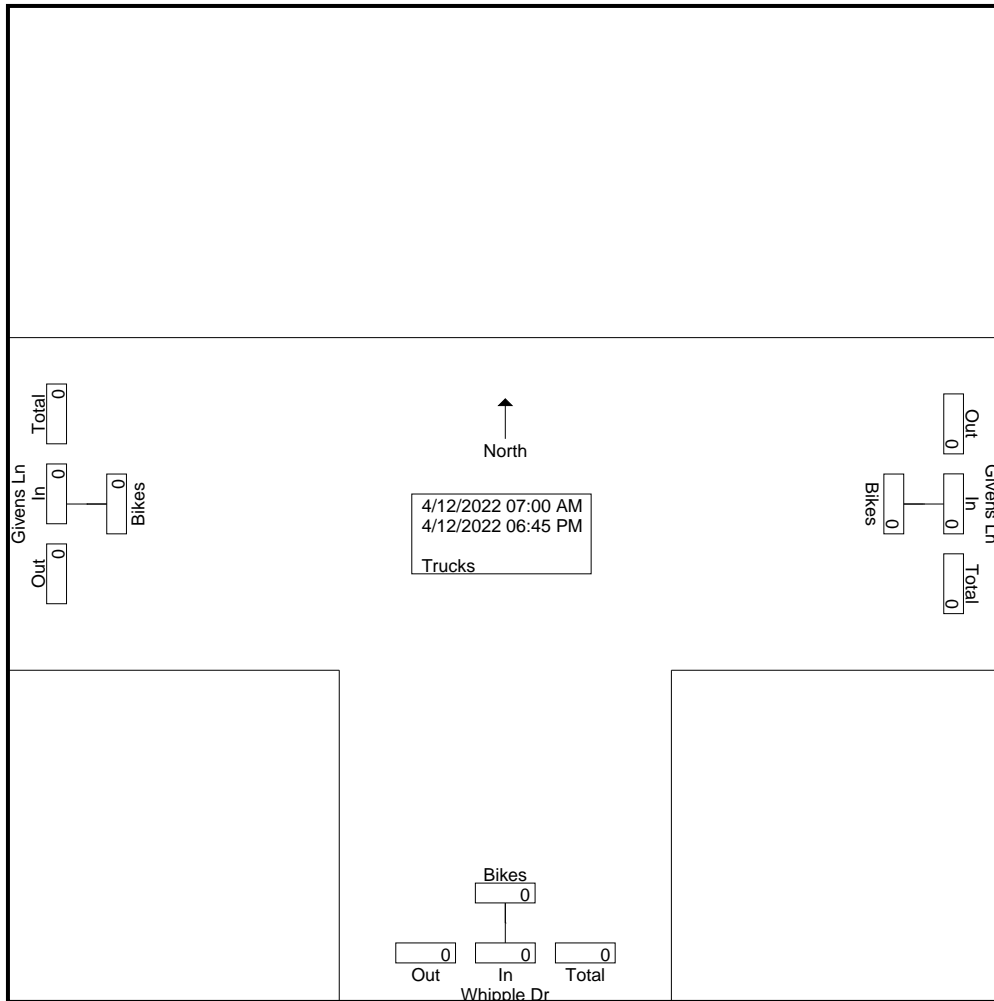
TRAFFIC DATA COLLECTION

File Name : Blacksburg(Whipple and Givens) Day 1

Site Code :

Start Date : 4/12/2022

Page No : 3





TRAFFIC DATA COLLECTION

File Name : Blacksburg(Whipple and Givens) Day 1

Site Code :

Start Date : 4/12/2022

Page No : 1

Groups Printed- Cars +

Start Time	Givens Ln Westbound		Whipple Dr Northbound		Givens Ln Eastbound		Int. Total
	Peds	App. Total	Peds	App. Total	Peds	App. Total	
07:00 AM	0	0	0	0	0	0	0
07:15 AM	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0
08:00 AM	0	0	0	0	0	0	0
08:15 AM	0	0	0	0	0	0	0
08:30 AM	0	0	0	0	0	0	0
08:45 AM	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0
09:00 AM	0	0	0	0	0	0	0
09:15 AM	0	0	1	1	0	0	1
09:30 AM	0	0	0	0	0	0	0
09:45 AM	0	0	0	0	0	0	0
Total	0	0	1	1	0	0	1
10:00 AM	0	0	0	0	0	0	0
10:15 AM	0	0	1	1	0	0	1
10:30 AM	0	0	0	0	0	0	0
10:45 AM	0	0	0	0	0	0	0
Total	0	0	1	1	0	0	1
11:00 AM	1	1	0	0	0	0	1
11:15 AM	1	1	0	0	0	0	1
11:30 AM	0	0	1	1	0	0	1
11:45 AM	0	0	1	1	0	0	1
Total	2	2	2	2	0	0	4
12:00 PM	0	0	3	3	0	0	3
12:15 PM	0	0	2	2	0	0	2
12:30 PM	0	0	2	2	0	0	2
12:45 PM	0	0	2	2	0	0	2
Total	0	0	9	9	0	0	9
01:00 PM	0	0	2	2	0	0	2
01:15 PM	0	0	1	1	0	0	1
01:30 PM	0	0	0	0	0	0	0
01:45 PM	0	0	0	0	0	0	0
Total	0	0	3	3	0	0	3
02:00 PM	0	0	0	0	0	0	0
02:15 PM	0	0	0	0	0	0	0
02:30 PM	0	0	1	1	0	0	1



TRAFFIC DATA COLLECTION

File Name : Blacksburg(Whipple and Givens) Day 1

Site Code :

Start Date : 4/12/2022

Page No : 2

Groups Printed- Cars +

Start Time	Givens Ln Westbound		Whipple Dr Northbound		Givens Ln Eastbound		Int. Total
	Peds	App. Total	Peds	App. Total	Peds	App. Total	
02:45 PM	0	0	0	0	0	0	0
Total	0	0	1	1	0	0	1
03:00 PM	0	0	0	0	0	0	0
03:15 PM	0	0	1	1	0	0	1
03:30 PM	0	0	1	1	0	0	1
03:45 PM	0	0	0	0	0	0	0
Total	0	0	2	2	0	0	2
04:00 PM	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0
05:00 PM	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	0
05:45 PM	0	0	1	1	0	0	1
Total	0	0	1	1	0	0	1
06:00 PM	0	0	0	0	0	0	0
06:15 PM	0	0	0	0	0	0	0
06:30 PM	0	0	0	0	0	0	0
06:45 PM	0	0	2	2	0	0	2
Total	0	0	2	2	0	0	2
Grand Total	2	2	22	22	0	0	24
Apprch %	100		100		0		
Total %	8.3	8.3	91.7	91.7	0	0	



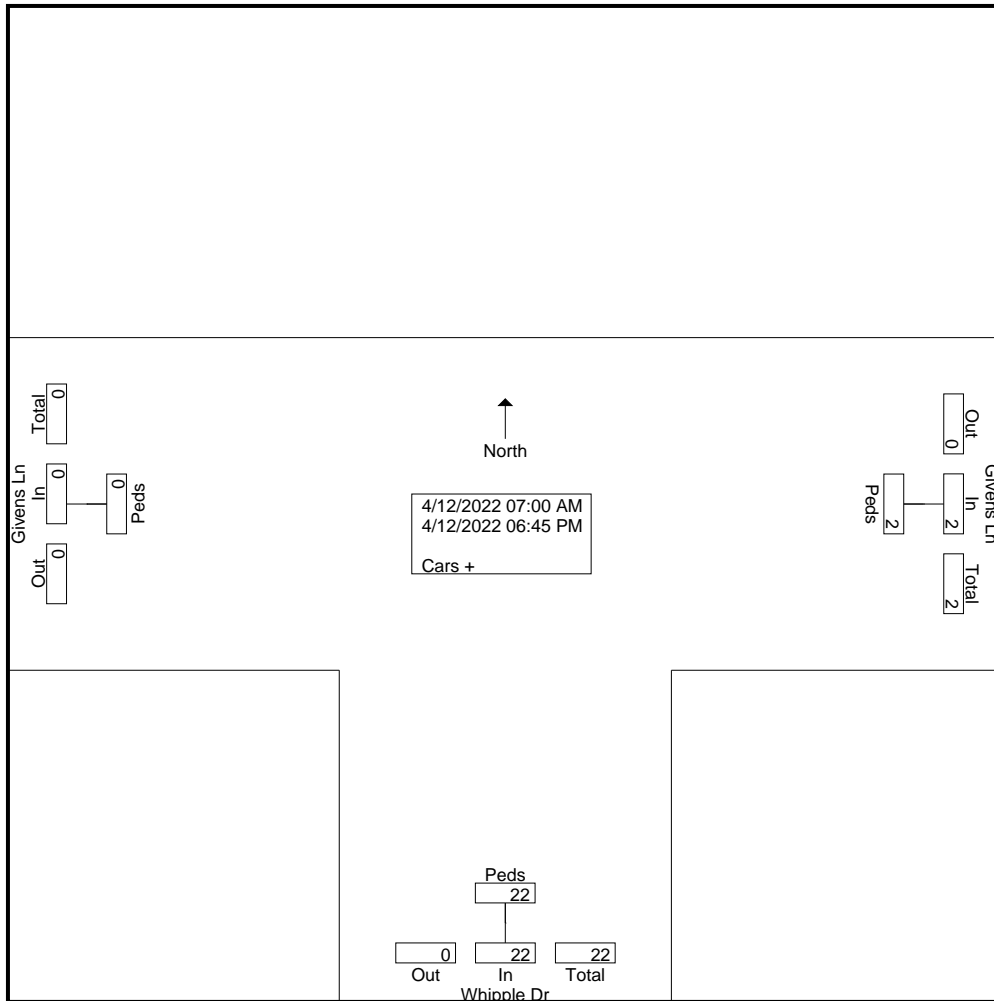
TRAFFIC DATA COLLECTION

File Name : Blacksburg(Whipple and Givens) Day 1

Site Code :

Start Date : 4/12/2022

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TRAFFIC DATA COLLECTION

File Name : Blacksburg(Whipple and Givens) Day 1
 Site Code :
 Start Date : 4/12/2022
 Page No : 1

Groups Printed- Cars + - Trucks

Start Time	Givens Ln Westbound				Whipple Dr Northbound				Givens Ln Eastbound				Int. Total
	Thru	Left	Peds	App. Total	Right	Left	Peds	App. Total	Right	Thru	Peds	App. Total	
07:00 AM	5	3	0	8	0	2	0	2	7	2	0	9	19
07:15 AM	10	3	0	13	0	4	0	4	6	1	0	7	24
07:30 AM	17	2	0	19	1	6	0	7	2	9	0	11	37
07:45 AM	13	1	0	14	0	4	0	4	14	2	0	16	34
Total	45	9	0	54	1	16	0	17	29	14	0	43	114
08:00 AM	13	1	0	14	0	6	0	6	5	3	0	8	28
08:15 AM	9	1	0	10	0	3	0	3	11	2	0	13	26
08:30 AM	14	2	0	16	0	4	0	4	7	6	0	13	33
08:45 AM	17	3	0	20	0	3	0	3	9	6	0	15	38
Total	53	7	0	60	0	16	0	16	32	17	0	49	125
09:00 AM	9	2	0	11	0	6	0	6	8	5	0	13	30
09:15 AM	7	3	0	10	0	5	1	6	4	2	0	6	22
09:30 AM	9	1	0	10	1	3	0	4	6	7	0	13	27
09:45 AM	5	1	0	6	0	2	0	2	4	4	0	8	16
Total	30	7	0	37	1	16	1	18	22	18	0	40	95
10:00 AM	12	3	0	15	0	5	0	5	2	5	0	7	27
10:15 AM	4	1	0	5	0	2	1	3	3	2	0	5	13
10:30 AM	4	1	0	5	1	4	0	5	6	5	0	11	21
10:45 AM	9	1	0	10	0	6	0	6	4	2	0	6	22
Total	29	6	0	35	1	17	1	19	15	14	0	29	83
11:00 AM	2	2	1	5	0	7	0	7	6	1	0	7	19
11:15 AM	13	3	1	17	0	3	0	3	2	3	0	5	25
11:30 AM	12	2	0	14	0	4	1	5	7	5	0	12	31
11:45 AM	6	3	0	9	2	8	1	11	8	4	0	12	32
Total	33	10	2	45	2	22	2	26	23	13	0	36	107
12:00 PM	8	3	0	11	1	8	3	12	1	3	0	4	27
12:15 PM	12	2	0	14	1	8	2	11	5	1	0	6	31
12:30 PM	6	1	0	7	0	5	2	7	6	5	0	11	25
12:45 PM	5	3	0	8	1	5	2	8	9	2	0	11	27
Total	31	9	0	40	3	26	9	38	21	11	0	32	110
01:00 PM	7	1	0	8	1	5	2	8	6	4	0	10	26
01:15 PM	5	2	0	7	0	6	1	7	9	4	0	13	27
01:30 PM	8	1	0	9	0	2	0	2	4	5	0	9	20
01:45 PM	9	1	0	10	1	7	0	8	3	4	0	7	25
Total	29	5	0	34	2	20	3	25	22	17	0	39	98
02:00 PM	11	2	0	13	1	7	0	8	6	3	0	9	30
02:15 PM	10	1	0	11	0	8	0	8	4	3	0	7	26
02:30 PM	10	1	0	11	0	3	1	4	8	2	0	10	25



TRAFFIC DATA COLLECTION

File Name : Blacksburg(Whipple and Givens) Day 1

Site Code :

Start Date : 4/12/2022

Page No : 2

Groups Printed- Cars + - Trucks

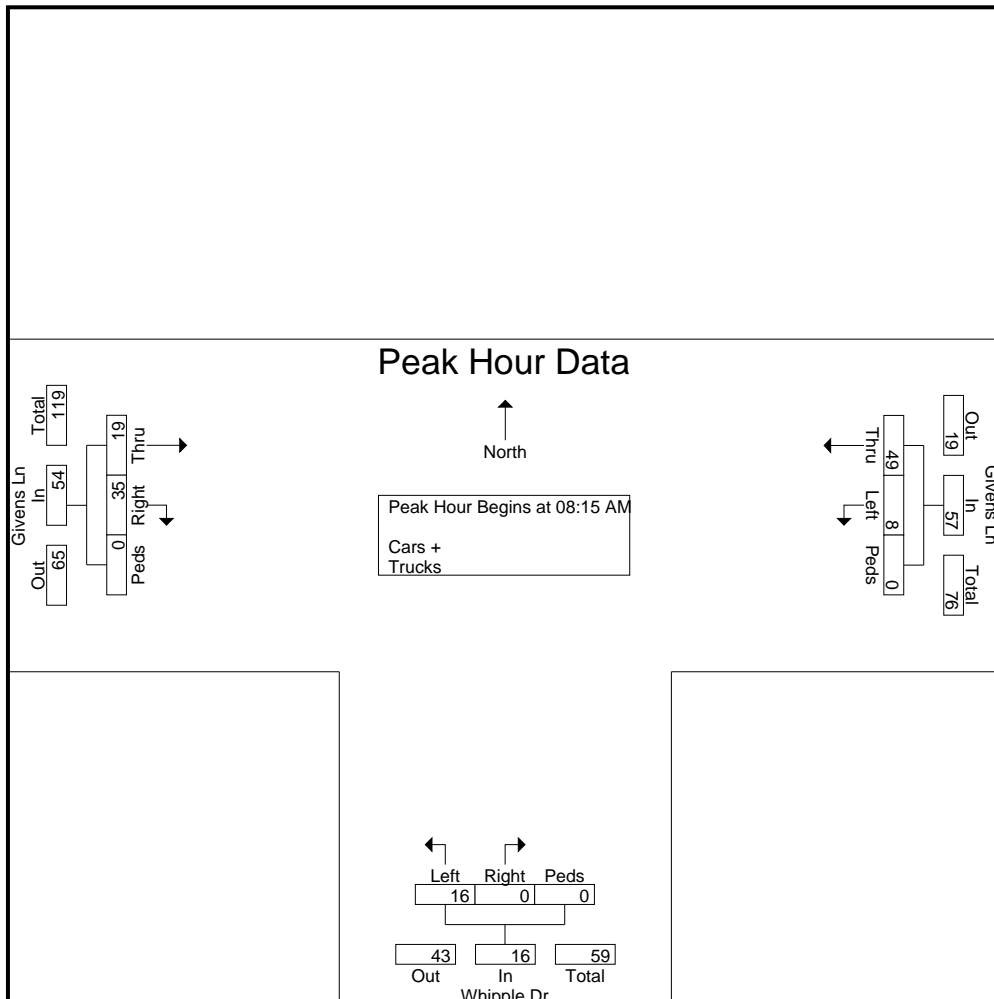
Start Time	Givens Ln Westbound				Whipple Dr Northbound				Givens Ln Eastbound				Int. Total
	Thru	Left	Peds	App. Total	Right	Left	Peds	App. Total	Right	Thru	Peds	App. Total	
02:45 PM	11	3	0	14	0	5	0	5	9	2	0	11	30
Total	42	7	0	49	1	23	1	25	27	10	0	37	111
03:00 PM	9	5	0	14	1	11	0	12	6	8	0	14	40
03:15 PM	13	3	0	16	0	5	1	6	7	2	0	9	31
03:30 PM	8	2	0	10	1	16	1	18	8	7	0	15	43
03:45 PM	15	1	0	16	1	5	0	6	11	11	0	22	44
Total	45	11	0	56	3	37	2	42	32	28	0	60	158
04:00 PM	9	1	0	10	1	12	0	13	10	7	0	17	40
04:15 PM	13	2	0	15	0	10	0	10	9	7	0	16	41
04:30 PM	9	2	0	11	1	9	0	10	6	11	0	17	38
04:45 PM	14	2	0	16	0	14	0	14	4	4	0	8	38
Total	45	7	0	52	2	45	0	47	29	29	0	58	157
05:00 PM	21	2	0	23	2	9	0	11	8	6	0	14	48
05:15 PM	9	1	0	10	1	7	0	8	9	5	0	14	32
05:30 PM	18	4	0	22	2	12	0	14	4	9	0	13	49
05:45 PM	12	2	0	14	0	8	1	9	9	7	0	16	39
Total	60	9	0	69	5	36	1	42	30	27	0	57	168
06:00 PM	16	1	0	17	1	3	0	4	8	7	0	15	36
06:15 PM	10	2	0	12	1	8	0	9	7	6	0	13	34
06:30 PM	4	1	0	5	1	8	0	9	18	6	0	24	38
06:45 PM	8	2	0	10	2	10	2	14	11	8	0	19	43
Total	38	6	0	44	5	29	2	36	44	27	0	71	151
Grand Total	480	93	2	575	26	303	22	351	326	225	0	551	1477
Apprch %	83.5	16.2	0.3		7.4	86.3	6.3		59.2	40.8	0		
Total %	32.5	6.3	0.1	38.9	1.8	20.5	1.5	23.8	22.1	15.2	0	37.3	
Cars +	451	41	2	494	24	300	22	346	310	215	0	525	1365
% Cars +	94	44.1	100	85.9	92.3	99	100	98.6	95.1	95.6	0	95.3	92.4
Trucks	29	52	0	81	2	3	0	5	16	10	0	26	112
% Trucks	6	55.9	0	14.1	7.7	1	0	1.4	4.9	4.4	0	4.7	7.6



TRAFFIC DATA COLLECTION

File Name : Blacksburg(Whipple and Givens) Day 1
 Site Code :
 Start Date : 4/12/2022
 Page No : 3

Start Time	Givens Ln Westbound				Whipple Dr Northbound				Givens Ln Eastbound				Int. Total
	Thru	Left	Peds	App. Total	Right	Left	Peds	App. Total	Right	Thru	Peds	App. Total	
Peak Hour Analysis From 07:00 AM to 11:45 AM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 08:15 AM													
08:15 AM	9	1	0	10	0	3	0	3	11	2	0	13	26
08:30 AM	14	2	0	16	0	4	0	4	7	6	0	13	33
08:45 AM	17	3	0	20	0	3	0	3	9	6	0	15	38
09:00 AM	9	2	0	11	0	6	0	6	8	5	0	13	30
Total Volume	49	8	0	57	0	16	0	16	35	19	0	54	127
% App. Total	86	14	0		0	100	0		64.8	35.2	0		
PHF	.721	.667	.000	.713	.000	.667	.000	.667	.795	.792	.000	.900	.836





TRAFFIC DATA COLLECTION

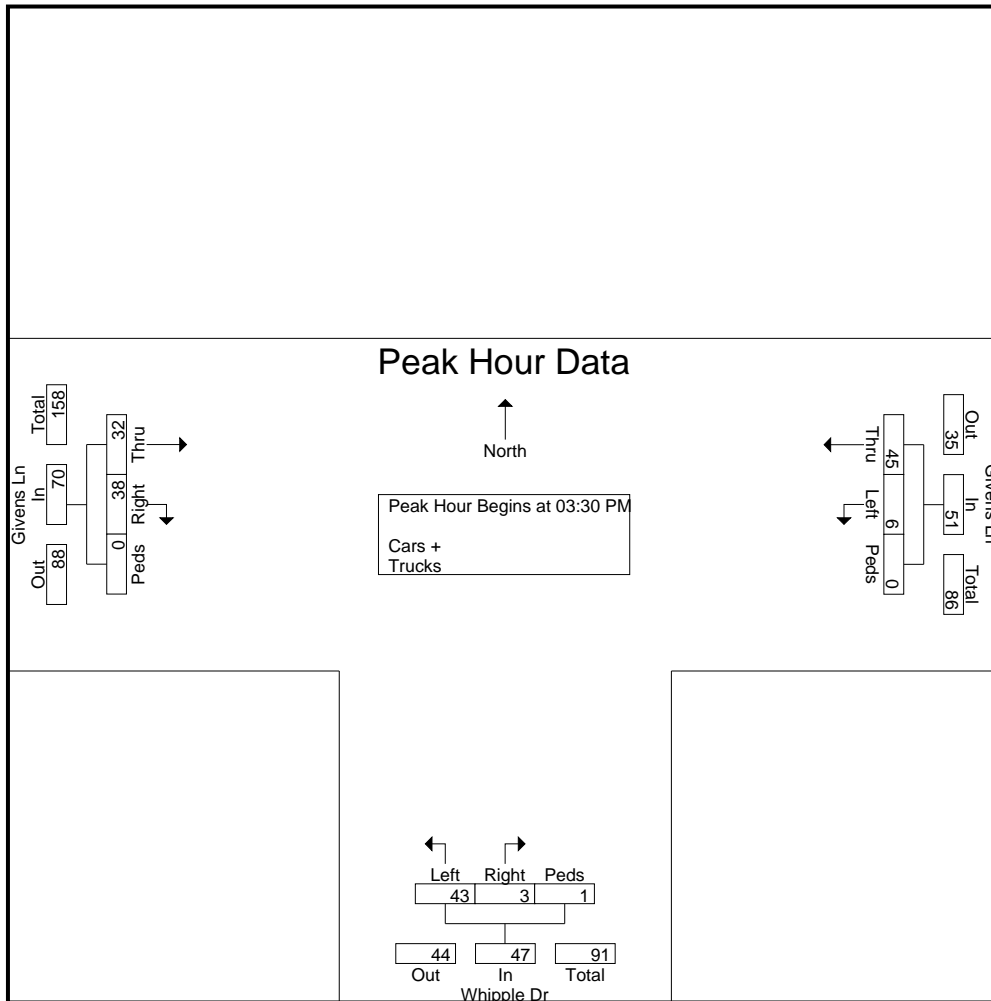
File Name : Blacksburg(Whipple and Givens) Day 1

Site Code :

Start Date : 4/12/2022

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Start Time	Givens Ln Westbound				Whipple Dr Northbound			Givens Ln Eastbound				Int. Total	
	Thru	Left	Peds	App. Total	Right	Left	Peds	App. Total	Right	Thru	Peds		App. Total
Peak Hour Analysis From 12:00 PM to 06:45 PM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 03:30 PM													
03:30 PM	8	2	0	10	1	16	1	18	8	7	0	15	43
03:45 PM	15	1	0	16	1	5	0	6	11	11	0	22	44
04:00 PM	9	1	0	10	1	12	0	13	10	7	0	17	40
04:15 PM	13	2	0	15	0	10	0	10	9	7	0	16	41
Total Volume	45	6	0	51	3	43	1	47	38	32	0	70	168
% App. Total	88.2	11.8	0		6.4	91.5	2.1		54.3	45.7	0		
PHF	.750	.750	.000	.797	.750	.672	.250	.653	.864	.727	.000	.795	.955





TRAFFIC DATA COLLECTION

File Name : Blacksburg(Whipple and Givens) Day 2
 Site Code :
 Start Date : 4/13/2022
 Page No : 1

Groups Printed- Trucks

Start Time	Givens Lane Westbound		Whipple Drive Northbound		Givens Lane Eastbound		Int. Total
	Peds	App. Total	Peds	App. Total	Peds	App. Total	
07:00 AM	0	0	0	0	0	0	0
07:15 AM	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0
08:00 AM	0	0	0	0	0	0	0
08:15 AM	0	0	0	0	0	0	0
08:30 AM	0	0	0	0	0	0	0
08:45 AM	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0
09:00 AM	0	0	0	0	0	0	0
09:15 AM	0	0	0	0	0	0	0
09:30 AM	0	0	0	0	0	0	0
09:45 AM	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0
10:00 AM	0	0	0	0	0	0	0
10:15 AM	0	0	0	0	0	0	0
10:30 AM	0	0	0	0	0	0	0
10:45 AM	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0
11:00 AM	0	0	0	0	0	0	0
11:15 AM	0	0	0	0	0	0	0
11:30 AM	0	0	0	0	0	0	0
11:45 AM	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0
12:00 PM	0	0	0	0	0	0	0
12:15 PM	0	0	0	0	0	0	0
12:30 PM	0	0	0	0	0	0	0
12:45 PM	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0
01:00 PM	0	0	0	0	0	0	0
01:15 PM	0	0	0	0	0	0	0
01:30 PM	0	0	0	0	0	0	0
01:45 PM	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0
02:00 PM	0	0	0	0	0	0	0
02:15 PM	0	0	0	0	0	0	0
02:30 PM	0	0	0	0	0	0	0



TRAFFIC DATA COLLECTION

File Name : Blacksburg(Whipple and Givens) Day 2

Site Code :

Start Date : 4/13/2022

Page No : 2

Groups Printed- Trucks

Start Time	Givens Lane Westbound		Whipple Drive Northbound		Givens Lane Eastbound		Int. Total
	Peds	App. Total	Peds	App. Total	Peds	App. Total	
02:45 PM	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0
03:00 PM	0	0	0	0	0	0	0
03:15 PM	0	0	0	0	0	0	0
03:30 PM	0	0	0	0	0	0	0
03:45 PM	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0
04:00 PM	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0
05:00 PM	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0
06:00 PM	0	0	0	0	0	0	0
06:15 PM	0	0	0	0	0	0	0
06:30 PM	0	0	0	0	0	0	0
06:45 PM	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0
Aprch %	0		0		0		
Total %							



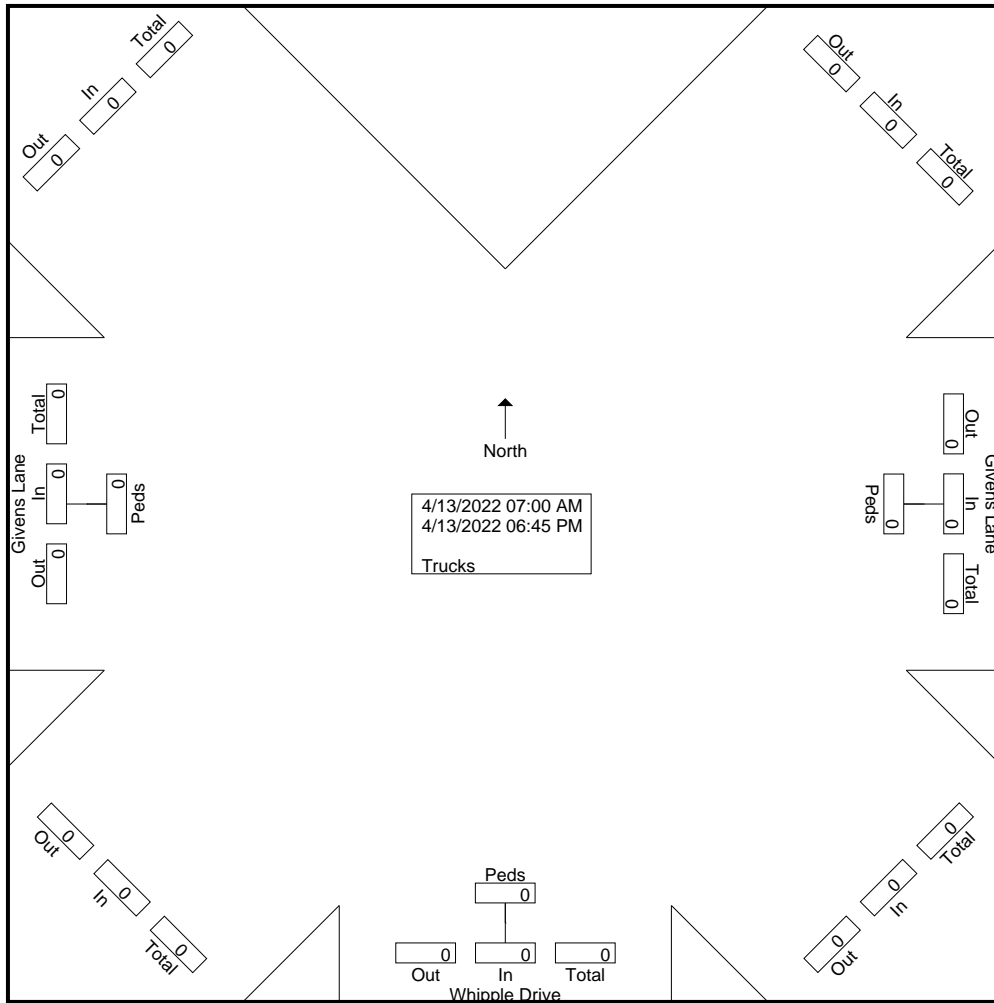
TRAFFIC DATA COLLECTION

File Name : Blacksburg(Whipple and Givens) Day 2

Site Code :

Start Date : 4/13/2022

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TRAFFIC DATA COLLECTION

File Name : Blacksburg(Whipple and Givens) Day 2
 Site Code :
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Groups Printed- Cars +

Start Time	Givens Lane Westbound		Whipple Drive Northbound		Givens Lane Eastbound		Int. Total
	Peds	App. Total	Peds	App. Total	Peds	App. Total	
07:00 AM	0	0	1	1	0	0	1
07:15 AM	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	0
Total	0	0	1	1	0	0	1
08:00 AM	0	0	0	0	0	0	0
08:15 AM	0	0	0	0	0	0	0
08:30 AM	0	0	1	1	0	0	1
08:45 AM	0	0	1	1	0	0	1
Total	0	0	2	2	0	0	2
09:00 AM	0	0	2	2	0	0	2
09:15 AM	0	0	1	1	0	0	1
09:30 AM	0	0	2	2	0	0	2
09:45 AM	0	0	1	1	0	0	1
Total	0	0	6	6	0	0	6
10:00 AM	0	0	1	1	0	0	1
10:15 AM	0	0	3	3	0	0	3
10:30 AM	0	0	2	2	0	0	2
10:45 AM	0	0	0	0	0	0	0
Total	0	0	6	6	0	0	6
11:00 AM	0	0	0	0	0	0	0
11:15 AM	0	0	0	0	0	0	0
11:30 AM	1	1	0	0	0	0	1
11:45 AM	0	0	0	0	0	0	0
Total	1	1	0	0	0	0	1
12:00 PM	0	0	0	0	0	0	0
12:15 PM	0	0	0	0	1	1	1
12:30 PM	0	0	1	1	0	0	1
12:45 PM	0	0	0	0	0	0	0
Total	0	0	1	1	1	1	2
01:00 PM	0	0	0	0	0	0	0
01:15 PM	0	0	0	0	0	0	0
01:30 PM	0	0	0	0	0	0	0
01:45 PM	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0
02:00 PM	0	0	0	0	0	0	0
02:15 PM	0	0	0	0	0	0	0
02:30 PM	0	0	1	1	0	0	1



TRAFFIC DATA COLLECTION

File Name : Blacksburg(Whipple and Givens) Day 2

Site Code :

Start Date : 4/13/2022

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Groups Printed- Cars +

Start Time	Givens Lane Westbound		Whipple Drive Northbound		Givens Lane Eastbound		Int. Total
	Peds	App. Total	Peds	App. Total	Peds	App. Total	
02:45 PM	0	0	1	1	0	0	1
Total	0	0	2	2	0	0	2
03:00 PM	0	0	0	0	0	0	0
03:15 PM	0	0	2	2	0	0	2
03:30 PM	0	0	0	0	0	0	0
03:45 PM	0	0	0	0	0	0	0
Total	0	0	2	2	0	0	2
04:00 PM	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0
04:30 PM	0	0	2	2	0	0	2
04:45 PM	0	0	0	0	0	0	0
Total	0	0	2	2	0	0	2
05:00 PM	0	0	0	0	1	1	1
05:15 PM	0	0	3	3	0	0	3
05:30 PM	0	0	2	2	0	0	2
05:45 PM	0	0	0	0	0	0	0
Total	0	0	5	5	1	1	6
06:00 PM	0	0	0	0	0	0	0
06:15 PM	0	0	0	0	3	3	3
06:30 PM	0	0	1	1	3	3	4
06:45 PM	0	0	0	0	0	0	0
Total	0	0	1	1	6	6	7
Grand Total	1	1	28	28	8	8	37
Apprch %	100		100		100		
Total %	2.7	2.7	75.7	75.7	21.6	21.6	



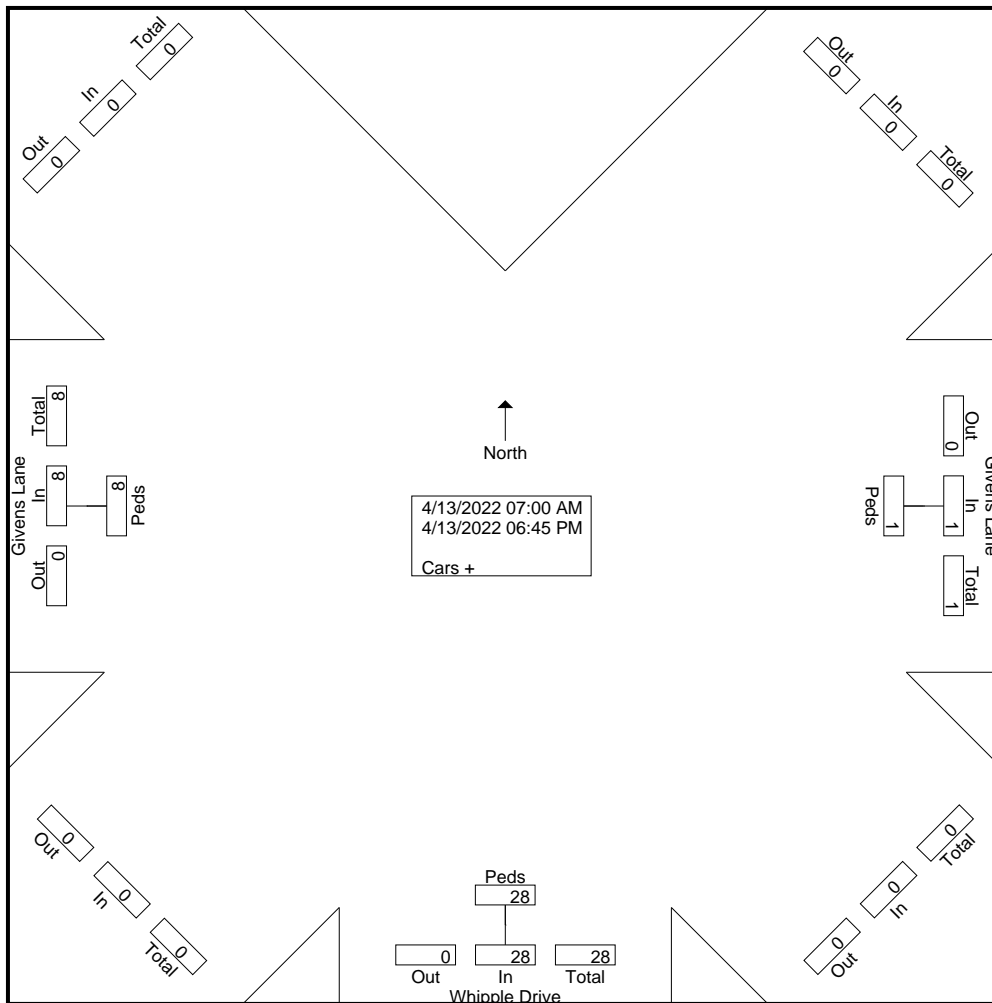
TRAFFIC DATA COLLECTION

File Name : Blacksburg(Whipple and Givens) Day 2

Site Code :

Start Date : 4/13/2022

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TRAFFIC DATA COLLECTION

File Name : Blacksburg(Whipple and Givens) Day 2
 Site Code :
 Start Date : 4/13/2022
 Page No : 1

Groups Printed- Cars + - Trucks

Start Time	Givens Lane Westbound					Whipple Drive Northbound					Givens Lane Eastbound					Int. Total
	Thru	Left	UTrn	Peds	App. Total	Right	Left	UTrn	Peds	App. Total	Right	Thru	UTrn	Peds	App. Total	
07:00 AM	8	2	0	0	10	0	4	0	1	5	4	2	0	0	6	21
07:15 AM	10	2	0	0	12	1	3	0	0	4	1	2	0	0	3	19
07:30 AM	16	2	0	0	18	0	3	0	0	3	3	6	0	0	9	30
07:45 AM	21	1	0	0	22	1	1	0	0	2	12	2	0	0	14	38
Total	55	7	0	0	62	2	11	0	1	14	20	12	0	0	32	108
08:00 AM	10	3	0	0	13	0	2	0	0	2	5	6	0	0	11	26
08:15 AM	11	1	0	0	12	0	2	0	0	2	12	4	0	0	16	30
08:30 AM	12	1	0	0	13	1	6	0	1	8	11	5	0	0	16	37
08:45 AM	18	2	0	0	20	0	7	0	1	8	8	11	0	0	19	47
Total	51	7	0	0	58	1	17	0	2	20	36	26	0	0	62	140
09:00 AM	17	1	0	0	18	0	7	1	2	10	6	2	0	0	8	36
09:15 AM	8	1	0	0	9	0	3	0	1	4	3	6	0	0	9	22
09:30 AM	10	2	0	0	12	0	4	0	2	6	9	4	0	0	13	31
09:45 AM	9	1	0	0	10	1	7	0	1	9	6	3	0	0	9	28
Total	44	5	0	0	49	1	21	1	6	29	24	15	0	0	39	117
10:00 AM	6	1	0	0	7	0	7	0	1	8	9	5	0	0	14	29
10:15 AM	6	1	0	0	7	0	6	0	3	9	4	3	0	0	7	23
10:30 AM	8	2	0	0	10	0	4	0	2	6	6	1	0	0	7	23
10:45 AM	16	1	0	0	17	2	4	0	0	6	10	9	0	0	19	42
Total	36	5	0	0	41	2	21	0	6	29	29	18	0	0	47	117
11:00 AM	10	1	0	0	11	0	11	0	0	11	5	3	0	0	8	30
11:15 AM	9	2	0	0	11	1	3	0	0	4	5	6	0	0	11	26
11:30 AM	7	2	0	1	10	1	3	0	0	4	3	4	0	0	7	21
11:45 AM	12	2	0	0	14	1	2	0	0	3	6	5	0	0	11	28
Total	38	7	0	1	46	3	19	0	0	22	19	18	0	0	37	105
12:00 PM	8	2	0	0	10	3	8	0	0	11	7	4	0	0	11	32
12:15 PM	5	3	0	0	8	0	5	0	0	5	7	2	0	1	10	23
12:30 PM	9	3	0	0	12	0	6	0	1	7	2	1	0	0	3	22
12:45 PM	11	1	0	0	12	1	3	0	0	4	4	4	0	0	8	24
Total	33	9	0	0	42	4	22	0	1	27	20	11	0	1	32	101
01:00 PM	7	3	0	0	10	1	3	0	0	4	3	5	0	0	8	22
01:15 PM	6	3	0	0	9	0	5	0	0	5	6	2	0	0	8	22
01:30 PM	6	1	0	0	7	1	6	0	0	7	5	5	0	0	10	24
01:45 PM	6	2	0	0	8	1	8	0	0	9	9	5	0	0	14	31
Total	25	9	0	0	34	3	22	0	0	25	23	17	0	0	40	99
02:00 PM	6	2	0	0	8	1	4	0	0	5	5	5	0	0	10	23
02:15 PM	12	1	0	0	13	0	4	0	0	4	5	4	0	0	9	26
02:30 PM	14	1	0	0	15	0	6	0	1	7	5	4	0	0	9	31



TRAFFIC DATA COLLECTION

File Name : Blacksburg(Whipple and Givens) Day 2

Site Code :

Start Date : 4/13/2022

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Groups Printed- Cars + - Trucks

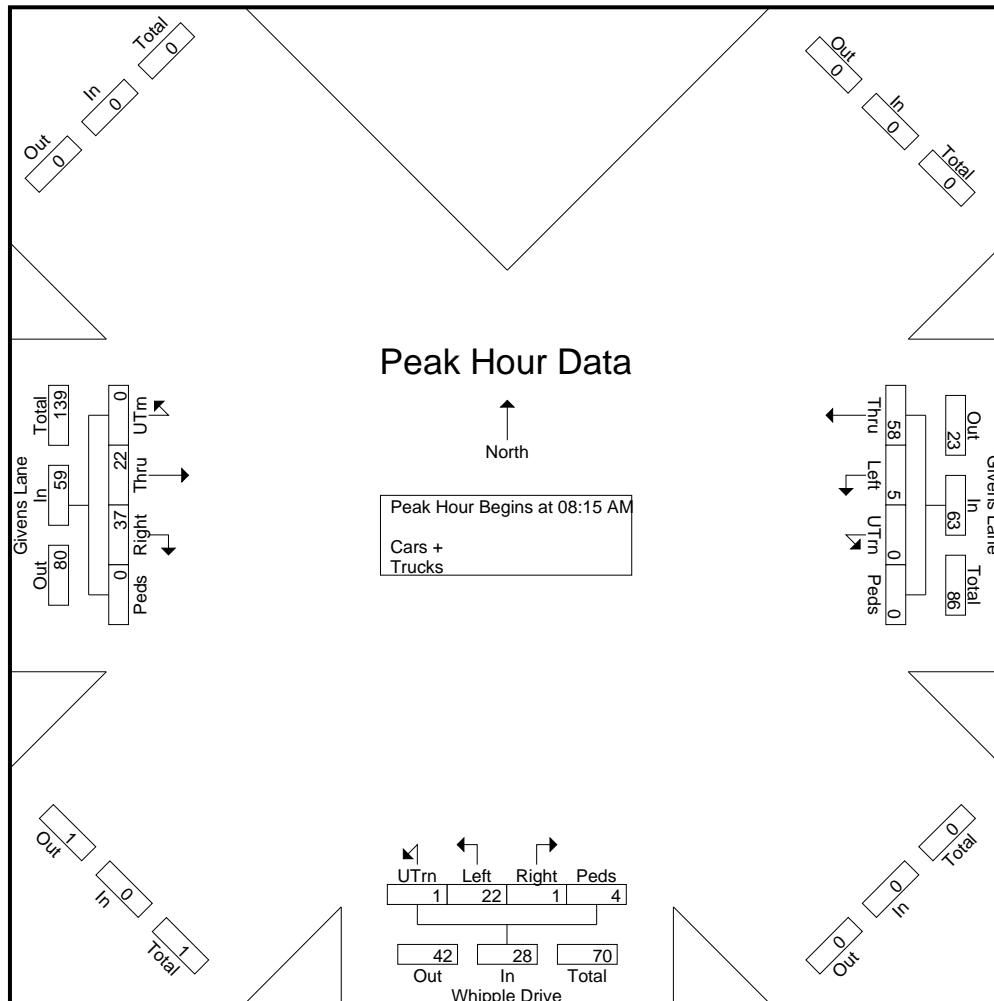
Start Time	Givens Lane Westbound					Whipple Drive Northbound					Givens Lane Eastbound					Int. Total
	Thru	Left	UTrn	Peds	App. Total	Right	Left	UTrn	Peds	App. Total	Right	Thru	UTrn	Peds	App. Total	
02:45 PM	9	2	0	0	11	0	6	0	1	7	6	2	0	0	8	26
Total	41	6	0	0	47	1	20	0	2	23	21	15	0	0	36	106
03:00 PM	8	1	0	0	9	1	8	0	0	9	7	3	0	0	10	28
03:15 PM	9	3	0	0	12	1	5	0	2	8	6	6	0	0	12	32
03:30 PM	8	3	1	0	12	1	4	0	0	5	4	6	0	0	10	27
03:45 PM	11	1	0	0	12	1	6	0	0	7	8	7	0	0	15	34
Total	36	8	1	0	45	4	23	0	2	29	25	22	0	0	47	121
04:00 PM	20	2	0	0	22	0	9	0	0	9	8	5	0	0	13	44
04:15 PM	11	3	0	0	14	0	16	0	0	16	9	12	0	0	21	51
04:30 PM	19	2	0	0	21	0	8	0	2	10	9	10	0	0	19	50
04:45 PM	16	3	0	0	19	0	4	0	0	4	9	7	0	0	16	39
Total	66	10	0	0	76	0	37	0	2	39	35	34	0	0	69	184
05:00 PM	17	4	0	0	21	1	14	0	0	15	6	5	0	1	12	48
05:15 PM	10	2	0	0	12	0	8	0	3	11	11	10	0	0	21	44
05:30 PM	17	2	0	0	19	0	7	0	2	9	7	11	0	0	18	46
05:45 PM	13	2	0	0	15	2	10	0	0	12	7	6	1	0	14	41
Total	57	10	0	0	67	3	39	0	5	47	31	32	1	1	65	179
06:00 PM	16	3	0	0	19	1	7	0	0	8	4	4	0	0	8	35
06:15 PM	6	1	0	0	7	3	5	0	0	8	10	8	0	3	21	36
06:30 PM	6	4	0	0	10	0	10	0	1	11	6	3	0	3	12	33
06:45 PM	9	2	0	0	11	0	5	0	0	5	13	2	0	0	15	31
Total	37	10	0	0	47	4	27	0	1	32	33	17	0	6	56	135
Grand Total	519	93	1	1	614	28	279	1	28	336	316	237	1	8	562	1512
Apprch %	84.5	15.1	0.2	0.2		8.3	83	0.3	8.3		56.2	42.2	0.2	1.4		
Total %	34.3	6.2	0.1	0.1	40.6	1.9	18.5	0.1	1.9	22.2	20.9	15.7	0.1	0.5	37.2	
Cars +	494	41	1	1	537	27	278	1	28	334	295	227	1	8	531	1402
% Cars +	95.2	44.1	100	100	87.5	96.4	99.6	100	100	99.4	93.4	95.8	100	100	94.5	92.7
Trucks	25	52	0	0	77	1	1	0	0	2	21	10	0	0	31	110
% Trucks	4.8	55.9	0	0	12.5	3.6	0.4	0	0	0.6	6.6	4.2	0	0	5.5	7.3



TRAFFIC DATA COLLECTION

File Name : Blacksburg(Whipple and Givens) Day 2
 Site Code :
 Start Date : 4/13/2022
 Page No : 3

Start Time	Givens Lane Westbound					Whipple Drive Northbound					Givens Lane Eastbound					Int. Total
	Thru	Left	UTrn	Peds	App. Total	Right	Left	UTrn	Peds	App. Total	Right	Thru	UTrn	Peds	App. Total	
Peak Hour Analysis From 07:00 AM to 11:45 AM - Peak 1 of 1																
Peak Hour for Entire Intersection Begins at 08:15 AM																
08:15 AM	11	1	0	0	12	0	2	0	0	2	12	4	0	0	16	30
08:30 AM	12	1	0	0	13	1	6	0	1	8	11	5	0	0	16	37
08:45 AM	18	2	0	0	20	0	7	0	1	8	8	11	0	0	19	47
09:00 AM	17	1	0	0	18	0	7	1	2	10	6	2	0	0	8	36
Total Volume	58	5	0	0	63	1	22	1	4	28	37	22	0	0	59	150
% App. Total	92.1	7.9	0	0		3.6	78.6	3.6	14.3		62.7	37.3	0	0		
PHF	.806	.625	.000	.000	.788	.250	.786	.250	.500	.700	.771	.500	.000	.000	.776	.798

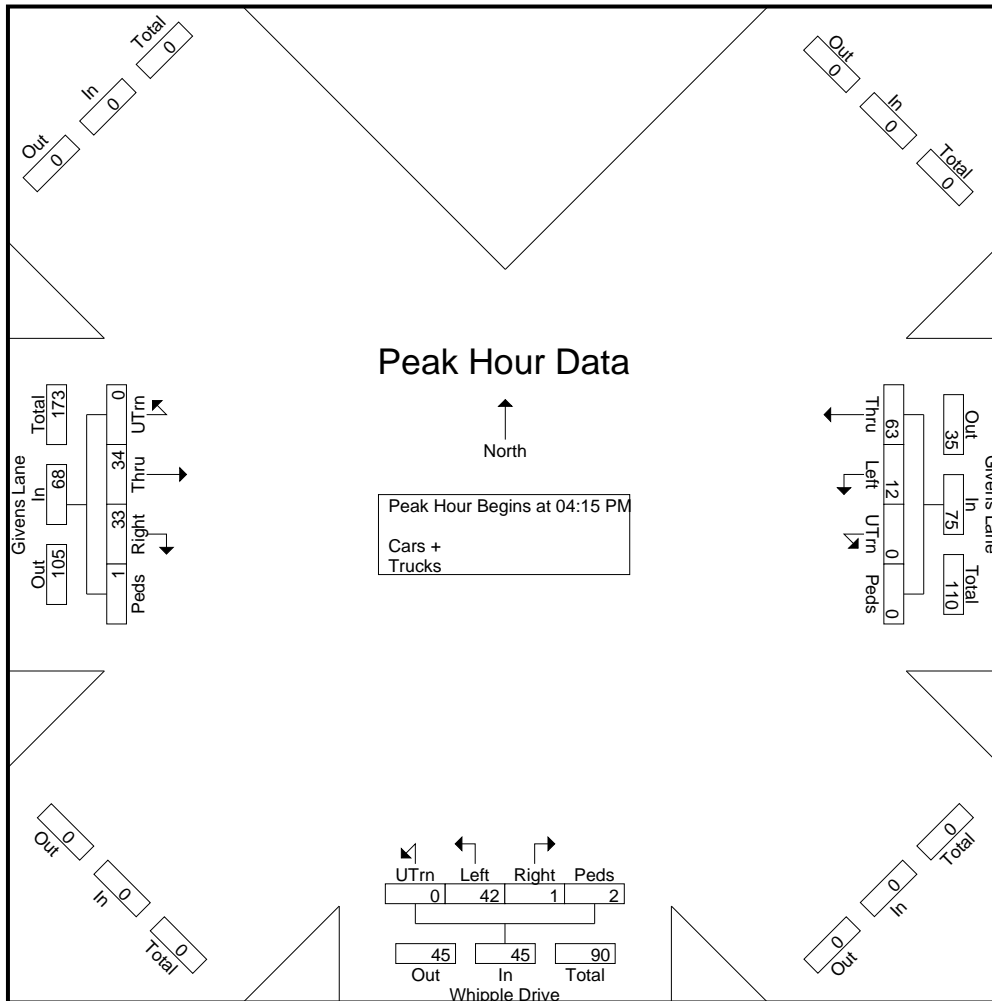




TRAFFIC DATA COLLECTION

File Name : Blacksburg(Whipple and Givens) Day 2
 Site Code :
 Start Date : 4/13/2022
 Page No : 4

Start Time	Givens Lane Westbound				Whipple Drive Northbound				Givens Lane Eastbound				Int. Total			
	Thru	Left	UTrn	Peds	App. Total	Right	Left	UTrn	Peds	App. Total	Right	Thru		UTrn	Peds	App. Total
Peak Hour Analysis From 12:00 PM to 06:45 PM - Peak 1 of 1																
Peak Hour for Entire Intersection Begins at 04:15 PM																
04:15 PM	11	3	0	0	14	0	16	0	0	16	9	12	0	0	21	51
04:30 PM	19	2	0	0	21	0	8	0	2	10	9	10	0	0	19	50
04:45 PM	16	3	0	0	19	0	4	0	0	4	9	7	0	0	16	39
05:00 PM	17	4	0	0	21	1	14	0	0	15	6	5	0	1	12	48
Total Volume	63	12	0	0	75	1	42	0	2	45	33	34	0	1	68	188
% App. Total	84	16	0	0		2.2	93.3	0	4.4		48.5	50	0	1.5		
PHF	.829	.750	.000	.000	.893	.250	.656	.000	.250	.703	.917	.708	.000	.250	.810	.922



APPENDIX C

CAPACITY ANALYSIS CALCULATIONS

HCM 6th TWSC
 1: North Main Street & Whipple Drive/Commercial Access

2022 Existing
 Timing Plan: AM Peak Hour

Intersection												
Int Delay, s/veh	1.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	2	1	69	4	1	0	23	194	21	6	517	2
Future Vol, veh/h	2	1	69	4	1	0	23	194	21	6	517	2
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	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	2	1	77	4	1	0	26	216	23	7	574	2

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	750	880	288	582	870	120	576	0	0	239	0	0
Stage 1	589	589	-	280	280	-	-	-	-	-	-	-
Stage 2	161	291	-	302	590	-	-	-	-	-	-	-
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	300	284	709	396	288	909	993	-	-	1325	-	-
Stage 1	461	494	-	703	678	-	-	-	-	-	-	-
Stage 2	825	670	-	682	493	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	290	273	709	342	277	909	993	-	-	1325	-	-
Mov Cap-2 Maneuver	290	273	-	342	277	-	-	-	-	-	-	-
Stage 1	447	490	-	682	658	-	-	-	-	-	-	-
Stage 2	799	650	-	602	489	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	11.1		16.2		0.9		0.1	
HCM LOS	B		C					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	993	-	-	667	327	1325	-
HCM Lane V/C Ratio	0.026	-	-	0.12	0.017	0.005	-
HCM Control Delay (s)	8.7	0.1	-	11.1	16.2	7.7	0
HCM Lane LOS	A	A	-	B	C	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0.4	0.1	0	-

HCM 6th TWSC
 1: North Main Street & Whipple Drive/Commercial Access

2022 Existing
 Timing Plan: PM Peak Hour

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	3	2	61	23	1	1	74	550	33	2	397	7
Future Vol, veh/h	3	2	61	23	1	1	74	550	33	2	397	7
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	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	3	2	68	26	1	1	82	611	37	2	441	8

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	919	1261	225	1020	1247	324	449	0	0	648	0	0
Stage 1	449	449	-	794	794	-	-	-	-	-	-	-
Stage 2	470	812	-	226	453	-	-	-	-	-	-	-
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	226	169	778	191	172	672	1108	-	-	934	-	-
Stage 1	559	571	-	348	398	-	-	-	-	-	-	-
Stage 2	543	390	-	756	568	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	204	149	778	157	152	672	1108	-	-	934	-	-
Mov Cap-2 Maneuver	204	149	-	157	152	-	-	-	-	-	-	-
Stage 1	494	569	-	308	352	-	-	-	-	-	-	-
Stage 2	478	345	-	685	566	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	11.6		31.8		1.3		0	
HCM LOS	B		D					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1108	-	-	620	162	934	-
HCM Lane V/C Ratio	0.074	-	-	0.118	0.171	0.002	-
HCM Control Delay (s)	8.5	0.4	-	11.6	31.8	8.9	0
HCM Lane LOS	A	A	-	B	D	A	A
HCM 95th %tile Q(veh)	0.2	-	-	0.4	0.6	0	-

HCM 6th TWSC
 1: North Main Street & Whipple Drive/Commercial Access

2023 No-Build
 Timing Plan: AM Peak Hour

Intersection												
Int Delay, s/veh	1.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	2	1	71	4	1	0	24	199	22	6	530	2
Future Vol, veh/h	2	1	71	4	1	0	24	199	22	6	530	2
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	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	2	1	79	4	1	0	27	221	24	7	589	2

Major/Minor	Minor2		Minor1			Major1			Major2			
Conflicting Flow All	769	903	296	596	892	123	591	0	0	245	0	0
Stage 1	604	604	-	287	287	-	-	-	-	-	-	-
Stage 2	165	299	-	309	605	-	-	-	-	-	-	-
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	291	276	700	387	280	905	981	-	-	1318	-	-
Stage 1	452	486	-	696	673	-	-	-	-	-	-	-
Stage 2	821	665	-	676	486	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	281	265	700	332	269	905	981	-	-	1318	-	-
Mov Cap-2 Maneuver	281	265	-	332	269	-	-	-	-	-	-	-
Stage 1	438	482	-	674	651	-	-	-	-	-	-	-
Stage 2	793	644	-	594	482	-	-	-	-	-	-	-

Approach	EB		WB			NB			SB		
HCM Control Delay, s	11.2		16.6			0.9			0.1		
HCM LOS	B		C								

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	981	-	-	659	317	1318	-
HCM Lane V/C Ratio	0.027	-	-	0.125	0.018	0.005	-
HCM Control Delay (s)	8.8	0.1	-	11.2	16.6	7.7	0
HCM Lane LOS	A	A	-	B	C	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0.4	0.1	0	-

HCM 6th TWSC
 1: North Main Street & Whipple Drive/Commercial Access

2023 No-Build
 Timing Plan: PM Peak Hour

Intersection												
Int Delay, s/veh	2.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	3	2	63	24	1	1	76	564	34	2	407	7
Future Vol, veh/h	3	2	63	24	1	1	76	564	34	2	407	7
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	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	3	2	70	27	1	1	84	627	38	2	452	8

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	942	1293	230	1045	1278	333	460	0	0	665	0	0
Stage 1	460	460	-	814	814	-	-	-	-	-	-	-
Stage 2	482	833	-	231	464	-	-	-	-	-	-	-
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	218	162	772	183	165	663	1097	-	-	920	-	-
Stage 1	551	564	-	338	390	-	-	-	-	-	-	-
Stage 2	534	382	-	751	562	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	196	142	772	149	144	663	1097	-	-	920	-	-
Mov Cap-2 Maneuver	196	142	-	149	144	-	-	-	-	-	-	-
Stage 1	484	562	-	297	342	-	-	-	-	-	-	-
Stage 2	467	335	-	678	560	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	11.7		33.9		1.3		0	
HCM LOS	B		D					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1097	-	-	613	153	920	-
HCM Lane V/C Ratio	0.077	-	-	0.123	0.189	0.002	-
HCM Control Delay (s)	8.6	0.4	-	11.7	33.9	8.9	0
HCM Lane LOS	A	A	-	B	D	A	A
HCM 95th %tile Q(veh)	0.2	-	-	0.4	0.7	0	-

HCM 6th TWSC
 1: North Main Street & Whipple Drive/Commercial Access

2023 Build
 Timing Plan: AM Peak Hour

Intersection												
Int Delay, s/veh	1.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	2	1	78	4	1	0	26	199	22	6	530	2
Future Vol, veh/h	2	1	78	4	1	0	26	199	22	6	530	2
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	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	2	1	87	4	1	0	29	221	24	7	589	2

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	773	907	296	600	896	123	591	0	0	245	0	0
Stage 1	604	604	-	291	291	-	-	-	-	-	-	-
Stage 2	169	303	-	309	605	-	-	-	-	-	-	-
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	289	274	700	385	278	905	981	-	-	1318	-	-
Stage 1	452	486	-	693	670	-	-	-	-	-	-	-
Stage 2	816	662	-	676	486	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	279	262	700	326	266	905	981	-	-	1318	-	-
Mov Cap-2 Maneuver	279	262	-	326	266	-	-	-	-	-	-	-
Stage 1	437	482	-	669	647	-	-	-	-	-	-	-
Stage 2	787	639	-	586	482	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	11.3		16.7		1		0.1	
HCM LOS	B		C					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	981	-	-	662	312	1318	-
HCM Lane V/C Ratio	0.029	-	-	0.136	0.018	0.005	-
HCM Control Delay (s)	8.8	0.1	-	11.3	16.7	7.7	0
HCM Lane LOS	A	A	-	B	C	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0.5	0.1	0	-

HCM 6th TWSC
 1: North Main Street & Whipple Drive/Commercial Access

2023 Build
 Timing Plan: PM Peak Hour

Intersection												
Int Delay, s/veh	2.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	3	2	72	24	1	1	85	564	34	2	407	7
Future Vol, veh/h	3	2	72	24	1	1	85	564	34	2	407	7
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	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	3	2	80	27	1	1	94	627	38	2	452	8

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	962	1313	230	1065	1298	333	460	0	0	665	0	0
Stage 1	460	460	-	834	834	-	-	-	-	-	-	-
Stage 2	502	853	-	231	464	-	-	-	-	-	-	-
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	210	157	772	177	160	663	1097	-	-	920	-	-
Stage 1	551	564	-	329	381	-	-	-	-	-	-	-
Stage 2	520	374	-	751	562	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	186	135	772	140	138	663	1097	-	-	920	-	-
Mov Cap-2 Maneuver	186	135	-	140	138	-	-	-	-	-	-	-
Stage 1	476	562	-	284	329	-	-	-	-	-	-	-
Stage 2	446	323	-	669	560	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	11.7		36.2		1.5		0	
HCM LOS	B		E					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1097	-	-	620	144	920	-
HCM Lane V/C Ratio	0.086	-	-	0.138	0.201	0.002	-
HCM Control Delay (s)	8.6	0.5	-	11.7	36.2	8.9	0
HCM Lane LOS	A	A	-	B	E	A	A
HCM 95th %tile Q(veh)	0.3	-	-	0.5	0.7	0	-

HCM Unsignalized Intersection Capacity Analysis

2: Whipple Drive & Site Entrance

2023 Build
Timing Plan: AM Peak Hour



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations			↔			↔
Traffic Volume (veh/h)	0	0	24	2	2	49
Future Volume (Veh/h)	0	0	24	2	2	49
Sign Control	Stop		Free		Free	
Grade	0%		0%		0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	0	27	2	2	54
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	86	28			29	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	86	28			29	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	100			100	
cM capacity (veh/h)	914	1047			1584	
Direction, Lane #	NB 1	SB 1				
Volume Total	29	56				
Volume Left	0	2				
Volume Right	2	0				
cSH	1700	1584				
Volume to Capacity	0.02	0.00				
Queue Length 95th (ft)	0	0				
Control Delay (s)	0.0	0.3				
Lane LOS		A				
Approach Delay (s)	0.0	0.3				
Approach LOS						
Intersection Summary						
Average Delay			0.2			
Intersection Capacity Utilization			7.5%	ICU Level of Service		A
Analysis Period (min)			15			

Intersection						
Int Delay, s/veh	1.3					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↔		↑			↑
Traffic Vol, veh/h	7	5	24	0	0	44
Future Vol, veh/h	7	5	24	0	0	44
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	8	6	27	0	0	49

Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	76	27	0	-	-	-
Stage 1	27	-	-	-	-	-
Stage 2	49	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	-	-
Pot Cap-1 Maneuver	927	1048	-	0	0	-
Stage 1	996	-	-	0	0	-
Stage 2	973	-	-	0	0	-
Platoon blocked, %			-			-
Mov Cap-1 Maneuver	927	1048	-	-	-	-
Mov Cap-2 Maneuver	927	-	-	-	-	-
Stage 1	996	-	-	-	-	-
Stage 2	973	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	8.7	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBTWBLn1	SBT
Capacity (veh/h)	- 974	-
HCM Lane V/C Ratio	- 0.014	-
HCM Control Delay (s)	- 8.7	-
HCM Lane LOS	- A	-
HCM 95th %tile Q(veh)	- 0	-

HCM Unsignalized Intersection Capacity Analysis

2: Whipple Drive & Site Entrance

2023 Build
Timing Plan: PM Peak Hour



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations			↔			↔
Traffic Volume (veh/h)	0	0	43	9	6	54
Future Volume (Veh/h)	0	0	43	9	6	54
Sign Control	Stop		Free		Free	
Grade	0%		0%		0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	0	48	10	7	60
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	127	53			58	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	127	53			58	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	100			100	
cM capacity (veh/h)	864	1014			1546	
Direction, Lane #	NB 1	SB 1				
Volume Total	58	67				
Volume Left	0	7				
Volume Right	10	0				
cSH	1700	1546				
Volume to Capacity	0.03	0.00				
Queue Length 95th (ft)	0	0				
Control Delay (s)	0.0	0.8				
Lane LOS	A					
Approach Delay (s)	0.0	0.8				
Approach LOS						
Intersection Summary						
Average Delay			0.4			
Intersection Capacity Utilization			11.2%	ICU Level of Service	A	
Analysis Period (min)			15			

Intersection						
Int Delay, s/veh	1.1					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↔		↑			↑
Traffic Vol, veh/h	7	5	43	0	0	44
Future Vol, veh/h	7	5	43	0	0	44
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	8	6	48	0	0	49

Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	97	48	0	-	-	-
Stage 1	48	-	-	-	-	-
Stage 2	49	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	-	-
Pot Cap-1 Maneuver	902	1021	-	0	0	-
Stage 1	974	-	-	0	0	-
Stage 2	973	-	-	0	0	-
Platoon blocked, %			-			-
Mov Cap-1 Maneuver	902	1021	-	-	-	-
Mov Cap-2 Maneuver	902	-	-	-	-	-
Stage 1	974	-	-	-	-	-
Stage 2	973	-	-	-	-	-

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

Minor Lane/Major Mvmt	NBTWBLn1	SBT
Capacity (veh/h)	- 948	-
HCM Lane V/C Ratio	- 0.014	-
HCM Control Delay (s)	- 8.9	-
HCM Lane LOS	- A	-
HCM 95th %tile Q(veh)	- 0	-

HCM 6th TWSC
 4: North Main Street & Givens Lane/Mountain Breeze Drive

2023 Build
 Timing Plan: AM Peak Hour

Intersection												
Int Delay, s/veh	1.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	17	0	8	14	8	7	13	198	5	7	446	44
Future Vol, veh/h	17	0	8	14	8	7	13	198	5	7	446	44
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	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	19	0	9	16	9	8	14	220	6	8	496	49

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	797	791	521	792	812	223	545	0	0	226	0	0
Stage 1	537	537	-	251	251	-	-	-	-	-	-	-
Stage 2	260	254	-	541	561	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	305	322	555	307	313	817	1024	-	-	1342	-	-
Stage 1	528	523	-	753	699	-	-	-	-	-	-	-
Stage 2	745	697	-	525	510	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	290	314	555	296	305	817	1024	-	-	1342	-	-
Mov Cap-2 Maneuver	290	314	-	296	305	-	-	-	-	-	-	-
Stage 1	520	518	-	741	688	-	-	-	-	-	-	-
Stage 2	717	686	-	512	505	-	-	-	-	-	-	-

Approach	EB		WB		NB			SB		
HCM Control Delay, s	16.5		16.2		0.5			0.1		
HCM LOS	C		C							

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1024	-	-	342	353	1342	-
HCM Lane V/C Ratio	0.014	-	-	0.081	0.091	0.006	-
HCM Control Delay (s)	8.6	0	-	16.5	16.2	7.7	0
HCM Lane LOS	A	A	-	C	C	A	A
HCM 95th %tile Q(veh)	0	-	-	0.3	0.3	0	-

HCM 6th TWSC
 4: North Main Street & Givens Lane/Mountain Breeze Drive

2023 Build
 Timing Plan: PM Peak Hour

Intersection												
Int Delay, s/veh	2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	19	4	17	22	6	7	25	476	24	13	311	44
Future Vol, veh/h	19	4	17	22	6	7	25	476	24	13	311	44
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	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	21	4	19	24	7	8	28	529	27	14	346	49

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	1005	1011	371	1009	1022	543	395	0	0	556	0	0
Stage 1	399	399	-	599	599	-	-	-	-	-	-	-
Stage 2	606	612	-	410	423	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	220	240	675	219	236	540	1164	-	-	1015	-	-
Stage 1	627	602	-	488	490	-	-	-	-	-	-	-
Stage 2	484	484	-	619	588	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	204	228	675	201	224	540	1164	-	-	1015	-	-
Mov Cap-2 Maneuver	204	228	-	201	224	-	-	-	-	-	-	-
Stage 1	605	591	-	471	473	-	-	-	-	-	-	-
Stage 2	454	467	-	586	577	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	19.4		23.3		0.4		0.3	
HCM LOS	C		C					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1164	-	-	294	235	1015	-
HCM Lane V/C Ratio	0.024	-	-	0.151	0.165	0.014	-
HCM Control Delay (s)	8.2	0	-	19.4	23.3	8.6	0
HCM Lane LOS	A	A	-	C	C	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0.5	0.6	0	-

Table 1: 2023 Build Traffic Volumes

	Northbound			Southbound			Eastbound			Westbound			Intersection Volume
	N Main Street			N Main Street			Whipple			Whipple			
Start Time	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
7:00	20	107	2	1	473	3	1	0	58	5	0	0	670
8:00	24	183	15	4	521	2	1	2	77	6	1	0	836
9:00	36	223	13	3	378	2	2	1	62	3	0	1	724
10:00	33	201	14	2	323	2	1	0	52	21	0	0	649
11:00	44	274	11	2	385	2	1	0	61	5	0	4	789
12:00	59	303	12	1	336	2	1	0	65	12	0	4	795
13:00	53	298	14	1	319	5	0	0	66	17	0	0	773
14:00	52	332	11	1	298	1	3	0	62	7	1	1	769
15:00	57	492	8	6	361	0	8	1	67	6	1	3	1,010
16:00	89	523	28	1	369	1	5	1	85	14	0	3	1,119
17:00	83	550	33	2	397	7	3	2	69	23	1	1	1,171
18:00	86	400	14	4	352	3	1	0	89	14	3	5	971

Traffic Signal Warrant Analysis

Warrants 1 - 3 (Volume Warrants)

Project Name	Whipple Drive Residential
Project/File #	22238
Scenario	Build Conditions

Intersection Information			
Major Street (N/S Road)	N Main Street	Minor Street (E/W Road)	Whipple Drive
Analyzed with	2 or more approach lanes	Analyzed with	1 Approach Lane
Total Approach Volume	9268 vehicles	Total Approach Volume	1011 vehicles
Total Ped/Bike Volume	0 crossings	Total Ped/Bike Volume	0 crossings
Right turn reduction of	0 percent applied	Right turn reduction of	0 percent applied

No high speed or isolated community reduction applied to the Volume Warrant thresholds.

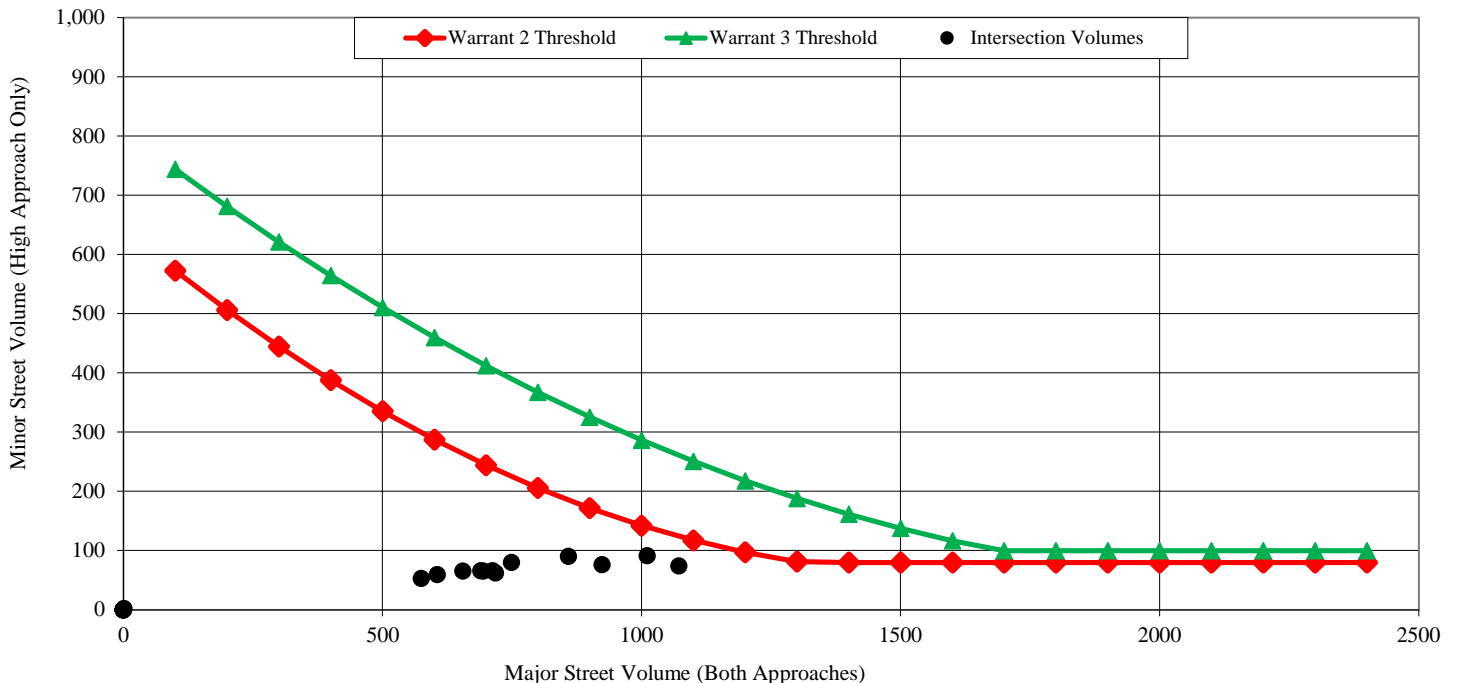
Warrant 1, Eight Hour Vehicular Volume			
	Condition A	Condition B	Condition A+B*
Condition Satisfied?	Not Satisfied	Not Satisfied	Not Satisfied
Required values reached for	0 hours	2 hours	0 (Cond. A) & 5 (Cond. B)
Criteria - Major Street (veh/hr)	600	900	480 (Cond. A) & 720 (Cond. B)
Criteria - Minor Street (veh/hr)	150	75	120 (Cond. A) & 60 (Cond. B)

* Should be applied only after an adequate trial of other alternatives that could cause less delay and inconvenience to traffic has failed to solve the traffic problems.

Warrant 2, Four Hour Vehicular Volume	
Condition Satisfied?	Not Satisfied
Required values reached for	0 hours
Criteria	See Figure Below

Warrant 3, Peak Hour Vehicular Volume		
	Condition A	Condition B
Condition Satisfied?	Not Satisfied	Not Satisfied
Required values reached for	1112 total, 40 minor, 0 delay	0 hours
Criteria - Total Approach Volume (veh in one hour)	800	See Figure Below
Criteria - Minor Street High Side Volume (veh in one hour)	100	
Criteria - Minor Street High Side Delay (veh-hrs)	4	

Figure 4C-1 (Warrant 2) & Figure 4C-3 (Warrant 3)



APPENDIX D

SIMTRAFFIC QUEUEING REPORTS

Intersection: 1: North Main Street & Whipple Drive/Commercial Access

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LT	LT
Maximum Queue (ft)	43	29	48	22
Average Queue (ft)	19	7	9	1
95th Queue (ft)	34	28	31	8
Link Distance (ft)	1134	1157	1040	671
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Network Summary

Network wide Queuing Penalty: 0

Intersection: 1: North Main Street & Whipple Drive/Commercial Access

Movement	EB	WB	NB
Directions Served	LTR	LTR	LT
Maximum Queue (ft)	60	29	118
Average Queue (ft)	23	13	22
95th Queue (ft)	46	37	66
Link Distance (ft)	1134	1157	1040
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Network Summary

Network wide Queuing Penalty: 0

Intersection: 1: North Main Street & Whipple Drive/Commercial Access

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LT	LT
Maximum Queue (ft)	43	29	48	22
Average Queue (ft)	20	6	9	1
95th Queue (ft)	38	25	31	8
Link Distance (ft)	1134	1157	1040	671
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Network Summary

Network wide Queuing Penalty: 0

Intersection: 1: North Main Street & Whipple Drive/Commercial Access

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LT	LT
Maximum Queue (ft)	60	53	118	17
Average Queue (ft)	25	18	23	1
95th Queue (ft)	49	45	66	6
Link Distance (ft)	1134	1157	1040	671
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Network Summary

Network wide Queuing Penalty: 0

Intersection: 1: North Main Street & Whipple Drive/Commercial Access

Movement	EB	WB	NB	NB	SB
Directions Served	LTR	LTR	LT	TR	LT
Maximum Queue (ft)	55	29	50	20	22
Average Queue (ft)	20	3	10	1	1
95th Queue (ft)	41	17	38	7	7
Link Distance (ft)	1106	1157	1040	1040	642
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)					
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 2: Whipple Drive & Site Entrance

Movement
Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Intersection: 3: Whipple Drive & Site Exit

Movement	WB
Directions Served	LR
Maximum Queue (ft)	30
Average Queue (ft)	9
95th Queue (ft)	32
Link Distance (ft)	458
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 4: North Main Street & Givens Lane/Mountain Breeze Drive

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	68	54	52	50
Average Queue (ft)	19	19	9	2
95th Queue (ft)	49	49	37	17
Link Distance (ft)	689	778	1358	764
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Network Summary

Network wide Queuing Penalty: 0

Intersection: 1: North Main Street & Whipple Drive/Commercial Access

Movement	EB	WB	NB
Directions Served	LTR	LTR	LT
Maximum Queue (ft)	43	52	102
Average Queue (ft)	26	23	37
95th Queue (ft)	44	48	81
Link Distance (ft)	1106	1157	1040
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 2: Whipple Drive & Site Entrance

Movement
Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Intersection: 3: Whipple Drive & Site Exit

Movement	WB
Directions Served	LR
Maximum Queue (ft)	30
Average Queue (ft)	8
95th Queue (ft)	30
Link Distance (ft)	458
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 4: North Main Street & Givens Lane/Mountain Breeze Drive

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	53	54	117	30
Average Queue (ft)	26	23	23	4
95th Queue (ft)	51	46	78	20
Link Distance (ft)	689	778	1358	764
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Network Summary

Network wide Queuing Penalty: 0
