Ashville Residential Developments

Traffic Impact Study

Prepared for: Maronda Homes Inc. of Ohio and D.R. Horton

March 28, 2022

6612 Singletree Drive
Columbus, OH 43229
614.656.2424
www.cmtran.com

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I. Purpose of Report & Study Objectives

The purpose of this traffic analysis and report is to document the potential traffic impacts of a proposed residential development located in Ashville, Ohio. This traffic impact study (TIS) is required by the Village of Ashville as part of the development approval process.

II. Proposed Development

A. Off-Site Developments

The study area includes the proposed site access points and the intersections of SR-752 and St. Paul Road with Ashville Pike. The surrounding area includes residential developments to the northeast and south, and undeveloped land in all other directions.

B. On-Site Development

Location

The site is located on both sides of Ashville Pike. The site is bounded by St. Paul Road to the north, railroad tracks to the west, Lockbourne Eastern Road to the east, and residential developments to the south. **Figure 1** shows the location of the proposed site in central Ohio and **Figure 2** shows the study area.

Figure 1 – Location in Central Ohio

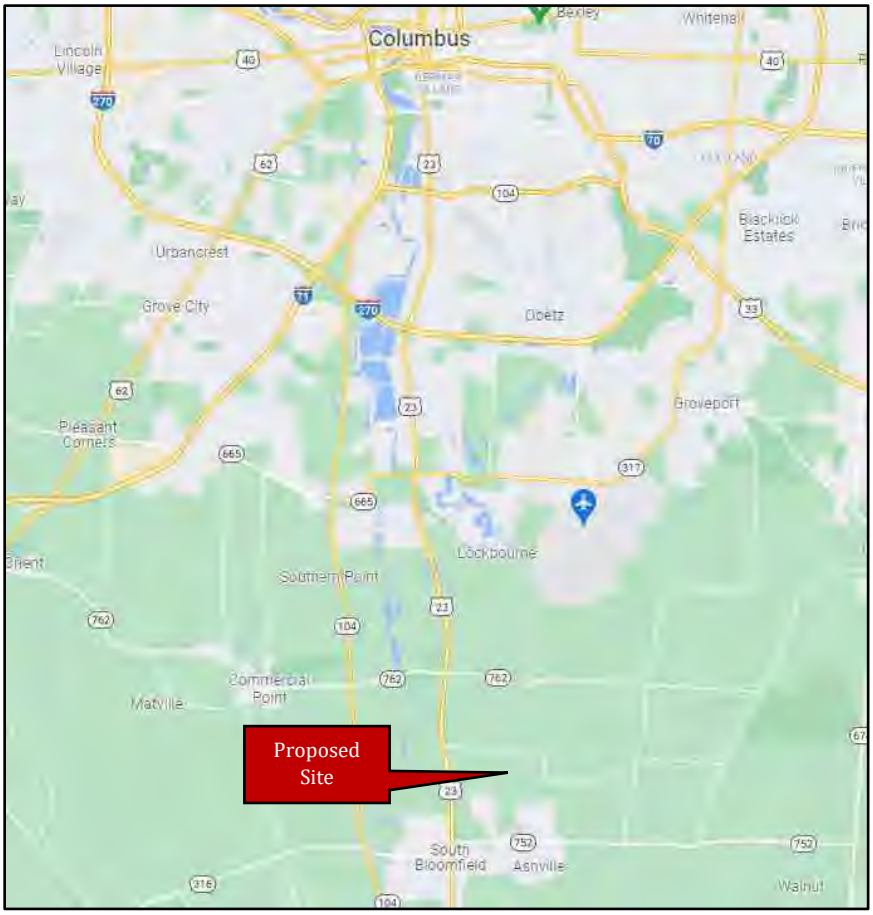
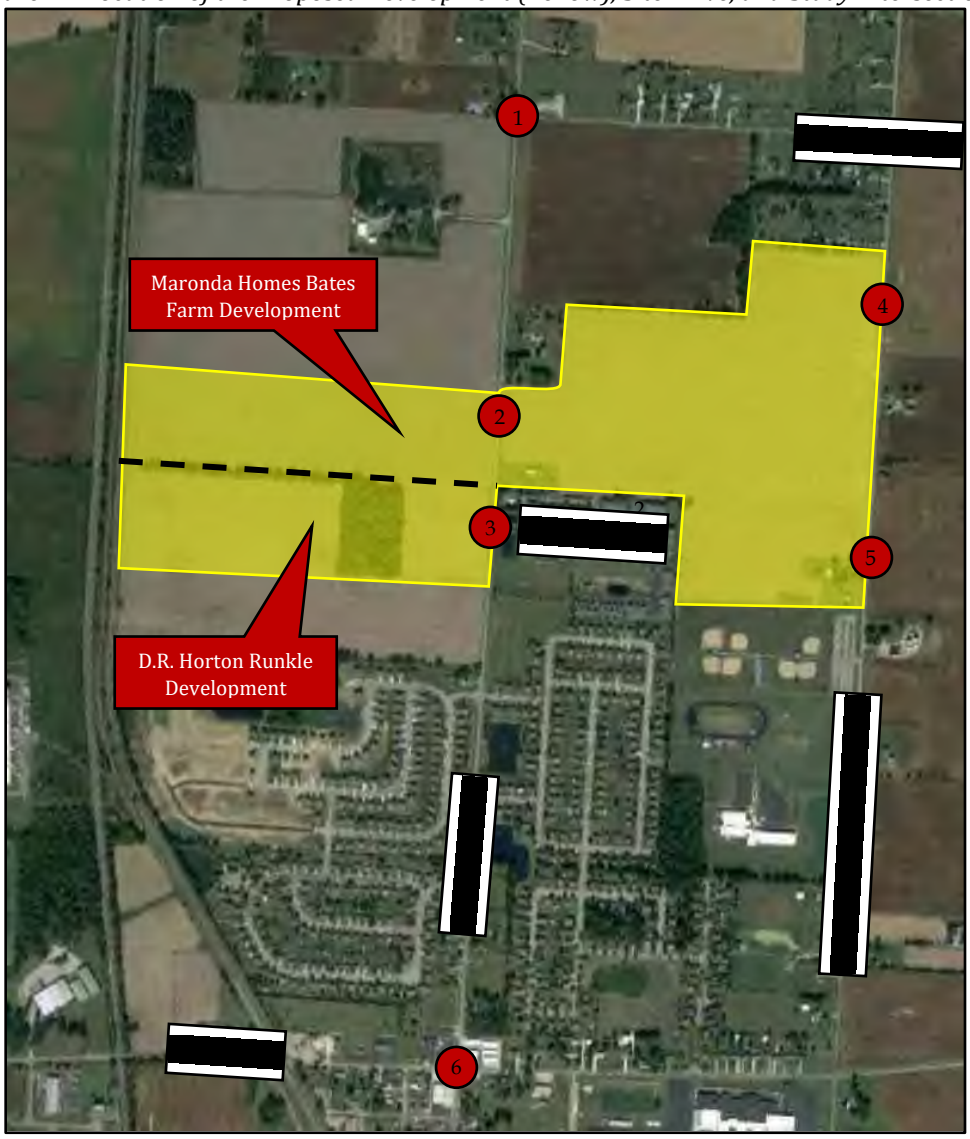


Figure 2 – Location of the Proposed Development (Yellow), Site Drive, and Study Intersections



Land Use & Intensity

The site is currently mostly undeveloped farmland with a few single-family homes. The site is comprised of two developments: the D.R. Horton Runkle development and the Maronda Homes Bates Farm development. The two developments are proposed to be developed into a total of 625 single-family units and 369 multi-family units. The Maronda Homes Bates Farm development is proposed to include four access points: two, aligned full access points on Ashville Pike, north of Long Street, a full access along Lockbourne Eastern Road to the single-family development, and an additional full access along Lockbourne Eastern Road for the planned 369-unit multifamily development. No cross access is proposed between the multifamily development and the single-family development that comprises the Maronda Homes Bates Farm development. The D.R. Horton Runkle development is proposed to have one full access across from Long Street (Lakes at Ashton Village Access). The two developments are proposed to have cross access on the west side of Ashville Pike to allow for shared use of the two site access intersections along Ashville Pike.

The site plan is provided in **Appendix A.**

III. Area Conditions

A. Area of Influence

The study intersections for the proposed development are listed below. Numbers correspond to **Figure 2**.

1. Ashville Pike & St. Paul Road (off-site intersection)
2. Ashville Pike & Site Drive 1/Site Drive 2
3. Ashville Pike & Long Street/Site Drive 3
4. Lockbourne Eastern Road & Site Drive 4
5. Lockbourne Eastern Road & Multifamily Site Drive 5
6. Ashville Pike & SR-752 (off-site intersection)

B. Jurisdictions

The proposed site is located in Ashville, Ohio. All intersections fall under Village of Ashville jurisdiction.

C. Traffic Volumes & Conditions

Peak hour count data was collected at the following intersections/segments with dates specified in parenthesis:

- SR-752 & St. Paul Road (September 30, 2021)
- SR-752 & Ashville Pike (September 30, 2021)
- Ashville Pike & Long Street (April 20, 2021)
- Lockbourne Eastern Road just north of Teays Valley East Middle School (February 16, 2022)

Count data can be found in **Appendix B**.

IV. Projected Traffic

A. Background Traffic

For analysis, the Opening Year of the development is 2022 and the Design, or Horizon Year, is 2032. A growth rate of 2% along Ashville Pike was obtained from ODOT's Transportation Information Mapping System (TIMS). This growth rate was applied to all count data to produce Background, or No Build, volumes for the Opening and Horizon Years.

B. Site Traffic

Trip Generation

Trips for the proposed development were generated using standard Institute of Transportation Engineers (ITE) practices and the Trip Generation Manual, 11th edition, data via the OTISS program[1]. Land Use Code (LUC) 210 – *Single-Family Detached Housing* was used to generate trips for the proposed development. LUC 220 – *Multifamily Housing (Low*

[1] Online Traffic Impact Study Software developed by ITE and Transoft Solutions.

Rise) was used to generate trips for the multifamily development. **Table 1** shows the trip generation of the proposed developments. The full trip generation analysis can be found in **Appendix C**.

Table 1 – Proposed Site Trip Generation Summary

Land Use	Size	AM Peak		PM Peak	
		Entry	Exit	Entry	Exit
210 – Single-Family Detached Housing	625 Units	103	292	351	206
220 – Multifamily Housing (Low-Rise)	369 Units	33	104	113	66

Site traffic was distributed to/from the sites based on count data, knowledge of the surrounding area, and engineering judgement. Site traffic was added to the No Build traffic to produce Build traffic for the Opening and Horizon Years. The full volume calculations can be found in **Appendix D.**

V. Traffic Analysis

A. Turn Lane Warrant Analysis

Turn lane warrant analysis was conducted using standard ODOT turn lane warrant graphs for the stop-controlled study intersections. If a turn lane was warranted in any particular scenario, the length was calculated using methodologies in the ODOT Location and Design (L&D) Manual. Ashville Pike has a posted speed limit of 35 MPH at all study intersections except St. Paul Road, outside of the limits of Ashville where the speed limit is 55 MPH. Turn lane analysis for the southbound approach of the Ashville Pike & Site Drive 1/Site Drive 2 intersection was analyzed with a 55 MPH design speed. A design speed of 40 MPH was utilized for all turn lane length calculations with a 35 MPH posted speed limit. The two study intersections along Lockbourne Eastern Road utilized a 55 MPH design speed.

B. Signal Warrant Analysis

Signal warrant analysis was conducted at the Ashville Pike & Site Drive 1/Site Drive 2 intersection for the 2032 Build scenario. Peak hour, four-hour, and eight-hour warrants were evaluated per the Ohio Manual of Uniform Traffic Control Devices (OMUTCD).

C. Capacity Analysis

Highway Capacity Software (HCS) version 7.8.5 was used for capacity analysis. A minimum LOS of D for the overall intersection/approaches and for each individual movement during peak traffic hours was considered acceptable at the study intersections. If an intersection fell below these criteria, mitigation strategies were developed to bring each movement or intersection back to an acceptable LOS. A roundabout was also analyzed at Site Drive 1/Site Drive 2 as a possible intersection control.

D. Sight Distance

Sight distance triangle exhibits were developed for each proposed access point, except for the multifamily development access, based on criteria outlined in the ODOT L&D Manual. The exact location of the multifamily development access was not known at the time of this TIS. All exhibits were created with design speeds 5 MPH over the posted speed limits.

VI. Results

A. Turn Lane Warrant Analysis

Results of the turn lane warrant analysis show the following turn lanes meet warrants for the listed scenarios:

- Ashville Pike & Site Drive 1/Site Drive 2
  - 285' southbound left turn lane (all Build scenarios)
  - 285' southbound right turn lane (all Build scenarios)
- Ashville Pike & Long Street/Site Drive 3
  - 215' northbound left turn lane (all Build scenarios)
  - 125' southbound left turn lane (Horizon Year Build scenario)
- Ashville Pike & St. Paul Road
  - 315' southbound left turn lane (all scenarios)
  - 285' northbound right turn lane (all scenarios except Opening Year No Build)

All turn lane lengths are inclusive of a 50' diverging taper. The full turn lane warrant analysis and turn lane length analysis can be found in **Appendix E.**

B. Signal Warrant Analysis

Results of the signal warrant analysis at Ashville Pike & Site Drive 1/Site Drive 2 shows that a signal is not warranted at the intersection. The full signal warrant analysis can be found in **Appendix F.**

C. Capacity Analysis

Results of the capacity analysis for the study intersections can be seen in **Table 2**. Warranted turn lanes were included in the analysis. The full capacity analysis can be found in **Appendix G.**

Table 2 – Capacity Analysis Summary (LOS/delay)

Intersection (Control Type, Intersection #[2])	Approach / Movement	Opening Year (2022)				Horizon Year (2032)			
		AM No Build	AM Build	PM No Build	PM Build	AM No Build	AM Build	PM No Build	PM Build
Ashville Pike & St. Paul Road (Stop-Control, 1)	WB	B/12.0	C/15.1	B/14.5	C/19.6	B/13.4	C/16.9	C/17.4	D/25.4
	SB Left	A/8.1	A/8.6	A/7.8	A/8.2	A/8.3	A/8.9	A/7.9	A/8.4
Ashville Pike & Site Drive 1/ Site Drive 2 (Stop-Control, 2)	EB		C/17.4		C/23.2		C/20.3		D/28.4
	WB		C/15.2		C/18.1		C/17.2		C/21.2
	NB Left		A/7.7		A/8.7		A/7.8		A/9.0
	SB Left		A/8.2		A/8.0		A/8.4		A/8.0
Ashville Pike & Site Drive 1/ Site Drive 2 (Roundabout, 2)	EB		A/4.3		A/5.9		A/4.5		A/6.5
	WB		A/5.6		A/4.2		A/6.1		A/4.4
	NB		A/6.2		A/5.2		A/6.9		A/5.5
	SB		A/4.5		A/8.3		A/4.8		A/9.6
	Total		**A/5.5**		**A/7.1**		**A/6.0**		**A/8.0**
Ashville Pike & Long Street/ Site Drive 3 (Stop-Control, 3)	EB		B/14.5		C/18.0		C/16.2		C/20.9
	WB	B/11.1	B/12.5	B/11.9	C/18.2	B/11.8	B/13.6	B/12.8	C/20.8
	NB Left		A/7.9		A/8.6		A/8.0		A/8.9
	SB Left	A/7.9	A/8.0	A/7.7	A/7.8	A/8.1	A/8.2	A/7.7	A/7.9
Lockbourne Eastern Road & Site Drive 4 (Stop-Control, 4)	EB		B/10.2		A/9.8		B/10.5		A/10.0
	NB Left		A/7.5		A/7.6		A/7.5		A/7.6
	SB Left		A/7.6		A/7.4		A/7.7		A/7.4
Lockbourne Eastern Road & Multifamily Site Drive 5 (Stop-Control, 5)	EB		B/10.7		B/10.4		B/11.1		B/10.6
	NB Left		A/7.5		A/7.7		A/7.6		A/7.7
	SB Left		A/7.5		A/7.4		A/7.6		A/7.4
Ashville Pike & SR-752 (Signal, 6)	EB	C/25.3	C/25.1	C/26.0	C/26.8	C/25.2	C/25.0	C/27.2	C/32.8
	WB	C/25.4	C/25.8	C/26.5	C/28.0	C/25.2	C/25.6	C/28.3	C/32.4
	NB	C/24.1	C/24.4	C/23.5	C/24.6	C/25.5	C/25.8	C/24.3	C/24.9
	SB	C/21.5	C/23.4	C/25.6	C/30.4	C/22.8	C/24.7	C/28.8	C/35.0
	Total	**C/24.0**	**C/24.5**	**C/25.5**	**C/27.8**	**C/24.6**	**C/25.2**	**C/27.4**	**C/31.9**

As seen above in **Table 2**, all intersections operate with acceptable LOS in all scenarios.

D. Sight Distance

Sight distance exhibits for the proposed site drives can be seen in **Appendix H**. No sight distance issues were noted.

VII. Recommendations and Conclusions

No Build Improvements

No Build improvements are improvements that are needed for already existing traffic, prior to any traffic from the proposed development.

Based on the results of the turn lane warrant analysis, capacity analysis, and sight distance analysis, a 315' southbound left turn lane at Ashville Pike & St. Paul Road is warranted in all scenarios and is recommended to be implemented as a No Build improvement. Additionally, a 285' northbound right turn lane is recommended as a No Build improvement. While this warrant does not meet in the No Build condition on its own, the warrant does meet in the Build condition when additional through traffic is added to the intersection. As the driving factor for the warrant, the number of right turning vehicles, will not be affected by the proposed development, the turn lane is recommended to be installed as a No Build

[2] Intersection numbers correspond to Figure 2.

improvement as the warrant would be met eventually due to natural growth in the area and is not the result of additional turning vehicles generated by the proposed development.

Build Improvements

Build improvements refer to improvements that are the result of the added traffic by the proposed development.

The following improvements would be required as Build improvements. Both stop-control and roundabout control improvements are provided at the Ashville Pike & Site Drive 1/Site Drive 2 intersection should the Village consider a roundabout as regional improvement.

- Ashville Pike & Site Drive 1/Site Drive 2
  - Stop-Control
    - 285' southbound left turn lane
    - 285' southbound right turn lane
  - Roundabout Control
    - Single circulating lane with single-lane approaches
- Ashville Pike & Long Street/Site Drive 3
  - 215' northbound left turn lane
  - 125' southbound left turn lane

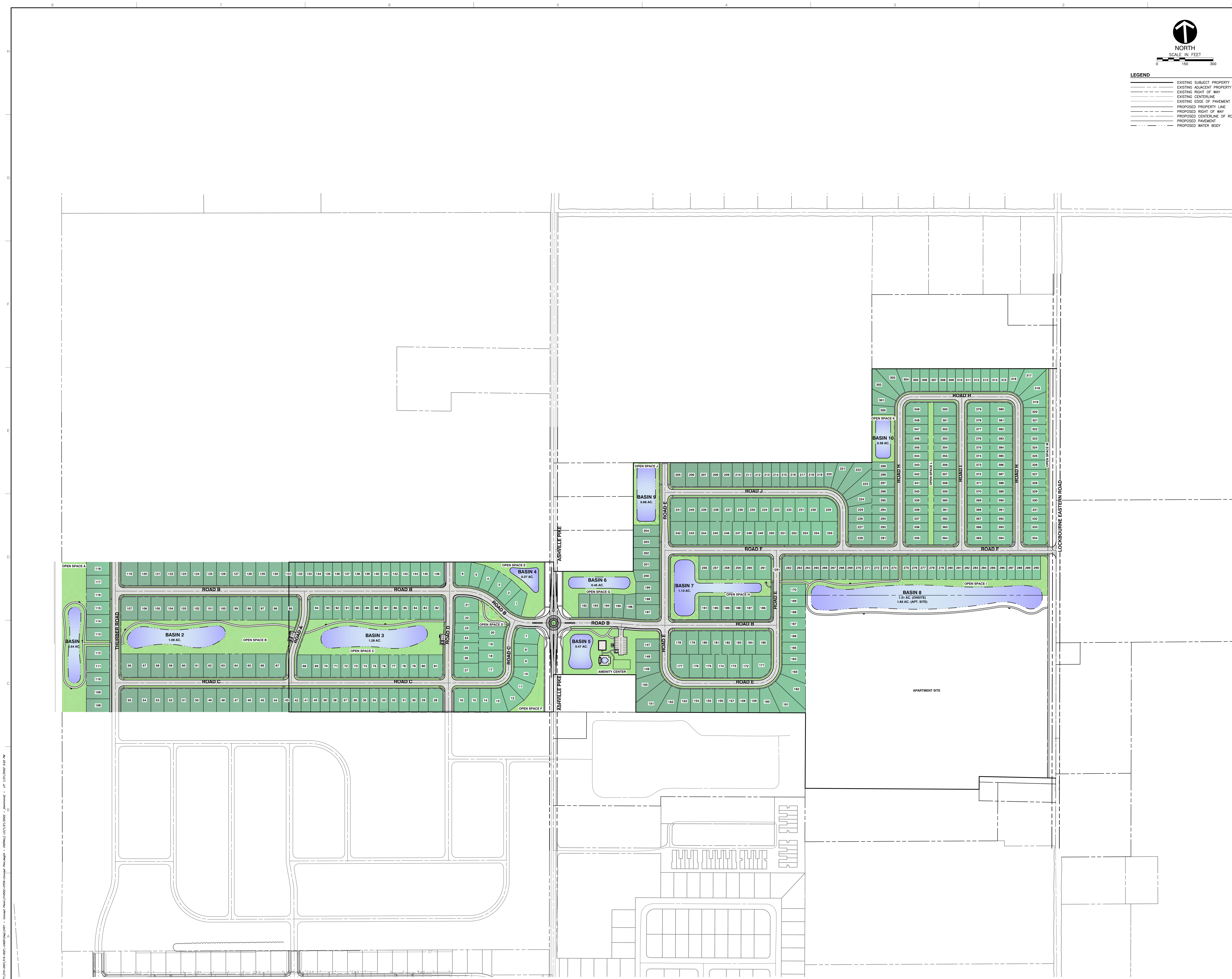
A conceptual exhibit of the recommended improvements can be found in **Appendix I**. In the stop-control scenario (no roundabout), a two-way left turn lane is shown between the Ashville Pike intersections with Site Drive 1/Site Drive 2 and Long Street/Site Drive 3 in lieu of dedicated left turn lanes due to the proximity of the intersections. No improvements are required or recommended for Site Drive 4 or the Multifamily Site Drive 5.

VIII. Appendices

Appendix A – Site Plan
Appendix B – Count Data
Appendix C – Trip Generation
Appendix D – Volume Calculations
Appendix E – Turn Lane Warrant & Length Analysis
Appendix F – Signal Warrant Analysis
Appendix G – Capacity Analysis
Appendix H – Sight Distance Analysis
Appendix I – Improvements Exhibit

Appendix A
Site Plan

Appendix A



REVISION RECORD

NO	DATE	DESCRIPTION

REVISION RECORD

NO	DATE	DESCRIPTION

Civil & Environmental Consultants, Inc.
250 W. Old Wilson Bridge Road · Suite 250 · Worthington, OH 43085
614-540-6633 · 888-598-6808
www.cecinc.com

MARONDA HOMES INC. OF OHIO
BATES PROPERTY
VILLAGE OF ASHVILLE
PICKAWAY COUNTY, OHIO

OVERALL SITE PLAN

DATE:	JANUARY 2022	DRAWN BY:	JTH
DWG SCALE:	1"=150'	CHECKED BY:	TJV
PROJECT NO:	314-502		
APPROVED BY:			DRAFT

DRAWING NO.:
CP-04
SHEET 4 OF 4

PRELIMINARY PLAN/PLAT
FOR
BATES FARM
VILLAGE OF ASHVILLE, PICKAWAY COUNTY, OHIO
JANUARY 2022

ENGINEER / SURVEYOR

CIVIL & ENVIRONMENTAL CONSULTANTS, INC.
250 OLD WILSON BRIDGE ROAD, SUITE 250
WORTHINGTON, OH 43085
CONTACT: TIM VOLCHKO, P.E.
PHONE: (614) 540-6633

DEVELOPER

MARONDA HOMES INC. OF OHIO
3148 BROADWAY
GROVE CITY, OHIO 43123
CONTACT: JOHN KONOVODOFF
PHONE: (312) 505-4419
EMAIL: JKONOVODOFF@MARONDA.COM

PROJECT DESCRIPTION

PRELIMINARY PLAN FOR THE DEVELOPMENT OF BATES FARM SHOWING CONCEPTUAL LOT CONFIGURATION, BASIN LOCATIONS AND FOOTPRINTS, AMENITY CENTER AND PATHS.

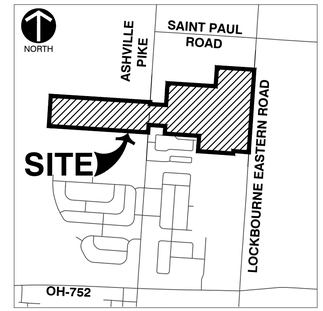
REFERENCES

1. EXISTING TOPOGRAPHIC INFORMATION IS BASED ON SURVEY PREFORMED BY CIVIL & ENVIRONMENTAL CONSULTANTS, INC IN OCTOBER 2021.
2. EXISTING BASE MAP INFORMATION PER PICKAWAY COUNTY AUDITOR ACCESSED SEPTEMBER 2021.
3. ALL INFORMATION SHOWN BY OTHERS IS FOR REFERENCE ONLY.

SITE STATISTICS

	REQUIRED	PROVIDED
EXISTING SITE	–	146.04 AC.
PROPOSED ASHVILLE PIKE RIGHT-OF-WAY	–	1.55 AC.
LOCKBOURNE E. RIGHT-OF-WAY DROP	–	2.26 AC.
PROPOSED GROSS SITE AREA (TOTAL)	–	142.23 AC.
APARTMENT SITE GROSS SITE AREA	–	30.15 AC.
SINGLE FAMILY SITE GROSS SITE AREA	–	112.08 AC.
SINGLE FAMILY LOT ACREAGE	–	67.35 AC.
SINGLE FAMILY LOT DENSITY PER G.S.A.	–	3.51 UNITS/AC.
PROPOSED SINGLE FAMILY RIGHT-OF-WAY	–	22.51 AC.
AMENITY CENTER	–	3.86 AC.
OPEN SPACE ACRES*	16.73 AC. (15% OF TOTAL SINGLE FAMILY SITE AREA)	18.36 AC. (16.5%)
BASIN ACREAGE (SF)*	5.58 AC. (5% OF TOTAL SINGLE FAMILY SITE AREA)	7.07 AC.
BASIN ACREAGE (APT)	–	1.83 AC.
BASIN ACREAGE (TOT.)	–	8.90 AC.

*SINGLE FAMILY BASIN ACREAGE IS INCLUDED IN OPEN SPACE ACREAGE



VICINITY MAP
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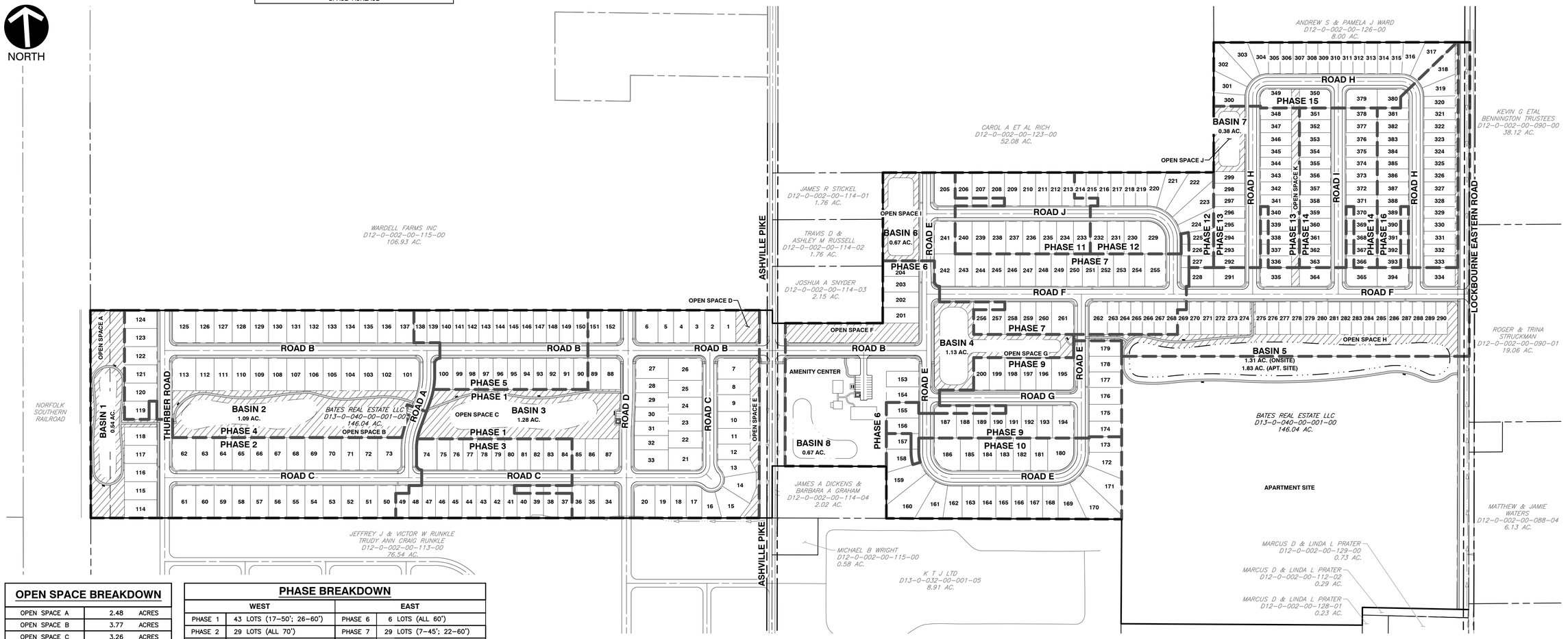

OPEN SPACE BREAKDOWN

OPEN SPACE A	2.48	ACRES
OPEN SPACE B	3.77	ACRES
OPEN SPACE C	3.26	ACRES
OPEN SPACE D	0.26	ACRES
OPEN SPACE E	0.46	ACRES
OPEN SPACE F	0.89	ACRES
OPEN SPACE G	1.97	ACRES
OPEN SPACE H	2.75	ACRES
OPEN SPACE I	1.08	ACRES
OPEN SPACE J	0.69	ACRES
OPEN SPACE K	0.52	ACRES
OPEN SPACE L	0.24	ACRES
TOTAL	18.37	ACRES

PHASE BREAKDOWN

WEST		EAST	
PHASE 1	43 LOTS (17-50'; 26-60')	PHASE 6	6 LOTS (ALL 60')
PHASE 2	29 LOTS (ALL 70')	PHASE 7	29 LOTS (7-45'; 22-60')
PHASE 3	24 LOTS (ALL 50')	PHASE 8	29 LOTS (ALL 45')
PHASE 4	32 LOTS (ALL 70')	PHASE 9	22 LOTS (ALL 60')
PHASE 5	24 LOTS (ALL 50')	PHASE 10	24 LOTS (ALL 60')
		PHASE 11	16 LOTS (3-45'; 13-60')
		PHASE 12	18 LOTS (14-45'; 4-60')
		PHASE 13	21 LOTS (ALL 45')
		PHASE 14	26 LOTS (ALL 45')
		PHASE 15	22 LOTS (ALL 45')
		PHASE 16	29 LOTS (ALL 45')
TOTAL	152 LOTS (WEST)	TOTAL	242 LOTS (EAST)

DRAWING INDEX

NUMBER	DESC.	TITLE
1	C000	COVER SHEET
2	C001	TYPICAL SECTIONS
4	C200	SITE LAYOUT PLAN
3	C100	EXISTING CONDITIONS
5	C201	SITE LAYOUT PLAN
6	C500	UTILITY PLAN
7	C501	UTILITY PLAN

INDEX MAP
SCALE IN FEET
0 200 400

LOT LEGEND

LOT DIMENSIONS	PAD DIMENSIONS	SETBACKS			NUMBER OF LOTS
		FRONT	SIDE	REAR	
45'W X 120'L	30'W X 65'L	30'	5' MIN. 10' TOTAL	25'	151
50'W X 120'L	40'W X 65'L	30'	5' MIN. 10' TOTAL	25'	65
60'W X 125'L	40'W X 65'L	30'	7.5' MIN. 15' TOTAL	25'	117
70'W X 125'L	55'W X 65'L	30'	7.5' MIN. 15' TOTAL	25'	61
				TOTAL NUMBER OF LOTS:	394

OHIO811.org Before You Dig

REVISION RECORD

NO	DATE	DESCRIPTION

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250 Old Wilson Bridge Road · Suite 250 · Worthington, OH 43085
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MARONDA HOMES INC. OF OHIO
PRELIMINARY PLAN/PLAT
BATES FARM
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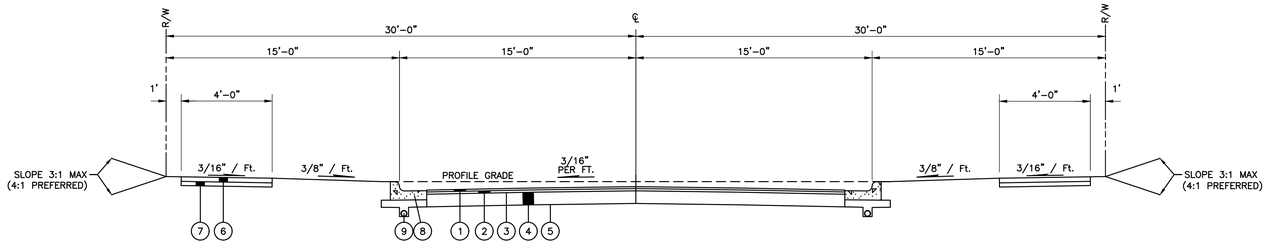
PICKAWAY COUNTY, OHIO

COVER SHEET

DATE:	JANUARY 2022
DWG SCALE:	1"=200'
PROJECT NO:	314-502
APPROVED BY:	*TJV
DRAWN BY:	JTH
CHECKED BY:	JTH
*HAND SIGNATURE ON FILE	

DRAWING NO.: C000
SHEET 1 OF 7

P:\310-0301\314-502\-CAD\Dwg\Civil2 - Preliminary Plan\314502-Civil2-C000-Cover Sheet, Typical Section, Site Layout.dwg[1 COVER SHEET] LS(1/21/2022 - jhammond) - LP: 1/21/2022 3:16 PM



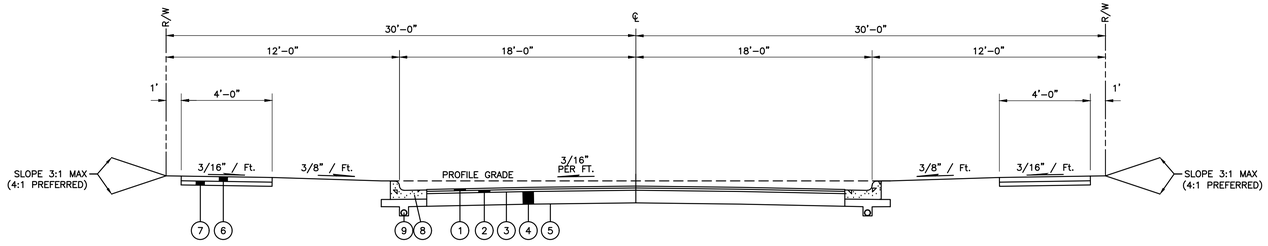
① ITEM 448 – 1 1/4" ASPHALT CONCRETE
② ITEM 448 – 2" ASPHALT CONCRETE
③ ITEM 408 – BITUMINOUS PRIME COAT (0.35 GAL. PER SY)
④ ITEM 304 – 10" AGGREGATE BASE
⑤ ITEM 204 – SUBGRADE COMPACTION
⑥ ITEM 608 – 4" CONCRETE WALK AS PER STD DWG 2300
⑦ ITEM 304 – 4" AGGREGATE BASE
⑧ ITEM 609 – CURB & GUTTER
⑨ ITEM 605 – 4" PIPE UNDERDRAIN

TYPICAL 30' SECTION (60' R/W)

NOT TO SCALE
ROAD A, ROAD C, ROAD E, ROAD G, ROAD H, ROAD I, ROAD J

NOTE:

FINAL PAVEMENT DESIGN SHALL BE PER THE FINAL ENGINEERING PLANS. PAVEMENT THICKNESS SHOWN HERE IS BASED ON SIMILAR PROJECTS AND IS TO BE USED AS REFERENCE ONLY.



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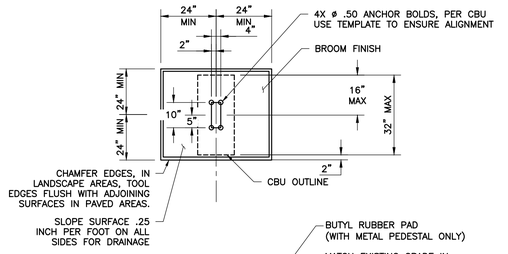
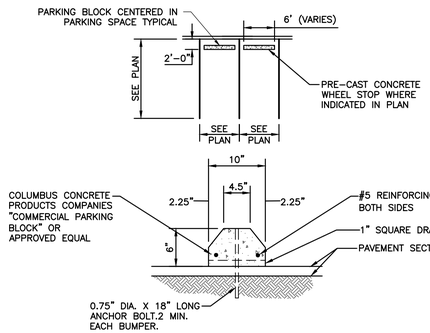
⑦ ITEM 304 – 4" AGGREGATE BASE
⑧ ITEM 609 – CURB & GUTTER
⑨ ITEM 605 – 4" PIPE UNDERDRAIN

TYPICAL 36' SECTION (60' R/W)

NOT TO SCALE
THURBER ROAD, ROAD B, ROAD D, ROAD E, ROAD F





PARKING BLOCK DETAIL

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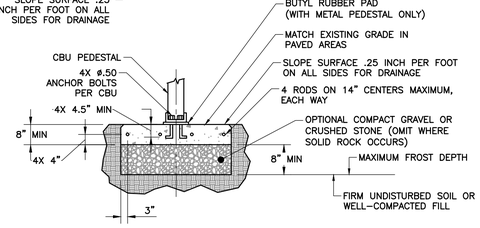


NOTES:

1. CONCRETE SHALL HAVE COMPRESSIVE STRENGTH OF 3000 PSI @ 28 DAYS, CONTAIN 4% MIN–6% MAX AIR ENTRAINMENT AND BE PLACED WITH A 3.50–4.50 SLUMP IN ACCORDANCE WITH ACI 301.
2. REINFORCING STEEL RODS SHALL CONFORM TO ASTM A615, GRADE 60.
3. ANCHOR BOLTS SHALL CONFORM TO ASTM A193, GRADE B8M, TYPE 315 STAINLESS STEEL.

CLUSTER BOX UNIT PAD DETAIL

NOT TO SCALE

REVISION RECORD

NO	DATE	DESCRIPTION

Civil & Environmental Consultants, Inc.
250 Old Wilson Bridge Road · Suite 250 · Worthington, OH 43085
614-540-6633 · 888-598-6808
www.cecinc.com

MARONDA HOMES INC. OF OHIO
PRELIMINARY PLAN/PLAT
BATES FARM
VILLAGE OF ASHVILLE
PICKAWAY COUNTY, OHIO

TYPICAL SECTIONS

DATE:	JANUARY 2022
DWG SCALE:	AS NOTED
PROJECT NO:	314-502
DRAWN BY:	JTH
CHECKED BY:	JTH
APPROVED BY:	TJW

*HAND SIGNATURE ON FILE

DRAWING NO.:
C001
SHEET 2 OF 7

P:\310-000\314-2021-CA001\Dwg\C102 - Preliminary Plan\314502-CV02-C000-Cover Sheet, Typical Section, Site Layout.dwg[2 TYPICAL SECTIONS] LS(1/21/2022 - jhammond) - LP: 1/21/2022 3:16 PM

REVISION RECORD

NO	DATE	DESCRIPTION

CEC
Civil & Environmental Consultants, Inc.
250 Old Wilson Bridge Road · Suite 250 · Worthington, OH 43085
614-540-6633 · 888-598-6808
www.cecinc.com

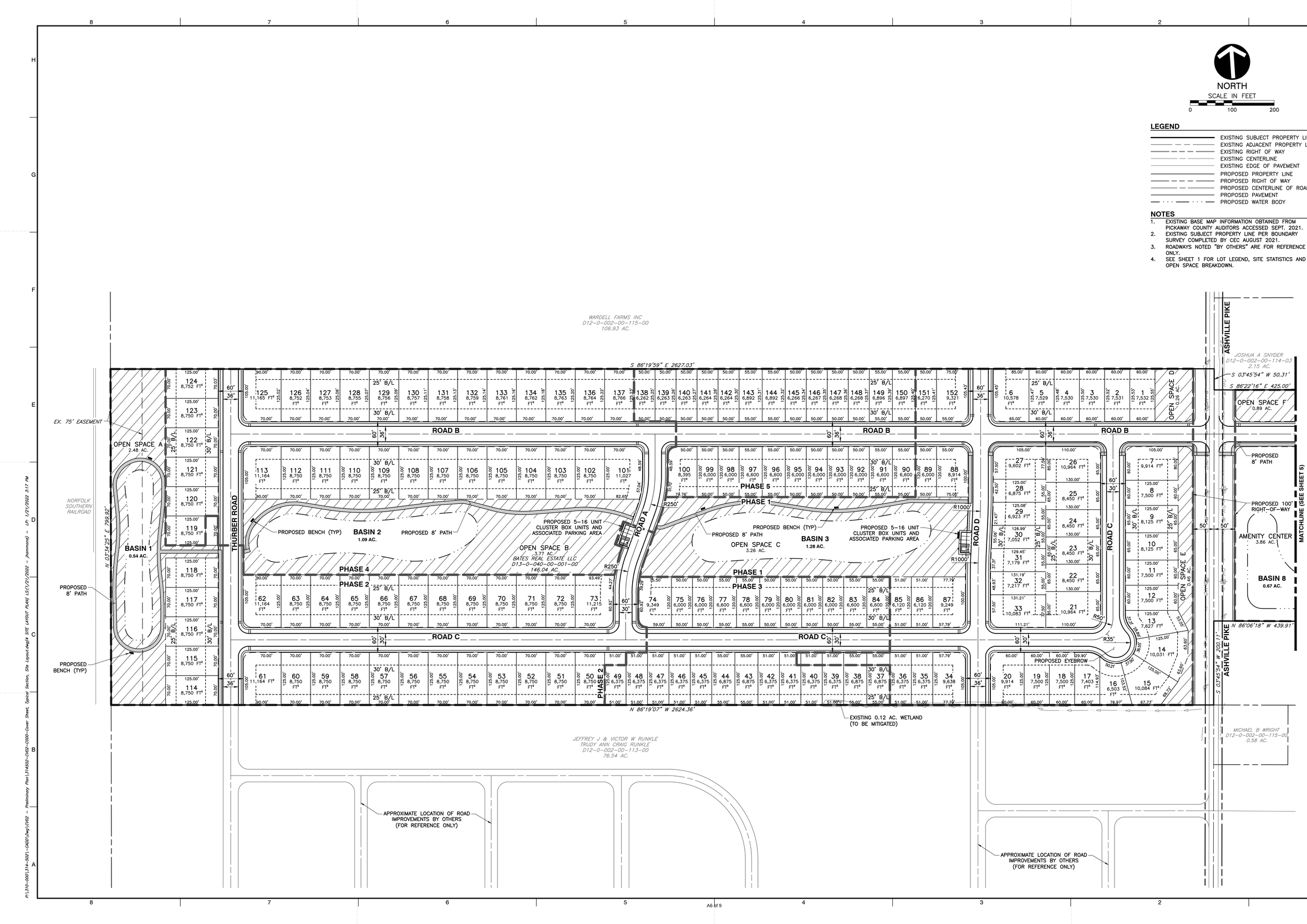
MARONDA HOMES INC. OF OHIO
PRELIMINARY PLAN/PLAT
BATES FARM
VILLAGE OF ASHVILLE
PICKAWAY COUNTY, OHIO

EXISTING CONDITIONS

DATE:	JANUARY 2022
DWG SCALE:	1"=200'
PROJECT NO:	314-502
APPROVED BY:	*HAND SIGNATURE ON FILE
DRAWN BY:	JTH
CHECKED BY:	JTH
	TJW

DRAWING NO.:
C100
SHEET 3 OF 7

P:\310-2001\314-502\--CAD\Dwg\CVSD - Preliminary Plan\314502-CVSD-C100-Existing Conditions.dwg\3 EXISTING CONDITIONS\ LS(1/19/2022 - jhammond) - LP: 1/21/2022 3:16 PM



REVISION RECORD

NO	DATE	DESCRIPTION

CEC
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MARONDA HOMES INC. OF OHIO
PRELIMINARY PLAN/PLAT
BATES FARM
VILLAGE OF ASHVILLE
PICKAWAY COUNTY, OHIO

SITE LAYOUT PLAN

DATE:	JANUARY 2022
DWG SCALE:	1"=100'
PROJECT NO:	314-502
DRAWN BY:	JTH
CHECKED BY:	JTH
APPROVED BY:	TJV

*HAND SIGNATURE ON FILE

DRAWING NO.:
C200
SHEET 4 OF 7

P:\310-0001\314-5021-CAD\Dwg\CV02 - Preliminary Plan\314502-CV02-C000-Cover Sheet, Typical Section, Site Layout.dwg\#4 SITE LAYOUT PLAN LS(1/21/2022 - jhammond) - LP: 1/21/2022 3:17 PM

MATCHLINE (SEE BELOW)

MATCHLINE (SEE ABOVE)

MATCHLINE (SEE SHEET 4)

BATES REAL ESTATE LLC
D13-0-040-00-001-00
146.04 AC.

APARTMENT SITE
30.15 AC.
369 UNITS (12 UNITS/AC.)

45' RIGHT-OF-WAY DROP FROM CENTERLINE

MARCUS D & LINDA L PRATER
D12-0-002-00-112-02
0.29 AC.

MARCUS D & LINDA L PRATER
D12-0-002-00-128-01
0.23 AC.

MARCUS D & LINDA L PRATER
D12-0-002-00-129-00
0.73 AC.

CRAZY HORSE ENTERPRISES INC
D12-0-002-00-088-05
4.00 AC.

MATTHEW & JAMIE WATERS
D12-0-002-00-088-04
6.13 AC.

ANDREW S & PAMELA J WARD
D12-0-002-00-126-00
8.00 AC.

CAROL A ET AL RICH
D12-0-002-00-123-00
52.08 AC.

JAMES R STICKEL
D12-0-002-00-114-01
1.76 AC.

TRAVIS D & ASHLEY M RUSSELL
D12-0-002-00-114-02
1.76 AC.

JOSHUA A SNYDER
D12-0-002-00-114-03
2.15 AC.

JAMES A DICKENS & BARBARA A GRAHAM
D12-0-002-00-114-04
2.02 AC.

K T J LTD
D13-0-032-00-001-05
8.91 AC.

KEVIN G ETAL BENNINGTON TRUSTEES
D12-0-002-00-090-00
38.12 AC.

ROGER & TRINA STRUCKMAN
D12-0-002-00-090-01
19.06 AC.

LOCKEAST LLC
D12-0-002-00-089-00
0.22 AC.

BASIN 4
1.13 AC.

BASIN 5
1.31 AC. (ONSITE)
1.83 AC. (APT. SITE)

BASIN 6
0.67 AC.

BASIN 7
0.38 AC.

BASIN 8
0.67 AC.

OPEN SPACE F
0.89 AC.

OPEN SPACE G
1.97 AC.

OPEN SPACE H
2.75 AC.

OPEN SPACE J
0.69 AC.

OPEN SPACE K
0.52 AC.

OPEN SPACE L
0.24 AC.

OPEN SPACE
1.08 AC.

AMENITY CENTER
3.86 AC.

POOL & CABANA

BARK PARK

15-16 UNIT & 1-8 UNIT CLUSTER BOX UNITS AND ASSOCIATED PARKING

PROPOSED BENCH (TYP)

PROPOSED 8' PATH

EXISTING 40' R/W

45' RIGHT-OF-WAY DROP FROM CENTERLINE

PROPOSED 8' PATH

ROAD B
ROAD E
ROAD F
ROAD G
ROAD H
ROAD I
ROAD J
LOCKBOURNE EASTERN ROAD

PHASE 6
PHASE 7
PHASE 9
PHASE 10
PHASE 11
PHASE 12
PHASE 13
PHASE 14
PHASE 15
PHASE 16

NORTH
SCALE IN FEET
0 100 200

LEGEND

- EXISTING SUBJECT PROPERTY LINE
- EXISTING ADJACENT PROPERTY LINE
- EXISTING RIGHT OF WAY
- EXISTING CENTERLINE
- EXISTING EDGE OF PAVEMENT
- PROPOSED PROPERTY LINE
- PROPOSED RIGHT OF WAY
- PROPOSED CENTERLINE OF ROAD
- PROPOSED PAVEMENT
- PROPOSED WATER BODY

NOTES

1. EXISTING BASE MAP INFORMATION OBTAINED FROM PICKAWAY COUNTY AUDITORS ACCESSED SEPT. 2021.
2. EXISTING SUBJECT PROPERTY LINE PER BOUNDARY SURVEY COMPLETED BY CEC AUGUST 2021.
3. ROADWAYS NOTED "BY OTHERS" ARE FOR REFERENCE ONLY.
4. SEE SHEET 1 FOR LOT LEGEND, SITE STATISTICS AND OPEN SPACE BREAKDOWN.

REVISION RECORD

NO	DATE	DESCRIPTION

Civil & Environmental Consultants, Inc.
250 Old Wilson Bridge Road · Suite 250 · Worthington, OH 43085
614-540-6633 · 888-598-6808
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MARONDA HOMES INC. OF OHIO
PRELIMINARY PLAN/PLAT
BATES FARM
VILLAGE OF ASHVILLE
PICKAWAY COUNTY, OHIO

SITE LAYOUT PLAN

DATE:	JANUARY 2022
DWG SCALE:	1"=100'
PROJECT NO:	314-502
APPROVED BY:	*HAND SIGNATURE ON FILE
DRAWN BY:	JTH
CHECKED BY:	JTH *TJV

DRAWING NO.: C201
SHEET 5 OF 7

P:\J10-000\314-502\1-CADD\Dwg\CV02 - Preliminary Plan\314502-CV02-COD0-Cover Sheet, Typical Section, Site Layout.dwg(5 SITE LAYOUT PLAN LS) (1/21/2022 - jhammond) - LP: 1/21/2022 3:17 PM

NORTH

SCALE IN FEET

0 100 200

LEGEND

- EXISTING SUBJECT PROPERTY LINE
- EXISTING ADJACENT PROPERTY LINE
- EXISTING RIGHT OF WAY
- EXISTING CENTERLINE
- EXISTING EDGE OF PAVEMENT
- PROPOSED PROPERTY LINE
- PROPOSED RIGHT OF WAY
- PROPOSED CENTERLINE OF ROAD
- PROPOSED PAVEMENT
- PROPOSED WATER BODY
- SAN — PROPOSED SANITARY SEWER
- PROPOSED SANITARY MANHOLE
- PROPOSED SANITARY SERVICE
- W — PROPOSED WATER MAIN
- PROPOSED WATER SERVICE
- PROPOSED FIRE HYDRANT
- ST — PROPOSED STORM SEWER
- PROPOSED STORM MANHOLE
- PROPOSED STORM SEWER INLET
- PROPOSED HEADWALL

WARDELL FARMS INC
D12-0-002-00-115-00
106.93 AC.

JOSHUA A SNYDER
D12-0-002-00-114-03
2.15 AC.

ASHVILLE PIKE

OPEN SPACE F
0.89 AC.

OPEN SPACE D
0.26 AC.

EX. 75' EASEMENT

OPEN SPACE A
2.48 AC.

NORFOLK SOUTHERN RAILROAD

THURBER ROAD

BASIN 1

PROPOSED 8' PATH

BASIN 2

PROPOSED 8' PATH

OPEN SPACE B
3.77 AC.
BATES REAL ESTATE LLC
D13-0-040-00-001-00
146.04 AC.

ROAD A

PROPOSED 8' PATH

OPEN SPACE C
3.26 AC.

BASIN 3

ROAD B

ROAD C

ROAD D

PHASE 1
PHASE 2
PHASE 3
PHASE 4
PHASE 5

OPEN SPACE E
0.46 AC.

AMENITY CENTER
3.86 AC.

BASIN 8

MATCHLINE (SEE SHEET 7)

APPROXIMATE LOCATION OF SANITARY SEWER BY OTHERS (FOR REFERENCE ONLY)

JEFFREY J & VICTOR W RUNKLE
TRUDY ANN CRAIG RUNKLE
D12-0-002-00-113-00
76.54 AC.

APPROXIMATE LOCATION OF ROAD IMPROVEMENTS BY OTHERS (FOR REFERENCE ONLY)

APPROXIMATE LOCATION OF SANITARY SEWER BY OTHERS (FOR REFERENCE ONLY)

APPROXIMATE LOCATION OF ROAD IMPROVEMENTS BY OTHERS (FOR REFERENCE ONLY)

MICHAEL B WRIGHT
D12-0-002-00-115-00
0.58 AC.

REVISION RECORD

NO	DATE	DESCRIPTION

Civil & Environmental Consultants, Inc.
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614-540-6633 · 888-598-6808
www.cecinc.com

MARONDA HOMES INC. OF OHIO
PRELIMINARY PLAN/PLAT
BATES FARM
VILLAGE OF ASHVILLE
PICKAWAY COUNTY, OHIO

UTILITY PLAN

DATE:	JANUARY 2022
DWG SCALE:	1"=100'
PROJECT NO:	314-502
DRAWN BY:	JTH
CHECKED BY:	JTH
APPROVED BY:	*TJV

*HARD SIGNATURE ON FILE

DRAWING NO.: C500

SHEET 6 OF 7

P:\310-000\314-502\-CAD\Dwg\CV02 - Preliminary Plan\314502-CV02-C500-Utility Plan.dwg|6 UTILITY PLAN| LS:(1/21/2022 - jhammond) - LP: 1/21/2022 3:17 PM

MATCHLINE (SEE BELOW)

BATES REAL ESTATE LLC
D13-0-040-00-001-00
146.04 AC.

APARTMENT SITE
30.15 AC.
369 UNITS (12 UNITS/AC.)

MATTHEW & JAMIE WATERS
D12-0-002-00-088-04
6.13 AC.

MARCUS D & LINDA L PRATER
D12-0-002-00-112-02
0.29 AC.

MARCUS D & LINDA L PRATER
D12-0-002-00-128-01
0.23 AC.

MARCUS D & LINDA L PRATER
D12-0-002-00-129-00
0.73 AC.

CRAZY HORSE ENTERPRISES INC
D12-0-002-00-088-05
4.00 AC.

ANDREW S & PAMELA J WARD
D12-0-002-00-126-00
8.00 AC.

CAROL A ET AL RICH
D12-0-002-00-123-00
52.08 AC.

JAMES R STICKEL
D12-0-002-00-114-01
1.76 AC.

TRAVIS D & ASHLEY M RUSSELL
D12-0-002-00-114-02
1.76 AC.

JOSHUA A SNYDER
D12-0-002-00-114-03
2.15 AC.

JAMES A DICKENS & BARBARA A GRAHAM
D12-0-002-00-114-04
2.02 AC.

K T J LTD
D13-0-032-00-001-05
8.91 AC.

KEVIN G ETAL BENNINGTON TRUSTEES
D12-0-002-00-090-00
38.12 AC.

ROGER & TRINA STRUCKMAN
D12-0-002-00-090-01
19.06 AC.

LOCKEAST LLC
D12-0-002-00-089-00
0.22 AC.

MATTHEW & JAMIE WATERS
D12-0-002-00-088-04
6.13 AC.

OPEN SPACE I
1.08 AC.

OPEN SPACE J
0.69 AC.

OPEN SPACE K
0.52 AC.

OPEN SPACE F
0.89 AC.

OPEN SPACE G
1.97 AC.

OPEN SPACE H
2.75 AC.

AMENITY CENTER
3.86 AC.

POOL & CABANA

AMENITY CENTER

BARK PARK

PROPOSED 8' PATH

BASIN 4

BASIN 5

BASIN 6

BASIN 7

BASIN 8

ROAD B

ROAD E

ROAD F

ROAD G

ROAD H

ROAD I

ROAD J

PHASE 6

PHASE 7

PHASE 9

PHASE 10

PHASE 11

PHASE 12

PHASE 13

PHASE 14

PHASE 15

PHASE 16

LOCKBOURNE EASTERN ROAD

MATCHLINE (SEE SHEET 6)

MATCHLINE (SEE ABOVE)

NORTH
SCALE IN FEET
0 100 200

LEGEND

- EXISTING SUBJECT PROPERTY LINE
- EXISTING ADJACENT PROPERTY LINE
- EXISTING RIGHT OF WAY
- EXISTING CENTERLINE
- EXISTING EDGE OF PAVEMENT
- PROPOSED PROPERTY LINE
- PROPOSED RIGHT OF WAY
- PROPOSED CENTERLINE OF ROAD
- PROPOSED PAVEMENT
- PROPOSED WATER BODY
- SAN — PROPOSED SANITARY SEWER
- PROPOSED SANITARY MANHOLE
- PROPOSED SANITARY SERVICE
- W — PROPOSED WATER MAIN
- PROPOSED WATER SERVICE
- PROPOSED FIRE HYDRANT
- ST — PROPOSED STORM SEWER
- PROPOSED STORM MANHOLE
- PROPOSED STORM SEWER INLET
- PROPOSED HEADWALL

REVISION RECORD

NO	DATE	DESCRIPTION

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250 Old Wilson Bridge Road · Suite 250 · Worthington, OH 43085
614-540-6633 · 888-598-6808
www.cecinc.com

MARONDA HOMES INC. OF OHIO
PRELIMINARY PLAN/PLAT
BATES FARM
VILLAGE OF ASHVILLE
PICKAWAY COUNTY, OHIO

UTILITY PLAN

DATE:	JANUARY 2022
DWG SCALE:	1"=100'
PROJECT NO.:	314-502
DRAWN BY:	JTH
CHECKED BY:	JTH
APPROVED BY:	*TJV

*HAND SIGNATURE ON FILE

DRAWING NO.:
C501
SHEET 7 OF 7

P:\310-2021\314-2021-CAD\Dwg\CV02 - Preliminary Plan\314502-CV02-C500-Utility Plan.dwg?? UTILITY PLAN LS(1/21/2022 - jhammond) - LP: 1/21/2022 3:17 PM

Appendix B
Count Data

Appendix B

Ashville Pike & St. Paul Road - TMC

Thu Sep 30, 2021
Full Length (7 AM-9 AM, 4 PM-6 PM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 881160, Location: 39.742179, -82.951237

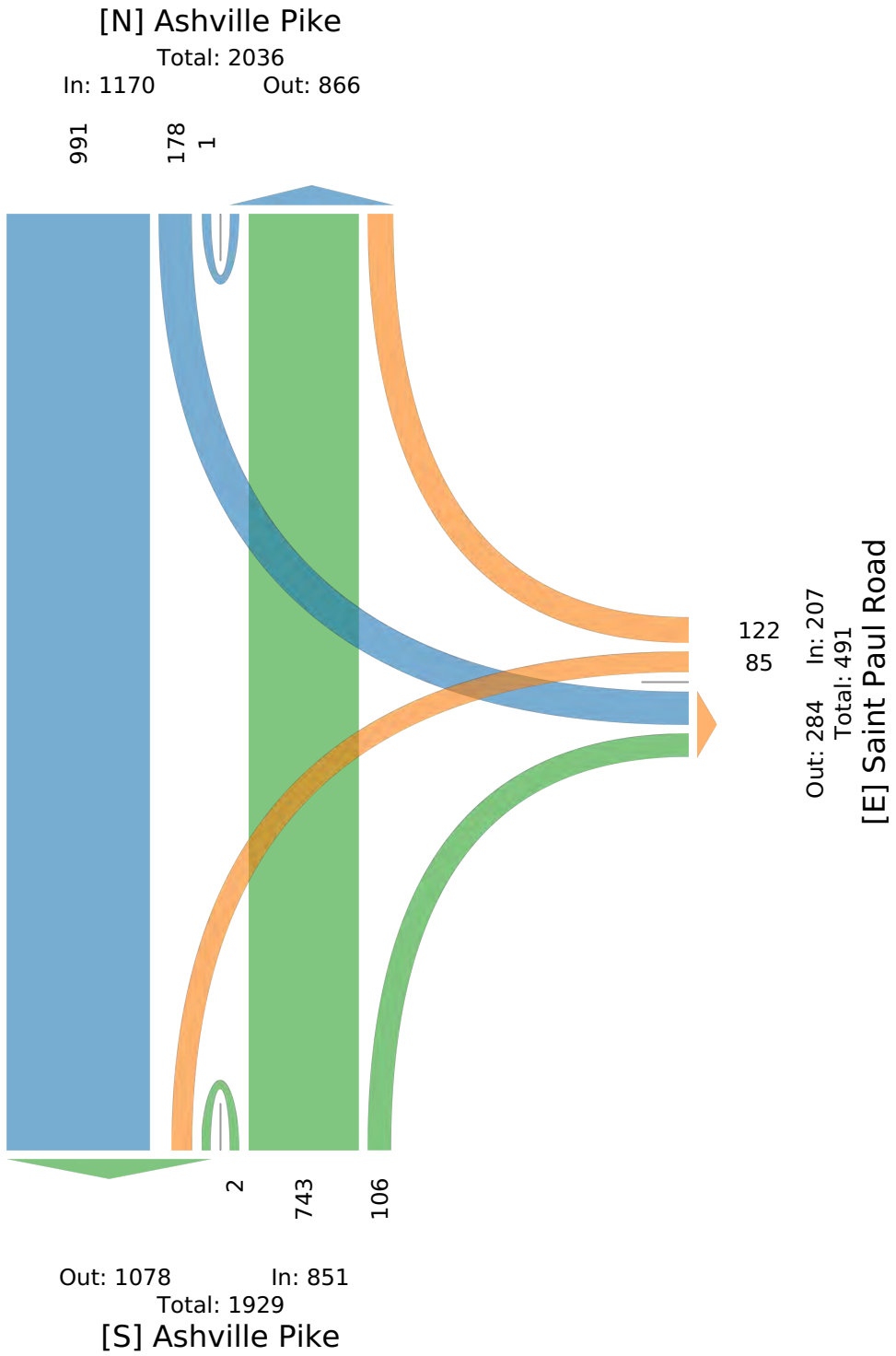
Provided by: Carpenter Marty (CM) Transportation Inc.
6612 Singletree Drive, Columbus, OH, 43229, US

Leg	Saint Paul Road				Ashville Pike				Ashville Pike				
Direction	Westbound				Northbound				Southbound				
Time	L	R	U	**App**	T	R	U	**App**	L	T	U	**App**	**Int**
2021-09-30 7:00AM	6	12	0	**18**	73	21	1	**95**	16	34	0	**50**	**163**
7:15AM	12	20	0	**32**	80	16	0	**96**	11	68	1	**80**	**208**
7:30AM	3	23	0	**26**	73	8	0	**81**	5	21	0	**26**	**133**
7:45AM	6	8	0	**14**	55	2	0	**57**	1	12	0	**13**	**84**
Hourly Total	27	63	0	**90**	281	47	1	**329**	33	135	1	**169**	**588**
8:00AM	0	6	0	**6**	49	4	0	**53**	2	22	0	**24**	**83**
8:15AM	4	3	0	**7**	40	6	0	**46**	2	32	0	**34**	**87**
8:30AM	4	2	0	**6**	47	3	0	**50**	4	29	0	**33**	**89**
8:45AM	4	6	0	**10**	25	5	0	**30**	2	17	0	**19**	**59**
Hourly Total	12	17	0	**29**	161	18	0	**179**	10	100	0	**110**	**318**
4:00PM	6	10	0	**16**	33	3	0	**36**	7	89	0	**96**	**148**
4:15PM	5	5	0	**10**	37	5	0	**42**	20	89	0	**109**	**161**
4:30PM	2	3	0	**5**	37	7	1	**45**	19	88	0	**107**	**157**
4:45PM	6	5	0	**11**	34	5	0	**39**	16	105	0	**121**	**171**
Hourly Total	19	23	0	**42**	141	20	1	**162**	62	371	0	**433**	**637**
5:00PM	7	4	0	**11**	40	2	0	**42**	17	102	0	**119**	**172**
5:15PM	8	2	0	**10**	40	7	0	**47**	14	116	0	**130**	**187**
5:30PM	10	8	0	**18**	42	7	0	**49**	21	94	0	**115**	**182**
5:45PM	2	5	0	**7**	38	5	0	**43**	21	73	0	**94**	**144**
Hourly Total	27	19	0	**46**	160	21	0	**181**	73	385	0	**458**	**685**
Total	85	122	0	**207**	743	106	2	**851**	178	991	1	**1170**	**2228**
% Approach	41.1%	58.9%	0%	**-**	87.3%	12.5%	0.2%	**-**	15.2%	84.7%	0.1%	**-**	-
% Total	3.8%	5.5%	0%	**9.3%**	33.3%	4.8%	0.1%	**38.2%**	8.0%	44.5%	0%	**52.5%**	-
Lights	77	115	0	**192**	722	101	2	**825**	172	955	1	**1128**	2145
% Lights	90.6%	94.3%	0%	**92.8%**	97.2%	95.3%	100%	**96.9%**	96.6%	96.4%	100%	**96.4%**	96.3%
Articulated Trucks	1	2	0	**3**	11	0	0	**11**	2	11	0	**13**	27
% Articulated Trucks	1.2%	1.6%	0%	**1.4%**	1.5%	0%	0%	**1.3%**	1.1%	1.1%	0%	**1.1%**	1.2%
Buses and Single-Unit Trucks	7	5	0	**12**	10	5	0	**15**	4	25	0	**29**	56
% Buses and Single-Unit Trucks	8.2%	4.1%	0%	**5.8%**	1.3%	4.7%	0%	**1.8%**	2.2%	2.5%	0%	**2.5%**	2.5%

*L: Left, R: Right, T: Thru, U: U-Turn

Ashville Pike & St. Paul Road - TMC
Thu Sep 30, 2021
Full Length (7 AM-9 AM, 4 PM-6 PM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 881160, Location: 39.742179, -82.951237

Provided by: Carpenter Marty (CM) Transportation Inc.
6612 Singletree Drive, Columbus, OH, 43229, US



Ashville Pike & St. Paul Road - TMC

Thu Sep 30, 2021
AM Peak (7 AM - 8 AM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 881160, Location: 39.742179, -82.951237

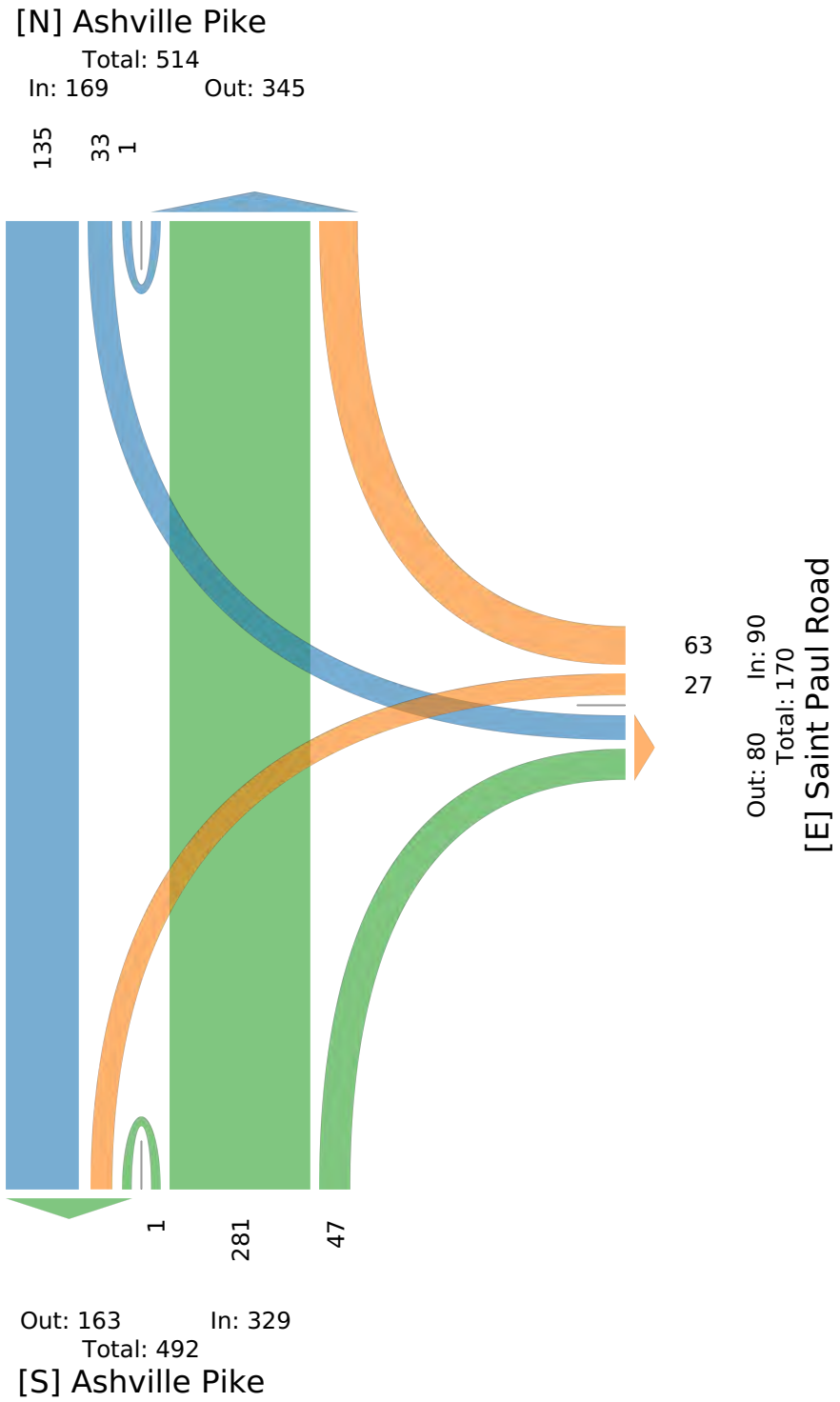
Provided by: Carpenter Marty (CM) Transportation Inc.
6612 Singletree Drive, Columbus, OH, 43229, US

Leg	Saint Paul Road				Ashville Pike				Ashville Pike				
Direction	Westbound				Northbound				Southbound				
Time	L	R	U	**App**	T	R	U	**App**	L	T	U	**App**	**Int**
2021-09-30 7:00AM	6	12	0	**18**	73	21	1	**95**	16	34	0	**50**	**163**
7:15AM	12	20	0	**32**	80	16	0	**96**	11	68	1	**80**	**208**
7:30AM	3	23	0	**26**	73	8	0	**81**	5	21	0	**26**	**133**
7:45AM	6	8	0	**14**	55	2	0	**57**	1	12	0	**13**	**84**
Total	27	63	0	**90**	281	47	1	**329**	33	135	1	**169**	**588**
% Approach	30.0%	70.0%	0%	**-**	85.4%	14.3%	0.3%	**-**	19.5%	79.9%	0.6%	**-**	-
% Total	4.6%	10.7%	0%	**15.3%**	47.8%	8.0%	0.2%	**56.0%**	5.6%	23.0%	0.2%	**28.7%**	-
PHF	0.563	0.685	-	**0.703**	0.878	0.560	0.250	**0.857**	0.516	0.496	0.250	**0.528**	0.707
Lights	22	60	0	**82**	275	46	1	**322**	32	130	1	**163**	567
% Lights	81.5%	95.2%	0%	**91.1%**	97.9%	97.9%	100%	**97.9%**	97.0%	96.3%	100%	**96.4%**	96.4%
Articulated Trucks	1	0	0	**1**	3	0	0	**3**	0	0	0	**0**	4
% Articulated Trucks	3.7%	0%	0%	**1.1%**	1.1%	0%	0%	**0.9%**	0%	0%	0%	**0%**	0.7%
Buses and Single-Unit Trucks	4	3	0	**7**	3	1	0	**4**	1	5	0	**6**	17
% Buses and Single-Unit Trucks	14.8%	4.8%	0%	**7.8%**	1.1%	2.1%	0%	**1.2%**	3.0%	3.7%	0%	**3.6%**	2.9%

*L: Left, R: Right, T: Thru, U: U-Turn

Ashville Pike & St. Paul Road - TMC
Thu Sep 30, 2021
AM Peak (7 AM - 8 AM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 881160, Location: 39.742179, -82.951237

Provided by: Carpenter Marty (CM) Transportation Inc.
6612 Singletree Drive, Columbus, OH, 43229, US



Ashville Pike & St. Paul Road - TMC

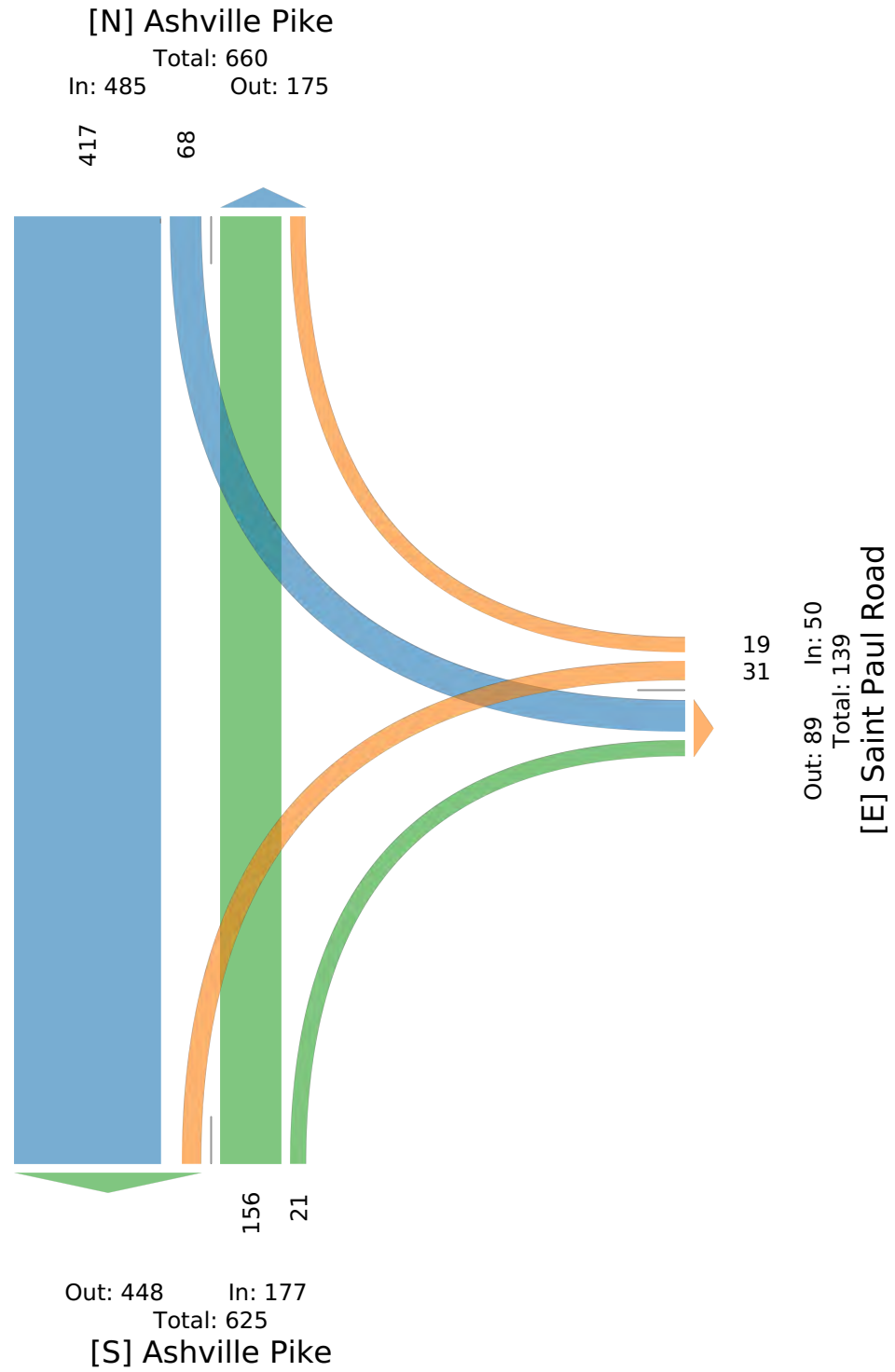
Thu Sep 30, 2021
PM Peak (4:45 PM - 5:45 PM) - Overall Peak Hour
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 881160, Location: 39.742179, -82.951237

Provided by: Carpenter Marty (CM) Transportation Inc.
6612 Singletree Drive, Columbus, OH, 43229, US

Leg	Saint Paul Road				Ashville Pike				Ashville Pike				
Direction	Westbound				Northbound				Southbound				
Time	L	R	U	**App**	T	R	U	**App**	L	T	U	**App**	**Int**
2021-09-30 4:45PM	6	5	0	**11**	34	5	0	**39**	16	105	0	**121**	**171**
5:00PM	7	4	0	**11**	40	2	0	**42**	17	102	0	**119**	**172**
5:15PM	8	2	0	**10**	40	7	0	**47**	14	116	0	**130**	**187**
5:30PM	10	8	0	**18**	42	7	0	**49**	21	94	0	**115**	**182**
Total	31	19	0	**50**	156	21	0	**177**	68	417	0	**485**	**712**
% Approach	62.0%	38.0%	0%	**-**	88.1%	11.9%	0%	**-**	14.0%	86.0%	0%	**-**	-
% Total	4.4%	2.7%	0%	**7.0%**	21.9%	2.9%	0%	**24.9%**	9.6%	58.6%	0%	**68.1%**	-
PHF	0.775	0.594	-	**0.694**	0.929	0.750	-	**0.903**	0.810	0.899	-	**0.933**	0.952
Lights	30	18	0	**48**	152	21	0	**173**	67	409	0	**476**	697
% Lights	96.8%	94.7%	0%	**96.0%**	97.4%	100%	0%	**97.7%**	98.5%	98.1%	0%	**98.1%**	97.9%
Articulated Trucks	0	1	0	**1**	3	0	0	**3**	0	5	0	**5**	9
% Articulated Trucks	0%	5.3%	0%	**2.0%**	1.9%	0%	0%	**1.7%**	0%	1.2%	0%	**1.0%**	1.3%
Buses and Single-Unit Trucks	1	0	0	**1**	1	0	0	**1**	1	3	0	**4**	6
% Buses and Single-Unit Trucks	3.2%	0%	0%	**2.0%**	0.6%	0%	0%	**0.6%**	1.5%	0.7%	0%	**0.8%**	0.8%

*L: Left, R: Right, T: Thru, U: U-Turn

Provided by: Carpenter Marty (CM) Transportation Inc.
6612 Singletree Drive, Columbus, OH, 43229, US



Ashville Pike and Long Street - TMC

Tue Apr 20, 2021
Full Length (7 AM-9 AM, 4 PM-6 PM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 830100, Location: 39.734115, -82.951975

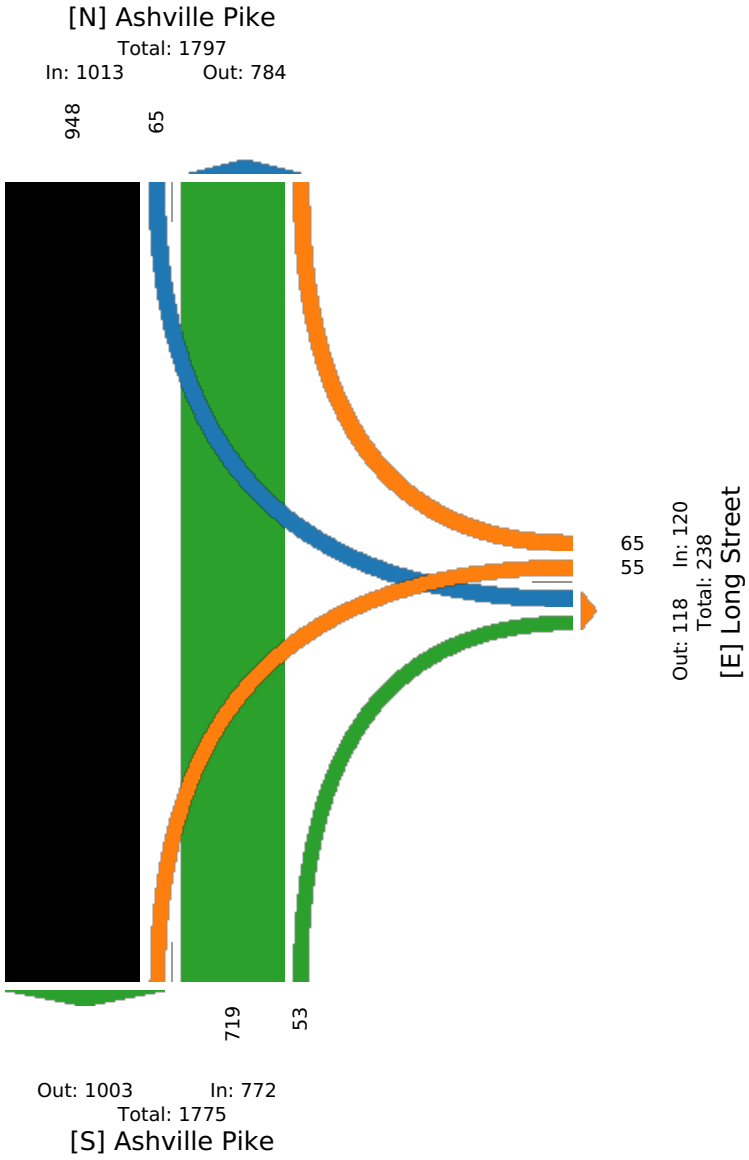
Provided by: Carpenter Marty (CM) Transportation Inc.
6612 Singletree Drive, Columbus, OH, 43229, US

Leg	Long Street				Ashville Pike				Ashville Pike				
Direction	Westbound				Northbound				Southbound				
Time	L	R	U	**App**	T	R	U	**App**	L	T	U	**App**	**Int**
2021-04-20 7:00AM	3	18	0	**21**	82	3	0	**85**	0	48	0	**48**	**154**
7:15AM	4	6	0	**10**	93	1	0	**94**	0	75	0	**75**	**179**
7:30AM	4	8	0	**12**	78	2	0	**80**	2	39	0	**41**	**133**
7:45AM	2	5	0	**7**	32	1	0	**33**	3	20	0	**23**	**63**
Hourly Total	13	37	0	**50**	285	7	0	**292**	5	182	0	**187**	**529**
8:00AM	2	8	0	**10**	40	0	0	**40**	1	24	0	**25**	**75**
8:15AM	5	1	0	**6**	24	2	0	**26**	1	22	0	**23**	**55**
8:30AM	4	1	0	**5**	32	1	0	**33**	2	26	0	**28**	**66**
8:45AM	3	1	0	**4**	43	3	0	**46**	2	16	0	**18**	**68**
Hourly Total	14	11	0	**25**	139	6	0	**145**	6	88	0	**94**	**264**
4:00PM	4	2	0	**6**	27	7	0	**34**	5	85	0	**90**	**130**
4:15PM	7	2	0	**9**	42	6	0	**48**	14	82	0	**96**	**153**
4:30PM	2	3	0	**5**	31	4	0	**35**	3	89	0	**92**	**132**
4:45PM	6	3	0	**9**	32	2	0	**34**	7	90	0	**97**	**140**
Hourly Total	19	10	0	**29**	132	19	0	**151**	29	346	0	**375**	**555**
5:00PM	1	1	0	**2**	41	8	0	**49**	4	85	0	**89**	**140**
5:15PM	2	3	0	**5**	41	2	0	**43**	6	91	0	**97**	**145**
5:30PM	4	2	0	**6**	41	5	0	**46**	7	83	0	**90**	**142**
5:45PM	2	1	0	**3**	40	6	0	**46**	8	73	0	**81**	**130**
Hourly Total	9	7	0	**16**	163	21	0	**184**	25	332	0	**357**	**557**
Total	55	65	0	**120**	719	53	0	**772**	65	948	0	**1013**	**1905**
% Approach	45.8%	54.2%	0%	**-**	93.1%	6.9%	0%	**-**	6.4%	93.6%	0%	**-**	-
% Total	2.9%	3.4%	0%	**6.3%**	37.7%	2.8%	0%	**40.5%**	3.4%	49.8%	0%	**53.2%**	-
Lights	54	64	0	**118**	704	51	0	**755**	65	925	0	**990**	1863
% Lights	98.2%	98.5%	0%	**98.3%**	97.9%	96.2%	0%	**97.8%**	100%	97.6%	0%	**97.7%**	97.8%
Articulated Trucks	0	0	0	**0**	3	0	0	**3**	0	0	0	**0**	3
% Articulated Trucks	0%	0%	0%	**0%**	0.4%	0%	0%	**0.4%**	0%	0%	0%	**0%**	0.2%
Buses and Single-Unit Trucks	1	1	0	**2**	12	2	0	**14**	0	23	0	**23**	39
% Buses and Single-Unit Trucks	1.8%	1.5%	0%	**1.7%**	1.7%	3.8%	0%	**1.8%**	0%	2.4%	0%	**2.3%**	2.0%

*L: Left, R: Right, T: Thru, U: U-Turn

Ashville Pike and Long Street - TMC
Tue Apr 20, 2021
Full Length (7 AM-9 AM, 4 PM-6 PM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 830100, Location: 39.734115, -82.951975

Provided by: Carpenter Marty (CM) Transportation Inc.
6612 Singletree Drive, Columbus, OH, 43229, US



Ashville Pike and Long Street - TMC

Tue Apr 20, 2021
AM Peak (7 AM - 8 AM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 830100, Location: 39.734115, -82.951975

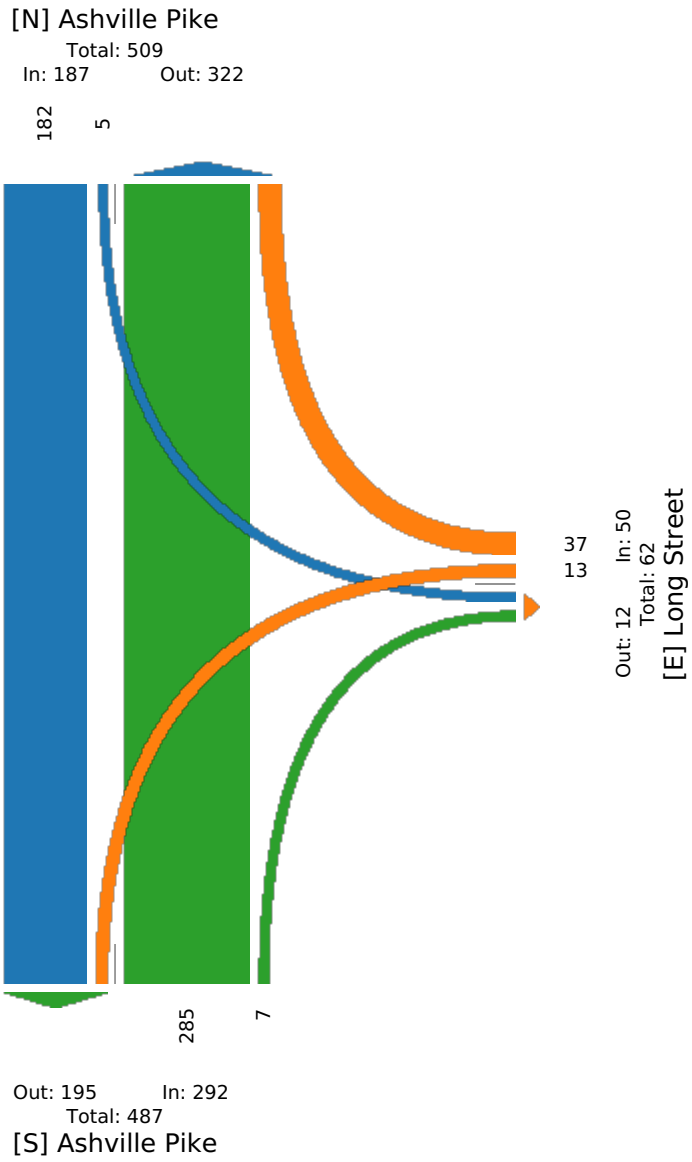
Provided by: Carpenter Marty (CM) Transportation Inc.
6612 Singletree Drive, Columbus, OH, 43229, US

Leg	Long Street				Ashville Pike				Ashville Pike				
Direction	Westbound				Northbound				Southbound				
Time	L	R	U	**App**	T	R	U	**App**	L	T	U	**App**	**Int**
2021-04-20 7:00AM	3	18	0	**21**	82	3	0	**85**	0	48	0	**48**	**154**
7:15AM	4	6	0	**10**	93	1	0	**94**	0	75	0	**75**	**179**
7:30AM	4	8	0	**12**	78	2	0	**80**	2	39	0	**41**	**133**
7:45AM	2	5	0	**7**	32	1	0	**33**	3	20	0	**23**	**63**
Total	13	37	0	**50**	285	7	0	**292**	5	182	0	**187**	**529**
% Approach	26.0%	74.0%	0%	**-**	97.6%	2.4%	0%	**-**	2.7%	97.3%	0%	**-**	-
% Total	2.5%	7.0%	0%	**9.5%**	53.9%	1.3%	0%	**55.2%**	0.9%	34.4%	0%	**35.3%**	-
PHF	0.813	0.514	-	**0.595**	0.766	0.583	-	**0.777**	0.417	0.607	-	**0.623**	0.739
Lights	13	36	0	**49**	282	6	0	**288**	5	176	0	**181**	518
% Lights	100%	97.3%	0%	**98.0%**	98.9%	85.7%	0%	**98.6%**	100%	96.7%	0%	**96.8%**	97.9%
Articulated Trucks	0	0	0	**0**	0	0	0	**0**	0	0	0	**0**	0
% Articulated Trucks	0%	0%	0%	**0%**	0%	0%	0%	**0%**	0%	0%	0%	**0%**	0%
Buses and Single-Unit Trucks	0	1	0	**1**	3	1	0	**4**	0	6	0	**6**	11
% Buses and Single-Unit Trucks	0%	2.7%	0%	**2.0%**	1.1%	14.3%	0%	**1.4%**	0%	3.3%	0%	**3.2%**	2.1%

*L: Left, R: Right, T: Thru, U: U-Turn

Ashville Pike and Long Street - TMC
Tue Apr 20, 2021
AM Peak (7 AM - 8 AM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 830100, Location: 39.734115, -82.951975

Provided by: Carpenter Marty (CM) Transportation Inc.
6612 Singletree Drive, Columbus, OH, 43229, US



Ashville Pike and Long Street - TMC

Tue Apr 20, 2021
PM Peak (4:45 PM - 5:45 PM) - Overall Peak Hour
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 830100, Location: 39.734115, -82.951975

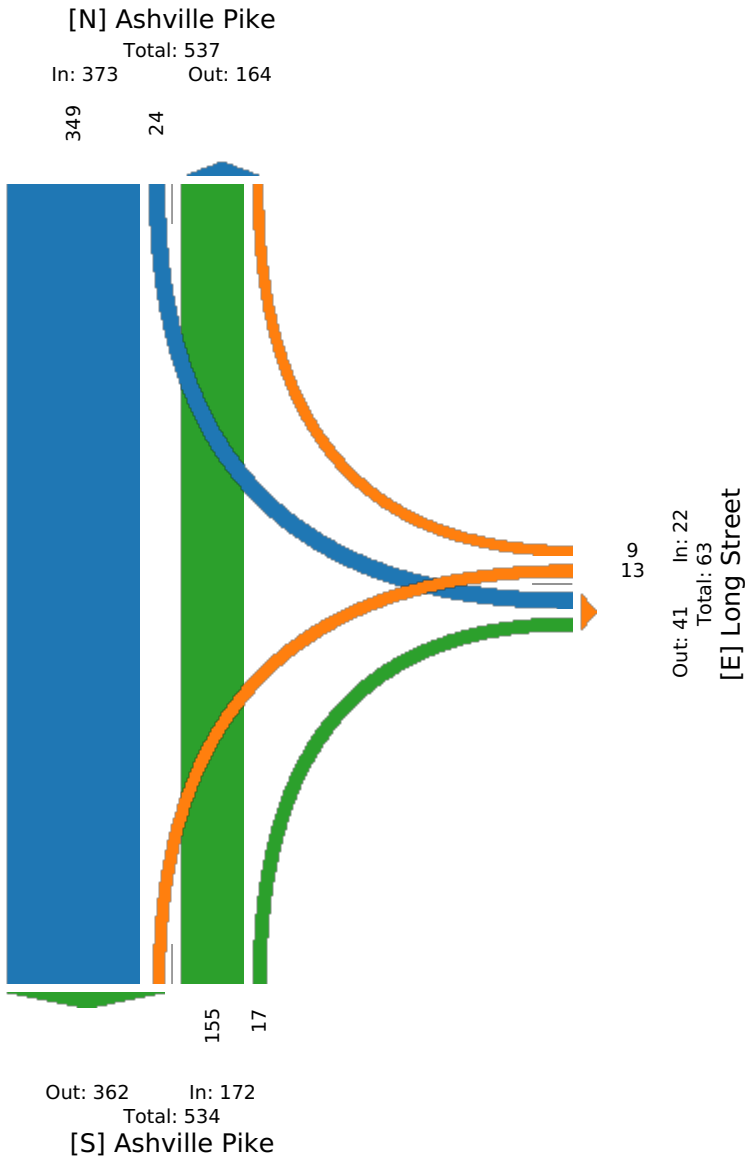
Provided by: Carpenter Marty (CM) Transportation Inc.
6612 Singletree Drive, Columbus, OH, 43229, US

Leg	Long Street				Ashville Pike				Ashville Pike				
Direction	Westbound				Northbound				Southbound				
Time	L	R	U	**App**	T	R	U	**App**	L	T	U	**App**	**Int**
2021-04-20 4:45PM	6	3	0	**9**	32	2	0	**34**	7	90	0	**97**	**140**
5:00PM	1	1	0	**2**	41	8	0	**49**	4	85	0	**89**	**140**
5:15PM	2	3	0	**5**	41	2	0	**43**	6	91	0	**97**	**145**
5:30PM	4	2	0	**6**	41	5	0	**46**	7	83	0	**90**	**142**
Total	13	9	0	**22**	155	17	0	**172**	24	349	0	**373**	**567**
% Approach	59.1%	40.9%	0%	**-**	90.1%	9.9%	0%	**-**	6.4%	93.6%	0%	**-**	-
% Total	2.3%	1.6%	0%	**3.9%**	27.3%	3.0%	0%	**30.3%**	4.2%	61.6%	0%	**65.8%**	-
PHF	0.542	0.750	-	**0.611**	0.945	0.531	-	**0.878**	0.857	0.959	-	**0.961**	0.978
Lights	13	9	0	**22**	151	17	0	**168**	24	344	0	**368**	558
% Lights	100%	100%	0%	**100%**	97.4%	100%	0%	**97.7%**	100%	98.6%	0%	**98.7%**	98.4%
Articulated Trucks	0	0	0	**0**	2	0	0	**2**	0	0	0	**0**	2
% Articulated Trucks	0%	0%	0%	**0%**	1.3%	0%	0%	**1.2%**	0%	0%	0%	**0%**	0.4%
Buses and Single-Unit Trucks	0	0	0	**0**	2	0	0	**2**	0	5	0	**5**	7
% Buses and Single-Unit Trucks	0%	0%	0%	**0%**	1.3%	0%	0%	**1.2%**	0%	1.4%	0%	**1.3%**	1.2%

*L: Left, R: Right, T: Thru, U: U-Turn

Ashville Pike and Long Street - TMC
Tue Apr 20, 2021
PM Peak (4:45 PM - 5:45 PM) - Overall Peak Hour
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 830100, Location: 39.734115, -82.951975

Provided by: Carpenter Marty (CM) Transportation Inc.
6612 Singletree Drive, Columbus, OH, 43229, US



SR-752 & Ashville Pike - TMC

Thu Sep 30, 2021
Full Length (7 AM-9 AM, 4 PM-6 PM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 881161, Location: 39.723492, -82.95282

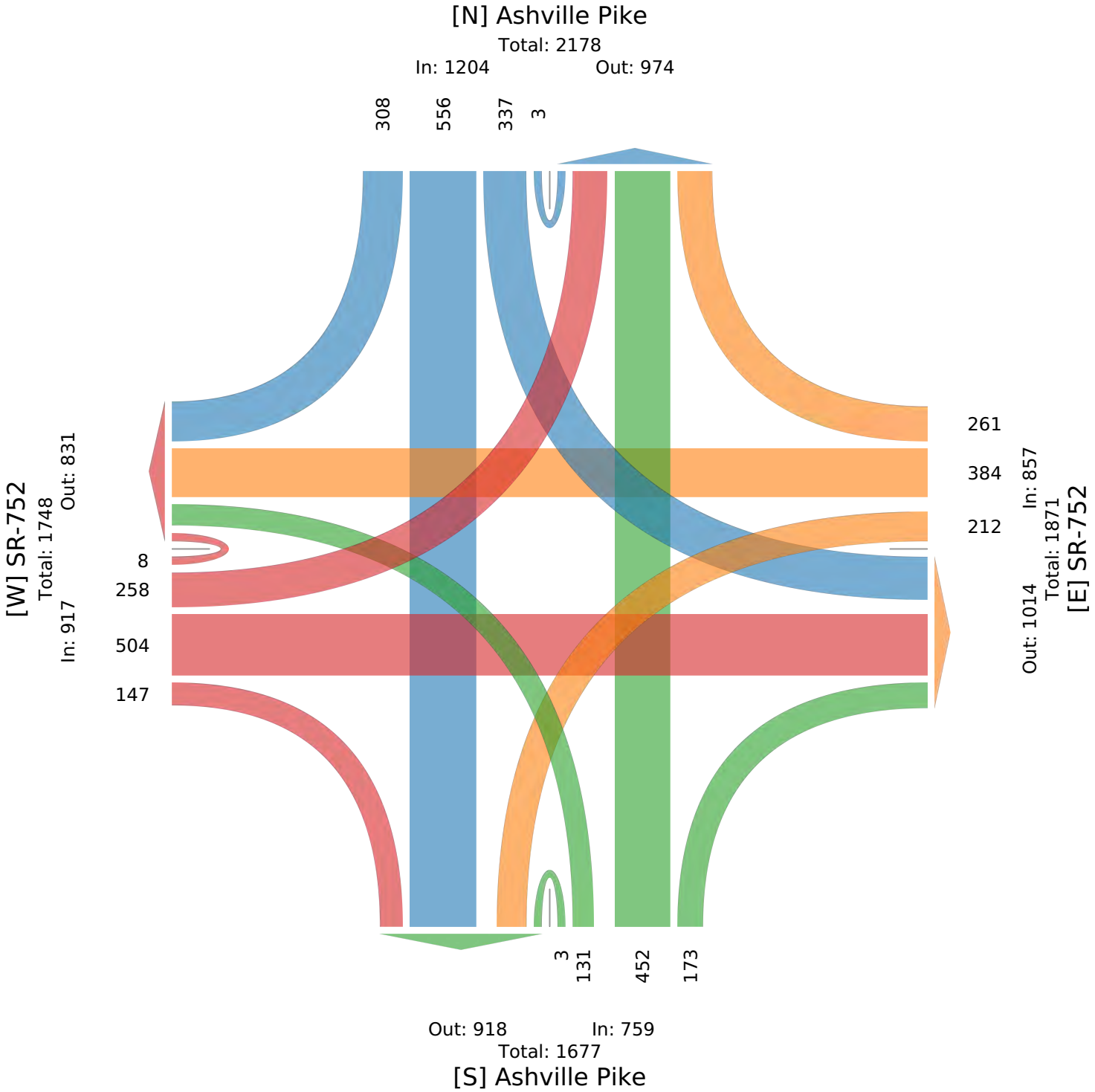
Provided by: Carpenter Marty (CM) Transportation Inc.
6612 Singletree Drive, Columbus, OH, 43229, US

Leg	SR-752					SR-752					Ashville Pike					Ashville Pike					
Direction	Eastbound					Westbound					Northbound					Southbound					
Time	L	T	R	U	**App**	L	T	R	U	**App**	L	T	R	U	**App**	L	T	R	U	**App**	**Int**
2021-09-30 7:00AM	8	53	3	1	**65**	7	15	12	0	**34**	4	26	21	2	**53**	32	15	16	1	**64**	**216**
7:15AM	11	74	3	0	**88**	8	33	17	0	**58**	8	34	20	0	**62**	70	19	11	0	**100**	**308**
7:30AM	9	24	4	0	**37**	10	29	26	0	**65**	7	27	14	0	**48**	15	6	12	0	**33**	**183**
7:45AM	12	16	2	1	**31**	3	20	8	0	**31**	1	25	1	0	**27**	7	12	15	0	**34**	**123**
Hourly Total	40	167	12	2	**221**	28	97	63	0	**188**	20	112	56	2	**190**	124	52	54	1	**231**	**830**
8:00AM	12	19	6	0	**37**	10	27	8	0	**45**	2	16	5	0	**23**	5	11	14	0	**30**	**135**
8:15AM	13	25	8	0	**46**	6	13	11	0	**30**	1	17	4	0	**22**	18	16	19	0	**53**	**151**
8:30AM	11	20	9	1	**41**	6	15	11	0	**32**	7	16	6	0	**29**	13	34	13	0	**60**	**162**
8:45AM	10	17	9	0	**36**	4	19	19	0	**42**	10	24	1	0	**35**	11	30	12	0	**53**	**166**
Hourly Total	46	81	32	1	**160**	26	74	49	0	**149**	20	73	16	0	**109**	47	91	58	0	**196**	**614**
4:00PM	26	28	10	0	**64**	28	23	19	0	**70**	20	30	7	0	**57**	16	58	14	0	**88**	**279**
4:15PM	21	33	8	0	**62**	10	23	15	0	**48**	11	29	11	0	**51**	11	49	31	1	**92**	**253**
4:30PM	20	30	15	1	**66**	14	19	15	0	**48**	10	33	6	0	**49**	17	45	27	0	**89**	**252**
4:45PM	23	26	10	0	**59**	20	17	13	0	**50**	7	37	16	1	**61**	27	47	33	0	**107**	**277**
Hourly Total	90	117	43	1	**251**	72	82	62	0	**216**	48	129	40	1	**218**	71	199	105	1	**376**	**1061**
5:00PM	24	31	17	2	**74**	17	40	22	0	**79**	13	40	13	0	**66**	23	44	24	0	**91**	**310**
5:15PM	20	26	16	0	**62**	18	30	28	0	**76**	7	32	12	0	**51**	25	54	28	1	**108**	**297**
5:30PM	25	47	17	1	**90**	26	35	16	0	**77**	15	28	19	0	**62**	31	57	22	0	**110**	**339**
5:45PM	13	35	10	1	**59**	25	26	21	0	**72**	8	38	17	0	**63**	16	59	17	0	**92**	**286**
Hourly Total	82	139	60	4	**285**	86	131	87	0	**304**	43	138	61	0	**242**	95	214	91	1	**401**	**1232**
Total	258	504	147	8	**917**	212	384	261	0	**857**	131	452	173	3	**759**	337	556	308	3	**1204**	**3737**
% Approach	28.1%	55.0%	16.0%	0.9%	**-**	24.7%	44.8%	30.5%	0%	**-**	17.3%	59.6%	22.8%	0.4%	**-**	28.0%	46.2%	25.6%	0.2%	**-**	-
% Total	6.9%	13.5%	3.9%	0.2%	**24.5%**	5.7%	10.3%	7.0%	0%	**22.9%**	3.5%	12.1%	4.6%	0.1%	**20.3%**	9.0%	14.9%	8.2%	0.1%	**32.2%**	-
Lights	251	474	145	8	**878**	209	357	254	0	**820**	128	443	171	3	**745**	321	543	295	2	**1161**	3604
% Lights	97.3%	94.0%	98.6%	100%	**95.7%**	98.6%	93.0%	97.3%	0%	**95.7%**	97.7%	98.0%	98.8%	100%	**98.2%**	95.3%	97.7%	95.8%	66.7%	**96.4%**	96.4%
Articulated Trucks	3	8	0	0	**11**	2	5	0	0	**7**	1	2	1	0	**4**	2	3	5	0	**10**	32
% Articulated Trucks	1.2%	1.6%	0%	0%	**1.2%**	0.9%	1.3%	0%	0%	**0.8%**	0.8%	0.4%	0.6%	0%	**0.5%**	0.6%	0.5%	1.6%	0%	**0.8%**	0.9%
Buses and Single-Unit Trucks	4	22	2	0	**28**	1	22	7	0	**30**	2	7	1	0	**10**	14	10	8	1	**33**	101
% Buses and Single-Unit Trucks	1.6%	4.4%	1.4%	0%	**3.1%**	0.5%	5.7%	2.7%	0%	**3.5%**	1.5%	1.5%	0.6%	0%	**1.3%**	4.2%	1.8%	2.6%	33.3%	**2.7%**	2.7%

*L: Left, R: Right, T: Thru, U: U-Turn

SR-752 & Ashville Pike - TMC
Thu Sep 30, 2021
Full Length (7 AM-9 AM, 4 PM-6 PM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 881161, Location: 39.723492, -82.95282

Provided by: Carpenter Marty (CM) Transportation Inc.
6612 Singletree Drive, Columbus, OH, 43229, US



SR-752 & Ashville Pike - TMC

Thu Sep 30, 2021
AM Peak (7 AM - 8 AM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 881161, Location: 39.723492, -82.95282

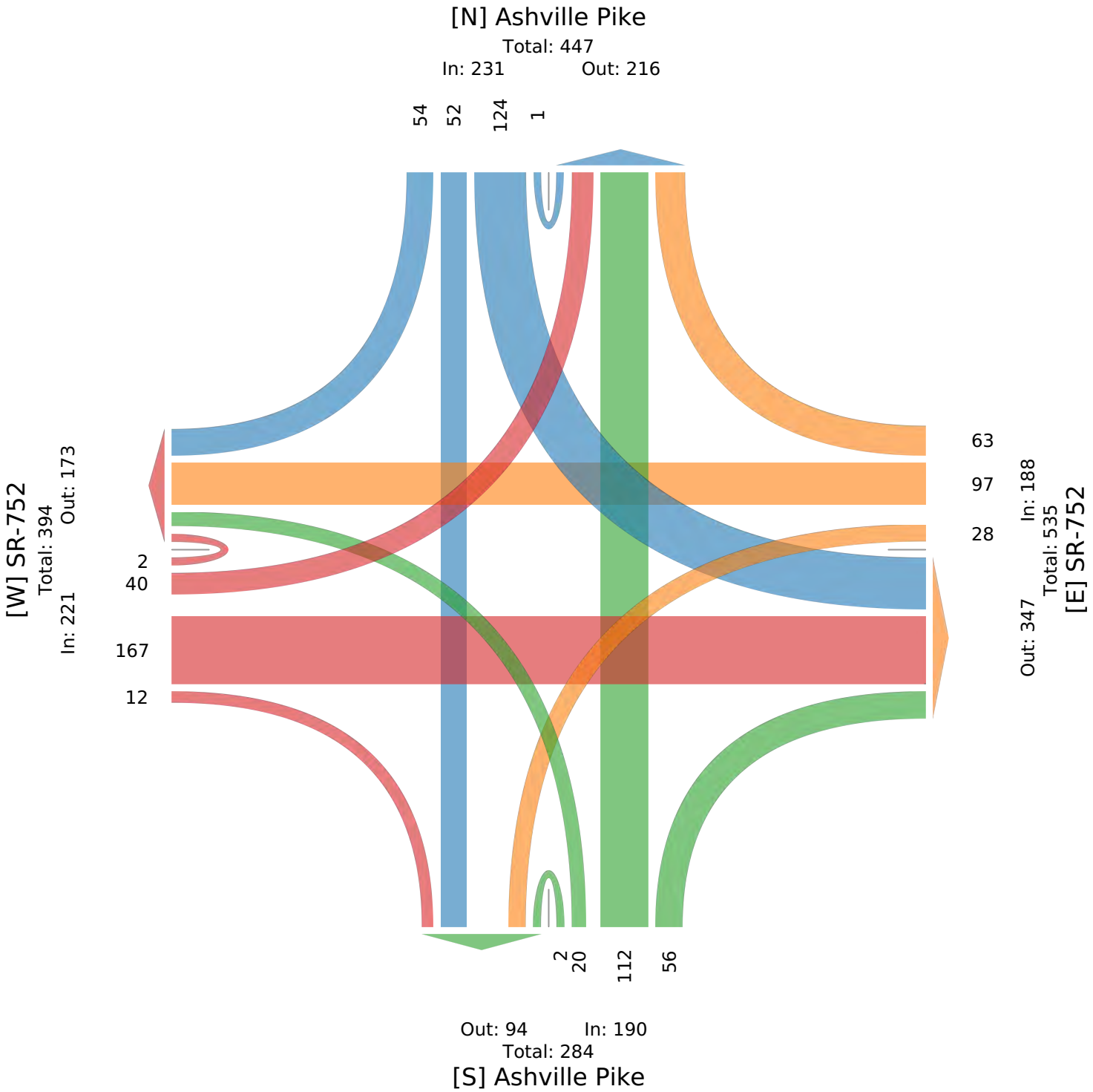
Provided by: Carpenter Marty (CM) Transportation Inc.
6612 Singletree Drive, Columbus, OH, 43229, US

Leg	SR-752					SR-752					Ashville Pike					Ashville Pike					
Direction	Eastbound					Westbound					Northbound					Southbound					
Time	L	T	R	U	**App**	L	T	R	U	**App**	L	T	R	U	**App**	L	T	R	U	**App**	**Int**
2021-09-30 7:00AM	8	53	3	1	**65**	7	15	12	0	**34**	4	26	21	2	**53**	32	15	16	1	**64**	**216**
7:15AM	11	74	3	0	**88**	8	33	17	0	**58**	8	34	20	0	**62**	70	19	11	0	**100**	**308**
7:30AM	9	24	4	0	**37**	10	29	26	0	**65**	7	27	14	0	**48**	15	6	12	0	**33**	**183**
7:45AM	12	16	2	1	**31**	3	20	8	0	**31**	1	25	1	0	**27**	7	12	15	0	**34**	**123**
Total	40	167	12	2	**221**	28	97	63	0	**188**	20	112	56	2	**190**	124	52	54	1	**231**	**830**
% Approach	18.1%	75.6%	5.4%	0.9%	**-**	14.9%	51.6%	33.5%	0%	**-**	10.5%	58.9%	29.5%	1.1%	**-**	53.7%	22.5%	23.4%	0.4%	**-**	-
% Total	4.8%	20.1%	1.4%	0.2%	**26.6%**	3.4%	11.7%	7.6%	0%	**22.7%**	2.4%	13.5%	6.7%	0.2%	**22.9%**	14.9%	6.3%	6.5%	0.1%	**27.8%**	-
PHF	0.833	0.564	0.750	0.500	**0.628**	0.700	0.735	0.606	-	**0.723**	0.625	0.824	0.667	0.250	**0.766**	0.443	0.684	0.844	0.250	**0.578**	0.674
Lights	39	156	11	2	**208**	28	90	61	0	**179**	19	111	55	2	**187**	123	50	51	0	**224**	798
% Lights	97.5%	93.4%	91.7%	100%	**94.1%**	100%	92.8%	96.8%	0%	**95.2%**	95.0%	99.1%	98.2%	100%	**98.4%**	99.2%	96.2%	94.4%	0%	**97.0%**	96.1%
Articulated Trucks	0	1	0	0	**1**	0	0	0	0	**0**	1	0	1	0	**2**	0	0	0	0	**0**	3
% Articulated Trucks	0%	0.6%	0%	0%	**0.5%**	0%	0%	0%	0%	**0%**	5.0%	0%	1.8%	0%	**1.1%**	0%	0%	0%	0%	**0%**	0.4%
Buses and Single-Unit Trucks	1	10	1	0	**12**	0	7	2	0	**9**	0	1	0	0	**1**	1	2	3	1	**7**	29
% Buses and Single-Unit Trucks	2.5%	6.0%	8.3%	0%	**5.4%**	0%	7.2%	3.2%	0%	**4.8%**	0%	0.9%	0%	0%	**0.5%**	0.8%	3.8%	5.6%	100%	**3.0%**	3.5%

*L: Left, R: Right, T: Thru, U: U-Turn

SR-752 & Ashville Pike - TMC
Thu Sep 30, 2021
AM Peak (7 AM - 8 AM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 881161, Location: 39.723492, -82.95282

Provided by: Carpenter Marty (CM) Transportation Inc.
6612 Singletree Drive, Columbus, OH, 43229, US



SR-752 & Ashville Pike - TMC

Thu Sep 30, 2021
PM Peak (5 PM - 6 PM) - Overall Peak Hour
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 881161, Location: 39.723492, -82.95282

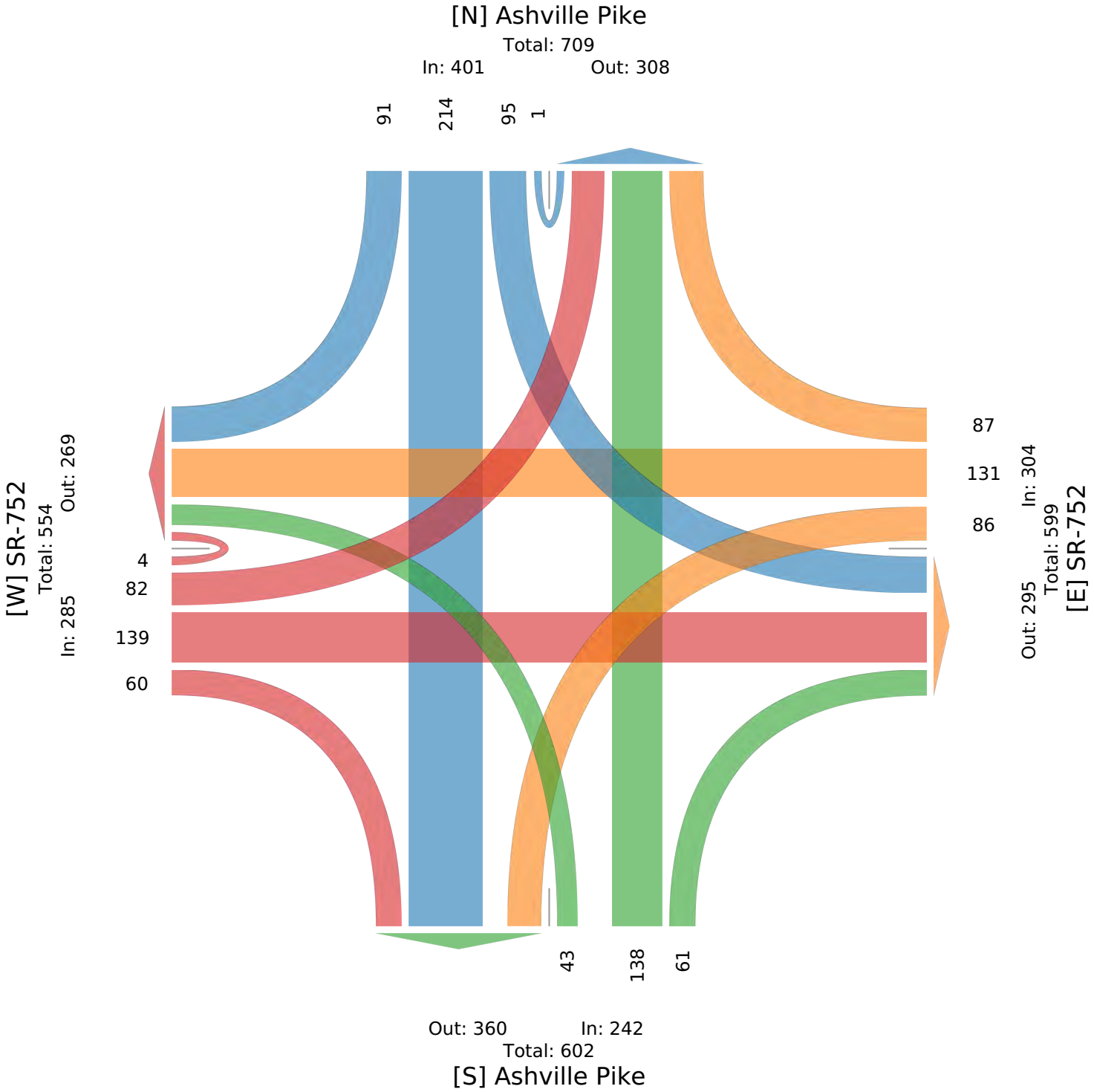
Provided by: Carpenter Marty (CM) Transportation Inc.
6612 Singletree Drive, Columbus, OH, 43229, US

Leg	SR-752					SR-752					Ashville Pike					Ashville Pike					
Direction	Eastbound					Westbound					Northbound					Southbound					
Time	L	T	R	U	**App**	L	T	R	U	**App**	L	T	R	U	**App**	L	T	R	U	**App**	**Int**
2021-09-30 5:00PM	24	31	17	2	**74**	17	40	22	0	**79**	13	40	13	0	**66**	23	44	24	0	**91**	**310**
5:15PM	20	26	16	0	**62**	18	30	28	0	**76**	7	32	12	0	**51**	25	54	28	1	**108**	**297**
5:30PM	25	47	17	1	**90**	26	35	16	0	**77**	15	28	19	0	**62**	31	57	22	0	**110**	**339**
5:45PM	13	35	10	1	**59**	25	26	21	0	**72**	8	38	17	0	**63**	16	59	17	0	**92**	**286**
Total	82	139	60	4	**285**	86	131	87	0	**304**	43	138	61	0	**242**	95	214	91	1	**401**	**1232**
% Approach	28.8%	48.8%	21.1%	1.4%	**-**	28.3%	43.1%	28.6%	0%	**-**	17.8%	57.0%	25.2%	0%	**-**	23.7%	53.4%	22.7%	0.2%	**-**	-
% Total	6.7%	11.3%	4.9%	0.3%	**23.1%**	7.0%	10.6%	7.1%	0%	**24.7%**	3.5%	11.2%	5.0%	0%	**19.6%**	7.7%	17.4%	7.4%	0.1%	**32.5%**	-
PHF	0.820	0.739	0.882	0.500	**0.792**	0.827	0.819	0.777	-	**0.962**	0.717	0.863	0.803	-	**0.917**	0.766	0.907	0.813	0.250	**0.911**	0.909
Lights	80	137	59	4	**280**	85	129	86	0	**300**	43	135	61	0	**239**	92	214	88	1	**395**	1214
% Lights	97.6%	98.6%	98.3%	100%	**98.2%**	98.8%	98.5%	98.9%	0%	**98.7%**	100%	97.8%	100%	0%	**98.8%**	96.8%	100%	96.7%	100%	**98.5%**	98.5%
Articulated Trucks	2	2	0	0	**4**	0	1	0	0	**1**	0	1	0	0	**1**	2	0	3	0	**5**	11
% Articulated Trucks	2.4%	1.4%	0%	0%	**1.4%**	0%	0.8%	0%	0%	**0.3%**	0%	0.7%	0%	0%	**0.4%**	2.1%	0%	3.3%	0%	**1.2%**	0.9%
Buses and Single-Unit Trucks	0	0	1	0	**1**	1	1	1	0	**3**	0	2	0	0	**2**	1	0	0	0	**1**	7
% Buses and Single-Unit Trucks	0%	0%	1.7%	0%	**0.4%**	1.2%	0.8%	1.1%	0%	**1.0%**	0%	1.4%	0%	0%	**0.8%**	1.1%	0%	0%	0%	**0.2%**	0.6%

*L: Left, R: Right, T: Thru, U: U-Turn

SR-752 & Ashville Pike - TMC
Thu Sep 30, 2021
PM Peak (5 PM - 6 PM) - Overall Peak Hour
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 881161, Location: 39.723492, -82.95282

Provided by: Carpenter Marty (CM) Transportation Inc.
6612 Singletree Drive, Columbus, OH, 43229, US



Lockbourne-Eastern Road Segment - ATR

Tue Feb 15, 2022
Full Length (7 AM-9 AM, 4 PM-6 PM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Channels
ID: 922827, Location: 39.731942, -82.942602

Provided by: Carpenter Marty (CM) Transportation Inc.
6612 Singletree Drive, Columbus, OH, 43229, US

Leg Direction	South Northbound		North Southbound		
Time	T	**App**	T	**App**	**Int**
2022-02-15 7:00AM	24	**24**	35	**35**	**59**
7:15AM	63	**63**	57	**57**	**120**
7:30AM	42	**42**	5	**5**	**47**
7:45AM	8	**8**	3	**3**	**11**
Hourly Total	137	**137**	100	**100**	**237**
8:00AM	11	**11**	5	**5**	**16**
8:15AM	6	**6**	7	**7**	**13**
8:30AM	5	**5**	12	**12**	**17**
8:45AM	8	**8**	7	**7**	**15**
Hourly Total	30	**30**	31	**31**	**61**
4:00PM	7	**7**	15	**15**	**22**
4:15PM	12	**12**	11	**11**	**23**
4:30PM	10	**10**	25	**25**	**35**
4:45PM	12	**12**	20	**20**	**32**
Hourly Total	41	**41**	71	**71**	**112**
5:00PM	10	**10**	13	**13**	**23**
5:15PM	8	**8**	21	**21**	**29**
5:30PM	14	**14**	22	**22**	**36**
5:45PM	5	**5**	18	**18**	**23**
Hourly Total	37	**37**	74	**74**	**111**
Total	245	**245**	276	**276**	**521**
% Approach	100%	**-**	100%	**-**	-
% Total	47.0%	**47.0%**	53.0%	**53.0%**	-
Lights	242	**242**	267	**267**	509
% Lights	98.8%	**98.8%**	96.7%	**96.7%**	97.7%
Articulated Trucks	0	**0**	0	**0**	0
% Articulated Trucks	0%	**0%**	0%	**0%**	0%
Buses and Single-Unit Trucks	3	**3**	9	**9**	12
% Buses and Single-Unit Trucks	1.2%	**1.2%**	3.3%	**3.3%**	2.3%

*T: Thru

Lockbourne-Eastern Road Segment - ATR

Tue Feb 15, 2022
Full Length (7 AM-9 AM, 4 PM-6 PM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Channels
ID: 922827, Location: 39.731942, -82.942602

Provided by: Carpenter Marty (CM) Transportation Inc.
6612 Singletree Drive, Columbus, OH, 43229, US

Lockbourne-Eastern Road Segment - ATR

Provided by: Carpenter Marty (CM) Transportation Inc.
6612 Singletree Drive, Columbus, OH, 43229, US

Tue Feb 15, 2022
AM Peak (7 AM - 8 AM) - Overall Peak Hour
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Channels
ID: 922827, Location: 39.731942, -82.942602

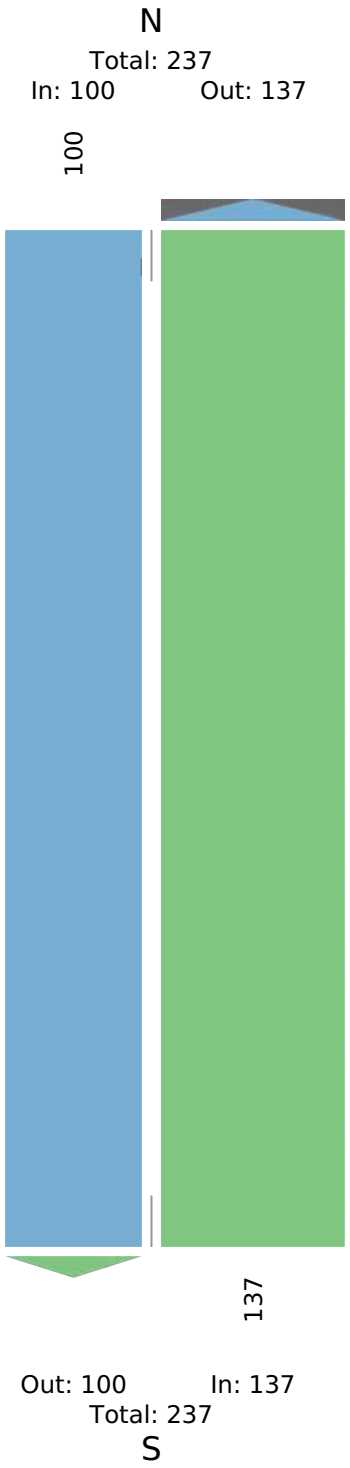
Leg Direction	South Northbound		North Southbound		
Time	T	**App**	T	**App**	**Int**
2022-02-15 7:00AM	24	**24**	35	**35**	**59**
7:15AM	63	**63**	57	**57**	**120**
7:30AM	42	**42**	5	**5**	**47**
7:45AM	8	**8**	3	**3**	**11**
Total	137	**137**	100	**100**	**237**
% Approach	100%	**-**	100%	**-**	-
% Total	57.8%	**57.8%**	42.2%	**42.2%**	-
PHF	0.544	**0.544**	0.439	**0.439**	0.494
Lights	136	**136**	96	**96**	232
% Lights	99.3%	**99.3%**	96.0%	**96.0%**	97.9%
Articulated Trucks	0	**0**	0	**0**	0
% Articulated Trucks	0%	**0%**	0%	**0%**	0%
Buses and Single-Unit Trucks	1	**1**	4	**4**	5
% Buses and Single-Unit Trucks	0.7%	**0.7%**	4.0%	**4.0%**	2.1%

*T: Thru

Lockbourne-Eastern Road Segment - ATR

Tue Feb 15, 2022
AM Peak (7 AM - 8 AM) - Overall Peak Hour
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Channels
ID: 922827, Location: 39.731942, -82.942602

Provided by: Carpenter Marty (CM) Transportation Inc.
6612 Singletree Drive, Columbus, OH, 43229, US



Lockbourne-Eastern Road Segment - ATR

Provided by: Carpenter Marty (CM) Transportation Inc.
6612 Singletree Drive, Columbus, OH, 43229, US

Tue Feb 15, 2022
PM Peak (4:45 PM - 5:45 PM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Channels
ID: 922827, Location: 39.731942, -82.942602

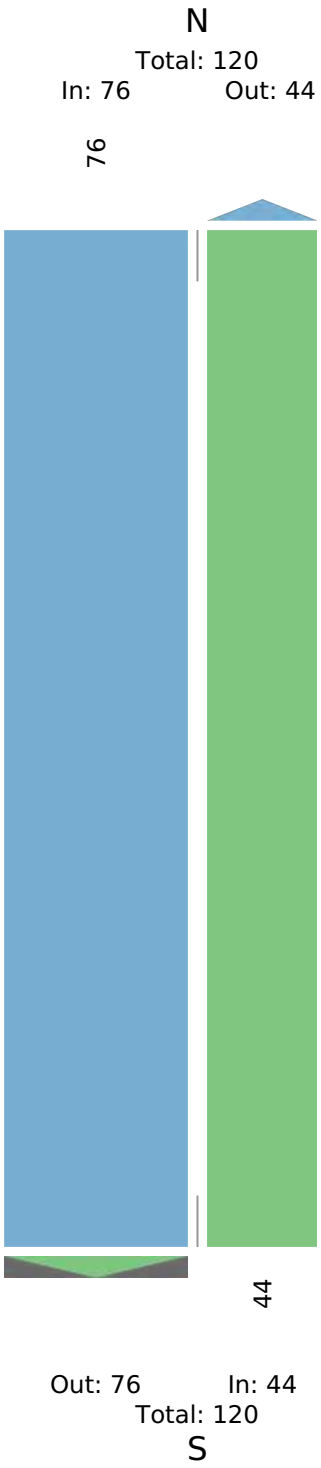
Leg Direction	South Northbound		North Southbound		
Time	T	**App**	T	**App**	**Int**
2022-02-15 4:45PM	12	**12**	20	**20**	**32**
5:00PM	10	**10**	13	**13**	**23**
5:15PM	8	**8**	21	**21**	**29**
5:30PM	14	**14**	22	**22**	**36**
Total	44	**44**	76	**76**	**120**
% Approach	100%	**-**	100%	**-**	-
% Total	36.7%	**36.7%**	63.3%	**63.3%**	-
PHF	0.786	**0.786**	0.864	**0.864**	0.833
Lights	44	**44**	76	**76**	120
% Lights	100%	**100%**	100%	**100%**	100%
Articulated Trucks	0	**0**	0	**0**	0
% Articulated Trucks	0%	**0%**	0%	**0%**	0%
Buses and Single-Unit Trucks	0	**0**	0	**0**	0
% Buses and Single-Unit Trucks	0%	**0%**	0%	**0%**	0%

*T: Thru

Lockbourne-Eastern Road Segment - ATR

Tue Feb 15, 2022
PM Peak (4:45 PM - 5:45 PM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Channels
ID: 922827, Location: 39.731942, -82.942602

Provided by: Carpenter Marty (CM) Transportation Inc.
6612 Singletree Drive, Columbus, OH, 43229, US



Appendix C
Trip Generation

Appendix C

Scenario - 1

Scenario Name: AM Peak
User Group:
Dev. phase: 1
No. of Years to Project Traffic : 0
Analyst Note:
Warning:

VEHICLE TRIPS BEFORE REDUCTION

Land Use & Data Source	Location	IV	Size	Time Period	Method Rate/Equation	Entry Split%	Exit Split%	Total
210 - Single-Family Detached Housing	General Urban/Suburban	Dwelling Units	625	Weekday, Peak Hour of Adjacent Street Traffic,	Best Fit (LOG)	103	292	395
Data Source: Trip Generation Manual, 11th Ed					Ln(T) =0.91Ln(X) + 0.12	26%	74%	
220 - Multifamily Housing (Low-Rise) - Not Close	General Urban/Suburban	Dwelling Units	369	Weekday, Peak Hour of Adjacent Street Traffic,	Best Fit (LIN)	33	104	137
Data Source: Trip Generation Manual, 11th Ed					T = 0.31(X) + 22.85	24%	76%	

VEHICLE TO PERSON TRIP CONVERSION

BASELINE SITE VEHICLE CHARACTERISTICS:

Land Use	Baseline Site Vehicle Mode Share		Baseline Site Vehicle Occupancy		Baseline Site Vehicle Directional Split	
	Entry (%)	Exit (%)	Entry	Exit	Entry (%)	Exit (%)
210 - Single-Family Detached Housing	100	100	1	1	26	74
220 - Multifamily Housing (Low-Rise) - Not Close to Rail Transit	100	100	1	1	24	76

ESTIMATED BASELINE SITE PERSON TRIPS:

Land Use	Person Trips by Vehicle		Person Trips by Other Modes		Total Baseline Site Person Trips	
	Entry	Exit	Entry	Exit	Entry	Exit
210 - Single-Family Detached Housing	103	292	0	0	103	292
	395		0		395	
220 - Multifamily Housing (Low-Rise) - Not Close to Rail Transit	33	104	0	0	33	104
	137		0		137	

NEW VEHICLE TRIPS

Land Use	New Vehicle Trips		
	Entry	Exit	Total
210 - Single-Family Detached Housing	103	292	395
220 - Multifamily Housing (Low-Rise) - Not Close to Rail Transit	33	104	137

RESULTS

Site Totals	Entry	Exit	Total
Vehicle Trips Before Reduction	136	396	532
External Vehicle Trips	136	396	532
New Vehicle Trips	136	396	532

Scenario - 2

Scenario Name: PM Peak
User Group:
Dev. phase: 1
No. of Years to Project Traffic : 0
Analyst Note:
Warning:

VEHICLE TRIPS BEFORE REDUCTION

Land Use & Data Source	Location	IV	Size	Time Period	Method	Entry	Exit	Total
					Rate/Equation	Split%	Split%	
210 - Single-Family Detached Housing	General Urban/Suburban	Dwelling Units	625	Weekday, Peak Hour of Adjacent Street Traffic,	Best Fit (LOG)	351	206	557
Data Source: Trip Generation Manual, 11th Ed					Ln(T) =0.94Ln(X) + 0.27	63%	37%	
220 - Multifamily Housing (Low-Rise) - Not Close	General Urban/Suburban	Dwelling Units	369	Weekday, Peak Hour of Adjacent Street Traffic,	Best Fit (LIN)	113	66	179
Data Source: Trip Generation Manual, 11th Ed					T = 0.43(X) + 20.55	63%	37%	

VEHICLE TO PERSON TRIP CONVERSION

BASELINE SITE VEHICLE CHARACTERISTICS:

Land Use	Baseline Site Vehicle Mode Share		Baseline Site Vehicle Occupancy		Baseline Site Vehicle Directional Split	
	Entry (%)	Exit (%)	Entry	Exit	Entry (%)	Exit (%)
210 - Single-Family Detached Housing	100	100	1	1	63	37
220 - Multifamily Housing (Low-Rise) - Not Close to Rail Transit	100	100	1	1	63	37

ESTIMATED BASELINE SITE PERSON TRIPS:

Land Use	Person Trips by Vehicle		Person Trips by Other Modes		Total Baseline Site Person Trips	
	Entry	Exit	Entry	Exit	Entry	Exit
210 - Single-Family Detached Housing	351	206	0	0	351	206
	557		0		557	
220 - Multifamily Housing (Low-Rise) - Not Close to Rail Transit	113	66	0	0	113	66
	179		0		179	

NEW VEHICLE TRIPS

Land Use	New Vehicle Trips		
	Entry	Exit	Total
210 - Single-Family Detached Housing	351	206	557
220 - Multifamily Housing (Low-Rise) - Not Close to Rail Transit	113	66	179

RESULTS

Site Totals	Entry	Exit	Total
Vehicle Trips Before Reduction	464	272	736
External Vehicle Trips	464	272	736
New Vehicle Trips	464	272	736

Scenario - 3

Scenario Name: Weekday
User Group:
Dev. phase: 1
No. of Years to Project Traffic : 0
Analyst Note:
Warning:

VEHICLE TRIPS BEFORE REDUCTION

Land Use & Data Source	Location	IV	Size	Time Period	Method Rate/Equation	Entry Split%	Exit Split%	Total
210 - Single-Family Detached Housing	General Urban/Suburban	Dwelling Units	625	Weekday	Best Fit (LOG)	2723	2723	5446
Data Source: Trip Generation Manual, 11th Ed					Ln(T) =0.92Ln(X) + 2.68	50%	50%	

VEHICLE TO PERSON TRIP CONVERSION

BASELINE SITE VEHICLE CHARACTERISTICS:

Land Use	Baseline Site Vehicle Mode Share		Baseline Site Vehicle Occupancy		Baseline Site Vehicle Directional Split	
	Entry (%)	Exit (%)	Entry	Exit	Entry (%)	Exit (%)
210 - Single-Family Detached Housing	100	100	1	1	50	50

ESTIMATED BASELINE SITE PERSON TRIPS:

Land Use	Person Trips by Vehicle		Person Trips by Other Modes		Total Baseline Site Person Trips	
	Entry	Exit	Entry	Exit	Entry	Exit
210 - Single-Family Detached Housing	2723	2723	0	0	2723	2723
	5446		0		5446	

NEW VEHICLE TRIPS

Land Use	New Vehicle Trips		
	Entry	Exit	Total
210 - Single-Family Detached Housing	2723	2723	5446

RESULTS

Site Totals	Entry	Exit	Total
Vehicle Trips Before Reduction	2723	2723	5446
External Vehicle Trips	2723	2723	5446
New Vehicle Trips	2723	2723	5446

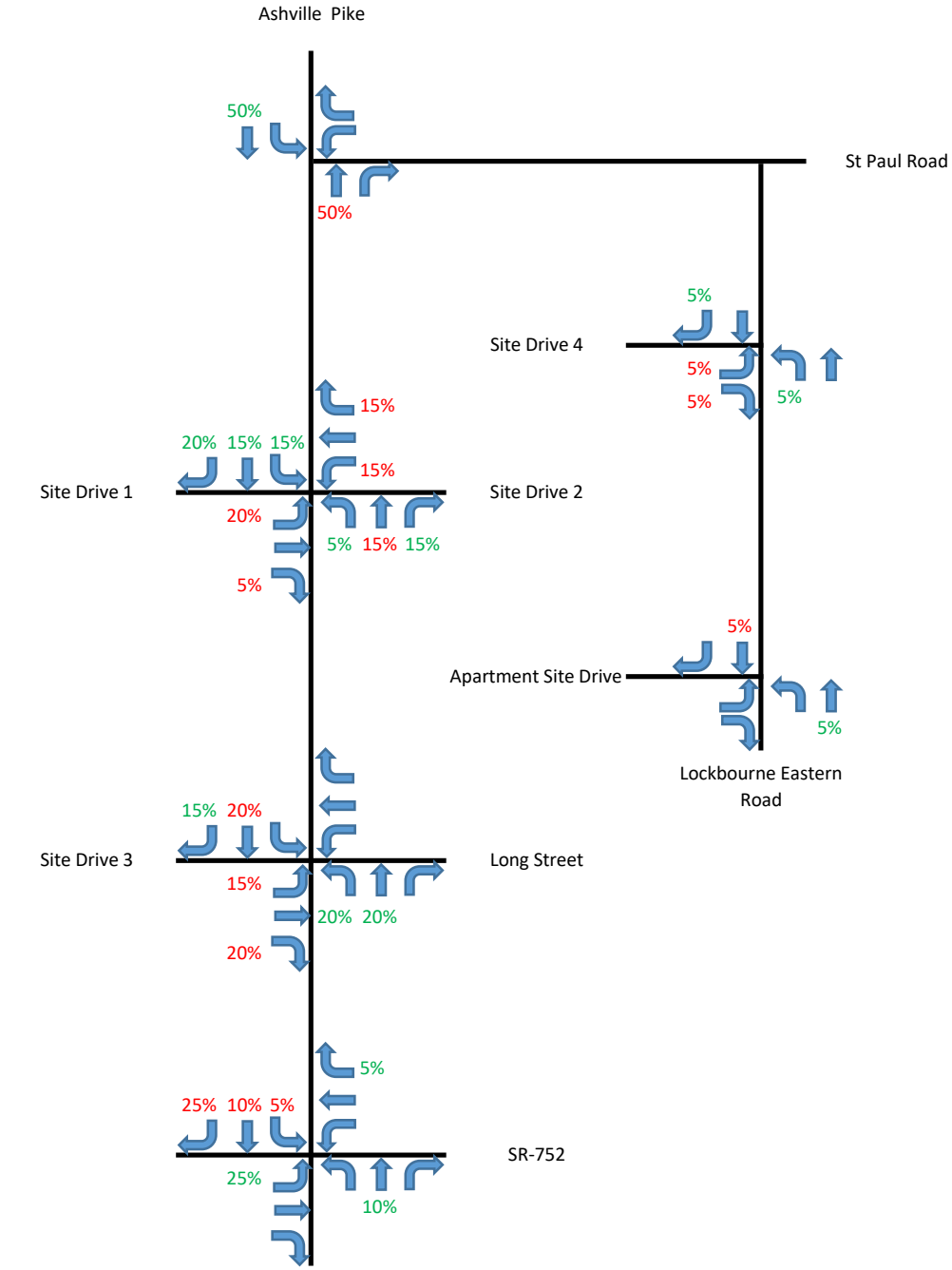
Appendix D
Volume Calculations

Appendix D

CARPENTER MARTY

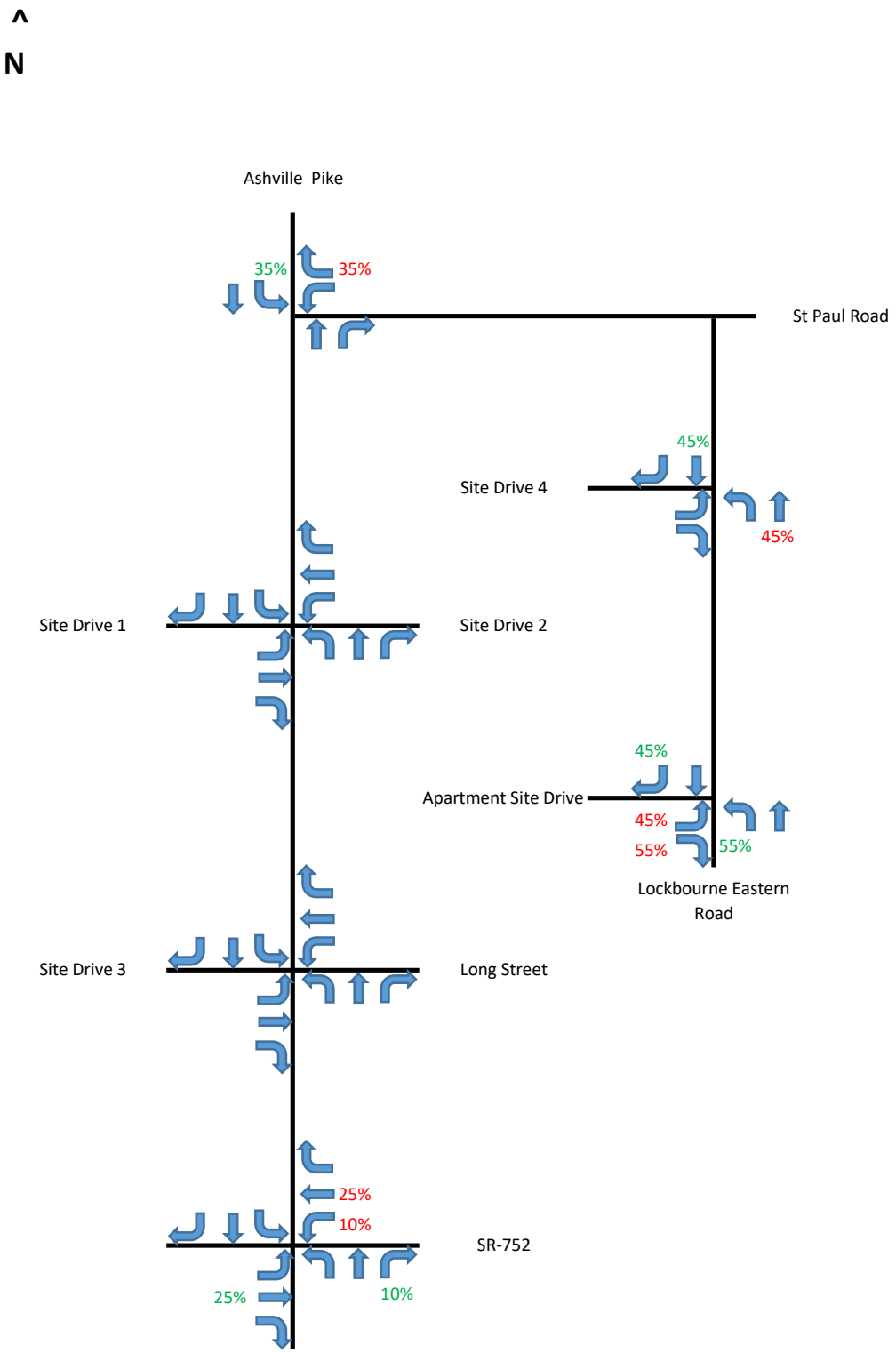
	Year	Period	Scenario	Plate
CARPENTER MARTY			Site Distribution	

^
N

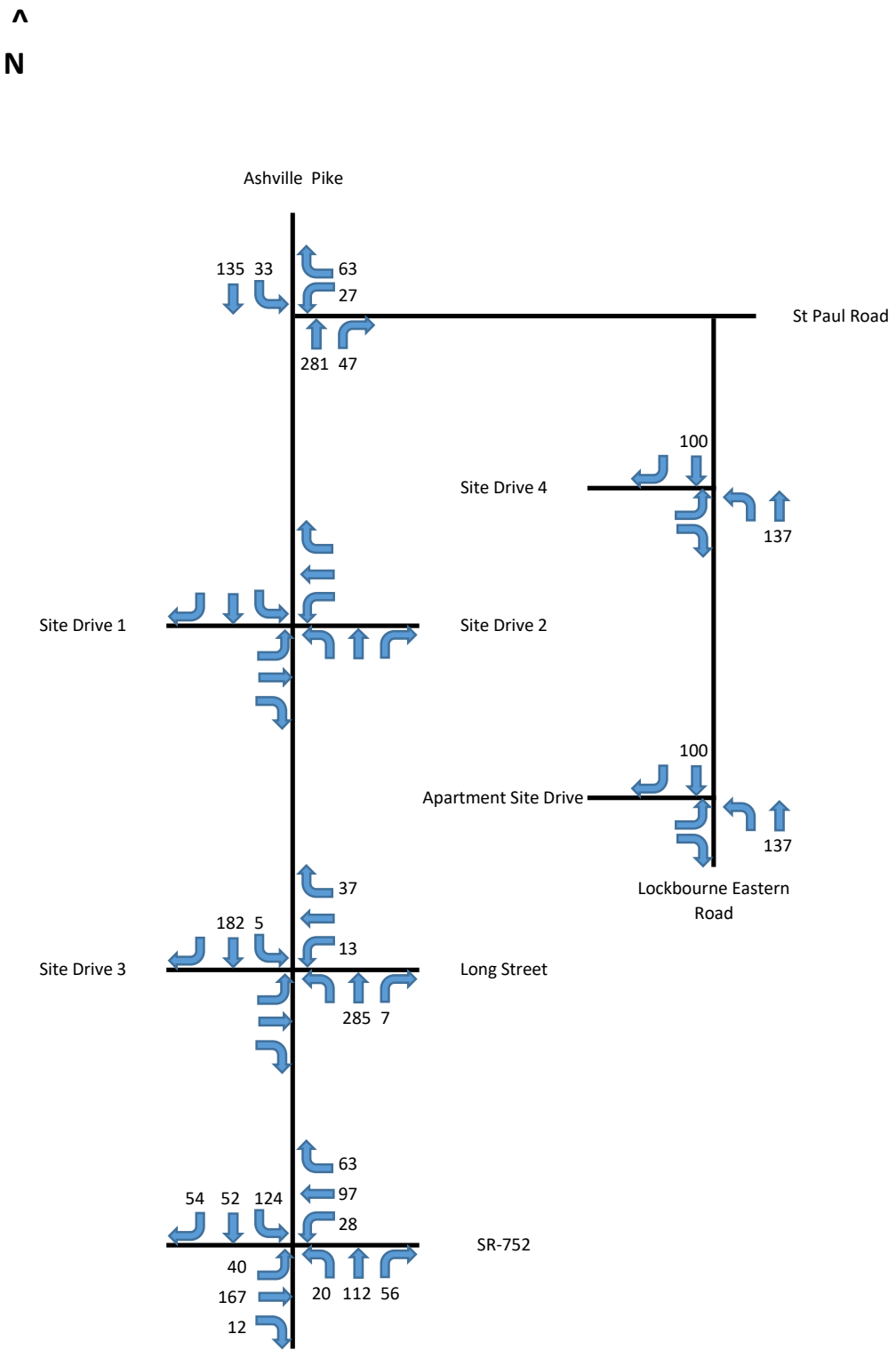


Ashville Residential TIS
Traffic Volume Calculations

	Year	Period	Scenario	Plate
CARPENTER MARTY			Apartment Distribution	



	Year	Period	Scenario	Plate
CARPENTER MARTY	2021	AM	Count	

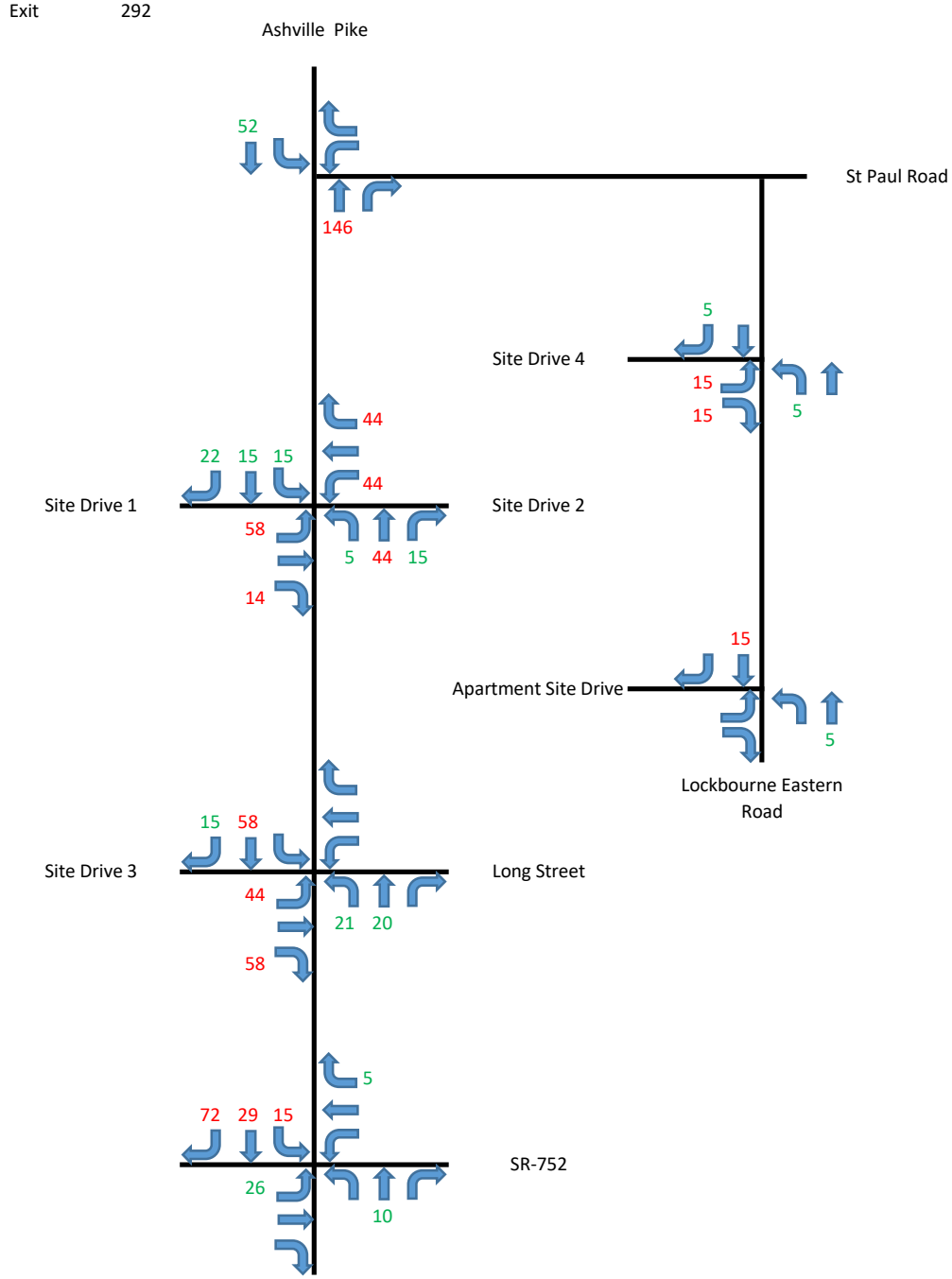


	Year	Period	Scenario	Plate
CARPENTER MARTY	2022	AM	No Build	A1

	Year	Period	Scenario	Plate
CARPENTER MARTY		AM	Site Non-Pass-By Traffic	B1

^
N

Enter 103
Exit 292



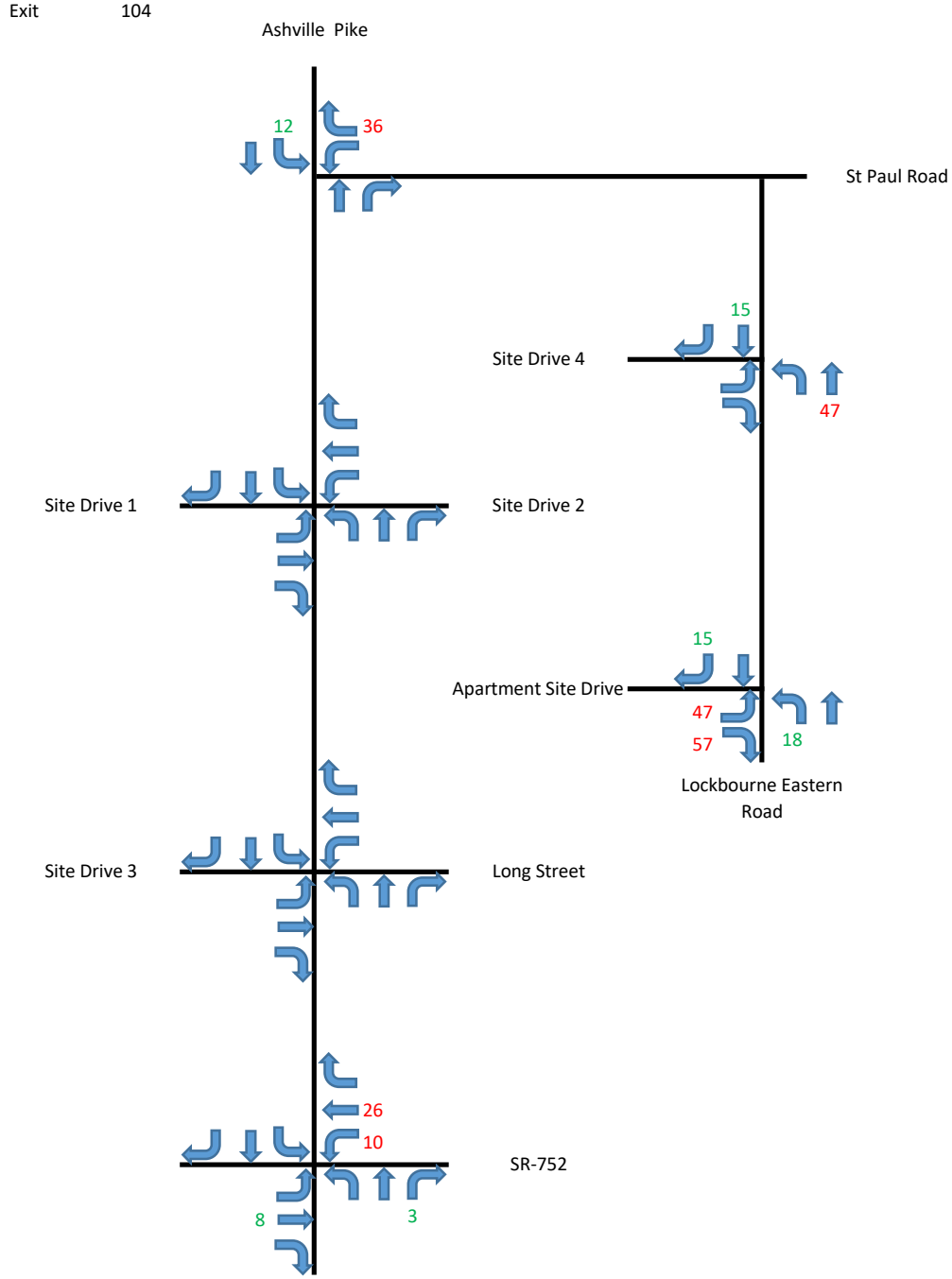
	Year	Period	Scenario	Plate
CARPENTER MARTY		AM	Apartment Site Non-Pass-By Traffic	C1

^

N

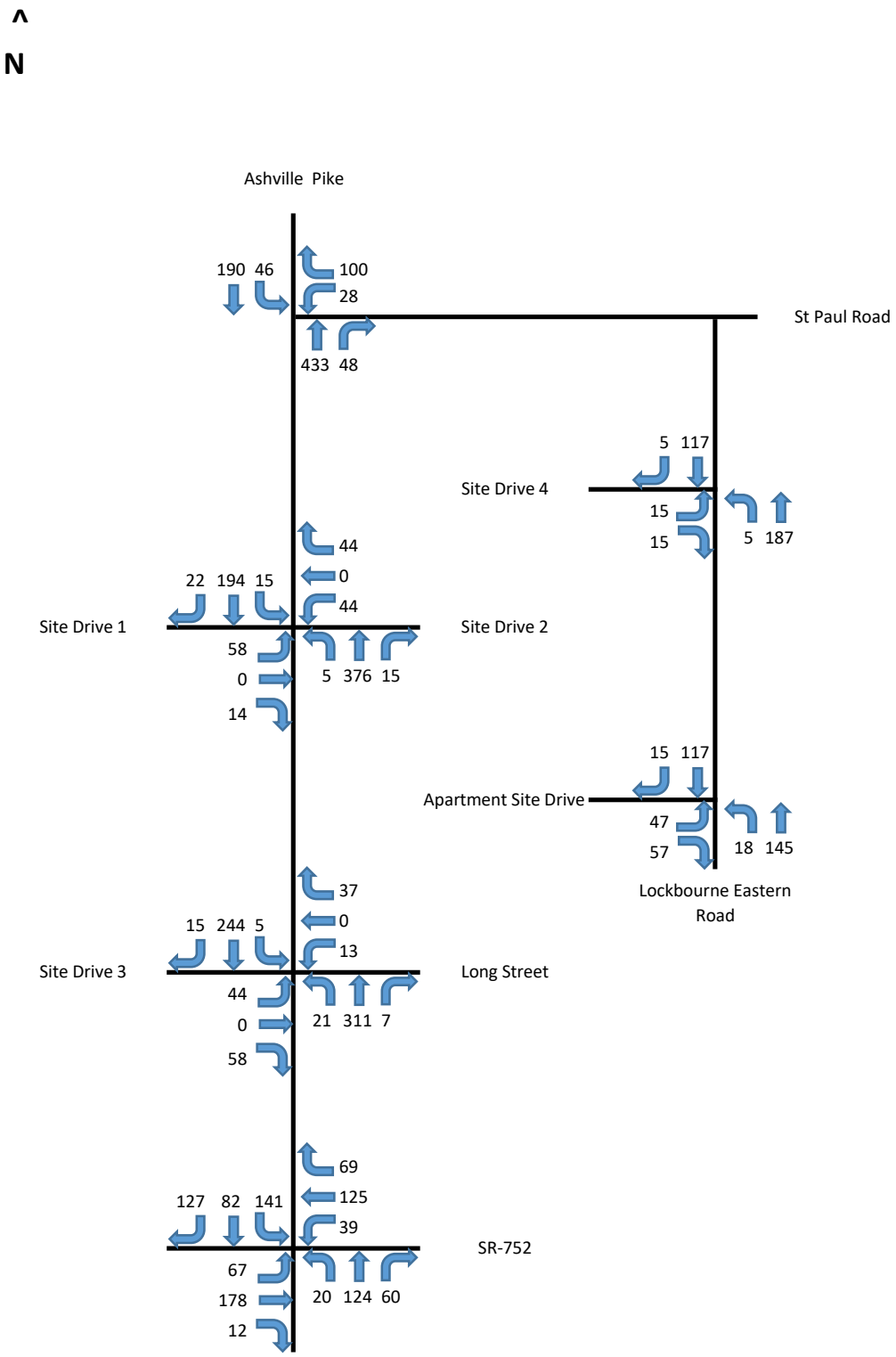
Enter 33

Exit 104

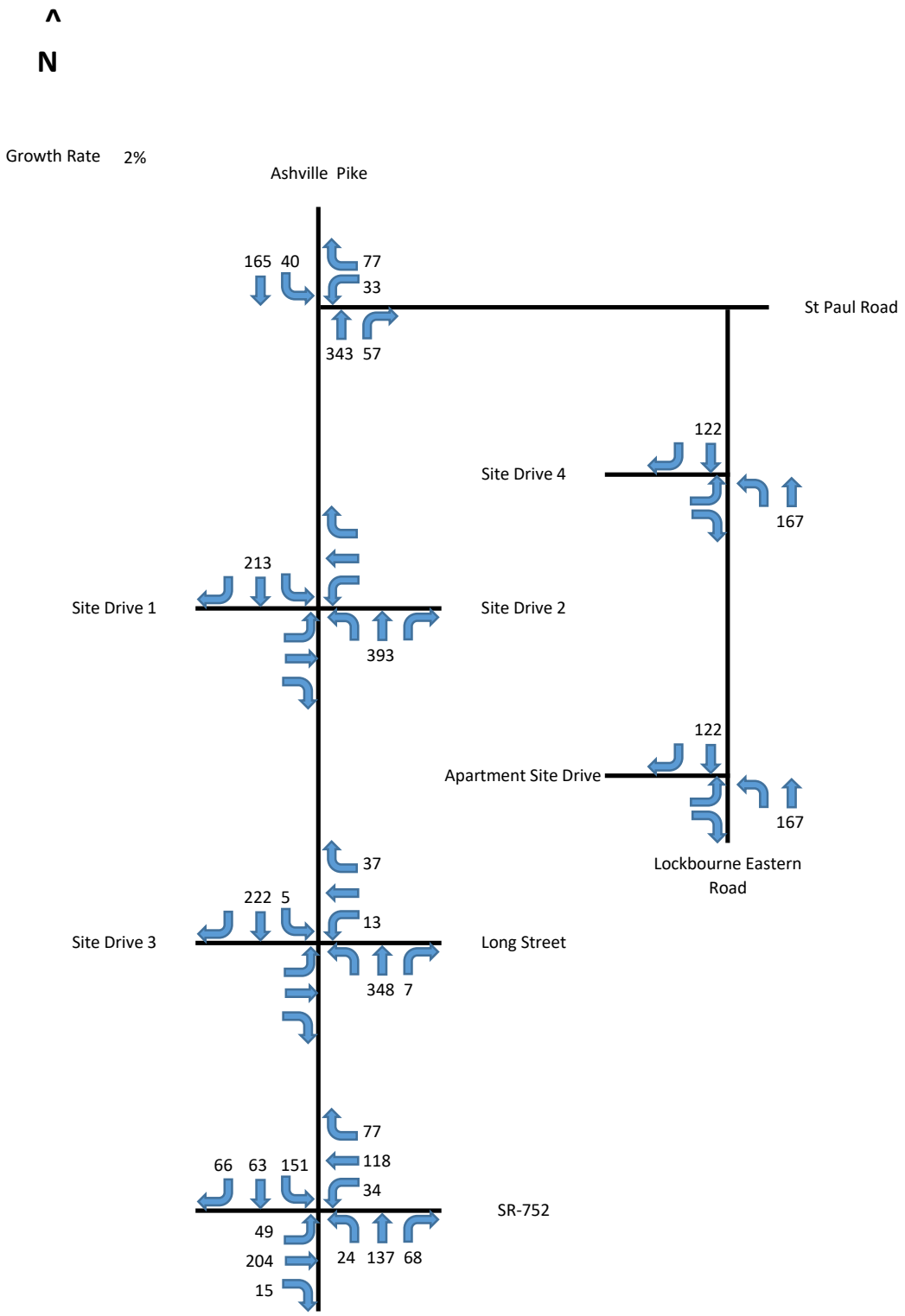


Ashville Residential TIS
Traffic Volume Calculations

	Year	Period	Scenario	Plate
CARPENTER MARTY	2022	AM	Build	D1 = A1 + B1 + C1

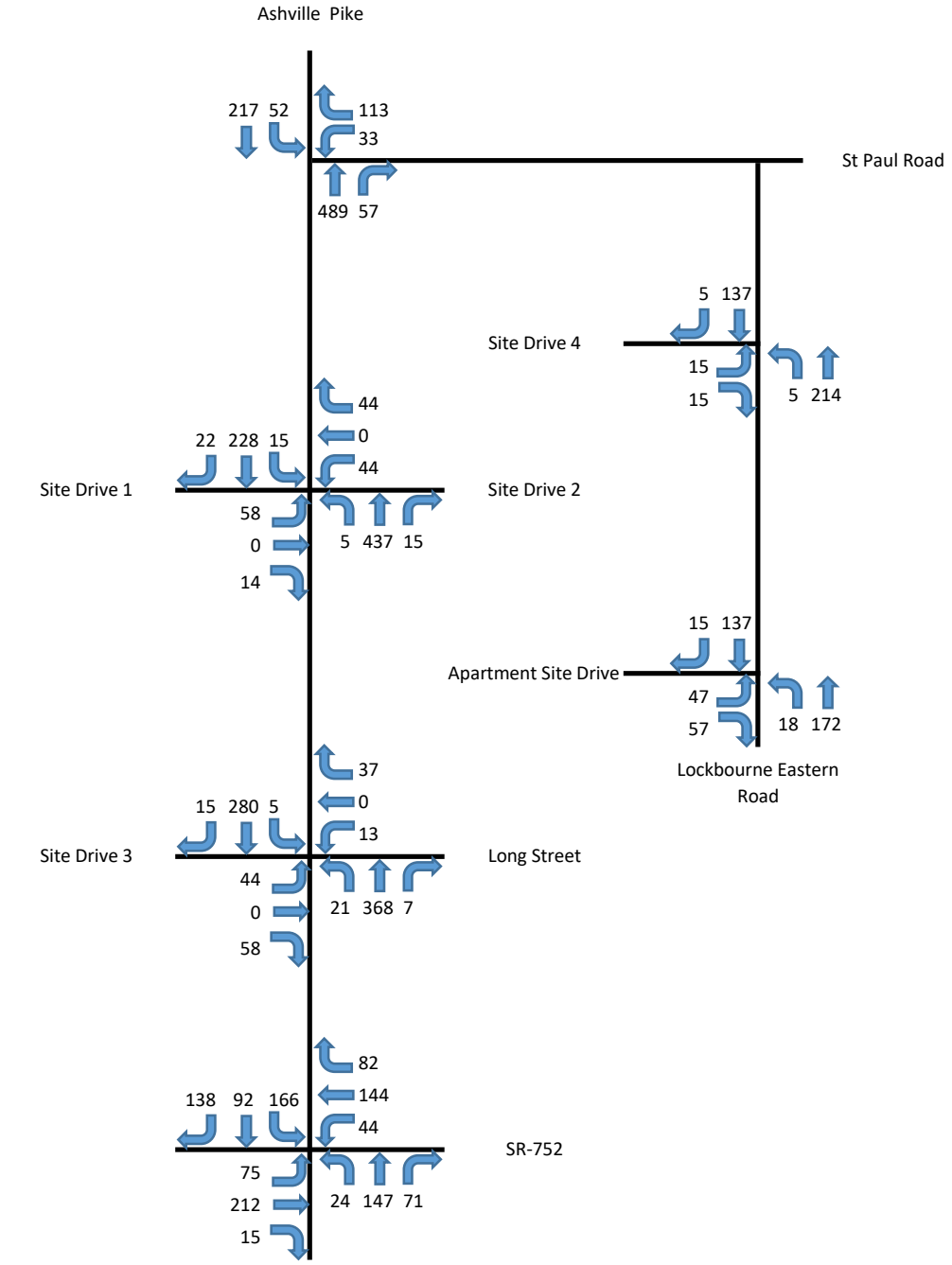


	Year	Period	Scenario	Plate
CARPENTER MARTY	2032	AM	No Build	E1



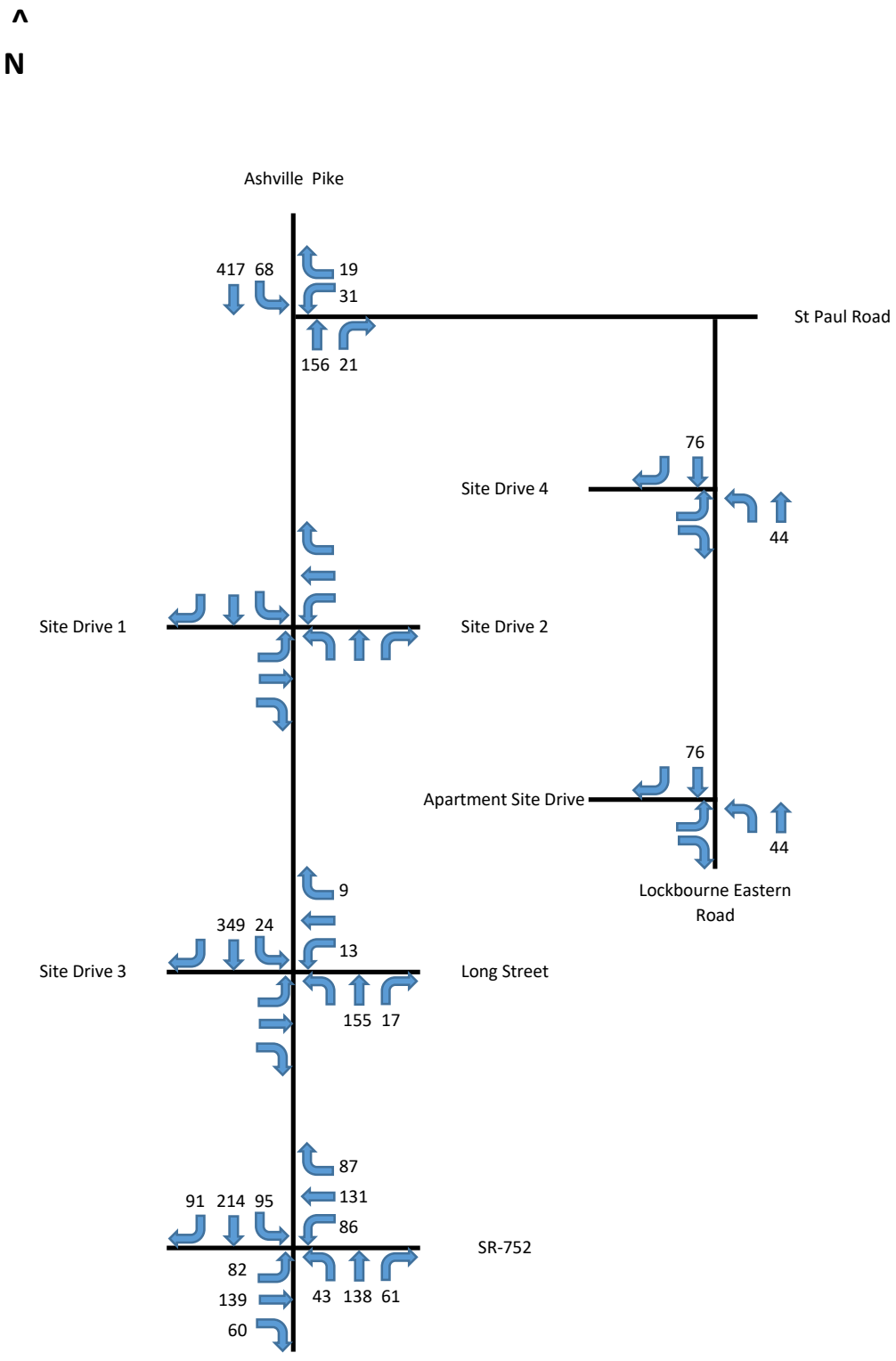
	Year	Period	Scenario	Plate
CARPENTER MARTY	2032	AM	Build	F1 = B1 + C1 + E1

^
N



Ashville Residential TIS
Traffic Volume Calculations

	Year	Period	Scenario	Plate
CARPENTER MARTY	2021	PM	Count	

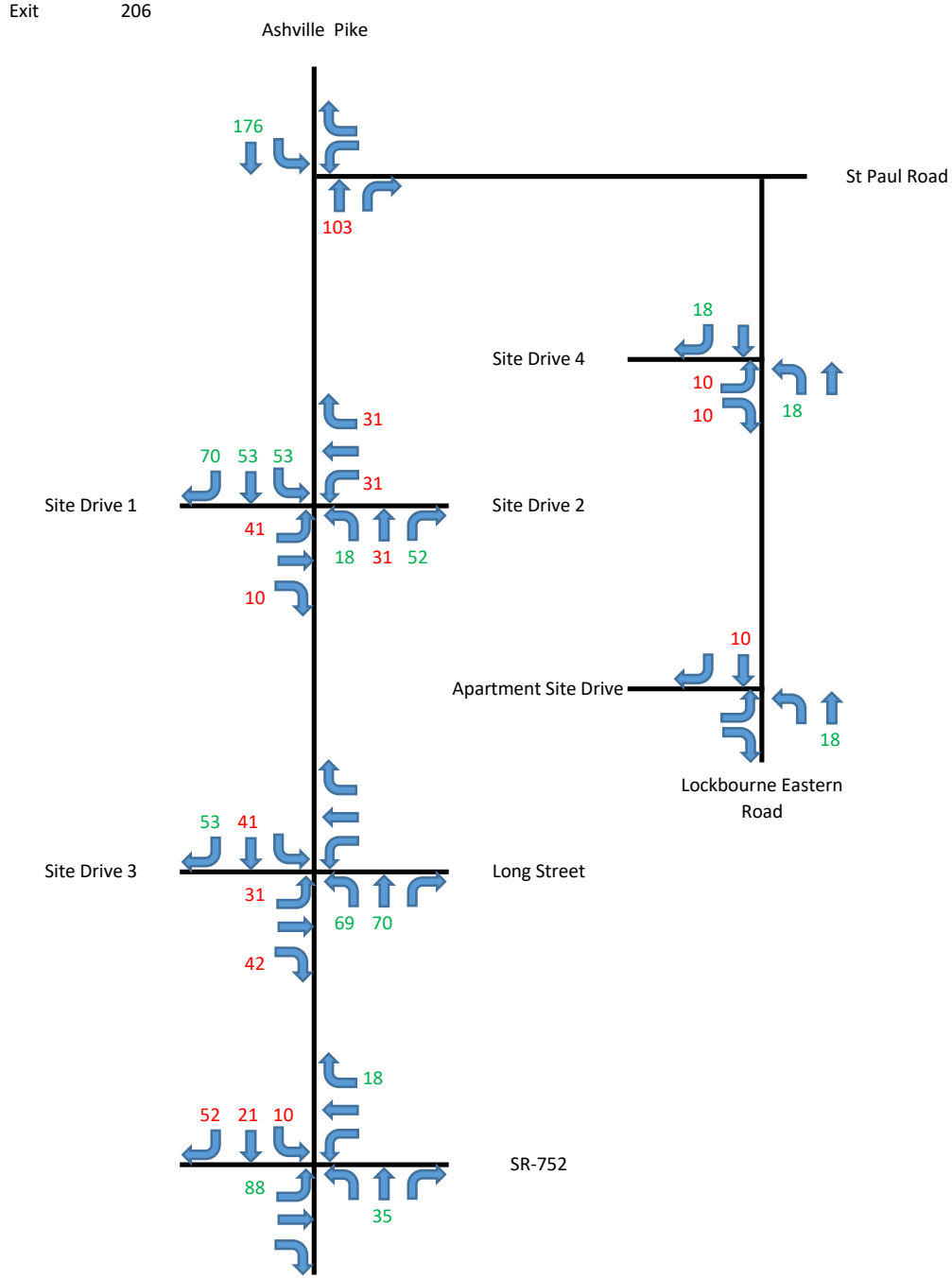


	Year	Period	Scenario	Plate
CARPENTER MARTY	2022	PM	No Build	A2

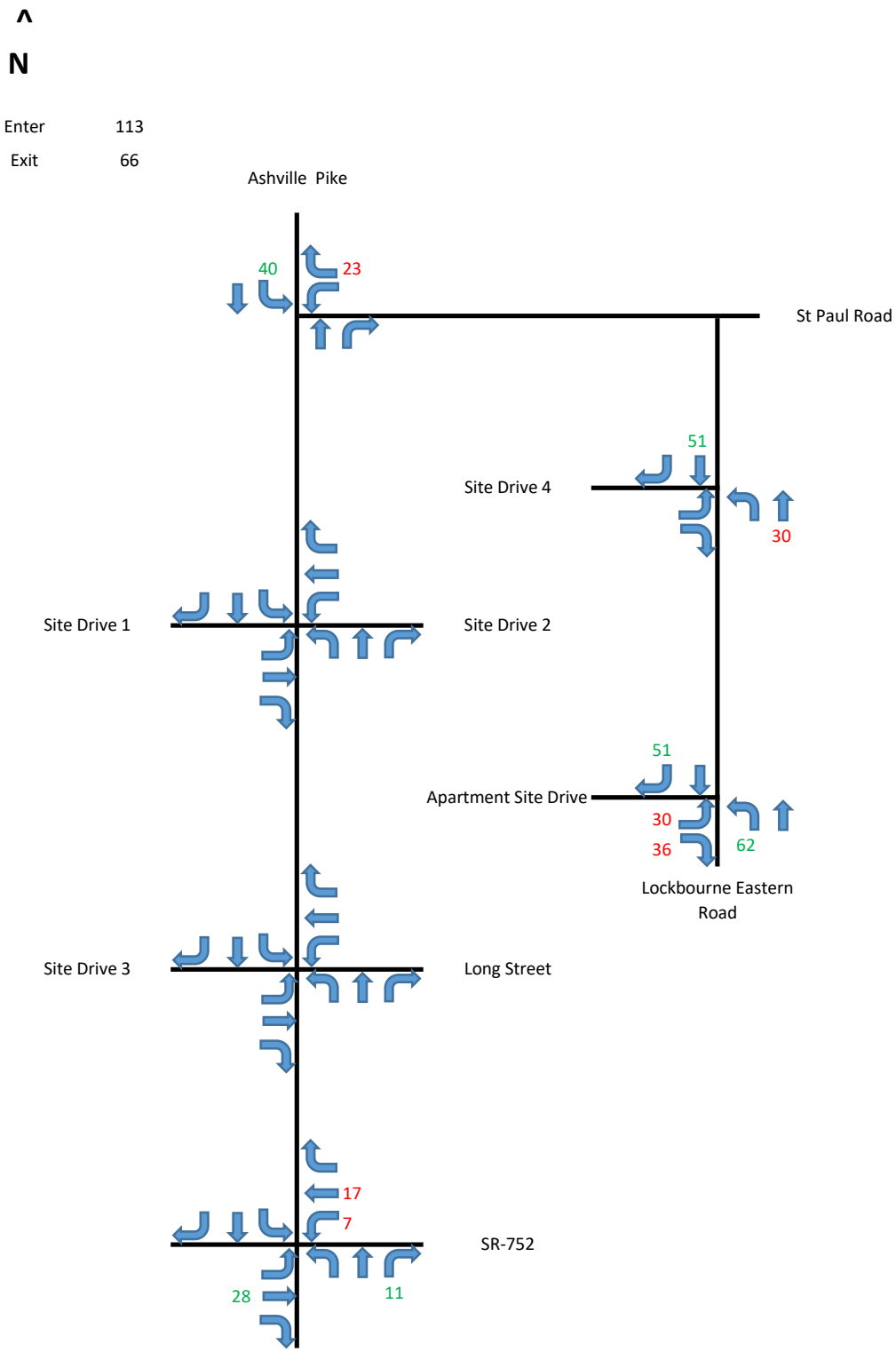
	Year	Period	Scenario	Plate
CARPENTER MARTY		PM	Site Non-Pass-By Traffic	B2

^
N

Enter 351
Exit 206

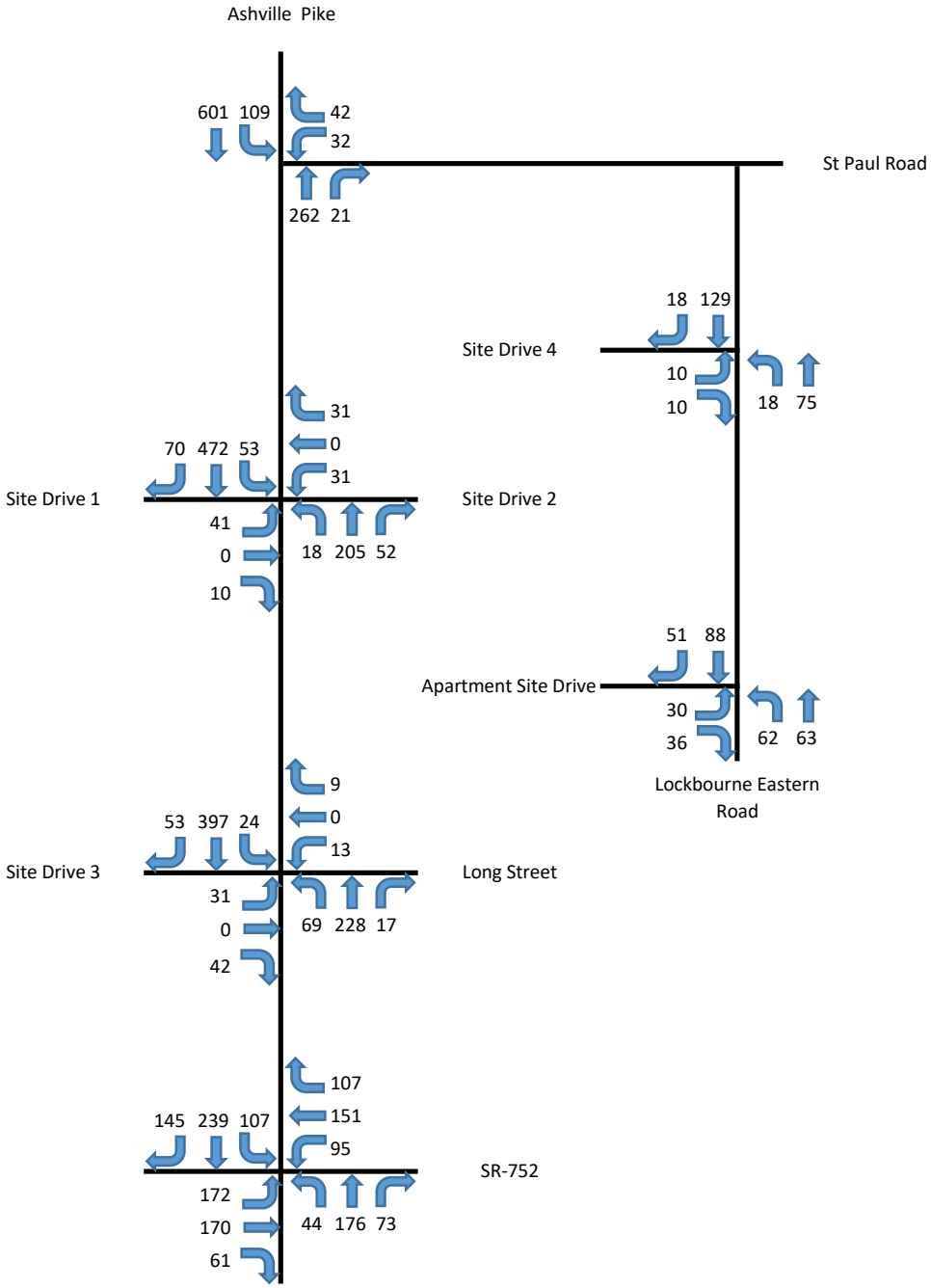


	Year	Period	Scenario	Plate
CARPENTER MARTY		PM	Apartment Site Non-Pass-By Traffic	C2

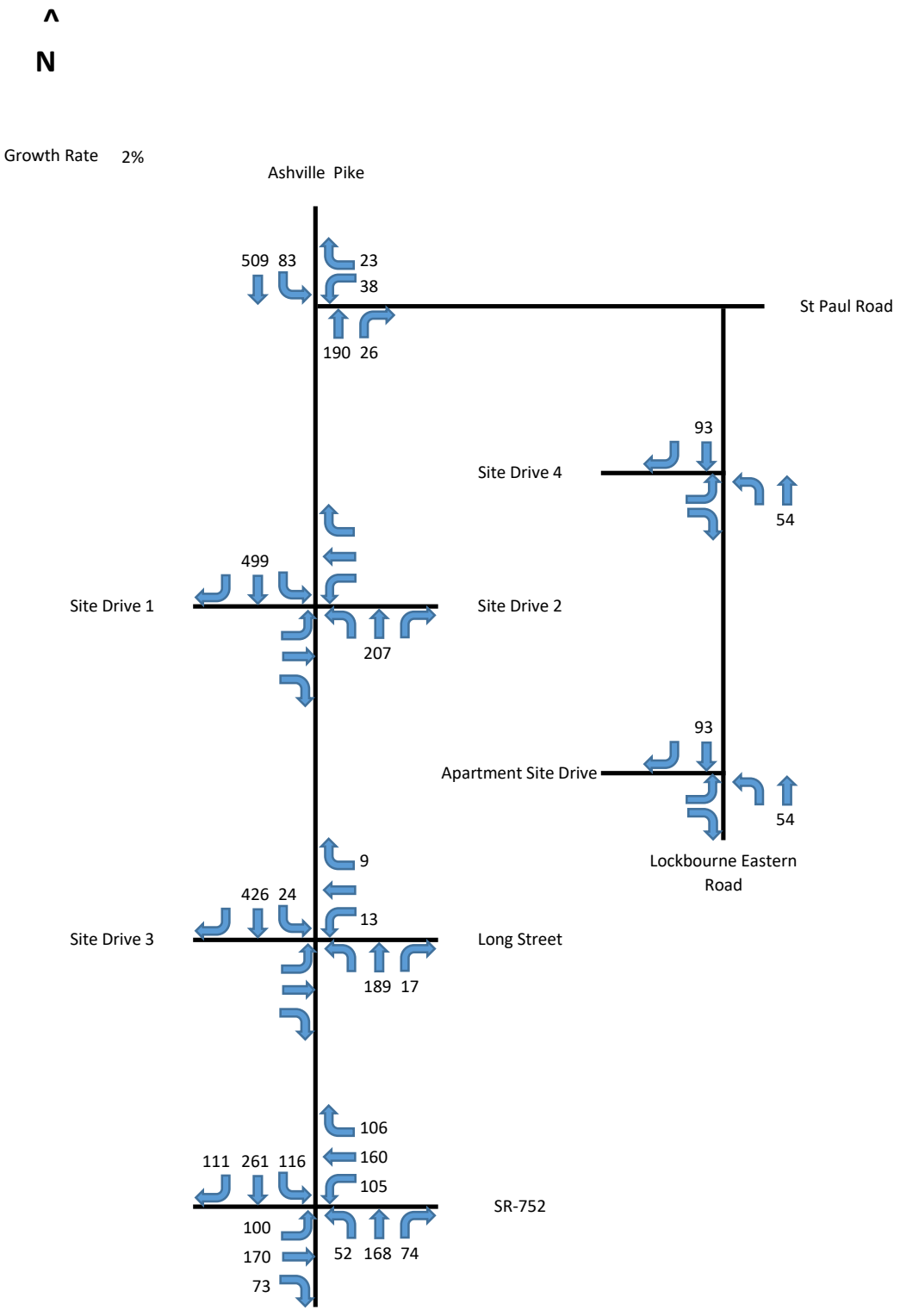


	Year	Period	Scenario	Plate
CARPENTER MARTY	2022	PM	Build	D2 = A2 + B2 + C2

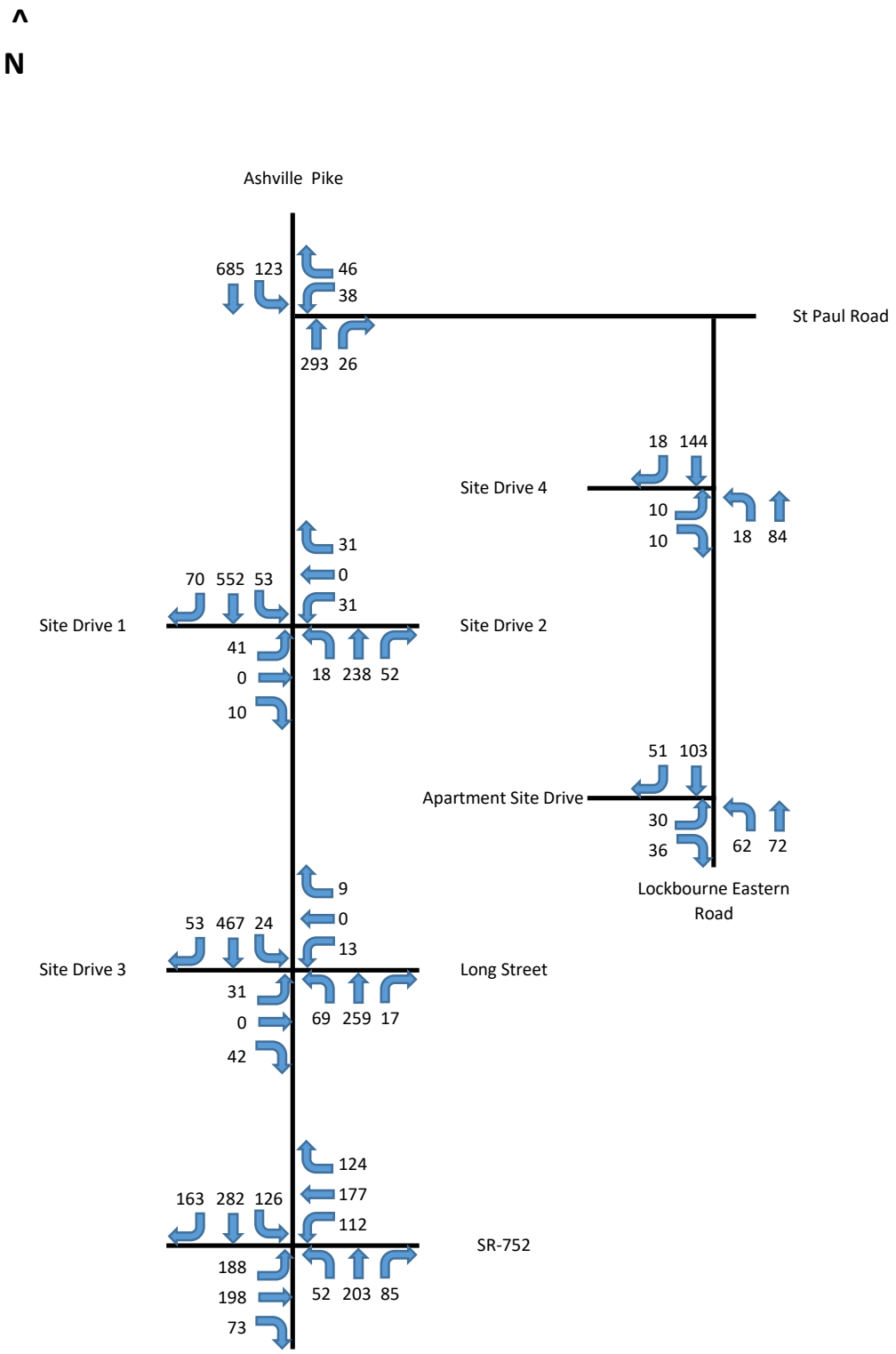
^
N



	Year	Period	Scenario	Plate
CARPENTER MARTY	2032	PM	No Build	E2



	Year	Period	Scenario	Plate
CARPENTER MARTY	2032	PM	Build	F2 = B2 + C2 + D2



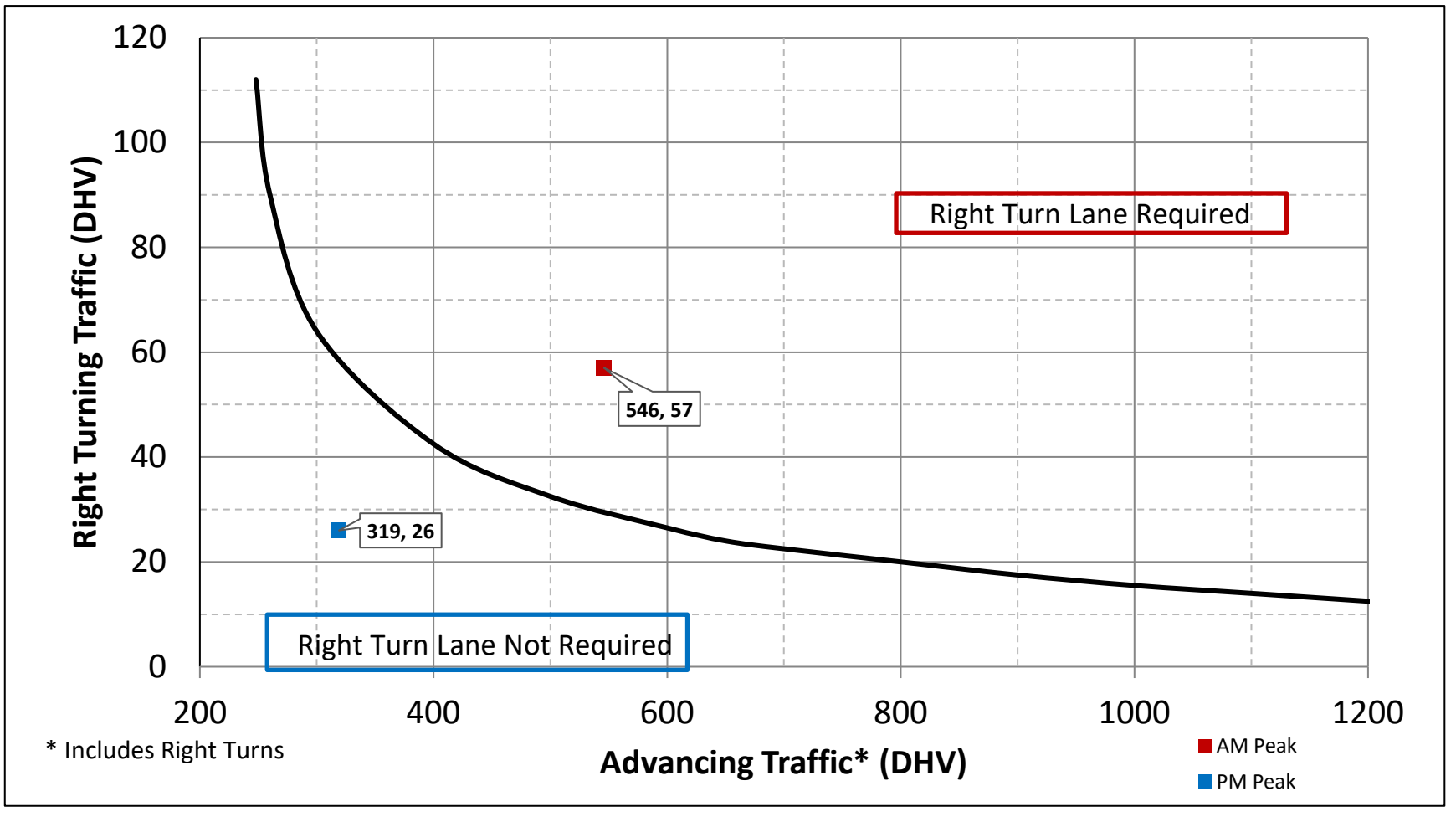
Appendix E
Turn Lane Warrant and Length Analysis

Appendix E

CARPENTER MARTY

2-Lane Highway Right Turn Lane Warrant

(> 40 mph or 70 kph Posted Speed)

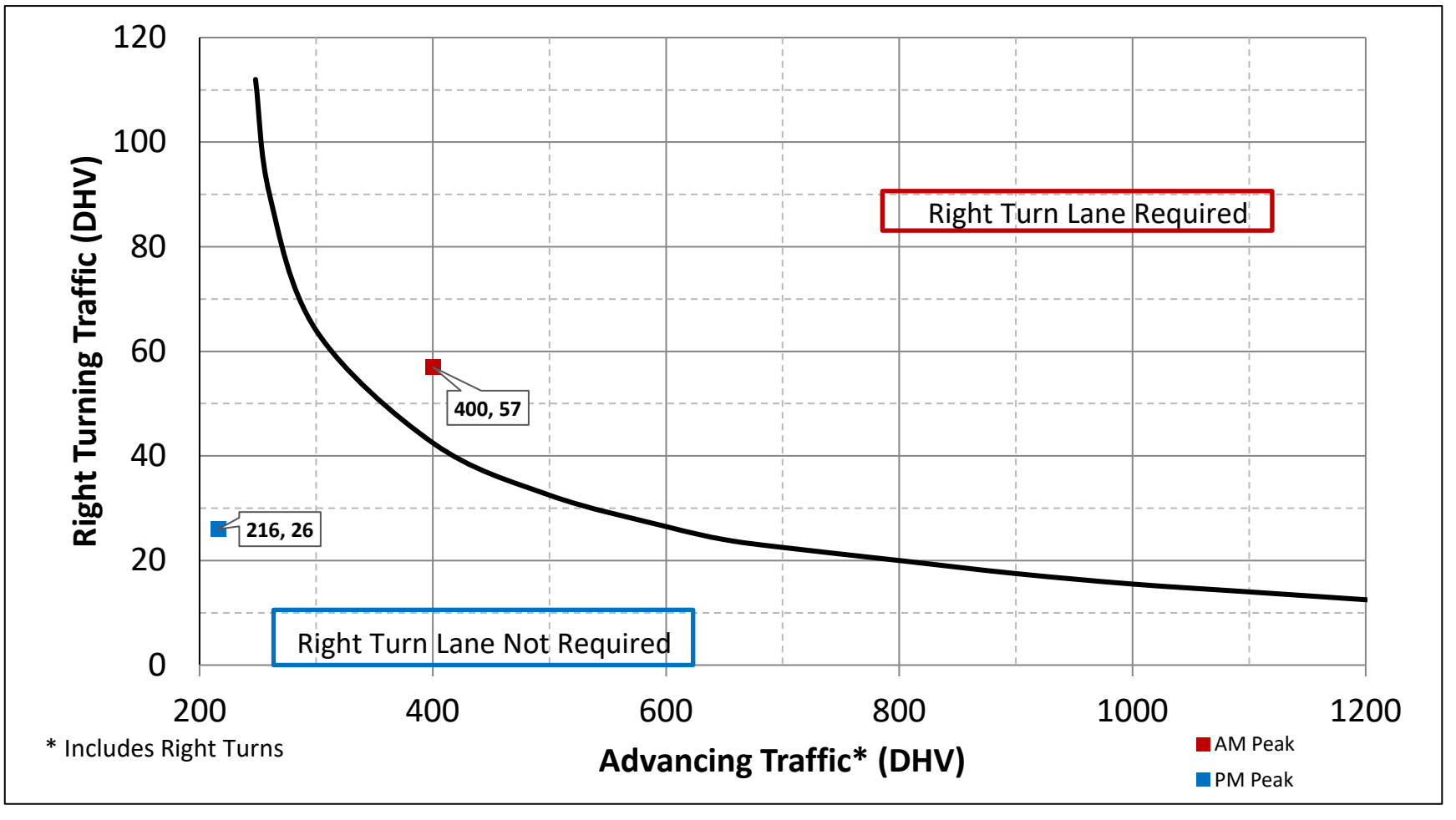


Turn Lane Length Calculations

AM Peak	**Design Speed**	55	**mph**	
	Traffic Control	Unsignalized		
	Cycle Length	Unsignalized		
	Cycles Per Hour	60	***Assume 60***	
	Turn Lane Volume	57	**VPH**	
	Advancing Traffic	546	**VPH**	
	Right Turn Percentage	10%		
	Location Type	Through Road		
	Condition	B or C		
	Vehicles/Cycle	1		
	Turn Lane Length	See Column to Right	285	** Turn Lane Length includes 50 ft diverging taper*
PM Peak	**Design Speed**	55	**mph**	
	Traffic Control	Unsignalized		
	Cycle Length	Unsignalized		
	Cycles Per Hour	60	***Assume 60***	
	Turn Lane Volume	26	**VPH**	
	Advancing Traffic	319	**VPH**	
	Right Turn Percentage	8%		
	Location Type	Through Road		
	Condition	B		
	Vehicles/Cycle	1		
	Turn Lane Length	285		** Turn Lane Length includes 50 ft diverging taper*
Is Right Turn Warrant Met		Yes	**See Above**	

2-Lane Highway Right Turn Lane Warrant

(> 40 mph or 70 kph Posted Speed)

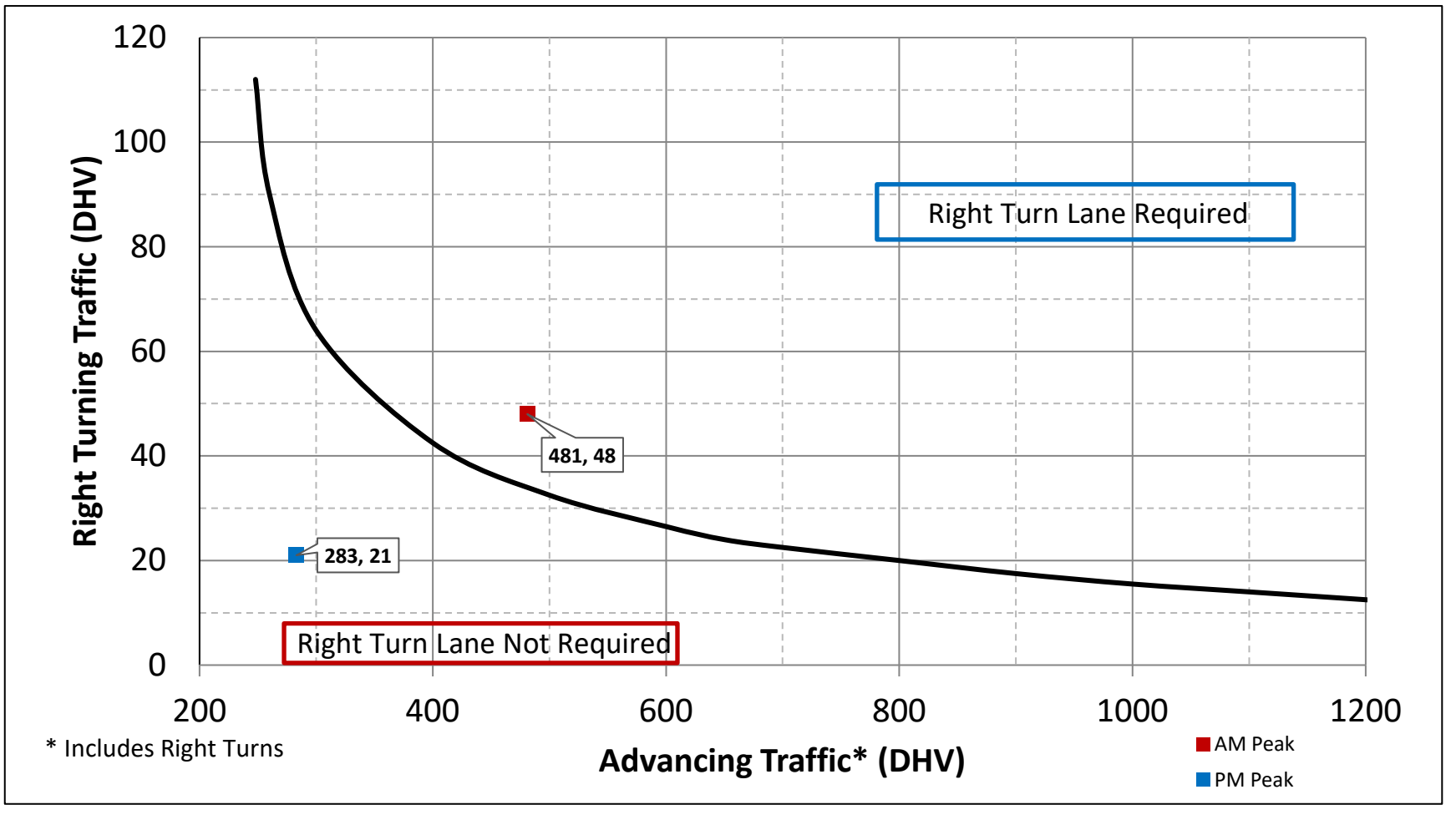


Turn Lane Length Calculations

AM Peak	**Design Speed**	55	**mph**	
	Traffic Control	Unsignalized		
	Cycle Length	Unsignalized		
	Cycles Per Hour	60	***Assume 60***	
	Turn Lane Volume	57	**VPH**	
	Advancing Traffic	400	**VPH**	
	Right Turn Percentage	14%		
	Location Type	Through Road		
	Condition	B or C		
	Vehicles/Cycle	1		
	Turn Lane Length	See Column to Right	285	** Turn Lane Length includes 50 ft diverging taper*
PM Peak	**Design Speed**	55	**mph**	
	Traffic Control	Unsignalized		
	Cycle Length	Unsignalized		
	Cycles Per Hour	60	***Assume 60***	
	Turn Lane Volume	26	**VPH**	
	Advancing Traffic	216	**VPH**	
	Right Turn Percentage	12%		
	Location Type	Through Road		
	Condition	B or C		
	Vehicles/Cycle	1		
	Turn Lane Length	See Column to Right	285	** Turn Lane Length includes 50 ft diverging taper*
Is Right Turn Warrant Met		Yes	**See Above**	

2-Lane Highway Right Turn Lane Warrant

(> 40 mph or 70 kph Posted Speed)

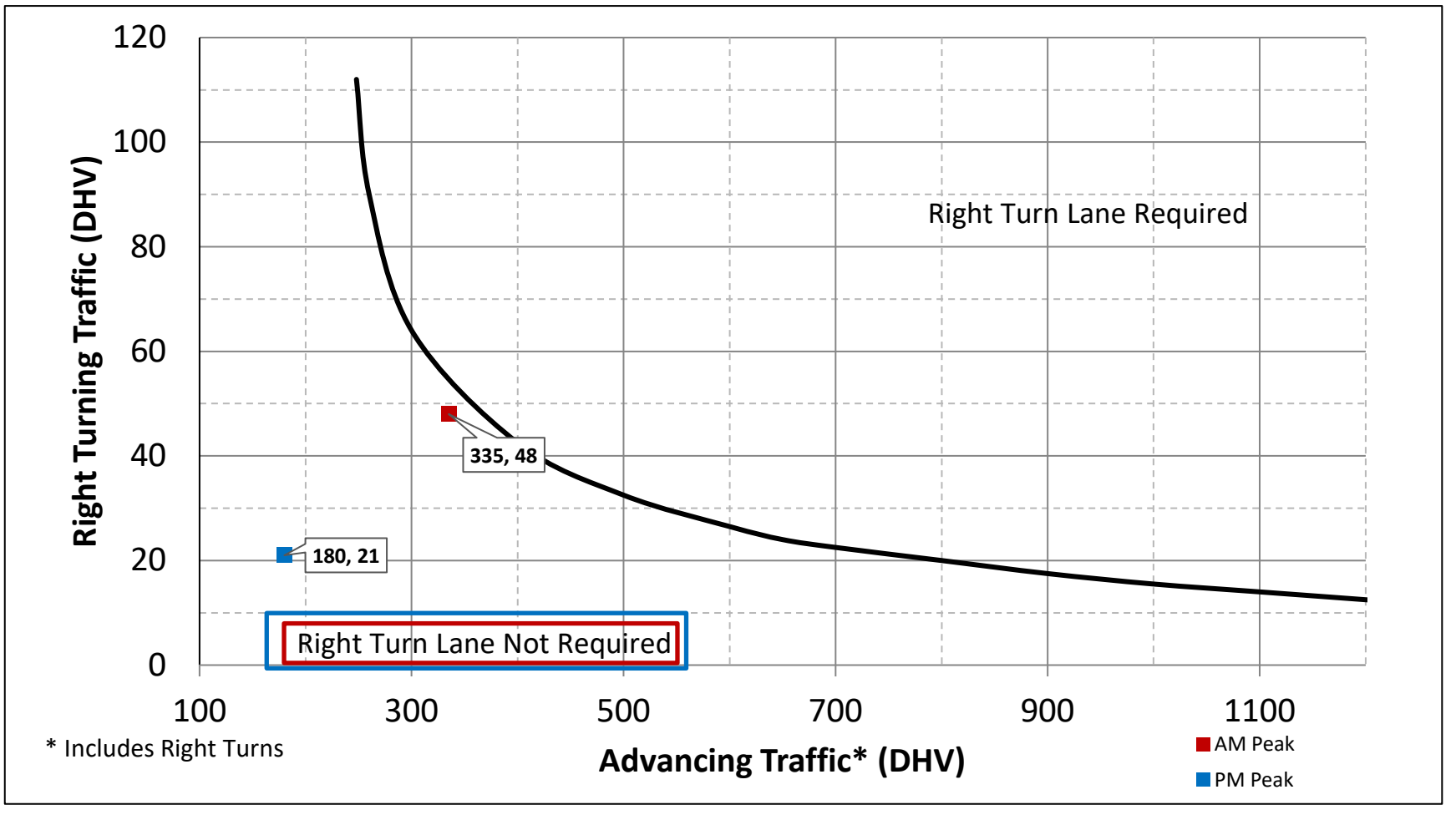


Turn Lane Length Calculations

AM Peak	Design Speed	55	mph	
	Traffic Control	Unsignalized		
	Cycle Length	Unsignalized		
	Cycles Per Hour	60	*Assume 60*	
	Turn Lane Volume	48	VPH	
	Advancing Traffic	481	VPH	
	Right Turn Percentage	10%		
	Location Type	Through Road		
	Condition	B		
	Vehicles/Cycle	1		
	Turn Lane Length	285		* Turn Lane Length includes 50 ft diverging taper
PM Peak	Design Speed	55	mph	
	Traffic Control	Unsignalized		
	Cycle Length	Unsignalized		
	Cycles Per Hour	60	*Assume 60*	
	Turn Lane Volume	21	VPH	
	Advancing Traffic	283	VPH	
	Right Turn Percentage	7%		
	Location Type	Through Road		
	Condition	B		
	Vehicles/Cycle	1		
	Turn Lane Length	285		* Turn Lane Length includes 50 ft diverging taper
Is Right Turn Warrant Met		Yes	See Above	

2-Lane Highway Right Turn Lane Warrant

(> 40 mph or 70 kph Posted Speed)

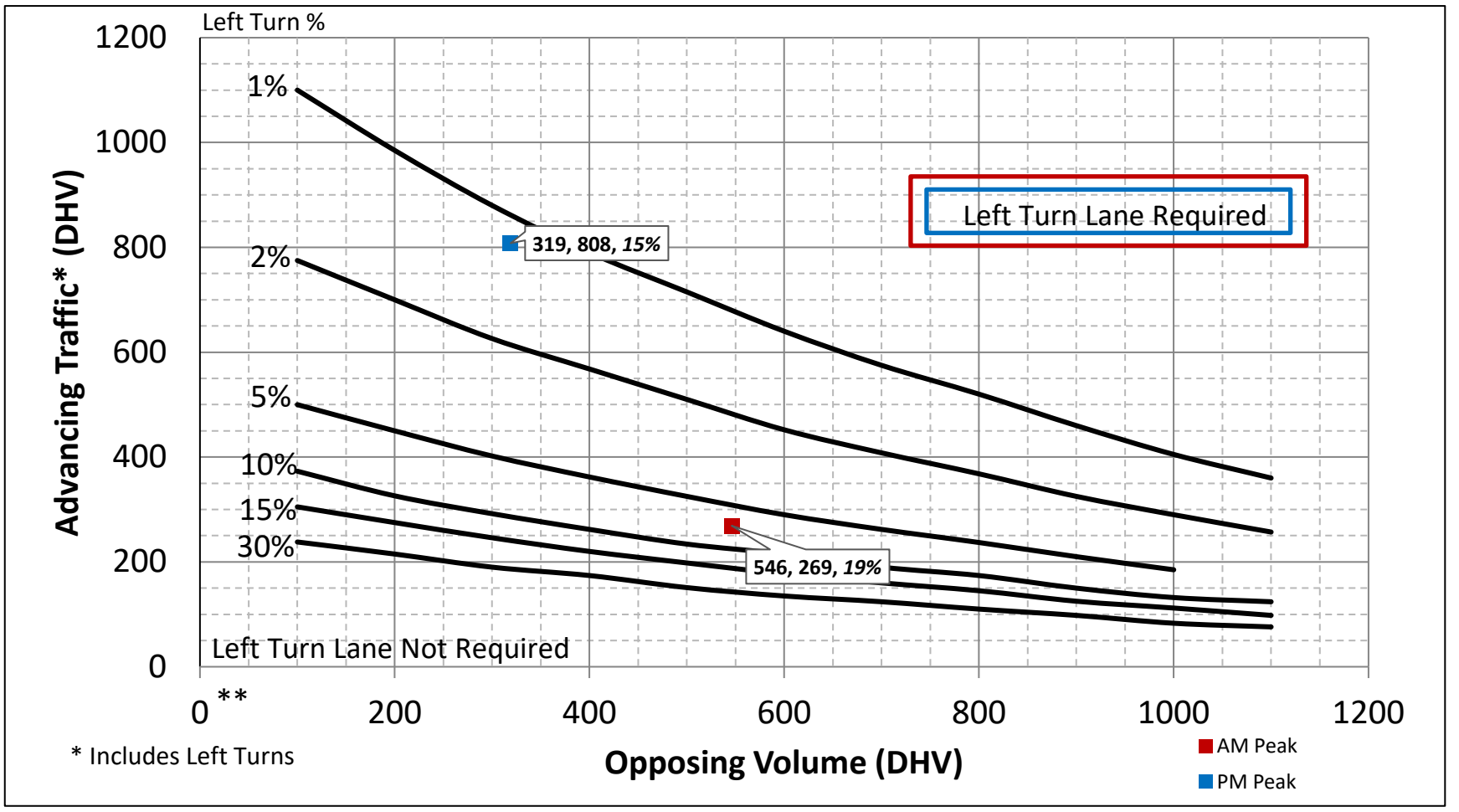


Turn Lane Length Calculations

AM Peak	**Design Speed**	55	**mph**	
	Traffic Control	Unsignalized		
	Cycle Length	Unsignalized		
	Cycles Per Hour	60	***Assume 60***	
	Turn Lane Volume	48	**VPH**	
	Advancing Traffic	335	**VPH**	
	Right Turn Percentage	14%		
	Location Type	Through Road		
	Condition	B or C		
	Vehicles/Cycle	1		
	Turn Lane Length	See Column to Right	285	* Turn Lane Length includes 50 ft diverging taper
PM Peak	**Design Speed**	55	**mph**	
	Traffic Control	Unsignalized		
	Cycle Length	Unsignalized		
	Cycles Per Hour	60	***Assume 60***	
	Turn Lane Volume	21	**VPH**	
	Advancing Traffic	180	**VPH**	
	Right Turn Percentage	12%		
	Location Type	Through Road		
	Condition	B or C		
	Vehicles/Cycle	1		
	Turn Lane Length	See Column to Right	285	* Turn Lane Length includes 50 ft diverging taper
Is Right Turn Warrant Met		No	**No Right Turn Lane Required**	

2-Lane Highway Left Turn Lane Warrant

(> 40 mph or 70 kph Posted Speed)

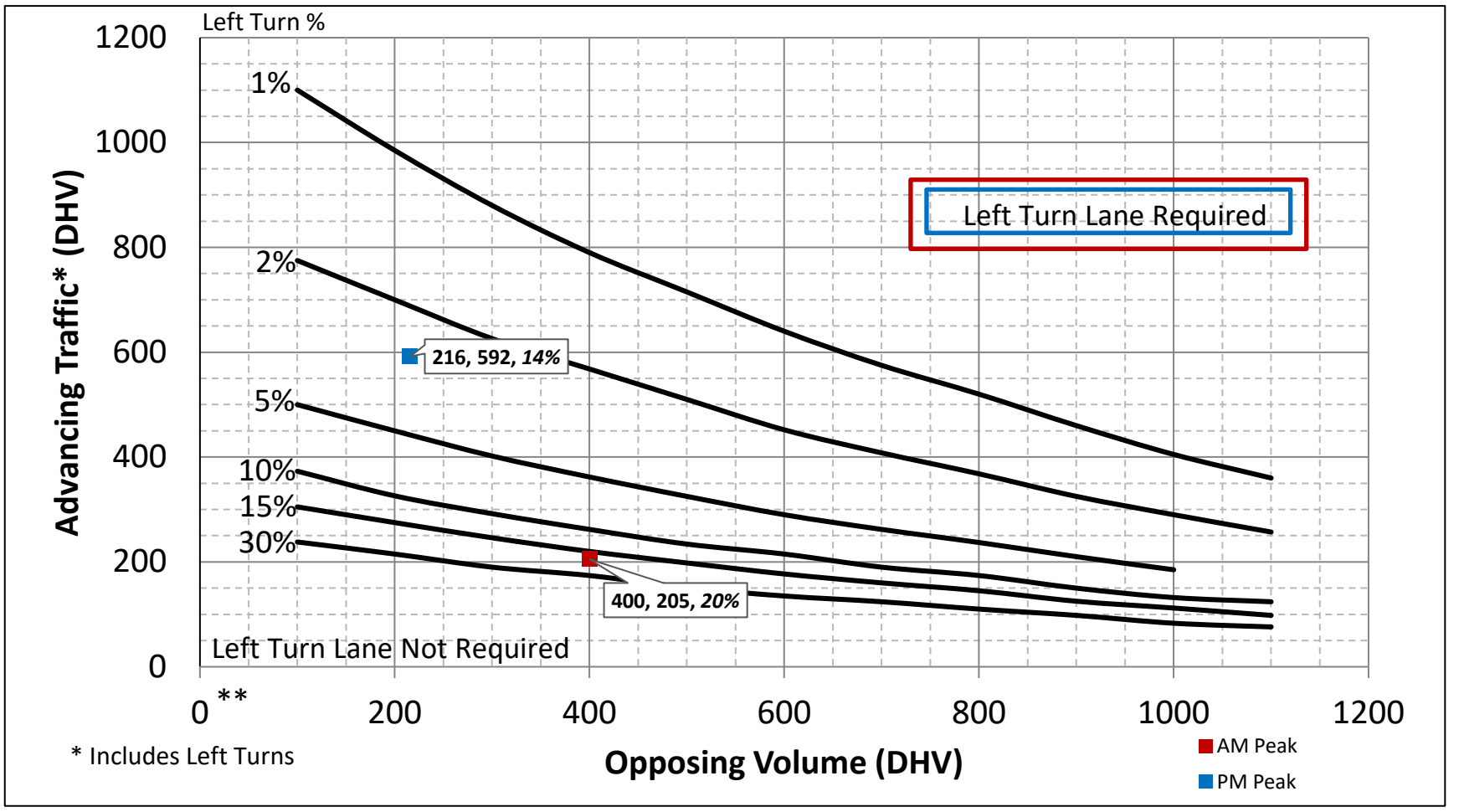


Turn Lane Length Calculations

AM Peak	**Design Speed**	55	**mph**	
	Traffic Control	Unsignalized		
	Cycle Length	Unsignalized		
	Cycles Per Hour	60	***Assume 60***	
	Turn Lane Volume	52	**VPH**	
	Advancing Traffic	269	**VPH**	
	Opposing Volume	546	**VPH**	
	Left Turn Percentage	19%		
	Location Type	Through Road		
	Condition	B or C		
	Vehicles/Cycle	1		
	Turn Lane Length	See Column to Right	285	** Turn Lane Length includes 50 ft diverging taper*
	Offset Width	12		
	Approach Taper	660		
PM Peak	**Design Speed**	55	**mph**	
	Traffic Control	Unsignalized		
	Cycle Length	Unsignalized		
	Cycles Per Hour	60	***Assume 60***	
	Turn Lane Volume	123	**VPH**	
	Advancing Traffic	808	**VPH**	
	Opposing Volume	319	**VPH**	
	Left Turn Percentage	15%		
	Location Type	Through Road		
	Condition	B or C		
	Vehicles/Cycle	3		
	Turn Lane Length	See Column to Right	315	** Turn Lane Length includes 50 ft diverging taper*
	Offset Width	12		
	Approach Taper	660		
Is Left Turn Warrant Met		Yes	**See Above**	

2-Lane Highway Left Turn Lane Warrant

(= < 40 mph or 70 kph Posted Speed)

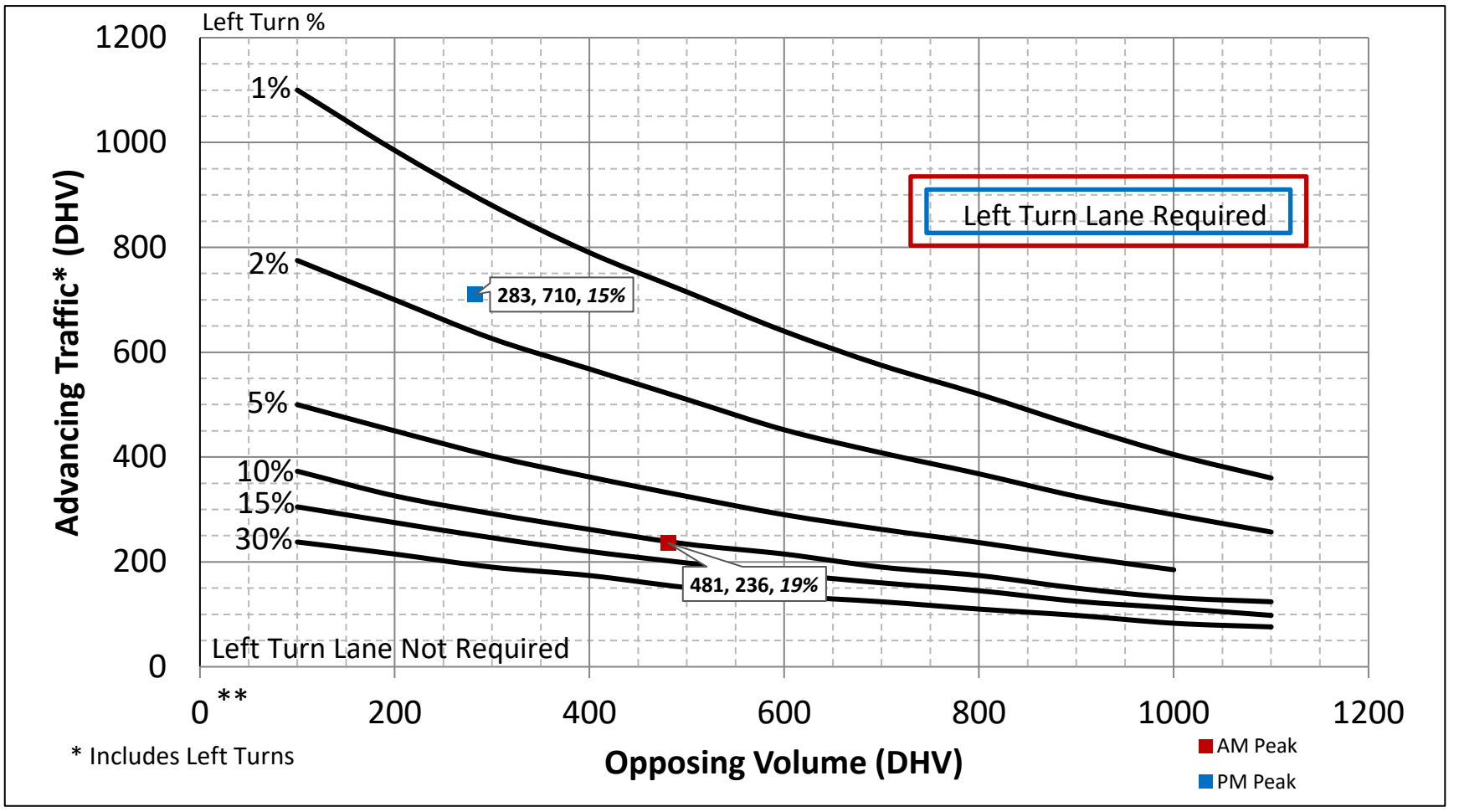


Turn Lane Length Calculations

AM Peak	**Design Speed**	55	**mph**	
	Traffic Control	Unsignalized		
	Cycle Length	Unsignalized		
	Cycles Per Hour	60	***Assume 60***	
	Turn Lane Volume	40	**VPH**	
	Advancing Traffic	205	**VPH**	
	Opposing Volume	400	**VPH**	
	Left Turn Percentage	20%		
	Location Type	Through Road		
	Condition	B or C		
	Vehicles/Cycle	1		
	Turn Lane Length	See Column to Right	285	** Turn Lane Length includes 50 ft diverging taper*
	Offset Width	12		
	Approach Taper	660		
PM Peak	**Design Speed**	55	**mph**	
	Traffic Control	Unsignalized		
	Cycle Length	Unsignalized		
	Cycles Per Hour	60	***Assume 60***	
	Turn Lane Volume	83	**VPH**	
	Advancing Traffic	592	**VPH**	
	Opposing Volume	216	**VPH**	
	Left Turn Percentage	14%		
	Location Type	Through Road		
	Condition	B or C		
	Vehicles/Cycle	2		
	Turn Lane Length	See Column to Right	285	** Turn Lane Length includes 50 ft diverging taper*
	Offset Width	12		
	Approach Taper	660		
Is Left Turn Warrant Met		Yes	**See Above**	

2-Lane Highway Left Turn Lane Warrant

(> 40 mph or 70 kph Posted Speed)

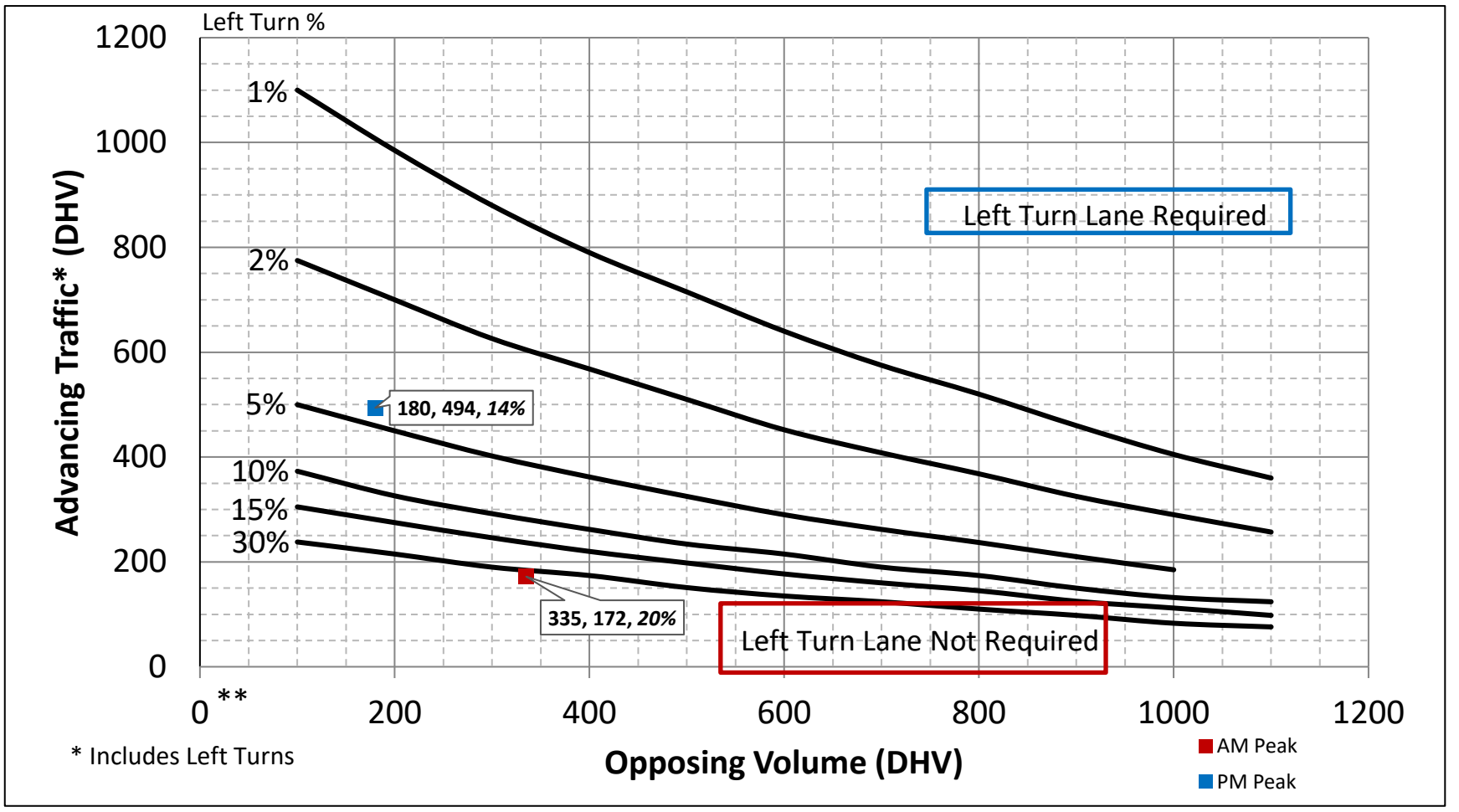


Turn Lane Length Calculations

AM Peak	**Design Speed**	55	**mph**	
	Traffic Control	Unsignalized		
	Cycle Length	Unsignalized		
	Cycles Per Hour	60	***Assume 60***	
	Turn Lane Volume	46	**VPH**	
	Advancing Traffic	236	**VPH**	
	Opposing Volume	481	**VPH**	
	Left Turn Percentage	19%		
	Location Type	Through Road		
	Condition	B or C		
	Vehicles/Cycle	1		
	Turn Lane Length	See Column to Right	285	** Turn Lane Length includes 50 ft diverging taper*
	Offset Width	12		
	Approach Taper	660		
PM Peak	**Design Speed**	55	**mph**	
	Traffic Control	Unsignalized		
	Cycle Length	Unsignalized		
	Cycles Per Hour	60	***Assume 60***	
	Turn Lane Volume	109	**VPH**	
	Advancing Traffic	710	**VPH**	
	Opposing Volume	283	**VPH**	
	Left Turn Percentage	15%		
	Location Type	Through Road		
	Condition	B or C		
	Vehicles/Cycle	2		
	Turn Lane Length	See Column to Right	285	** Turn Lane Length includes 50 ft diverging taper*
	Offset Width	12		
	Approach Taper	660		
Is Left Turn Warrant Met		Yes	**See Above**	

2-Lane Highway Left Turn Lane Warrant

(> 40 mph or 70 kph Posted Speed)

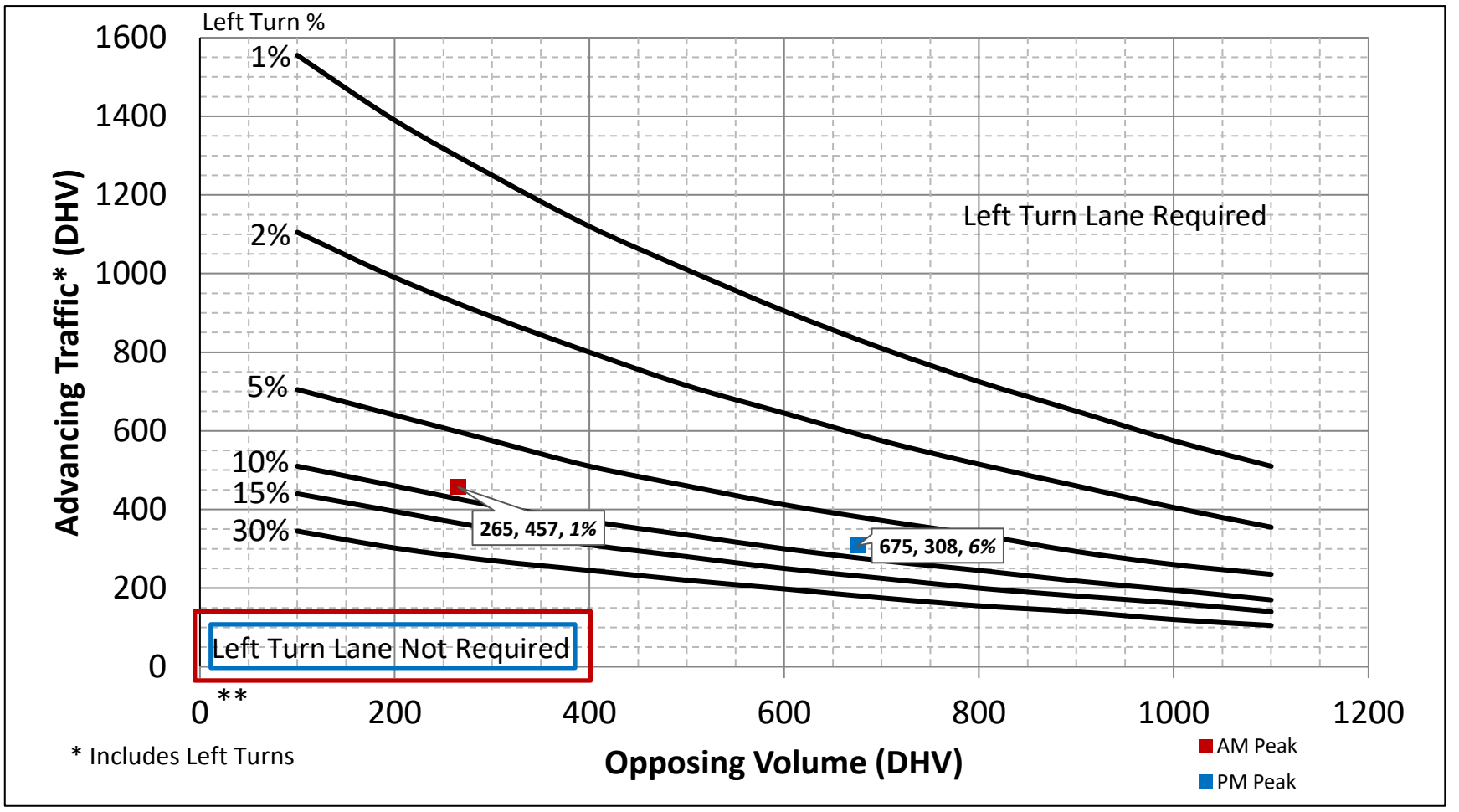


Turn Lane Length Calculations

AM Peak	**Design Speed**	55	**mph**	
	Traffic Control	Unsignalized		
	Cycle Length	Unsignalized		
	Cycles Per Hour	60	***Assume 60***	
	Turn Lane Volume	34	**VPH**	
	Advancing Traffic	172	**VPH**	
	Opposing Volume	335	**VPH**	
	Left Turn Percentage	20%		
	Location Type	Through Road		
	Condition	B or C		
	Vehicles/Cycle	1		
	Turn Lane Length	See Column to Right	285	** Turn Lane Length includes 50 ft diverging taper*
	Offset Width	12		
	Approach Taper	660		
PM Peak	**Design Speed**	55	**mph**	
	Traffic Control	Unsignalized		
	Cycle Length	Unsignalized		
	Cycles Per Hour	60	***Assume 60***	
	Turn Lane Volume	69	**VPH**	
	Advancing Traffic	494	**VPH**	
	Opposing Volume	180	**VPH**	
	Left Turn Percentage	14%		
	Location Type	Through Road		
	Condition	B or C		
	Vehicles/Cycle	2		
	Turn Lane Length	See Column to Right	285	** Turn Lane Length includes 50 ft diverging taper*
	Offset Width	12		
	Approach Taper	660		
Is Left Turn Warrant Met		Yes	**See Above**	

2-Lane Highway Left Turn Lane Warrant

(= < 40 mph or 70 kph Posted Speed)

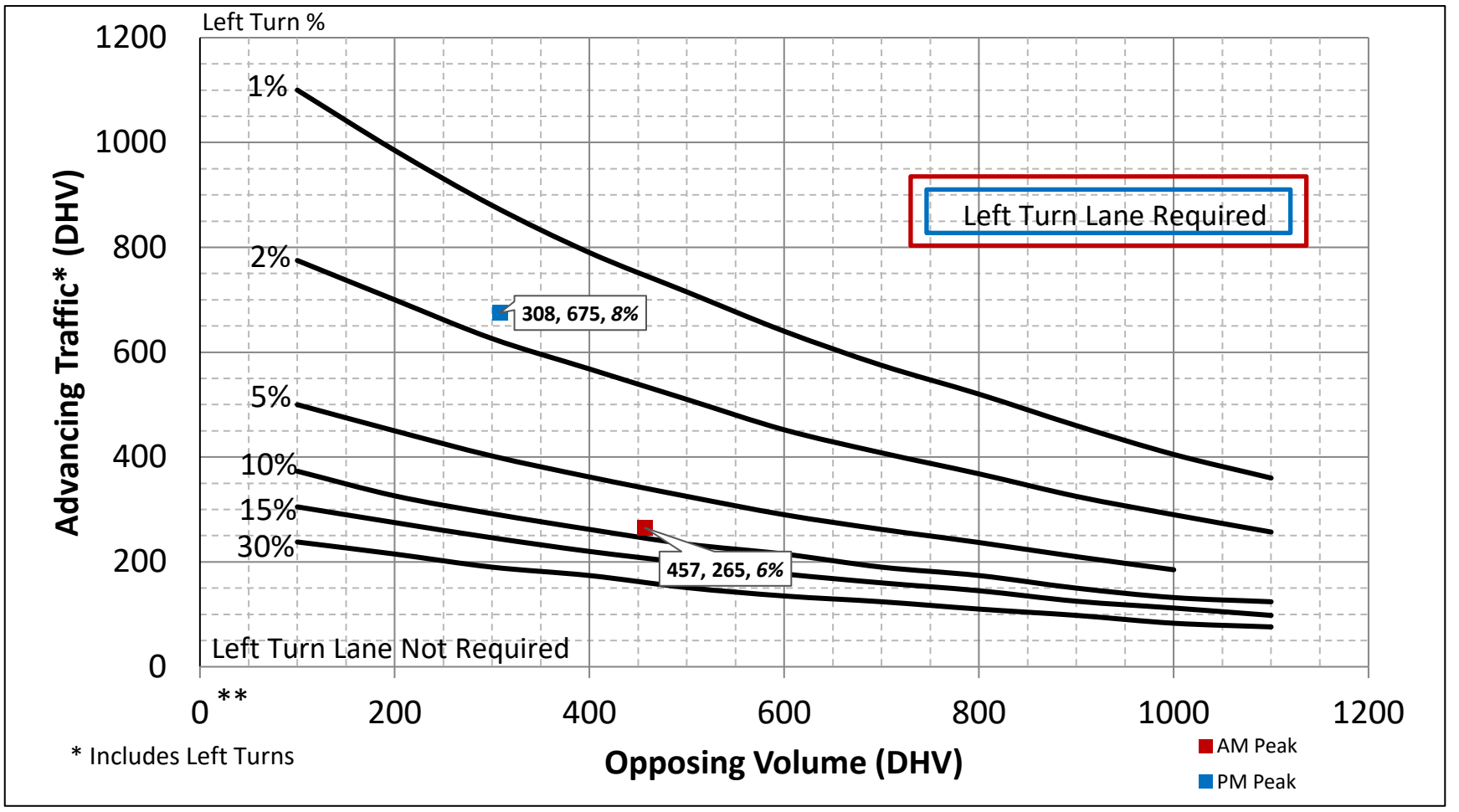


Turn Lane Length Calculations

AM Peak	**Design Speed**	40	**mph**	
	Traffic Control	Unsignalized		
	Cycle Length	Unsignalized		
	Cycles Per Hour	60	***Assume 60***	
	Turn Lane Volume	5	**VPH**	
	Advancing Traffic	457	**VPH**	
	Opposing Volume	265	**VPH**	
	Left Turn Percentage	1%		
	Location Type	Through Road		
	Condition	B		
	Vehicles/Cycle	1		
	Turn Lane Length	125		** Turn Lane Length includes 50 ft diverging taper*
	Offset Width	12		
	Approach Taper	320		
PM Peak	**Design Speed**	40	**mph**	
	Traffic Control	Unsignalized		
	Cycle Length	Unsignalized		
	Cycles Per Hour	60	***Assume 60***	
	Turn Lane Volume	18	**VPH**	
	Advancing Traffic	308	**VPH**	
	Opposing Volume	675	**VPH**	
	Left Turn Percentage	6%		
	Location Type	Through Road		
	Condition	B		
	Vehicles/Cycle	1		
	Turn Lane Length	125		** Turn Lane Length includes 50 ft diverging taper*
	Offset Width	12		
	Approach Taper	320		
Is Left Turn Warrant Met		No	**No Left Turn Lane Required**	

2-Lane Highway Left Turn Lane Warrant

(> 40 mph or 70 kph Posted Speed)

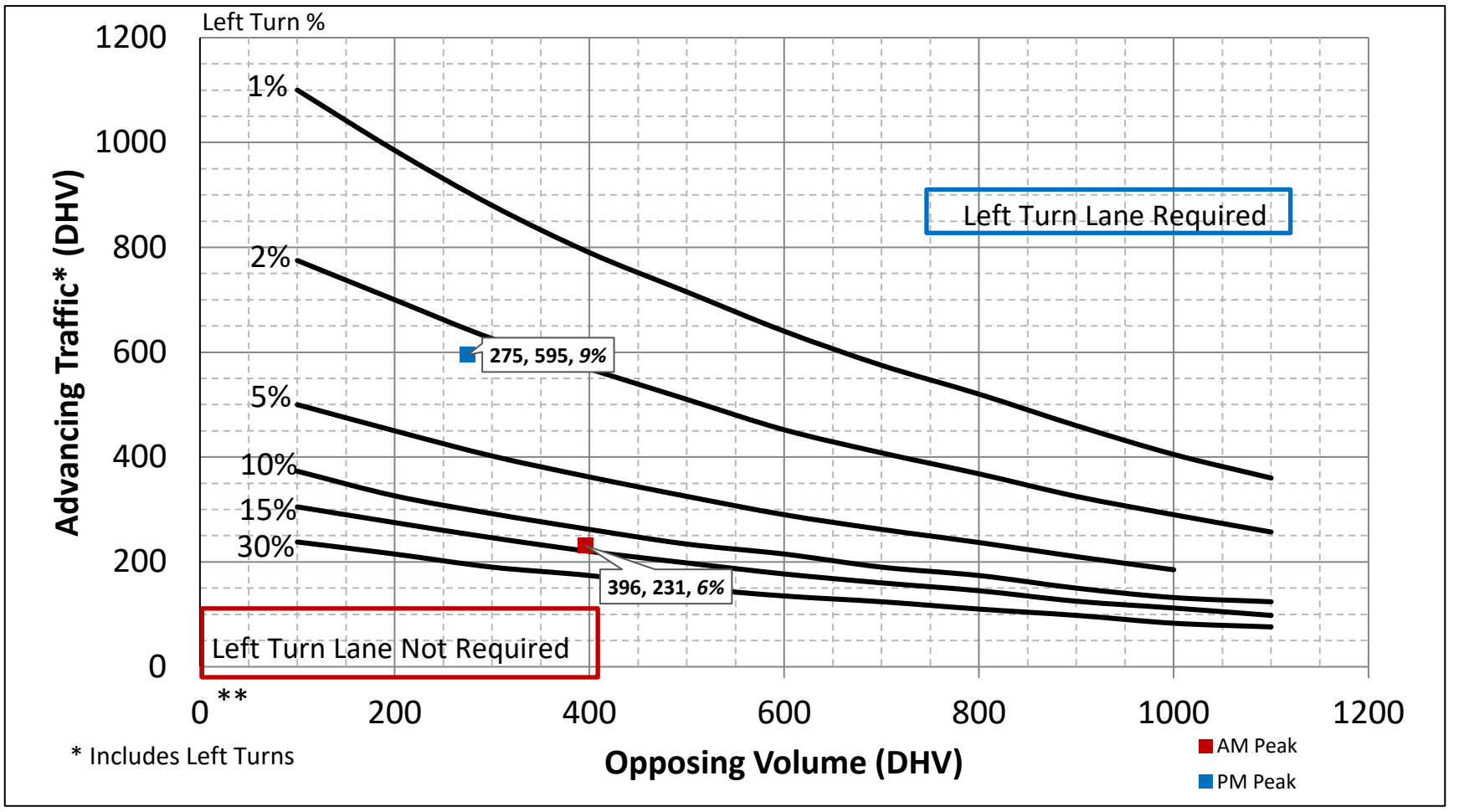


Turn Lane Length Calculations

AM Peak	**Design Speed**	55	**mph**	
	Traffic Control	Unsignalized		
	Cycle Length	Unsignalized		
	Cycles Per Hour	60	***Assume 60***	
	Turn Lane Volume	15	**VPH**	
	Advancing Traffic	265	**VPH**	
	Opposing Volume	457	**VPH**	
	Left Turn Percentage	6%		
	Location Type	Through Road		
	Condition	B		
	Vehicles/Cycle	1		
	Turn Lane Length	285		** Turn Lane Length includes 50 ft diverging taper*
	Offset Width	12		
	Approach Taper	660		
PM Peak	**Design Speed**	55	**mph**	
	Traffic Control	Unsignalized		
	Cycle Length	Unsignalized		
	Cycles Per Hour	60	***Assume 60***	
	Turn Lane Volume	53	**VPH**	
	Advancing Traffic	675	**VPH**	
	Opposing Volume	308	**VPH**	
	Left Turn Percentage	8%		
	Location Type	Through Road		
	Condition	B		
	Vehicles/Cycle	1		
	Turn Lane Length	285		** Turn Lane Length includes 50 ft diverging taper*
	Offset Width	12		
	Approach Taper	660		
Is Left Turn Warrant Met		Yes	**See Above**	

2-Lane Highway Left Turn Lane Warrant

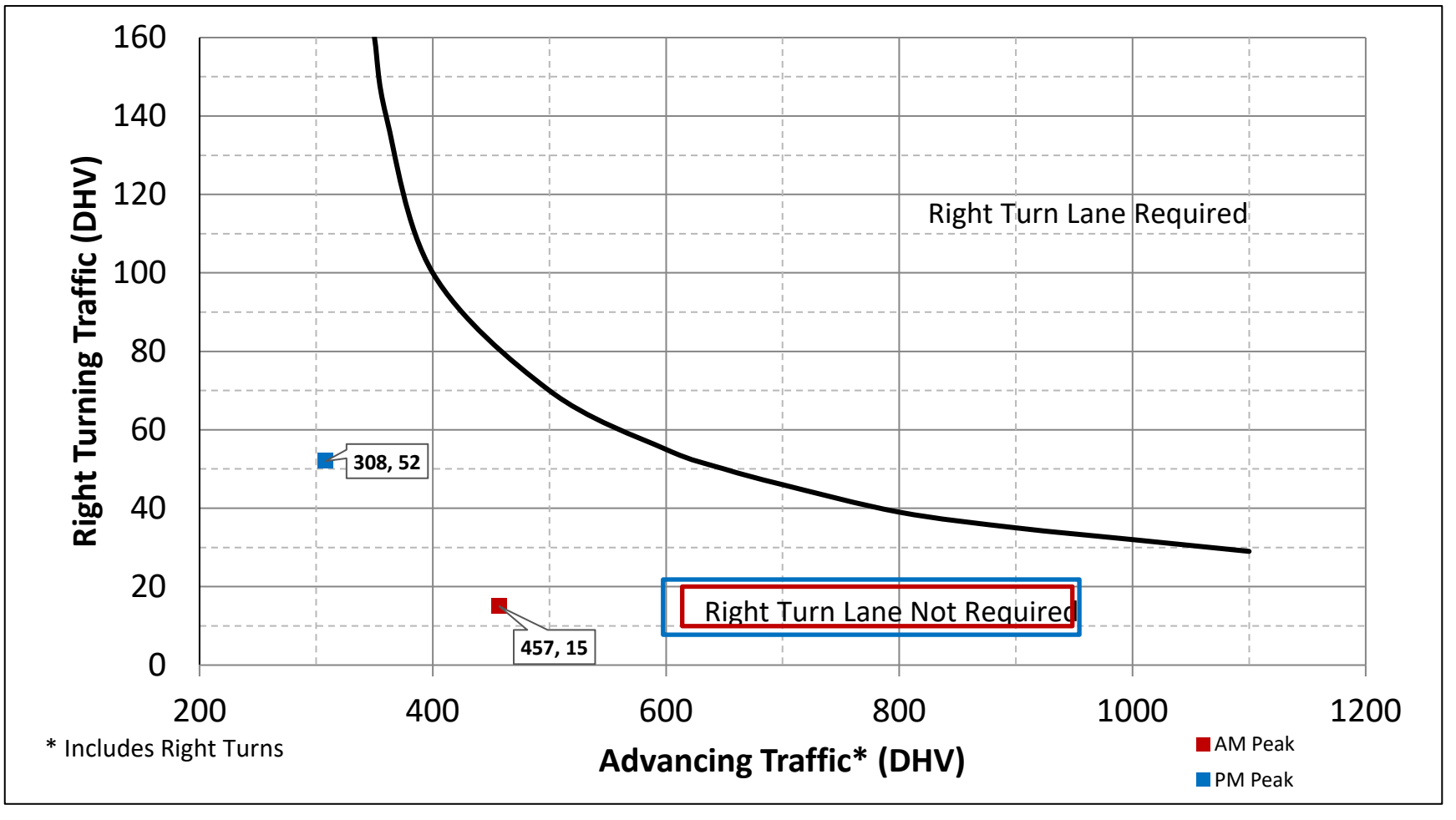
(> 40 mph or 70 kph Posted Speed)



Turn Lane Length Calculations

AM Peak	**Design Speed**	55	**mph**	
	Traffic Control	Unsignalized		
	Cycle Length	Unsignalized		
	Cycles Per Hour	60	***Assume 60***	
	Turn Lane Volume	15	**VPH**	
	Advancing Traffic	231	**VPH**	
	Opposing Volume	396	**VPH**	
	Left Turn Percentage	6%		
	Location Type	Through Road		
	Condition	B		
	Vehicles/Cycle	1		
	Turn Lane Length	285		** Turn Lane Length includes 50 ft diverging taper*
	Offset Width	12		
	Approach Taper	660		
PM Peak	**Design Speed**	55	**mph**	
	Traffic Control	Unsignalized		
	Cycle Length	Unsignalized		
	Cycles Per Hour	60	***Assume 60***	
	Turn Lane Volume	53	**VPH**	
	Advancing Traffic	595	**VPH**	
	Opposing Volume	275	**VPH**	
	Left Turn Percentage	9%		
	Location Type	Through Road		
	Condition	B		
	Vehicles/Cycle	1		
	Turn Lane Length	285		** Turn Lane Length includes 50 ft diverging taper*
	Offset Width	12		
	Approach Taper	660		
Is Left Turn Warrant Met		Yes	**See Above**	

2-Lane Highway Right Turn Lane Warrant
(= < 40 mph or 70 kph Posted Speed)

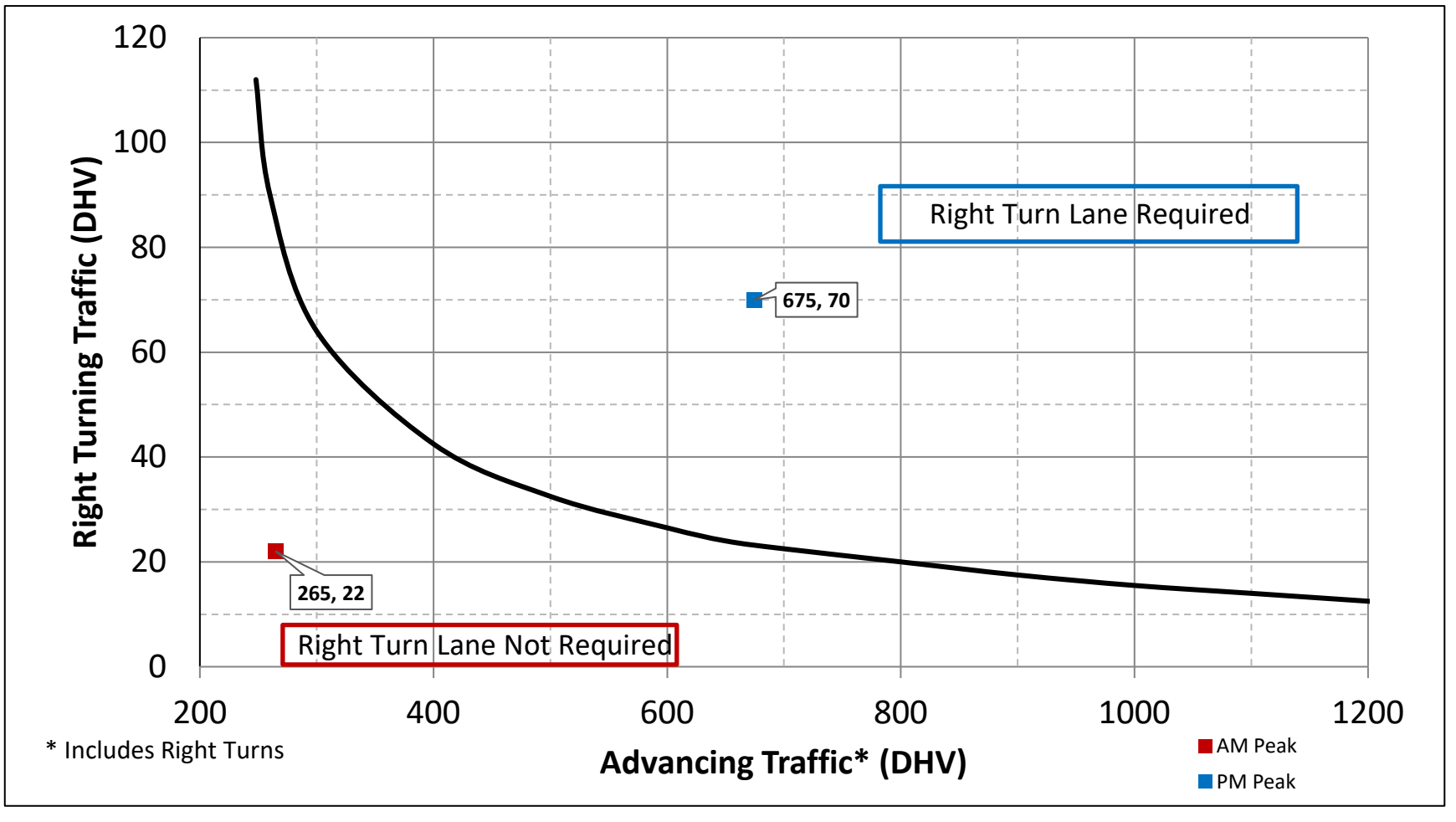


Turn Lane Length Calculations

AM Peak	**Design Speed**	40	**mph**	
	Traffic Control	Unsignalized		
	Cycle Length	Unsignalized		
	Cycles Per Hour	60	***Assume 60***	
	Turn Lane Volume	15	**VPH**	
	Advancing Traffic	457	**VPH**	
	Right Turn Percentage	3%		
	Location Type	Through Road		
	Condition	B		
	Vehicles/Cycle	1		
	Turn Lane Length	125		** Turn Lane Length includes 50 ft diverging taper*
PM Peak	**Design Speed**	40	**mph**	
	Traffic Control	Unsignalized		
	Cycle Length	Unsignalized		
	Cycles Per Hour	60	***Assume 60***	
	Turn Lane Volume	52	**VPH**	
	Advancing Traffic	308	**VPH**	
	Right Turn Percentage	17%		
	Location Type	Through Road		
	Condition	C		
	Vehicles/Cycle	1		
	Turn Lane Length	165		** Turn Lane Length includes 50 ft diverging taper*
Is Right Turn Warrant Met		No	**No Right Turn Lane Required**	

2-Lane Highway Right Turn Lane Warrant

(> 40 mph or 70 kph Posted Speed)

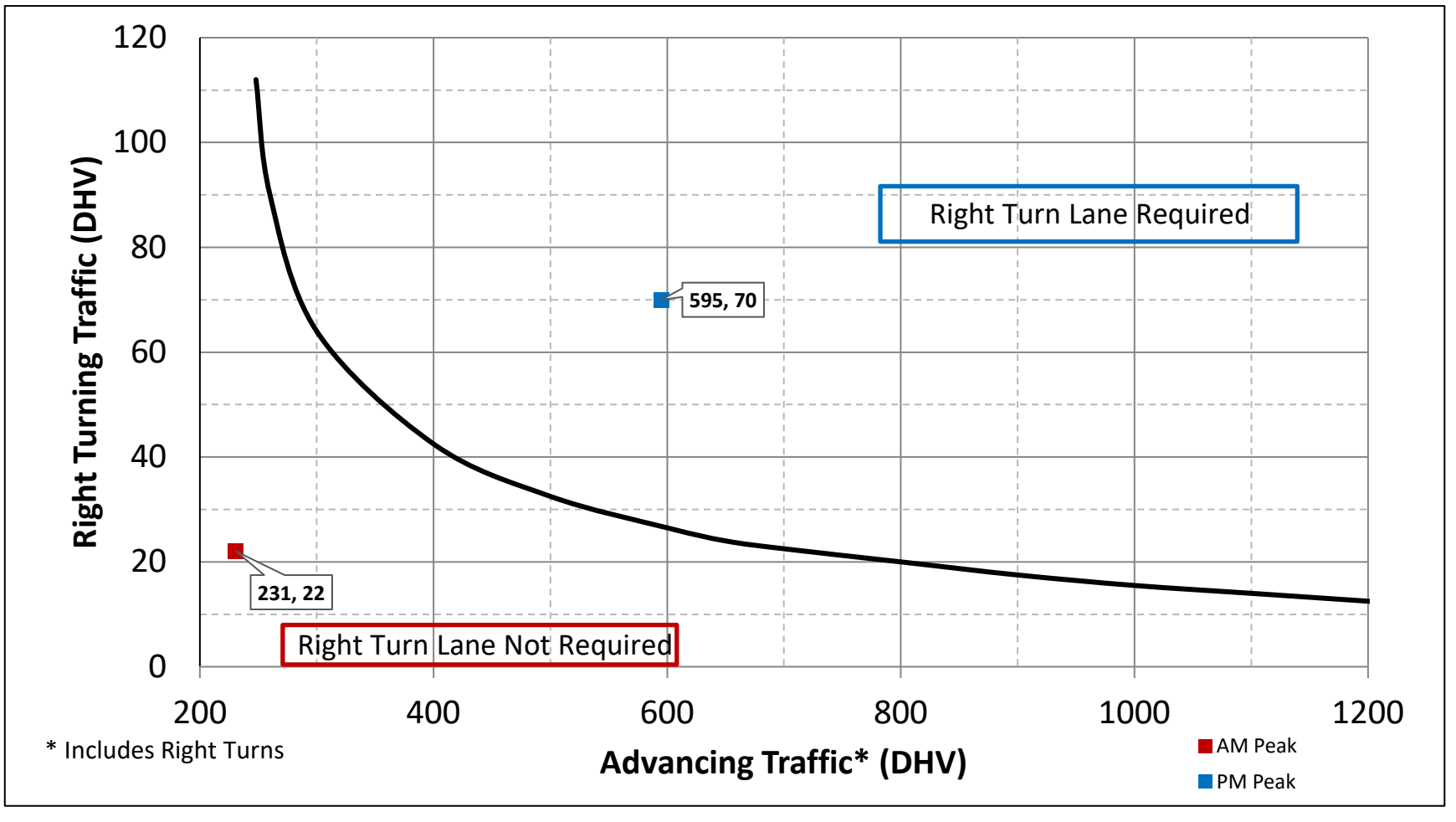


Turn Lane Length Calculations

AM Peak	**Design Speed**	55	**mph**	
	Traffic Control	Unsignalized		
	Cycle Length	Unsignalized		
	Cycles Per Hour	60	***Assume 60***	
	Turn Lane Volume	22	**VPH**	
	Advancing Traffic	265	**VPH**	
	Right Turn Percentage	8%		
	Location Type	Through Road		
	Condition	B		
	Vehicles/Cycle	1		
	Turn Lane Length	285		** Turn Lane Length includes 50 ft diverging taper*
PM Peak	**Design Speed**	55	**mph**	
	Traffic Control	Unsignalized		
	Cycle Length	Unsignalized		
	Cycles Per Hour	60	***Assume 60***	
	Turn Lane Volume	70	**VPH**	
	Advancing Traffic	675	**VPH**	
	Right Turn Percentage	10%		
	Location Type	Through Road		
	Condition	B or C		
	Vehicles/Cycle	2		
	Turn Lane Length	See Column to Right	285	** Turn Lane Length includes 50 ft diverging taper*
Is Right Turn Warrant Met		Yes	**See Above**	

2-Lane Highway Right Turn Lane Warrant

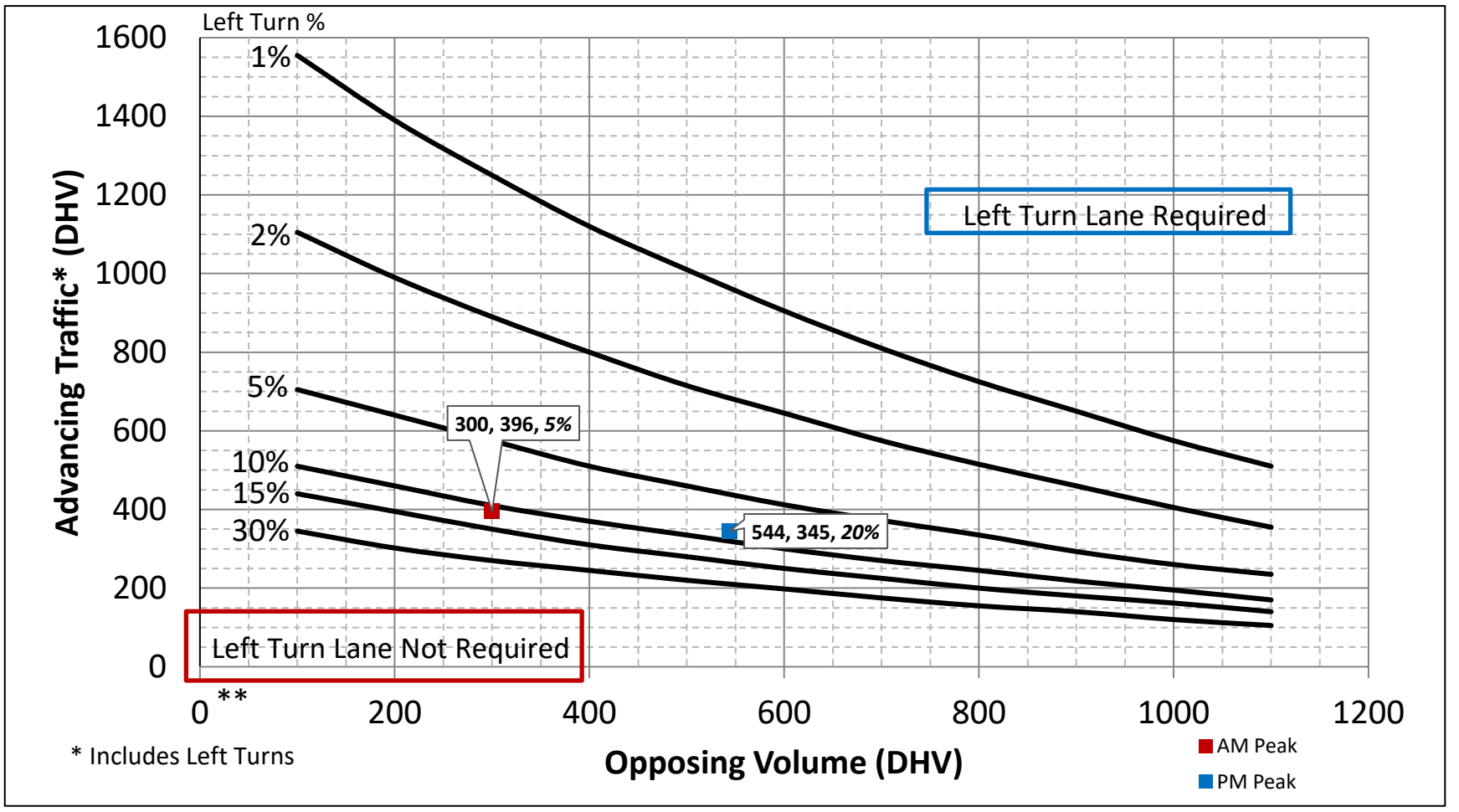
(> 40 mph or 70 kph Posted Speed)



Turn Lane Length Calculations

AM Peak	**Design Speed**	55	**mph**	
	Traffic Control	Unsignalized		
	Cycle Length	Unsignalized		
	Cycles Per Hour	60	***Assume 60***	
	Turn Lane Volume	22	**VPH**	
	Advancing Traffic	231	**VPH**	
	Right Turn Percentage	10%		
	Location Type	Through Road		
	Condition	B		
	Vehicles/Cycle	1		
	Turn Lane Length	285		** Turn Lane Length includes 50 ft diverging taper*
PM Peak	**Design Speed**	55	**mph**	
	Traffic Control	Unsignalized		
	Cycle Length	Unsignalized		
	Cycles Per Hour	60	***Assume 60***	
	Turn Lane Volume	70	**VPH**	
	Advancing Traffic	595	**VPH**	
	Right Turn Percentage	12%		
	Location Type	Through Road		
	Condition	B or C		
	Vehicles/Cycle	2		
	Turn Lane Length	See Column to Right	285	** Turn Lane Length includes 50 ft diverging taper*
Is Right Turn Warrant Met		Yes	**See Above**	

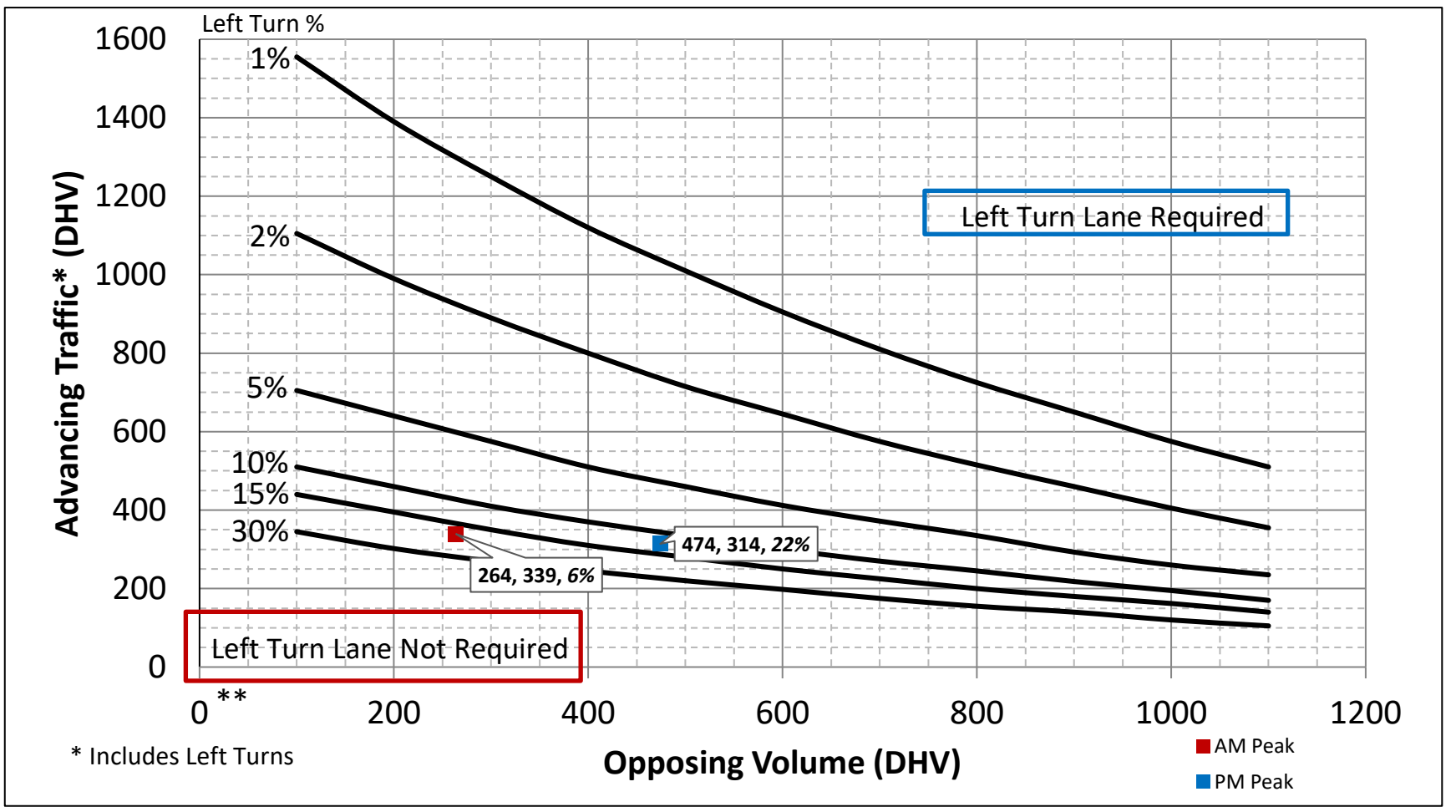
2-Lane Highway Left Turn Lane Warrant
(= < 40 mph or 70 kph Posted Speed)



Turn Lane Length Calculations

AM Peak	**Design Speed**	40	**mph**	
	Traffic Control	Unsignalized		
	Cycle Length	Unsignalized		
	Cycles Per Hour	60	***Assume 60***	
	Turn Lane Volume	21	**VPH**	
	Advancing Traffic	396	**VPH**	
	Opposing Volume	300	**VPH**	
	Left Turn Percentage	5%		
	Location Type	Through Road		
	Condition	B		
	Vehicles/Cycle	1		
	Turn Lane Length	125		** Turn Lane Length includes 50 ft diverging taper*
	Offset Width	12		
	Approach Taper	320		
PM Peak	**Design Speed**	40	**mph**	
	Traffic Control	Unsignalized		
	Cycle Length	Unsignalized		
	Cycles Per Hour	60	***Assume 60***	
	Turn Lane Volume	69	**VPH**	
	Advancing Traffic	345	**VPH**	
	Opposing Volume	544	**VPH**	
	Left Turn Percentage	20%		
	Location Type	Through Road		
	Condition	C		
	Vehicles/Cycle	2		
	Turn Lane Length	215		** Turn Lane Length includes 50 ft diverging taper*
	Offset Width	12		
	Approach Taper	320		
Is Left Turn Warrant Met		Yes	**See Above**	

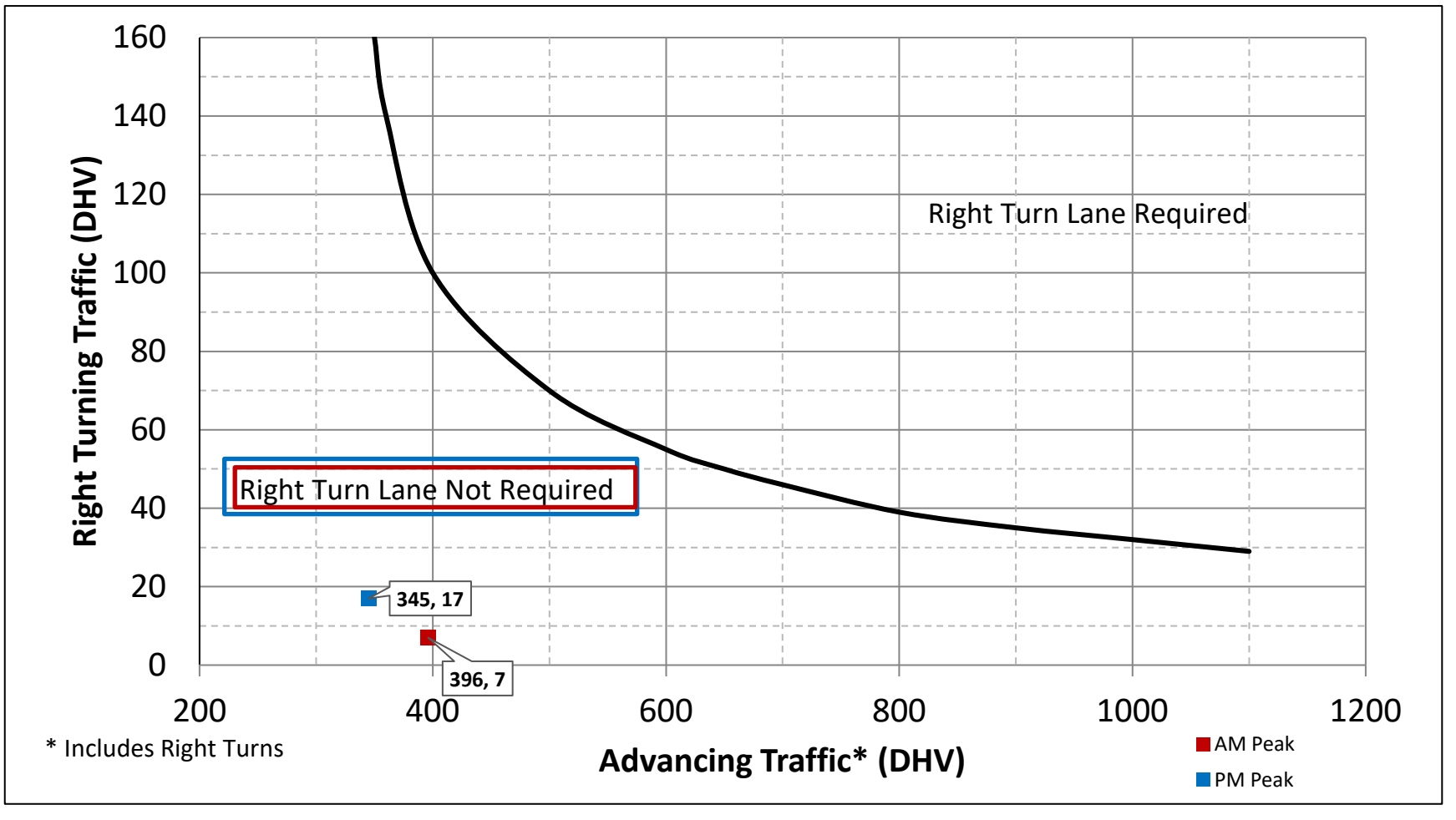
2-Lane Highway Left Turn Lane Warrant
(= < 40 mph or 70 kph Posted Speed)



Turn Lane Length Calculations

AM Peak	**Design Speed**	40	**mph**	
	Traffic Control	Unsignalized		
	Cycle Length	Unsignalized		
	Cycles Per Hour	60	***Assume 60***	
	Turn Lane Volume	21	**VPH**	
	Advancing Traffic	339	**VPH**	
	Opposing Volume	264	**VPH**	
	Left Turn Percentage	6%		
	Location Type	Through Road		
	Condition	B		
	Vehicles/Cycle	1		
	Turn Lane Length	125		** Turn Lane Length includes 50 ft diverging taper*
	Offset Width	12		
	Approach Taper	320		
PM Peak	**Design Speed**	40	**mph**	
	Traffic Control	Unsignalized		
	Cycle Length	Unsignalized		
	Cycles Per Hour	60	***Assume 60***	
	Turn Lane Volume	69	**VPH**	
	Advancing Traffic	314	**VPH**	
	Opposing Volume	474	**VPH**	
	Left Turn Percentage	22%		
	Location Type	Through Road		
	Condition	C		
	Vehicles/Cycle	2		
	Turn Lane Length	215		** Turn Lane Length includes 50 ft diverging taper*
	Offset Width	12		
	Approach Taper	320		
Is Left Turn Warrant Met		Yes	**See Above**	

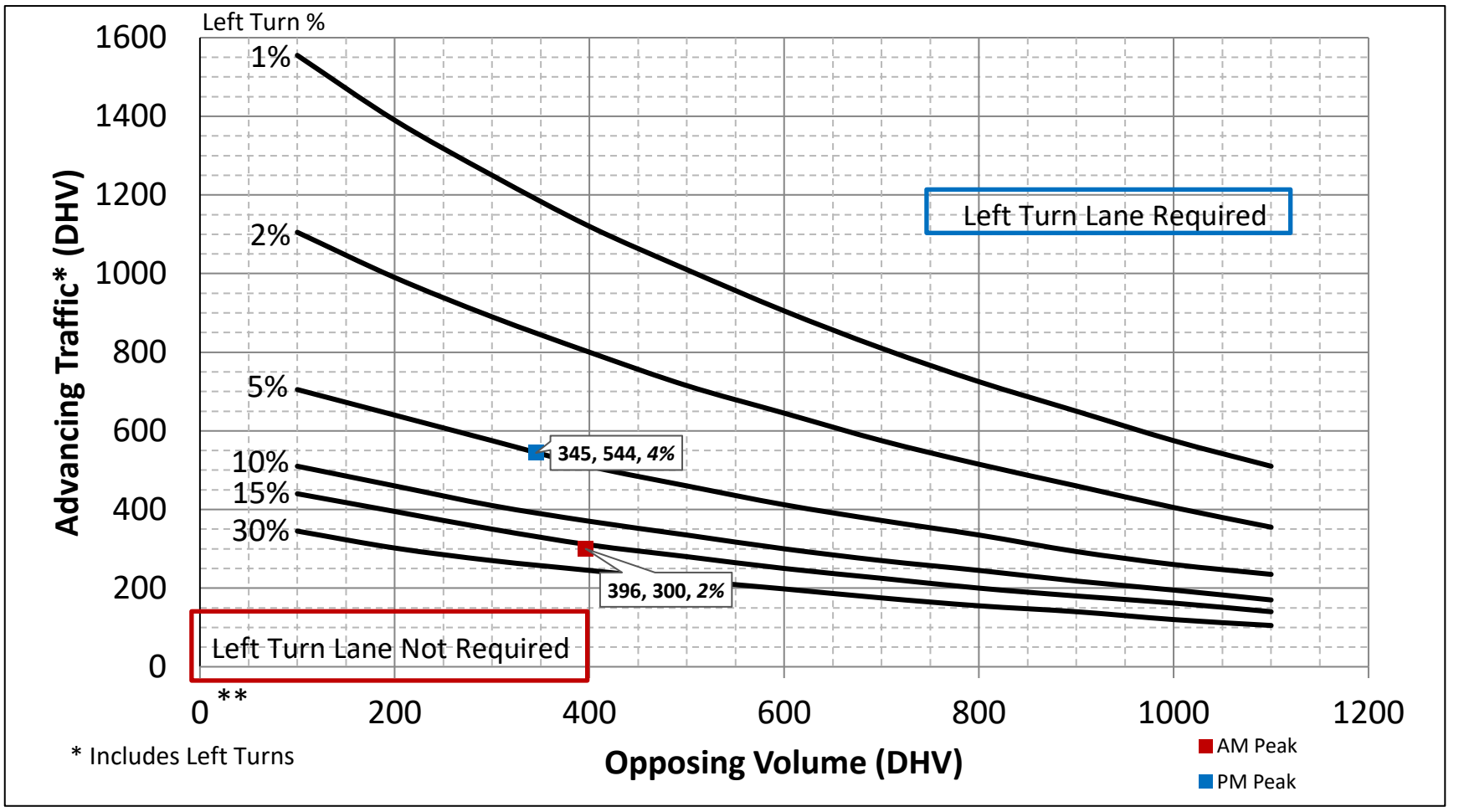
2-Lane Highway Right Turn Lane Warrant
(= < 40 mph or 70 kph Posted Speed)



Turn Lane Length Calculations

AM Peak	**Design Speed**	40	**mph**	
	Traffic Control	Unsignalized		
	Cycle Length	Unsignalized		
	Cycles Per Hour	60	***Assume 60***	
	Turn Lane Volume	7	**VPH**	
	Advancing Traffic	396	**VPH**	
	Right Turn Percentage	2%		
	Location Type	Through Road		
	Condition	B		
	Vehicles/Cycle	1		
	Turn Lane Length	125		** Turn Lane Length includes 50 ft diverging taper*
PM Peak	**Design Speed**	40	**mph**	
	Traffic Control	Unsignalized		
	Cycle Length	Unsignalized		
	Cycles Per Hour	60	***Assume 60***	
	Turn Lane Volume	17	**VPH**	
	Advancing Traffic	345	**VPH**	
	Right Turn Percentage	5%		
	Location Type	Through Road		
	Condition	B		
	Vehicles/Cycle	1		
	Turn Lane Length	125		** Turn Lane Length includes 50 ft diverging taper*
Is Right Turn Warrant Met		No	**No Right Turn Lane Required**	

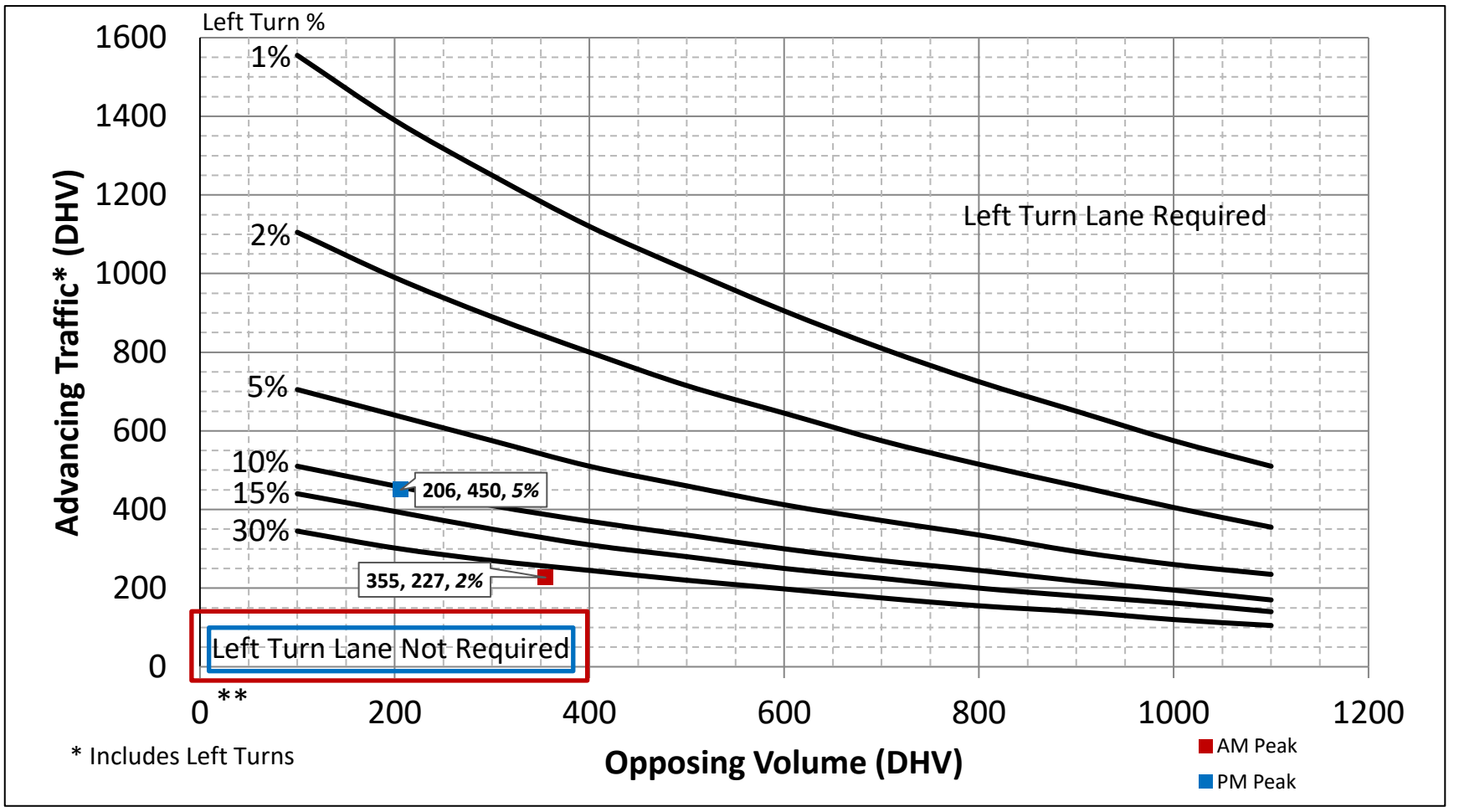
2-Lane Highway Left Turn Lane Warrant
(= < 40 mph or 70 kph Posted Speed)



Turn Lane Length Calculations

AM Peak	**Design Speed**	40	**mph**	
	Traffic Control	Unsignalized		
	Cycle Length	Unsignalized		
	Cycles Per Hour	60	***Assume 60***	
	Turn Lane Volume	5	**VPH**	
	Advancing Traffic	300	**VPH**	
	Opposing Volume	396	**VPH**	
	Left Turn Percentage	2%		
	Location Type	Through Road		
	Condition	B		
	Vehicles/Cycle	1		
	Turn Lane Length	125		** Turn Lane Length includes 50 ft diverging taper*
	Offset Width	12		
	Approach Taper	320		
PM Peak	**Design Speed**	40	**mph**	
	Traffic Control	Unsignalized		
	Cycle Length	Unsignalized		
	Cycles Per Hour	60	***Assume 60***	
	Turn Lane Volume	24	**VPH**	
	Advancing Traffic	544	**VPH**	
	Opposing Volume	345	**VPH**	
	Left Turn Percentage	4%		
	Location Type	Through Road		
	Condition	B		
	Vehicles/Cycle	1		
	Turn Lane Length	125		** Turn Lane Length includes 50 ft diverging taper*
	Offset Width	12		
	Approach Taper	320		
Is Left Turn Warrant Met		Yes	**See Above**	

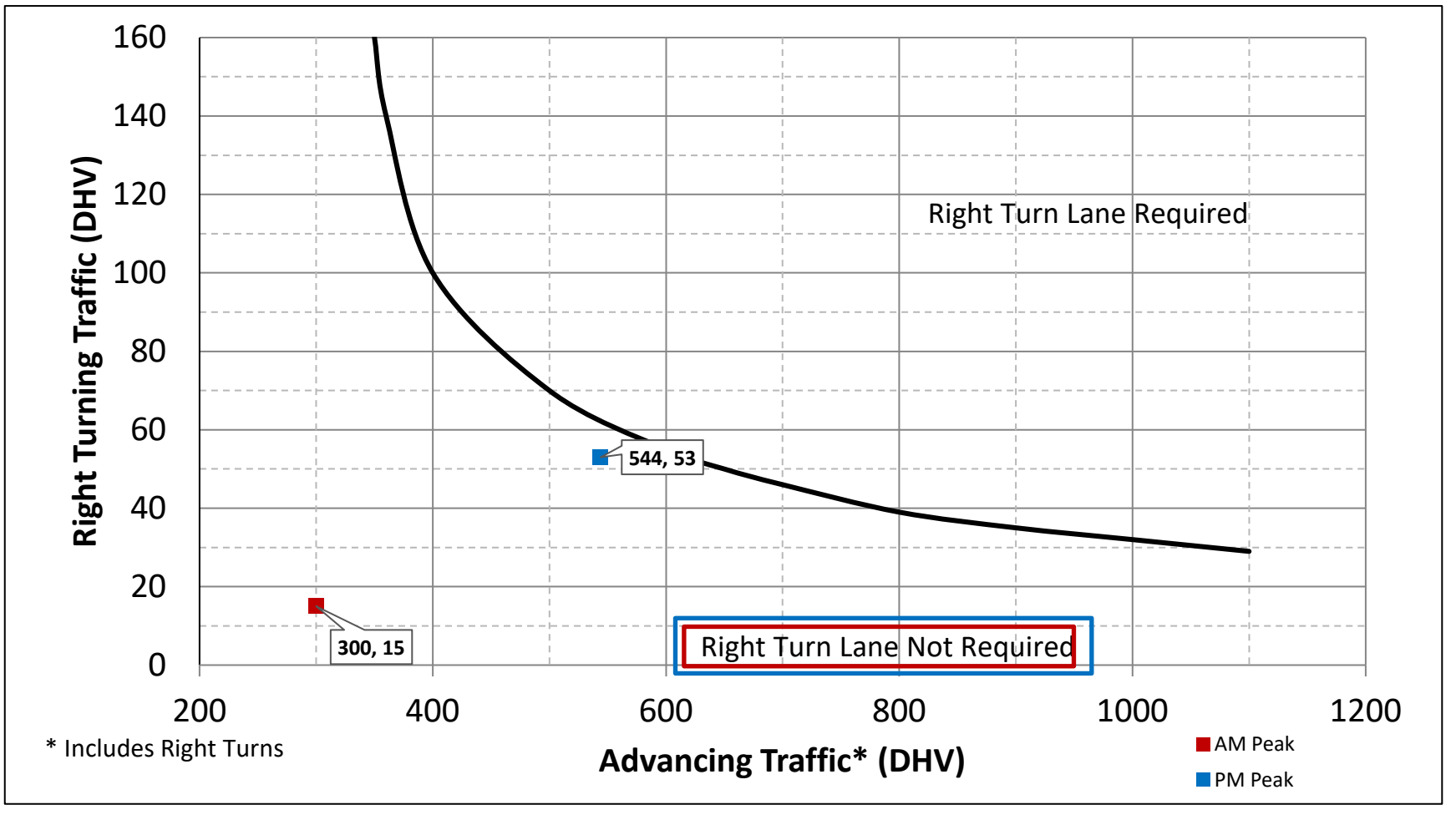
2-Lane Highway Left Turn Lane Warrant
(= < 40 mph or 70 kph Posted Speed)



Turn Lane Length Calculations

AM Peak	Design Speed	40	mph	
	Traffic Control	Unsignalized		
	Cycle Length	Unsignalized		
	Cycles Per Hour	60	*Assume 60*	
	Turn Lane Volume	5	VPH	
	Advancing Traffic	227	VPH	
	Opposing Volume	355	VPH	
	Left Turn Percentage	2%		
	Location Type	Through Road		
	Condition	B		
	Vehicles/Cycle	1		
	Turn Lane Length	125		** Turn Lane Length includes 50 ft diverging taper*
	Offset Width	12		
	Approach Taper	320		
PM Peak	Design Speed	40	mph	
	Traffic Control	Unsignalized		
	Cycle Length	Unsignalized		
	Cycles Per Hour	60	*Assume 60*	
	Turn Lane Volume	24	VPH	
	Advancing Traffic	450	VPH	
	Opposing Volume	206	VPH	
	Left Turn Percentage	5%		
	Location Type	Through Road		
	Condition	B		
	Vehicles/Cycle	1		
	Turn Lane Length	125		** Turn Lane Length includes 50 ft diverging taper*
	Offset Width	12		
	Approach Taper	320		
Is Left Turn Warrant Met		No	No Left Turn Lane Required	

2-Lane Highway Right Turn Lane Warrant
(= < 40 mph or 70 kph Posted Speed)

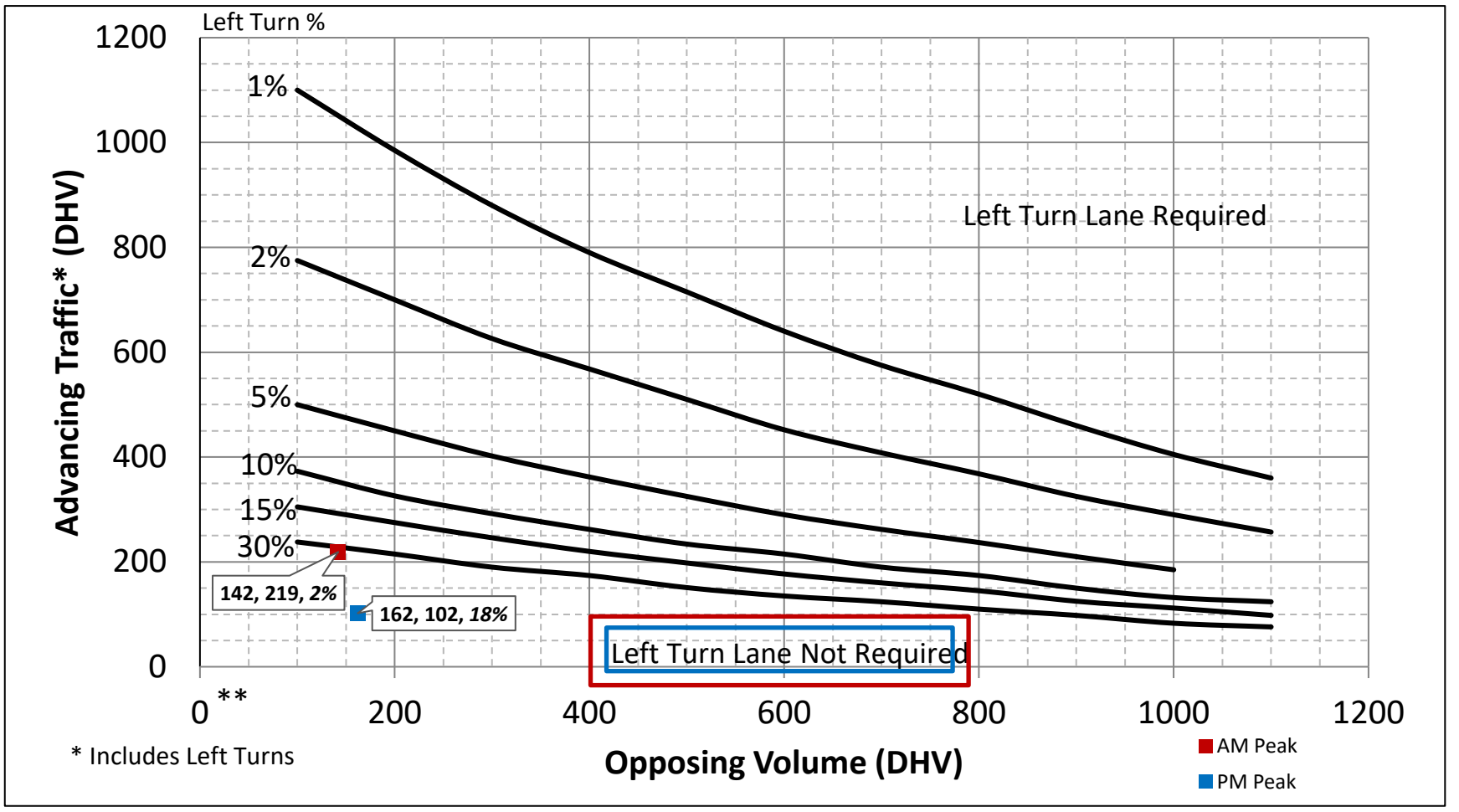


Turn Lane Length Calculations

AM Peak	Design Speed	40	mph	
	Traffic Control	Unsignalized		
	Cycle Length	Unsignalized		
	Cycles Per Hour	60	*Assume 60*	
	Turn Lane Volume	15	VPH	
	Advancing Traffic	300	VPH	
	Right Turn Percentage	5%		
	Location Type	Through Road		
	Condition	B		
	Vehicles/Cycle	1		
	Turn Lane Length	125		* Turn Lane Length includes 50 ft diverging taper
PM Peak	Design Speed	40	mph	
	Traffic Control	Unsignalized		
	Cycle Length	Unsignalized		
	Cycles Per Hour	60	*Assume 60*	
	Turn Lane Volume	53	VPH	
	Advancing Traffic	544	VPH	
	Right Turn Percentage	10%		
	Location Type	Through Road		
	Condition	B		
	Vehicles/Cycle	1		
	Turn Lane Length	125		* Turn Lane Length includes 50 ft diverging taper
Is Right Turn Warrant Met		No	No Right Turn Lane Required	

2-Lane Highway Left Turn Lane Warrant

(> 40 mph or 70 kph Posted Speed)

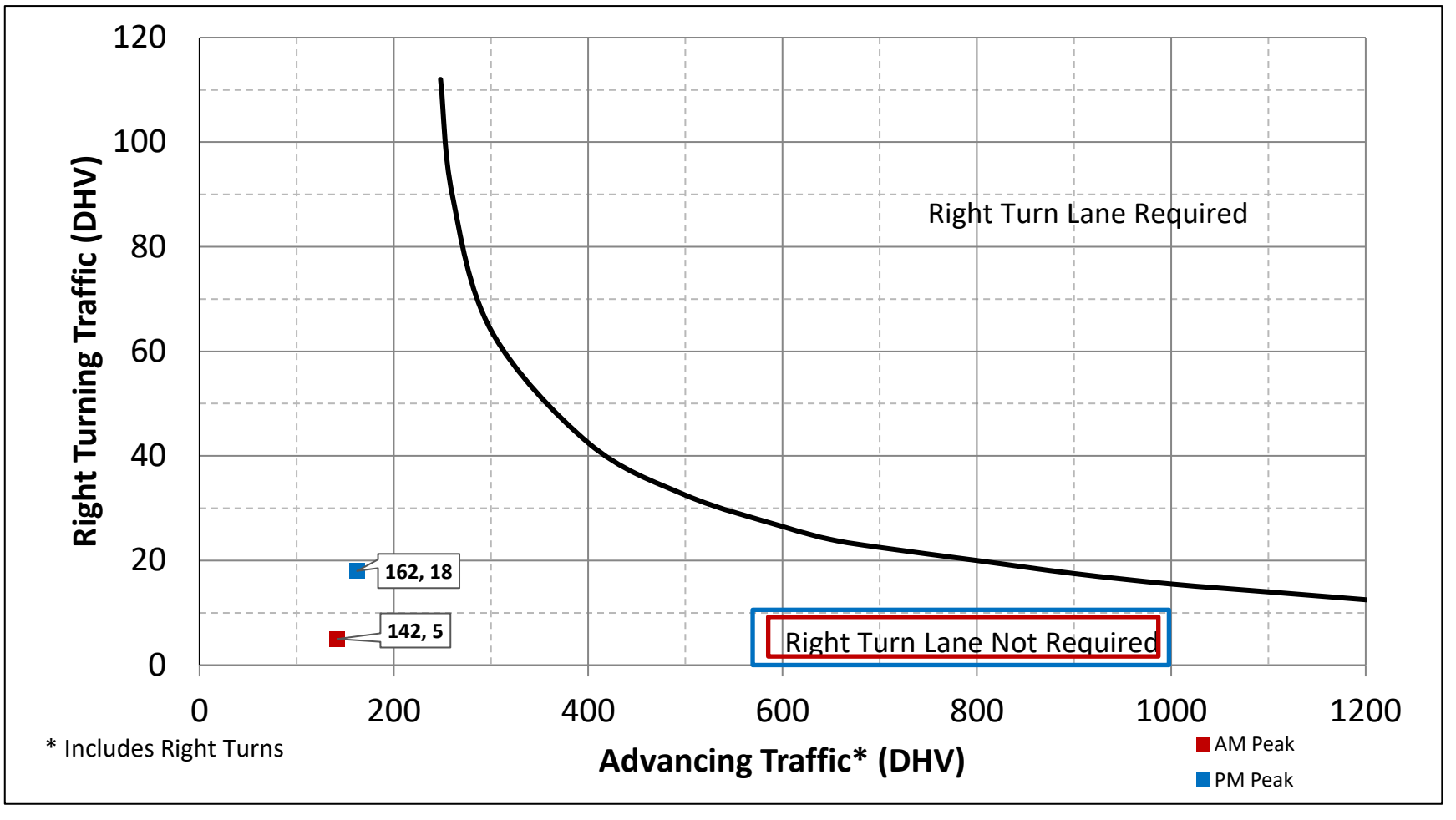


Turn Lane Length Calculations

AM Peak	**Design Speed**	55	**mph**	
	Traffic Control	Unsignalized		
	Cycle Length	Unsignalized		
	Cycles Per Hour	60	***Assume 60***	
	Turn Lane Volume	5	**VPH**	
	Advancing Traffic	219	**VPH**	
	Opposing Volume	142	**VPH**	
	Left Turn Percentage	2%		
	Location Type	Through Road		
	Condition	B		
	Vehicles/Cycle	1		
	Turn Lane Length	285		** Turn Lane Length includes 50 ft diverging taper*
	Offset Width	12		
	Approach Taper	660		
PM Peak	**Design Speed**	55	**mph**	
	Traffic Control	Unsignalized		
	Cycle Length	Unsignalized		
	Cycles Per Hour	60	***Assume 60***	
	Turn Lane Volume	18	**VPH**	
	Advancing Traffic	102	**VPH**	
	Opposing Volume	162	**VPH**	
	Left Turn Percentage	18%		
	Location Type	Through Road		
	Condition	B or C		
	Vehicles/Cycle	1		
	Turn Lane Length	See Column to Right	285	** Turn Lane Length includes 50 ft diverging taper*
	Offset Width	12		
	Approach Taper	660		
Is Left Turn Warrant Met		No	**No Left Turn Lane Required**	

2-Lane Highway Right Turn Lane Warrant

(> 40 mph or 70 kph Posted Speed)

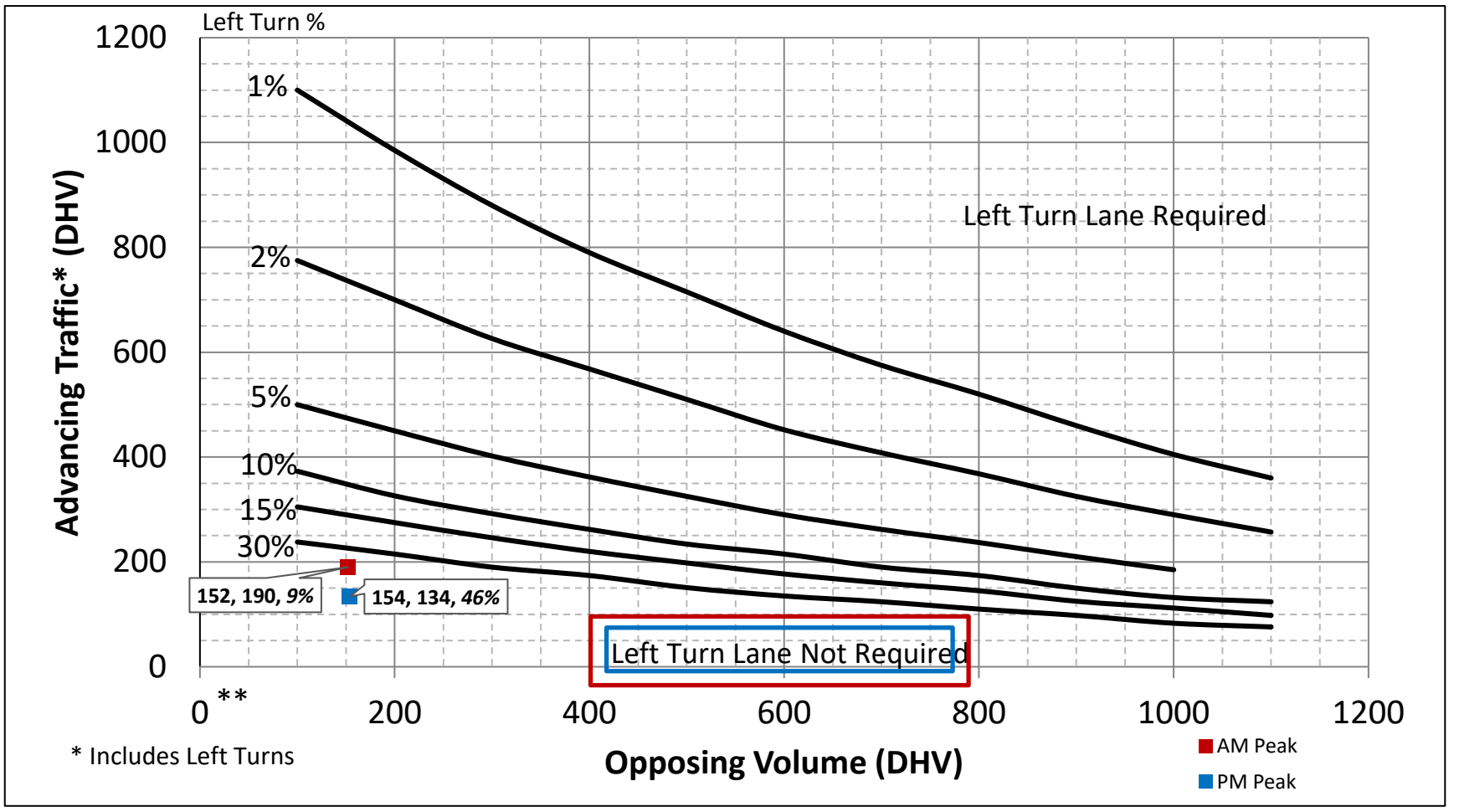


Turn Lane Length Calculations

AM Peak	**Design Speed**	55	**mph**	
	Traffic Control	Unsignalized		
	Cycle Length	Unsignalized		
	Cycles Per Hour	60	***Assume 60***	
	Turn Lane Volume	5	**VPH**	
	Advancing Traffic	142	**VPH**	
	Right Turn Percentage	4%		
	Location Type	Through Road		
	Condition	B		
	Vehicles/Cycle	1		
	Turn Lane Length	285		** Turn Lane Length includes 50 ft diverging taper*
PM Peak	**Design Speed**	55	**mph**	
	Traffic Control	Unsignalized		
	Cycle Length	Unsignalized		
	Cycles Per Hour	60	***Assume 60***	
	Turn Lane Volume	18	**VPH**	
	Advancing Traffic	162	**VPH**	
	Right Turn Percentage	11%		
	Location Type	Through Road		
	Condition	B or C		
	Vehicles/Cycle	1		
	Turn Lane Length	See Column to Right	285	** Turn Lane Length includes 50 ft diverging taper*
Is Right Turn Warrant Met		No	**No Right Turn Lane Required**	

2-Lane Highway Left Turn Lane Warrant

(> 40 mph or 70 kph Posted Speed)

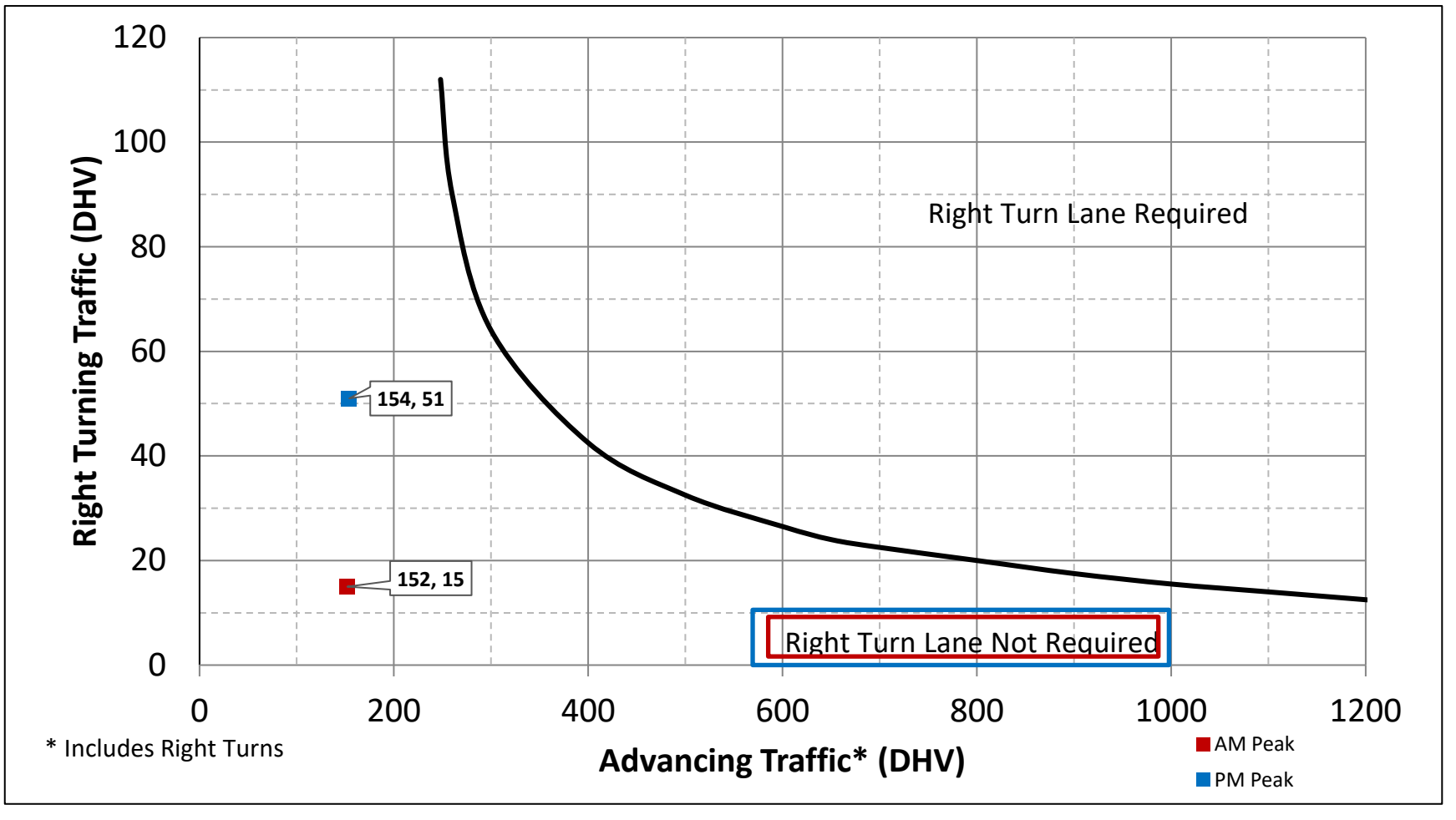


Turn Lane Length Calculations

AM Peak	Design Speed	55	mph	
	Traffic Control	Unsignalized		
	Cycle Length	Unsignalized		
	Cycles Per Hour	60	*Assume 60*	
	Turn Lane Volume	18	VPH	
	Advancing Traffic	190	VPH	
	Opposing Volume	152	VPH	
	Left Turn Percentage	9%		
	Location Type	Through Road		
	Condition	B		
	Vehicles/Cycle	1		
	Turn Lane Length	285		* Turn Lane Length includes 50 ft diverging taper
	Offset Width	12		
	Approach Taper	660		
PM Peak	Design Speed	55	mph	
	Traffic Control	Unsignalized		
	Cycle Length	Unsignalized		
	Cycles Per Hour	60	*Assume 60*	
	Turn Lane Volume	62	VPH	
	Advancing Traffic	134	VPH	
	Opposing Volume	154	VPH	
	Left Turn Percentage	46%		
	Location Type	Through Road		
	Condition	B or C		
	Vehicles/Cycle	2		
	Turn Lane Length	See Column to Right	285	* Turn Lane Length includes 50 ft diverging taper
	Offset Width	12		
	Approach Taper	660		
Is Left Turn Warrant Met		No	No Left Turn Lane Required	

2-Lane Highway Right Turn Lane Warrant

(> 40 mph or 70 kph Posted Speed)



Turn Lane Length Calculations

AM Peak	**Design Speed**	55	**mph**	
	Traffic Control	Unsignalized		
	Cycle Length	Unsignalized		
	Cycles Per Hour	60	***Assume 60***	
	Turn Lane Volume	15	**VPH**	
	Advancing Traffic	152	**VPH**	
	Right Turn Percentage	10%		
	Location Type	Through Road		
	Condition	B		
	Vehicles/Cycle	1		
	Turn Lane Length	285		** Turn Lane Length includes 50 ft diverging taper*
PM Peak	**Design Speed**	55	**mph**	
	Traffic Control	Unsignalized		
	Cycle Length	Unsignalized		
	Cycles Per Hour	60	***Assume 60***	
	Turn Lane Volume	51	**VPH**	
	Advancing Traffic	154	**VPH**	
	Right Turn Percentage	33%		
	Location Type	Through Road		
	Condition	B or C		
	Vehicles/Cycle	1		
	Turn Lane Length	See Column to Right	285	** Turn Lane Length includes 50 ft diverging taper*
Is Right Turn Warrant Met		No	**No Right Turn Lane Required**	

Appendix F
Signal Warrant Analysis

STUDY AND ANALYSIS INFORMATION

Municipality:	Village of Ashville	**Traffic Volumes Obtained By:**	CMTran
County:	Pickaway	**Analysis Date:**	
ODOT Engineering District:	6	**Agency/ Company Name Performing Warrant Analysis:**	CMTran

Analysis Information

Data Collection Date: 7/25/2012
Day of the Week: Wednesday

Is the intersection in a built-up area of an isolated community of <10,000 population? No

Existing Traffic Signal at intersection: No

Total Number of Approaches at Intersection: 4

Major Street Information

Major Street Name and Route Number: Ashville Pike

Major Street Approach Direction: N-Bound / S-Bound

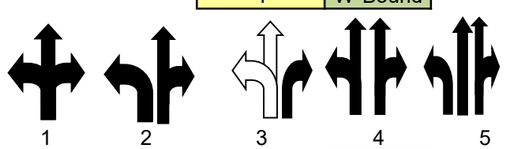
Number of Thru Lanes on Each Major Street Approach: 1 **LANE(S)**

Speed Limit or 85th Percentile Speed on the Major Street*: 35 **MPH**
*Unknown assumes below 45 mph

Minor Street Information

Minor Street Name and Route Number: Site Access 1/ Site Access 2

Minor Street Approach Configuration: 1 E-Bound / 1 W-Bound



Number of Thru Lanes on Each Minor Street Approach: 1 **LANE(S)**

Apply Right Turn Lane Reduction*: No

*Right Turn Lane Reduction Shall be used for Warrants 1, 2, & 3 for New ODOT Signals. Please refer to TEM 402-3.2 for clarification and criteria under which Right Turn Reduction is not required.

TRAFFIC SIGNAL WARRANT ANALYSIS FINDINGS

	Applicable?	Warrant Satisfied?	Notes and Comments:
Warrant 1, Eight-Hour Vehicular Volume	Yes	**No**	
Warrant 2, Four-Hour Vehicular Volume	Yes	**No**	
Warrant 3, Peak Hour	Yes	**No**	Signals installed under Warrant 3 should be traffic actuated. **Peak Hour** 4:45 PM, 5:45 PM

For Warrants 1-3, new ODOT signals must be based off of 100% volume thresholds (TEM 402-3.2)

Warrant 4, Pedestrian Volume	No		If this warrant is met, and a traffic control signal is justified by an engineering study, the traffic control signal shall be equipped with pedestrian signal heads complying with the provisions set forth in Chapter 4E of the OMUTCD. **Peak Hour** 4:45 PM, 5:45 PM
Warrant 5, School Crossing	No		N/A
Warrant 6, Coordinated Signal System	No		(Shall not be used as the sole warrant in the analysis)
Warrant 7, Crash Experience	No		If this is the sole warrant, signal must be semi-actuated with control devices which provide proper coordination if installed at an intersection within a coordinated system and normally should be fully traffic actuated if installed at an isolated intersection.
Warrant 8, Roadway Network	No		(Shall not be used as the sole warrant in the analysis)
Warrant 9, Intersection Near a Grade Crossing	No		Figure 4C-9
Multi-Way Stop Warrant	No		May be used as an interim measure if traffic signal warrants are satisfied.

The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal.

If no warrants are satisfied, additional options may be considered:

1. An engineering study, performed by a firm prequalified by ODOT for signal design, if approved by the ODOT district, may be used to justify a new signal installation or retention of an existing signal that otherwise does not meet the published warrants. An example of such an instance is a traffic signal in proximity to a railroad crossing that serves to reduce queuing across the tracks.
2. According to TEM 402-2, If the actual turning movement counts fail to satisfy a signal warrant, it may be acceptable to use traffic volumes projected to the second year after project completion. The **Modeling and Forecasting Section** should provide the projected traffic volumes.
3. A pedestrian hybrid beacon may be considered for installation to facilitate pedestrian crossings at a location that does not meet traffic signal warrants (see Chapter 4C of TEM) or at a location that meets traffic signal warrants under Sections 4C.05 and/or 4C.06 but a decision is made to not install a traffic control signal. **Please fill inputs on PHB Score Sheet and submit to ODOT.**

Considerations such as geometrics and lack of sight distance generally have not been accepted in lieu of satisfying signal warrants. These considerations may allow an otherwise unwarranted traffic signal to be retained at **100 percent** local cost. Please review TEM 402-4 for details.

Conclusion: Do Not Install New Traffic Signal

Notes: Ashville Pike & Site Drive 1/Site Drive 2 - 2032 Build

OMUTCD WARRANT 1, EIGHT-HOUR VEHICULAR VOLUME

Number of Lanes for Moving Traffic on Each Approach	
Major Street:	1 Lane
Minor Street:	1 Lane

Built up Isolated Community with Less Than 10,000 Population or Above 40 MPH on Major Street? No

**Only applicable after an adequate trial of other alternatives (See section 4C.02.06 of the 2012 OMUTCD)*

Lanes Major/ Minor	Adjusted Volumes		Condition A				Condition B				Combination A/B*							
											Cond. A		Cond. B		Cond. A		Cond. B	
	Major	Minor	100%		70%		100%		70%		80%		80%		56%		56%	
			Maj.	Min.	Maj.	Min.	Maj.	Min.	Maj.	Min.	Maj.	Min.	Maj.	Min.	Maj.	Min.	Maj.	Min.
1 / 1	X		500	150	350	105	750	75	525	53	400	120	600	60	280	84	420	42
2+ / 1			600	150	420	105	900	75	630	53	480	120	720	60	336	84	504	42
2+ / 2+			600	200	420	140	900	100	630	70	480	160	720	80	336	112	504	56
1 / 2+			500	200	350	140	750	100	525	70	400	160	600	80	280	112	420	56
12:00 AM	0	0																
12:15 AM	0	0																
12:30 AM	0	0																
12:45 AM	0	0																
1:00 AM	0	0																
1:15 AM	0	0																
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4:45 AM	0	0																
5:00 AM	0	0																
5:15 AM	110	48																
5:30 AM	164	48																
5:45 AM	227	48																
6:00 AM	302	48													1			
6:15 AM	408	82			1						1							
6:30 AM	491	82															1	1
6:45 AM	527	82	1						1	1								
7:00 AM	499	82													1			
7:15 AM	446	70			1						1							
7:30 AM	347	70																
7:45 AM	296	70																
8:00 AM	298	70													1			
8:15 AM	274	48																
8:30 AM	277	48																
8:45 AM	261	48																
9:00 AM	249	48																
9:15 AM	250	46																
9:30 AM	247	46																
9:45 AM	248	46																
10:00 AM	246	46																
10:15 AM	275	42																
10:30 AM	281	42													1			
10:45 AM	294	42																
11:00 AM	300	42																
11:15 AM	316	46																
11:30 AM	322	46													1			
11:45 AM	317	46																
12:00 PM	321	46																
12:15 PM	317	50																
12:30 PM	296	50													1			
12:45 PM	304	50																
1:00 PM	320	50																
1:15 PM	342	50																
1:30 PM	370	50			1										1			
1:45 PM	405	50									1							
2:00 PM	419	50																
2:15 PM	481	52															1	1
2:30 PM	488	52			1										1			
2:45 PM	476	52									1							
3:00 PM	505	52	1															
3:15 PM	563	60							1	1							1	1
3:30 PM	609	60			1								1	1	1			
3:45 PM	634	60									1							
4:00 PM	632	60	1															
4:15 PM	633	60							1	1							1	1
4:30 PM	633	60			1								1	1	1			
4:45 PM	640	60									1							
5:00 PM	633	60	1															
5:15 PM	562	48							1								1	1
5:30 PM	520	48			1										1			
5:45 PM	477	48									1							
6:00 PM	425	48																
6:15 PM	172	0																
6:30 PM	104	0																
6:45 PM	43	0																
7:00 PM	0	0																
7:15 PM	0	0																
7:30 PM	0	0																
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8:45 PM	0	0																
9:00 PM	0	0																
9:15 PM	0	0																
9:30 PM	0	0																
9:45 PM	0	0																
HOURS MET			**4**	**0**	**7**	**0**	**0**	**0**	**4**	**3**	**7**	**0**	**2**	**2**	**11**	**0**	**5**	**5**
WARRANT SATISFIED?			**NO**		**N/A**		**NO**		**N/A**		**NO**				**NO**			

Warrant Met: No

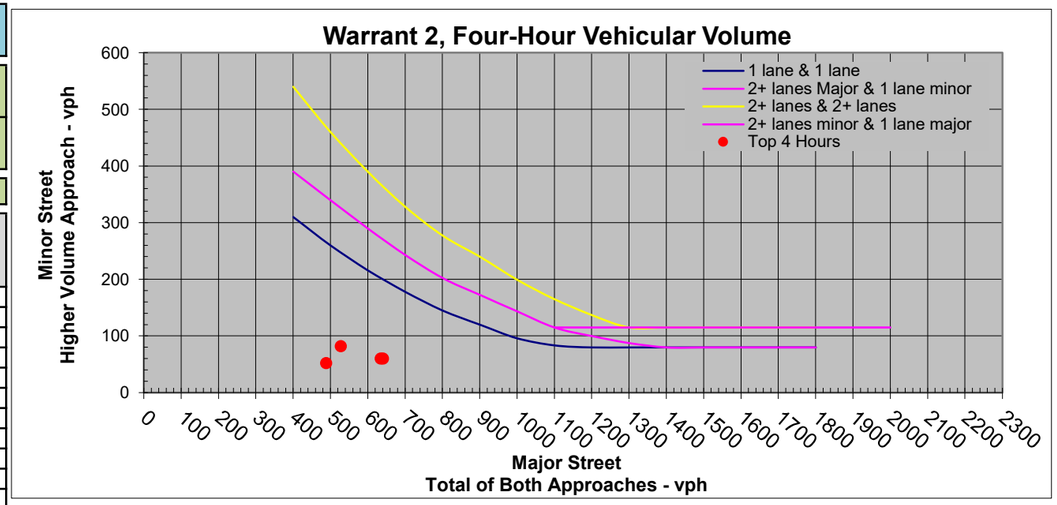
Notes:

OMUTCD WARRANT 2, FOUR-HOUR VEHICULAR VOLUME

Number of Lanes for Moving Traffic on Each Approach		Total Number of Unique Hours Met on Figure 4C-1	0
Major street:	1 Lane	Total Number of Unique Hours Met on Figure 4C-2 (70% Factor)	0
Minor Street:	1 Lane		

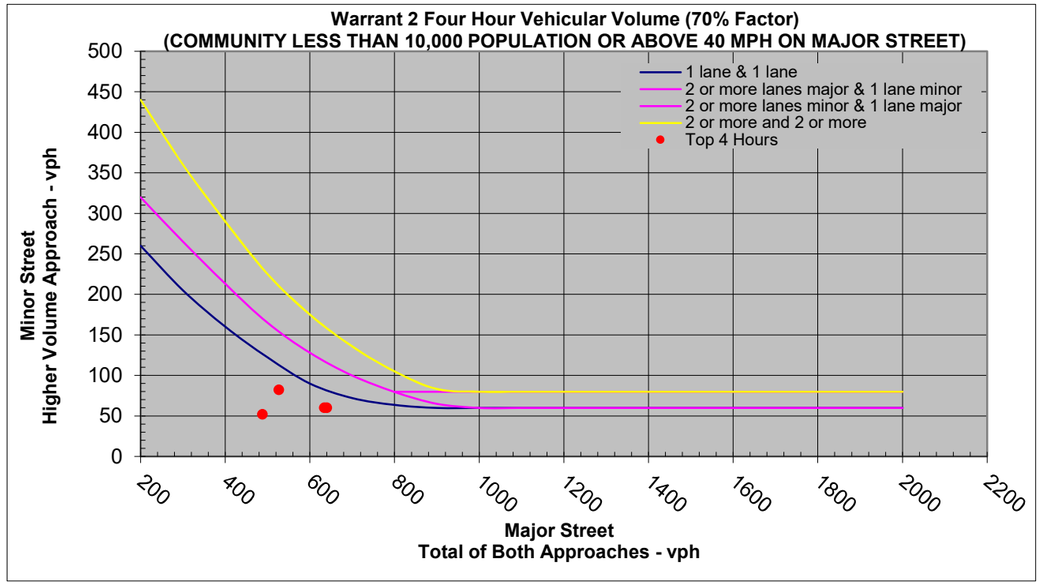
Built up Isolated Community with Less Than 10,000 Population or Above 40 MPH on Major Street?	No

Hour Interval Beginning At	Raw Traffic Counts				Total Major Approach Volumes	Highest Actual Minor Street Approach Volumes	Hour Met?	Hour Met? (70% Factor)
	Major - Ashville Pike		Minor - Site Access 1/ Site Access					
	N-Bound	S-Bound	W-Bound	E-Bound				
6:00 AM	246	56	48	40	302	48		
6:15 AM	301	107	82	68	408	82		
6:30 AM	330	161	82	68	491	82		
6:45 AM	341	186	82	68	527	82		
7:00 AM	310	189	82	68	499	82		
7:15 AM	266	180	70	58	446	70		
7:30 AM	208	139	70	58	347	70		
7:45 AM	167	129	70	58	296	70		
8:00 AM	173	125	70	58	298	70		
8:15 AM	157	117	48	39	274	48		
8:30 AM	166	111	48	39	277	48		
8:45 AM	158	103	48	39	261	48		
9:00 AM	143	106	48	39	249	48		
9:15 AM	130	120	46	38	250	46		
9:30 AM	122	125	46	38	247	46		
9:45 AM	123	125	46	38	248	46		
10:00 AM	121	125	46	38	246	46		
10:15 AM	132	143	42	35	275	42		
10:30 AM	130	151	42	35	281	42		
10:45 AM	130	164	42	35	294	42		
11:00 AM	133	167	42	35	300	42		
11:15 AM	138	178	46	39	316	46		
11:30 AM	143	179	46	39	322	46		
11:45 AM	149	168	46	39	317	46		
12:00 PM	148	173	46	39	321	46		
12:15 PM	151	166	50	41	317	50		
12:30 PM	140	156	50	41	296	50		
12:45 PM	135	169	50	41	304	50		
1:00 PM	143	177	50	41	320	50		
1:15 PM	143	199	50	41	342	50		
1:30 PM	155	215	50	41	370	50		
1:45 PM	178	227	50	41	405	50		
2:00 PM	183	236	50	41	419	50		
2:15 PM	207	274	52	43	481	52		
2:30 PM	206	282	52	43	488	52		
2:45 PM	186	290	52	43	476	52		
3:00 PM	189	316	52	43	505	52		
3:15 PM	193	370	60	50	563	60		
3:30 PM	204	405	60	50	609	60		
3:45 PM	207	427	60	50	634	60		
4:00 PM	198	434	60	50	632	60		
4:15 PM	206	427	60	50	633	60		
4:30 PM	205	428	60	50	633	60		
4:45 PM	213	427	60	50	640	60		
5:00 PM	218	415	60	50	633	60		
5:15 PM	191	371	48	40	562	48		
5:30 PM	182	338	48	40	520	48		
5:45 PM	173	304	48	40	477	48		
6:00 PM	161	264	48	40	425	48		
6:15 PM	70	102	0	0	172	0		
6:30 PM	45	59	0	0	104	0		
6:45 PM	20	23	0	0	43	0		
7:00 PM	0	0	0	0	0	0		
7:15 PM	0	0	0	0	0	0		
7:30 PM	0	0	0	0	0	0		
7:45 PM	0	0	0	0	0	0		
8:00 PM	0	0	0	0	0	0		



Top Hours for Figure 4C-1	Start Time	End Time	Major Street	Minor Street
Top Hour	4:45 PM	5:45 PM	640	60
2nd Highest Hour	3:45 PM	4:45 PM	634	60
3rd Highest Hour	6:45 AM	7:45 AM	527	82
4th Highest Hour	2:30 PM	3:30 PM	488	52

Top Hours for Figure 4C-2	Start Time	End Time	Major Street	Minor Street
Top Hour	4:45 PM	5:45 PM	640	60
2nd Highest Hour	3:45 PM	4:45 PM	634	60
3rd Highest Hour	6:45 AM	7:45 AM	527	82
4th Highest Hour	2:30 PM	3:30 PM	488	52



Are the requirements for Warrant 2 met?: No

OMUTCD WARRANT 3, PEAK HOUR

Number of Lanes for Moving Traffic on Each Approach		Peak Hour Start time	4:45 PM
Major Street:	1 Lane	Peak Hour End Time	5:45 PM
Minor Street:	1 Lane		

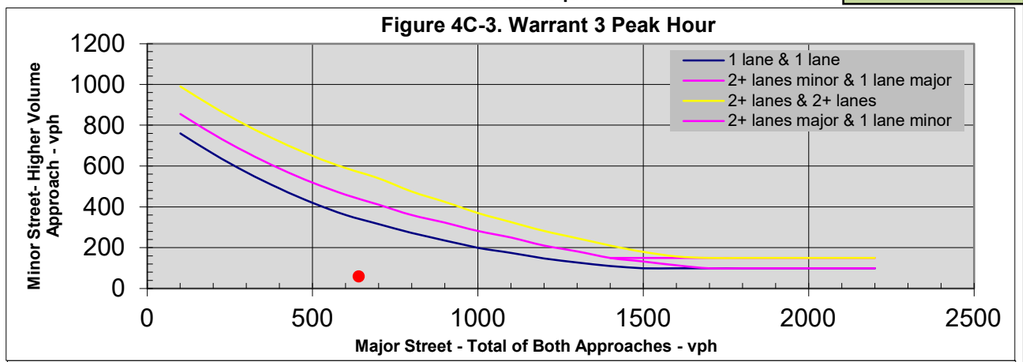
Built up Isolated Community with Less Than 10,000 Population or Above 40 MPH on Major Street?	No
Is this signal warrant being applied for an unusual case, such as office complexes, manufacturing plants, industrial complexes, or high-occupancy vehicle facilities that attract or discharge large numbers of vehicles over a short time?	No

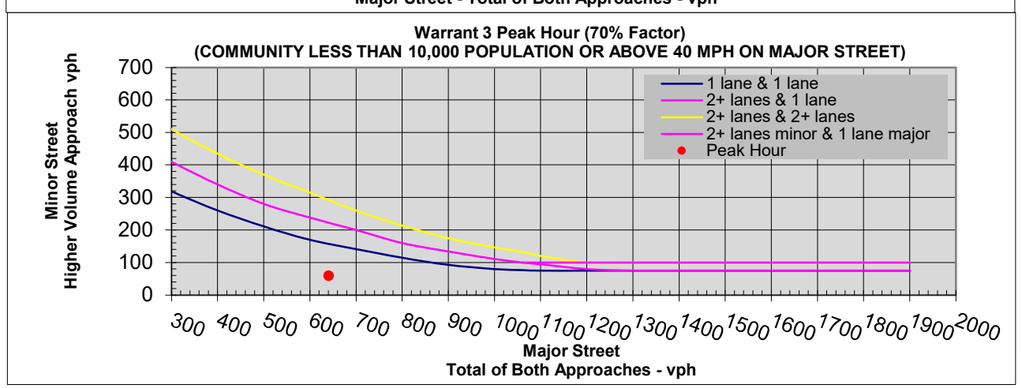
Indicate whether all three of the following conditions for the same 1 hour (any four consecutive 15-minute periods) of an average day are present*

Does the total stopped time delay experienced by the traffic on one minor-street approach (one direction only) controlled by a STOP sign equal or exceed 4 vehicle-hours for a one-lane approach or 5 vehicle-hours for a two-lane approach?	No
Does the volume on the same minor-street approach (one direction only) equal or exceed 100 vehicles per hour for one moving lane of traffic or 150 vehicles per hour for two moving lanes?	No
Does the total entering volume serviced during the hour equal or exceed 650 vehicles per hour for intersection with three approaches or 800 vehicles per hour for intersections with four or more approaches?	No

**If applicable, attach all supporting calculations and documentation.*

Are the requirements for Warrant 3 met?: No





Hour Interval Beginning At	Major Street Combined Vehicles Per Hour (VPH)	Highest Minor Street Approach Vehicles Per Hour (VPH)	Sum of Major Street and Highest Minor Street	Sum of Major Street and Combined Minor Street
6:00 AM	302	48	350	390
6:15 AM	408	82	490	558
6:30 AM	491	82	573	641
6:45 AM	527	82	609	677
7:00 AM	499	82	581	649
7:15 AM	446	70	516	574
7:30 AM	347	70	417	475
7:45 AM	296	70	366	424
8:00 AM	298	70	368	426
8:15 AM	274	48	322	361
8:30 AM	277	48	325	364
8:45 AM	261	48	309	348
9:00 AM	249	48	297	336
9:15 AM	250	46	296	334
9:30 AM	247	46	293	331
9:45 AM	248	46	294	332
10:00 AM	246	46	292	330
10:15 AM	275	42	317	352
10:30 AM	281	42	323	358
10:45 AM	294	42	336	371
11:00 AM	300	42	342	377
11:15 AM	316	46	362	401
11:30 AM	322	46	368	407
11:45 AM	317	46	363	402
12:00 PM	321	46	367	406
12:15 PM	317	50	367	408
12:30 PM	296	50	346	387
12:45 PM	304	50	354	395
1:00 PM	320	50	370	411
1:15 PM	342	50	392	433
1:30 PM	370	50	420	461
1:45 PM	405	50	455	496
2:00 PM	419	50	469	510
2:15 PM	481	52	533	576
2:30 PM	488	52	540	583
2:45 PM	476	52	528	571
3:00 PM	505	52	557	600
3:15 PM	563	60	623	673
3:30 PM	609	60	669	719
3:45 PM	634	60	694	744
4:00 PM	632	60	692	742
4:15 PM	633	60	693	743
4:30 PM	633	60	693	743
4:45 PM	640	60	700	750
5:00 PM	633	60	693	743
5:15 PM	562	48	610	650
5:30 PM	520	48	568	608
5:45 PM	477	48	525	565
6:00 PM	425	48	473	513
6:15 PM	172	0	172	172
6:30 PM	104	0	104	104
6:45 PM	43	0	43	43
7:00 PM	0	0	0	0
7:15 PM	0	0	0	0
7:30 PM	0	0	0	0
7:45 PM	0	0	0	0
8:00 PM	0	0	0	0

Actual Peak Hour Major Traffic Volume	Actual Peak Hour Minor Traffic Volume	Required Peak Hour Minor Traffic Volume for Fig. 4C-3	Required Peak Hour Minor Traffic Volume for Fig. 4C-4
640	60	330.8156	155.9416

Start Time	Southbound Approach						Westbound Approach						Northbound Approach						Eastbound Approach						NOTES:
	Southbound						Westbound						Nouthbound						Eastbound						
	Right	Thru	Left	U-Turn	Peds	App Total	Right	Thru	Left	U-Turn	Peds	App Total	Right	Thru	Left	U-Turn	Peds	App Total	Right	Thru	Left	U-Turn	Peds	App Total	
12:00 AM						0						0						0						0	It should be noted that if data is copied overtop of the Hourly Totals or Approach Totals, that the 'AutoSum' Formula will be lost. This should not affect the actual totals if the data was copied from a program that performs the calculations for the user.
12:15 AM						0						0						0						0	
12:30 AM						0						0						0						0	
12:45 AM						0						0						0						0	
Hourly Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
1:00 AM						0						0						0						0	
1:15 AM						0						0						0						0	
1:30 AM						0						0						0						0	
1:45 AM						0						0						0						0	
Hourly Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
2:00 AM						0						0						0						0	
2:15 AM						0						0						0						0	
2:30 AM						0						0						0						0	
2:45 AM						0						0						0						0	
Hourly Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
3:00 AM						0						0						0						0	
3:15 AM						0						0						0						0	
3:30 AM						0						0						0						0	
3:45 AM						0						0						0						0	
Hourly Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
4:00 AM						0						0						0						0	
4:15 AM						0						0						0						0	
4:30 AM						0						0						0						0	
4:45 AM						0						0						0						0	
Hourly Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
5:00 AM						0						0						0						0	
5:15 AM						0						0						0						0	
5:30 AM						0						0						0						0	
5:45 AM						0						0						0						0	
Hourly Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
6:00 AM	8	15	6			29	24	0	24			48	6	73	2			81	8	0	32			40	
6:15 AM	0	5	0			5	0	0	0			0	0	49	0			49	0	0	0			0	
6:30 AM	0	7	0			7	0	0	0			0	0	56	0			56	0	0	0			0	
6:45 AM	0	15	0			15	0	0	0			0	0	60	0			60	0	0	0			0	
Hourly Total	8	42	6	0	0	56	24	0	24	0	0	48	6	238	2	0	0	246	8	0	32	0	0	40	
7:00 AM	17	50	13			80	41	0	41			82	13	119	4			136	14	0	54			68	
7:15 AM	0	59	0			59	0	0	0			0	0	78	0			78	0	0	0			0	
7:30 AM	0	32	0			32	0	0	0			0	0	67	0			67	0	0	0			0	
7:45 AM	0	18	0			18	0	0	0			0	0	29	0			29	0	0	0			0	
Hourly Total	17	159	13	0	0	189	41	0	41	0	0	82	13	293	4	0	0	310	14	0	54	0	0	68	
8:00 AM	21	35	15			71	35	0	35			70	15	72	5			92	12	0	46			58	
8:15 AM	0	18	0			18	0	0	0			0	0	20	0			20	0	0	0			0	
8:30 AM	0	22	0			22	0	0	0			0	0	26	0			26	0	0	0			0	
8:45 AM	0	14	0			14	0	0	0			0	0	35	0			35	0	0	0			0	
Hourly Total	21	89	15	0	0	125	35	0	35	0	0	70	15	153	5	0	0	173	12	0	46	0	0	58	
9:00 AM	18	31	14			63	24	0	24			48	14	57	5			76	8	0	31			39	
9:15 AM	0	12	0			12	0	0	0			0	0	29	0			29	0	0	0			0	
9:30 AM	0	14	0			14	0	0	0			0	0	18	0			18	0	0	0			0	
9:45 AM	0	17	0			17	0	0	0			0	0	20	0			20	0	0	0			0	
Hourly Total	18	74	14	0	0	106	24	0	24	0	0	48	14	124	5	0	0	143	8	0	31	0	0	39	
10:00 AM	23	37	17			77	23	0	23			46	17	40	6			63	8	0	30			38	
10:15 AM	0	17	0			17	0	0	0			0	0	21	0			21	0	0	0			0	
10:30 AM	0	14	0			14	0	0	0			0	0	19	0			19	0	0	0			0	
10:45 AM	0	17	0			17	0	0	0			0	0	18	0			18	0	0	0			0	
Hourly Total	23	85	17	0	0	125	23	0	23	0	0	46	17	98	6	0	0	121	8	0	30	0	0	38	
11:00 AM	30	43	22			95	21	0	21			42	22	45	7			74	7	0	28			35	
11:15 AM	0	25	0			25	0	0	0			0	0	19	0			19	0	0	0			0	
11:30 AM	0	27	0			27	0	0	0			0	0	19	0			19	0	0	0			0	
11:45 AM	0	20	0			20	0	0	0			0	0	21	0			21	0	0	0			0	
Hourly Total	30	115	22	0	0	167	21	0	21	0	0	42	22	104	7	0	0	133	7	0	28	0	0	35	
12:00 PM	31	52	23			106	23	0	23			46	23	48	8			79	8	0	31			39	
12:15 PM	0	26	0			26	0	0	0			0	0	24	0			24	0	0	0			0	
12:30 PM	0	16	0			16	0	0	0			0	0	25	0			25	0	0	0			0	
12:45 PM	0	25	0			25	0	0	0			0	0	20	0			20	0	0	0			0	
Hourly Total	31	119	23	0	0	173	23	0	23	0	0	46	23	117	8	0	0	148	8	0	31	0	0	39	
1:00 PM	33	41	25			99	25	0	25			50	25	49	8			82	8	0	33			41	
1:15 PM	0	16	0			16	0	0	0			0	0	13	0			13	0	0	0			0	
1:30 PM	0	29	0			29	0	0	0			0	0	20	0			20	0	0	0			0	
1:45 PM	0	33	0			33	0	0	0			0	0	28	0			28	0	0	0			0	
Hourly Total	33	119	25	0	0	177	25	0	25	0	0	50	25	110	8	0	0	143	8	0	33	0	0	41	
2:00 PM	39	53	29			121	25	0	25			50	29	43	10			82	8	0	33			41	
2:15 PM	0	32	0			32	0	0	0			0	0	25	0			25	0	0	0			0	
2:30 PM	0	41	0			41	0	0	0			0	0	43	0			43	0	0	0			0	
2:45 PM	0	42	0			42	0	0	0			0	0	33	0			33	0	0	0			0	
Hourly Total	39	168	29	0	0	236	25	0	25	0	0	50	29	144	10	0	0	183	8	0	33	0	0	41	
3:00 PM	47	76	36			159	26	0	26			52	36	58	12			106	9	0	34			43	
3:15 PM	0	40	0			40	0	0	0			0	0	24	0			24	0	0	0			0	
3:30 PM	0	49	0			49	0	0	0			0	0	23	0			23	0	0	0			0	
3:45 PM	0	68	0			68	0	0	0			0	0	36	0			36	0	0	0			0	
Hourly Total	47	233	36	0	0	316	26	0	26	0	0	52	36	141	12	0	0	189	9	0	34	0	0	43	
4:00 PM	57	113	43			213	30	0	30			60	43	53	14			110	10	0	40			50	
4:15 PM	0	75	0			75	0	0	0			0	0	35	0			35	0	0	0			0	
4:30 PM	0	71	0			71	0	0	0			0	0	26	0			26	0	0	0			0	
4:45 PM	0	75	0			75	0	0	0			0	0	27	0			27	0	0	0			0	
Hourly Total	57	334	43	0	0	434	30	0	30	0	0	60	43	141	14	0	0	198	10	0	40	0	0	50	
5:00 PM	55	110	41			206	30	0	30			60	41	63	14			118	10	0	40			50	
5:15 PM	0	76	0			76	0	0	0			0	0	34	0			34	0	0	0			0	
5:30 PM	0	70	0			70	0	0	0			0	0	34	0			34	0	0	0			0	
5:45 PM	0	63	0			63	0	0	0			0	0	32	0			32	0	0	0			0	
Hourly Total	55	319	41	0	0	415	30	0	30	0	0	60	41	163	14	0	0	218	10	0	40	0	0	50	
6:00 PM	46	81	35			162	24	0	24			48	35	44	12			91	8	0	32			40	
6:15 PM	0	43	0			43	0	0	0			0	0	25	0			25	0	0	0			0	
6:30 PM	0	36	0			36	0	0	0			0	0	25	0			25	0	0	0			0	
6:45 PM	0	23	0			23	0	0	0			0	0	20	0			20	0	0	0			0	
Hourly Total	46	183	35	0	0	264	24	0	24	0	0	48	35	114	12	0	0	161	8	0	32	0	0	40	
7:00 PM	0	0	0			0	0	0	0			0	0	0	0			0	0	0	0			0	
7:15 PM	0	0	0			0	0	0	0			0	0	0	0			0	0	0	0			0	
7:30 PM	0	0	0			0	0	0	0			0	0	0	0			0	0	0	0			0	
7:45 PM	0	0	0			0	0	0	0			0	0	0	0			0	0	0	0			0	
Hourly Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
8:00 PM						0						0						0						0	
8:15 PM						0						0						0						0	
8:30 PM						0						0						0						0	
8:45 PM						0						0						0						0	
Hourly Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
9:00 PM						0						0						0						0	
9:15 PM						0						0						0						0	
9:30 PM						0						0						0						0	
9:45 PM						0						0						0						0	
Hourly Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
10:00 PM						0						0						0						0	
10:15 PM						0						0						0						0	
10:30 PM						0						0						0						0	
10:45 PM						0						0						0						0	
Hourly Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
11:00 PM						0						0						0						0	
11:15 PM						0						0						0						0	
11:30 PM						0						0						0						0	
11:45 PM						0						0						0						0	
Hourly Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	

Ashville Pike & Long Street Count Data

	Southbound						Westbound						Northbound						Eastbound		
	Right	Thru	Left				Right	Thru	Left				Right	Thru	Left				Right	Thru	Left
0:00																					
12:15																					
12:30																					
12:45																					
1:00																					
1:15																					
1:30																					
1:45																					
2:00																					
2:15																					
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4:00																					
4:15																					
4:30																					
4:45																					
5:00																					
5:15																					
5:30																					
5:45																					
6:00		10	1				6							57							
6:15		6	0				7							57							
6:30		9	0				2							69							
6:45		18	1				7							70							
7:00		48	0				18							82							
7:15		75	0				6							93							
7:30		39	2				8							78							
7:45		20	3				5							32							
8:00		24	1				8							40							
8:15		22	1				1							24							
8:30		26	2				1							32							
8:45		16	2				1							43							
9:00		21	1				0							42							
9:15		15	0				3							34							
9:30		18	0				4							19							
9:45		21	1				0							25							
10:00		25	0				0							22							
10:15		22	0				6							20							
10:30		15	3				1							23							
10:45		21	1				3							20							
11:00		27	0				1							29							
11:15		31	1				0							24							
11:30		32	3				5							19							
11:45		24	1				1							26							
12:00		35	2				2							29							
12:15		31	2				3							28							
12:30		19	1				1							31							
12:45		29	2				1							24							
1:00		18	2				1							30							
1:15		21	0				1							16							
1:30		34	2				1							24							
1:45		40	2				1							34							
2:00		29	1				2							20							
2:15		40	1				3							30							
2:30		50	3				0							55							
2:45		50	4				4							38							
3:00		49	3				2							39							
3:15		48	4				2							28							
3:30		59	4				4							25							
3:45		81	6				5							41							
4:00		85	5				2							27							
4:15		82	14				2							42							
4:30		89	3				3							31							
4:45		90	7				3							32							
5:00		85	4				1							41							
5:15		91	6				3							41							
5:30		83	7				2							41							
5:45		73	8				1							40							
6:00		56	2				4							22							
6:15		51	4				4							28							
6:30		42	4				4							28							
6:45		25	4				0							25							
7:00																					
7:15																					
7:30																					
7:45																					
8:00																					
8:15																					
8:30																					
8:45																					
9:00																					
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9:30																					
9:45																					
10:00																					
10:15																					
10:30																					
10:45																					
11:00																					
11:15																					
11:30																					
11:45																					

Ashville Pike & Long Street Count Data Grown

	Southbound						Westbound						Northbound						Eastbound		
	Right	Thru	Left				Right	Thru	Left				Right	Thru	Left				Right	Thru	Left
0:00																					
12:15																					
12:30																					
12:45																					
1:00																					
1:15																					
1:30																					
1:45																					
2:00																					
2:15																					
2:30																					
2:45																					
3:00																					
3:15																					
3:30																					
3:45																					
4:00																					
4:15																					
4:30																					
4:45																					
5:00																					
5:15																					
5:30																					
5:45																					
6:00		8	1				5							44							
6:15		5	0				5							44							
6:30		7	0				2							54							
6:45		14	1				5							55							
7:00		37	0				14							64							
7:15		59	0				5							73							
7:30		30	2				6							61							
7:45		16	2				4							25							
8:00		19	1				6							31							
8:15		17	1				1							19							
8:30		20	2				1							25							
8:45		12	2				1							34							
9:00		16	1				0							33							
9:15		12	0				2							27							
9:30		14	0				3							15							
9:45		16	1				0							20							
10:00		20	0				0							17							
10:15		17	0				5							16							
10:30		12	2				1							18							
10:45		16	1				2							16							
11:00		21	0				1							23							
11:15		24	1				0							19							
11:30		25	2				4							15							
11:45		19	1				1							20							
12:00		27	2				2							23							
12:15		24	2				2							22							
12:30		15	1				1							24							
12:45		23	2				1							19							
1:00		14	2				1							23							
1:15		16	0				1							12							
1:30		27	2				1							19							
1:45		31	2				1							27							
2:00		23	1				2							16							
2:15		31	1				2							23							
2:30		39	2				0							43							
2:45		39	3				3							30							
3:00		38	2				2							30							
3:15		37	3				2							22							
3:30		46	3				3							20							
3:45		63	5				4							32							
4:00		66	4				2							21							
4:15		64	11				2							33							
4:30		69	2				2							24							
4:45		70	5				2							25							
5:00		66	3				1							32							
5:15		71	5				2							32							
5:30		65	5				2							32							
5:45		57	6				1							31							
6:00		44	2				3							17							
6:15		40	3				3							22							
6:30		33	3				3							22							
6:45		20	3				0							20							
7:00		0	0				0							0							
7:15		0	0				0							0							
7:30		0	0				0							0							
7:45		0	0				0							0							
8:00																					
8:15																					
8:30																					
8:45																					
9:00																					
9:15																					
9:30																					
9:45																					
10:00																					
10:15																					
10:30																					
10:45																					
11:00																					
11:15																					
11:30																					
11:45																					

Growth Rate 2.00%
Collection Year 2021
Design Year 2032

Through Volumes at Site Drive 1/Site Drive 2 determined from the Ashville Pike & Long Street Count Data

	Southbound						Westbound						Northbound						Eastbound		
	Right	Thru	Left				Right	Thru	Left				Right	Thru	Left				Right	Thru	Left
0:00																					
12:15																					
12:30																					
12:45																					
1:00																					
1:15																					
1:30																					
1:45																					
2:00																					
2:15																					
2:30																					
2:45																					
3:00																					
3:15																					
3:30																					
3:45																					
4:00																					
4:15																					
4:30																					
4:45																					
5:00																					
5:15																					
5:30																					
5:45																					
6:00		9												49							
6:15		5												49							
6:30		7												56							
6:45		15												60							
7:00		37												78							
7:15		59												78							
7:30		32												67							
7:45		18												29							
8:00		20												37							
8:15		18												20							
8:30		22												26							
8:45		14												35							
9:00		17												33							
9:15		12												29							
9:30		14												18							
9:45		17												20							
10:00		20												17							
10:15		17												21							
10:30		14												19							
10:45		17												18							
11:00		21												24							
11:15		25												19							
11:30		27												19							
11:45		20												21							
12:00		29												25							
12:15		26												24							
12:30		16												25							
12:45		25												20							
1:00		16												24							
1:15		16												13							
1:30		29												20							
1:45		33												28							
2:00		24												18							
2:15		32												25							
2:30		41												43							
2:45		42												33							
3:00		40												32							
3:15		40												24							
3:30		49												23							
3:45		68												36							
4:00		70												23							
4:15		75												35							
4:30		71												26							
4:45		75												27							
5:00		69												33							
5:15		76												34							
5:30		70												34							
5:45		63												32							
6:00		46												20							
6:15		43												25							
6:30		36												25							
6:45		23												20							
7:00																					
7:15																					
7:30																					
7:45																					
8:00																					
8:15																					
8:30																					
8:45																					
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9:30																					
9:45																					
10:00																					
10:15																					
10:30																					
10:45																					
11:00																					
11:15																					
11:30																					
11:45																					

Trip Distribution at Ashville Pike & Site Drive 1/Site Drive 2 - Distribution matches the distribution used in the TIS volumes.

	20% Entry	15% Entry	15% Entry				15% Exit		15% Exit				15% Entry	15% Exit	5% Entry				5% Exit		20% Exit	210 - Single-Family Detached Housing		210 Weekday 2723
	Southbound						Westbound						Northbound						Eastbound			Entry %	Exit %	
	Right	Thru	Left				Right	Thru	Left				Right	Thru	Left				Right	Thru	Left			
0:00																								
12:15																								
12:30																								
12:45																								
1:00																								
1:15																								
1:30																								
1:45																								
2:00																								
2:15																								
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4:00																								
4:15																								
4:30																								
4:45																								
5:00																								
5:15																								
5:30																								
5:45																								
6:00	8	6	6				24		24				6	24	2				8		32	1.6%	5.8%	
6:15																								
6:30																								
6:45																								
7:00	17	13	13				41		41				13	41	4				14		54	3.1%	10.0%	
7:15																								
7:30																								
7:45																								
8:00	21	15	15				35		35				15	35	5				12		46	3.8%	8.5%	
8:15																								
8:30																								
8:45																								
9:00	18	14	14				24		24				14	24	5				8		31	3.3%	5.8%	
9:15																								
9:30																								
9:45																								
10:00	23	17	17				23		23				17	23	6				8		30	4.2%	5.6%	
10:15																								
10:30																								
10:45																								
11:00	30	22	22				21		21				22	21	7				7		28	5.4%	5.1%	
11:15																								
11:30																								
11:45																								
12:00	31	23	23				23		23				23	23	8				8		31	5.7%	5.7%	
12:15																								
12:30																								
12:45																								
1:00	33	25	25				25		25				25	25	8				8		33	6.1%	6.0%	
1:15																								
1:30																								
1:45																								
2:00	39	29	29				25		25				29	25	10				8		33	7.1%	6.1%	
2:15																								
2:30																								
2:45																								
3:00	47	36	36				26		26				36	26	12				9		34	8.7%	6.2%	
3:15																								
3:30																								
3:45																								
4:00	57	43	43				30		30				43	30	14				10		40	10.5%	7.4%	
4:15																								
4:30																								
4:45																								
5:00	55	41	41				30		30				41	30	14				10		40	10.0%	7.3%	
5:15																								
5:30																								
5:45																								
6:00	46	35	35				24		24				35	24	12				8		32	8.5%	5.9%	
6:15																								
6:30																								
6:45																								
7:00																								
7:15																								
7:30																								
7:45																								
8:00																								
8:15																								
8:30																								
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9:45																								
10:00																								
10:15																								
10:30																								
10:45																								
11:00																								
11:15																								
11:30																								
11:45																								

Appendix G
Capacity Analysis

Appendix G

HCS7 Two-Way Stop-Control Report

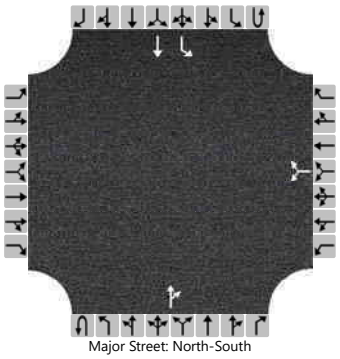
General Information

Analyst	LRY
Agency/Co.	CMTran
Date Performed	
Analysis Year	2022
Time Analyzed	AM No Build
Intersection Orientation	North-South
Project Description	Ashville Residential TIS

Site Information

Intersection	Ashville Pk & St Paul Rd
Jurisdiction	Village of Ashville
East/West Street	St Paul Road
North/South Street	Ashville Pike
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes


Major Street: North-South

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	0	0		0	1	0	0	0	1	0	0	1	1	0
Configuration							LR					TR		L	T	
Volume (veh/h)						28		64			287	48		34	138	
Percent Heavy Vehicles (%)						3		3						3		
Proportion Time Blocked																
Percent Grade (%)						0										
Right Turn Channelized																
Median Type | Storage						Undivided										

Critical and Follow-up Headways

Base Critical Headway (sec)						7.1		6.2						4.1		
Critical Headway (sec)						6.43		6.23						4.13		
Base Follow-Up Headway (sec)						3.5		3.3						2.2		
Follow-Up Headway (sec)						3.53		3.33						2.23		

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)							100							37		
Capacity, c (veh/h)							611							1189		
v/c Ratio							0.16							0.03		
95% Queue Length, Q_{95} (veh)							0.6							0.1		
Control Delay (s/veh)							12.0							8.1		
Level of Service (LOS)							B							A		
Approach Delay (s/veh)						12.0								1.6		
Approach LOS						B										

HCS7 Two-Way Stop-Control Report

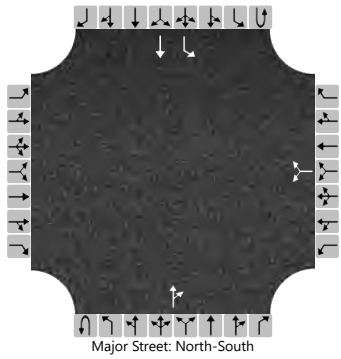
General Information

Analyst	LRY
Agency/Co.	CMTran
Date Performed	
Analysis Year	2022
Time Analyzed	AM Build
Intersection Orientation	North-South
Project Description	Ashville Residential TIS

Site Information

Intersection	Ashville Pk & St Paul Rd
Jurisdiction	Village of Ashville
East/West Street	St Paul Road
North/South Street	Ashville Pike
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes



Major Street: North-South

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	0	0		0	1	0	0	0	1	0	0	1	1	0
Configuration							LR					TR		L	T	
Volume (veh/h)						28		100			433	48		46	190	
Percent Heavy Vehicles (%)						3		3						3		
Proportion Time Blocked																
Percent Grade (%)							0									
Right Turn Channelized																
Median Type | Storage			Undivided													

Critical and Follow-up Headways

Base Critical Headway (sec)						7.1		6.2						4.1		
Critical Headway (sec)						6.43		6.23						4.13		
Base Follow-Up Headway (sec)						3.5		3.3						2.2		
Follow-Up Headway (sec)						3.53		3.33						2.23		

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)							139							50		
Capacity, c (veh/h)							495							1039		
v/c Ratio							0.28							0.05		
95% Queue Length, Q_{95} (veh)							1.1							0.2		
Control Delay (s/veh)							15.1							8.6		
Level of Service (LOS)							C							A		
Approach Delay (s/veh)							15.1							1.7		
Approach LOS							C									

HCS7 Two-Way Stop-Control Report

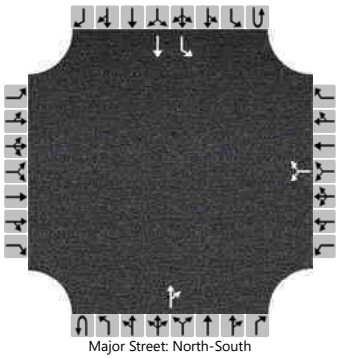
General Information

Analyst	LRY
Agency/Co.	CMTran
Date Performed	
Analysis Year	2022
Time Analyzed	PM No Build
Intersection Orientation	North-South
Project Description	Ashville Residential TIS

Site Information

Intersection	Ashville Pk & St Paul Rd
Jurisdiction	Village of Ashville
East/West Street	St Paul Road
North/South Street	Ashville Pike
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes


Major Street: North-South

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	0	0		0	1	0	0	0	1	0	0	1	1	0
Configuration							LR					TR		L	T	
Volume (veh/h)						32		19			159	21		69	425	
Percent Heavy Vehicles (%)						3		3						3		
Proportion Time Blocked																
Percent Grade (%)						0										
Right Turn Channelized																
Median Type | Storage						Undivided										

Critical and Follow-up Headways

Base Critical Headway (sec)						7.1		6.2						4.1		
Critical Headway (sec)						6.43		6.23						4.13		
Base Follow-Up Headway (sec)						3.5		3.3						2.2		
Follow-Up Headway (sec)						3.53		3.33						2.23		

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)							55							75		
Capacity, c (veh/h)							433							1371		
v/c Ratio							0.13							0.05		
95% Queue Length, Q_{95} (veh)							0.4							0.2		
Control Delay (s/veh)							14.5							7.8		
Level of Service (LOS)							B							A		
Approach Delay (s/veh)						14.5								1.1		
Approach LOS						B										

HCS7 Two-Way Stop-Control Report

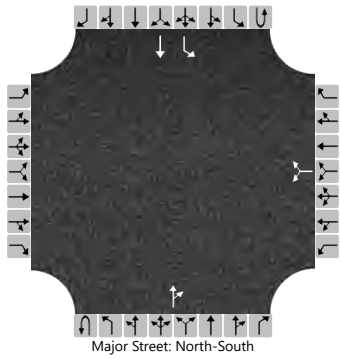
General Information

Analyst	LRY
Agency/Co.	CMTran
Date Performed	
Analysis Year	2022
Time Analyzed	PM Build
Intersection Orientation	North-South
Project Description	Ashville Residential TIS

Site Information

Intersection	Ashville Pk & St Paul Rd
Jurisdiction	Village of Ashville
East/West Street	St Paul Road
North/South Street	Ashville Pike
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes


Major Street: North-South

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	0	0		0	1	0	0	0	1	0	0	1	1	0
Configuration							LR					TR		L	T	
Volume (veh/h)						32		42			262	21		109	601	
Percent Heavy Vehicles (%)						3		3						3		
Proportion Time Blocked																
Percent Grade (%)						0										
Right Turn Channelized																
Median Type | Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)						7.1		6.2						4.1		
Critical Headway (sec)						6.43		6.23						4.13		
Base Follow-Up Headway (sec)						3.5		3.3						2.2		
Follow-Up Headway (sec)						3.53		3.33						2.23		

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)							80							118		
Capacity, c (veh/h)							326							1247		
v/c Ratio							0.25							0.09		
95% Queue Length, Q_{95} (veh)							1.0							0.3		
Control Delay (s/veh)							19.6							8.2		
Level of Service (LOS)							C							A		
Approach Delay (s/veh)						19.6								1.3		
Approach LOS						C										

HCS7 Two-Way Stop-Control Report

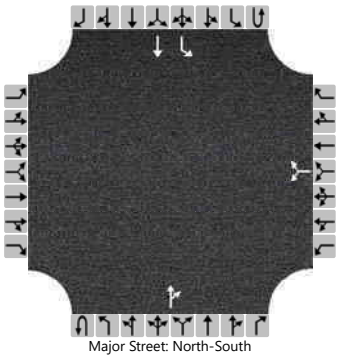
General Information

Analyst	LRY
Agency/Co.	CMTran
Date Performed	
Analysis Year	2032
Time Analyzed	AM No Build
Intersection Orientation	North-South
Project Description	Ashville Residential TIS

Site Information

Intersection	Ashville Pk & St Paul Rd
Jurisdiction	Village of Ashville
East/West Street	St Paul Road
North/South Street	Ashville Pike
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes


Major Street: North-South

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	0	0		0	1	0	0	0	1	0	0	1	1	0
Configuration							LR					TR		L	T	
Volume (veh/h)						33		77			343	57		40	165	
Percent Heavy Vehicles (%)						3		3						3		
Proportion Time Blocked																
Percent Grade (%)						0										
Right Turn Channelized																
Median Type | Storage						Undivided										

Critical and Follow-up Headways

Base Critical Headway (sec)						7.1		6.2						4.1		
Critical Headway (sec)						6.43		6.23						4.13		
Base Follow-Up Headway (sec)						3.5		3.3						2.2		
Follow-Up Headway (sec)						3.53		3.33						2.23		

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)							120							43		
Capacity, c (veh/h)							547							1120		
v/c Ratio							0.22							0.04		
95% Queue Length, Q_{95} (veh)							0.8							0.1		
Control Delay (s/veh)							13.4							8.3		
Level of Service (LOS)							B							A		
Approach Delay (s/veh)						13.4								1.6		
Approach LOS						B										

HCS7 Two-Way Stop-Control Report

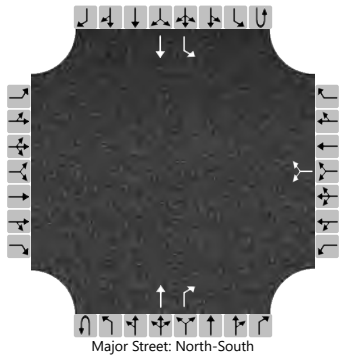
General Information

Analyst	LRY
Agency/Co.	CMTran
Date Performed	
Analysis Year	2032
Time Analyzed	AM Build
Intersection Orientation	North-South
Project Description	Ashville Residential TIS

Site Information

Intersection	Ashville Pk & St Paul Rd
Jurisdiction	Village of Ashville
East/West Street	St Paul Road
North/South Street	Ashville Pike
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes


Major Street: North-South

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	0	0		0	1	0	0	0	1	1	0	1	1	0
Configuration							LR				T	R		L	T	
Volume (veh/h)						33		113			489	57		52	217	
Percent Heavy Vehicles (%)						3		3						3		
Proportion Time Blocked																
Percent Grade (%)						0										
Right Turn Channelized											No					
Median Type | Storage			Undivided													

Critical and Follow-up Headways

Base Critical Headway (sec)						7.1		6.2						4.1		
Critical Headway (sec)						6.43		6.23						4.13		
Base Follow-Up Headway (sec)						3.5		3.3						2.2		
Follow-Up Headway (sec)						3.53		3.33						2.23		

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)							159							57		
Capacity, c (veh/h)							459							978		
v/c Ratio							0.35							0.06		
95% Queue Length, Q_{95} (veh)							1.5							0.2		
Control Delay (s/veh)							16.9							8.9		
Level of Service (LOS)							C							A		
Approach Delay (s/veh)						16.9								1.7		
Approach LOS						C										

HCS7 Two-Way Stop-Control Report

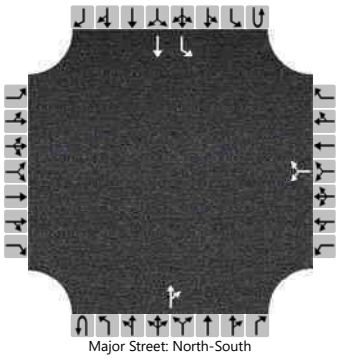
General Information

Analyst	LRY
Agency/Co.	CMTran
Date Performed	
Analysis Year	2032
Time Analyzed	PM No Build
Intersection Orientation	North-South
Project Description	Ashville Residential TIS

Site Information

Intersection	Ashville Pk & St Paul Rd
Jurisdiction	Village of Ashville
East/West Street	St Paul Road
North/South Street	Ashville Pike
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes


Major Street: North-South

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	0	0		0	1	0	0	0	1	0	0	1	1	0
Configuration							LR					TR		L	T	
Volume (veh/h)						38		23			190	26		83	509	
Percent Heavy Vehicles (%)						3		3						3		
Proportion Time Blocked																
Percent Grade (%)						0										
Right Turn Channelized																
Median Type | Storage						Undivided										

Critical and Follow-up Headways

Base Critical Headway (sec)						7.1		6.2						4.1		
Critical Headway (sec)						6.43		6.23						4.13		
Base Follow-Up Headway (sec)						3.5		3.3						2.2		
Follow-Up Headway (sec)						3.53		3.33						2.23		

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)							66							90		
Capacity, c (veh/h)							357							1327		
v/c Ratio							0.19							0.07		
95% Queue Length, Q_{95} (veh)							0.7							0.2		
Control Delay (s/veh)							17.4							7.9		
Level of Service (LOS)							C							A		
Approach Delay (s/veh)						17.4								1.1		
Approach LOS						C										

HCS7 Two-Way Stop-Control Report

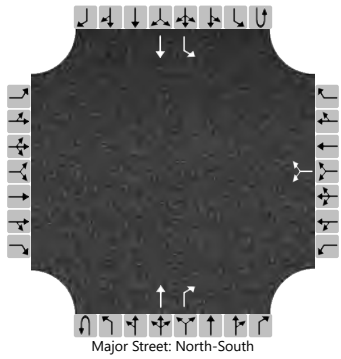
General Information

Analyst	LRY
Agency/Co.	CMTran
Date Performed	
Analysis Year	2032
Time Analyzed	PM Build
Intersection Orientation	North-South
Project Description	Ashville Residential TIS

Site Information

Intersection	Ashville Pk & St Paul Rd
Jurisdiction	Village of Ashville
East/West Street	St Paul Road
North/South Street	Ashville Pike
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes


Major Street: North-South

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	0	0		0	1	0	0	0	1	1	0	1	1	0
Configuration							LR				T	R		L	T	
Volume (veh/h)						38		46			293	26		123	685	
Percent Heavy Vehicles (%)						3		3						3		
Proportion Time Blocked																
Percent Grade (%)						0										
Right Turn Channelized										No						
Median Type | Storage			Undivided													

Critical and Follow-up Headways

Base Critical Headway (sec)						7.1		6.2						4.1		
Critical Headway (sec)						6.43		6.23						4.13		
Base Follow-Up Headway (sec)						3.5		3.3						2.2		
Follow-Up Headway (sec)						3.53		3.33						2.23		

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)							91							134		
Capacity, c (veh/h)							266							1207		
v/c Ratio							0.34							0.11		
95% Queue Length, Q_{95} (veh)							1.5							0.4		
Control Delay (s/veh)							25.4							8.4		
Level of Service (LOS)							D							A		
Approach Delay (s/veh)						25.4								1.3		
Approach LOS						D										

HCS7 Two-Way Stop-Control Report

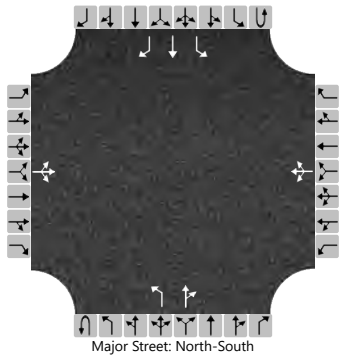
General Information

Analyst	LRY
Agency/Co.	CMTran
Date Performed	
Analysis Year	2022
Time Analyzed	AM Build
Intersection Orientation	North-South
Project Description	Ashville Residential TIS

Site Information

Intersection	Ashville Pk & SD1/SD2
Jurisdiction	Village of Ashville
East/West Street	Site Drive 1/Site Drive 2
North/South Street	Ashville Pike
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes



Major Street: North-South

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	1	0		0	1	0	0	1	1	0	0	1	1	1
Configuration			LTR				LTR			L		TR		L	T	R
Volume (veh/h)		58	0	14		44	0	44		5	376	15		15	194	22
Percent Heavy Vehicles (%)		3	3	3		3	3	3		3				3		
Proportion Time Blocked																
Percent Grade (%)		0				0										
Right Turn Channelized														No		
Median Type | Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)		7.1	6.5	6.2		7.1	6.5	6.2		4.1				4.1		
Critical Headway (sec)		7.13	6.53	6.23		7.13	6.53	6.23		4.13				4.13		
Base Follow-Up Headway (sec)		3.5	4.0	3.3		3.5	4.0	3.3		2.2				2.2		
Follow-Up Headway (sec)		3.53	4.03	3.33		3.53	4.03	3.33		2.23				2.23		

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			78				96			5				16		
Capacity, c (veh/h)			367				448			1327				1129		
v/c Ratio			0.21				0.21			0.00				0.01		
95% Queue Length, Q_{95} (veh)			0.8				0.8			0.0				0.0		
Control Delay (s/veh)			17.4				15.2			7.7				8.2		
Level of Service (LOS)			C				C			A				A		
Approach Delay (s/veh)		17.4				15.2				0.1				0.5		
Approach LOS		C				C										

HCS7 Two-Way Stop-Control Report

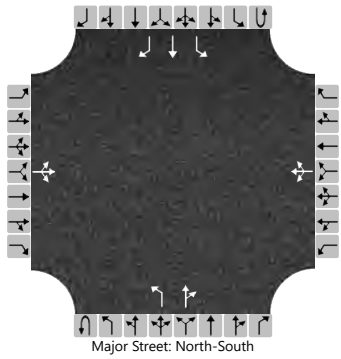
General Information

Analyst	LRY
Agency/Co.	CMTran
Date Performed	
Analysis Year	2022
Time Analyzed	PM Build
Intersection Orientation	North-South
Project Description	Ashville Residential TIS

Site Information

Intersection	Ashville Pk & SD1/SD2
Jurisdiction	Village of Ashville
East/West Street	Site Drive 1/Site Drive 2
North/South Street	Ashville Pike
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes


Major Street: North-South

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	1	0		0	1	0	0	1	1	0	0	1	1	1
Configuration			LTR				LTR			L		TR		L	T	R
Volume (veh/h)		41	0	10		31	0	31		18	205	52		53	472	70
Percent Heavy Vehicles (%)		3	3	3		3	3	3		3				3		
Proportion Time Blocked																
Percent Grade (%)		0				0										
Right Turn Channelized														No		
Median Type | Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)		7.1	6.5	6.2		7.1	6.5	6.2		4.1				4.1		
Critical Headway (sec)		7.13	6.53	6.23		7.13	6.53	6.23		4.13				4.13		
Base Follow-Up Headway (sec)		3.5	4.0	3.3		3.5	4.0	3.3		2.2				2.2		
Follow-Up Headway (sec)		3.53	4.03	3.33		3.53	4.03	3.33		2.23				2.23		

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			55				67			20				58		
Capacity, c (veh/h)			252				342			981				1278		
v/c Ratio			0.22				0.20			0.02				0.05		
95% Queue Length, Q_{95} (veh)			0.8				0.7			0.1				0.1		
Control Delay (s/veh)			23.2				18.1			8.7				8.0		
Level of Service (LOS)			C				C			A				A		
Approach Delay (s/veh)		23.2				18.1				0.6				0.7		
Approach LOS		C				C										

HCS7 Two-Way Stop-Control Report

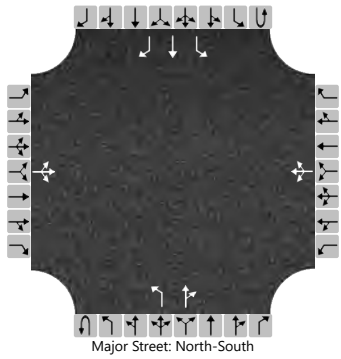
General Information

Analyst	LRY
Agency/Co.	CMTran
Date Performed	
Analysis Year	2032
Time Analyzed	AM Build
Intersection Orientation	North-South
Project Description	Ashville Residential TIS

Site Information

Intersection	Ashville Pk & SD1/SD2
Jurisdiction	Village of Ashville
East/West Street	Site Drive 1/Site Drive 2
North/South Street	Ashville Pike
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes


Major Street: North-South

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	1	0		0	1	0	0	1	1	0	0	1	1	1
Configuration			LTR				LTR			L		TR		L	T	R
Volume (veh/h)		58	0	14		44	0	44		5	437	15		15	228	22
Percent Heavy Vehicles (%)		3	3	3		3	3	3		3				3		
Proportion Time Blocked																
Percent Grade (%)		0				0										
Right Turn Channelized														No		
Median Type | Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)		7.1	6.5	6.2		7.1	6.5	6.2		4.1				4.1		
Critical Headway (sec)		7.13	6.53	6.23		7.13	6.53	6.23		4.13				4.13		
Base Follow-Up Headway (sec)		3.5	4.0	3.3		3.5	4.0	3.3		2.2				2.2		
Follow-Up Headway (sec)		3.53	4.03	3.33		3.53	4.03	3.33		2.23				2.23		

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			78				96			5				16		
Capacity, c (veh/h)			313				391			1286				1067		
v/c Ratio			0.25				0.24			0.00				0.02		
95% Queue Length, Q_{95} (veh)			1.0				0.9			0.0				0.0		
Control Delay (s/veh)			20.3				17.2			7.8				8.4		
Level of Service (LOS)			C				C			A				A		
Approach Delay (s/veh)		20.3				17.2				0.1				0.5		
Approach LOS		C				C										

HCS7 Two-Way Stop-Control Report

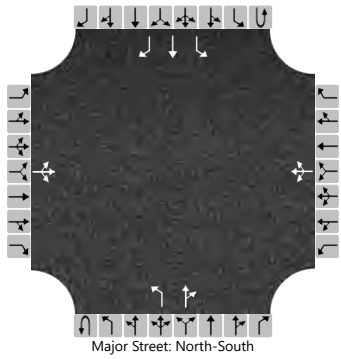
General Information

Analyst	LRY
Agency/Co.	CMTran
Date Performed	
Analysis Year	2032
Time Analyzed	PM Build
Intersection Orientation	North-South
Project Description	Ashville Residential TIS

Site Information

Intersection	Ashville Pk & SD1/SD2
Jurisdiction	Village of Ashville
East/West Street	Site Drive 1/Site Drive 2
North/South Street	Ashville Pike
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes



Major Street: North-South

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	1	0		0	1	0	0	1	1	0	0	1	1	1
Configuration			LTR				LTR			L		TR		L	T	R
Volume (veh/h)		41	0	10		31	0	31		18	238	52		53	552	70
Percent Heavy Vehicles (%)		3	3	3		3	3	3		3				3		
Proportion Time Blocked																
Percent Grade (%)		0				0										
Right Turn Channelized														No		
Median Type | Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)		7.1	6.5	6.2		7.1	6.5	6.2		4.1				4.1		
Critical Headway (sec)		7.13	6.53	6.23		7.13	6.53	6.23		4.13				4.13		
Base Follow-Up Headway (sec)		3.5	4.0	3.3		3.5	4.0	3.3		2.2				2.2		
Follow-Up Headway (sec)		3.53	4.03	3.33		3.53	4.03	3.33		2.23				2.23		

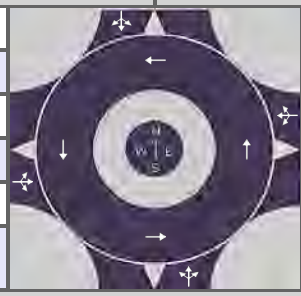
Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			55				67			20				58		
Capacity, c (veh/h)			209				290			911				1239		
v/c Ratio			0.27				0.23			0.02				0.05		
95% Queue Length, Q_{95} (veh)			1.0				0.9			0.1				0.1		
Control Delay (s/veh)			28.4				21.2			9.0				8.0		
Level of Service (LOS)			D				C			A				A		
Approach Delay (s/veh)		28.4				21.2				0.5				0.6		
Approach LOS		D				C										

HCS7 Roundabouts Report

General Information

Analyst	LRY
Agency or Co.	CMTran
Date Performed	
Analysis Year	2022
Time Analyzed	AM Build
Project Description	Ashville Residential TIS



Site Information

Intersection	Ashville Pike & SD1/SD2
E/W Street Name	Site Drive 1/Site Drive 2
N/S Street Name	Ashville Pike
Analysis Time Period (hrs)	0.25
Peak Hour Factor	0.92
Jurisdiction	Village of Ashville

Volume Adjustments and Site Characteristics

Approach	EB				WB				NB				SB			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Number of Lanes (N)	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0
Lane Assignment			LTR				LTR				LTR				LTR	
Volume (V), veh/h	0	58	0	14	0	44	0	44	0	5	376	15	0	15	194	22
Percent Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
Flow Rate (v_{PCE}), pc/h	0	65	0	16	0	49	0	49	0	6	421	17	0	17	217	25
Right-Turn Bypass	None				None				None				None			
Conflicting Lanes	1				1				1				1			
Pedestrians Crossing, p/h	0				0				0				0			

Critical and Follow-Up Headway Adjustment

Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Critical Headway (s)		4.9763			4.9763			4.9763			4.9763	
Follow-Up Headway (s)		2.6087			2.6087			2.6087			2.6087	

Flow Computations, Capacity and v/c Ratios

Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Entry Flow (v_e), pc/h		81			98			444			259	
Entry Volume, veh/h		79			95			431			251	
Circulating Flow (v_c), pc/h	283			492			82			55		
Exiting Flow (v_{ex}), pc/h	34			31			535			282		
Capacity (c_{pce}), pc/h		1034			835			1269			1305	
Capacity (c), veh/h		1004			811			1232			1267	
v/c Ratio (x)		0.08			0.12			0.35			0.20	

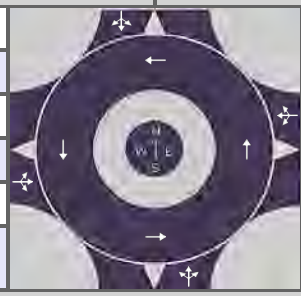
Delay and Level of Service

Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Lane Control Delay (d), s/veh		4.3			5.6			6.2			4.5	
Lane LOS		A			A			A			A	
95% Queue, veh		0.3			0.4			1.6			0.7	
Approach Delay, s/veh	4.3			5.6			6.2			4.5		
Approach LOS	A			A			A			A		
Intersection Delay, s/veh | LOS	5.5						A					

HCS7 Roundabouts Report

General Information

Analyst	LRY
Agency or Co.	CMTran
Date Performed	
Analysis Year	2022
Time Analyzed	PM Build
Project Description	Ashville Residential TIS



Site Information

Intersection	Ashville Pike & SD1/SD2
E/W Street Name	Site Drive 1/Site Drive 2
N/S Street Name	Ashville Pike
Analysis Time Period (hrs)	0.25
Peak Hour Factor	0.92
Jurisdiction	Village of Ashville

Volume Adjustments and Site Characteristics

Approach	EB				WB				NB				SB			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Number of Lanes (N)	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0
Lane Assignment			LTR				LTR				LTR				LTR	
Volume (V), veh/h	0	41	0	10	0	31	0	31	0	18	205	52	0	53	472	70
Percent Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
Flow Rate (v_{PCE}), pc/h	0	46	0	11	0	35	0	35	0	20	230	58	0	59	528	78
Right-Turn Bypass	None				None				None				None			
Conflicting Lanes	1				1				1				1			
Pedestrians Crossing, p/h	0				0				0				0			

Critical and Follow-Up Headway Adjustment

Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Critical Headway (s)		4.9763			4.9763			4.9763			4.9763	
Follow-Up Headway (s)		2.6087			2.6087			2.6087			2.6087	

Flow Computations, Capacity and v/c Ratios

Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Entry Flow (v_e), pc/h		57			70			308			665	
Entry Volume, veh/h		55			68			299			646	
Circulating Flow (v_c), pc/h	622			296			105			55		
Exiting Flow (v_{ex}), pc/h	117			98			311			574		
Capacity (c_{pce}), pc/h		732			1020			1240			1305	
Capacity (c), veh/h		710			991			1204			1267	
v/c Ratio (x)		0.08			0.07			0.25			0.51	

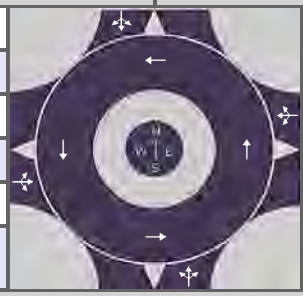
Delay and Level of Service

Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Lane Control Delay (d), s/veh		5.9			4.2			5.2			8.3	
Lane LOS		A			A			A			A	
95% Queue, veh		0.3			0.2			1.0			3.0	
Approach Delay, s/veh	5.9			4.2			5.2			8.3		
Approach LOS	A			A			A			A		
Intersection Delay, s/veh | LOS	7.1						A					

HCS7 Roundabouts Report

General Information

Analyst	LRY
Agency or Co.	CMTran
Date Performed	
Analysis Year	2032
Time Analyzed	AM Build
Project Description	Ashville Residential TIS



Site Information

Intersection	Ashville Pike & SD1/SD2
E/W Street Name	Site Drive 1/Site Drive 2
N/S Street Name	Ashville Pike
Analysis Time Period (hrs)	0.25
Peak Hour Factor	0.92
Jurisdiction	Village of Ashville

Volume Adjustments and Site Characteristics

Approach	EB				WB				NB				SB			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Number of Lanes (N)	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0
Lane Assignment			LTR				LTR				LTR				LTR	
Volume (V), veh/h	0	58	0	14	0	44	0	44	0	5	437	15	0	15	228	22
Percent Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
Flow Rate (v_{PCE}), pc/h	0	65	0	16	0	49	0	49	0	6	489	17	0	17	255	25
Right-Turn Bypass	None				None				None				None			
Conflicting Lanes	1				1				1				1			
Pedestrians Crossing, p/h	0				0				0				0			

Critical and Follow-Up Headway Adjustment

Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Critical Headway (s)		4.9763			4.9763			4.9763			4.9763	
Follow-Up Headway (s)		2.6087			2.6087			2.6087			2.6087	

Flow Computations, Capacity and v/c Ratios

Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Entry Flow (v_e), pc/h		81			98			512			297	
Entry Volume, veh/h		79			95			497			288	
Circulating Flow (v_c), pc/h	321			560			82			55		
Exiting Flow (v_{ex}), pc/h	34			31			603			320		
Capacity (c_{pce}), pc/h		995			779			1269			1305	
Capacity (c), veh/h		966			757			1232			1267	
v/c Ratio (x)		0.08			0.13			0.40			0.23	

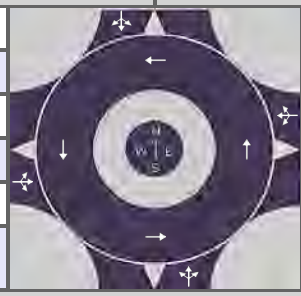
Delay and Level of Service

Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Lane Control Delay (d), s/veh		4.5			6.1			6.9			4.8	
Lane LOS		A			A			A			A	
95% Queue, veh		0.3			0.4			2.0			0.9	
Approach Delay, s/veh	4.5			6.1			6.9			4.8		
Approach LOS	A			A			A			A		
Intersection Delay, s/veh | LOS	6.0						A					

HCS7 Roundabouts Report

General Information

Analyst	LRY
Agency or Co.	CMTran
Date Performed	
Analysis Year	2032
Time Analyzed	PM Build
Project Description	Ashville Residential TIS



Site Information

Intersection	Ashville Pike & SD1/SD2
E/W Street Name	Site Drive 1/Site Drive 2
N/S Street Name	Ashville Pike
Analysis Time Period (hrs)	0.25
Peak Hour Factor	0.92
Jurisdiction	Village of Ashville

Volume Adjustments and Site Characteristics

Approach	EB				WB				NB				SB			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Number of Lanes (N)	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0
Lane Assignment			LTR				LTR				LTR				LTR	
Volume (V), veh/h	0	41	0	10	0	31	0	31	0	18	238	52	0	53	552	70
Percent Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
Flow Rate (v_{PCE}), pc/h	0	46	0	11	0	35	0	35	0	20	266	58	0	59	618	78
Right-Turn Bypass	None				None				None				None			
Conflicting Lanes	1				1				1				1			
Pedestrians Crossing, p/h	0				0				0				0			

Critical and Follow-Up Headway Adjustment

Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Critical Headway (s)		4.9763			4.9763			4.9763			4.9763	
Follow-Up Headway (s)		2.6087			2.6087			2.6087			2.6087	

Flow Computations, Capacity and v/c Ratios

Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Entry Flow (v_e), pc/h		57			70			344			755	
Entry Volume, veh/h		55			68			334			733	
Circulating Flow (v_c), pc/h	712			332			105			55		
Exiting Flow (v_{ex}), pc/h	117			98			347			664		
Capacity (c_{pce}), pc/h		668			984			1240			1305	
Capacity (c), veh/h		648			955			1204			1267	
v/c Ratio (x)		0.09			0.07			0.28			0.58	

Delay and Level of Service

Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Lane Control Delay (d), s/veh		6.5			4.4			5.5			9.6	
Lane LOS		A			A			A			A	
95% Queue, veh		0.3			0.2			1.1			3.9	
Approach Delay, s/veh	6.5			4.4			5.5			9.6		
Approach LOS	A			A			A			A		
Intersection Delay, s/veh | LOS	8.0						A					

HCS7 Two-Way Stop-Control Report

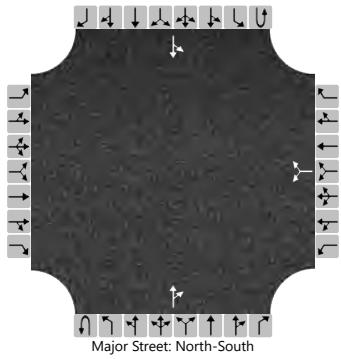
General Information

Analyst	LRY
Agency/Co.	CMTran
Date Performed	
Analysis Year	2022
Time Analyzed	AM No Build
Intersection Orientation	North-South
Project Description	Ashville Residential TIS

Site Information

Intersection	Ashville Pk & Long St
Jurisdiction	Village of Ashville
East/West Street	Long Street
North/South Street	Ashville Pike
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes


Major Street: North-South

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	0	0		0	1	0	0	0	1	0	0	0	1	0
Configuration							LR					TR		LT		
Volume (veh/h)						13		37			291	7		5	186	
Percent Heavy Vehicles (%)						3		3						3		
Proportion Time Blocked																
Percent Grade (%)						0										
Right Turn Channelized																
Median Type | Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)						7.1		6.2						4.1		
Critical Headway (sec)						6.43		6.23						4.13		
Base Follow-Up Headway (sec)						3.5		3.3						2.2		
Follow-Up Headway (sec)						3.53		3.33						2.23		

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)							54							5		
Capacity, c (veh/h)							646							1230		
v/c Ratio							0.08							0.00		
95% Queue Length, Q_{95} (veh)							0.3							0.0		
Control Delay (s/veh)							11.1							7.9		
Level of Service (LOS)							B							A		
Approach Delay (s/veh)						11.1								0.2		
Approach LOS						B										

HCS7 Two-Way Stop-Control Report

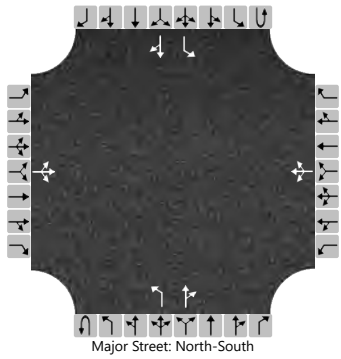
General Information

Analyst	LRY
Agency/Co.	CMTran
Date Performed	
Analysis Year	2022
Time Analyzed	AM Build
Intersection Orientation	North-South
Project Description	Ashville Residential TIS

Site Information

Intersection	Ashville Pk & Long St
Jurisdiction	Village of Ashville
East/West Street	Long Street/Site Drive 3
North/South Street	Ashville Pike
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes


Major Street: North-South

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	1	0		0	1	0	0	1	1	0	0	1	1	0
Configuration			LTR				LTR			L		TR		L		TR
Volume (veh/h)		44	0	58		13	0	37		21	311	7		5	244	15
Percent Heavy Vehicles (%)		3	3	3		3	3	3		3				3		
Proportion Time Blocked																
Percent Grade (%)		0				0										
Right Turn Channelized																
Median Type | Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)		7.1	6.5	6.2		7.1	6.5	6.2		4.1				4.1		
Critical Headway (sec)		7.13	6.53	6.23		7.13	6.53	6.23		4.13				4.13		
Base Follow-Up Headway (sec)		3.5	4.0	3.3		3.5	4.0	3.3		2.2				2.2		
Follow-Up Headway (sec)		3.53	4.03	3.33		3.53	4.03	3.33		2.23				2.23		

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			111				54			23				5		
Capacity, c (veh/h)			488				532			1275				1208		
v/c Ratio			0.23				0.10			0.02				0.00		
95% Queue Length, Q_{95} (veh)			0.9				0.3			0.1				0.0		
Control Delay (s/veh)			14.5				12.5			7.9				8.0		
Level of Service (LOS)			B				B			A				A		
Approach Delay (s/veh)		14.5				12.5				0.5				0.2		
Approach LOS		B				B										

HCS7 Two-Way Stop-Control Report

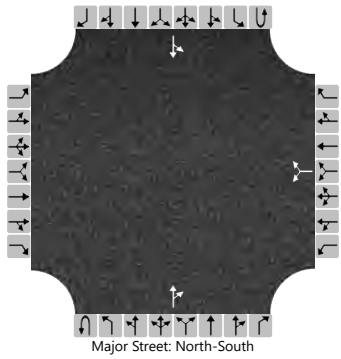
General Information

Analyst	LRY
Agency/Co.	CMTran
Date Performed	
Analysis Year	2022
Time Analyzed	PM No Build
Intersection Orientation	North-South
Project Description	Ashville Residential TIS

Site Information

Intersection	Ashville Pk & Long St
Jurisdiction	Village of Ashville
East/West Street	Long Street
North/South Street	Ashville Pike
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes


Major Street: North-South

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	0	0		0	1	0	0	0	1	0	0	0	1	0
Configuration							LR					TR		LT		
Volume (veh/h)						13		9			158	17		24	356	
Percent Heavy Vehicles (%)						3		3						3		
Proportion Time Blocked																
Percent Grade (%)							0									
Right Turn Channelized																
Median Type | Storage			Undivided													

Critical and Follow-up Headways

Base Critical Headway (sec)						7.1		6.2						4.1		
Critical Headway (sec)						6.43		6.23						4.13		
Base Follow-Up Headway (sec)						3.5		3.3						2.2		
Follow-Up Headway (sec)						3.53		3.33						2.23		

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)							24							26		
Capacity, c (veh/h)							549							1378		
v/c Ratio							0.04							0.02		
95% Queue Length, Q_{95} (veh)							0.1							0.1		
Control Delay (s/veh)							11.9							7.7		
Level of Service (LOS)							B							A		
Approach Delay (s/veh)							11.9							0.7		
Approach LOS							B									

HCS7 Two-Way Stop-Control Report

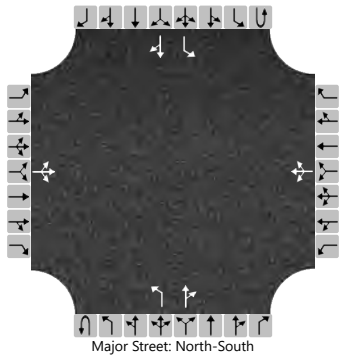
General Information

Analyst	LRY
Agency/Co.	CMTran
Date Performed	
Analysis Year	2022
Time Analyzed	PM Build
Intersection Orientation	North-South
Project Description	Ashville Residential TIS

Site Information

Intersection	Ashville Pk & Long St
Jurisdiction	Village of Ashville
East/West Street	Long Street/Site Drive 3
North/South Street	Ashville Pike
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes



Major Street: North-South

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	1	0		0	1	0	0	1	1	0	0	1	1	0
Configuration			LTR				LTR			L		TR		L		TR
Volume (veh/h)		31	0	42		13	0	9		69	228	17		24	397	53
Percent Heavy Vehicles (%)		3	3	3		3	3	3		3				3		
Proportion Time Blocked																
Percent Grade (%)		0				0										
Right Turn Channelized																
Median Type | Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)		7.1	6.5	6.2		7.1	6.5	6.2		4.1				4.1		
Critical Headway (sec)		7.13	6.53	6.23		7.13	6.53	6.23		4.13				4.13		
Base Follow-Up Headway (sec)		3.5	4.0	3.3		3.5	4.0	3.3		2.2				2.2		
Follow-Up Headway (sec)		3.53	4.03	3.33		3.53	4.03	3.33		2.23				2.23		

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			79				24			75				26		
Capacity, c (veh/h)			355				297			1069				1292		
v/c Ratio			0.22				0.08			0.07				0.02		
95% Queue Length, Q_{95} (veh)			0.8				0.3			0.2				0.1		
Control Delay (s/veh)			18.0				18.2			8.6				7.8		
Level of Service (LOS)			C				C			A				A		
Approach Delay (s/veh)		18.0				18.2				1.9				0.4		
Approach LOS		C				C										

HCS7 Two-Way Stop-Control Report

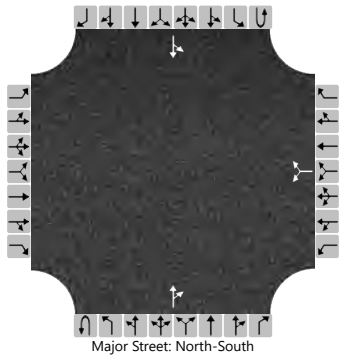
General Information

Analyst	LRY
Agency/Co.	CMTran
Date Performed	
Analysis Year	2032
Time Analyzed	AM No Build
Intersection Orientation	North-South
Project Description	Ashville Residential TIS

Site Information

Intersection	Ashville Pk & Long St
Jurisdiction	Village of Ashville
East/West Street	Long Street
North/South Street	Ashville Pike
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes


Major Street: North-South

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	0	0		0	1	0	0	0	1	0	0	0	1	0
Configuration							LR					TR		LT		
Volume (veh/h)						13		37			348	7		5	222	
Percent Heavy Vehicles (%)						3		3						3		
Proportion Time Blocked																
Percent Grade (%)						0										
Right Turn Channelized																
Median Type | Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)						7.1		6.2						4.1		
Critical Headway (sec)						6.43		6.23						4.13		
Base Follow-Up Headway (sec)						3.5		3.3						2.2		
Follow-Up Headway (sec)						3.53		3.33						2.23		

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)							54							5		
Capacity, c (veh/h)							585							1167		
v/c Ratio							0.09							0.00		
95% Queue Length, Q_{95} (veh)							0.3							0.0		
Control Delay (s/veh)							11.8							8.1		
Level of Service (LOS)							B							A		
Approach Delay (s/veh)						11.8								0.2		
Approach LOS						B										

HCS7 Two-Way Stop-Control Report

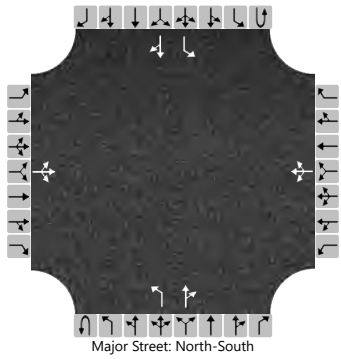
General Information

Analyst	LRY
Agency/Co.	CMTran
Date Performed	
Analysis Year	2032
Time Analyzed	AM Build
Intersection Orientation	North-South
Project Description	Ashville Residential TIS

Site Information

Intersection	Ashville Pk & Long St
Jurisdiction	Village of Ashville
East/West Street	Long Street/Site Drive 3
North/South Street	Ashville Pike
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes


Major Street: North-South

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	1	0		0	1	0	0	1	1	0	0	1	1	0
Configuration			LTR				LTR			L		TR		L		TR
Volume (veh/h)		44	0	58		13	0	37		21	368	7		5	280	15
Percent Heavy Vehicles (%)		3	3	3		3	3	3		3				3		
Proportion Time Blocked																
Percent Grade (%)		0				0										
Right Turn Channelized																
Median Type | Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)		7.1	6.5	6.2		7.1	6.5	6.2		4.1				4.1		
Critical Headway (sec)		7.13	6.53	6.23		7.13	6.53	6.23		4.13				4.13		
Base Follow-Up Headway (sec)		3.5	4.0	3.3		3.5	4.0	3.3		2.2				2.2		
Follow-Up Headway (sec)		3.53	4.03	3.33		3.53	4.03	3.33		2.23				2.23		

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			111				54			23				5		
Capacity, c (veh/h)			431				473			1234				1146		
v/c Ratio			0.26				0.11			0.02				0.00		
95% Queue Length, Q_{95} (veh)			1.0				0.4			0.1				0.0		
Control Delay (s/veh)			16.2				13.6			8.0				8.2		
Level of Service (LOS)			C				B			A				A		
Approach Delay (s/veh)		16.2				13.6				0.4				0.1		
Approach LOS		C				B										

HCS7 Two-Way Stop-Control Report

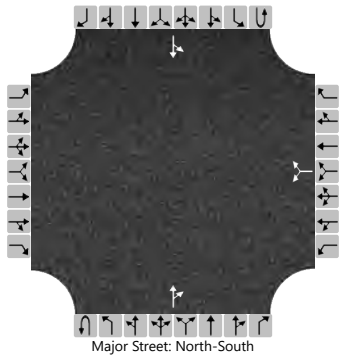
General Information

Analyst	LRY
Agency/Co.	CMTran
Date Performed	
Analysis Year	2032
Time Analyzed	PM No Build
Intersection Orientation	North-South
Project Description	Ashville Residential TIS

Site Information

Intersection	Ashville Pk & Long St
Jurisdiction	Village of Ashville
East/West Street	Long Street
North/South Street	Ashville Pike
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes


Major Street: North-South

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	0	0		0	1	0	0	0	1	0	0	0	1	0
Configuration							LR					TR		LT		
Volume (veh/h)						13		9			189	17		24	426	
Percent Heavy Vehicles (%)						3		3						3		
Proportion Time Blocked																
Percent Grade (%)							0									
Right Turn Channelized																
Median Type | Storage			Undivided													

Critical and Follow-up Headways

Base Critical Headway (sec)						7.1		6.2						4.1		
Critical Headway (sec)						6.43		6.23						4.13		
Base Follow-Up Headway (sec)						3.5		3.3						2.2		
Follow-Up Headway (sec)						3.53		3.33						2.23		

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)							24							26		
Capacity, c (veh/h)							485							1339		
v/c Ratio							0.05							0.02		
95% Queue Length, Q_{95} (veh)							0.2							0.1		
Control Delay (s/veh)							12.8							7.7		
Level of Service (LOS)							B							A		
Approach Delay (s/veh)							12.8							0.6		
Approach LOS							B									

HCS7 Two-Way Stop-Control Report

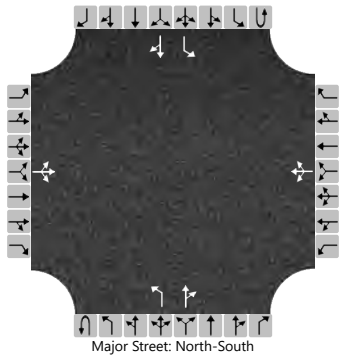
General Information

Analyst	LRY
Agency/Co.	CMTran
Date Performed	
Analysis Year	2032
Time Analyzed	PM Build
Intersection Orientation	North-South
Project Description	Ashville Residential TIS

Site Information

Intersection	Ashville Pk & Long St
Jurisdiction	Village of Ashville
East/West Street	Long Street/Site Drive 3
North/South Street	Ashville Pike
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes



Major Street: North-South

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	1	0		0	1	0	0	1	1	0	0	1	1	0
Configuration			LTR				LTR			L		TR		L		TR
Volume (veh/h)		31	0	42		13	0	9		69	259	17		24	467	53
Percent Heavy Vehicles (%)		3	3	3		3	3	3		3				3		
Proportion Time Blocked																
Percent Grade (%)			0				0									
Right Turn Channelized																
Median Type | Storage			Undivided													

Critical and Follow-up Headways

Base Critical Headway (sec)		7.1	6.5	6.2		7.1	6.5	6.2		4.1				4.1		
Critical Headway (sec)		7.13	6.53	6.23		7.13	6.53	6.23		4.13				4.13		
Base Follow-Up Headway (sec)		3.5	4.0	3.3		3.5	4.0	3.3		2.2				2.2		
Follow-Up Headway (sec)		3.53	4.03	3.33		3.53	4.03	3.33		2.23				2.23		

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			79				24			75				26		
Capacity, c (veh/h)			305				252			1002				1255		
v/c Ratio			0.26				0.09			0.07				0.02		
95% Queue Length, Q_{95} (veh)			1.0				0.3			0.2				0.1		
Control Delay (s/veh)			20.9				20.8			8.9				7.9		
Level of Service (LOS)			C				C			A				A		
Approach Delay (s/veh)		20.9				20.8				1.8				0.3		
Approach LOS		C				C										

HCS7 Two-Way Stop-Control Report

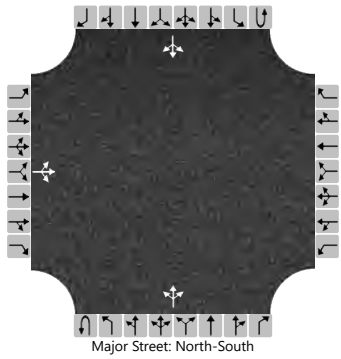
General Information

Analyst	LRY
Agency/Co.	CMTran
Date Performed	
Analysis Year	2022
Time Analyzed	AM Build
Intersection Orientation	North-South
Project Description	Ashville Residential TIS

Site Information

Intersection	Lockbourne Eastern & SD4
Jurisdiction	Village of Ashville
East/West Street	Site Drive 4
North/South Street	Lockbourne Eastern Road
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes


Major Street: North-South

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	1	0		0	0	0	0	0	1	0	0	0	1	0
Configuration			LTR								LTR				LTR	
Volume (veh/h)		15	0	15						5	187	0		0	117	5
Percent Heavy Vehicles (%)		3	3	3						3				3		
Proportion Time Blocked																
Percent Grade (%)			0													
Right Turn Channelized																
Median Type | Storage			Undivided													

Critical and Follow-up Headways

Base Critical Headway (sec)		7.1	6.5	6.2						4.1				4.1		
Critical Headway (sec)		7.13	6.53	6.23						4.13				4.13		
Base Follow-Up Headway (sec)		3.5	4.0	3.3						2.2				2.2		
Follow-Up Headway (sec)		3.53	4.03	3.33						2.23				2.23		

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			33							5				0		
Capacity, c (veh/h)			730							1446				1362		
v/c Ratio			0.04							0.00				0.00		
95% Queue Length, Q_{95} (veh)			0.1							0.0				0.0		
Control Delay (s/veh)			10.2							7.5				7.6		
Level of Service (LOS)			B							A				A		
Approach Delay (s/veh)		10.2								0.2				0.0		
Approach LOS		B														

HCS7 Two-Way Stop-Control Report

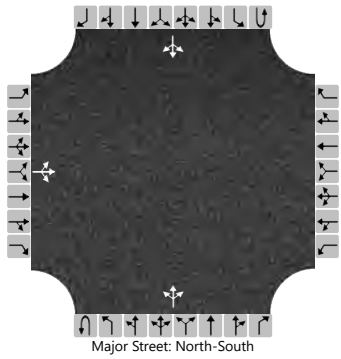
General Information

Analyst	LRY
Agency/Co.	CMTran
Date Performed	
Analysis Year	2022
Time Analyzed	PM Build
Intersection Orientation	North-South
Project Description	Ashville Residential TIS

Site Information

Intersection	Lockbourne Eastern & SD4
Jurisdiction	Village of Ashville
East/West Street	Site Drive 4
North/South Street	Lockbourne Eastern Road
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes


Major Street: North-South

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	1	0		0	0	0	0	0	1	0	0	0	1	0
Configuration			LTR								LTR				LTR	
Volume (veh/h)		10	0	10						18	75	0		0	129	18
Percent Heavy Vehicles (%)		3	3	3						3				3		
Proportion Time Blocked																
Percent Grade (%)			0													
Right Turn Channelized																
Median Type | Storage			Undivided													

Critical and Follow-up Headways

Base Critical Headway (sec)		7.1	6.5	6.2						4.1				4.1		
Critical Headway (sec)		7.13	6.53	6.23						4.13				4.13		
Base Follow-Up Headway (sec)		3.5	4.0	3.3						2.2				2.2		
Follow-Up Headway (sec)		3.53	4.03	3.33						2.23				2.23		

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			22							20				0		
Capacity, c (veh/h)			767							1413				1510		
v/c Ratio			0.03							0.01				0.00		
95% Queue Length, Q_{95} (veh)			0.1							0.0				0.0		
Control Delay (s/veh)			9.8							7.6				7.4		
Level of Service (LOS)			A							A				A		
Approach Delay (s/veh)		9.8								1.6				0.0		
Approach LOS		A														

HCS7 Two-Way Stop-Control Report

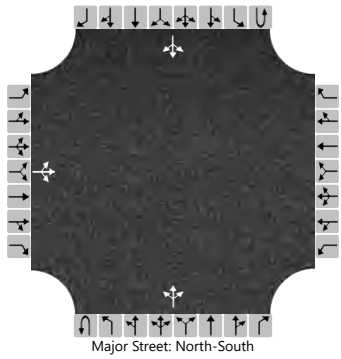
General Information

Analyst	LRY
Agency/Co.	CMTran
Date Performed	
Analysis Year	2032
Time Analyzed	AM Build
Intersection Orientation	North-South
Project Description	Ashville Residential TIS

Site Information

Intersection	Lockbourne Eastern & SD4
Jurisdiction	Village of Ashville
East/West Street	Site Drive 4
North/South Street	Lockbourne Eastern Road
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes



Major Street: North-South

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	1	0		0	0	0	0	0	1	0	0	0	1	0
Configuration			LTR								LTR				LTR	
Volume (veh/h)		15	0	15						5	214	0		0	137	5
Percent Heavy Vehicles (%)		3	3	3						3				3		
Proportion Time Blocked																
Percent Grade (%)			0													
Right Turn Channelized																
Median Type | Storage			Undivided													

Critical and Follow-up Headways

Base Critical Headway (sec)		7.1	6.5	6.2						4.1				4.1		
Critical Headway (sec)		7.13	6.53	6.23						4.13				4.13		
Base Follow-Up Headway (sec)		3.5	4.0	3.3						2.2				2.2		
Follow-Up Headway (sec)		3.53	4.03	3.33						2.23				2.23		

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			33							5				0		
Capacity, c (veh/h)			689							1420				1329		
v/c Ratio			0.05							0.00				0.00		
95% Queue Length, Q_{95} (veh)			0.1							0.0				0.0		
Control Delay (s/veh)			10.5							7.5				7.7		
Level of Service (LOS)			B							A				A		
Approach Delay (s/veh)		10.5								0.2				0.0		
Approach LOS		B														

HCS7 Two-Way Stop-Control Report

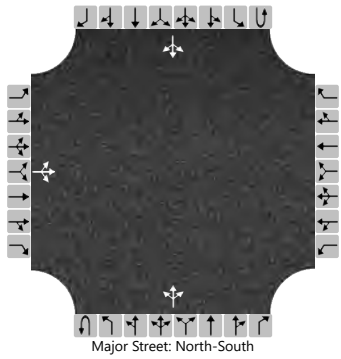
General Information

Analyst	LRY
Agency/Co.	CMTran
Date Performed	
Analysis Year	2032
Time Analyzed	PM Build
Intersection Orientation	North-South
Project Description	Ashville Residential TIS

Site Information

Intersection	Lockbourne Eastern & SD4
Jurisdiction	Village of Ashville
East/West Street	Site Drive 4
North/South Street	Lockbourne Eastern Road
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes


Major Street: North-South

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	1	0		0	0	0	0	0	1	0	0	0	1	0
Configuration			LTR								LTR				LTR	
Volume (veh/h)		10	0	10						18	84	0		0	144	18
Percent Heavy Vehicles (%)		3	3	3						3				3		
Proportion Time Blocked																
Percent Grade (%)			0													
Right Turn Channelized																
Median Type | Storage			Undivided													

Critical and Follow-up Headways

Base Critical Headway (sec)		7.1	6.5	6.2						4.1				4.1		
Critical Headway (sec)		7.13	6.53	6.23						4.13				4.13		
Base Follow-Up Headway (sec)		3.5	4.0	3.3						2.2				2.2		
Follow-Up Headway (sec)		3.53	4.03	3.33						2.23				2.23		

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			22							20				0		
Capacity, c (veh/h)			744							1394				1497		
v/c Ratio			0.03							0.01				0.00		
95% Queue Length, Q_{95} (veh)			0.1							0.0				0.0		
Control Delay (s/veh)			10.0							7.6				7.4		
Level of Service (LOS)			A							A				A		
Approach Delay (s/veh)		10.0								1.4				0.0		
Approach LOS		A														

HCS7 Two-Way Stop-Control Report

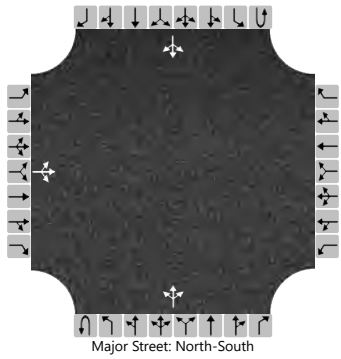
General Information

Analyst	LRY
Agency/Co.	CMTran
Date Performed	
Analysis Year	2022
Time Analyzed	AM Build
Intersection Orientation	North-South
Project Description	Ashville Residential TIS

Site Information

Intersection	Lockbourne & Apartments
Jurisdiction	Village of Ashville
East/West Street	Apartment Site Drive
North/South Street	Lockbourne Eastern Road
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes


Major Street: North-South

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	1	0		0	0	0	0	0	1	0	0	0	1	0
Configuration			LTR								LTR				LTR	
Volume (veh/h)		47	0	57						18	145	0		0	117	15
Percent Heavy Vehicles (%)		3	3	3						3				3		
Proportion Time Blocked																
Percent Grade (%)			0													
Right Turn Channelized																
Median Type | Storage			Undivided													

Critical and Follow-up Headways

Base Critical Headway (sec)		7.1	6.5	6.2						4.1				4.1		
Critical Headway (sec)		7.13	6.53	6.23						4.13				4.13		
Base Follow-Up Headway (sec)		3.5	4.0	3.3						2.2				2.2		
Follow-Up Headway (sec)		3.53	4.03	3.33						2.23				2.23		

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			113							20				0		
Capacity, c (veh/h)			746							1433				1416		
v/c Ratio			0.15							0.01				0.00		
95% Queue Length, Q_{95} (veh)			0.5							0.0				0.0		
Control Delay (s/veh)			10.7							7.5				7.5		
Level of Service (LOS)			B							A				A		
Approach Delay (s/veh)		10.7								0.9				0.0		
Approach LOS		B														

HCS7 Two-Way Stop-Control Report

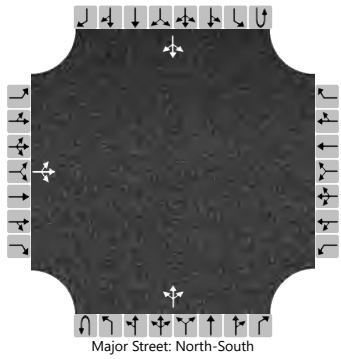
General Information

Analyst	LRY
Agency/Co.	CMTran
Date Performed	
Analysis Year	2022
Time Analyzed	PM Build
Intersection Orientation	North-South
Project Description	Ashville Residential TIS

Site Information

Intersection	Lockbourne & Apartments
Jurisdiction	Village of Ashville
East/West Street	Apartment Site Drive
North/South Street	Lockbourne Eastern Road
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes


Major Street: North-South

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	1	0		0	0	0	0	0	1	0	0	0	1	0
Configuration			LTR								LTR				LTR	
Volume (veh/h)		30	0	36						62	63	0		0	88	51
Percent Heavy Vehicles (%)		3	3	3						3				3		
Proportion Time Blocked																
Percent Grade (%)			0													
Right Turn Channelized																
Median Type | Storage			Undivided													

Critical and Follow-up Headways

Base Critical Headway (sec)		7.1	6.5	6.2						4.1				4.1		
Critical Headway (sec)		7.13	6.53	6.23						4.13				4.13		
Base Follow-Up Headway (sec)		3.5	4.0	3.3						2.2				2.2		
Follow-Up Headway (sec)		3.53	4.03	3.33						2.23				2.23		

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			72							67				0		
Capacity, c (veh/h)			743							1424				1526		
v/c Ratio			0.10							0.05				0.00		
95% Queue Length, Q_{95} (veh)			0.3							0.1				0.0		
Control Delay (s/veh)			10.4							7.7				7.4		
Level of Service (LOS)			B							A				A		
Approach Delay (s/veh)		10.4								4.0				0.0		
Approach LOS		B														

HCS7 Two-Way Stop-Control Report

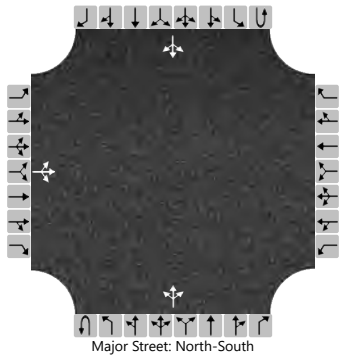
General Information

Analyst	LRY
Agency/Co.	CMTran
Date Performed	
Analysis Year	2032
Time Analyzed	AM Build
Intersection Orientation	North-South
Project Description	Ashville Residential TIS

Site Information

Intersection	Lockbourne & Apartments
Jurisdiction	Village of Ashville
East/West Street	Apartment Site Drive
North/South Street	Lockbourne Eastern Road
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes


Major Street: North-South

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	1	0		0	0	0	0	0	1	0	0	0	1	0
Configuration			LTR								LTR				LTR	
Volume (veh/h)		47	0	57						18	172	0		0	137	15
Percent Heavy Vehicles (%)		3	3	3						3				3		
Proportion Time Blocked																
Percent Grade (%)			0													
Right Turn Channelized																
Median Type | Storage			Undivided													

Critical and Follow-up Headways

Base Critical Headway (sec)		7.1	6.5	6.2						4.1				4.1		
Critical Headway (sec)		7.13	6.53	6.23						4.13				4.13		
Base Follow-Up Headway (sec)		3.5	4.0	3.3						2.2				2.2		
Follow-Up Headway (sec)		3.53	4.03	3.33						2.23				2.23		

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			113							20				0		
Capacity, c (veh/h)			706							1407				1381		
v/c Ratio			0.16							0.01				0.00		
95% Queue Length, Q_{95} (veh)			0.6							0.0				0.0		
Control Delay (s/veh)			11.1							7.6				7.6		
Level of Service (LOS)			B							A				A		
Approach Delay (s/veh)		11.1								0.8				0.0		
Approach LOS		B														

HCS7 Two-Way Stop-Control Report

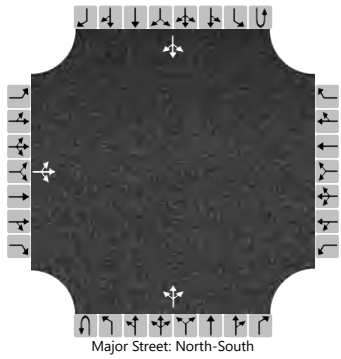
General Information

Analyst	LRY
Agency/Co.	CMTran
Date Performed	
Analysis Year	2032
Time Analyzed	PM Build
Intersection Orientation	North-South
Project Description	Ashville Residential TIS

Site Information

Intersection	Lockbourne & Apartments
Jurisdiction	Village of Ashville
East/West Street	Apartment Site Drive
North/South Street	Lockbourne Eastern Road
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes


Major Street: North-South

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	1	0		0	0	0	0	0	1	0	0	0	1	0
Configuration			LTR								LTR				LTR	
Volume (veh/h)		30	0	36						62	72	0		0	103	51
Percent Heavy Vehicles (%)		3	3	3						3				3		
Proportion Time Blocked																
Percent Grade (%)			0													
Right Turn Channelized																
Median Type | Storage			Undivided													

Critical and Follow-up Headways

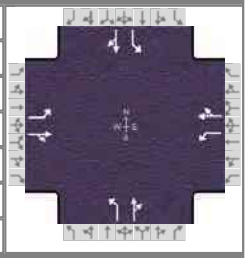
Base Critical Headway (sec)		7.1	6.5	6.2						4.1				4.1		
Critical Headway (sec)		7.13	6.53	6.23						4.13				4.13		
Base Follow-Up Headway (sec)		3.5	4.0	3.3						2.2				2.2		
Follow-Up Headway (sec)		3.53	4.03	3.33						2.23				2.23		

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			72							67				0		
Capacity, c (veh/h)			720							1404				1514		
v/c Ratio			0.10							0.05				0.00		
95% Queue Length, Q_{95} (veh)			0.3							0.2				0.0		
Control Delay (s/veh)			10.6							7.7				7.4		
Level of Service (LOS)			B							A				A		
Approach Delay (s/veh)		10.6								3.8				0.0		
Approach LOS		B														

HCS7 Signalized Intersection Results Summary

General Information				Intersection Information	
Agency	CMTran			Duration, h	0.250
Analyst	LRY	Analysis Date	Oct 4, 2021	Area Type	Other
Jurisdiction	Village of Ashville	Time Period	AM No Build	PHF	0.92
Urban Street	Ashville Pike	Analysis Year	2022	Analysis Period	1> 7:00
Intersection	Ashville Pike & SR-752	File Name	OY AM No Build - 752.xus		
Project Description	Ashville Residential TIS				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	41	170	12	29	99	64	20	114	57	126	53	55

Signal Information			
Cycle, s	90.0	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	Yes	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On

Green	7.0	27.0	7.0	25.0	0.0	0.0
Yellow	4.0	4.0	4.0	4.0	0.0	0.0
Red	2.0	2.0	2.0	2.0	0.0	0.0

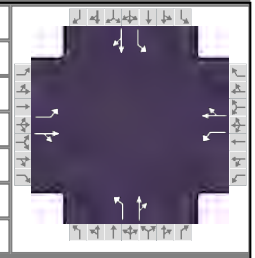
Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase	7	4	3	8	5	2	1	6
Case Number	1.1	4.0	1.1	4.0	1.1	4.0	1.1	4.0
Phase Duration, s	13.0	31.0	13.0	31.0	13.0	33.0	13.0	33.0
Change Period, ($Y+R_c$), s	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Max Allow Headway (*MAH*), s	3.1	3.1	3.1	3.1	3.1	3.2	3.1	3.2
Queue Clearance Time (g_s), s	3.5	10.1	3.1	9.5	2.7	9.4	6.7	6.7
Green Extension Time (g_e), s	0.0	0.6	0.0	0.6	0.0	0.5	0.0	0.5
Phase Call Probability	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Max Out Probability	0.56	0.00	0.22	0.00	0.09	0.00	1.00	0.00

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	7	4	14	3	8	18	5	2	12	1	6	16
Adjusted Flow Rate (*v*), veh/h	45	198		32	177		22	186		137	117	
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1725	1790		1739	1705		1781	1764		1767	1700	
Queue Service Time (g_s), s	1.5	8.1		1.1	7.5		0.7	7.4		4.7	4.7	
Cycle Queue Clearance Time (g_c), s	1.5	8.1		1.1	7.5		0.7	7.4		4.7	4.7	
Green Ratio (*g/C*)	0.36	0.28		0.36	0.28		0.38	0.30		0.38	0.30	
Capacity (*c*), veh/h	415	497		407	474		506	529		450	510	
Volume-to-Capacity Ratio (*X*)	0.107	0.398		0.077	0.374		0.043	0.351		0.305	0.230	
Back of Queue (*Q*), ft/ln (95 th percentile)	28.2	157.8		19.6	139.3		12.6	137.4		85.7	84.1	
Back of Queue (*Q*), veh/ln (95 th percentile)	1.1	6.0		0.8	5.4		0.5	5.4		3.3	3.3	
Queue Storage Ratio (*RQ*) (95 th percentile)	0.13	0.53		0.09	0.09		0.08	0.46		0.57	0.07	
Uniform Delay (d_1), s/veh	19.7	26.4		19.6	26.2		17.9	24.6		19.4	23.7	
Incremental Delay (d_2), s/veh	0.0	0.2		0.0	0.2		0.0	0.1		0.1	0.1	
Initial Queue Delay (d_3), s/veh	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Control Delay (*d*), s/veh	19.8	26.6		19.6	26.4		17.9	24.8		19.6	23.8	
Level of Service (LOS)	B	C		B	C		B	C		B	C	
Approach Delay, s/veh / LOS	25.3	C		25.4	C		24.1	C		21.5	C	
Intersection Delay, s/veh / LOS	24.0						C					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	1.92	B	1.92	B	1.92	B	1.92	B
Bicycle LOS Score / LOS	0.89	A	0.83	A	0.83	A	0.91	A

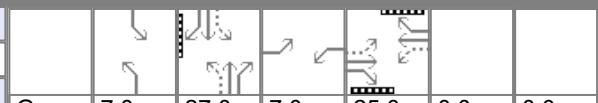
HCS7 Signalized Intersection Results Summary

General Information				Intersection Information	
Agency	CMTran			Duration, h	0.250
Analyst	LRY	Analysis Date	Oct 4, 2021	Area Type	Other
Jurisdiction	Village of Ashville	Time Period	AM Build	PHF	0.92
Urban Street	Ashville Pike	Analysis Year	2022	Analysis Period	1> 7:00
Intersection	Ashville Pike & SR-752	File Name	OY AM Build - 752.xus		
Project Description	Ashville Residential TIS				

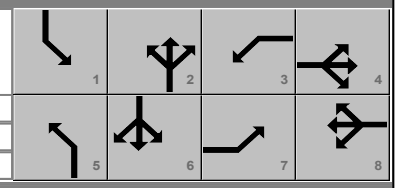


Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	67	178	12	39	125	69	20	124	60	141	82	127

Signal Information			
Cycle, s	90.0	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	Yes	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On



Green	7.0	27.0	7.0	25.0	0.0	0.0
Yellow	4.0	4.0	4.0	4.0	0.0	0.0
Red	2.0	2.0	2.0	2.0	0.0	0.0



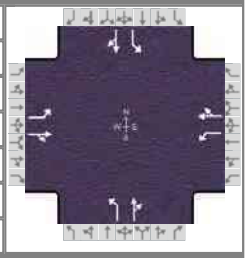
Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase	7	4	3	8	5	2	1	6
Case Number	1.1	4.0	1.1	4.0	1.1	4.0	1.1	4.0
Phase Duration, s	13.0	31.0	13.0	31.0	13.0	33.0	13.0	33.0
Change Period, ($Y+R_c$), s	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Max Allow Headway (*MAH*), s	3.1	3.1	3.1	3.1	3.1	3.2	3.1	3.2
Queue Clearance Time (g_s), s	4.6	10.5	3.4	11.1	2.7	10.0	7.3	11.9
Green Extension Time (g_e), s	0.0	0.7	0.0	0.7	0.0	0.8	0.0	0.8
Phase Call Probability	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Max Out Probability	1.00	0.00	0.47	0.00	0.09	0.00	1.00	0.00

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	7	4	14	3	8	18	5	2	12	1	6	16
Adjusted Flow Rate (*v*), veh/h	73	207		42	211		22	200		153	227	
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1725	1791		1739	1716		1781	1767		1767	1673	
Queue Service Time (g_s), s	2.6	8.5		1.4	9.1		0.7	8.0		5.3	9.9	
Cycle Queue Clearance Time (g_c), s	2.6	8.5		1.4	9.1		0.7	8.0		5.3	9.9	
Green Ratio (*g/C*)	0.36	0.28		0.36	0.28		0.38	0.30		0.38	0.30	
Capacity (*c*), veh/h	389	497		400	477		412	530		438	502	
Volume-to-Capacity Ratio (*X*)	0.187	0.415		0.106	0.442		0.053	0.377		0.350	0.453	
Back of Queue (*Q*), ft/ln (95 th percentile)	46.9	165.8		26.6	169.5		12.6	149.4		96.9	175.7	
Back of Queue (*Q*), veh/ln (95 th percentile)	1.8	6.3		1.0	6.5		0.5	5.9		3.8	6.9	
Queue Storage Ratio (*RQ*) (95 th percentile)	0.21	0.55		0.12	0.11		0.08	0.50		0.65	0.14	
Uniform Delay (d_1), s/veh	20.2	26.5		19.8	26.8		18.4	24.9		19.7	25.5	
Incremental Delay (d_2), s/veh	0.1	0.2		0.0	0.2		0.0	0.2		0.2	0.2	
Initial Queue Delay (d_3), s/veh	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Control Delay (*d*), s/veh	20.3	26.7		19.8	27.0		18.5	25.0		19.9	25.8	
Level of Service (LOS)	C	C		B	C		B	C		B	C	
Approach Delay, s/veh / LOS	25.1	C		25.8	C		24.4	C		23.4	C	
Intersection Delay, s/veh / LOS	24.5						C					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	1.92	B	1.92	B	1.92	B	1.92	B
Bicycle LOS Score / LOS	0.95	A	0.91	A	0.85	A	1.12	A

HCS7 Signalized Intersection Results Summary

General Information				Intersection Information	
Agency	CMTran			Duration, h	0.250
Analyst	LRY	Analysis Date	Oct 4, 2021	Area Type	Other
Jurisdiction	Village of Ashville	Time Period	PM No Build	PHF	0.92
Urban Street	Ashville Pike	Analysis Year	2022	Analysis Period	1> 7:00
Intersection	Ashville Pike & SR-752	File Name	OY PM No Build - 752.xus		
Project Description	Ashville Residential TIS				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	84	142	61	88	134	89	44	141	62	97	218	93

Signal Information					EB			WB			NB			SB		
Cycle, s	90.0	Reference Phase	2													
Offset, s	0	Reference Point	End	Green	7.0	28.0		7.0	24.0	0.0	0.0					
Uncoordinated	Yes	Simult. Gap E/W	On	Yellow	4.0	4.0		4.0	4.0	0.0	0.0					
Force Mode	Fixed	Simult. Gap N/S	On	Red	2.0	2.0		2.0	2.0	0.0	0.0					

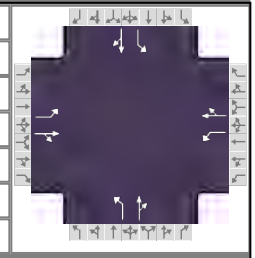
Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase	7	4	3	8	5	2	1	6
Case Number	1.1	4.0	1.1	4.0	1.1	4.0	1.1	4.0
Phase Duration, s	13.0	30.0	13.0	30.0	13.0	34.0	13.0	34.0
Change Period, ($Y+R_c$), s	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Max Allow Headway (*MAH*), s	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1
Queue Clearance Time (g_s), s	5.2	11.4	5.3	12.5	3.5	10.7	5.4	16.4
Green Extension Time (g_e), s	0.0	0.8	0.0	0.8	0.0	1.0	0.0	0.9
Phase Call Probability	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Max Out Probability	1.00	0.00	1.00	0.01	0.53	0.00	1.00	0.01

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	7	4	14	3	8	18	5	2	12	1	6	16
Adjusted Flow Rate (*v*), veh/h	91	221		96	242		48	221		105	338	
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1781	1774		1795	1759		1795	1787		1795	1789	
Queue Service Time (g_s), s	3.2	9.4		3.3	10.5		1.5	8.7		3.4	14.4	
Cycle Queue Clearance Time (g_c), s	3.2	9.4		3.3	10.5		1.5	8.7		3.4	14.4	
Green Ratio (*g/C*)	0.34	0.27		0.34	0.27		0.39	0.31		0.39	0.31	
Capacity (*c*), veh/h	363	473		384	469		355	556		444	557	
Volume-to-Capacity Ratio (*X*)	0.251	0.466		0.249	0.517		0.135	0.397		0.237	0.607	
Back of Queue (*Q*), ft/ln (95 th percentile)	58.8	176.7		61.2	195.3		27.3	162.2		62.2	255.5	
Back of Queue (*Q*), veh/ln (95 th percentile)	2.3	7.0		2.4	7.7		1.1	6.4		2.5	10.1	
Queue Storage Ratio (*RQ*) (95 th percentile)	0.27	0.59		0.28	0.12		0.17	0.54		0.41	0.21	
Uniform Delay (d_1), s/veh	21.3	27.6		21.2	28.1		18.8	24.4		18.6	26.3	
Incremental Delay (d_2), s/veh	0.1	0.3		0.1	0.5		0.1	0.2		0.1	1.4	
Initial Queue Delay (d_3), s/veh	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Control Delay (*d*), s/veh	21.5	27.9		21.3	28.5		18.9	24.5		18.7	27.7	
Level of Service (LOS)	C	C		C	C		B	C		B	C	
Approach Delay, s/veh / LOS	26.0	C		26.5	C		23.5	C		25.6	C	
Intersection Delay, s/veh / LOS	25.5						C					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	1.93	B	1.93	B	1.92	B	1.92	B
Bicycle LOS Score / LOS	1.00	A	1.05	A	0.93	A	1.22	A

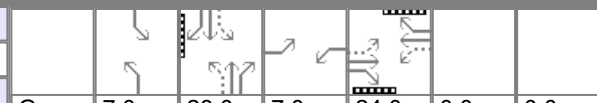
HCS7 Signalized Intersection Results Summary

General Information				Intersection Information	
Agency	CMTran			Duration, h	0.250
Analyst	LRY	Analysis Date	Oct 4, 2021	Area Type	Other
Jurisdiction	Village of Ashville	Time Period	PM Build	PHF	0.92
Urban Street	Ashville Pike	Analysis Year	2022	Analysis Period	1> 7:00
Intersection	Ashville Pike & SR-752	File Name	OY PM Build - 752.xus		
Project Description	Ashville Residential TIS				

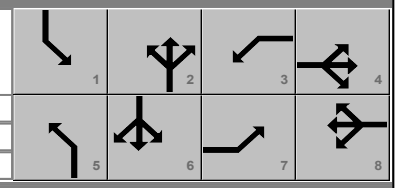


Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	172	170	61	95	151	107	44	176	73	107	239	145

Signal Information			
Cycle, s	90.0	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	Yes	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On



Green	7.0	28.0	7.0	24.0	0.0	0.0
Yellow	4.0	4.0	4.0	4.0	0.0	0.0
Red	2.0	2.0	2.0	2.0	0.0	0.0



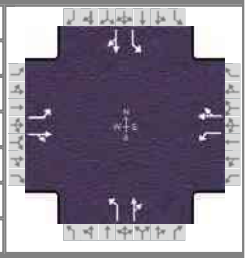
Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase	7	4	3	8	5	2	1	6
Case Number	1.1	4.0	1.1	4.0	1.1	4.0	1.1	4.0
Phase Duration, s	13.0	30.0	13.0	30.0	13.0	34.0	13.0	34.0
Change Period, ($Y+R_c$), s	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Max Allow Headway (*MAH*), s	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1
Queue Clearance Time (g_s), s	8.9	12.8	5.6	14.6	3.5	13.0	5.8	21.2
Green Extension Time (g_e), s	0.0	0.9	0.0	0.8	0.0	1.3	0.0	1.0
Phase Call Probability	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Max Out Probability	1.00	0.01	1.00	0.03	0.53	0.00	1.00	0.18

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	7	4	14	3	8	18	5	2	12	1	6	16
Adjusted Flow Rate (*v*), veh/h	187	251		103	280		48	271		116	417	
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1781	1785		1795	1754		1795	1791		1795	1765	
Queue Service Time (g_s), s	6.9	10.8		3.6	12.6		1.5	11.0		3.8	19.2	
Cycle Queue Clearance Time (g_c), s	6.9	10.8		3.6	12.6		1.5	11.0		3.8	19.2	
Green Ratio (*g/C*)	0.34	0.27		0.34	0.27		0.39	0.31		0.39	0.31	
Capacity (*c*), veh/h	334	476		361	468		293	557		405	549	
Volume-to-Capacity Ratio (*X*)	0.560	0.527		0.286	0.599		0.163	0.486		0.287	0.760	
Back of Queue (*Q*), ft/ln (95 th percentile)	131.8	203.2		66.6	227.8		27.4	202.2		69.2	336.4	
Back of Queue (*Q*), veh/ln (95 th percentile)	5.2	8.0		2.6	9.0		1.1	8.0		2.7	13.3	
Queue Storage Ratio (*RQ*) (95 th percentile)	0.60	0.68		0.30	0.14		0.17	0.67		0.46	0.27	
Uniform Delay (d_1), s/veh	23.0	28.2		21.5	28.8		19.9	25.2		19.0	28.0	
Incremental Delay (d_2), s/veh	1.3	0.5		0.2	1.5		0.1	0.2		0.1	5.5	
Initial Queue Delay (d_3), s/veh	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Control Delay (*d*), s/veh	24.3	28.7		21.7	30.3		20.0	25.4		19.2	33.5	
Level of Service (LOS)	C	C		C	C		B	C		B	C	
Approach Delay, s/veh / LOS	26.8	C		28.0	C		24.6	C		30.4	C	
Intersection Delay, s/veh / LOS	27.8						C					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	1.93	B	1.93	B	1.92	B	1.92	B
Bicycle LOS Score / LOS	1.21	A	1.12	A	1.01	A	1.37	A

HCS7 Signalized Intersection Results Summary

General Information				Intersection Information	
Agency	CMTran			Duration, h	0.250
Analyst	LRY	Analysis Date	Oct 4, 2021	Area Type	Other
Jurisdiction	Village of Ashville	Time Period	AM No Build	PHF	0.92
Urban Street	Ashville Pike	Analysis Year	2032	Analysis Period	1> 7:00
Intersection	Ashville Pike & SR-752	File Name	HY AM No Build - 752.xus		
Project Description	Ashville Residential TIS				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	49	204	15	34	118	77	24	137	68	151	63	66

Signal Information			
Cycle, s	90.0	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	Yes	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On

Green	7.0	26.0	7.0	26.0	0.0	0.0
Yellow	4.0	4.0	4.0	4.0	0.0	0.0
Red	2.0	2.0	2.0	2.0	0.0	0.0

Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase	7	4	3	8	5	2	1	6
Case Number	1.1	4.0	1.1	4.0	1.1	4.0	1.1	4.0
Phase Duration, s	13.0	32.0	13.0	32.0	13.0	32.0	13.0	32.0
Change Period, ($Y+R_c$), s	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Max Allow Headway (*MAH*), s	3.1	3.1	3.1	3.1	3.1	3.2	3.1	3.2
Queue Clearance Time (g_s), s	3.8	11.8	3.2	11.1	2.8	11.2	7.8	7.8
Green Extension Time (g_e), s	0.0	0.7	0.0	0.8	0.0	0.6	0.0	0.7
Phase Call Probability	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Max Out Probability	0.90	0.00	0.31	0.00	0.13	0.00	1.00	0.00

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	7	4	14	3	8	18	5	2	12	1	6	16
Adjusted Flow Rate (*v*), veh/h	53	238		37	212		26	223		164	140	
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1725	1789		1739	1705		1781	1765		1767	1699	
Queue Service Time (g_s), s	1.8	9.8		1.2	9.1		0.8	9.2		5.8	5.8	
Cycle Queue Clearance Time (g_c), s	1.8	9.8		1.2	9.1		0.8	9.2		5.8	5.8	
Green Ratio (*g/C*)	0.37	0.29		0.37	0.29		0.37	0.29		0.37	0.29	
Capacity (*c*), veh/h	402	517		391	492		472	510		406	491	
Volume-to-Capacity Ratio (*X*)	0.133	0.461		0.095	0.430		0.055	0.437		0.404	0.286	
Back of Queue (*Q*), ft/ln (95 th percentile)	33.2	191.5		22.6	167.3		15.4	172.3		106.9	103.9	
Back of Queue (*Q*), veh/ln (95 th percentile)	1.3	7.3		0.9	6.4		0.6	6.8		4.2	4.1	
Queue Storage Ratio (*RQ*) (95 th percentile)	0.15	0.64		0.10	0.10		0.10	0.57		0.71	0.08	
Uniform Delay (d_1), s/veh	19.3	26.2		19.2	26.0		18.7	26.0		20.7	24.8	
Incremental Delay (d_2), s/veh	0.1	0.2		0.0	0.2		0.0	0.2		0.2	0.1	
Initial Queue Delay (d_3), s/veh	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Control Delay (*d*), s/veh	19.4	26.5		19.3	26.2		18.7	26.3		21.0	24.9	
Level of Service (LOS)	B	C		B	C		B	C		C	C	
Approach Delay, s/veh / LOS	25.2	C		25.2	C		25.5	C		22.8	C	
Intersection Delay, s/veh / LOS	24.6						C					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	1.92	B	1.92	B	1.92	B	1.92	B
Bicycle LOS Score / LOS	0.97	A	0.90	A	0.90	A	0.99	A

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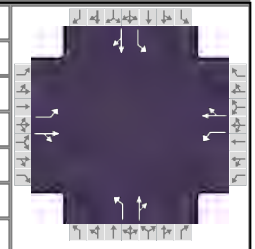
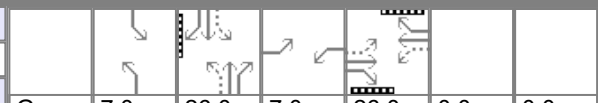
HCS7 Signalized Intersection Results Summary

General Information				Intersection Information	
Agency	CMTran			Duration, h	0.250
Analyst	LRY	Analysis Date	Oct 4, 2021	Area Type	Other
Jurisdiction	Village of Ashville	Time Period	AM Build	PHF	0.92
Urban Street	Ashville Pike	Analysis Year	2032	Analysis Period	1> 7:00
Intersection	Ashville Pike & SR-752	File Name	HY AM Build - 752.xus		
Project Description	Ashville Residential TIS				

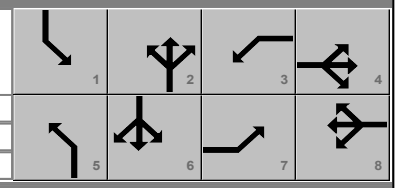


Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	75	212	15	44	144	82	24	147	71	166	92	138

Signal Information			
Cycle, s	90.0	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	Yes	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On



Green	7.0	26.0	7.0	26.0	0.0	0.0
Yellow	4.0	4.0	4.0	4.0	0.0	0.0
Red	2.0	2.0	2.0	2.0	0.0	0.0



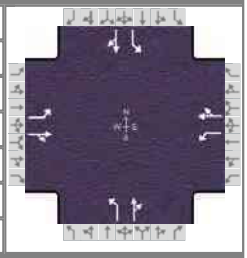
Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase	7	4	3	8	5	2	1	6
Case Number	1.1	4.0	1.1	4.0	1.1	4.0	1.1	4.0
Phase Duration, s	13.0	32.0	13.0	32.0	13.0	32.0	13.0	32.0
Change Period, ($Y+R_c$), s	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Max Allow Headway (*MAH*), s	3.1	3.1	3.1	3.1	3.1	3.2	3.1	3.2
Queue Clearance Time (g_s), s	4.8	12.2	3.6	12.7	2.8	11.9	8.5	13.2
Green Extension Time (g_e), s	0.0	0.8	0.0	0.8	0.0	0.9	0.0	0.8
Phase Call Probability	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Max Out Probability	1.00	0.00	0.64	0.00	0.13	0.00	1.00	0.00

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	7	4	14	3	8	18	5	2	12	1	6	16
Adjusted Flow Rate (*v*), veh/h	82	247		48	246		26	237		180	250	
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1725	1790		1739	1714		1781	1767		1767	1675	
Queue Service Time (g_s), s	2.8	10.2		1.6	10.7		0.8	9.9		6.5	11.2	
Cycle Queue Clearance Time (g_c), s	2.8	10.2		1.6	10.7		0.8	9.9		6.5	11.2	
Green Ratio (*g/C*)	0.37	0.29		0.37	0.29		0.37	0.29		0.37	0.29	
Capacity (*c*), veh/h	376	517		384	495		379	510		395	484	
Volume-to-Capacity Ratio (*X*)	0.217	0.477		0.124	0.496		0.069	0.464		0.457	0.517	
Back of Queue (*Q*), ft/ln (95 th percentile)	51.7	199.2		29.4	198.1		15.5	184.9		118.9	199.5	
Back of Queue (*Q*), veh/ln (95 th percentile)	2.0	7.6		1.1	7.6		0.6	7.3		4.6	7.8	
Queue Storage Ratio (*RQ*) (95 th percentile)	0.23	0.66		0.13	0.12		0.10	0.62		0.79	0.16	
Uniform Delay (d_1), s/veh	19.9	26.4		19.4	26.6		19.3	26.3		21.0	26.7	
Incremental Delay (d_2), s/veh	0.1	0.3		0.1	0.3		0.0	0.2		0.3	0.4	
Initial Queue Delay (d_3), s/veh	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Control Delay (*d*), s/veh	20.0	26.6		19.5	26.8		19.3	26.5		21.3	27.2	
Level of Service (LOS)	C	C		B	C		B	C		C	C	
Approach Delay, s/veh / LOS	25.0	C		25.6	C		25.8	C		24.7	C	
Intersection Delay, s/veh / LOS	25.2						C					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	1.92	B	1.92	B	1.92	B	1.92	B
Bicycle LOS Score / LOS	1.03	A	0.97	A	0.92	A	1.20	A

HCS7 Signalized Intersection Results Summary

General Information				Intersection Information	
Agency	CMTran			Duration, h	0.250
Analyst	LRY	Analysis Date	Oct 4, 2021	Area Type	Other
Jurisdiction	Village of Ashville	Time Period	PM No Build	PHF	0.92
Urban Street	Ashville Pike	Analysis Year	2032	Analysis Period	1> 7:00
Intersection	Ashville Pike & SR-752	File Name	HY PM No Build - 752.xus		
Project Description	Ashville Residential TIS				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	100	170	73	105	160	106	52	168	74	116	261	111

Signal Information			
Cycle, s	90.0	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	Yes	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On

Green	7.0	28.0	7.0	24.0	0.0	0.0
Yellow	4.0	4.0	4.0	4.0	0.0	0.0
Red	2.0	2.0	2.0	2.0	0.0	0.0

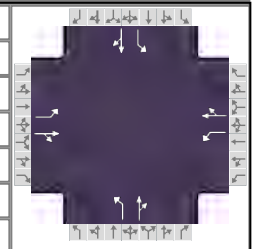
Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase	7	4	3	8	5	2	1	6
Case Number	1.1	4.0	1.1	4.0	1.1	4.0	1.1	4.0
Phase Duration, s	13.0	30.0	13.0	30.0	13.0	34.0	13.0	34.0
Change Period, ($Y+R_c$), s	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Max Allow Headway (*MAH*), s	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1
Queue Clearance Time (g_s), s	5.8	13.5	6.0	15.0	3.8	12.7	6.2	20.1
Green Extension Time (g_e), s	0.0	0.9	0.0	0.8	0.0	1.2	0.0	1.0
Phase Call Probability	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Max Out Probability	1.00	0.02	1.00	0.04	0.86	0.00	1.00	0.10

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	7	4	14	3	8	18	5	2	12	1	6	16
Adjusted Flow Rate (*v*), veh/h	109	264		114	289		57	263		126	404	
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1781	1774		1795	1759		1795	1787		1795	1789	
Queue Service Time (g_s), s	3.8	11.5		4.0	13.0		1.8	10.7		4.2	18.1	
Cycle Queue Clearance Time (g_c), s	3.8	11.5		4.0	13.0		1.8	10.7		4.2	18.1	
Green Ratio (*g/C*)	0.34	0.27		0.34	0.27		0.39	0.31		0.39	0.31	
Capacity (*c*), veh/h	328	473		350	469		306	556		411	557	
Volume-to-Capacity Ratio (*X*)	0.332	0.558		0.326	0.616		0.184	0.473		0.307	0.726	
Back of Queue (*Q*), ft/ln (95 th percentile)	71	214.4		74.1	235.3		32.5	197		75.5	318.7	
Back of Queue (*Q*), veh/ln (95 th percentile)	2.8	8.4		2.9	9.3		1.3	7.8		3.0	12.6	
Queue Storage Ratio (*RQ*) (95 th percentile)	0.32	0.71		0.34	0.15		0.20	0.66		0.50	0.26	
Uniform Delay (d_1), s/veh	22.0	28.4		21.8	29.0		19.7	25.0		19.1	27.6	
Incremental Delay (d_2), s/veh	0.2	0.9		0.2	1.8		0.1	0.2		0.2	4.1	
Initial Queue Delay (d_3), s/veh	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Control Delay (*d*), s/veh	22.2	29.3		22.0	30.8		19.8	25.3		19.2	31.7	
Level of Service (LOS)	C	C		C	C		B	C		B	C	
Approach Delay, s/veh / LOS	27.2	C		28.3	C		24.3	C		28.8	C	
Intersection Delay, s/veh / LOS	27.4						C					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	1.93	B	1.93	B	1.92	B	1.92	B
Bicycle LOS Score / LOS	1.10	A	1.15	A	1.01	A	1.36	A

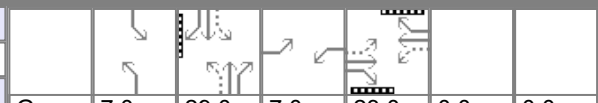
HCS7 Signalized Intersection Results Summary

General Information				Intersection Information	
Agency	CMTran			Duration, h	0.250
Analyst	LRY	Analysis Date	Oct 4, 2021	Area Type	Other
Jurisdiction	Village of Ashville	Time Period	PM Build	PHF	0.92
Urban Street	Ashville Pike	Analysis Year	2032	Analysis Period	1> 7:00
Intersection	Ashville Pike & SR-752	File Name	HY PM Build - 752.xus		
Project Description	Ashville Residential TIS				

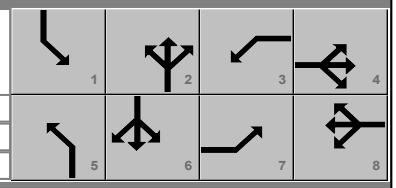


Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	188	198	73	112	177	124	52	203	85	126	282	163

Signal Information			
Cycle, s	90.0	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	Yes	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On



Green	7.0	29.0	7.0	23.0	0.0	0.0
Yellow	4.0	4.0	4.0	4.0	0.0	0.0
Red	2.0	2.0	2.0	2.0	0.0	0.0



Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase	7	4	3	8	5	2	1	6
Case Number	1.1	4.0	1.1	4.0	1.1	4.0	1.1	4.0
Phase Duration, s	13.0	29.0	13.0	29.0	13.0	35.0	13.0	35.0
Change Period, ($Y+R_c$), s	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Max Allow Headway (*MAH*), s	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1
Queue Clearance Time (g_s), s	9.0	15.3	6.4	17.4	3.8	14.9	6.5	25.0
Green Extension Time (g_e), s	0.0	0.9	0.0	0.8	0.0	1.5	0.0	0.8
Phase Call Probability	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Max Out Probability	1.00	0.10	1.00	0.28	0.82	0.01	1.00	0.69

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	7	4	14	3	8	18	5	2	12	1	6	16
Adjusted Flow Rate (*v*), veh/h	204	295		122	327		57	313		137	484	
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1781	1784		1795	1755		1795	1790		1795	1769	
Queue Service Time (g_s), s	7.0	13.3		4.4	15.4		1.8	12.9		4.5	23.0	
Cycle Queue Clearance Time (g_c), s	7.0	13.3		4.4	15.4		1.8	12.9		4.5	23.0	
Green Ratio (*g/C*)	0.33	0.26		0.33	0.26		0.40	0.32		0.40	0.32	
Capacity (*c*), veh/h	285	456		314	449		261	577		388	570	
Volume-to-Capacity Ratio (*X*)	0.718	0.646		0.388	0.729		0.217	0.543		0.353	0.849	
Back of Queue (*Q*), ft/ln (95 th percentile)	169.2	246.9		81.2	281.6		31.8	230		80.7	412.6	
Back of Queue (*Q*), veh/ln (95 th percentile)	6.7	9.7		3.2	11.2		1.3	9.1		3.2	16.4	
Queue Storage Ratio (*RQ*) (95 th percentile)	0.77	0.82		0.37	0.18		0.20	0.77		0.54	0.34	
Uniform Delay (d_1), s/veh	26.1	29.9		22.9	30.7		20.4	25.1		19.0	28.5	
Incremental Delay (d_2), s/veh	7.3	2.5		0.3	5.2		0.2	0.6		0.2	11.0	
Initial Queue Delay (d_3), s/veh	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Control Delay (*d*), s/veh	33.4	32.3		23.2	35.9		20.6	25.6		19.2	39.5	
Level of Service (LOS)	C	C		C	D		C	C		B	D	
Approach Delay, s/veh / LOS	32.8	C		32.4	C		24.9	C		35.0	C	
Intersection Delay, s/veh / LOS	31.9						C					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	1.93	B	1.93	B	1.92	B	1.92	B
Bicycle LOS Score / LOS	1.31	A	1.23	A	1.10	A	1.51	B

Appendix H
Sight Distance Analysis

Appendix H

CARPENTER MARTY

ASHVILLE RESIDENTIAL TIS
SITE DRIVE 1 INTERSECTION SIGHT DISTANCE

CALCULATED LRY
CHECKED AML

0 20 40 80
HORIZONTAL SCALE IN FEET

CARPENTER MARTY transportation

1/4

ROAD C
ROAD B
SITE DRIVE 1
SITE DRIVE 2
ASHVILLE PIKE
PROPOSED EYEBROW
OPEN SPACE C 0.26 AC.
OPEN SPACE D 0.45 AC.
OPEN SPACE E 0.89 AC.
AMENITY CENTER 3.86 AC.
445'
385'
14.4'
S 03°45'54" W 50.31'
S 86°22'16" E 425.00'
JAMES R STICKEL D12-0-002-00-114-01 1.76 AC.
TRAVIS D & ASHLEY M RUSSELL D12-0-002-00-114-02 1.76 AC.
JOSHUA A SNYDER D12-0-002-00-114-03 2.15 AC.

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ASHVILLE RESIDENTIAL TIS
SITE DRIVE 2 INTERSECTION SIGHT DISTANCE

CALCULATED LRY
CHECKED AML

0 20 40 80
HORIZONTAL SCALE IN FEET

CARPENTER MARTY transportation

2/4

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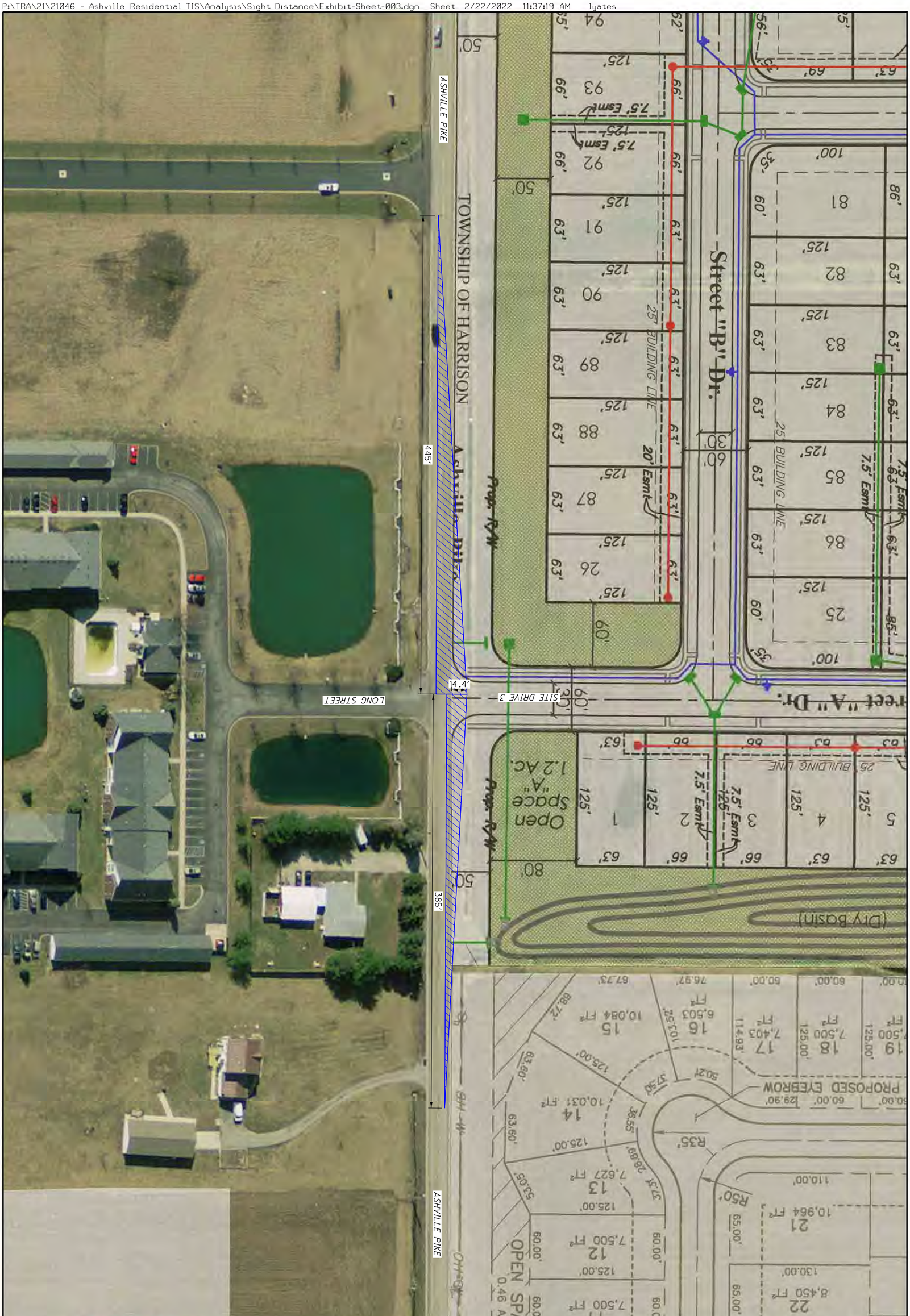
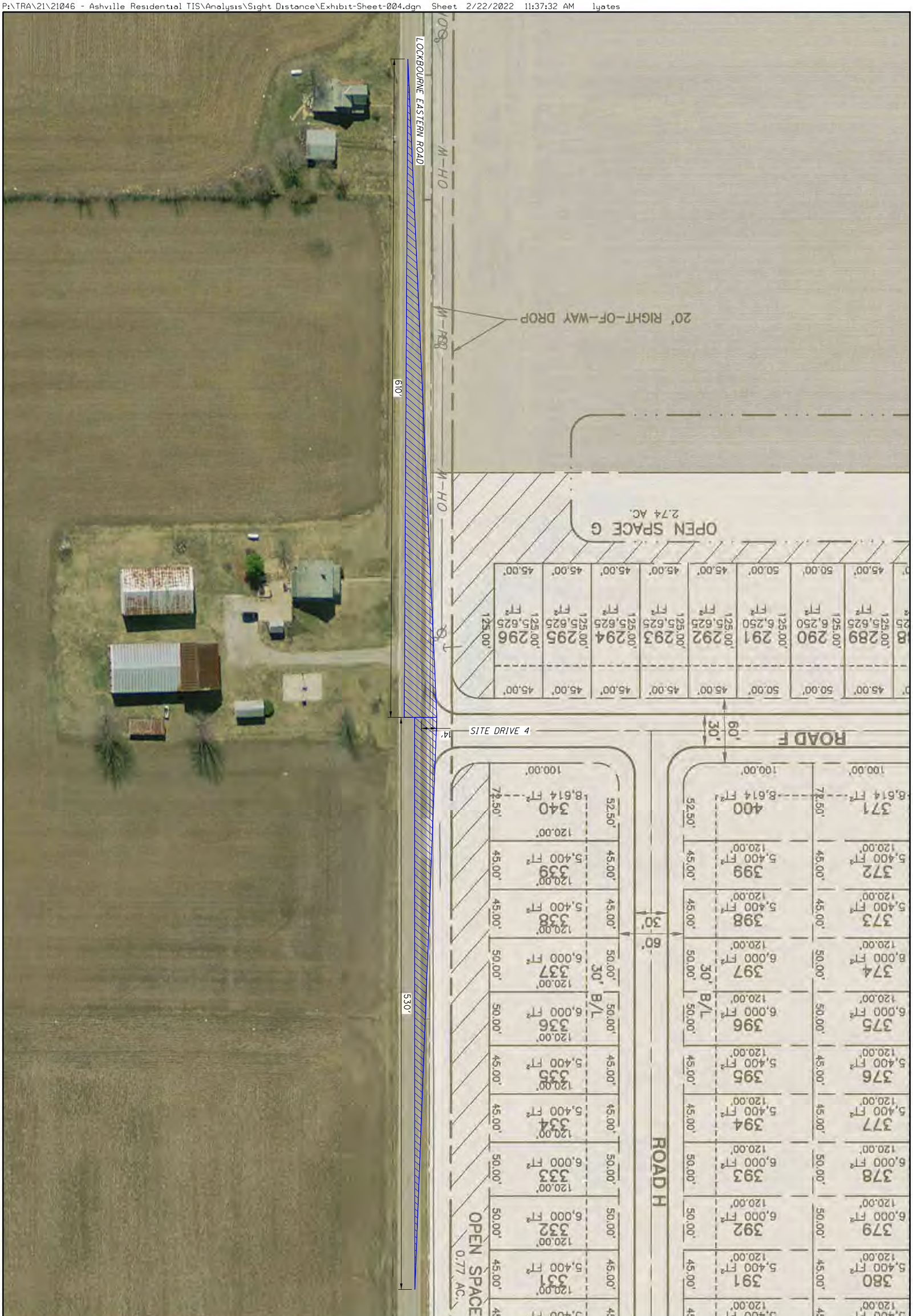
P:\TRA\21\21046 - Ashville Residential TIS\Analysis\Sight Distance\Exhibit-Sheet-003.dgn Sheet 2/22/2022 11:37:19 AM lyates



H4 of 5

3 of 4	CARPENTER MARTY transportation	ASHVILLE RESIDENTIAL TIS SITE DRIVE 3 INTERSECTION SIGHT DISTANCE	CALCULATED LRY CHECKED AML	0 40 20 80 HORIZONTAL SCALE IN FEET



CARPENTER MARTY transportation

ASHVILLE RESIDENTIAL TIS
SITE DRIVE 4 INTERSECTION SIGHT DISTANCE

CALCULATED LRY
CHECKED AML

0 20 40 80
HORIZONTAL SCALE IN FEET

Appendix I
Improvements Exhibit

Appendix I

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CARPENTER MARTY transportation

ASHVILLE RESIDENTIAL TIS
IMPROVEMENTS EXHIBIT

CALCULATED AML
CHECKED GMB

0 150
75 300
HORIZONTAL SCALE IN FEET

N

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13 of 3

2	CARPENTER MARTY transportation	ASHVILLE RESIDENTIAL TIS IMPROVEMENTS EXHIBIT W/ ROUNDABOUT	CALCULATED AML CHECKED GMB	0 150 75 300 HORIZONTAL SCALE IN FEET