# APPENDIX A

# Level-of-Service and Queue Matrix Tables

## Table 2 - 95th Percentile Queue Matrices

### Ashbourne Road (S.R. 2025) and New Second Street (S.R. 2060)

| Time Period / Design Year / Development Condition | | | Current Storage (1) | Weekday Morning Peak Hour | | | Weekday Afternoon Peak Hour | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | Existing | 2013 Build-Out Year | | Existing | 2013 Build-Out Year | |
| | | | | | w/o Dev | w/Dev (Base) | | w/o Dev | w/Dev (Base) |
| Ashbourne Road (S.R. 2025) | EB | Left / Thru | 1,650 | 237 | 247 | 247 | 176 | 189 | 202 |
| | | Right | 110 | 6 | 6 | 6 | 13 | 13 | 13 |
| | WB | Left / Thru / Right | 2,100 | 198 | 204 | 205 | 176 | 187 | 189 |
| New Second Street (S.R. 2060) | NB | Left / Thru / Right | 1,125 | 145 | 148 | 148 | 208 | 212 | 212 |
| | SB | Left / Thru / Right | 2,200 | 442 | 460 | 460 | 291 | 325 | 328 |

(1) Distance measured from stop bar to adjacent signalized intersection, otherwise it is based on closest adjacent intersection.

## Table 2 - 95th Percentile Queue Matrices

### Ashbourne Road (S.R. 2025) and Oak Lane Road (S.R. 2062)/Country Club Access

| Time Period / Design Year / Development Condition | | | Current Storage [1] | Weekday Morning Peak Hour | | | Weekday Afternoon Peak Hour | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | Existing | 2013 Build-Out Year | | Existing | 2013 Build-Out Year | |
| | | | | | w/o Dev | w/Dev (Base) | | w/o Dev | w/Dev (Base) |
| Ashbourne Road (S.R. 2025) | EB | Left | 140 | 3 | 3 | 3 | 0 | 0 | 0 |
| | | Thru / Right | 2,100 | 61 | 66 | 66 | 88 | 91 | 91 |
| | WB | Left | 150 | 64 | 69 | 69 | 74 | 81 | 81 |
| | | Thru / Right | 1,200 | 73 | 78 | 78 | 60 | 64 | 65 |
| Oak Lane Road (S.R. 2062) | NB | Left / Thru | 500 [2] | 10 | 10 | 10 | 7 | 7 | 7 |
| | | Right | 45 [3] | 22 | 22 | 22 | 42 | 42 | 42 |
| Country Club Access | SB | Left / Thru / Right | ≥ 200 | 6 | 6 | 6 | 2 | 2 | 2 |

(1) Distance measured from stop bar to adjacent signalized intersection, otherwise it is based on closest adjacent intersection, as noted.

(2) Distance measured to Brookfield Road.

(3) To be extended to provide at least 150 feet of storage, which is reflected in the analysis.

## Table 2 - 95th Percentile Queue Matrices

### Ashbourne Road (S.R. 2025) and Access Road

| Time Period / Design Year / Development Condition | | | Future Storage [1] | Weekday Morning Peak Hour | | | Weekday Afternoon Peak Hour | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | Existing | 2013 Build-Out Year | | Existing | 2013 Build-Out Year | |
| | | | | | w/o Dev | w/Dev (Base) | | w/o Dev | w/Dev (Base) |
| Ashbourne Road (S.R. 2025) | EB | Thru / Right | 150 | N/A | N/A | 0 | N/A | N/A | 0 |
| Ashbourne Road (S.R. 2025) | WB | Left / Thru | 1,010 | N/A | N/A | 0 | N/A | N/A | 0 |
| Access Road | NB | Left / Right | ≥ 200 | N/A | N/A | 1 | N/A | N/A | 1 |

(1) Distance measured from near curb to near curb of the adjacent signalized intersection along Ashbourne Road.

### Oak Lane Road (S.R. 2062) and Access Road

| Time Period / Design Year / Development Condition | | | Future Storage [1] | Weekday Morning Peak Hour | | | Weekday Afternoon Peak Hour | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | Existing | 2013 Build-Out Year | | Existing | 2013 Build-Out Year | |
| | | | | | w/o Dev | w/Dev (Base) | | w/o Dev | w/Dev (Base) |
| Access Road | WB | Left / Right | ≥ 200 | N/A | N/A | 0 | N/A | N/A | 0 |
| Oak Lane Road (S.R. 2062) | NB | Thru / Right | 250 | N/A | N/A | 0 | N/A | N/A | 0 |
| Oak Lane Road (S.R. 2062) | SB | Left / Thru | 235 | N/A | N/A | 0 | N/A | N/A | 0 |

(1) Distance measured from near curb to near curb of the adjacent signalized intersection along Oak Lane Road to the north and to Brookfield Road to the south.

## Table 2 - 95th Percentile Queue Matrices

### Ashbourne Road (S.R. 2025) and Front Street/Ashmead Road/Arbor Road

| Time Period / Design Year / Development Condition | | | Current Storage [1] | Weekday Morning Peak Hour | | | Weekday Afternoon Peak Hour | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | Existing | 2013 Build-Out Year | | Existing | 2013 Build-Out Year | |
| | | | | | w/o Dev | w/Dev (Base) | | w/o Dev | w/Dev (Base) |
| Ashbourne Road (S.R. 2025) | EB | Thru<br>Right<br>Right | 1,010 | 117 | 122 | 124 | 579 | 652 | 656 |
| Arbor Road | WB | Left<br>Thru<br>Right | 800 | 39 | 39 | 39 | 48 | 48 | 48 |
| Front Street | NB | Thru<br>Right<br>Right | 325 [2] | 155 | 165 | 165 | 162 | 147 | 147 |
| Ashbourne Road (S.R. 2025) | SB | Left<br>Thru<br>Right | 330 [3] | 362 | 364 | 365 | 331 | 336 | 339 |
| Ashmead Road | NW | Left<br>Thru<br>Right | ≥ 500 | 431 | 435 | 438 | 422 | 428 | 431 |

(1) Distance measured from stop bar to adjacent signalized intersection, otherwise it is based on closest adjacent intersection, as noted.

(2) Distance measured to near curb at the school driveway to the south.

(3) Distance measured to near curb at Boyer Road, no signals within one mile.

# APPENDIX B

## Study Area Intersection
## Signal Permit Plans and Photographs

AshbourneRd-NewSecondSt

Cheltenham Township, Montgomery County, Pennsylvania

IMG_3291.JPG

Looking east along Ashbourne Road away from the signal

IMG_3292.JPG

Looking west along Ashbourne Road toward the signal

McMAHON
TRANSPORTATION ENGINEERS & PLANNERS

AshbourneRd-NewSecondSt

Cheltenham Township, Montgomery County, Pennsylvania

IMG_3293.JPG

Looking north along New Second Street away from the signal

IMG_3294.JPG

Looking south along New Second Street toward the signal

McMAHON
TRANSPORTATION ENGINEERS & PLANNERS

AshbourneRd-NewSecondSt

Cheltenham Township, Montgomery County, Pennsylvania

IMG_3295.JPG

Looking at southbound channelized right-turn island along New Second Street

IMG_3296.JPG

Looking west along Ashbourne Road away from signal

AshbourneRd-NewSecondSt

Cheltenham Township, Montgomery County, Pennsylvania

IMG_3297.JPG

Looking east along Ashbourne Road toward the signal

IMG_3289.JPG

Looking north along New Second Street toward signal

McMAHON
TRANSPORTATION ENGINEERS & PLANNERS

AshbourneRd-NewSecondSt

Cheltenham Township, Montgomery County, Pennsylvania

IMG_3290.JPG

Looking north along New Second Street at right-turn channelization island

McMAHON
TRANSPORTATION ENGINEERS & PLANNERS

AshbourneRd-Oak Lane Rd

Cheltenham Township, Montgomery County, Pennsylvania

IMG_3276.JPG

Looking west along Ashbourne Road toward Oak Lane Road

IMG_3277.JPG

Looking east along Ashbourne Road away from Oak Lane Road

AshbourneRd-Oak Lane Rd

Cheltenham Township, Montgomery County, Pennsylvania

IMG_3278.JPG

Looking west along Ashbourne Road toward Oak Lane Road

IMG_3279.JPG

Looking east along Ashbourne Road away from Oak Lane Road

McMAHON
TRANSPORTATION ENGINEERS & PLANNERS

AshbourneRd-Oak Lane Rd

Cheltenham Township, Montgomery County, Pennsylvania

IMG_3280.JPG

Looking south across Ashbourne Road toward Oak Lane Road from Country Club Access

IMG_3281.JPG

Looking south at Oak Lane Road approach to the signal

McMAHON
TRANSPORTATION ENGINEERS & PLANNERS

AshbourneRd-Oak Lane Rd

Cheltenham Township, Montgomery County, Pennsylvania

IMG_3282.JPG

Looking west along Ashbourne Road past Oak Lane Road, left-in to Country Club

IMG_3283.JPG

Looking east along Ashbourne Road toward Oak Lane Road

McMAHON
TRANSPORTATION ENGINEERS & PLANNERS

AshbourneRd-Oak Lane Rd

Cheltenham Township, Montgomery County, Pennsylvania

IMG_3284.JPG

Looking north along Oak Lane Road toward Ashbourne Road

IMG_3285.JPG

Looking south along Oak Lane Road away from teh signal

AshbourneRd-Oak Lane Rd

Cheltenham Township, Montgomery County, Pennsylvania

IMG_3286.JPG

Looking further south along Oak Lane Road away from signal

IMG_3287.JPG

Looking north along Oak Lane Road toward the signal

AshbourneRd-FrontSt-Ashmead

Cheltenham Township, Montgomery County, Pennsylvania

IMG_3266.JPG

Ashmead Road approach to Front Street/Ashbourne Road

IMG_3267.JPG

Looking along Ashmead Road away from the signal

AshbourneRd-FrontSt-Ashmead

Cheltenham Township, Montgomery County, Pennsylvania

IMG_3268.JPG

Looking south along Front Street away from the signal, school is to the right

IMG_3269.JPG

Looking north along Front Street toward the signal, school is to the right

McMAHON
TRANSPORTATION ENGINEERS & PLANNERS

AshbourneRd-FrontSt-Ashmead

Cheltenham Township, Montgomery County, Pennsylvania

IMG_3270.JPG

Looking west along Ashbourne Road away from the signal

IMG_3271.JPG

Looking east along Ashbourne Road toward the signal

AshbourneRd-FrontSt-Ashmead

Cheltenham Township, Montgomery County, Pennsylvania

IMG_3272.JPG

Looking east along Ashbourne Road toward Arbor Road

IMG_3273.JPG

Looking north along Ashbourne Road away from the signal

McMAHON
TRANSPORTATION ENGINEERS & PLANNERS

AshbourneRd-FrontSt-Ashmead

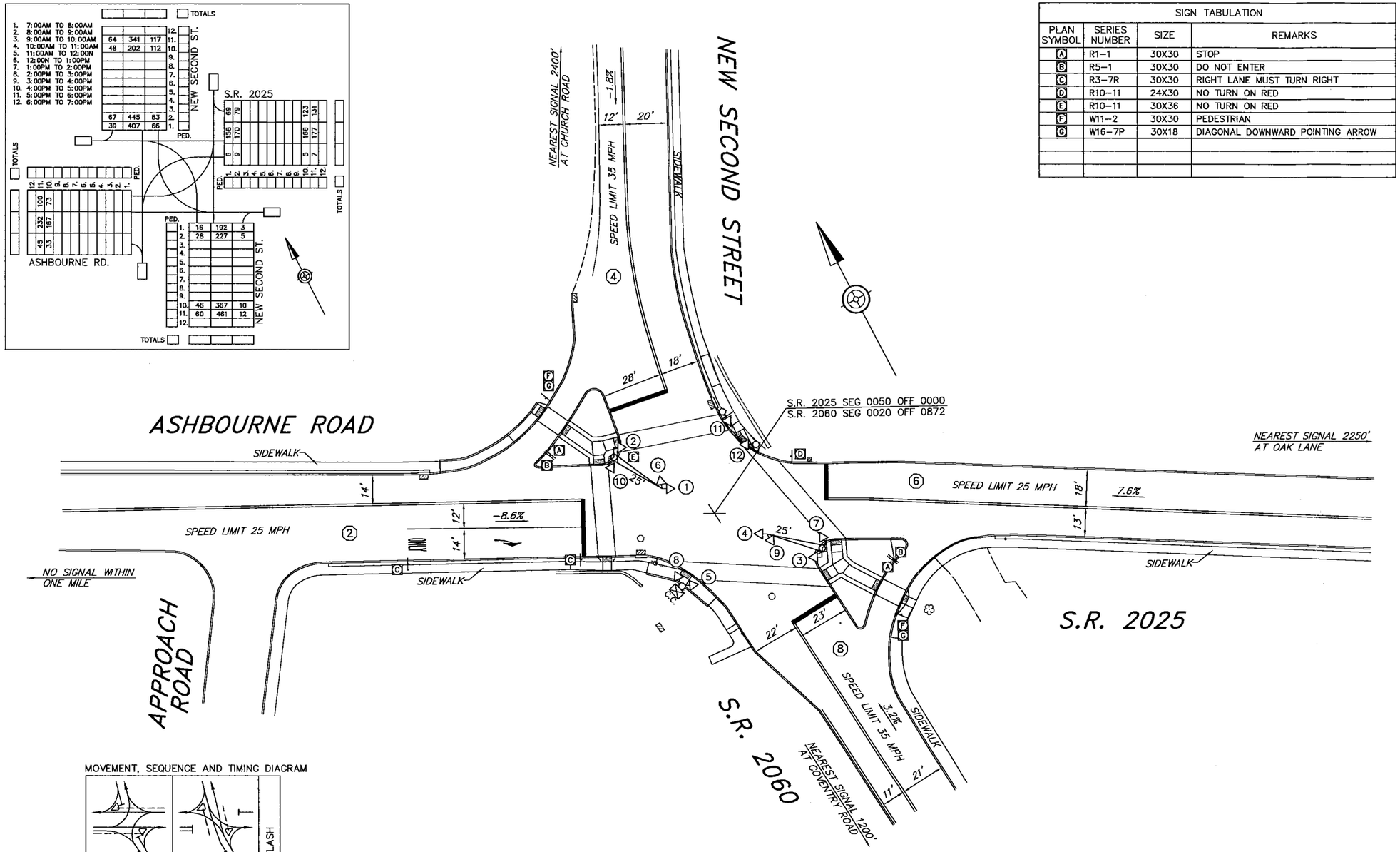
Cheltenham Township, Montgomery County, Pennsylvania

IMG_3274.JPG

Looking south along Ashbourne Road toward the signal

IMG_3275.JPG

Looking west along Arbor Road toward the signal




| SIGN TABULATION | | | |
|---|---|---|---|
| PLAN SYMBOL | SERIES NUMBER | SIZE | REMARKS |
| A | R1-1 | 30X30 | STOP |
| B | R5-1 | 30X30 | DO NOT ENTER |
| C | R3-7R | 30X30 | RIGHT LANE MUST TURN RIGHT |
| D | R10-11 | 24X30 | NO TURN ON RED |
| E | R10-11 | 30X36 | NO TURN ON RED |
| F | W11-2 | 30X30 | PEDESTRIAN |
| G | W16-7P | 30X18 | DIAGONAL DOWNWARD POINTING ARROW |
| | | | |
| | | | |
| | | | |

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ALL MAINTENANCE WORK INCLUDING TRIMMING OF TREES, NECESSARY FOR PROPER VISIBILITY OF THE SIGNALS IS THE RESPONSIBILITY OF THE PERMITTEE.

ALL SIGNS AND PAVEMENT MARKINGS INDICATED ON THIS DRAWING ARE CONSIDERED PART OF THE PERMIT AND SHALL BE INSTALLED AND MAINTAINED IN ACCORDANCE WITH PUBLICATION NO. 212.

POST MOUNTED SIGNALS SHALL BE INSTALLED WITH THE SIGNAL HEADS A MINIMUM OF 2 FEET BEHIND THE FACE OF CURB OR THE EDGE OF THE SHOULDER. SUPPORT POLES FOR OVERHEAD SIGNALS SHALL ALSO HAVE A MINIMUM CLEARANCE HORIZONTALLY OF 2 FEET.

SIGNALS ERECTED OVER THE ROADWAY SHALL HAVE A MINIMUM VERTICAL CLEARANCE OF 16 FT. ABOVE THE ROADWAY. POST MOUNTED SIGNALS SHALL BE A MINIMUM OF 8 FT. ABOVE THE SIDEWALK OR PAVEMENT.

ALL OVERHEAD SIGNALS MUST BE RIGIDLY MOUNTED, TOP AND BOTTOM, AND EQUIPPED WITH BACKPLATES.

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EXACT LOCATION OF DETECTORS SHALL BE DETERMINED PRIOR TO INSTALLATION BY A REPRESENTATIVE OF PENNDOT.

CURBING TO BE INSTALLED BY MUNICIPALITY AND WHERE NOTED, SHALL BE PLAIN CEMENT CONCRETE CURB OR GRANITE CURB, INSTALLED IN ACCORDANCE WITH DEPARTMENT SPECIFICATIONS FORM 408.

PRIOR TO INSTALLATION THE CONTRACTOR SHALL CONSULT WITH THE LOCAL OFFICIALS AND UTILITY COMPANIES TO RESOLVE ANY PROBLEMS WHICH MAY BE CREATED DUE TO THE LOCATION OF UTILITIES.

THIS DRAWING CANNOT BE USED AS A CONSTRUCTION DRAWING UNLESS THE PERMITTEE COMPLIES WITH THE PROVISIONS OF THE LATEST AMENDMENT TO ACT 287, PREVENTION OF DAMAGE TO UNDERGROUND UTILITIES, DATED DECEMBER 20, 1974.

WHEN LIQUID FUELS MONEY IS USED, SIGNAL INSTALLATION MUST CONFORM TO FORM 408 AND A COPY OF THE PROPOSED SPECIFICATIONS MUST BE SUBMITTED TO THE DISTRICT TRAFFIC UNIT, FOR REVIEW, PRIOR TO BIDDING.

PERMITTEE SHALL OBTAIN A HIGHWAY OCCUPANCY PERMIT FOR ANY CHANGES IN INTERSECTION GEOMETRY REGARDING EXCAVATION.

CONDUIT INSTALLED IN BITUMINOUS ROADWAY LESS THAN 5 YEARS OLD, OR CONCRETE ROADWAY REGARDLESS OF AGE, MUST BE BORED OR JACKED UNDER THE ROADWAY. INSTALL IN ACCORDANCE WITH TRAFFIC SIGNAL STANDARDS TC-8800 SERIES.

MOVEMENT, SEQUENCE AND TIMING DIAGRAM

| PHASE | 2+6 | | | | 4+8 | | | | FLASH |
|---|---|---|---|---|---|---|---|---|---|
| SIGNALS \ INTERVAL | 1 | 2 | 3 | | 4 | 5 | 6 | | |
| 1,3,4,5 | G | Y | R | | R | R | R | | Y |
| 2,12 | G | Y | R | | R | R | R | | OFF |
| 6,8,9,10 | R | R | R | | G | Y | R | | R |
| 7,11 | R | R | R | | G | Y | R | | OFF |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |

| FIXED TIME | 20 | 4 | 3 | | 31 | 4 | 3 | | 65 SEC. CYCLE |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |

SIGNAL INDICATIONS

8" LENS: R, Y, G — 2,7,11,12

12" LENS: R, Y, G — 1,3,4,5, 6,8,9,10

SIGNALS TO BE EQUIPPED WITH TUNNEL VISORS _____

SIGNALS TO BE EQUIPPED WITH TUNNEL VISORS & LOUVERS _____

SCALE

25 0 25

LEGEND

- 20' — MAST ARM/ IDENTIFYING LENGTH
- (1) — VEHICULAR SIGNAL HEAD/ BACKPLATE/VISORS/ DIRECTIONAL ARROW/ IDENTIFYING NUMBER
- (1) — PEDESTRIAN SIGNAL HEAD/ IDENTIFYING NUMBER
- PEDESTRIAN PUSHBUTTON/ SIGN
- A — SIGN/IDENTIFYING LETTER
- VIDEO DETECTOR
- C.C. — CONTROLLER CABINET
- 12'x6' — LOOP SENSOR/SIZE
- ZONE OF DETECTION
- MICROWAVE PRESENCE DETECTOR
- EMERGENCY PRE-EMPTION FLASHING BEACON
- EMERGENCY PRE-EMPTION DEVICE
- CURB RAMP
- UTILITY POLE
- (1) — PHASE NUMBER
- INLET

PENNSYLVANIA DEPARTMENT OF TRANSPORTATION

ENGINEERING DISTRICT 6-0

COUNTY: MONTGOMERY

MUNICIPALITY: CHELTENHAM TOWNSHIP

INTERSECTION: ASHBOURNE ROAD (S.R. 2025) & NEW SECOND STREET (S.R. 2060)

REVIEWED:

DATE

MUNICIPAL OFFICIAL DATE

RECOMMENDED:

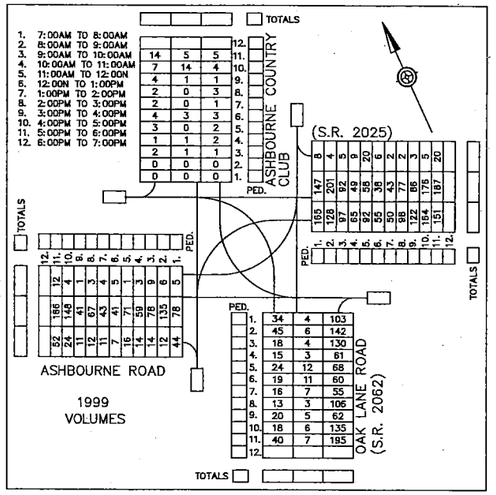
MARK L. KRAY 7/12/89

DOUGLAS MAY 7/12/89

DISTRICT TRAFFIC ENGINEER DATE

| NO. | REVISION | DES./ REVW. | DATE | REVW. | DATE | RECOM. | DATE |
|---|---|---|---|---|---|---|---|
| 1 | ADD RT LANES & CHANGED TIMES | NV | 9/12/81 | MLK | 9/12/81 | DWM | 9/12/81 |
| 2 | ADD STOP SIGN & SIGNAL HEADS | NV | 8/21/89 | MLK | 8/21/89 | DWM | 8/21/89 |
| 3 | ADDED SIGN 'E' TO NW MAST ARM | NV | 1/18/08 | MLK | 1/18/08 | ABP | 1/18/08 |
| 4 | ADDED SIGN 'E', REMOVED SIGN 'D' ON MAST ARM | HAL | 5/9/08 | DLA | 5/12/08 | ABP | 5/23/08 |
| 5 | ADDED CURB RAMPS UNDER ST-75 RESURFACING PROJECT, REV TIMES | MCM | | | | | |
| 6 | | | | | | | |
| 7 | | | | | | | |
| 8 | | | | | | | |

SHEET 2 OF 2 | PERMIT # 64-0350 | FILE # 0350



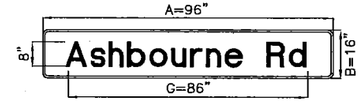

| WEEKLY PROGRAM CHART | | | | | | |
|---|---|---|---|---|---|---|
| EVENT | DAY | TIME | CYCLE | OFFSET | PROGRAM | REMARKS |
| 1 | 1–7 | 00:00 | FREE | – | MAX. 1 | – |
| 2 | 1–5 | 06:00 | FREE | – | MAX. 2 | – |
| 3 | 1–5 | 09:00 | FREE | – | MAX. 1 | – |
| 4 | 1–5 | 15:00 | FREE | – | MAX. 2 | – |
| 5 | 1–7 | 18:00 | FREE | – | MAX. 2 | – |
| | | | | | | |
| | | | | | | |

MONDAY = DAY 1

| SIGN TABULATION | | | |
|---|---|---|---|
| PLAN SYMBOL | SERIES NUMBER | SIZE | REMARKS |
| A | D3–4 | 96X16 | OVERHEAD STREET NAME SIGN (SEE DETAIL) |
| B | D3–4 | 84X16 | OVERHEAD STREET NAME SIGN (SEE DETAIL) |
| C | R10–3B(L) | 9X12 | EDUCATIONAL PUSH BUTTON FOR WALKING PERSON |
| D | R10–3B(R) | 9X12 | EDUCATIONAL PUSH BUTTON FOR WALKING PERSON |
| E | R3–7R | 30X30 | RIGHT LANE MUST TURN RIGHT |
| F | R9–3 | 18X18 | NO PEDESTRIAN CROSSING |
| G | R10–11 | 30X36 | NO TURN ON RED |
| J | R3–7L | 30X30 | LEFT LANE MUST TURN LEFT |
| | | | |
| | | | |

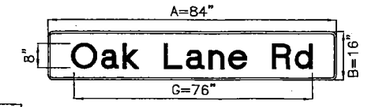
## SIGN DETAILS

NOT TO SCALE



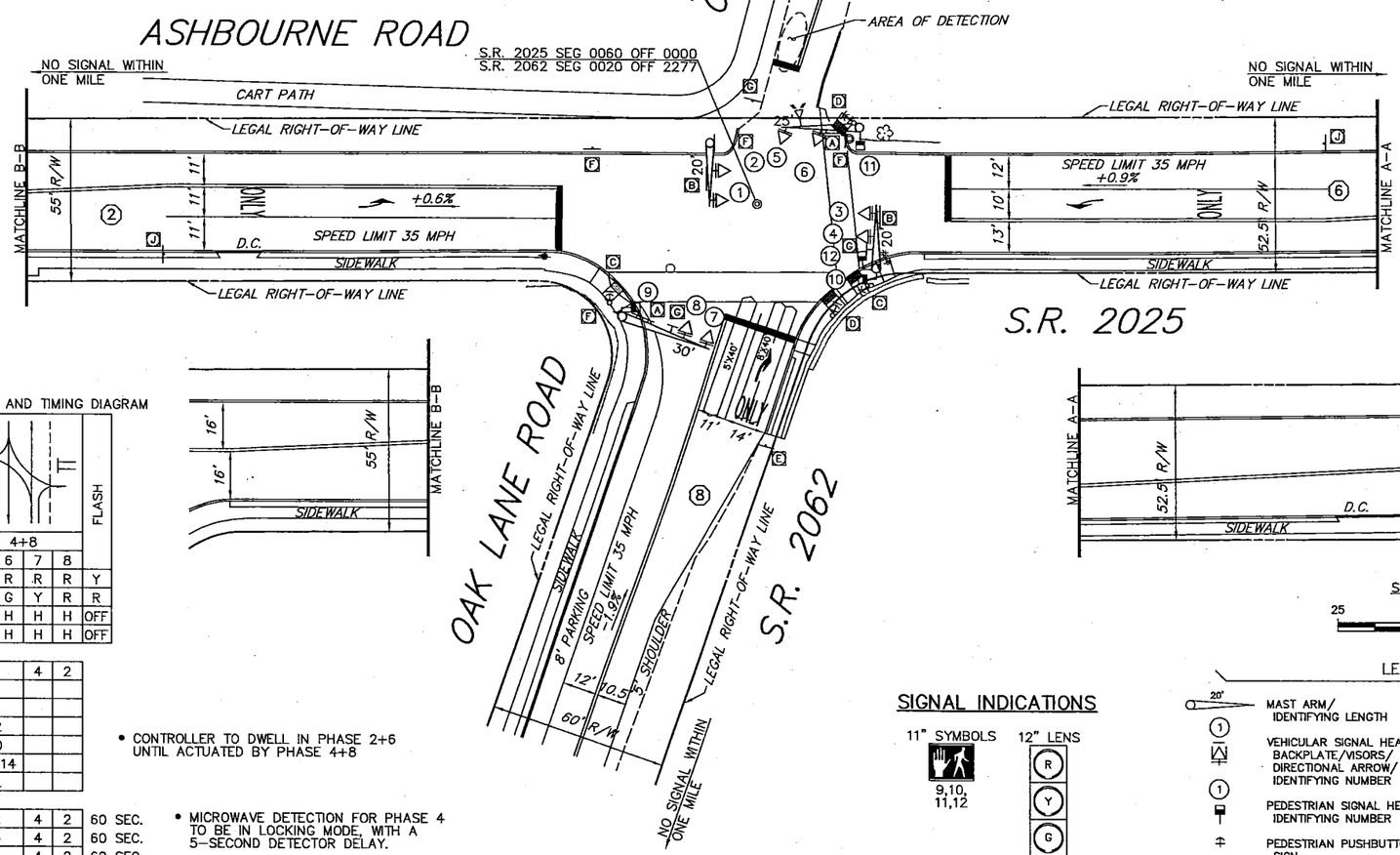

SIGN A

8" UPPER CASE
6" LOWER CASE

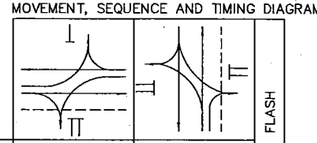



SIGN B

8" UPPER CASE
6" LOWER CASE




MOVEMENT, SEQUENCE AND TIMING DIAGRAM




| PHASE | 2+6 | | | | 4+8 | | | | |
|---|---|---|---|---|---|---|---|---|---|
| SIGNALS \ INTERVAL | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | |
| 1,2,3,4 | G | G | Y | R | R | R | R | R | Y |
| 5,6,7,8 | R | R | R | R | G | G | Y | R | R |
| 9,10* | M | FH | H | H | H | H | H | H | OFF |
| 11,12* | H | H | H | H | FH | H | H | H | OFF |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| FIXED | | | 4 | 2 | | 4 | 2 |
| MINIMUM | 33 | | | | 3 | | |
| PASSAGE | | | | | 3 | | |
| MAX. 1 | | | | | 12 | | |
| MAX. 2 | | | | | 20 | | |
| PEDESTRIAN | 13 | 20 | | | 7 | 14 | |
| MEMORY | MN | | | | NL | | |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| PROGRAM 1 | 36 | 4 | 2 | 12 | 4 | 2 | 60 SEC. |
| PROGRAM 2 | 33 | 4 | 2 | 15 | 4 | 2 | 60 SEC. |
| PROGRAM 3 | 35 | 4 | 2 | 13 | 4 | 2 | 60 SEC. |

*UPON PEDESTRIAN ACTUATION ONLY, OTHERWISE HAND SYMBOL AT ALL TIMES

- CONTROLLER TO DWELL IN PHASE 2+6 UNTIL ACTUATED BY PHASE 4+8
- MICROWAVE DETECTION FOR PHASE 4 TO BE IN LOCKING MODE, WITH A 5–SECOND DETECTOR DELAY.

## SIGNAL INDICATIONS

11" SYMBOLS — 9,10, 11,12

12" LENS — R, Y, G — 1,2,3, 4,5,6, 7,8

SCALE

25 0 25

LEGEND

- MAST ARM/ IDENTIFYING LENGTH
- VEHICULAR SIGNAL HEAD/ BACKPLATE/VISORS/ DIRECTIONAL ARROW/ IDENTIFYING NUMBER
- PEDESTRIAN SIGNAL HEAD/ IDENTIFYING NUMBER
- PEDESTRIAN PUSHBUTTON/ SIGN
- SIGN/IDENTIFYING LETTER
- VIDEO DETECTOR
- C.C. CONTROLLER CABINET
- 12"x6" LOOP SENSOR/SIZE
- ZONE OF DETECTION
- MICROWAVE PRESENCE DETECTOR
- EMERGENCY PRE–EMPTION FLASHING BEACON
- EMERGENCY PRE–EMPTION DEVICE
- CURB RAMP
- UTILITY POLE
- PHASE NUMBER
- INLET

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PENNSYLVANIA DEPARTMENT OF TRANSPORTATION
ENGINEERING DISTRICT 6–0

COUNTY: MONTGOMERY

MUNICIPALITY: CHELTENHAM TOWNSHIP

INTERSECTION: ASHBOURNE ROAD (S.R. 2025) AND OAK LANE ROAD (S.R. 2062)/ASHBOURNE COUNTRY CLUB DRIVE

REVIEWED:

DATE

MUNICIPAL OFFICIAL DATE

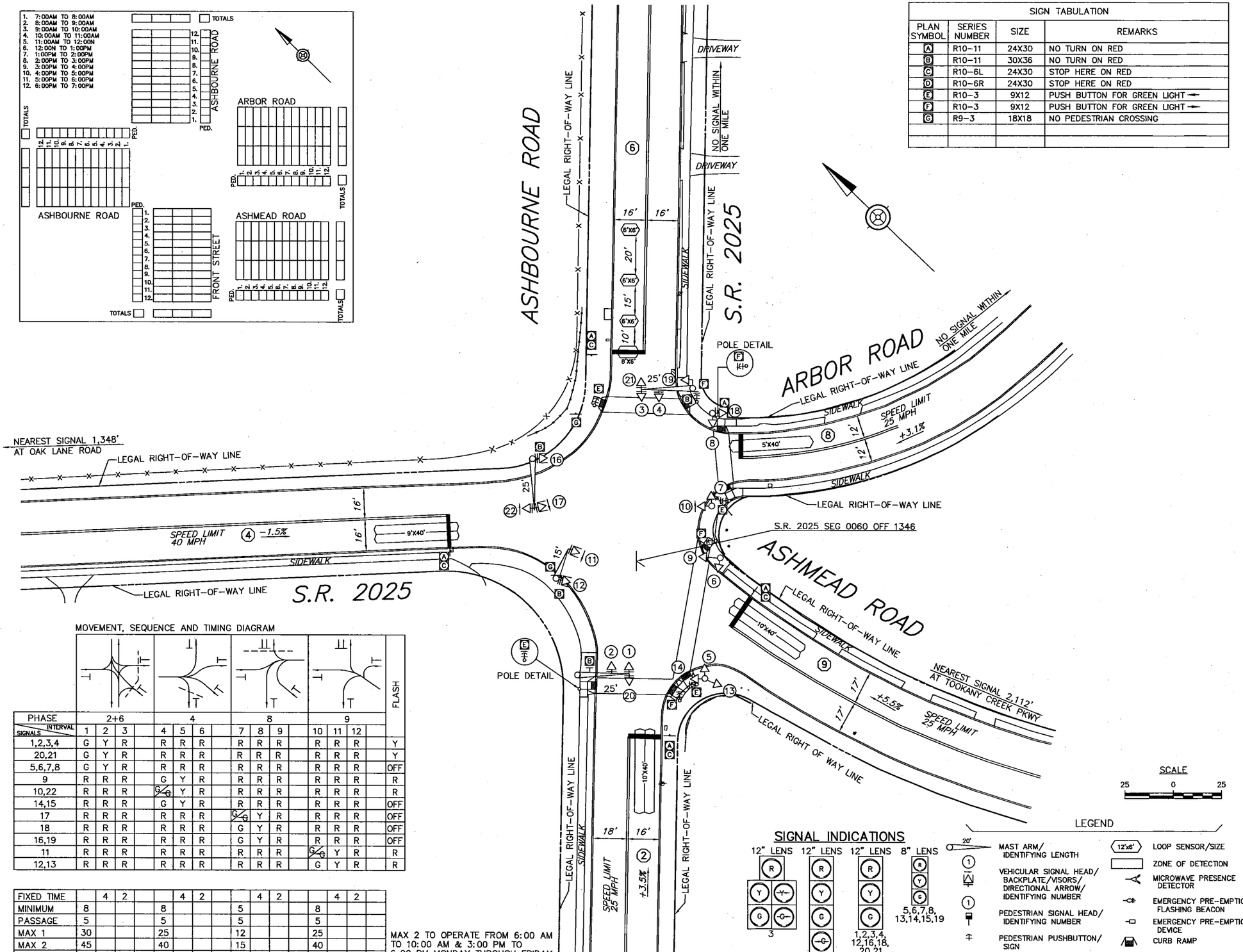
RECOMMENDED:

MARK L. KRAY 3–19–91

DOUGLAS MAY 3–19–91
DISTRICT TRAFFIC ENGINEER DATE

| NO. | REVISION | DES./REVW. | DATE | REVW. | DATE | RECOM. | DATE |
|---|---|---|---|---|---|---|---|
| 1 | NEW DRAWING | McM | 9/23/03 | MLK | 10/8/03 | DWM | 10/27/03 |
| 2 | ADDED ADA RAMPS AND PED BUTTONS | MCM | | | | | |
| 3 | | | | | | | |
| 4 | | | | | | | |
| 5 | | | | | | | |
| 6 | | | | | | | |
| 7 | | | | | | | |
| 8 | | | | | | | |

SHEET 2 OF 2 | PERMIT # 64–0991 | FILE # 0991




| SIGN TABULATION | | | |
|---|---|---|---|
| PLAN SYMBOL | SERIES NUMBER | SIZE | REMARKS |
| A | R10-11 | 24X30 | NO TURN ON RED |
| B | R10-11 | 30X36 | NO TURN ON RED |
| C | R10-6L | 24X30 | STOP HERE ON RED |
| D | R10-6R | 24X30 | STOP HERE ON RED |
| E | R10-3 | 9X12 | PUSH BUTTON FOR GREEN LIGHT ← |
| F | R10-3 | 9X12 | PUSH BUTTON FOR GREEN LIGHT ← |
| G | R9-3 | 18X18 | NO PEDESTRIAN CROSSING |
| | | | |
| | | | |

MOVEMENT, SEQUENCE AND TIMING DIAGRAM

| PHASE | 2+6 | | | | 4 | | | | 8 | | | | 9 | | | | FLASH |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SIGNALS / INTERVAL | 1 | 2 | 3 | | 4 | 5 | 6 | | 7 | 8 | 9 | | 10 | 11 | 12 | | |
| 1,2,3,4 | G | Y | R | | R | R | R | | R | R | R | | R | R | R | | Y |
| 20,21 | G | Y | R | | R | R | R | | R | R | R | | R | R | R | | Y |
| 5,6,7,8 | G | Y | R | | R | R | R | | R | R | R | | R | R | R | | OFF |
| 9 | R | R | R | | G | Y | R | | R | R | R | | R | R | R | | R |
| 10,22 | R | R | R | | G/G | Y | R | | R | R | R | | R | R | R | | R |
| 14,15 | R | R | R | | G | Y | R | | R | R | R | | R | R | R | | OFF |
| 17 | R | R | R | | R | R | R | | G/G | Y | R | | R | R | R | | OFF |
| 18 | R | R | R | | R | R | R | | G | Y | R | | R | R | R | | OFF |
| 16,19 | R | R | R | | R | R | R | | G | Y | R | | R | R | R | | OFF |
| 11 | R | R | R | | R | R | R | | R | R | R | | G/G | Y | R | | R |
| 12,13 | R | R | R | | R | R | R | | R | R | R | | G | Y | R | | R |

| FIXED TIME | | 4 | 2 | | | 4 | 2 | | | 4 | 2 | | | 4 | 2 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MINIMUM | 8 | | | | 8 | | | | 5 | | | | 8 | | | |
| PASSAGE | 5 | | | | 5 | | | | 5 | | | | 5 | | | |
| MAX 1 | 30 | | | | 25 | | | | 12 | | | | 25 | | | |
| MAX 2 | 45 | | | | 40 | | | | 15 | | | | 40 | | | |
| PED TIME* | 14 | | | | 21 | | | | 14 | | | | | | | |
| MEMORY | MR | | | | NL | | | | NL | | | | NL | | | |

*UPON PEDESTRIAN ACTUATION ONLY.

MAX 2 TO OPERATE FROM 6:00 AM TO 10:00 AM & 3:00 PM TO 6:00 PM MONDAY THROUGH FRIDAY

MAX 1 TO OPERATE AT ALL OTHER TIMES

SIGNAL INDICATIONS

12" LENS 12" LENS 12" LENS 8" LENS

3 10,11, 17,22 1,2,3,4, 12,16,18, 20,21 5,6,7,8, 13,14,15,19

SIGNALS TO BE EQUIPPED WITH TUNNEL VISORS & LOUVERS 11,12,15,16,17,19

LEGEND

- MAST ARM/ IDENTIFYING LENGTH
- VEHICULAR SIGNAL HEAD/ BACKPLATE/VISORS/ DIRECTIONAL ARROW/ IDENTIFYING NUMBER
- PEDESTRIAN SIGNAL HEAD/ IDENTIFYING NUMBER
- PEDESTRIAN PUSHBUTTON/ SIGN
- SIGN/IDENTIFYING LETTER
- VIDEO DETECTOR
- C.C. CONTROLLER CABINET
- 12'x6' LOOP SENSOR/SIZE
- ZONE OF DETECTION
- MICROWAVE PRESENCE DETECTOR
- EMERGENCY PRE-EMPTION FLASHING BEACON
- EMERGENCY PRE-EMPTION DEVICE
- CURB RAMP
- UTILITY POLE
- PHASE NUMBER
- INLET

# GENERAL NOTES

NO MODIFICATIONS OF THIS INSTALLATION ARE PERMITTED UNLESS PRIOR APPROVAL IS GRANTED IN WRITING BY A REPRESENTATIVE OF THE DEPARTMENT OF TRANSPORTATION.

ALL MAINTENANCE WORK INCLUDING TRIMMING OF TREES, NECESSARY FOR PROPER VISIBILITY OF THE SIGNALS IS THE RESPONSIBILITY OF THE PERMITTEE.

ALL SIGNS AND PAVEMENT MARKINGS INDICATED ON THIS DRAWING ARE CONSIDERED PART OF THE PERMIT AND SHALL BE INSTALLED AND MAINTAINED IN ACCORDANCE WITH PUBLICATION NO. 212.

POST MOUNTED SIGNALS SHALL BE INSTALLED WITH THE SIGNAL HEADS A MINIMUM OF 2 FEET BEHIND THE FACE OF CURB OR THE EDGE OF THE SHOULDER. SUPPORT POLES FOR OVERHEAD SIGNALS SHALL ALSO HAVE A MINIMUM CLEARANCE HORIZONTALLY OF 2 FEET.

SIGNALS ERECTED OVER THE ROADWAY SHALL HAVE A MINIMUM VERTICAL CLEARANCE OF 16 FT. ABOVE THE ROADWAY. POST MOUNTED SIGNALS SHALL BE A MINIMUM OF 8 FT. ABOVE THE SIDEWALK OR PAVEMENT.

ALL OVERHEAD SIGNALS MUST BE RIGIDLY MOUNTED, TOP AND BOTTOM, AND EQUIPPED WITH BACKPLATES.

THE MINIMUM HORIZONTAL DISTANCE BETWEEN SIGNALS MEASURED AT RIGHT ANGLES TO THE APPROACH SHALL BE 8 FEET.

EXACT LOCATION OF DETECTORS SHALL BE DETERMINED PRIOR TO INSTALLATION BY A REPRESENTATIVE OF PENNDOT.

CURBING TO BE INSTALLED BY MUNICIPALITY AND WHERE NOTED, SHALL BE PLAIN CEMENT CONCRETE CURB OR GRANITE CURB, INSTALLED IN ACCORDANCE WITH DEPARTMENT SPECIFICATIONS FORM 408.

PRIOR TO INSTALLATION THE CONTRACTOR SHALL CONSULT WITH THE LOCAL OFFICIALS AND UTILITY COMPANIES TO RESOLVE ANY PROBLEMS WHICH MAY BE CREATED DUE TO THE LOCATION OF UTILITIES.

THIS DRAWING CANNOT BE USED AS A CONSTRUCTION DRAWING UNLESS THE PERMITTEE COMPLIES WITH THE PROVISIONS OF THE LATEST AMENDMENT TO ACT 287, PREVENTION OF DAMAGE TO UNDERGROUND UTILITIES, DATED DECEMBER 20, 1974.

WHEN LIQUID FUELS MONEY IS USED, SIGNAL INSTALLATION MUST CONFORM TO FORM 408 AND A COPY OF THE PROPOSED SPECIFICATIONS MUST BE SUBMITTED TO THE DISTRICT TRAFFIC UNIT, FOR REVIEW, PRIOR TO BIDDING.

PERMITTEE SHALL OBTAIN A HIGHWAY OCCUPANCY PERMIT FOR ANY CHANGES IN INTERSECTION GEOMETRY REGARDING EXCAVATION.

CONDUIT INSTALLED IN BITUMINOUS ROADWAY LESS THAN 5 YEARS OLD, OR CONCRETE ROADWAY REGARDLESS OF AGE, MUST BE BORED OR JACKED UNDER THE ROADWAY. INSTALL IN ACCORDANCE WITH TRAFFIC SIGNAL STANDARDS TC-8800 SERIES.

PENNSYLVANIA DEPARTMENT OF TRANSPORTATION
ENGINEERING DISTRICT 6-0

COUNTY: MONTGOMERY
MUNICIPALITY: CHELTENHAM TOWNSHIP
INTERSECTION: ASHBOURNE RD (S.R. 2025) & ASHMEAD RD/ARBOR RD/FRONT STREET

REVIEWED:

DATE

MUNICIPAL OFFICIAL DATE

RECOMMENDED:

MARK L. KRAY 12/13/88

DOUGLAS MAY 12/19/88
DISTRICT TRAFFIC ENGINEER DATE

| NO. | REVISION | DES./REVW. | DATE | REVW. | DATE | RECOM. | DATE |
|---|---|---|---|---|---|---|---|
| 1 | NEW DRAWING, REVISED TIMING | | | MLK | 12/13/88 | DWM | 12/19/88 |
| 2 | ADDED MAST ARMS | | | CB | 4/21/89 | DWM | 4/24/89 |
| 3 | ADD NEW S.H. & PUSHBUTTONS | | | NV | 7/27/89 | DWM | 7/28/89 |
| 4 | ADD S.H.#'S 20 AND 21 | NV | 12/12/89 | MLK | 12/14/89 | DWM | 12/14/89 |
| 5 | ADD SPLT PHASE & LT TRN SGNL | | | MLK | 1/22/90 | DWM | 1/23/90 |
| 6 | ADDED ADA RAMPS AND PED BUTTONS | MCM | | | | | |
| 7 | | | | | | | |
| 8 | | | | | | | |

SHEET 2 OF 2 PERMIT # 64-0996 FILE # 0996

# APPENDIX C

# Automatic Traffic Recorder (ATR) Counts

# McMahon Associates, Inc.

Transportation Engineers and Planners
425 Commerce Drive, Suite 200
Fort Washington, PA

Municipality: Cheltenham Township
Comments: None
Weather: Variable
Operator/ATR #: NDB/11135

Site Code: 00000000000000000000
Station ID: 00000000000000000000
Ashbourne Road east of
Oak Lane Road
Latitude: 0' 0.000 Undefined

Eastbound

| Start Time | Bikes | Cars & Trailers | 2 Axle Long | Buses | 2 Axle 6 Tire | 3 Axle Single | 4 Axle Single | <5 Axl Double | 5 Axle Double | >6 Axl Double | <6 Axl Multi | 6 Axle Multi | >6 Axl Multi | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 04/18/11 | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 01:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 02:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 03:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 04:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 05:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 06:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 07:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 08:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 09:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 10:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 11:00 | **2** | **206** | **48** | 0 | **10** | 0 | 0 | **2** | **1** | 0 | 0 | 0 | 0 | **269** |
| 12 PM | 0 | 215 | 36 | **6** | 6 | 0 | 0 | 2 | 1 | 0 | 0 | 0 | 0 | 266 |
| 13:00 | 0 | 208 | 68 | 3 | 9 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 288 |
| 14:00 | 0 | 255 | 58 | 1 | 11 | 0 | **1** | 3 | 0 | 0 | 0 | 0 | 0 | 329 |
| 15:00 | 0 | 288 | 69 | 1 | **12** | 0 | 0 | 1 | **2** | 0 | 0 | 0 | 0 | 373 |
| 16:00 | 1 | 364 | **75** | 1 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **446** |
| 17:00 | 1 | **369** | 59 | 1 | 7 | **1** | 0 | **6** | 1 | 0 | 0 | 0 | 0 | 445 |
| 18:00 | **4** | 297 | 51 | 0 | 9 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 361 |
| 19:00 | 2 | 265 | 50 | 1 | 8 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 328 |
| 20:00 | 1 | 216 | 39 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 259 |
| 21:00 | 2 | 124 | 15 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 142 |
| 22:00 | 0 | 90 | 16 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 107 |
| 23:00 | 1 | 36 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 40 |
| Day Total | 14 | 2933 | 587 | 14 | 82 | 1 | 1 | 16 | 5 | 0 | 0 | 0 | 0 | 3653 |
| Percent | 0.4% | 80.3% | 16.1% | 0.4% | 2.2% | 0.0% | 0.0% | 0.4% | 0.1% | 0.0% | 0.0% | 0.0% | 0.0% | |
| AM Peak | 11:00 | 11:00 | 11:00 | | 11:00 | | | 11:00 | 11:00 | | | | | 11:00 |
| Vol. | 2 | 206 | 48 | | 10 | | | 2 | 1 | | | | | 269 |
| PM Peak | 18:00 | 17:00 | 16:00 | 12:00 | 15:00 | 17:00 | 14:00 | 17:00 | 15:00 | | | | | 16:00 |
| Vol. | 4 | 369 | 75 | 6 | 12 | 1 | 1 | 6 | 2 | | | | | 446 |

# McMahon Associates, Inc.

Transportation Engineers and Planners
425 Commerce Drive, Suite 200
Fort Washington, PA

Municipality: Cheltenham Township
Comments: None
Weather: Variable
Operator/ATR #: NDB/11135

Site Code: 00000000000000000000
Station ID: 00000000000000000000
Ashbourne Road east of
Oak Lane Road
Latitude: 0' 0.000 Undefined

Eastbound

| Start Time | Bikes | Cars & Trailers | 2 Axle Long | Buses | 2 Axle 6 Tire | 3 Axle Single | 4 Axle Single | <5 Axl Double | 5 Axle Double | >6 Axl Double | <6 Axl Multi | 6 Axle Multi | >6 Axl Multi | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 04/19/11 | 0 | 25 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 29 |
| 01:00 | 0 | 17 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 21 |
| 02:00 | 0 | 6 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 |
| 03:00 | 0 | 2 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 |
| 04:00 | 0 | 12 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 14 |
| 05:00 | 0 | 48 | 12 | 3 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 66 |
| 06:00 | **2** | 164 | 46 | 1 | 9 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 225 |
| 07:00 | 0 | **320** | **73** | 2 | 8 | 0 | **1** | 2 | **2** | 0 | 0 | 0 | 0 | **408** |
| 08:00 | 1 | 276 | 61 | 2 | **10** | 0 | 0 | 2 | 1 | 0 | 0 | 0 | 0 | 353 |
| 09:00 | 1 | 241 | 52 | **4** | 8 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 309 |
| 10:00 | 0 | 167 | 40 | 1 | 6 | **2** | 0 | **4** | 2 | 0 | 0 | 0 | 0 | 222 |
| 11:00 | 1 | 225 | 57 | 0 | 9 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 295 |
| 12 PM | **2** | 204 | 50 | 3 | 8 | 0 | 0 | **3** | 1 | 0 | 0 | 0 | 0 | 271 |
| 13:00 | 0 | 215 | 35 | 3 | 5 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 261 |
| 14:00 | 0 | 287 | 72 | **4** | **10** | **4** | 0 | 0 | **2** | 0 | 0 | 0 | 0 | 379 |
| 15:00 | 2 | 327 | **85** | 3 | 7 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 426 |
| 16:00 | 0 | **355** | 58 | 0 | 7 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 423 |
| 17:00 | 1 | 349 | 68 | 1 | 7 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | **2** | **430** |
| 18:00 | 0 | 339 | 62 | 0 | 10 | 0 | 0 | 3 | 1 | 0 | 0 | 0 | 1 | 416 |
| 19:00 | 0 | 257 | 43 | 0 | 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 308 |
| 20:00 | 1 | 224 | 39 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 267 |
| 21:00 | 0 | 139 | 29 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 170 |
| 22:00 | 0 | 93 | 22 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 117 |
| 23:00 | 1 | 44 | 10 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 56 |
| Day Total | 12 | 4336 | 929 | 27 | 121 | 8 | 1 | 30 | 11 | 0 | 0 | 0 | 4 | 5479 |
| Percent | 0.2% | 79.1% | 17.0% | 0.5% | 2.2% | 0.1% | 0.0% | 0.5% | 0.2% | 0.0% | 0.0% | 0.0% | 0.1% | |
| AM Peak | 06:00 | 07:00 | 07:00 | 09:00 | 08:00 | 10:00 | 07:00 | 10:00 | 07:00 | | | | | 07:00 |
| Vol. | 2 | 320 | 73 | 4 | 10 | 2 | 1 | 4 | 2 | | | | | 408 |
| PM Peak | 12:00 | 16:00 | 15:00 | 14:00 | 14:00 | 14:00 | | 12:00 | 14:00 | | | | 17:00 | 17:00 |
| Vol. | 2 | 355 | 85 | 4 | 10 | 4 | | 3 | 2 | | | | 2 | 430 |

# McMahon Associates, Inc.

Transportation Engineers and Planners
425 Commerce Drive, Suite 200
Fort Washington, PA

Municipality: Cheltenham Township
Comments: None
Weather: Variable
Operator/ATR #: NDB/11135

Site Code: 00000000000000000000
Station ID: 00000000000000000000
Ashbourne Road east of
Oak Lane Road
Latitude: 0' 0.000 Undefined

Eastbound

| Start Time | Bikes | Cars & Trailers | 2 Axle Long | Buses | 2 Axle 6 Tire | 3 Axle Single | 4 Axle Single | <5 Axl Double | 5 Axle Double | >6 Axl Double | <6 Axl Multi | 6 Axle Multi | >6 Axl Multi | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 04/20/11 | 0 | 29 | 7 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 37 |
| 01:00 | 0 | 9 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 14 |
| 02:00 | **1** | 8 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 11 |
| 03:00 | 0 | 11 | 3 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 15 |
| 04:00 | 0 | 22 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 24 |
| 05:00 | 1 | 43 | 18 | 0 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 68 |
| 06:00 | 0 | 185 | 38 | 0 | 3 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 227 |
| 07:00 | 0 | **314** | **66** | 1 | 12 | 0 | 0 | 1 | **2** | 0 | **1** | 0 | 0 | **397** |
| 08:00 | 1 | 297 | 60 | **3** | **15** | 0 | 0 | 2 | 0 | 0 | 0 | 0 | **1** | 379 |
| 09:00 | 1 | 202 | 55 | 3 | 9 | **1** | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 273 |
| 10:00 | 1 | 197 | 42 | 2 | 6 | 0 | 0 | 2 | 1 | 0 | 0 | 0 | 0 | 251 |
| 11:00 | 0 | 175 | 59 | 1 | 11 | 0 | 0 | **3** | 1 | 0 | 0 | 0 | 1 | 251 |
| 12 PM | 0 | 205 | 42 | 2 | 5 | 0 | 0 | 2 | 1 | 0 | 0 | 0 | 0 | 257 |
| 13:00 | 0 | 227 | 53 | **4** | 12 | 0 | 0 | 0 | **2** | 0 | 0 | 0 | **1** | 299 |
| 14:00 | 1 | 229 | 72 | 3 | **14** | **2** | 0 | 3 | 1 | 0 | 0 | 0 | 0 | 325 |
| 15:00 | **2** | 320 | 67 | 1 | 12 | 2 | 0 | 2 | 1 | 0 | 0 | 0 | 0 | 407 |
| 16:00 | 1 | 335 | 57 | 1 | 9 | 0 | 0 | **4** | 0 | 0 | 0 | 0 | 0 | 407 |
| 17:00 | 0 | **341** | **74** | 1 | 10 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | **428** |
| 18:00 | 0 | 329 | 65 | 0 | 7 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 403 |
| 19:00 | 0 | 302 | 54 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 358 |
| 20:00 | 0 | 214 | 47 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 263 |
| 21:00 | 0 | 151 | 16 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 167 |
| 22:00 | 0 | 101 | 19 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 121 |
| 23:00 | 1 | 57 | 11 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 70 |
| Day Total | 10 | 4303 | 933 | 23 | 139 | 5 | 0 | 26 | 9 | 0 | 1 | 0 | 3 | 5452 |
| Percent | 0.2% | 78.9% | 17.1% | 0.4% | 2.5% | 0.1% | 0.0% | 0.5% | 0.2% | 0.0% | 0.0% | 0.0% | 0.1% | |
| AM Peak | 02:00 | 07:00 | 07:00 | 08:00 | 08:00 | 09:00 | | 11:00 | 07:00 | | 07:00 | | 08:00 | 07:00 |
| Vol. | 1 | 314 | 66 | 3 | 15 | 1 | | 3 | 2 | | 1 | | 1 | 397 |
| PM Peak | 15:00 | 17:00 | 17:00 | 13:00 | 14:00 | 14:00 | | 16:00 | 13:00 | | | | 13:00 | 17:00 |
| Vol. | 2 | 341 | 74 | 4 | 14 | 2 | | 4 | 2 | | | | 1 | 428 |

# McMahon Associates, Inc.

Transportation Engineers and Planners
425 Commerce Drive, Suite 200
Fort Washington, PA

Municipality: Cheltenham Township
Comments: None
Weather: Variable
Operator/ATR #: NDB/11135

Site Code: 00000000000000000000
Station ID: 00000000000000000000
Ashbourne Road east of
Oak Lane Road
Latitude: 0' 0.000 Undefined

Eastbound

| Start Time | Bikes | Cars & Trailers | 2 Axle Long | Buses | 2 Axle 6 Tire | 3 Axle Single | 4 Axle Single | <5 Axl Double | 5 Axle Double | >6 Axl Double | <6 Axl Multi | 6 Axle Multi | >6 Axl Multi | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 04/21/11 | 0 | 28 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 30 |
| 01:00 | 0 | 16 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 22 |
| 02:00 | 0 | 9 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 11 |
| 03:00 | 0 | 5 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 |
| 04:00 | 0 | 14 | 5 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 20 |
| 05:00 | 0 | 52 | 15 | 1 | 5 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 74 |
| 06:00 | **1** | 169 | 40 | 0 | 5 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 216 |
| 07:00 | 0 | **323** | 69 | 2 | **20** | 0 | 0 | 4 | 1 | **1** | 0 | 0 | 0 | **420** |
| 08:00 | 1 | 270 | **75** | 2 | 18 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 368 |
| 09:00 | 1 | 195 | 46 | **3** | 9 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 256 |
| 10:00 | 0 | 218 | 46 | 3 | 4 | **2** | 0 | 1 | **2** | 0 | 0 | 0 | 0 | 276 |
| 11:00 | 0 | 153 | 29 | 2 | 9 | 0 | **1** | **9** | 0 | 0 | 0 | 0 | 0 | 203 |
| 12 PM | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 13:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 14:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 15:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 16:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 17:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 18:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 19:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 20:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 21:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 22:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 23:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| Day Total | 3 | 1452 | 336 | 13 | 71 | 3 | 1 | 18 | 4 | 1 | 0 | 0 | 0 | 1902 |
| Percent | 0.2% | 76.3% | 17.7% | 0.7% | 3.7% | 0.2% | 0.1% | 0.9% | 0.2% | 0.1% | 0.0% | 0.0% | 0.0% | |
| AM Peak | 06:00 | 07:00 | 08:00 | 09:00 | 07:00 | 10:00 | 11:00 | 11:00 | 10:00 | 07:00 | | | | 07:00 |
| Vol. | 1 | 323 | 75 | 3 | 20 | 2 | 1 | 9 | 2 | 1 | | | | 420 |
| PM Peak Vol. | | | | | | | | | | | | | | |
| Grand Total | 39 | 13024 | 2785 | 77 | 413 | 17 | 3 | 90 | 29 | 1 | 1 | 0 | 7 | 16486 |
| Percent | 0.2% | 79.0% | 16.9% | 0.5% | 2.5% | 0.1% | 0.0% | 0.5% | 0.2% | 0.0% | 0.0% | 0.0% | 0.0% | |

# McMahon Associates, Inc.

Transportation Engineers and Planners
425 Commerce Drive, Suite 200
Fort Washington, PA

Municipality: Cheltenham Township
Comments: None
Weather: Variable
Operator/ATR #: NDB/11135

Site Code: 00000000000000000000
Station ID: 00000000000000000000
Ashbourne Road east of
Oak Lane Road
Latitude: 0' 0.000 Undefined

Westbound

| Start Time | Bikes | Cars & Trailers | 2 Axle Long | Buses | 2 Axle 6 Tire | 3 Axle Single | 4 Axle Single | <5 Axl Double | 5 Axle Double | >6 Axl Double | <6 Axl Multi | 6 Axle Multi | >6 Axl Multi | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 04/18/11 | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 01:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 02:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 03:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 04:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 05:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 06:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 07:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 08:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 09:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 10:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 11:00 | **1** | **222** | **55** | 0 | **6** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **284** |
| 12 PM | **3** | 212 | 60 | 1 | 9 | **1** | 0 | 1 | **1** | 0 | 0 | 0 | 0 | 288 |
| 13:00 | 2 | 192 | 49 | 3 | 11 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 257 |
| 14:00 | 0 | 250 | 69 | 2 | 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 331 |
| 15:00 | 3 | 335 | **89** | **5** | 10 | 0 | 0 | **3** | 0 | 0 | 0 | 0 | 0 | 445 |
| 16:00 | 3 | **360** | 69 | 0 | 11 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 445 |
| 17:00 | 2 | 360 | 69 | 1 | **13** | 0 | 0 | 3 | 1 | 0 | 0 | 0 | 0 | **449** |
| 18:00 | 1 | 316 | 52 | 0 | 5 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 376 |
| 19:00 | 2 | 194 | 32 | 1 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 234 |
| 20:00 | 3 | 184 | 24 | 1 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 216 |
| 21:00 | 3 | 134 | 18 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 156 |
| 22:00 | 0 | 61 | 12 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 76 |
| 23:00 | 0 | 30 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 35 |
| Day Total | 23 | 2850 | 603 | 14 | 88 | 1 | 0 | 11 | 2 | 0 | 0 | 0 | 0 | 3592 |
| Percent | 0.6% | 79.3% | 16.8% | 0.4% | 2.4% | 0.0% | 0.0% | 0.3% | 0.1% | 0.0% | 0.0% | 0.0% | 0.0% | |
| AM Peak | 11:00 | 11:00 | 11:00 | | 11:00 | | | | | | | | | 11:00 |
| Vol. | 1 | 222 | 55 | | 6 | | | | | | | | | 284 |
| PM Peak | 12:00 | 16:00 | 15:00 | 15:00 | 17:00 | 12:00 | | 15:00 | 12:00 | | | | | 17:00 |
| Vol. | 3 | 360 | 89 | 5 | 13 | 1 | | 3 | 1 | | | | | 449 |

# McMahon Associates, Inc.

Transportation Engineers and Planners
425 Commerce Drive, Suite 200
Fort Washington, PA

Municipality: Cheltenham Township
Comments: None
Weather: Variable
Operator/ATR #: NDB/11135

Site Code: 00000000000000000000
Station ID: 00000000000000000000
Ashbourne Road east of
Oak Lane Road
Latitude: 0' 0.000 Undefined

Westbound

| Start Time | Bikes | Cars & Trailers | 2 Axle Long | Buses | 2 Axle 6 Tire | 3 Axle Single | 4 Axle Single | <5 Axl Double | 5 Axle Double | >6 Axl Double | <6 Axl Multi | 6 Axle Multi | >6 Axl Multi | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 04/19/11 | 0 | 24 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 29 |
| 01:00 | 0 | 6 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9 |
| 02:00 | 0 | 5 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 |
| 03:00 | 0 | 7 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9 |
| 04:00 | 0 | 10 | 8 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 19 |
| 05:00 | 1 | 55 | 14 | 2 | 8 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 81 |
| 06:00 | **2** | 197 | 52 | 1 | 8 | 0 | **1** | 0 | 0 | 0 | 0 | 0 | 0 | 261 |
| 07:00 | 2 | 374 | 85 | 0 | **17** | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 480 |
| 08:00 | 1 | **419** | **100** | 1 | 10 | 0 | 1 | **6** | **1** | **1** | 0 | 0 | 0 | **540** |
| 09:00 | 1 | 274 | 68 | **4** | 8 | **1** | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 359 |
| 10:00 | 1 | 207 | 66 | 0 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 277 |
| 11:00 | 1 | 173 | 48 | 0 | 4 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 228 |
| 12 PM | 2 | 201 | 55 | 3 | 7 | **1** | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 272 |
| 13:00 | 0 | 222 | 51 | 1 | 7 | 0 | **2** | 0 | **1** | 0 | 0 | 0 | 0 | 284 |
| 14:00 | 2 | 259 | 79 | 3 | **10** | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 355 |
| 15:00 | 2 | 294 | 71 | **5** | 9 | 1 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 385 |
| 16:00 | 1 | **427** | **119** | 1 | 5 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | **555** |
| 17:00 | 2 | 407 | 78 | 0 | 6 | 1 | 0 | **4** | 0 | 0 | 0 | 0 | 0 | 498 |
| 18:00 | **4** | 372 | 69 | 0 | 6 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 452 |
| 19:00 | 1 | 234 | 34 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 274 |
| 20:00 | 2 | 186 | 31 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 221 |
| 21:00 | 1 | 132 | 28 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 164 |
| 22:00 | 0 | 79 | 13 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 95 |
| 23:00 | 0 | 43 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 46 |
| Day Total | 26 | 4607 | 1084 | 22 | 119 | 5 | 6 | 25 | 5 | 1 | 0 | 0 | 0 | 5900 |
| Percent | 0.4% | 78.1% | 18.4% | 0.4% | 2.0% | 0.1% | 0.1% | 0.4% | 0.1% | 0.0% | 0.0% | 0.0% | 0.0% | |
| AM Peak | 06:00 | 08:00 | 08:00 | 09:00 | 07:00 | 09:00 | 06:00 | 08:00 | 08:00 | 08:00 | | | | 08:00 |
| Vol. | 2 | 419 | 100 | 4 | 17 | 1 | 1 | 6 | 1 | 1 | | | | 540 |
| PM Peak | 18:00 | 16:00 | 16:00 | 15:00 | 14:00 | 12:00 | 13:00 | 17:00 | 13:00 | | | | | 16:00 |
| Vol. | 4 | 427 | 119 | 5 | 10 | 1 | 2 | 4 | 1 | | | | | 555 |

# McMahon Associates, Inc.

Transportation Engineers and Planners
425 Commerce Drive, Suite 200
Fort Washington, PA

Municipality: Cheltenham Township
Comments: None
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Operator/ATR #: NDB/11135

Site Code: 00000000000000000000
Station ID: 00000000000000000000
Ashbourne Road east of
Oak Lane Road
Latitude: 0' 0.000 Undefined

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| Start Time | Bikes | Cars & Trailers | 2 Axle Long | Buses | 2 Axle 6 Tire | 3 Axle Single | 4 Axle Single | <5 Axl Double | 5 Axle Double | >6 Axl Double | <6 Axl Multi | 6 Axle Multi | >6 Axl Multi | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 04/20/11 | 0 | 21 | 3 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 25 |
| 01:00 | 0 | 10 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 12 |
| 02:00 | 0 | 11 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 13 |
| 03:00 | 1 | 5 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 10 |
| 04:00 | 0 | 6 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 12 |
| 05:00 | 1 | 52 | 14 | 0 | 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 75 |
| 06:00 | 1 | 185 | 55 | 2 | 5 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 250 |
| 07:00 | 1 | 361 | 83 | 2 | 11 | 0 | 0 | **4** | **1** | **2** | 0 | 0 | **1** | 466 |
| 08:00 | **5** | **410** | **106** | **3** | 8 | 0 | **1** | 4 | 0 | 0 | 0 | 0 | 1 | **538** |
| 09:00 | 1 | 316 | 105 | 3 | **17** | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 445 |
| 10:00 | 3 | 198 | 60 | 3 | 7 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 274 |
| 11:00 | 2 | 179 | 53 | 1 | 7 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 244 |
| 12 PM | 0 | 221 | 48 | 0 | 12 | **1** | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 285 |
| 13:00 | 1 | 208 | 55 | 4 | 8 | 0 | 1 | 2 | **1** | 0 | 0 | 0 | 0 | 280 |
| 14:00 | 1 | 279 | 71 | 3 | 10 | 0 | **2** | 0 | 0 | 0 | 0 | 0 | 0 | 366 |
| 15:00 | 2 | 304 | 85 | **5** | 11 | 0 | 0 | 4 | 1 | 0 | 0 | 0 | 0 | 412 |
| 16:00 | 0 | 393 | 88 | 0 | **14** | 1 | 0 | **6** | 0 | 0 | 0 | 0 | 0 | 502 |
| 17:00 | **3** | **433** | **89** | 0 | 11 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **536** |
| 18:00 | 2 | 310 | 48 | 0 | 4 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 366 |
| 19:00 | 2 | 248 | 38 | 0 | 4 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 293 |
| 20:00 | 0 | 177 | 34 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 214 |
| 21:00 | 2 | 155 | 25 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 187 |
| 22:00 | 0 | 99 | 11 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 112 |
| 23:00 | 0 | 34 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 38 |
| Day Total | 28 | 4615 | 1089 | 26 | 148 | 3 | 5 | 34 | 3 | 2 | 0 | 0 | 2 | 5955 |
| Percent | 0.5% | 77.5% | 18.3% | 0.4% | 2.5% | 0.1% | 0.1% | 0.6% | 0.1% | 0.0% | 0.0% | 0.0% | 0.0% | |
| AM Peak | 08:00 | 08:00 | 08:00 | 08:00 | 09:00 | | 08:00 | 07:00 | 07:00 | 07:00 | | | 07:00 | 08:00 |
| Vol. | 5 | 410 | 106 | 3 | 17 | | 1 | 4 | 1 | 2 | | | 1 | 538 |
| PM Peak | 17:00 | 17:00 | 17:00 | 15:00 | 16:00 | 12:00 | 14:00 | 16:00 | 13:00 | | | | | 17:00 |
| Vol. | 3 | 433 | 89 | 5 | 14 | 1 | 2 | 6 | 1 | | | | | 536 |

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Ashbourne Road east of
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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 04/21/11 | 0 | 21 | 1 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 24 |
| 01:00 | 0 | 15 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 18 |
| 02:00 | 0 | 6 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 |
| 03:00 | 0 | 3 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 |
| 04:00 | 0 | 5 | 10 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 16 |
| 05:00 | 2 | 51 | 15 | 0 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 74 |
| 06:00 | 2 | 192 | 48 | 1 | 6 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 251 |
| 07:00 | **3** | 380 | 68 | **2** | **13** | 0 | 0 | 3 | 0 | 0 | 0 | **2** | 0 | 471 |
| 08:00 | 1 | **432** | **106** | 2 | 13 | 0 | **1** | **8** | 0 | 0 | 0 | 0 | 0 | **563** |
| 09:00 | 3 | 305 | 82 | 2 | 4 | **1** | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 400 |
| 10:00 | 0 | 216 | 49 | 1 | 3 | 0 | 1 | 0 | **1** | 0 | 0 | 0 | 0 | 271 |
| 11:00 | 0 | 136 | 37 | 1 | 7 | 0 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 184 |
| 12 PM | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 13:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 14:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 15:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 16:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 17:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 18:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 19:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 20:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 21:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 22:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 23:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| Day Total | 11 | 1762 | 421 | 10 | 54 | 1 | 3 | 18 | 1 | 0 | 0 | 2 | 0 | 2283 |
| Percent | 0.5% | 77.2% | 18.4% | 0.4% | 2.4% | 0.0% | 0.1% | 0.8% | 0.0% | 0.0% | 0.0% | 0.1% | 0.0% | |
| AM Peak | 07:00 | 08:00 | 08:00 | 07:00 | 07:00 | 09:00 | 08:00 | 08:00 | 10:00 | | | 07:00 | | 08:00 |
| Vol. | 3 | 432 | 106 | 2 | 13 | 1 | 1 | 8 | 1 | | | 2 | | 563 |
| PM Peak Vol. | | | | | | | | | | | | | | |
| Grand Total | 88 | 13834 | 3197 | 72 | 409 | 10 | 14 | 88 | 11 | 3 | 0 | 2 | 2 | 17730 |
| Percent | 0.5% | 78.0% | 18.0% | 0.4% | 2.3% | 0.1% | 0.1% | 0.5% | 0.1% | 0.0% | 0.0% | 0.0% | 0.0% | |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 04/18/11 | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 01:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 02:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 03:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 04:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 05:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 06:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 07:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 08:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 09:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 10:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 11:00 | 0 | **146** | **36** | **1** | **5** | **1** | 0 | **1** | 0 | 0 | 0 | 0 | 0 | **190** |
| 12 PM | 0 | 159 | 41 | **2** | 9 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 212 |
| 13:00 | 1 | 191 | 45 | 2 | 8 | 0 | 0 | **2** | 0 | 0 | 0 | 0 | 0 | 249 |
| 14:00 | 0 | 170 | **51** | 2 | **19** | 0 | 0 | 1 | **2** | 0 | 0 | 0 | 0 | 245 |
| 15:00 | 0 | 169 | 35 | 1 | 13 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 219 |
| 16:00 | **2** | 211 | 46 | 1 | 4 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 266 |
| 17:00 | 0 | **236** | 30 | 0 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **273** |
| 18:00 | 0 | 134 | 17 | 0 | 5 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 157 |
| 19:00 | 0 | 115 | 16 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 134 |
| 20:00 | 0 | 99 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 105 |
| 21:00 | 0 | 67 | 13 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 81 |
| 22:00 | 0 | 68 | 6 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 76 |
| 23:00 | 0 | 22 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 25 |
| Day Total | 3 | 1787 | 345 | 9 | 75 | 1 | 0 | 9 | 3 | 0 | 0 | 0 | 0 | 2232 |
| Percent | 0.1% | 80.1% | 15.5% | 0.4% | 3.4% | 0.0% | 0.0% | 0.4% | 0.1% | 0.0% | 0.0% | 0.0% | 0.0% | |
| AM Peak | | 11:00 | 11:00 | 11:00 | 11:00 | 11:00 | | 11:00 | | | | | | 11:00 |
| Vol. | | 146 | 36 | 1 | 5 | 1 | | 1 | | | | | | 190 |
| PM Peak | 16:00 | 17:00 | 14:00 | 12:00 | 14:00 | | | 13:00 | 14:00 | | | | | 17:00 |
| Vol. | 2 | 236 | 51 | 2 | 19 | | | 2 | 2 | | | | | 273 |

# McMahon Associates, Inc.

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 04/19/11 | 0 | 10 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 11 |
| 01:00 | 0 | 9 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 10 |
| 02:00 | 0 | 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 8 |
| 03:00 | 0 | 5 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 7 |
| 04:00 | 0 | 8 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9 |
| 05:00 | 0 | 34 | 19 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 54 |
| 06:00 | **1** | 125 | 47 | 0 | 7 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 181 |
| 07:00 | 0 | **188** | 33 | 1 | 9 | 1 | 0 | **2** | **2** | 0 | 0 | 0 | 0 | **236** |
| 08:00 | 1 | 167 | **50** | **4** | **11** | 0 | 0 | 2 | 0 | 0 | 0 | 0 | **1** | 236 |
| 09:00 | 0 | 146 | 42 | 2 | 9 | 2 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 202 |
| 10:00 | 1 | 138 | 42 | 1 | 6 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 190 |
| 11:00 | 0 | 161 | 43 | 3 | 10 | **3** | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 221 |
| 12 PM | 0 | 211 | 41 | 1 | 9 | 0 | 0 | 1 | **1** | 0 | 0 | 0 | 0 | **264** |
| 13:00 | 1 | 203 | 39 | 2 | **15** | **1** | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 262 |
| 14:00 | 1 | 182 | **50** | **4** | 14 | 0 | 0 | **3** | 0 | 0 | 0 | 0 | 0 | 254 |
| 15:00 | 0 | 179 | 40 | 3 | 14 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 237 |
| 16:00 | **4** | 208 | 44 | 0 | 4 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 263 |
| 17:00 | 2 | **225** | 33 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 263 |
| 18:00 | 0 | 204 | 28 | 0 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 238 |
| 19:00 | 0 | 135 | 16 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 152 |
| 20:00 | 2 | 93 | 8 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 106 |
| 21:00 | 0 | 76 | 11 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 87 |
| 22:00 | 0 | 65 | 5 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 71 |
| 23:00 | 0 | 27 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 28 |
| Day Total | 13 | 2807 | 595 | 21 | 124 | 7 | 0 | 18 | 4 | 0 | 0 | 0 | 1 | 3590 |
| Percent | 0.4% | 78.2% | 16.6% | 0.6% | 3.5% | 0.2% | 0.0% | 0.5% | 0.1% | 0.0% | 0.0% | 0.0% | 0.0% | |
| AM Peak | 06:00 | 07:00 | 08:00 | 08:00 | 08:00 | 11:00 | | 07:00 | 07:00 | | | | 08:00 | 07:00 |
| Vol. | 1 | 188 | 50 | 4 | 11 | 3 | | 2 | 2 | | | | 1 | 236 |
| PM Peak | 16:00 | 17:00 | 14:00 | 14:00 | 13:00 | 13:00 | | 14:00 | 12:00 | | | | | 12:00 |
| Vol. | 4 | 225 | 50 | 4 | 15 | 1 | | 3 | 1 | | | | | 264 |

# McMahon Associates, Inc.

Transportation Engineers and Planners
425 Commerce Drive, Suite 200
Fort Washington, PA

Municipality: Cheltenham Township
Comments: None
Weather: Variable
ATR # / Operator: 11134/NDB

Site Code: 00000000000000000000
Station ID:
Oak Lane Road south of
Ashbourne Road
Latitude: 0' 0.000 Undefined

Northbound

| Start Time | Bikes | Cars & Trailers | 2 Axle Long | Buses | 2 Axle 6 Tire | 3 Axle Single | 4 Axle Single | <5 Axl Double | 5 Axle Double | >6 Axl Double | <6 Axl Multi | 6 Axle Multi | >6 Axl Multi | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 04/20/11 | 0 | 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 10 |
| 01:00 | 0 | 9 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9 |
| 02:00 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| 03:00 | 0 | 5 | 1 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 8 |
| 04:00 | 0 | 8 | 2 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 12 |
| 05:00 | 0 | 36 | 11 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 51 |
| 06:00 | 0 | 117 | **38** | 0 | 9 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 165 |
| 07:00 | 0 | 163 | 26 | 1 | 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 198 |
| 08:00 | 0 | **194** | 36 | **3** | 11 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | **246** |
| 09:00 | 0 | 142 | 29 | 2 | 8 | 0 | 0 | 1 | **2** | 0 | 0 | 0 | 0 | 184 |
| 10:00 | 0 | 140 | 30 | 0 | **12** | 0 | 0 | **2** | 0 | 0 | 0 | 0 | 0 | 184 |
| 11:00 | 0 | 150 | 34 | 0 | 11 | **1** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 196 |
| 12 PM | 0 | 160 | 34 | 1 | **10** | 0 | 0 | 2 | **2** | 0 | 0 | 0 | 0 | 209 |
| 13:00 | 0 | 171 | 33 | 2 | 10 | **1** | 0 | 2 | 1 | 0 | 0 | 0 | 0 | 220 |
| 14:00 | 0 | 154 | **41** | **4** | 6 | 0 | 0 | **4** | 0 | 0 | 0 | 0 | 0 | 209 |
| 15:00 | 0 | 205 | 33 | 0 | 5 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 244 |
| 16:00 | 0 | 184 | 41 | 1 | 8 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 236 |
| 17:00 | 0 | **236** | 28 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **266** |
| 18:00 | 0 | 167 | 21 | 2 | 4 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 195 |
| 19:00 | 0 | 114 | 16 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 131 |
| 20:00 | 0 | 67 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 74 |
| 21:00 | 0 | 83 | 14 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 97 |
| 22:00 | 0 | 65 | 7 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 74 |
| 23:00 | 0 | 31 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 35 |
| Day Total | 0 | 2613 | 486 | 16 | 113 | 2 | 0 | 16 | 9 | 0 | 0 | 0 | 0 | 3255 |
| Percent | 0.0% | 80.3% | 14.9% | 0.5% | 3.5% | 0.1% | 0.0% | 0.5% | 0.3% | 0.0% | 0.0% | 0.0% | 0.0% | |
| AM Peak | | 08:00 | 06:00 | 08:00 | 10:00 | 11:00 | | 10:00 | 09:00 | | | | | 08:00 |
| Vol. | | 194 | 38 | 3 | 12 | 1 | | 2 | 2 | | | | | 246 |
| PM Peak | | 17:00 | 14:00 | 14:00 | 12:00 | 13:00 | | 14:00 | 12:00 | | | | | 17:00 |
| Vol. | | 236 | 41 | 4 | 10 | 1 | | 4 | 2 | | | | | 266 |

# McMahon Associates, Inc.

Transportation Engineers and Planners
425 Commerce Drive, Suite 200
Fort Washington, PA

Municipality: Cheltenham Township
Comments: None
Weather: Variable
ATR # / Operator: 11134/NDB

Site Code: 00000000000000000000
Station ID:
Oak Lane Road south of
Ashbourne Road
Latitude: 0' 0.000 Undefined

Northbound

| Start Time | Bikes | Cars & Trailers | 2 Axle Long | Buses | 2 Axle 6 Tire | 3 Axle Single | 4 Axle Single | <5 Axl Double | 5 Axle Double | >6 Axl Double | <6 Axl Multi | 6 Axle Multi | >6 Axl Multi | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 04/21/11 | 0 | 15 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 17 |
| 01:00 | 0 | 13 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 15 |
| 02:00 | 0 | 6 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 |
| 03:00 | 0 | 4 | 1 | 0 | 1 | 0 | 0 | **1** | 0 | 0 | 0 | 0 | 0 | 7 |
| 04:00 | 0 | 8 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 11 |
| 05:00 | 0 | 35 | 12 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 49 |
| 06:00 | 0 | 131 | 44 | **2** | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 183 |
| 07:00 | 0 | **137** | **47** | 2 | **7** | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | **194** |
| 08:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 09:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 10:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 11:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 12 PM | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 13:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 14:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 15:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 16:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 17:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 18:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 19:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 20:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 21:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 22:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 23:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| Day Total | 0 | 349 | 111 | 5 | 16 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 483 |
| Percent | 0.0% | 72.3% | 23.0% | 1.0% | 3.3% | 0.0% | 0.0% | 0.4% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | |
| AM Peak | | 07:00 | 07:00 | 06:00 | 07:00 | | | 03:00 | | | | | | 07:00 |
| Vol. | | 137 | 47 | 2 | 7 | | | 1 | | | | | | 194 |
| PM Peak | | | | | | | | | | | | | | |
| Vol. | | | | | | | | | | | | | | |
| Grand Total | 16 | 7556 | 1537 | 51 | 328 | 10 | 0 | 45 | 16 | 0 | 0 | 0 | 1 | 9560 |
| Percent | 0.2% | 79.0% | 16.1% | 0.5% | 3.4% | 0.1% | 0.0% | 0.5% | 0.2% | 0.0% | 0.0% | 0.0% | 0.0% | |

# McMahon Associates, Inc.

Transportation Engineers and Planners
425 Commerce Drive, Suite 200
Fort Washington, PA

Municipality: Cheltenham Township
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ATR # / Operator: 11134/NDB

Site Code: 00000000000000000000
Station ID:
Oak Lane Road south of
Ashbourne Road
Latitude: 0' 0.000 Undefined

Southbound

| Start Time | Bikes | Cars & Trailers | 2 Axle Long | Buses | 2 Axle 6 Tire | 3 Axle Single | 4 Axle Single | <5 Axl Double | 5 Axle Double | >6 Axl Double | <6 Axl Multi | 6 Axle Multi | >6 Axl Multi | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 04/18/11 | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 01:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 02:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 03:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 04:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 05:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 06:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 07:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 08:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 09:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 10:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 11:00 | **2** | **144** | **50** | **3** | **5** | **1** | **1** | **1** | **1** | 0 | 0 | 0 | **1** | **209** |
| 12 PM | 0 | 235 | 49 | **3** | 14 | 0 | 0 | 2 | **1** | 0 | 0 | 0 | **1** | 305 |
| 13:00 | 0 | 180 | 40 | 0 | 6 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 228 |
| 14:00 | 0 | 207 | 47 | 2 | **19** | **1** | 0 | 2 | 1 | 0 | 0 | 0 | 0 | 279 |
| 15:00 | **1** | 253 | **67** | 1 | 16 | 0 | 0 | **4** | 1 | 0 | 0 | 0 | 0 | 343 |
| 16:00 | 0 | 267 | 64 | 0 | 17 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 351 |
| 17:00 | 1 | **302** | 45 | 0 | 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **356** |
| 18:00 | 0 | 169 | 29 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 200 |
| 19:00 | 0 | 129 | 17 | 0 | 6 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 153 |
| 20:00 | 0 | 86 | 11 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 98 |
| 21:00 | 0 | 78 | 11 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 90 |
| 22:00 | 0 | 41 | 7 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 49 |
| 23:00 | 0 | 42 | 5 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 48 |
| Day Total | 4 | 2133 | 442 | 9 | 96 | 2 | 1 | 15 | 5 | 0 | 0 | 0 | 2 | 2709 |
| Percent | 0.1% | 78.7% | 16.3% | 0.3% | 3.5% | 0.1% | 0.0% | 0.6% | 0.2% | 0.0% | 0.0% | 0.0% | 0.1% | |
| AM Peak | 11:00 | 11:00 | 11:00 | 11:00 | 11:00 | 11:00 | 11:00 | 11:00 | 11:00 | | | | 11:00 | 11:00 |
| Vol. | 2 | 144 | 50 | 3 | 5 | 1 | 1 | 1 | 1 | | | | 1 | 209 |
| PM Peak | 15:00 | 17:00 | 15:00 | 12:00 | 14:00 | 14:00 | | 15:00 | 12:00 | | | | 12:00 | 17:00 |
| Vol. | 1 | 302 | 67 | 3 | 19 | 1 | | 4 | 1 | | | | 1 | 356 |

# McMahon Associates, Inc.

Transportation Engineers and Planners
425 Commerce Drive, Suite 200
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Municipality: Cheltenham Township
Comments: None
Weather: Variable
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Site Code: 00000000000000000000
Station ID:
Oak Lane Road south of
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Southbound

| Start Time | Bikes | Cars & Trailers | 2 Axle Long | Buses | 2 Axle 6 Tire | 3 Axle Single | 4 Axle Single | <5 Axl Double | 5 Axle Double | >6 Axl Double | <6 Axl Multi | 6 Axle Multi | >6 Axl Multi | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 04/19/11 | 0 | 17 | 2 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 20 |
| 01:00 | 0 | 13 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 15 |
| 02:00 | 0 | 8 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9 |
| 03:00 | 0 | 5 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 |
| 04:00 | 0 | 10 | 2 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 14 |
| 05:00 | 0 | 30 | 11 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 42 |
| 06:00 | 0 | 121 | 37 | 2 | 9 | **1** | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 172 |
| 07:00 | 0 | **249** | 43 | 1 | 9 | 0 | 0 | 2 | **3** | 0 | 0 | 0 | 0 | **307** |
| 08:00 | 0 | 169 | **55** | 2 | **13** | 0 | **1** | 2 | 1 | 0 | 0 | 0 | 0 | 243 |
| 09:00 | 0 | 184 | 46 | 1 | 12 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 245 |
| 10:00 | **1** | 174 | 52 | 3 | 10 | 0 | 0 | **3** | 0 | 0 | 0 | 0 | 0 | 243 |
| 11:00 | 0 | 168 | 43 | **4** | 10 | 1 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 229 |
| 12 PM | 0 | 245 | 58 | **2** | 12 | 0 | 0 | 3 | **1** | 0 | 0 | 0 | 0 | 321 |
| 13:00 | 1 | 182 | 53 | 1 | **15** | 0 | 0 | **4** | 1 | 0 | 0 | 0 | 0 | 257 |
| 14:00 | 2 | 205 | 30 | 0 | 9 | **1** | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 249 |
| 15:00 | 3 | 233 | 47 | 1 | 13 | 0 | 0 | 2 | 0 | 0 | 0 | **1** | 0 | 300 |
| 16:00 | **4** | 269 | **59** | 0 | 12 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 345 |
| 17:00 | 4 | **330** | 41 | 0 | 9 | 0 | 0 | 2 | 0 | **1** | 0 | 0 | 0 | **387** |
| 18:00 | 1 | 213 | 39 | 0 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 259 |
| 19:00 | 1 | 140 | 22 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 166 |
| 20:00 | 0 | 79 | 9 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 88 |
| 21:00 | 0 | 91 | 12 | 0 | 2 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 106 |
| 22:00 | 0 | 44 | 6 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 52 |
| 23:00 | 0 | 35 | 5 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 42 |
| Day Total | 17 | 3214 | 675 | 17 | 152 | 4 | 1 | 23 | 12 | 1 | 0 | 1 | 0 | 4117 |
| Percent | 0.4% | 78.1% | 16.4% | 0.4% | 3.7% | 0.1% | 0.0% | 0.6% | 0.3% | 0.0% | 0.0% | 0.0% | 0.0% | |
| AM Peak | 10:00 | 07:00 | 08:00 | 11:00 | 08:00 | 06:00 | 08:00 | 10:00 | 07:00 | | | | | 07:00 |
| Vol. | 1 | 249 | 55 | 4 | 13 | 1 | 1 | 3 | 3 | | | | | 307 |
| PM Peak | 16:00 | 17:00 | 16:00 | 12:00 | 13:00 | 14:00 | | 13:00 | 12:00 | 17:00 | | 15:00 | | 17:00 |
| Vol. | 4 | 330 | 59 | 2 | 15 | 1 | | 4 | 1 | 1 | | 1 | | 387 |

# McMahon Associates, Inc.

Transportation Engineers and Planners
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Comments: None
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Southbound

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 04/20/11 | 0 | 19 | 6 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 26 |
| 01:00 | 0 | 14 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 15 |
| 02:00 | 0 | 11 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 11 |
| 03:00 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| 04:00 | 0 | 8 | 1 | 0 | 4 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 14 |
| 05:00 | 0 | 30 | 12 | 1 | 0 | **2** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 45 |
| 06:00 | 0 | 117 | 26 | 1 | 9 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 154 |
| 07:00 | 0 | **237** | 39 | 1 | 11 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | **289** |
| 08:00 | 0 | 172 | 48 | **2** | 12 | 1 | 0 | 1 | **2** | 0 | 0 | 0 | 0 | 238 |
| 09:00 | 0 | 189 | 43 | 0 | **14** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 246 |
| 10:00 | 0 | 150 | 38 | 0 | 11 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 201 |
| 11:00 | 0 | 151 | **50** | 1 | 7 | 0 | 0 | **2** | 0 | 0 | 0 | 0 | 0 | 211 |
| 12 PM | 0 | 189 | 55 | 1 | 15 | 0 | 0 | **3** | 1 | 0 | 0 | 0 | 0 | 264 |
| 13:00 | 0 | 172 | 32 | **3** | 10 | **1** | 0 | 2 | **3** | 0 | 0 | **1** | 0 | 224 |
| 14:00 | 0 | 180 | 60 | 2 | 9 | 1 | 0 | 3 | 1 | 0 | 0 | 0 | 0 | 256 |
| 15:00 | 0 | 226 | 56 | 1 | **17** | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 302 |
| 16:00 | 0 | 249 | **70** | 2 | 13 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 335 |
| 17:00 | 0 | **315** | 46 | 0 | 8 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | **372** |
| 18:00 | 0 | 178 | 22 | 1 | 4 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 207 |
| 19:00 | 0 | 116 | 24 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 144 |
| 20:00 | 0 | 98 | 19 | 1 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 121 |
| 21:00 | 0 | 68 | 15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 83 |
| 22:00 | 0 | 58 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 64 |
| 23:00 | 0 | 46 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 50 |
| Day Total | 0 | 2995 | 673 | 17 | 152 | 6 | 0 | 19 | 11 | 0 | 0 | 1 | 0 | 3874 |
| Percent | 0.0% | 77.3% | 17.4% | 0.4% | 3.9% | 0.2% | 0.0% | 0.5% | 0.3% | 0.0% | 0.0% | 0.0% | 0.0% | |
| AM Peak | | 07:00 | 11:00 | 08:00 | 09:00 | 05:00 | | 11:00 | 08:00 | | | | | 07:00 |
| Vol. | | 237 | 50 | 2 | 14 | 2 | | 2 | 2 | | | | | 289 |
| PM Peak | | 17:00 | 16:00 | 13:00 | 15:00 | 13:00 | | 12:00 | 13:00 | | | 13:00 | | 17:00 |
| Vol. | | 315 | 70 | 3 | 17 | 1 | | 3 | 3 | | | 1 | | 372 |

# McMahon Associates, Inc.

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 04/21/11 | 0 | 17 | 2 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 20 |
| 01:00 | 0 | 16 | 2 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 19 |
| 02:00 | 0 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 |
| 03:00 | 0 | 4 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 |
| 04:00 | 0 | 6 | 4 | 0 | 2 | 0 | 0 | **1** | 0 | 0 | 0 | 0 | 0 | 13 |
| 05:00 | 0 | 29 | 7 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 37 |
| 06:00 | 0 | 116 | 45 | **1** | 4 | **1** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 167 |
| 07:00 | 0 | **206** | **49** | 1 | **8** | 0 | 0 | 0 | **2** | 0 | 0 | 0 | 0 | **266** |
| 08:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 09:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 10:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 11:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 12 PM | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 13:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 14:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 15:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 16:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 17:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 18:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 19:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 20:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 21:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 22:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 23:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| Day Total | 0 | 400 | 110 | 2 | 17 | 1 | 0 | 1 | 2 | 0 | 0 | 0 | 0 | 533 |
| Percent | 0.0% | 75.0% | 20.6% | 0.4% | 3.2% | 0.2% | 0.0% | 0.2% | 0.4% | 0.0% | 0.0% | 0.0% | 0.0% | |
| AM Peak | | 07:00 | 07:00 | 06:00 | 07:00 | 06:00 | | 04:00 | 07:00 | | | | | 07:00 |
| Vol. | | 206 | 49 | 1 | 8 | 1 | | 1 | 2 | | | | | 266 |
| PM Peak | | | | | | | | | | | | | | |
| Vol. | | | | | | | | | | | | | | |
| Grand Total | 21 | 8742 | 1900 | 45 | 417 | 13 | 2 | 58 | 30 | 1 | 0 | 2 | 2 | 11233 |
| Percent | 0.2% | 77.8% | 16.9% | 0.4% | 3.7% | 0.1% | 0.0% | 0.5% | 0.3% | 0.0% | 0.0% | 0.0% | 0.0% | |

# McMahon Associates, Inc.

Transportation Engineers and Planners
425 Commerce Drive, Suite 200
Fort Washington, PA

Municipality: Cheltenham Township
Comments: None
Weather: Variable
ATR # / Operator: 11135/NDB

Site Code: 00000000000000000000
Station ID: 00000000000000000000
Ashbourne Road east of
Oak Lane Road
Latitude: 0' 0.000 Undefined

Eastbound

| Start Time | 0 15 | 16 20 | 21 25 | 26 30 | 31 35 | 36 40 | 41 45 | 46 50 | 51 55 | 56 60 | 61 65 | 66 70 | 71 75 | Total | 85th Percent | 95th Percent |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 04/18/11 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 01:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 02:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 03:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 04:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 05:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 06:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 07:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 08:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 09:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 10:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 11:00 | **2** | **1** | **18** | **17** | **53** | **102** | **55** | **15** | **5** | 0 | **1** | 0 | 0 | **269** | 44 | 48 |
| 12 PM | 1 | 1 | 2 | 17 | 63 | 118 | 51 | 11 | 2 | 0 | 0 | 0 | 0 | 266 | 43 | 45 |
| 13:00 | 1 | 2 | 4 | 9 | 78 | 122 | 52 | 16 | 3 | 1 | 0 | 0 | 0 | 288 | 43 | 47 |
| 14:00 | 2 | 0 | 0 | 12 | 79 | 147 | 64 | 19 | **6** | 0 | 0 | 0 | 0 | 329 | 44 | 48 |
| 15:00 | 3 | 1 | 0 | 6 | 83 | 169 | 94 | 16 | 1 | 0 | 0 | 0 | 0 | 373 | 43 | 45 |
| 16:00 | **7** | 3 | 0 | **25** | 108 | 179 | **96** | **25** | 2 | 1 | 0 | 0 | 0 | **446** | 43 | 47 |
| 17:00 | 2 | 0 | 1 | 17 | **121** | **201** | 76 | 23 | 4 | 0 | 0 | 0 | 0 | 445 | 43 | 46 |
| 18:00 | 1 | 5 | 4 | 10 | 91 | 147 | 79 | 21 | 3 | 0 | 0 | 0 | 0 | 361 | 44 | 47 |
| 19:00 | 2 | 5 | **7** | 22 | 74 | 128 | 78 | 8 | 3 | 1 | 0 | 0 | 0 | 328 | 43 | 45 |
| 20:00 | 6 | **6** | 0 | 12 | 55 | 121 | 43 | 13 | 3 | 0 | 0 | 0 | 0 | 259 | 43 | 46 |
| 21:00 | 2 | 2 | 2 | 4 | 27 | 58 | 34 | 11 | 0 | **2** | 0 | 0 | 0 | 142 | 44 | 48 |
| 22:00 | 1 | 0 | 0 | 3 | 36 | 41 | 18 | 6 | 1 | 0 | **1** | 0 | 0 | 107 | 43 | 47 |
| 23:00 | 0 | 0 | 0 | 1 | 7 | 12 | 17 | 3 | 0 | 0 | 0 | 0 | 0 | 40 | 44 | 46 |
| Total | 30 | 26 | 38 | 155 | 875 | 1545 | 757 | 187 | 33 | 5 | 2 | 0 | 0 | 3653 | | |
| Percent | 0.8% | 0.7% | 1.0% | 4.2% | 24.0% | 42.3% | 20.7% | 5.1% | 0.9% | 0.1% | 0.1% | 0.0% | 0.0% | | | |
| AM Peak | 11:00 | 11:00 | 11:00 | 11:00 | 11:00 | 11:00 | 11:00 | 11:00 | 11:00 | | 11:00 | | | 11:00 | | |
| Vol. | 2 | 1 | 18 | 17 | 53 | 102 | 55 | 15 | 5 | | 1 | | | 269 | | |
| PM Peak | 16:00 | 20:00 | 19:00 | 16:00 | 17:00 | 17:00 | 16:00 | 16:00 | 14:00 | 21:00 | 22:00 | | | 16:00 | | |
| Vol. | 7 | 6 | 7 | 25 | 121 | 201 | 96 | 25 | 6 | 2 | 1 | | | 446 | | |

# McMahon Associates, Inc.

Transportation Engineers and Planners
425 Commerce Drive, Suite 200
Fort Washington, PA

Municipality: Cheltenham Township
Comments: None
Weather: Variable
ATR # / Operator: 11135/NDB

Site Code: 00000000000000000000
Station ID: 00000000000000000000
Ashbourne Road east of
Oak Lane Road
Latitude: 0' 0.000 Undefined

Eastbound

| Start Time | 0 15 | 16 20 | 21 25 | 26 30 | 31 35 | 36 40 | 41 45 | 46 50 | 51 55 | 56 60 | 61 65 | 66 70 | 71 75 | Total | 85th Percent | 95th Percent |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 04/19/11 | 0 | 0 | 0 | 1 | 6 | 15 | 6 | 1 | 0 | 0 | 0 | 0 | 0 | 29 | 42 | 45 |
| 01:00 | 0 | 0 | 0 | 0 | 5 | 11 | 4 | 1 | 0 | 0 | 0 | 0 | 0 | 21 | 42 | 44 |
| 02:00 | 0 | 0 | 0 | 0 | 0 | 6 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 40 | 41 |
| 03:00 | 0 | 0 | 0 | 0 | 1 | 2 | 2 | 0 | 0 | 1 | 0 | 0 | 0 | 6 | 42 | 56 |
| 04:00 | 1 | 0 | 0 | 0 | 2 | 3 | 4 | 3 | 0 | 1 | 0 | 0 | 0 | 14 | 47 | 48 |
| 05:00 | 1 | 0 | 0 | 0 | 6 | 25 | 20 | 11 | 1 | 1 | 1 | 0 | 0 | 66 | 47 | 50 |
| 06:00 | 3 | 1 | 0 | 3 | 42 | 82 | 66 | 22 | 4 | **2** | 0 | 0 | 0 | 225 | 45 | 49 |
| 07:00 | 2 | 1 | 5 | 24 | **121** | 132 | **92** | 21 | **5** | 0 | **3** | 0 | **1** | **407** | 44 | 48 |
| 08:00 | 2 | 0 | 0 | 24 | 105 | **142** | 62 | 16 | 2 | 0 | 0 | 0 | 0 | 353 | 43 | 45 |
| 09:00 | 3 | 0 | 0 | 12 | 81 | 124 | 62 | **25** | 2 | 0 | 0 | 0 | 0 | 309 | 44 | 48 |
| 10:00 | **5** | 0 | 2 | 15 | 57 | 78 | 54 | 9 | 2 | 0 | 0 | 0 | 0 | 222 | 43 | 45 |
| 11:00 | 3 | **18** | **11** | **28** | 74 | 93 | 51 | 13 | 2 | 1 | 0 | **1** | 0 | 295 | 43 | 46 |
| 12 PM | 1 | 3 | 1 | 15 | 76 | 107 | 58 | 7 | 2 | 1 | 0 | 0 | 0 | 271 | 43 | 45 |
| 13:00 | 1 | 0 | 2 | 19 | 70 | 112 | 48 | 5 | 3 | 0 | **1** | 0 | 0 | 261 | 42 | 45 |
| 14:00 | 0 | 1 | 2 | 9 | 96 | **186** | 66 | 13 | 3 | **2** | 0 | **1** | 0 | 379 | 43 | 45 |
| 15:00 | 2 | 4 | **5** | 25 | 121 | 173 | 80 | 12 | **4** | 0 | 0 | 0 | 0 | 426 | 42 | 45 |
| 16:00 | 6 | 2 | 3 | 20 | **122** | 181 | 69 | 19 | 0 | 1 | 0 | 0 | 0 | 423 | 42 | 45 |
| 17:00 | 6 | 5 | 1 | **26** | 115 | 170 | **83** | **21** | 1 | 1 | 0 | 1 | 0 | **430** | 43 | 46 |
| 18:00 | **8** | **6** | 5 | 21 | 117 | 165 | 70 | 21 | 3 | 0 | 0 | 0 | 0 | 416 | 43 | 46 |
| 19:00 | 0 | 4 | 0 | 17 | 58 | 133 | 81 | 13 | 1 | 1 | 0 | 0 | 0 | 308 | 44 | 45 |
| 20:00 | 3 | 4 | 2 | 17 | 56 | 122 | 52 | 9 | 1 | 1 | 0 | 0 | 0 | 267 | 43 | 45 |
| 21:00 | 0 | 1 | 0 | 8 | 43 | 67 | 42 | 7 | 1 | 1 | 0 | 0 | 0 | 170 | 43 | 45 |
| 22:00 | 0 | 0 | 0 | 2 | 34 | 56 | 15 | 7 | 3 | 0 | 0 | 0 | 0 | 117 | 43 | 47 |
| 23:00 | 0 | 1 | 0 | 4 | 16 | 12 | 17 | 5 | 1 | 0 | 0 | 0 | 0 | 56 | 45 | 48 |
| Total | 47 | 51 | 39 | 290 | 1424 | 2197 | 1105 | 261 | 41 | 14 | 5 | 3 | 1 | 5478 | | |
| Percent | 0.9% | 0.9% | 0.7% | 5.3% | 26.0% | 40.1% | 20.2% | 4.8% | 0.7% | 0.3% | 0.1% | 0.1% | 0.0% | | | |
| AM Peak | 10:00 | 11:00 | 11:00 | 11:00 | 07:00 | 08:00 | 07:00 | 09:00 | 07:00 | 06:00 | 07:00 | 11:00 | 07:00 | 07:00 | | |
| Vol. | 5 | 18 | 11 | 28 | 121 | 142 | 92 | 25 | 5 | 2 | 3 | 1 | 1 | 407 | | |
| PM Peak | 18:00 | 18:00 | 15:00 | 17:00 | 16:00 | 14:00 | 17:00 | 17:00 | 15:00 | 14:00 | 13:00 | 14:00 | | 17:00 | | |
| Vol. | 8 | 6 | 5 | 26 | 122 | 186 | 83 | 21 | 4 | 2 | 1 | 1 | | 430 | | |

# McMahon Associates, Inc.

Transportation Engineers and Planners
425 Commerce Drive, Suite 200
Fort Washington, PA

Municipality: Cheltenham Township
Comments: None
Weather: Variable
ATR # / Operator: 11135/NDB

Site Code: 00000000000000000000
Station ID: 00000000000000000000
Ashbourne Road east of
Oak Lane Road
Latitude: 0' 0.000 Undefined

Eastbound

| Start Time | 0 15 | 16 20 | 21 25 | 26 30 | 31 35 | 36 40 | 41 45 | 46 50 | 51 55 | 56 60 | 61 65 | 66 70 | 71 75 | Total | 85th Percent | 95th Percent |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 04/20/11 | 0 | 0 | 0 | 0 | 5 | 16 | 11 | 4 | 1 | 0 | 0 | 0 | 0 | 37 | 45 | 48 |
| 01:00 | 0 | 0 | 0 | 0 | 2 | 4 | 5 | 2 | 0 | **1** | 0 | 0 | 0 | 14 | 46 | 47 |
| 02:00 | 1 | 0 | 0 | 0 | 2 | 1 | 4 | 2 | 1 | 0 | 0 | 0 | 0 | 11 | 46 | 47 |
| 03:00 | 2 | 0 | 0 | 1 | 6 | 4 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 15 | 39 | 50 |
| 04:00 | 0 | 1 | 0 | 1 | 1 | 6 | 10 | 5 | 0 | 0 | 0 | 0 | 0 | 24 | 46 | 49 |
| 05:00 | 1 | 1 | 0 | 0 | 6 | 23 | 21 | 11 | 3 | 1 | 1 | 0 | 0 | 68 | 48 | 52 |
| 06:00 | 0 | 0 | 0 | 8 | 29 | 89 | 81 | 14 | **5** | 0 | 0 | 0 | 0 | 226 | 45 | 48 |
| 07:00 | 2 | 0 | **8** | **35** | **107** | 127 | **96** | 17 | 5 | 0 | 0 | 0 | 0 | **397** | 43 | 46 |
| 08:00 | 2 | 0 | 0 | 23 | 98 | **168** | 72 | 14 | 2 | 0 | 0 | 0 | 0 | 379 | 43 | 45 |
| 09:00 | 1 | 1 | 0 | 11 | 53 | 114 | 68 | **21** | 2 | 0 | **2** | 0 | 0 | 273 | 44 | 48 |
| 10:00 | **3** | **4** | 3 | 10 | 54 | 101 | 59 | 14 | 2 | 1 | 0 | 0 | 0 | 251 | 44 | 47 |
| 11:00 | 1 | 0 | 0 | 4 | 52 | 122 | 51 | 15 | 4 | 1 | 1 | 0 | 0 | 251 | 44 | 48 |
| 12 PM | 1 | 1 | 0 | 10 | 68 | 119 | 46 | 9 | **3** | 0 | 0 | 0 | 0 | 257 | 42 | 45 |
| 13:00 | 6 | 1 | 1 | 18 | 85 | 107 | 63 | 16 | 0 | **2** | 0 | 0 | 0 | 299 | 43 | 46 |
| 14:00 | 2 | **3** | **2** | 16 | 85 | 139 | 68 | 8 | 2 | 0 | 0 | 0 | 0 | 325 | 43 | 45 |
| 15:00 | **9** | 1 | 1 | 25 | 115 | 150 | 87 | 16 | 3 | 0 | 0 | 0 | 0 | 407 | 43 | 45 |
| 16:00 | 4 | 2 | 0 | **27** | 106 | 161 | **88** | **18** | 1 | 0 | 0 | 0 | 0 | 407 | 43 | 45 |
| 17:00 | 7 | 3 | 2 | 21 | **147** | **166** | 67 | 14 | 1 | 0 | 0 | 0 | 0 | **428** | 42 | 45 |
| 18:00 | 2 | 3 | 0 | 27 | 130 | 162 | 68 | 10 | 1 | 0 | 0 | 0 | 0 | 403 | 42 | 45 |
| 19:00 | 4 | 3 | 0 | 15 | 106 | 161 | 56 | 13 | 0 | 0 | 0 | 0 | 0 | 358 | 42 | 45 |
| 20:00 | 2 | 1 | 2 | 21 | 75 | 117 | 34 | 7 | 3 | 1 | 0 | 0 | 0 | 263 | 41 | 45 |
| 21:00 | 2 | 1 | 0 | 7 | 31 | 79 | 38 | 8 | 1 | 0 | 0 | 0 | 0 | 167 | 43 | 46 |
| 22:00 | 0 | 0 | 0 | 2 | 31 | 53 | 20 | 12 | 0 | 2 | **1** | 0 | 0 | 121 | 45 | 49 |
| 23:00 | 0 | 0 | 0 | 2 | 8 | 29 | 21 | 8 | 2 | 0 | 0 | 0 | 0 | 70 | 45 | 48 |
| Total | 52 | 26 | 19 | 284 | 1402 | 2218 | 1134 | 259 | 43 | 9 | 5 | 0 | 0 | 5451 | | |
| Percent | 1.0% | 0.5% | 0.3% | 5.2% | 25.7% | 40.7% | 20.8% | 4.8% | 0.8% | 0.2% | 0.1% | 0.0% | 0.0% | | | |
| AM Peak | 10:00 | 10:00 | 07:00 | 07:00 | 07:00 | 08:00 | 07:00 | 09:00 | 06:00 | 01:00 | 09:00 | | | 07:00 | | |
| Vol. | 3 | 4 | 8 | 35 | 107 | 168 | 96 | 21 | 5 | 1 | 2 | | | 397 | | |
| PM Peak | 15:00 | 14:00 | 14:00 | 16:00 | 17:00 | 17:00 | 16:00 | 16:00 | 12:00 | 13:00 | 22:00 | | | 17:00 | | |
| Vol. | 9 | 3 | 2 | 27 | 147 | 166 | 88 | 18 | 3 | 2 | 1 | | | 428 | | |

# McMahon Associates, Inc.

Transportation Engineers and Planners
425 Commerce Drive, Suite 200
Fort Washington, PA

Municipality: Cheltenham Township
Comments: None
Weather: Variable
ATR # / Operator: 11135/NDB

Site Code: 00000000000000000000
Station ID: 00000000000000000000
Ashbourne Road east of
Oak Lane Road
Latitude: 0' 0.000 Undefined

Eastbound

| Start Time | 0 15 | 16 20 | 21 25 | 26 30 | 31 35 | 36 40 | 41 45 | 46 50 | 51 55 | 56 60 | 61 65 | 66 70 | 71 75 | Total | 85th Percent | 95th Percent |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 04/21/11 | 0 | 0 | 0 | 0 | 6 | 13 | 9 | 1 | 0 | 1 | 0 | 0 | 0 | 30 | 43 | 45 |
| 01:00 | 1 | 0 | 0 | 0 | 5 | 8 | 5 | 2 | 1 | 0 | 0 | 0 | 0 | 22 | 45 | 47 |
| 02:00 | 0 | 1 | 0 | 0 | 0 | 6 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 11 | 42 | 43 |
| 03:00 | 0 | 0 | 0 | 0 | 0 | 4 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 41 | 42 |
| 04:00 | 0 | 0 | 1 | 0 | 5 | 7 | 3 | 3 | 1 | 0 | 0 | 0 | 0 | 20 | 46 | 48 |
| 05:00 | 1 | 0 | 0 | 1 | 4 | 26 | 30 | 5 | **5** | **2** | 0 | 0 | 0 | 74 | 46 | 53 |
| 06:00 | 1 | 0 | 0 | 6 | 30 | 87 | 59 | **27** | 4 | 2 | 0 | 0 | 0 | 216 | 46 | 49 |
| 07:00 | 2 | 1 | **10** | 27 | 104 | **183** | 69 | 23 | 0 | 0 | 0 | 0 | 0 | **419** | 43 | 46 |
| 08:00 | 1 | **3** | 5 | **29** | **115** | 125 | 68 | 18 | 4 | 0 | 0 | 0 | 0 | 368 | 43 | 46 |
| 09:00 | **3** | 0 | 1 | 14 | 36 | 105 | **77** | 15 | 4 | 1 | 0 | 0 | 0 | 256 | 44 | 48 |
| 10:00 | 2 | 2 | 1 | 9 | 71 | 111 | 66 | 8 | 4 | 1 | 0 | 0 | 0 | 275 | 43 | 45 |
| 11:00 | 1 | 0 | 1 | 9 | 43 | 85 | 50 | 11 | 3 | 0 | 0 | 0 | 0 | 203 | 44 | 47 |
| 12 PM | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 13:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 14:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 15:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 16:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 17:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 18:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 19:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 20:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 21:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 22:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 23:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| Total | 12 | 7 | 19 | 95 | 419 | 760 | 442 | 113 | 26 | 7 | 0 | 0 | 0 | 1900 | | |
| Percent | 0.6% | 0.4% | 1.0% | 5.0% | 22.1% | 40.0% | 23.3% | 5.9% | 1.4% | 0.4% | 0.0% | 0.0% | 0.0% | | | |
| AM Peak | 09:00 | 08:00 | 07:00 | 08:00 | 08:00 | 07:00 | 09:00 | 06:00 | 05:00 | 05:00 | | | | 07:00 | | |
| Vol. | 3 | 3 | 10 | 29 | 115 | 183 | 77 | 27 | 5 | 2 | | | | 419 | | |
| PM Peak Vol. | | | | | | | | | | | | | | | | |
| Grand Total | 141 | 110 | 115 | 824 | 4120 | 6720 | 3438 | 820 | 143 | 35 | 12 | 3 | 1 | 16482 | | |
| Percent | 0.9% | 0.7% | 0.7% | 5.0% | 25.0% | 40.8% | 20.9% | 5.0% | 0.9% | 0.2% | 0.1% | 0.0% | 0.0% | | | |

| | |
|---|---|
| 15th Percentile : | 32 MPH |
| 50th Percentile : | 38 MPH |
| 85th Percentile : | 43 MPH |
| 95th Percentile : | 47 MPH |

Stats

| | |
|---|---|
| 10 MPH Pace Speed : | 31-40 MPH |
| Number in Pace : | 10840 |
| Percent in Pace : | 65.8% |
| Number of Vehicles > 55 MPH : | 51 |
| Percent of Vehicles > 55 MPH : | 0.3% |
| Mean Speed(Average) : | 37 MPH |

# McMahon Associates, Inc.

Transportation Engineers and Planners
425 Commerce Drive, Suite 200
Fort Washington, PA

Municipality: Cheltenham Township
Comments: None
Weather: Variable
ATR # / Operator: 11135/NDB

Site Code: 00000000000000000000
Station ID: 00000000000000000000
Ashbourne Road east of
Oak Lane Road
Latitude: 0' 0.000 Undefined

Westbound

| Start Time | 0 15 | 16 20 | 21 25 | 26 30 | 31 35 | 36 40 | 41 45 | 46 50 | 51 55 | 56 60 | 61 65 | 66 70 | 71 75 | Total | 85th Percent | 95th Percent |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 04/18/11 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 01:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 02:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 03:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 04:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 05:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 06:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 07:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 08:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 09:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 10:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 11:00 | 0 | **1** | 0 | **8** | **67** | **136** | **49** | **21** | **1** | **1** | 0 | 0 | 0 | **284** | 43 | 47 |
| 12 PM | 6 | 1 | 2 | 5 | 53 | 133 | 71 | 16 | 1 | 0 | 0 | 0 | 0 | 288 | 44 | 46 |
| 13:00 | 4 | **3** | 5 | 17 | 50 | 118 | 48 | 12 | 0 | 0 | 0 | 0 | 0 | 257 | 43 | 45 |
| 14:00 | 3 | 0 | 7 | 17 | 73 | 133 | 80 | 13 | **5** | 0 | 0 | 0 | 0 | 331 | 43 | 46 |
| 15:00 | 4 | 1 | 6 | **44** | 109 | 190 | 76 | 11 | 3 | **1** | 0 | 0 | 0 | 445 | 42 | 45 |
| 16:00 | 6 | 1 | 11 | 17 | 116 | 178 | **95** | **18** | 3 | 0 | 0 | 0 | 0 | 445 | 43 | 45 |
| 17:00 | 2 | 1 | **14** | 31 | 113 | **197** | 81 | 9 | 1 | 0 | 0 | 0 | 0 | **449** | 42 | 45 |
| 18:00 | 3 | 1 | 2 | 19 | **119** | 160 | 59 | 10 | 2 | 0 | 0 | 0 | **1** | 376 | 42 | 45 |
| 19:00 | **10** | 0 | 2 | 13 | 53 | 74 | 64 | 14 | 4 | 0 | 0 | 0 | 0 | 234 | 44 | 47 |
| 20:00 | 10 | 0 | 1 | 12 | 69 | 82 | 35 | 5 | 1 | 1 | 0 | 0 | 0 | 216 | 42 | 45 |
| 21:00 | 0 | 0 | 1 | 9 | 41 | 66 | 28 | 5 | 3 | 1 | **2** | 0 | 0 | 156 | 43 | 48 |
| 22:00 | 0 | 1 | 0 | 4 | 23 | 29 | 16 | 0 | 3 | 0 | 0 | 0 | 0 | 76 | 43 | 45 |
| 23:00 | 0 | 0 | 0 | 2 | 2 | 13 | 10 | 6 | 2 | 0 | 0 | 0 | 0 | 35 | 47 | 50 |
| Total | 48 | 10 | 51 | 198 | 888 | 1509 | 712 | 140 | 29 | 4 | 2 | 0 | 1 | 3592 | | |
| Percent | 1.3% | 0.3% | 1.4% | 5.5% | 24.7% | 42.0% | 19.8% | 3.9% | 0.8% | 0.1% | 0.1% | 0.0% | 0.0% | | | |
| AM Peak | | 11:00 | | 11:00 | 11:00 | 11:00 | 11:00 | 11:00 | 11:00 | 11:00 | | | | 11:00 | | |
| Vol. | | 1 | | 8 | 67 | 136 | 49 | 21 | 1 | 1 | | | | 284 | | |
| PM Peak | 19:00 | 13:00 | 17:00 | 15:00 | 18:00 | 17:00 | 16:00 | 16:00 | 14:00 | 15:00 | 21:00 | | 18:00 | 17:00 | | |
| Vol. | 10 | 3 | 14 | 44 | 119 | 197 | 95 | 18 | 5 | 1 | 2 | | 1 | 449 | | |

# McMahon Associates, Inc.

Transportation Engineers and Planners
425 Commerce Drive, Suite 200
Fort Washington, PA

Municipality: Cheltenham Township
Comments: None
Weather: Variable
ATR # / Operator: 11135/NDB

Site Code: 00000000000000000000
Station ID: 00000000000000000000
Ashbourne Road east of
Oak Lane Road
Latitude: 0' 0.000 Undefined

Westbound

| Start Time | 0 15 | 16 20 | 21 25 | 26 30 | 31 35 | 36 40 | 41 45 | 46 50 | 51 55 | 56 60 | 61 65 | 66 70 | 71 75 | Total | 85th Percent | 95th Percent |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 04/19/11 | 0 | 0 | 0 | 2 | 8 | 6 | 11 | 1 | 1 | 0 | 0 | 0 | 0 | 29 | 44 | 50 |
| 01:00 | 0 | 0 | 1 | 0 | 5 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 9 | 37 | 41 |
| 02:00 | 0 | 0 | 0 | 0 | 0 | 2 | 3 | 0 | 2 | 0 | 0 | 0 | 0 | 7 | 51 | 52 |
| 03:00 | 0 | 0 | 0 | 0 | 3 | 4 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 9 | 45 | 46 |
| 04:00 | 0 | 0 | 1 | 1 | 2 | 9 | 2 | 3 | 0 | **1** | 0 | 0 | 0 | 19 | 46 | 48 |
| 05:00 | 1 | 0 | 0 | 2 | 14 | 25 | 32 | 7 | 0 | 0 | 0 | 0 | 0 | 81 | 45 | 47 |
| 06:00 | 3 | 0 | 1 | 4 | 34 | 121 | 68 | **24** | **4** | 1 | 0 | **1** | 0 | 261 | 45 | 49 |
| 07:00 | **11** | 5 | 8 | **76** | 132 | **170** | 66 | 11 | 0 | 0 | 0 | 0 | 0 | 479 | 41 | 44 |
| 08:00 | 11 | **11** | **31** | 72 | **185** | 154 | 63 | 11 | 2 | 0 | 0 | 0 | 0 | **540** | 40 | 44 |
| 09:00 | 1 | 4 | 0 | 10 | 112 | 145 | **76** | 9 | 2 | 0 | 0 | 0 | 0 | 359 | 43 | 45 |
| 10:00 | 3 | 1 | 7 | 15 | 84 | 99 | 54 | 12 | 2 | 0 | 0 | 0 | 0 | 277 | 43 | 45 |
| 11:00 | 4 | 2 | 1 | 12 | 60 | 89 | 48 | 9 | 2 | 1 | 0 | 0 | 0 | 228 | 43 | 46 |
| 12 PM | 2 | 1 | 3 | 11 | 64 | 116 | 60 | 13 | 2 | 0 | 0 | 0 | 0 | 272 | 43 | 46 |
| 13:00 | 2 | 1 | 2 | 20 | 69 | 114 | 62 | 11 | 1 | 1 | 0 | 0 | 0 | 283 | 43 | 45 |
| 14:00 | 2 | 0 | 2 | 21 | 110 | 152 | 58 | 6 | **3** | 0 | 0 | 0 | 0 | 354 | 42 | 45 |
| 15:00 | **11** | **2** | 2 | 26 | 100 | 162 | 65 | 15 | 0 | 0 | 0 | 0 | 0 | 383 | 42 | 45 |
| 16:00 | 5 | 0 | 3 | **66** | **163** | **211** | **95** | 10 | 2 | 0 | 0 | 0 | 0 | **555** | 42 | 45 |
| 17:00 | 9 | 0 | 2 | 64 | 163 | 195 | 56 | 8 | 1 | 0 | 0 | 0 | 0 | 498 | 40 | 44 |
| 18:00 | 6 | 0 | **6** | 29 | 142 | 181 | 63 | **22** | 3 | 0 | 0 | 0 | 0 | 452 | 42 | 46 |
| 19:00 | 3 | 1 | 4 | 17 | 78 | 116 | 39 | 15 | 1 | 0 | 0 | 0 | 0 | 274 | 42 | 46 |
| 20:00 | 2 | 1 | 4 | 21 | 67 | 98 | 23 | 5 | 0 | 0 | 0 | 0 | 0 | 221 | 40 | 44 |
| 21:00 | 2 | 1 | 3 | 10 | 42 | 67 | 25 | 10 | 3 | 0 | 0 | **1** | 0 | 164 | 43 | 48 |
| 22:00 | 1 | 0 | 1 | 6 | 22 | 33 | 22 | 7 | 1 | **2** | 0 | 0 | 0 | 95 | 44 | 48 |
| 23:00 | 0 | 1 | 0 | 1 | 14 | 15 | 15 | 0 | 0 | 0 | 0 | 0 | 0 | 46 | 43 | 45 |
| Total | 79 | 31 | 82 | 486 | 1673 | 2286 | 1008 | 210 | 32 | 6 | 0 | 2 | 0 | 5895 | | |
| Percent | 1.3% | 0.5% | 1.4% | 8.2% | 28.4% | 38.8% | 17.1% | 3.6% | 0.5% | 0.1% | 0.0% | 0.0% | 0.0% | | | |
| AM Peak | 07:00 | 08:00 | 08:00 | 07:00 | 08:00 | 07:00 | 09:00 | 06:00 | 06:00 | 04:00 | | 06:00 | | 08:00 | | |
| Vol. | 11 | 11 | 31 | 76 | 185 | 170 | 76 | 24 | 4 | 1 | | 1 | | 540 | | |
| PM Peak | 15:00 | 15:00 | 18:00 | 16:00 | 16:00 | 16:00 | 16:00 | 18:00 | 14:00 | 22:00 | | 21:00 | | 16:00 | | |
| Vol. | 11 | 2 | 6 | 66 | 163 | 211 | 95 | 22 | 3 | 2 | | 1 | | 555 | | |

# McMahon Associates, Inc.

Transportation Engineers and Planners
425 Commerce Drive, Suite 200
Fort Washington, PA

Municipality: Cheltenham Township
Comments: None
Weather: Variable
ATR # / Operator: 11135/NDB

Site Code: 00000000000000000000
Station ID: 00000000000000000000
Ashbourne Road east of
Oak Lane Road
Latitude: 0' 0.000 Undefined

Westbound

| Start Time | 0 15 | 16 20 | 21 25 | 26 30 | 31 35 | 36 40 | 41 45 | 46 50 | 51 55 | 56 60 | 61 65 | 66 70 | 71 75 | Total | 85th Percent | 95th Percent |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 04/20/11 | 0 | 0 | 0 | 0 | 3 | 11 | 8 | 3 | 0 | 0 | 0 | 0 | 0 | 25 | 44 | 47 |
| 01:00 | 0 | 0 | 0 | 0 | 2 | 3 | 6 | 1 | 0 | 0 | 0 | 0 | 0 | 12 | 44 | 45 |
| 02:00 | 2 | 0 | 0 | 0 | 3 | 0 | 3 | 2 | 2 | 0 | **1** | 0 | 0 | 13 | 51 | 52 |
| 03:00 | 1 | 0 | 1 | 1 | 2 | 4 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 10 | 38 | 39 |
| 04:00 | 0 | 0 | 0 | 1 | 3 | 4 | 2 | 1 | 1 | 0 | 0 | 0 | 0 | 12 | 42 | 50 |
| 05:00 | 1 | 0 | 0 | 4 | 18 | 17 | 19 | 11 | **4** | 0 | 1 | 0 | 0 | 75 | 47 | 51 |
| 06:00 | 4 | 0 | 1 | 7 | 39 | 100 | 73 | **22** | 3 | 1 | 0 | 0 | 0 | 250 | 45 | 48 |
| 07:00 | **29** | **12** | **26** | **65** | 121 | 148 | 55 | 9 | 2 | 0 | 0 | 0 | 0 | 467 | 40 | 44 |
| 08:00 | 5 | 1 | 7 | 51 | **154** | **214** | 94 | 6 | 4 | **2** | 0 | 0 | 0 | **538** | 42 | 45 |
| 09:00 | 3 | 0 | 4 | 23 | 102 | 188 | **110** | 12 | 2 | 1 | 0 | 0 | 0 | 445 | 43 | 45 |
| 10:00 | 4 | 1 | 0 | 14 | 61 | 121 | 62 | 9 | 2 | 0 | 0 | 0 | 0 | 274 | 43 | 45 |
| 11:00 | 1 | 0 | 0 | 10 | 39 | 108 | 70 | 12 | 4 | 0 | 0 | 0 | 0 | 244 | 44 | 47 |
| 12 PM | 3 | 0 | 1 | 16 | 49 | 126 | 66 | 20 | **3** | 0 | 0 | 0 | 0 | 284 | 44 | 48 |
| 13:00 | 6 | 0 | 6 | 3 | 71 | 118 | 60 | 13 | 3 | 0 | 0 | 0 | 0 | 280 | 43 | 46 |
| 14:00 | 5 | **5** | 7 | 35 | 83 | 164 | 57 | 10 | 0 | 0 | 0 | 0 | 0 | 366 | 41 | 45 |
| 15:00 | 6 | 2 | 5 | 15 | 119 | 188 | 65 | 10 | 2 | 0 | 0 | 0 | 0 | 412 | 42 | 45 |
| 16:00 | **10** | 1 | 8 | 45 | **168** | 193 | 67 | 8 | 2 | 0 | 0 | 0 | 0 | 502 | 41 | 44 |
| 17:00 | 5 | 1 | **16** | **50** | 133 | **233** | **76** | 20 | 1 | **1** | 0 | 0 | 0 | **536** | 42 | 45 |
| 18:00 | 2 | 0 | 11 | 30 | 79 | 163 | 67 | 11 | 3 | 0 | 0 | 0 | 0 | 366 | 42 | 45 |
| 19:00 | 5 | 1 | 0 | 12 | 83 | 106 | 61 | **23** | 2 | 0 | 0 | 0 | 0 | 293 | 44 | 47 |
| 20:00 | 1 | 0 | 2 | 21 | 69 | 76 | 38 | 6 | 1 | 0 | 0 | 0 | 0 | 214 | 42 | 45 |
| 21:00 | 0 | 1 | 0 | 11 | 50 | 85 | 32 | 8 | 0 | 0 | 0 | 0 | 0 | 187 | 42 | 45 |
| 22:00 | 1 | 1 | 0 | 5 | 22 | 48 | 28 | 5 | 2 | 0 | 0 | 0 | 0 | 112 | 43 | 46 |
| 23:00 | 0 | 0 | 0 | 2 | 10 | 16 | 7 | 2 | 0 | 0 | **1** | 0 | 0 | 38 | 42 | 46 |
| Total | 94 | 26 | 95 | 421 | 1483 | 2434 | 1127 | 224 | 43 | 5 | 3 | 0 | 0 | 5955 | | |
| Percent | 1.6% | 0.4% | 1.6% | 7.1% | 24.9% | 40.9% | 18.9% | 3.8% | 0.7% | 0.1% | 0.1% | 0.0% | 0.0% | | | |
| AM Peak | 07:00 | 07:00 | 07:00 | 07:00 | 08:00 | 08:00 | 09:00 | 06:00 | 05:00 | 08:00 | 02:00 | | | 08:00 | | |
| Vol. | 29 | 12 | 26 | 65 | 154 | 214 | 110 | 22 | 4 | 2 | 1 | | | 538 | | |
| PM Peak | 16:00 | 14:00 | 17:00 | 17:00 | 16:00 | 17:00 | 17:00 | 19:00 | 12:00 | 17:00 | 23:00 | | | 17:00 | | |
| Vol. | 10 | 5 | 16 | 50 | 168 | 233 | 76 | 23 | 3 | 1 | 1 | | | 536 | | |

# McMahon Associates, Inc.

Transportation Engineers and Planners
425 Commerce Drive, Suite 200
Fort Washington, PA

Municipality: Cheltenham Township
Comments: None
Weather: Variable
ATR # / Operator: 11135/NDB

Site Code: 00000000000000000000
Station ID: 00000000000000000000
Ashbourne Road east of
Oak Lane Road
Latitude: 0' 0.000 Undefined

Westbound

| Start Time | 0 15 | 16 20 | 21 25 | 26 30 | 31 35 | 36 40 | 41 45 | 46 50 | 51 55 | 56 60 | 61 65 | 66 70 | 71 75 | Total | 85th Percent | 95th Percent |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 04/21/11 | 0 | 1 | 0 | 1 | 4 | 10 | 5 | 2 | 0 | 1 | 0 | 0 | 0 | 24 | 44 | 47 |
| 01:00 | 1 | 0 | 0 | 0 | 4 | 3 | 8 | 1 | 1 | 0 | 0 | 0 | 0 | 18 | 44 | 50 |
| 02:00 | 0 | 0 | 0 | 0 | 1 | 1 | 4 | 1 | 0 | 0 | 0 | 0 | 0 | 7 | 44 | 46 |
| 03:00 | 0 | 0 | 0 | 0 | 1 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 37 | 38 |
| 04:00 | 0 | 0 | 1 | 0 | 1 | 7 | 5 | 2 | 0 | 0 | 0 | 0 | 0 | 16 | 45 | 46 |
| 05:00 | 1 | 0 | 0 | 0 | 7 | 24 | 33 | 5 | **4** | 0 | 0 | 0 | 0 | 74 | 45 | 50 |
| 06:00 | 4 | 1 | 2 | 10 | 36 | 101 | **79** | 13 | 4 | 0 | **1** | 0 | 0 | 251 | 44 | 47 |
| 07:00 | **20** | **18** | **19** | 51 | 120 | 168 | 61 | 14 | 0 | 0 | 0 | 0 | 0 | 471 | 41 | 45 |
| 08:00 | 13 | 9 | 10 | **79** | **204** | **181** | 57 | 7 | 1 | **2** | 0 | 0 | 0 | **563** | 40 | 44 |
| 09:00 | 4 | 0 | 3 | 13 | 131 | 152 | 77 | **17** | 2 | 1 | 0 | 0 | 0 | 400 | 43 | 45 |
| 10:00 | 6 | 0 | 1 | 16 | 68 | 99 | 70 | 10 | 0 | 0 | 1 | 0 | 0 | 271 | 43 | 45 |
| 11:00 | 1 | 0 | 11 | 18 | 31 | 74 | 42 | 5 | 2 | 0 | 0 | 0 | 0 | 184 | 43 | 45 |
| 12 PM | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 13:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 14:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 15:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 16:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 17:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 18:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 19:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 20:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 21:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 22:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 23:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| Total | 50 | 29 | 47 | 188 | 608 | 823 | 441 | 77 | 14 | 4 | 2 | 0 | 0 | 2283 | | |
| Percent | 2.2% | 1.3% | 2.1% | 8.2% | 26.6% | 36.0% | 19.3% | 3.4% | 0.6% | 0.2% | 0.1% | 0.0% | 0.0% | | | |
| AM Peak | 07:00 | 07:00 | 07:00 | 08:00 | 08:00 | 08:00 | 06:00 | 09:00 | 05:00 | 08:00 | 06:00 | | | 08:00 | | |
| Vol. | 20 | 18 | 19 | 79 | 204 | 181 | 79 | 17 | 4 | 2 | 1 | | | 563 | | |
| PM Peak Vol. | | | | | | | | | | | | | | | | |
| Grand Total | 271 | 96 | 275 | 1293 | 4652 | 7052 | 3288 | 651 | 118 | 19 | 7 | 2 | 1 | 17725 | | |
| Percent | 1.5% | 0.5% | 1.6% | 7.3% | 26.2% | 39.8% | 18.6% | 3.7% | 0.7% | 0.1% | 0.0% | 0.0% | 0.0% | | | |

| | |
|---|---|
| 15th Percentile : | 31 MPH |
| 50th Percentile : | 37 MPH |
| 85th Percentile : | 43 MPH |
| 95th Percentile : | 45 MPH |

Stats

| | |
|---|---|
| 10 MPH Pace Speed : | 31-40 MPH |
| Number in Pace : | 11704 |
| Percent in Pace : | 66.0% |
| Number of Vehicles > 55 MPH : | 29 |
| Percent of Vehicles > 55 MPH : | 0.2% |
| Mean Speed(Average) : | 37 MPH |

# McMahon Associates, Inc.

Transportation Engineers and Planners
425 Commerce Drive, Suite 200
Fort Washington, PA

Municipality: Cheltenham Township
Comments: None
Weather: Variable
ATR # / Operator: 11134/NDB

Site Code: 00000000000000000000
Station ID:
Oak Lane Road south of
Ashbourne Road
Latitude: 0' 0.000 Undefined

Northbound

| Start Time | 0 15 | 16 20 | 21 25 | 26 30 | 31 35 | 36 40 | 41 45 | 46 50 | 51 55 | 56 60 | 61 65 | 66 70 | 71 75 | 76 9999 | Total | Pace Speed | Number in Pace |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 04/18/11 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 01:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 02:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 03:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 04:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 05:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 06:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 07:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 08:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 09:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 10:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 11:00 | **4** | **3** | **10** | **42** | **65** | **49** | **15** | **2** | 0 | 0 | 0 | 0 | 0 | 0 | **190** | 30-39 | 114 |
| 12 PM | 0 | 5 | 12 | 57 | 47 | 74 | 13 | 2 | **2** | 0 | 0 | 0 | 0 | 0 | 212 | 31-40 | 121 |
| 13:00 | 0 | 2 | 18 | 59 | 78 | 69 | **21** | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 249 | 31-40 | 147 |
| 14:00 | 0 | **6** | 26 | 74 | 68 | 59 | 10 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 245 | 26-35 | 142 |
| 15:00 | 0 | 4 | **27** | 54 | **90** | 32 | 10 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 219 | 26-35 | 144 |
| 16:00 | 1 | 2 | 26 | 65 | 90 | 61 | 18 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 266 | 26-35 | 155 |
| 17:00 | 0 | 0 | 13 | **77** | 76 | **84** | 18 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | **273** | 31-40 | 160 |
| 18:00 | 0 | 2 | 18 | 27 | 62 | 39 | 6 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 157 | 31-40 | 101 |
| 19:00 | 0 | 1 | 12 | 33 | 45 | 33 | 9 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 134 | 28-37 | 80 |
| 20:00 | **2** | 2 | 8 | 20 | 35 | 25 | 10 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 105 | 31-40 | 60 |
| 21:00 | 0 | 1 | 1 | 11 | 22 | 32 | 12 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 81 | 31-40 | 54 |
| 22:00 | 0 | 1 | 5 | 17 | 18 | 15 | 13 | **6** | 1 | 0 | 0 | 0 | 0 | 0 | 76 | 26-35 | 35 |
| 23:00 | 0 | 0 | 1 | 3 | 5 | 9 | 6 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 25 | 32-41 | 15 |
| Total | 7 | 29 | 177 | 539 | 701 | 581 | 161 | 30 | 7 | 0 | 0 | 0 | 0 | 0 | 2232 | | |
| Percent | 0.3% | 1.3% | 7.9% | 24.1% | 31.4% | 26.0% | 7.2% | 1.3% | 0.3% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | | | |
| AM Peak | 11:00 | 11:00 | 11:00 | 11:00 | 11:00 | 11:00 | 11:00 | 11:00 | | | | | | | 11:00 | | |
| Vol. | 4 | 3 | 10 | 42 | 65 | 49 | 15 | 2 | | | | | | | 190 | | |
| PM Peak | 20:00 | 14:00 | 15:00 | 17:00 | 15:00 | 17:00 | 13:00 | 22:00 | 12:00 | | | | | | 17:00 | | |
| Vol. | 2 | 6 | 27 | 77 | 90 | 84 | 21 | 6 | 2 | | | | | | 273 | | |

# McMahon Associates, Inc.

Transportation Engineers and Planners
425 Commerce Drive, Suite 200
Fort Washington, PA

Municipality: Cheltenham Township
Comments: None
Weather: Variable
ATR # / Operator: 11134/NDB

Site Code: 00000000000000000000
Station ID:
Oak Lane Road south of
Ashbourne Road
Latitude: 0' 0.000 Undefined

Northbound

| Start Time | 0 15 | 16 20 | 21 25 | 26 30 | 31 35 | 36 40 | 41 45 | 46 50 | 51 55 | 56 60 | 61 65 | 66 70 | 71 75 | 76 9999 | Total | Pace Speed | Number in Pace |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 04/19/11 | 0 | 0 | 0 | 3 | 1 | 6 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 11 | 32-41 | 8 |
| 01:00 | 0 | 0 | 1 | 2 | 3 | 3 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 10 | 29-38 | 8 |
| 02:00 | 0 | 0 | 1 | 1 | 2 | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 8 | 33-42 | 6 |
| 03:00 | 0 | 0 | 0 | 1 | 2 | 2 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 7 | 28-37 | 5 |
| 04:00 | 0 | 0 | 0 | 0 | 3 | 2 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9 | 35-44 | 6 |
| 05:00 | 1 | 0 | 1 | 4 | 11 | 22 | 9 | **4** | 1 | **1** | 0 | 0 | 0 | 0 | 54 | 31-40 | 33 |
| 06:00 | 2 | **10** | 6 | 12 | 34 | 83 | **29** | 4 | 0 | 0 | **1** | 0 | 0 | 0 | 181 | 31-40 | 117 |
| 07:00 | 0 | 2 | 1 | 22 | 87 | **92** | 26 | 4 | **2** | 0 | 0 | 0 | 0 | 0 | **236** | 31-40 | 179 |
| 08:00 | 3 | 0 | 13 | 36 | **90** | 75 | 17 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 236 | 31-40 | 165 |
| 09:00 | 2 | 2 | 11 | 22 | 68 | 76 | 19 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 202 | 31-40 | 144 |
| 10:00 | 0 | 2 | **15** | **50** | 49 | 51 | 20 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 190 | 27-36 | 100 |
| 11:00 | **5** | 0 | 15 | 50 | 71 | 55 | 22 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 221 | 31-40 | 126 |
| 12 PM | 0 | **3** | 10 | 49 | **99** | 76 | 23 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | **264** | 31-40 | 175 |
| 13:00 | 0 | 0 | 17 | **66** | 72 | 69 | 35 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 262 | 30-39 | 142 |
| 14:00 | 0 | 1 | 16 | 48 | 89 | 64 | 27 | 6 | **2** | **1** | 0 | 0 | 0 | 0 | 254 | 31-40 | 153 |
| 15:00 | 0 | 2 | 13 | 51 | 77 | 73 | 18 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 237 | 31-40 | 150 |
| 16:00 | **1** | 3 | 17 | 51 | 78 | 72 | **36** | 2 | 2 | 1 | 0 | 0 | 0 | 0 | 263 | 31-40 | 150 |
| 17:00 | 0 | 2 | **23** | 34 | 71 | **95** | 30 | **8** | 0 | 0 | 0 | 0 | 0 | 0 | 263 | 31-40 | 166 |
| 18:00 | 0 | 1 | 18 | 53 | 82 | 64 | 18 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 238 | 31-40 | 146 |
| 19:00 | 0 | 1 | 2 | 23 | 55 | 51 | 16 | 3 | 1 | 0 | 0 | 0 | 0 | 0 | 152 | 31-40 | 106 |
| 20:00 | 0 | 0 | 10 | 23 | 28 | 32 | 9 | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 106 | 31-40 | 60 |
| 21:00 | 0 | 1 | 3 | 10 | 30 | 34 | 8 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 87 | 31-40 | 64 |
| 22:00 | 0 | 0 | 3 | 12 | 14 | 23 | 16 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 71 | 32-41 | 39 |
| 23:00 | 0 | 1 | 1 | 3 | 8 | 7 | 5 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 28 | 28-37 | 15 |
| Total | 14 | 31 | 197 | 626 | 1124 | 1129 | 391 | 59 | 14 | 4 | 1 | 0 | 0 | 0 | 3590 | | |
| Percent | 0.4% | 0.9% | 5.5% | 17.4% | 31.3% | 31.4% | 10.9% | 1.6% | 0.4% | 0.1% | 0.0% | 0.0% | 0.0% | 0.0% | | | |
| AM Peak | 11:00 | 06:00 | 10:00 | 10:00 | 08:00 | 07:00 | 06:00 | 05:00 | 07:00 | 05:00 | 06:00 | | | | 07:00 | | |
| Vol. | 5 | 10 | 15 | 50 | 90 | 92 | 29 | 4 | 2 | 1 | 1 | | | | 236 | | |
| PM Peak | 16:00 | 12:00 | 17:00 | 13:00 | 12:00 | 17:00 | 16:00 | 17:00 | 14:00 | 14:00 | | | | | 12:00 | | |
| Vol. | 1 | 3 | 23 | 66 | 99 | 95 | 36 | 8 | 2 | 1 | | | | | 264 | | |

# McMahon Associates, Inc.

Transportation Engineers and Planners
425 Commerce Drive, Suite 200
Fort Washington, PA

Municipality: Cheltenham Township
Comments: None
Weather: Variable
ATR # / Operator: 11134/NDB

Site Code: 00000000000000000000
Station ID:
Oak Lane Road south of
Ashbourne Road
Latitude: 0' 0.000 Undefined

Northbound

| Start Time | 0 15 | 16 20 | 21 25 | 26 30 | 31 35 | 36 40 | 41 45 | 46 50 | 51 55 | 56 60 | 61 65 | 66 70 | 71 75 | 76 9999 | Total | Pace Speed | Number in Pace |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 04/20/11 | 0 | 0 | 0 | 2 | 5 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 10 | 29-38 | 10 |
| 01:00 | 0 | 0 | 0 | 0 | 6 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9 | 28-37 | 8 |
| 02:00 | **1** | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | * | 1 |
| 03:00 | 0 | 0 | 0 | 2 | 2 | 2 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 8 | 28-37 | 6 |
| 04:00 | 0 | 0 | 0 | 1 | 1 | 8 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 12 | 33-42 | 11 |
| 05:00 | 0 | 0 | 1 | 1 | 14 | 22 | 10 | 1 | **2** | 0 | 0 | 0 | 0 | 0 | 51 | 31-40 | 36 |
| 06:00 | 0 | 2 | 3 | 20 | 43 | **67** | **24** | **5** | 1 | 0 | 0 | 0 | 0 | 0 | 165 | 31-40 | 110 |
| 07:00 | 0 | 2 | 6 | 30 | 76 | 59 | 20 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 198 | 31-40 | 135 |
| 08:00 | 0 | 4 | 22 | 58 | **94** | 60 | 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **246** | 28-37 | 154 |
| 09:00 | 1 | **5** | **23** | 52 | 58 | 37 | 7 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 184 | 26-35 | 110 |
| 10:00 | 1 | 2 | 9 | **61** | 59 | 45 | 5 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 184 | 26-35 | 120 |
| 11:00 | 0 | 4 | 17 | 35 | 86 | 42 | 12 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 196 | 31-40 | 128 |
| 12 PM | 0 | 2 | 27 | 42 | 75 | 50 | 11 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 209 | 31-40 | 125 |
| 13:00 | **2** | **5** | 22 | 45 | 84 | 44 | **16** | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 220 | 26-35 | 129 |
| 14:00 | 0 | 3 | 19 | 32 | 83 | 57 | 13 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 209 | 31-40 | 140 |
| 15:00 | 1 | 5 | 27 | **87** | 86 | 34 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 244 | 26-35 | 173 |
| 16:00 | 1 | 2 | **33** | 68 | 87 | 38 | 5 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 236 | 26-35 | 155 |
| 17:00 | 2 | 1 | 31 | 63 | **91** | **65** | 8 | **4** | 0 | 0 | 0 | 0 | 0 | 0 | **265** | 28-37 | 156 |
| 18:00 | 1 | 5 | 21 | 42 | 67 | 46 | 11 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 195 | 29-38 | 113 |
| 19:00 | 1 | 3 | 6 | 16 | 60 | 35 | 9 | 0 | 0 | **1** | 0 | 0 | 0 | 0 | 131 | 31-40 | 95 |
| 20:00 | 0 | 0 | 11 | 14 | 21 | 16 | 9 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 74 | 27-36 | 37 |
| 21:00 | 0 | 2 | 6 | 23 | 27 | 28 | 9 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 97 | 29-38 | 55 |
| 22:00 | 0 | 0 | 5 | 14 | 16 | 29 | 7 | 2 | **1** | 0 | 0 | 0 | 0 | 0 | 74 | 31-40 | 45 |
| 23:00 | 0 | 0 | 1 | 4 | 9 | 11 | 9 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 35 | 32-41 | 21 |
| Total | 11 | 47 | 290 | 712 | 1150 | 800 | 202 | 37 | 4 | 1 | 0 | 0 | 0 | 0 | 3254 | | |
| Percent | 0.3% | 1.4% | 8.9% | 21.9% | 35.3% | 24.6% | 6.2% | 1.1% | 0.1% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | | | |
| AM Peak | 02:00 | 09:00 | 09:00 | 10:00 | 08:00 | 06:00 | 06:00 | 06:00 | 05:00 | | | | | | 08:00 | | |
| Vol. | 1 | 5 | 23 | 61 | 94 | 67 | 24 | 5 | 2 | | | | | | 246 | | |
| PM Peak | 13:00 | 13:00 | 16:00 | 15:00 | 17:00 | 17:00 | 13:00 | 17:00 | 22:00 | 19:00 | | | | | 17:00 | | |
| Vol. | 2 | 5 | 33 | 87 | 91 | 65 | 16 | 4 | 1 | 1 | | | | | 265 | | |

# McMahon Associates, Inc.

Transportation Engineers and Planners
425 Commerce Drive, Suite 200
Fort Washington, PA

Municipality: Cheltenham Township
Comments: None
Weather: Variable
ATR # / Operator: 11134/NDB

Site Code: 00000000000000000000
Station ID:
Oak Lane Road south of
Ashbourne Road
Latitude: 0' 0.000 Undefined

Northbound

| Start Time | 0 15 | 16 20 | 21 25 | 26 30 | 31 35 | 36 40 | 41 45 | 46 50 | 51 55 | 56 60 | 61 65 | 66 70 | 71 75 | 76 9999 | Total | Pace Speed | Number in Pace |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 04/21/11 | 0 | 0 | 0 | 2 | 8 | 6 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 17 | 29-38 | 14 |
| 01:00 | 0 | 0 | 2 | 3 | 6 | 1 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 15 | 24-33 | 9 |
| 02:00 | 0 | 0 | 0 | 1 | 1 | 3 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 29-38 | 5 |
| 03:00 | 0 | 0 | 0 | 0 | 4 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 31-40 | 5 |
| 04:00 | 0 | 0 | 0 | 1 | 2 | 4 | 3 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 11 | 34-43 | 9 |
| 05:00 | 0 | 0 | 1 | 3 | 13 | 18 | 6 | **5** | **3** | 0 | 0 | 0 | 0 | 0 | 49 | 31-40 | 31 |
| 06:00 | 1 | 0 | 6 | 18 | 46 | 58 | **47** | 5 | 1 | **1** | 0 | 0 | 0 | 0 | 183 | 33-42 | 106 |
| 07:00 | **4** | **1** | **7** | **31** | **49** | **67** | 27 | 5 | 0 | 0 | **1** | 0 | 0 | 0 | **192** | 31-40 | 116 |
| 08:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 09:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 10:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 11:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 12 PM | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 13:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 14:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 15:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 16:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 17:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 18:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 19:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 20:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 21:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 22:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 23:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| Total | 5 | 1 | 16 | 59 | 129 | 158 | 88 | 19 | 4 | 1 | 1 | 0 | 0 | 0 | 481 | | |
| Percent | 1.0% | 0.2% | 3.3% | 12.3% | 26.8% | 32.8% | 18.3% | 4.0% | 0.8% | 0.2% | 0.2% | 0.0% | 0.0% | 0.0% | | | |
| AM Peak | 07:00 | 07:00 | 07:00 | 07:00 | 07:00 | 07:00 | 06:00 | 05:00 | 05:00 | 06:00 | 07:00 | | | | 07:00 | | |
| Vol. | 4 | 1 | 7 | 31 | 49 | 67 | 47 | 5 | 3 | 1 | 1 | | | | 192 | | |
| PM Peak Vol. | | | | | | | | | | | | | | | | | |
| Total | 37 | 108 | 680 | 1936 | 3104 | 2668 | 842 | 145 | 29 | 6 | 2 | 0 | 0 | 0 | 9557 | | |
| Percent | 0.4% | 1.1% | 7.1% | 20.3% | 32.5% | 27.9% | 8.8% | 1.5% | 0.3% | 0.1% | 0.0% | 0.0% | 0.0% | 0.0% | | | |

| | |
|---|---|
| 15th Percentile : | 27 MPH |
| 50th Percentile : | 34 MPH |
| 85th Percentile : | 40 MPH |
| 95th Percentile : | 44 MPH |

Stats

| | |
|---|---|
| 10 MPH Pace Speed : | 31-40 MPH |
| Number in Pace : | 5772 |
| Percent in Pace : | 60.4% |
| Number of Vehicles > 55 MPH : | 8 |
| Percent of Vehicles > 55 MPH : | 0.1% |
| Mean Speed(Average) : | 34 MPH |

# McMahon Associates, Inc.

Transportation Engineers and Planners
425 Commerce Drive, Suite 200
Fort Washington, PA

Municipality: Cheltenham Township
Comments: None
Weather: Variable
ATR # / Operator: 11134/NDB

Site Code: 00000000000000000000
Station ID:
Oak Lane Road south of
Ashbourne Road
Latitude: 0' 0.000 Undefined

Southbound

| Start Time | 0 15 | 16 20 | 21 25 | 26 30 | 31 35 | 36 40 | 41 45 | 46 50 | 51 55 | 56 60 | 61 65 | 66 70 | 71 75 | 76 9999 | Total | Pace Speed | Number in Pace |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 04/18/11 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 01:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 02:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 03:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 04:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 05:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 06:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 07:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 08:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 09:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 10:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 11:00 | **6** | **16** | **14** | **24** | **71** | **55** | **18** | **4** | **1** | 0 | 0 | 0 | 0 | 0 | **209** | 31-40 | 126 |
| 12 PM | 1 | 8 | 31 | 50 | 99 | 86 | **28** | 1 | 0 | **1** | 0 | 0 | 0 | 0 | 305 | 31-40 | 185 |
| 13:00 | 0 | 15 | 18 | 33 | 86 | 53 | 22 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 228 | 31-40 | 139 |
| 14:00 | **2** | 9 | 24 | 51 | 87 | 79 | 24 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 279 | 31-40 | 166 |
| 15:00 | 1 | **19** | **45** | **119** | 95 | 53 | 8 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 343 | 26-35 | 214 |
| 16:00 | 1 | 9 | 30 | 60 | 127 | 97 | 25 | 1 | **1** | 0 | 0 | 0 | 0 | 0 | 351 | 31-40 | 224 |
| 17:00 | 0 | 5 | 22 | 25 | **150** | **140** | 13 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | **356** | 31-40 | 290 |
| 18:00 | 0 | 8 | 14 | 15 | 71 | 66 | 22 | 3 | 0 | 1 | 0 | 0 | 0 | 0 | 200 | 31-40 | 137 |
| 19:00 | 0 | 3 | 12 | 15 | 55 | 48 | 16 | **4** | 0 | 0 | 0 | 0 | 0 | 0 | 153 | 31-40 | 103 |
| 20:00 | 2 | 1 | 6 | 7 | 23 | 41 | 15 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 98 | 31-40 | 64 |
| 21:00 | 0 | 0 | 11 | 3 | 31 | 23 | 18 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 90 | 31-40 | 54 |
| 22:00 | 0 | 1 | 3 | 6 | 10 | 21 | 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 49 | 31-40 | 31 |
| 23:00 | 0 | 3 | 0 | 4 | 11 | 17 | 10 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 48 | 31-40 | 28 |
| Total | 13 | 97 | 230 | 412 | 916 | 779 | 227 | 30 | 3 | 2 | 0 | 0 | 0 | 0 | 2709 | | |
| Percent | 0.5% | 3.6% | 8.5% | 15.2% | 33.8% | 28.8% | 8.4% | 1.1% | 0.1% | 0.1% | 0.0% | 0.0% | 0.0% | 0.0% | | | |
| AM Peak | 11:00 | 11:00 | 11:00 | 11:00 | 11:00 | 11:00 | 11:00 | 11:00 | 11:00 | | | | | | 11:00 | | |
| Vol. | 6 | 16 | 14 | 24 | 71 | 55 | 18 | 4 | 1 | | | | | | 209 | | |
| PM Peak | 14:00 | 15:00 | 15:00 | 15:00 | 17:00 | 17:00 | 12:00 | 19:00 | 16:00 | 12:00 | | | | | 17:00 | | |
| Vol. | 2 | 19 | 45 | 119 | 150 | 140 | 28 | 4 | 1 | 1 | | | | | 356 | | |

# McMahon Associates, Inc.

Transportation Engineers and Planners
425 Commerce Drive, Suite 200
Fort Washington, PA

Municipality: Cheltenham Township
Comments: None
Weather: Variable
ATR # / Operator: 11134/NDB

Site Code: 00000000000000000000
Station ID:
Oak Lane Road south of
Ashbourne Road
Latitude: 0' 0.000 Undefined

Southbound

| Start Time | 0 15 | 16 20 | 21 25 | 26 30 | 31 35 | 36 40 | 41 45 | 46 50 | 51 55 | 56 60 | 61 65 | 66 70 | 71 75 | 76 9999 | Total | Pace Speed | Number in Pace |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 04/19/11 | 0 | 0 | 2 | 0 | 2 | 8 | 5 | 1 | **2** | 0 | 0 | 0 | 0 | 0 | 20 | 34-43 | 13 |
| 01:00 | 0 | 3 | 0 | 0 | 3 | 6 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 15 | 31-40 | 9 |
| 02:00 | 0 | 1 | 1 | 1 | 0 | 2 | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 9 | 38-47 | 6 |
| 03:00 | 0 | 0 | 0 | 1 | 1 | 2 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 28-37 | 4 |
| 04:00 | 0 | 0 | 2 | 1 | 1 | 4 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 14 | 35-44 | 10 |
| 05:00 | **1** | 1 | 0 | 3 | 12 | 15 | 8 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 42 | 31-40 | 27 |
| 06:00 | 0 | **10** | 15 | 10 | 37 | 59 | **36** | **5** | 0 | 0 | 0 | 0 | 0 | 0 | 172 | 32-41 | 97 |
| 07:00 | 0 | 6 | **38** | 26 | 88 | **111** | 35 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | **307** | 31-40 | 199 |
| 08:00 | 0 | 6 | 19 | **46** | **101** | 52 | 16 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 243 | 30-39 | 153 |
| 09:00 | 1 | 4 | 21 | 21 | 88 | 75 | 30 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 245 | 31-40 | 163 |
| 10:00 | 0 | 8 | 24 | 32 | 74 | 70 | 30 | 3 | 2 | 0 | 0 | 0 | 0 | 0 | 243 | 31-40 | 144 |
| 11:00 | 0 | 9 | 17 | 25 | 85 | 70 | 19 | 3 | 1 | 0 | 0 | 0 | 0 | 0 | 229 | 31-40 | 155 |
| 12 PM | **1** | 7 | 16 | 45 | 122 | 101 | 27 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 321 | 31-40 | 223 |
| 13:00 | 0 | **12** | 23 | 42 | 93 | 72 | 12 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 257 | 31-40 | 165 |
| 14:00 | 0 | 5 | 19 | 31 | 92 | 70 | 27 | 4 | 1 | 0 | 0 | 0 | 0 | 0 | 249 | 31-40 | 162 |
| 15:00 | 1 | 5 | **28** | **56** | 123 | 68 | 14 | **5** | 0 | 0 | 0 | 0 | 0 | 0 | 300 | 31-40 | 191 |
| 16:00 | 0 | 4 | 20 | 56 | 126 | 98 | **37** | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 345 | 31-40 | 224 |
| 17:00 | 0 | 9 | 27 | 44 | **152** | **128** | 23 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | **387** | 31-40 | 280 |
| 18:00 | 0 | 10 | 16 | 30 | 95 | 96 | 12 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 259 | 31-40 | 191 |
| 19:00 | 0 | 4 | 20 | 13 | 48 | 60 | 19 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 166 | 31-40 | 108 |
| 20:00 | 0 | 1 | 12 | 7 | 33 | 29 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 88 | 31-40 | 62 |
| 21:00 | 0 | 2 | 6 | 10 | 31 | 42 | 12 | 1 | **2** | 0 | 0 | 0 | 0 | 0 | 106 | 31-40 | 73 |
| 22:00 | 0 | 2 | 3 | 4 | 13 | 20 | 7 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 52 | 31-40 | 33 |
| 23:00 | 0 | 2 | 1 | 3 | 12 | 17 | 6 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 42 | 31-40 | 29 |
| Total | 4 | 111 | 330 | 507 | 1432 | 1275 | 391 | 57 | 10 | 0 | 0 | 0 | 0 | 0 | 4117 | | |
| Percent | 0.1% | 2.7% | 8.0% | 12.3% | 34.8% | 31.0% | 9.5% | 1.4% | 0.2% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | | | |
| AM Peak | 05:00 | 06:00 | 07:00 | 08:00 | 08:00 | 07:00 | 06:00 | 06:00 | 00:00 | | | | | | 07:00 | | |
| Vol. | 1 | 10 | 38 | 46 | 101 | 111 | 36 | 5 | 2 | | | | | | 307 | | |
| PM Peak | 12:00 | 13:00 | 15:00 | 15:00 | 17:00 | 17:00 | 16:00 | 15:00 | 21:00 | | | | | | 17:00 | | |
| Vol. | 1 | 12 | 28 | 56 | 152 | 128 | 37 | 5 | 2 | | | | | | 387 | | |

# McMahon Associates, Inc.

Transportation Engineers and Planners
425 Commerce Drive, Suite 200
Fort Washington, PA

Municipality: Cheltenham Township
Comments: None
Weather: Variable
ATR # / Operator: 11134/NDB

Site Code: 00000000000000000000
Station ID:
Oak Lane Road south of
Ashbourne Road
Latitude: 0' 0.000 Undefined

Southbound

| Start Time | 0 15 | 16 20 | 21 25 | 26 30 | 31 35 | 36 40 | 41 45 | 46 50 | 51 55 | 56 60 | 61 65 | 66 70 | 71 75 | 76 9999 | Total | Pace Speed | Number in Pace |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 04/20/11 | 0 | 0 | 0 | 4 | 8 | 8 | 2 | **2** | **2** | 0 | 0 | 0 | 0 | 0 | 26 | 29-38 | 16 |
| 01:00 | 0 | 2 | 0 | 1 | 7 | 1 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 15 | 26-35 | 8 |
| 02:00 | 1 | 0 | 0 | 0 | 0 | 5 | 4 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 11 | 35-44 | 9 |
| 03:00 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 28-37 | 2 |
| 04:00 | 0 | 0 | 1 | 0 | 5 | 4 | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 14 | 30-39 | 9 |
| 05:00 | 0 | 2 | 1 | 3 | 11 | 18 | 9 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 45 | 31-40 | 29 |
| 06:00 | 1 | 8 | 13 | 9 | 45 | 56 | 21 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 154 | 31-40 | 101 |
| 07:00 | 0 | 11 | 26 | 37 | **93** | **96** | **22** | 2 | 1 | **1** | 0 | 0 | 0 | 0 | **289** | 31-40 | 189 |
| 08:00 | 1 | 8 | 24 | **72** | 90 | 36 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 238 | 26-35 | 162 |
| 09:00 | **2** | **15** | **36** | 43 | 84 | 50 | 15 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 246 | 31-40 | 134 |
| 10:00 | 0 | 11 | 13 | 30 | 86 | 50 | 9 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 201 | 31-40 | 136 |
| 11:00 | 0 | 9 | 11 | 47 | 66 | 62 | 14 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 211 | 31-40 | 128 |
| 12 PM | 0 | 5 | 19 | 39 | 91 | 91 | 18 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 264 | 31-40 | 182 |
| 13:00 | 0 | 6 | 14 | 36 | 74 | 75 | 14 | **3** | **2** | 0 | 0 | 0 | 0 | 0 | 224 | 31-40 | 149 |
| 14:00 | **1** | **13** | 24 | 46 | 91 | 67 | 13 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 256 | 31-40 | 158 |
| 15:00 | 1 | 10 | 20 | **96** | 126 | 45 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 302 | 26-35 | 222 |
| 16:00 | 0 | 6 | 24 | 54 | 157 | 81 | 12 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 335 | 31-40 | 238 |
| 17:00 | 0 | 6 | **28** | 45 | **162** | **104** | **25** | 2 | 0 | 0 | 0 | 0 | 0 | 0 | **372** | 31-40 | 266 |
| 18:00 | 0 | 2 | 24 | 21 | 76 | 64 | 18 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 207 | 31-40 | 140 |
| 19:00 | 0 | 1 | 13 | 11 | 51 | 52 | 15 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 144 | 31-40 | 103 |
| 20:00 | 0 | 1 | 12 | 9 | 41 | 44 | 10 | 3 | 0 | 0 | **1** | 0 | 0 | 0 | 121 | 31-40 | 85 |
| 21:00 | 0 | 1 | 5 | 11 | 29 | 20 | 17 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 83 | 31-40 | 49 |
| 22:00 | 0 | 2 | 3 | 6 | 24 | 21 | 6 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 64 | 31-40 | 45 |
| 23:00 | 0 | 1 | 2 | 1 | 19 | 13 | 12 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 50 | 31-40 | 32 |
| Total | 7 | 120 | 313 | 621 | 1436 | 1065 | 273 | 31 | 6 | 1 | 1 | 0 | 0 | 0 | 3874 | | |
| Percent | 0.2% | 3.1% | 8.1% | 16.0% | 37.1% | 27.5% | 7.0% | 0.8% | 0.2% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | | | |
| AM Peak | 09:00 | 09:00 | 09:00 | 08:00 | 07:00 | 07:00 | 07:00 | 00:00 | 00:00 | 07:00 | | | | | 07:00 | | |
| Vol. | 2 | 15 | 36 | 72 | 93 | 96 | 22 | 2 | 2 | 1 | | | | | 289 | | |
| PM Peak | 14:00 | 14:00 | 17:00 | 15:00 | 17:00 | 17:00 | 17:00 | 13:00 | 13:00 | | 20:00 | | | | 17:00 | | |
| Vol. | 1 | 13 | 28 | 96 | 162 | 104 | 25 | 3 | 2 | | 1 | | | | 372 | | |

# McMahon Associates, Inc.

Transportation Engineers and Planners
425 Commerce Drive, Suite 200
Fort Washington, PA

Municipality: Cheltenham Township
Comments: None
Weather: Variable
ATR # / Operator: 11134/NDB

Site Code: 00000000000000000000
Station ID:
Oak Lane Road south of
Ashbourne Road
Latitude: 0' 0.000 Undefined

Southbound

| Start Time | 0 15 | 16 20 | 21 25 | 26 30 | 31 35 | 36 40 | 41 45 | 46 50 | 51 55 | 56 60 | 61 65 | 66 70 | 71 75 | 76 9999 | Total | Pace Speed | Number in Pace |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 04/21/11 | 0 | 0 | 0 | 0 | 7 | 11 | 1 | 0 | **1** | 0 | 0 | 0 | 0 | 0 | 20 | 31-40 | 18 |
| 01:00 | 0 | 0 | 2 | 0 | 4 | 7 | 2 | 3 | 1 | 0 | 0 | 0 | 0 | 0 | 19 | 31-40 | 11 |
| 02:00 | 0 | 0 | 1 | 0 | 1 | 3 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 32-41 | 5 |
| 03:00 | 0 | 0 | 0 | 0 | 0 | 1 | 3 | 0 | 0 | **1** | 0 | 0 | 0 | 0 | 5 | 34-43 | 4 |
| 04:00 | 0 | 0 | 2 | 0 | 3 | 3 | 4 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 13 | 33-42 | 8 |
| 05:00 | 0 | 1 | 1 | 1 | 9 | 10 | 13 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 37 | 34-43 | 23 |
| 06:00 | 0 | 4 | 8 | 10 | 33 | 78 | **31** | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 167 | 32-41 | 112 |
| 07:00 | 0 | **8** | **24** | **28** | **87** | **92** | 22 | **4** | 1 | 0 | 0 | 0 | 0 | 0 | **266** | 31-40 | 179 |
| 08:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 09:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 10:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 11:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 12 PM | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 13:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 14:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 15:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 16:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 17:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 18:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 19:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 20:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 21:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 22:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| 23:00 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| Total | 0 | 13 | 38 | 39 | 144 | 205 | 77 | 13 | 3 | 1 | 0 | 0 | 0 | 0 | 533 | | |
| Percent | 0.0% | 2.4% | 7.1% | 7.3% | 27.0% | 38.5% | 14.4% | 2.4% | 0.6% | 0.2% | 0.0% | 0.0% | 0.0% | 0.0% | | | |
| AM Peak | | 07:00 | 07:00 | 07:00 | 07:00 | 07:00 | 06:00 | 07:00 | 00:00 | 03:00 | | | | | 07:00 | | |
| Vol. | | 8 | 24 | 28 | 87 | 92 | 31 | 4 | 1 | 1 | | | | | 266 | | |
| PM Peak | | | | | | | | | | | | | | | | | |
| Vol. | | | | | | | | | | | | | | | | | |
| Total | 24 | 341 | 911 | 1579 | 3928 | 3324 | 968 | 131 | 22 | 4 | 1 | 0 | 0 | 0 | 11233 | | |
| Percent | 0.2% | 3.0% | 8.1% | 14.1% | 35.0% | 29.6% | 8.6% | 1.2% | 0.2% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | | | |

| | |
|---|---|
| 15th Percentile : | 27 MPH |
| 50th Percentile : | 34 MPH |
| 85th Percentile : | 40 MPH |
| 95th Percentile : | 43 MPH |

Stats

| | |
|---|---|
| 10 MPH Pace Speed : | 31-40 MPH |
| Number in Pace : | 7252 |
| Percent in Pace : | 64.6% |
| Number of Vehicles > 55 MPH : | 5 |
| Percent of Vehicles > 55 MPH : | 0.0% |
| Mean Speed(Average) : | 34 MPH |

# APPENDIX D

## Manual Turning Movement (MTM) Counts and Volume Balancing Notes

# Manual Turning Movement (MTM) Counts

# McMahon Associates, Inc.

Transportation Engineers and Planners

*425 Commerce Drive, Suite 200*
*Fort Washington, PA 19034*

Municipality: Cheltenham Township
Location: Ashbourne Road &
New Second Street
Counter/Countboard No.: JB

File Name : ashbourneCC01w
Site Code : 11111101
Start Date : 5/10/2011
Page No : 1

Groups Printed- Passenger Vehicles - Heavy Vehicles

| | New Second St Southbound | | | Ashbourne Rd Westbound | | | New Second St Northbound | | | Ashbourne Rd Eastbound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Int. Total |
| 07:00 | 15 | 113 | 14 | 1 | 33 | 37 | 0 | 48 | 0 | 8 | 25 | 4 | 298 |
| 07:15 | 16 | 127 | 12 | 2 | 47 | 22 | 1 | 56 | 1 | 19 | 38 | 4 | 345 |
| 07:30 | 25 | 110 | 12 | 1 | 56 | 20 | 4 | 87 | 2 | 14 | 28 | 9 | 368 |
| 07:45 | 17 | 123 | 22 | 0 | 50 | 32 | 6 | 98 | 1 | 29 | 33 | 3 | 414 |
| Total | 73 | 473 | 60 | 4 | 186 | 111 | 11 | 289 | 4 | 70 | 124 | 20 | 1425 |
| 08:00 | 20 | 81 | 26 | 3 | 41 | 33 | 4 | 68 | 5 | 35 | 38 | 3 | 357 |
| 08:15 | 18 | 83 | 25 | 3 | 39 | 26 | 5 | 73 | 4 | 22 | 24 | 4 | 326 |
| 08:30 | 14 | 71 | 15 | 2 | 27 | 29 | 5 | 50 | 1 | 25 | 26 | 8 | 273 |
| 08:45 | 17 | 85 | 17 | 6 | 33 | 20 | 9 | 64 | 3 | 17 | 18 | 7 | 296 |
| Total | 69 | 320 | 83 | 14 | 140 | 108 | 23 | 255 | 13 | 99 | 106 | 22 | 1252 |
| *** BREAK *** | | | | | | | | | | | | | |
| 16:00 | 31 | 92 | 17 | 1 | 40 | 29 | 4 | 76 | 0 | 15 | 25 | 6 | 336 |
| 16:15 | 24 | 85 | 16 | 2 | 44 | 31 | 8 | 97 | 2 | 10 | 23 | 9 | 351 |
| 16:30 | 18 | 72 | 11 | 2 | 35 | 33 | 8 | 98 | 1 | 20 | 43 | 4 | 345 |
| 16:45 | 16 | 67 | 9 | 3 | 39 | 39 | 9 | 121 | 6 | 21 | 37 | 8 | 375 |
| Total | 89 | 316 | 53 | 8 | 158 | 132 | 29 | 392 | 9 | 66 | 128 | 27 | 1407 |
| 17:00 | 18 | 86 | 12 | 2 | 29 | 21 | 4 | 84 | 4 | 15 | 49 | 7 | 331 |
| 17:15 | 26 | 93 | 7 | 1 | 34 | 25 | 7 | 102 | 4 | 20 | 50 | 5 | 374 |
| 17:30 | 22 | 80 | 15 | 3 | 36 | 19 | 5 | 99 | 5 | 15 | 43 | 5 | 347 |
| 17:45 | 26 | 60 | 17 | 0 | 39 | 24 | 6 | 91 | 6 | 21 | 52 | 8 | 350 |
| Total | 92 | 319 | 51 | 6 | 138 | 89 | 22 | 376 | 19 | 71 | 194 | 25 | 1402 |
| Grand Total | 323 | 1428 | 247 | 32 | 622 | 440 | 85 | 1312 | 45 | 306 | 552 | 94 | 5486 |
| Apprch % | 16.2 | 71.5 | 12.4 | 2.9 | 56.9 | 40.2 | 5.9 | 91 | 3.1 | 32.1 | 58 | 9.9 | |
| Total % | 5.9 | 26 | 4.5 | 0.6 | 11.3 | 8 | 1.5 | 23.9 | 0.8 | 5.6 | 10.1 | 1.7 | |
| Passenger Vehicles | 307 | 1397 | 237 | 30 | 611 | 419 | 84 | 1294 | 45 | 298 | 541 | 77 | 5340 |
| % Passenger Vehicles | 95 | 97.8 | 96 | 93.8 | 98.2 | 95.2 | 98.8 | 98.6 | 100 | 97.4 | 98 | 81.9 | 97.3 |
| Heavy Vehicles | 16 | 31 | 10 | 2 | 11 | 21 | 1 | 18 | 0 | 8 | 11 | 17 | 146 |
| % Heavy Vehicles | 5 | 2.2 | 4 | 6.2 | 1.8 | 4.8 | 1.2 | 1.4 | 0 | 2.6 | 2 | 18.1 | 2.7 |

# McMahon Associates, Inc.

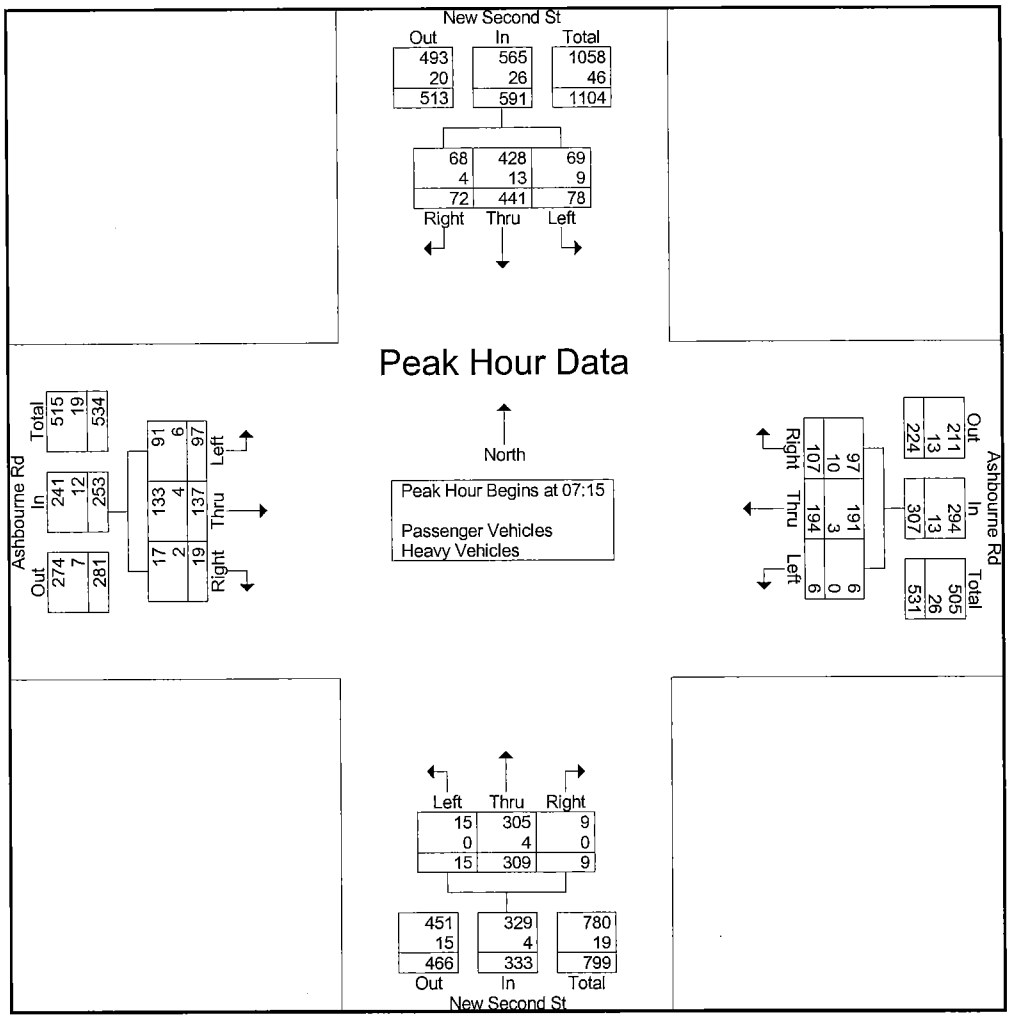
Transportation Engineers and Planners

*425 Commerce Drive, Suite 200*
*Fort Washington, PA 19034*

Municipality: Cheltenham Township
Location: Ashbourne Road &
New Second Street
Counter/Countboard No.: JB

File Name : ashbourneCC01w
Site Code : 11111101
Start Date : 5/10/2011
Page No : 2

| | New Second St Southbound | | | | Ashbourne Rd Westbound | | | | New Second St Northbound | | | | Ashbourne Rd Eastbound | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Int. Total |
| Peak Hour Analysis From 07:00 to 12:45 - Peak 1 of 1 | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 07:15 | | | | | | | | | | | | | | | | | |
| 07:15 | 16 | **127** | 12 | 155 | 2 | 47 | 22 | 71 | 1 | 56 | 1 | 58 | 19 | **38** | 4 | 61 | 345 |
| 07:30 | **25** | 110 | 12 | 147 | 1 | **56** | 20 | 77 | 4 | 87 | 2 | 93 | 14 | 28 | **9** | 51 | 368 |
| 07:45 | 17 | 123 | 22 | **162** | 0 | 50 | 32 | **82** | **6** | **98** | 1 | **105** | 29 | 33 | 3 | 65 | **414** |
| 08:00 | 20 | 81 | **26** | 127 | **3** | 41 | **33** | 77 | 4 | 68 | **5** | 77 | **35** | 38 | 3 | **76** | 357 |
| Total Volume | 78 | 441 | 72 | 591 | 6 | 194 | 107 | 307 | 15 | 309 | 9 | 333 | 97 | 137 | 19 | 253 | 1484 |
| % App. Total | 13.2 | 74.6 | 12.2 | | 2 | 63.2 | 34.9 | | 4.5 | 92.8 | 2.7 | | 38.3 | 54.2 | 7.5 | | |
| PHF | .780 | .868 | .692 | .912 | .500 | .866 | .811 | .936 | .625 | .788 | .450 | .793 | .693 | .901 | .528 | .832 | .896 |
| Passenger Vehicles | 69 | 428 | 68 | 565 | 6 | 191 | 97 | 294 | 15 | 305 | 9 | 329 | 91 | 133 | 17 | 241 | 1429 |
| % Passenger Vehicles | 88.5 | 97.1 | 94.4 | 95.6 | 100 | 98.5 | 90.7 | 95.8 | 100 | 98.7 | 100 | 98.8 | 93.8 | 97.1 | 89.5 | 95.3 | 96.3 |
| Heavy Vehicles | 9 | 13 | 4 | 26 | 0 | 3 | 10 | 13 | 0 | 4 | 0 | 4 | 6 | 4 | 2 | 12 | 55 |
| % Heavy Vehicles | 11.5 | 2.9 | 5.6 | 4.4 | 0 | 1.5 | 9.3 | 4.2 | 0 | 1.3 | 0 | 1.2 | 6.2 | 2.9 | 10.5 | 4.7 | 3.7 |



# McMahon Associates, Inc.

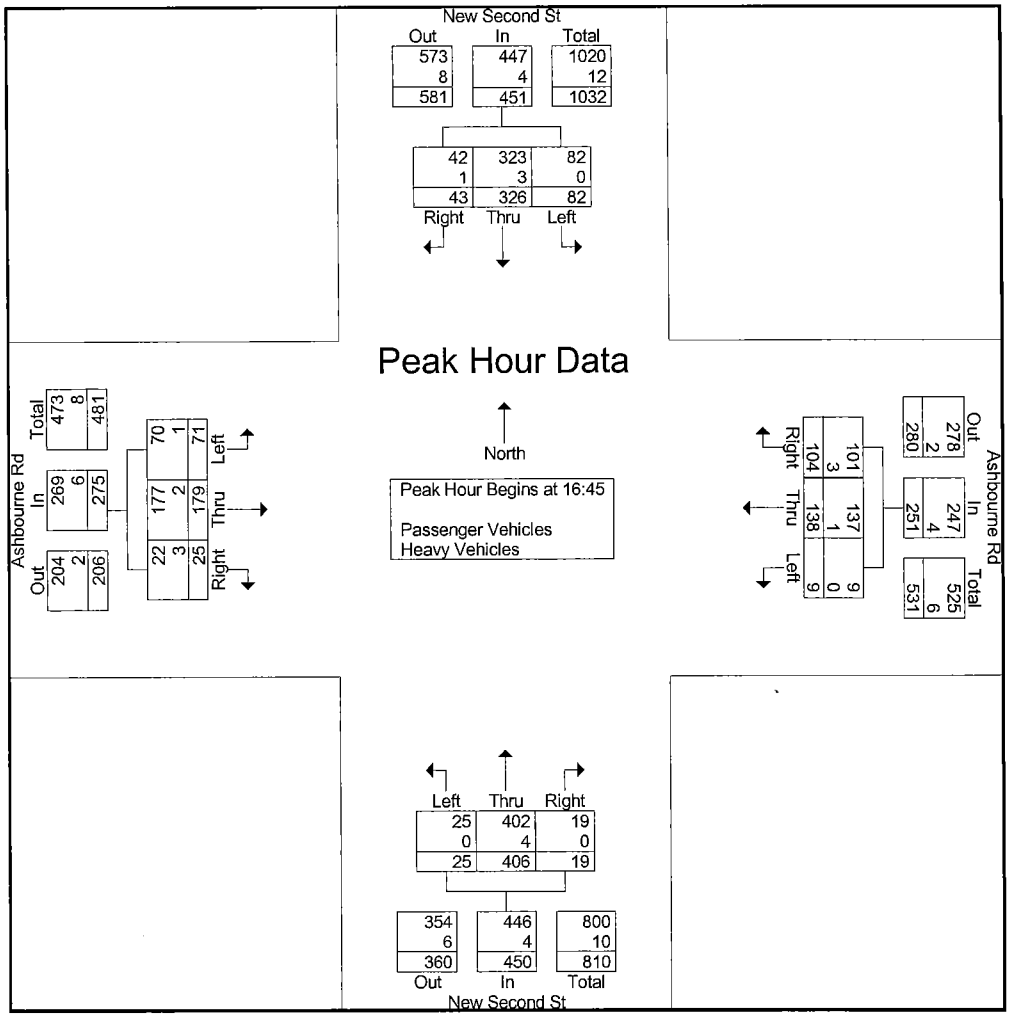
Transportation Engineers and Planners

*425 Commerce Drive, Suite 200*
*Fort Washington, PA 19034*

Municipality: Cheltenham Township
Location: Ashbourne Road &
New Second Street
Counter/Countboard No.: JB

File Name : ashbourneCC01w
Site Code : 11111101
Start Date : 5/10/2011
Page No : 3

| | New Second St Southbound | | | | Ashbourne Rd Westbound | | | | New Second St Northbound | | | | Ashbourne Rd Eastbound | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Int. Total |
| Peak Hour Analysis From 13:00 to 17:45 - Peak 1 of 1 | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 16:45 | | | | | | | | | | | | | | | | | |
| 16:45 | 16 | 67 | 9 | 92 | **3** | **39** | **39** | **81** | **9** | **121** | **6** | **136** | **21** | 37 | **8** | 66 | **375** |
| 17:00 | 18 | 86 | 12 | 116 | 2 | 29 | 21 | 52 | 4 | 84 | 4 | 92 | 15 | 49 | 7 | 71 | 331 |
| 17:15 | **26** | **93** | 7 | **126** | 1 | 34 | 25 | 60 | 7 | 102 | 4 | 113 | 20 | **50** | 5 | **75** | 374 |
| 17:30 | 22 | 80 | **15** | 117 | 3 | 36 | 19 | 58 | 5 | 99 | 5 | 109 | 15 | 43 | 5 | 63 | 347 |
| Total Volume | 82 | 326 | 43 | 451 | 9 | 138 | 104 | 251 | 25 | 406 | 19 | 450 | 71 | 179 | 25 | 275 | 1427 |
| % App. Total | 18.2 | 72.3 | 9.5 | | 3.6 | 55 | 41.4 | | 5.6 | 90.2 | 4.2 | | 25.8 | 65.1 | 9.1 | | |
| PHF | .788 | .876 | .717 | .895 | .750 | .885 | .667 | .775 | .694 | .839 | .792 | .827 | .845 | .895 | .781 | .917 | .951 |
| Passenger Vehicles | 82 | 323 | 42 | 447 | 9 | 137 | 101 | 247 | 25 | 402 | 19 | 446 | 70 | 177 | 22 | 269 | 1409 |
| % Passenger Vehicles | 100 | 99.1 | 97.7 | 99.1 | 100 | 99.3 | 97.1 | 98.4 | 100 | 99.0 | 100 | 99.1 | 98.6 | 98.9 | 88.0 | 97.8 | 98.7 |
| Heavy Vehicles | 0 | 3 | 1 | 4 | 0 | 1 | 3 | 4 | 0 | 4 | 0 | 4 | 1 | 2 | 3 | 6 | 18 |
| % Heavy Vehicles | 0 | 0.9 | 2.3 | 0.9 | 0 | 0.7 | 2.9 | 1.6 | 0 | 1.0 | 0 | 0.9 | 1.4 | 1.1 | 12.0 | 2.2 | 1.3 |



# McMahon Associates, Inc.

Transportation Engineers and Planners

*425 Commerce Drive, Suite 200*
*Fort Washington, PA 19034*

Municipality: Cheltenham Township
Location: Ashbourne Road &
New Second Street
Counter/Countboard No.: JB

File Name : ashbourneCC01w
Site Code : 11111101
Start Date : 5/10/2011
Page No : 1

Groups Printed- Passenger Vehicles

| | New Second St Southbound | | | Ashbourne Rd Westbound | | | New Second St Northbound | | | Ashbourne Rd Eastbound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Int. Total |
| 07:00 | 15 | 108 | 14 | 1 | 33 | 35 | 0 | 45 | 0 | 8 | 25 | 3 | 287 |
| 07:15 | 15 | 123 | 12 | 2 | 45 | 18 | 1 | 56 | 1 | 19 | 37 | 3 | 332 |
| 07:30 | 23 | 108 | 12 | 1 | 56 | 19 | 4 | 86 | 2 | 12 | 27 | 8 | 358 |
| 07:45 | 13 | 120 | 20 | 0 | 49 | 31 | 6 | 96 | 1 | 27 | 33 | 3 | 399 |
| Total | 66 | 459 | 58 | 4 | 183 | 103 | 11 | 283 | 4 | 66 | 122 | 17 | 1376 |
| 08:00 | 18 | 77 | 24 | 3 | 41 | 29 | 4 | 67 | 5 | 33 | 36 | 3 | 340 |
| 08:15 | 18 | 81 | 22 | 3 | 38 | 26 | 5 | 73 | 4 | 22 | 23 | 4 | 319 |
| 08:30 | 12 | 70 | 15 | 2 | 27 | 29 | 5 | 49 | 1 | 25 | 26 | 6 | 267 |
| 08:45 | 16 | 82 | 16 | 4 | 32 | 18 | 9 | 64 | 3 | 17 | 18 | 4 | 283 |
| Total | 64 | 310 | 77 | 12 | 138 | 102 | 23 | 253 | 13 | 97 | 103 | 17 | 1209 |
| *** BREAK *** | | | | | | | | | | | | | |
| 16:00 | 29 | 90 | 16 | 1 | 37 | 28 | 3 | 73 | 0 | 15 | 23 | 2 | 317 |
| 16:15 | 22 | 85 | 16 | 2 | 43 | 30 | 8 | 95 | 2 | 10 | 21 | 7 | 341 |
| 16:30 | 18 | 70 | 11 | 2 | 34 | 31 | 8 | 98 | 1 | 19 | 43 | 4 | 339 |
| 16:45 | 16 | 67 | 9 | 3 | 39 | 39 | 9 | 120 | 6 | 21 | 36 | 5 | 370 |
| Total | 85 | 312 | 52 | 8 | 153 | 128 | 28 | 386 | 9 | 65 | 123 | 18 | 1367 |
| 17:00 | 18 | 84 | 12 | 2 | 29 | 19 | 4 | 83 | 4 | 14 | 48 | 7 | 324 |
| 17:15 | 26 | 93 | 6 | 1 | 34 | 24 | 7 | 101 | 4 | 20 | 50 | 5 | 371 |
| 17:30 | 22 | 79 | 15 | 3 | 35 | 19 | 5 | 98 | 5 | 15 | 43 | 5 | 344 |
| 17:45 | 26 | 60 | 17 | 0 | 39 | 24 | 6 | 90 | 6 | 21 | 52 | 8 | 349 |
| Total | 92 | 316 | 50 | 6 | 137 | 86 | 22 | 372 | 19 | 70 | 193 | 25 | 1388 |
| Grand Total | 307 | 1397 | 237 | 30 | 611 | 419 | 84 | 1294 | 45 | 298 | 541 | 77 | 5340 |
| Apprch % | 15.8 | 72 | 12.2 | 2.8 | 57.6 | 39.5 | 5.9 | 90.9 | 3.2 | 32.5 | 59.1 | 8.4 | |
| Total % | 5.7 | 26.2 | 4.4 | 0.6 | 11.4 | 7.8 | 1.6 | 24.2 | 0.8 | 5.6 | 10.1 | 1.4 | |

# McMahon Associates, Inc.

Transportation Engineers and Planners

*425 Commerce Drive, Suite 200*
*Fort Washington, PA 19034*

Municipality: Cheltenham Township
Location: Ashbourne Road &
New Second Street
Counter/Countboard No.: JB

File Name : ashbourneCC01w
Site Code : 11111101
Start Date : 5/10/2011
Page No : 1

Groups Printed- Heavy Vehicles

| | New Second St Southbound | | | Ashbourne Rd Westbound | | | New Second St Northbound | | | Ashbourne Rd Eastbound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Int. Total |
| 07:00 | 0 | 5 | 0 | 0 | 0 | 2 | 0 | 3 | 0 | 0 | 0 | 1 | 11 |
| 07:15 | 1 | 4 | 0 | 0 | 2 | 4 | 0 | 0 | 0 | 0 | 1 | 1 | 13 |
| 07:30 | 2 | 2 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 2 | 1 | 1 | 10 |
| 07:45 | 4 | 3 | 2 | 0 | 1 | 1 | 0 | 2 | 0 | 2 | 0 | 0 | 15 |
| Total | 7 | 14 | 2 | 0 | 3 | 8 | 0 | 6 | 0 | 4 | 2 | 3 | 49 |
| 08:00 | 2 | 4 | 2 | 0 | 0 | 4 | 0 | 1 | 0 | 2 | 2 | 0 | 17 |
| 08:15 | 0 | 2 | 3 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 7 |
| 08:30 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 2 | 6 |
| 08:45 | 1 | 3 | 1 | 2 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 3 | 13 |
| Total | 5 | 10 | 6 | 2 | 2 | 6 | 0 | 2 | 0 | 2 | 3 | 5 | 43 |
| *** BREAK *** | | | | | | | | | | | | | |
| 16:00 | 2 | 2 | 1 | 0 | 3 | 1 | 1 | 3 | 0 | 0 | 2 | 4 | 19 |
| 16:15 | 2 | 0 | 0 | 0 | 1 | 1 | 0 | 2 | 0 | 0 | 2 | 2 | 10 |
| 16:30 | 0 | 2 | 0 | 0 | 1 | 2 | 0 | 0 | 0 | 1 | 0 | 0 | 6 |
| 16:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 3 | 5 |
| Total | 4 | 4 | 1 | 0 | 5 | 4 | 1 | 6 | 0 | 1 | 5 | 9 | 40 |
| 17:00 | 0 | 2 | 0 | 0 | 0 | 2 | 0 | 1 | 0 | 1 | 1 | 0 | 7 |
| 17:15 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 3 |
| 17:30 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 3 |
| 17:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 |
| Total | 0 | 3 | 1 | 0 | 1 | 3 | 0 | 4 | 0 | 1 | 1 | 0 | 14 |
| Grand Total | 16 | 31 | 10 | 2 | 11 | 21 | 1 | 18 | 0 | 8 | 11 | 17 | 146 |
| Apprch % | 28.1 | 54.4 | 17.5 | 5.9 | 32.4 | 61.8 | 5.3 | 94.7 | 0 | 22.2 | 30.6 | 47.2 | |
| Total % | 11 | 21.2 | 6.8 | 1.4 | 7.5 | 14.4 | 0.7 | 12.3 | 0 | 5.5 | 7.5 | 11.6 | |

# McMahon Associates, Inc.

Transportation Engineers and Planners

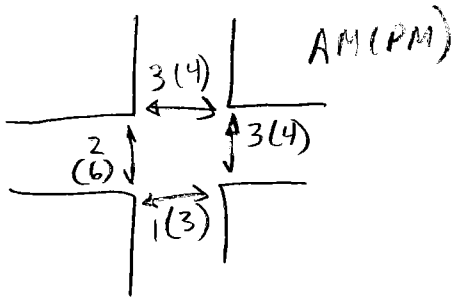
*425 Commerce Drive, Suite 200*
*Fort Washington, PA 19034*

Municipality: Cheltenham Township
Location: Ashbourne Road &
New Second Street
Counter/Countboard No.: JB

File Name : ashbourneCC01w
Site Code : 11111101
Start Date : 5/10/2011
Page No : 1

Groups Printed- Pedestrians

| | New Second St Southbound | Ashbourne Rd Westbound | New Second St Northbound | Ashbourne Rd Eastbound | |
|---|---|---|---|---|---|
| Start Time | E/W Peds | N/S Peds | HV E/W Peds | N/S Peds | Int. Total |
| 07:00 | 1 | 1 | 3 | 2 | 7 |
| 07:15 | 2 | 2 | 0 | 0 | 4 |
| 07:30 | 1 | 0 | 0 | 1 | 2 |
| 07:45 | 0 | 0 | 0 | 1 | 1 |
| Total | 4 | 3 | 3 | 4 | 14 |
| 08:00 | 0 | 1 | 1 | 0 | 2 |
| 08:15 | 1 | 0 | 0 | 1 | 2 |
| 08:30 | 1 | 0 | 0 | 0 | 1 |
| 08:45 | 2 | 1 | 1 | 0 | 4 |
| Total | 4 | 2 | 2 | 1 | 9 |
| *** BREAK *** | | | | | |
| 16:00 | 1 | 1 | 2 | 0 | 4 |
| 16:15 | 1 | 0 | 0 | 3 | 4 |
| 16:30 | 1 | 0 | 0 | 0 | 1 |
| 16:45 | 1 | 0 | 1 | 0 | 2 |
| Total | 4 | 1 | 3 | 3 | 11 |
| 17:00 | 1 | 1 | 2 | 3 | 7 |
| 17:15 | 0 | 0 | 0 | 2 | 2 |
| 17:30 | 2 | 3 | 0 | 1 | 6 |
| 17:45 | 0 | 1 | 1 | 1 | 3 |
| Total | 3 | 5 | 3 | 7 | 18 |
| Grand Total | 15 | 11 | 11 | 15 | 52 |
| Apprch % | 100 | 100 | 100 | 100 | |
| Total % | 28.8 | 21.2 | 21.2 | 28.8 | |



# McMahon Associates, Inc.

Transportation Engineers and Planners

*425 Commerce Drive, Suite 200*
*Fort Washington, PA 19034*

Municipality: Cheltenham Township
Location: Ashbourne Road &
Oak Lane Road / CC Access
Counter/Countboard No.: LB

File Name : ashbourneCC02w
Site Code : 11111102
Start Date : 5/10/2011
Page No : 1

Groups Printed- Passenger Vehicles - Heavy Vehicles

| | CC Access Southbound | | | Ashbourne Rd Westbound | | | Oak Lane Rd Northbound | | | Ashbourne Rd Eastbound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Int. Total |
| 07:00 | 0 | 1 | 0 | 27 | 53 | 0 | 7 | 0 | 24 | 0 | 34 | 2 | 148 |
| 07:15 | 0 | 0 | 4 | 49 | 54 | 0 | 11 | 0 | 28 | 0 | 46 | 0 | 192 |
| 07:30 | 0 | 0 | 5 | 50 | 59 | 0 | 4 | 0 | 30 | 0 | 52 | 6 | 206 |
| 07:45 | 0 | 0 | 0 | 47 | 63 | 0 | 6 | 0 | 46 | 2 | 43 | 4 | 211 |
| Total | 0 | 1 | 9 | 173 | 229 | 0 | 28 | 0 | 128 | 2 | 175 | 12 | 757 |
| 08:00 | 0 | 0 | 2 | 34 | 43 | 0 | 6 | 0 | 21 | 2 | 42 | 4 | 154 |
| 08:15 | 0 | 1 | 1 | 54 | 52 | 2 | 10 | 0 | 35 | 0 | 35 | 4 | 194 |
| 08:30 | 1 | 0 | 0 | 39 | 36 | 0 | 15 | 1 | 48 | 0 | 39 | 5 | 184 |
| 08:45 | 0 | 0 | 4 | 50 | 33 | 0 | 13 | 0 | 67 | 1 | 32 | 6 | 206 |
| Total | 1 | 1 | 7 | 177 | 164 | 2 | 44 | 1 | 171 | 3 | 148 | 19 | 738 |
| *** BREAK *** | | | | | | | | | | | | | |
| 16:00 | 0 | 1 | 2 | 55 | 54 | 0 | 8 | 1 | 45 | 0 | 40 | 9 | 215 |
| 16:15 | 0 | 0 | 2 | 52 | 59 | 1 | 6 | 0 | 29 | 0 | 38 | 8 | 195 |
| 16:30 | 1 | 0 | 0 | 38 | 46 | 0 | 10 | 1 | 21 | 1 | 52 | 8 | 178 |
| 16:45 | 0 | 1 | 0 | 32 | 46 | 0 | 6 | 1 | 26 | 1 | 29 | 4 | 146 |
| Total | 1 | 2 | 4 | 177 | 205 | 1 | 30 | 3 | 121 | 2 | 159 | 29 | 734 |
| 17:00 | 0 | 0 | 1 | 47 | 53 | 0 | 6 | 0 | 53 | 0 | 52 | 15 | 227 |
| 17:15 | 0 | 0 | 0 | 55 | 48 | 0 | 5 | 0 | 44 | 0 | 54 | 6 | 212 |
| 17:30 | 0 | 0 | 0 | 49 | 48 | 0 | 5 | 0 | 42 | 0 | 54 | 5 | 203 |
| 17:45 | 0 | 0 | 0 | 48 | 50 | 0 | 5 | 0 | 46 | 0 | 65 | 13 | 227 |
| Total | 0 | 0 | 1 | 199 | 199 | 0 | 21 | 0 | 185 | 0 | 225 | 39 | 869 |
| Grand Total | 2 | 4 | 21 | 726 | 797 | 3 | 123 | 4 | 605 | 7 | 707 | 99 | 3098 |
| Apprch % | 7.4 | 14.8 | 77.8 | 47.6 | 52.2 | 0.2 | 16.8 | 0.5 | 82.7 | 0.9 | 87 | 12.2 | |
| Total % | 0.1 | 0.1 | 0.7 | 23.4 | 25.7 | 0.1 | 4 | 0.1 | 19.5 | 0.2 | 22.8 | 3.2 | |
| Passenger Vehicles | 2 | 3 | 13 | 672 | 787 | 3 | 118 | 4 | 564 | 4 | 700 | 93 | 2963 |
| % Passenger Vehicles | 100 | 75 | 61.9 | 92.6 | 98.7 | 100 | 95.9 | 100 | 93.2 | 57.1 | 99 | 93.9 | 95.6 |
| Heavy Vehicles | 0 | 1 | 8 | 54 | 10 | 0 | 5 | 0 | 41 | 3 | 7 | 6 | 135 |
| % Heavy Vehicles | 0 | 25 | 38.1 | 7.4 | 1.3 | 0 | 4.1 | 0 | 6.8 | 42.9 | 1 | 6.1 | 4.4 |

# McMahon Associates, Inc.

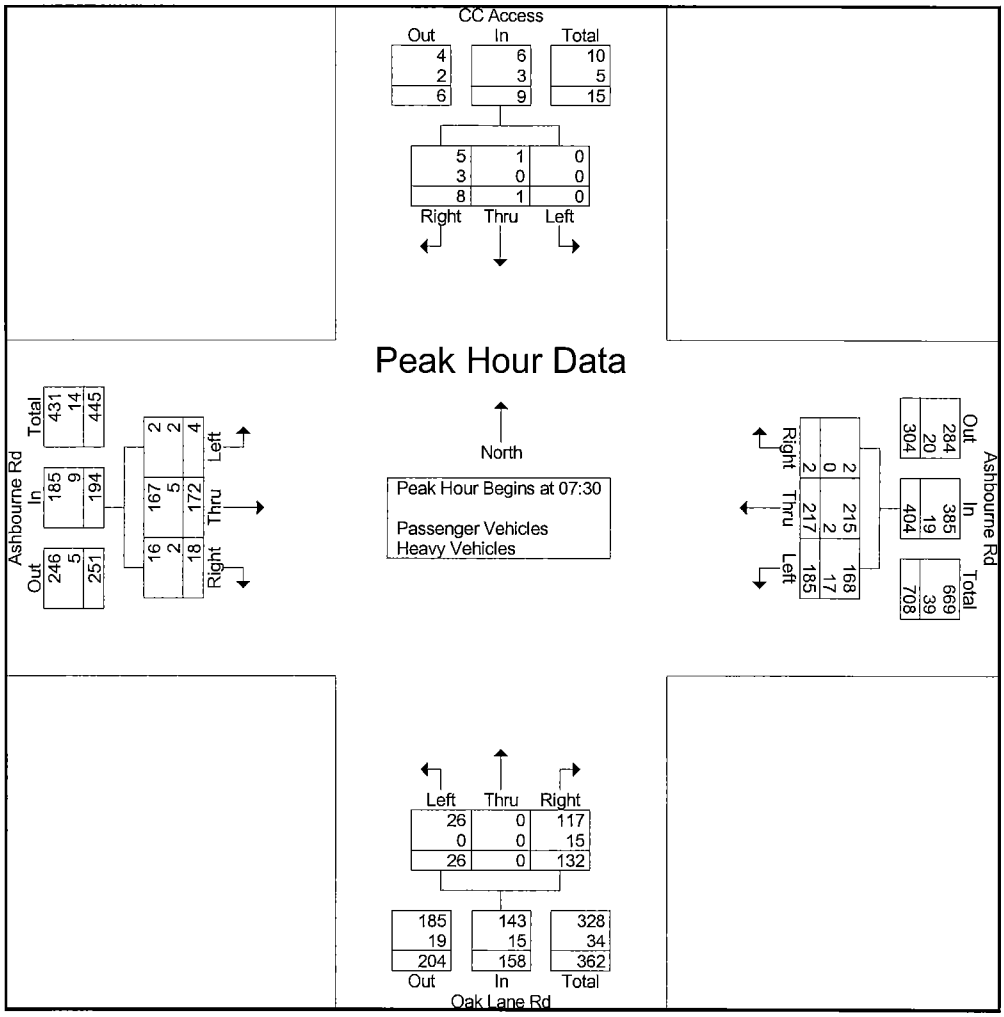
Transportation Engineers and Planners

*425 Commerce Drive, Suite 200*
*Fort Washington, PA 19034*

Municipality: Cheltenham Township
Location: Ashbourne Road &
Oak Lane Road / CC Access
Counter/Countboard No.: LB

File Name : ashbourneCC02w
Site Code : 11111102
Start Date : 5/10/2011
Page No : 2

| | CC Access Southbound | | | | Ashbourne Rd Westbound | | | | Oak Lane Rd Northbound | | | | Ashbourne Rd Eastbound | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Int. Total |
| Peak Hour Analysis From 07:00 to 12:30 - Peak 1 of 1 | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 07:30 | | | | | | | | | | | | | | | | | |
| 07:30 | 0 | 0 | **5** | **5** | 50 | 59 | 0 | 109 | 4 | 0 | 30 | 34 | 0 | **52** | **6** | **58** | 206 |
| 07:45 | 0 | 0 | 0 | 0 | 47 | **63** | 0 | **110** | 6 | 0 | **46** | **52** | **2** | 43 | 4 | 49 | **211** |
| 08:00 | 0 | 0 | 2 | 2 | 34 | 43 | 0 | 77 | 6 | 0 | 21 | 27 | 2 | 42 | 4 | 48 | 154 |
| 08:15 | 0 | **1** | 1 | 2 | **54** | 52 | **2** | 108 | **10** | 0 | 35 | 45 | 0 | 35 | 4 | 39 | 194 |
| Total Volume | 0 | 1 | 8 | 9 | 185 | 217 | 2 | 404 | 26 | 0 | 132 | 158 | 4 | 172 | 18 | 194 | 765 |
| % App. Total | 0 | 11.1 | 88.9 | | 45.8 | 53.7 | 0.5 | | 16.5 | 0 | 83.5 | | 2.1 | 88.7 | 9.3 | | |
| PHF | .000 | .250 | .400 | .450 | .856 | .861 | .250 | .918 | .650 | .000 | .717 | .760 | .500 | .827 | .750 | .836 | .906 |
| Passenger Vehicles | 0 | 1 | 5 | 6 | 168 | 215 | 2 | 385 | 26 | 0 | 117 | 143 | 2 | 167 | 16 | 185 | 719 |
| % Passenger Vehicles | 0 | 100 | 62.5 | 66.7 | 90.8 | 99.1 | 100 | 95.3 | 100 | 0 | 88.6 | 90.5 | 50.0 | 97.1 | 88.9 | 95.4 | 94.0 |
| Heavy Vehicles | 0 | 0 | 3 | 3 | 17 | 2 | 0 | 19 | 0 | 0 | 15 | 15 | 2 | 5 | 2 | 9 | 46 |
| % Heavy Vehicles | 0 | 0 | 37.5 | 33.3 | 9.2 | 0.9 | 0 | 4.7 | 0 | 0 | 11.4 | 9.5 | 50.0 | 2.9 | 11.1 | 4.6 | 6.0 |



# McMahon Associates, Inc.

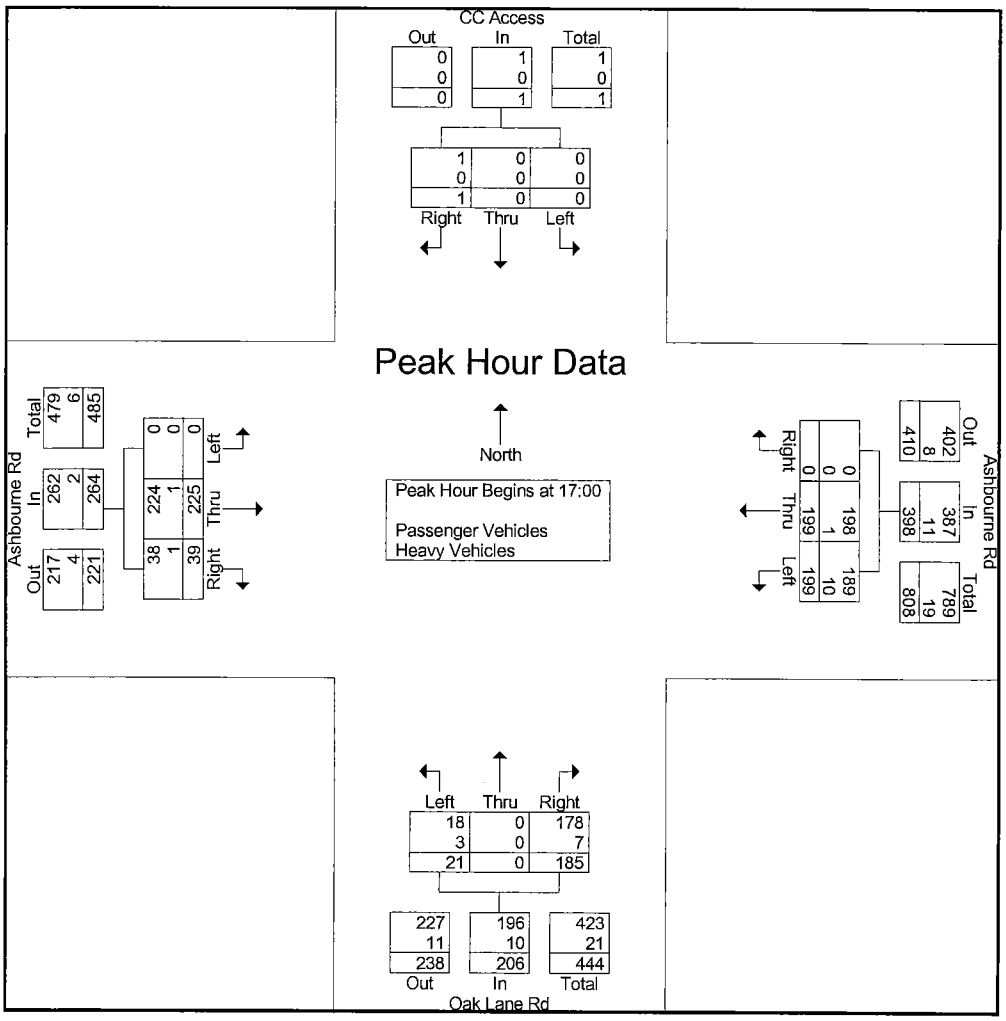
Transportation Engineers and Planners

*425 Commerce Drive, Suite 200*
*Fort Washington, PA 19034*

Municipality: Cheltenham Township
Location: Ashbourne Road &
Oak Lane Road / CC Access
Counter/Countboard No.: LB

File Name : ashbourneCC02w
Site Code : 11111102
Start Date : 5/10/2011
Page No : 3

| | CC Access Southbound | | | | Ashbourne Rd Westbound | | | | Oak Lane Rd Northbound | | | | Ashbourne Rd Eastbound | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Int. Total |
| Peak Hour Analysis From 12:45 to 17:45 - Peak 1 of 1 | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 17:00 | | | | | | | | | | | | | | | | | |
| 17:00 | 0 | 0 | **1** | **1** | 47 | **53** | 0 | 100 | **6** | 0 | **53** | **59** | 0 | 52 | **15** | 67 | **227** |
| 17:15 | 0 | 0 | 0 | 0 | **55** | 48 | 0 | **103** | 5 | 0 | 44 | 49 | 0 | 54 | 6 | 60 | 212 |
| 17:30 | 0 | 0 | 0 | 0 | 49 | 48 | 0 | 97 | 5 | 0 | 42 | 47 | 0 | 54 | 5 | 59 | 203 |
| 17:45 | 0 | 0 | 0 | 0 | 48 | 50 | 0 | 98 | 5 | 0 | 46 | 51 | 0 | **65** | 13 | **78** | 227 |
| Total Volume | 0 | 0 | 1 | 1 | 199 | 199 | 0 | 398 | 21 | 0 | 185 | 206 | 0 | 225 | 39 | 264 | 869 |
| % App. Total | 0 | 0 | 100 | | 50 | 50 | 0 | | 10.2 | 0 | 89.8 | | 0 | 85.2 | 14.8 | | |
| PHF | .000 | .000 | .250 | .250 | .905 | .939 | .000 | .966 | .875 | .000 | .873 | .873 | .000 | .865 | .650 | .846 | .957 |
| Passenger Vehicles | 0 | 0 | 1 | 1 | 189 | 198 | 0 | 387 | 18 | 0 | 178 | 196 | 0 | 224 | 38 | 262 | 846 |
| % Passenger Vehicles | 0 | 0 | 100 | 100 | 95.0 | 99.5 | 0 | 97.2 | 85.7 | 0 | 96.2 | 95.1 | 0 | 99.6 | 97.4 | 99.2 | 97.4 |
| Heavy Vehicles | 0 | 0 | 0 | 0 | 10 | 1 | 0 | 11 | 3 | 0 | 7 | 10 | 0 | 1 | 1 | 2 | 23 |
| % Heavy Vehicles | 0 | 0 | 0 | 0 | 5.0 | 0.5 | 0 | 2.8 | 14.3 | 0 | 3.8 | 4.9 | 0 | 0.4 | 2.6 | 0.8 | 2.6 |



# McMahon Associates, Inc.

Transportation Engineers and Planners

*425 Commerce Drive, Suite 200*
*Fort Washington, PA 19034*

Municipality: Cheltenham Township
Location: Ashbourne Road &
Oak Lane Road / CC Access
Counter/Countboard No.: LB

File Name : ashbourneCC02w
Site Code : 11111102
Start Date : 5/10/2011
Page No : 1

Groups Printed- Passenger Vehicles

| | CC Access Southbound | | | Ashbourne Rd Westbound | | | Oak Lane Rd Northbound | | | Ashbourne Rd Eastbound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Int. Total |
| 07:00 | 0 | 0 | 0 | 24 | 52 | 0 | 7 | 0 | 20 | 0 | 34 | 2 | 139 |
| 07:15 | 0 | 0 | 1 | 44 | 54 | 0 | 11 | 0 | 24 | 0 | 46 | 0 | 180 |
| 07:30 | 0 | 0 | 4 | 46 | 58 | 0 | 4 | 0 | 26 | 0 | 50 | 6 | 194 |
| 07:45 | 0 | 0 | 0 | 43 | 62 | 0 | 6 | 0 | 42 | 1 | 41 | 3 | 198 |
| Total | 0 | 0 | 5 | 157 | 226 | 0 | 28 | 0 | 112 | 1 | 171 | 11 | 711 |
| 08:00 | 0 | 0 | 0 | 29 | 43 | 0 | 6 | 0 | 18 | 1 | 41 | 3 | 141 |
| 08:15 | 0 | 1 | 1 | 50 | 52 | 2 | 10 | 0 | 31 | 0 | 35 | 4 | 186 |
| 08:30 | 1 | 0 | 0 | 37 | 34 | 0 | 15 | 1 | 45 | 0 | 39 | 4 | 176 |
| 08:45 | 0 | 0 | 3 | 45 | 32 | 0 | 13 | 0 | 66 | 1 | 32 | 6 | 198 |
| Total | 1 | 1 | 4 | 161 | 161 | 2 | 44 | 1 | 160 | 2 | 147 | 17 | 701 |
| *** BREAK *** | | | | | | | | | | | | | |
| 16:00 | 0 | 1 | 1 | 52 | 53 | 0 | 8 | 1 | 42 | 0 | 39 | 9 | 206 |
| 16:15 | 0 | 0 | 2 | 48 | 58 | 1 | 4 | 0 | 27 | 0 | 38 | 6 | 184 |
| 16:30 | 1 | 0 | 0 | 36 | 45 | 0 | 10 | 1 | 20 | 0 | 52 | 8 | 173 |
| 16:45 | 0 | 1 | 0 | 29 | 46 | 0 | 6 | 1 | 25 | 1 | 29 | 4 | 142 |
| Total | 1 | 2 | 3 | 165 | 202 | 1 | 28 | 3 | 114 | 1 | 158 | 27 | 705 |
| 17:00 | 0 | 0 | 1 | 42 | 53 | 0 | 4 | 0 | 50 | 0 | 52 | 14 | 216 |
| 17:15 | 0 | 0 | 0 | 54 | 48 | 0 | 4 | 0 | 42 | 0 | 54 | 6 | 208 |
| 17:30 | 0 | 0 | 0 | 45 | 47 | 0 | 5 | 0 | 41 | 0 | 54 | 5 | 197 |
| 17:45 | 0 | 0 | 0 | 48 | 50 | 0 | 5 | 0 | 45 | 0 | 64 | 13 | 225 |
| Total | 0 | 0 | 1 | 189 | 198 | 0 | 18 | 0 | 178 | 0 | 224 | 38 | 846 |
| Grand Total | 2 | 3 | 13 | 672 | 787 | 3 | 118 | 4 | 564 | 4 | 700 | 93 | 2963 |
| Apprch % | 11.1 | 16.7 | 72.2 | 46 | 53.8 | 0.2 | 17.2 | 0.6 | 82.2 | 0.5 | 87.8 | 11.7 | |
| Total % | 0.1 | 0.1 | 0.4 | 22.7 | 26.6 | 0.1 | 4 | 0.1 | 19 | 0.1 | 23.6 | 3.1 | |

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*425 Commerce Drive, Suite 200*
*Fort Washington, PA 19034*

Municipality: Cheltenham Township
Location: Ashbourne Road &
Oak Lane Road / CC Access
Counter/Countboard No.: LB

File Name : ashbourneCC02w
Site Code : 11111102
Start Date : 5/10/2011
Page No : 1

Groups Printed- Heavy Vehicles

| | CC Access Southbound | | | Ashbourne Rd Westbound | | | Oak Lane Rd Northbound | | | Ashbourne Rd Eastbound | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Int. Total |
| 07:00 | 0 | 1 | 0 | 3 | 1 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 9 |
| 07:15 | 0 | 0 | 3 | 5 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 12 |
| 07:30 | 0 | 0 | 1 | 4 | 1 | 0 | 0 | 0 | 4 | 0 | 2 | 0 | 12 |
| 07:45 | 0 | 0 | 0 | 4 | 1 | 0 | 0 | 0 | 4 | 1 | 2 | 1 | 13 |
| Total | 0 | 1 | 4 | 16 | 3 | 0 | 0 | 0 | 16 | 1 | 4 | 1 | 46 |
| 08:00 | 0 | 0 | 2 | 5 | 0 | 0 | 0 | 0 | 3 | 1 | 1 | 1 | 13 |
| 08:15 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 8 |
| 08:30 | 0 | 0 | 0 | 2 | 2 | 0 | 0 | 0 | 3 | 0 | 0 | 1 | 8 |
| 08:45 | 0 | 0 | 1 | 5 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 8 |
| Total | 0 | 0 | 3 | 16 | 3 | 0 | 0 | 0 | 11 | 1 | 1 | 2 | 37 |
| *** BREAK *** | | | | | | | | | | | | | |
| 16:00 | 0 | 0 | 1 | 3 | 1 | 0 | 0 | 0 | 3 | 0 | 1 | 0 | 9 |
| 16:15 | 0 | 0 | 0 | 4 | 1 | 0 | 2 | 0 | 2 | 0 | 0 | 2 | 11 |
| 16:30 | 0 | 0 | 0 | 2 | 1 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 5 |
| 16:45 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 4 |
| Total | 0 | 0 | 1 | 12 | 3 | 0 | 2 | 0 | 7 | 1 | 1 | 2 | 29 |
| 17:00 | 0 | 0 | 0 | 5 | 0 | 0 | 2 | 0 | 3 | 0 | 0 | 1 | 11 |
| 17:15 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 2 | 0 | 0 | 0 | 4 |
| 17:30 | 0 | 0 | 0 | 4 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 6 |
| 17:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 2 |
| Total | 0 | 0 | 0 | 10 | 1 | 0 | 3 | 0 | 7 | 0 | 1 | 1 | 23 |
| Grand Total | 0 | 1 | 8 | 54 | 10 | 0 | 5 | 0 | 41 | 3 | 7 | 6 | 135 |
| Apprch % | 0 | 11.1 | 88.9 | 84.4 | 15.6 | 0 | 10.9 | 0 | 89.1 | 18.8 | 43.8 | 37.5 | |
| Total % | 0 | 0.7 | 5.9 | 40 | 7.4 | 0 | 3.7 | 0 | 30.4 | 2.2 | 5.2 | 4.4 | |

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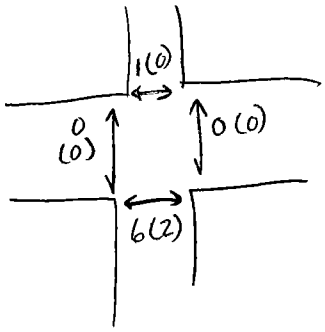
Municipality: Cheltenham Township
Location: Ashbourne Road &
Oak Lane Road / CC Access
Counter/Countboard No.: LB

File Name : ashbourneCC02w
Site Code : 11111102
Start Date : 5/10/2011
Page No : 1

Groups Printed- Pedestrians

| | CC Access Southbound | Ashbourne Rd Westbound | Oak Lane Rd Northbound | Ashbourne Rd Eastbound | |
|---|---|---|---|---|---|
| Start Time | E/W Peds | N/S Peds | E/W Peds | N/S Peds | Int. Total |
| 07:00 | 1 | 0 | 2 | 0 | 3 |
| 07:15 | 0 | 0 | 1 | 0 | 1 |
| 07:30 | 1 | 0 | 1 | 0 | 2 |
| 07:45 | 0 | 0 | 2 | 0 | 2 |
| Total | 2 | 0 | 6 | 0 | 8 |
| 08:00 | 0 | 0 | 3 | 0 | 3 |
| *** BREAK *** | | | | | |
| 08:30 | 0 | 0 | 8 | 0 | 8 |
| *** BREAK *** | | | | | |
| Total | 0 | 0 | 11 | 0 | 11 |
| *** BREAK *** | | | | | |
| 16:00 | 0 | 0 | 4 | 0 | 4 |
| 16:15 | 0 | 0 | 1 | 0 | 1 |
| 16:30 | 1 | 0 | 1 | 0 | 2 |
| 16:45 | 2 | 0 | 0 | 0 | 2 |
| Total | 3 | 0 | 6 | 0 | 9 |
| *** BREAK *** | | | | | |
| 17:45 | 0 | 0 | 2 | 0 | 2 |
| Total | 0 | 0 | 2 | 0 | 2 |
| Grand Total | 5 | 0 | 25 | 0 | 30 |
| Apprch % | 100 | 0 | 100 | 0 | |
| Total % | 16.7 | 0 | 83.3 | 0 | |

AM (PM)



# McMahon Associates, Inc.

Transportation Engineers and Planners

*425 Commerce Drive, Suite 200*
*Fort Washington, PA 19034*

Municipality: Cheltenham Township
Location: Ashbourne / Ashmead / Front / Arbor
Counter/Countboard No.: BW

File Name : ashbourneCC03w
Site Code : 11111103
Start Date : 5/10/2011
Page No : 1

Groups Printed- Passenger Vehicles - Heavy Vehicles

| | Front St Southbound | | | | Arbor Rd Southwestbound | | | | Ashmead Rd Westbound | | | | Front St Northbound | | | | Ashbourne Rd Eastbound | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Hard Left | Left | Thru | Right | Hard Left | Bear Left | Bear Right | Hard Right | Left | Thru | Right | Hard Right | Left | Thru | Bear Right | Right | Left | Bear Left | Thru | Right | Int. Total |
| 07:00 | 0 | 2 | 22 | 37 | 0 | 0 | 2 | 0 | 2 | 49 | 4 | 0 | 3 | 7 | 1 | 5 | 23 | 0 | 45 | 3 | 205 |
| 07:15 | 0 | 3 | 25 | 44 | 1 | 0 | 5 | 0 | 8 | 47 | 6 | 0 | 0 | 17 | 0 | 3 | 26 | 3 | 49 | 1 | 238 |
| 07:30 | 0 | 2 | 19 | 43 | 0 | 0 | 2 | 0 | 4 | 69 | 2 | 0 | 7 | 16 | 0 | 4 | 34 | 0 | 45 | 2 | 249 |
| 07:45 | 0 | 6 | 23 | 45 | 0 | 2 | 2 | 0 | 2 | 65 | 4 | 0 | 2 | 24 | 0 | 5 | 37 | 0 | 53 | 4 | 274 |
| Total | 0 | 13 | 89 | 169 | 1 | 2 | 11 | 0 | 16 | 230 | 16 | 0 | 12 | 64 | 1 | 17 | 120 | 3 | 192 | 10 | 966 |
| 08:00 | 2 | 3 | 14 | 43 | 0 | 0 | 1 | 0 | 4 | 56 | 3 | 0 | 4 | 15 | 0 | 3 | 36 | 0 | 39 | 4 | 227 |
| 08:15 | 0 | 6 | 18 | 40 | 0 | 1 | 2 | 1 | 1 | 62 | 7 | 0 | 3 | 13 | 1 | 3 | 38 | 1 | 34 | 6 | 237 |
| 08:30 | 0 | 6 | 28 | 34 | 0 | 0 | 2 | 0 | 10 | 43 | 4 | 0 | 3 | 17 | 0 | 4 | 30 | 1 | 34 | 10 | 226 |
| 08:45 | 0 | 3 | 39 | 42 | 0 | 1 | 3 | 0 | 10 | 31 | 4 | 1 | 5 | 24 | 0 | 1 | 31 | 0 | 29 | 30 | 254 |
| Total | 2 | 18 | 99 | 159 | 0 | 2 | 8 | 1 | 25 | 192 | 18 | 1 | 15 | 69 | 1 | 11 | 135 | 2 | 136 | 50 | 944 |
| *** BREAK *** | | | | | | | | | | | | | | | | | | | | | |
| 16:00 | 0 | 3 | 17 | 36 | 0 | 1 | 1 | 0 | 4 | 51 | 6 | 0 | 2 | 31 | 0 | 2 | 38 | 1 | 37 | 7 | 237 |
| 16:15 | 0 | 6 | 8 | 53 | 0 | 0 | 0 | 0 | 9 | 65 | 5 | 0 | 3 | 21 | 0 | 3 | 35 | 5 | 37 | 5 | 255 |
| 16:30 | 0 | 6 | 18 | 23 | 0 | 1 | 3 | 1 | 2 | 60 | 4 | 1 | 2 | 15 | 0 | 4 | 34 | 4 | 43 | 6 | 227 |
| 16:45 | 0 | 7 | 12 | 32 | 0 | 0 | 2 | 0 | 7 | 71 | 8 | 0 | 2 | 12 | 0 | 3 | 55 | 5 | 46 | 2 | 264 |
| Total | 0 | 22 | 55 | 144 | 0 | 2 | 6 | 1 | 22 | 247 | 23 | 1 | 9 | 79 | 0 | 12 | 162 | 15 | 163 | 20 | 983 |
| 17:00 | 0 | 4 | 18 | 30 | 0 | 1 | 2 | 2 | 5 | 65 | 6 | 0 | 2 | 24 | 0 | 3 | 42 | 4 | 39 | 5 | 252 |
| 17:15 | 1 | 1 | 20 | 34 | 0 | 0 | 1 | 0 | 1 | 62 | 5 | 0 | 1 | 24 | 0 | 5 | 60 | 3 | 58 | 6 | 282 |
| 17:30 | 1 | 2 | 19 | 38 | 0 | 0 | 2 | 1 | 3 | 55 | 3 | 1 | 2 | 15 | 0 | 2 | 53 | 7 | 52 | 5 | 261 |
| 17:45 | 1 | 1 | 13 | 41 | 0 | 2 | 1 | 0 | 5 | 64 | 4 | 0 | 4 | 17 | 1 | 5 | 45 | 6 | 54 | 8 | 272 |
| Total | 3 | 8 | 70 | 143 | 0 | 3 | 6 | 3 | 14 | 246 | 18 | 1 | 9 | 80 | 1 | 15 | 200 | 20 | 203 | 24 | 1067 |
| Grand Total | 5 | 61 | 313 | 615 | 1 | 9 | 31 | 5 | 77 | 915 | 75 | 3 | 45 | 292 | 3 | 55 | 617 | 40 | 694 | 104 | 3960 |
| Apprch % | 0.5 | 6.1 | 31.5 | 61.9 | 2.2 | 19.6 | 67.4 | 10.9 | 7.2 | 85.5 | 7 | 0.3 | 11.4 | 73.9 | 0.8 | 13.9 | 42.4 | 2.7 | 47.7 | 7.1 | |
| Total % | 0.1 | 1.5 | 7.9 | 15.5 | 0 | 0.2 | 0.8 | 0.1 | 1.9 | 23.1 | 1.9 | 0.1 | 1.1 | 7.4 | 0.1 | 1.4 | 15.6 | 1 | 17.5 | 2.6 | |
| Passenger Vehicles | | | | | | | | | | | | | | | | | | | | | |
| % Passenger Vehicles | 100 | 100 | 100 | 97.4 | 100 | 100 | 100 | 100 | 98.7 | 98.9 | 97.3 | 100 | 97.8 | 96.6 | 100 | 96.4 | 91.1 | 100 | 99.6 | 98.1 | 97.4 |
| Heavy Vehicles | 0 | 0 | 0 | 16 | 0 | 0 | 0 | 0 | 1 | 10 | 2 | 0 | 1 | 10 | 0 | 2 | 55 | 0 | 3 | 2 | 102 |
| % Heavy Vehicles | 0 | 0 | 0 | 2.6 | 0 | 0 | 0 | 0 | 1.3 | 1.1 | 2.7 | 0 | 2.2 | 3.4 | 0 | 3.6 | 8.9 | 0 | 0.4 | 1.9 | 2.6 |

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File Name : ashbourneCC03w
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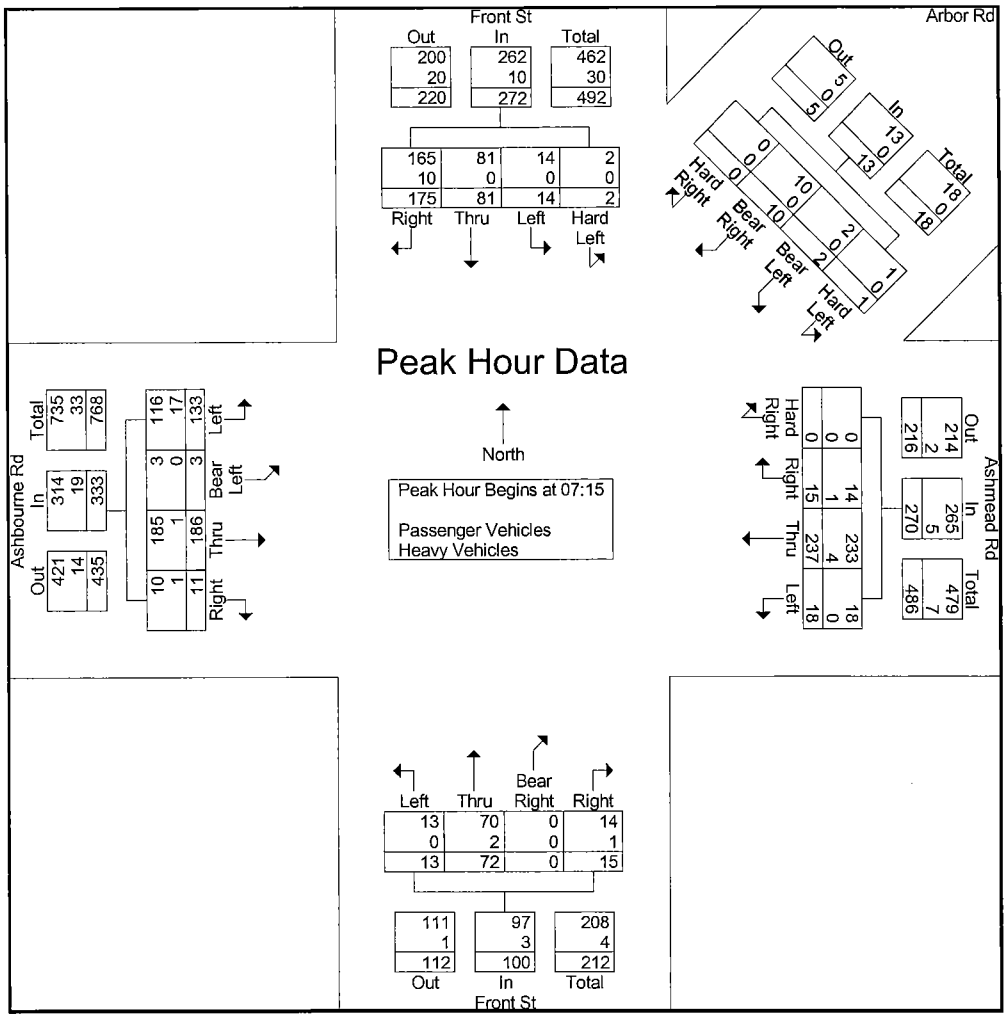
Start Date : 5/10/2011
Page No : 2

| | Front St Southbound | | | | | Arbor Rd Southwestbound | | | | | Ashmead Rd Westbound | | | | | Front St Northbound | | | | | Ashbourne Rd Eastbound | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Hard Left | Left | Thru | Right | App. Total | Hard Left | Bear Left | Bear Right | Hard Right | App. Total | Left | Thru | Right | Hard Right | App. Total | Left | Thru | Bear Right | Right | App. Total | Left | Bear Left | Thru | Right | App. Total | Int. Total |
| Peak Hour Analysis From 07:00 to 11:45 - Peak 1 of 1 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 07:15 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 07:15 | 0 | 3 | **25** | 44 | 72 | **1** | 0 | **5** | 0 | **6** | **8** | 47 | **6** | 0 | 61 | 0 | 17 | 0 | 3 | 20 | 26 | **3** | 49 | 1 | 79 | 238 |
| 07:30 | 0 | 2 | 19 | 43 | 64 | 0 | 0 | 2 | 0 | 2 | 4 | **69** | 2 | 0 | **75** | **7** | 16 | 0 | 4 | 27 | 34 | 0 | 45 | 2 | 81 | 249 |
| 07:45 | 0 | **6** | 23 | **45** | **74** | 0 | **2** | 2 | 0 | 4 | 2 | 65 | 4 | 0 | 71 | 2 | **24** | 0 | **5** | **31** | **37** | 0 | **53** | **4** | **94** | **274** |
| 08:00 | **2** | 3 | 14 | 43 | 62 | 0 | 0 | 1 | 0 | 1 | 4 | 56 | 3 | 0 | 63 | 4 | 15 | 0 | 3 | 22 | 36 | 0 | 39 | 4 | 79 | 227 |
| Total Volume | 2 | 14 | 81 | 175 | 272 | 1 | 2 | 10 | 0 | 13 | 18 | 237 | 15 | 0 | 270 | 13 | 72 | 0 | 15 | 100 | 133 | 3 | 186 | 11 | 333 | 988 |
| % App. Total | 0.7 | 5.1 | 29.8 | 64.3 | | 7.7 | 15.4 | 76.9 | | | 6.7 | 87.8 | 5.6 | | | | | | | | 39.9 | 0.9 | 55.9 | 3.3 | | |
| PHF | .250 | .583 | .810 | .972 | .919 | .250 | .250 | .500 | .000 | .542 | .563 | .859 | .625 | .000 | .900 | .464 | .750 | .000 | .750 | .806 | .899 | .250 | .877 | .688 | .886 | .901 |
| Passenger Vehicles | 2 | 14 | 81 | 165 | 262 | 1 | 2 | 10 | 0 | 13 | 18 | 233 | 14 | 0 | 265 | 13 | 70 | 0 | 14 | 97 | 116 | 3 | 185 | 10 | 314 | 951 |
| % Passenger Vehicles | 100 | 100 | 100 | 94.3 | 96.3 | 100 | 100 | 100 | 0 | 100 | 100 | 98.3 | 93.3 | 0 | 98.1 | 100 | 97.2 | 0 | 93.3 | 97.0 | 87.2 | 100 | 99.5 | 90.9 | 94.3 | 96.3 |
| Heavy Vehicles | 0 | 0 | 0 | 10 | 10 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 1 | 0 | 5 | 0 | 2 | 0 | 1 | 3 | 17 | 0 | 1 | 1 | 19 | 37 |
| % Heavy Vehicles | 0 | 0 | 0 | 5.7 | 3.7 | 0 | 0 | 0 | 0 | 0 | 0 | 1.7 | 6.7 | 0 | 1.9 | 0 | 2.8 | 0 | 6.7 | 3.0 | 12.8 | 0 | 0.5 | 9.1 | 5.7 | 3.7 |



# McMahon Associates, Inc.

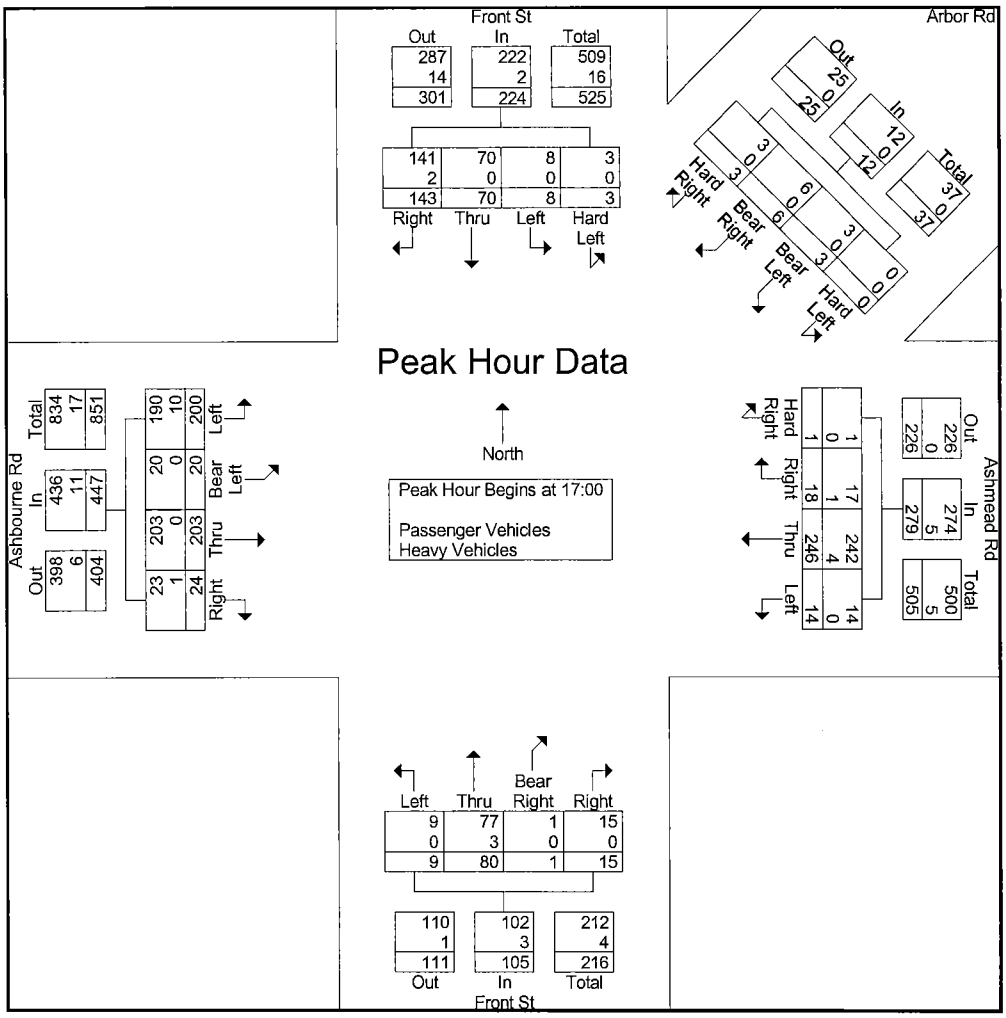
Transportation Engineers and Planners

*425 Commerce Drive, Suite 200*
*Fort Washington, PA 19034*

Municipality: Cheltenham Township
Location: Ashbourne / Ashmead / Front / Arbor
Counter/Countboard No.: BW

File Name : ashbourneCC03w
Site Code : 11111103
Start Date : 5/10/2011
Page No : 3

| | Front St Southbound | | | | | Arbor Rd Southwestbound | | | | | Ashmead Rd Westbound | | | | | Front St Northbound | | | | | Ashbourne Rd Eastbound | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Hard Left | Left | Thru | Right | App. Total | Hard Left | Bear Left | Bear Right | Hard Right | App. Total | Left | Thru | Right | Hard Right | App. Total | Left | Thru | Bear Right | Right | App. Total | Left | Bear Left | Thru | Right | App. Total | Int. Total |
| Peak Hour Analysis From 12:00 to 17:45 - Peak 1 of 1 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 17:00 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 17:00 | 0 | **4** | 18 | 30 | 52 | 0 | 1 | **2** | **2** | **5** | **5** | **65** | **6** | 0 | **76** | 2 | **24** | 0 | 3 | 29 | 42 | 4 | 39 | 5 | 90 | 252 |
| 17:15 | **1** | 1 | **20** | 34 | 56 | 0 | 0 | 1 | 0 | 1 | 1 | 62 | 5 | 0 | 68 | 1 | 24 | 0 | **5** | **30** | **60** | 3 | **58** | 6 | **127** | **282** |
| 17:30 | 1 | 2 | 19 | 38 | **60** | 0 | 0 | 2 | 1 | 3 | 3 | 55 | 3 | **1** | 62 | 2 | 15 | 0 | 2 | 19 | 53 | **7** | 52 | 5 | 117 | 261 |
| 17:45 | 1 | 1 | 13 | **41** | 56 | 0 | **2** | 1 | 0 | 3 | 5 | 64 | 4 | 0 | 73 | **4** | 17 | **1** | 5 | 27 | 45 | 6 | 54 | **8** | 113 | 272 |
| Total Volume | 3 | 8 | 70 | 143 | 224 | 0 | 3 | 6 | 3 | 12 | 14 | 246 | 18 | 1 | 279 | 9 | 80 | 1 | 15 | 105 | 200 | 20 | 203 | 24 | 447 | 1067 |
| % App. Total | 1.3 | 3.6 | 31.2 | 63.8 | | | | | | | | 88.2 | 6.5 | 0.4 | | 8.6 | 76.2 | | 14.3 | | 44.7 | 4.5 | 45.4 | 5.4 | | |
| PHF | .750 | .500 | .875 | .872 | .933 | .000 | .375 | .750 | .375 | .600 | .700 | .946 | .750 | .250 | .918 | .563 | .833 | .250 | .750 | .875 | .833 | .714 | .875 | .750 | .880 | .946 |
| Passenger Vehicles | 3 | 8 | 70 | 141 | 222 | 0 | 3 | 6 | 3 | 12 | 14 | 242 | 17 | 1 | 274 | 9 | 77 | 1 | 15 | 102 | 190 | 20 | 203 | 23 | 436 | 1046 |
| % Passenger Vehicles | 100 | 100 | 100 | 98.6 | 99.1 | 0 | 100 | 100 | 100 | 100 | 100 | 98.4 | 94.4 | 100 | 98.2 | 100 | 96.3 | 100 | 100 | 97.1 | 95.0 | 100 | 100 | 95.8 | 97.5 | 98.0 |
| Heavy Vehicles | 0 | 0 | 0 | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 1 | 0 | 5 | 0 | 3 | 0 | 0 | 3 | 10 | 0 | 0 | 1 | 11 | 21 |
| % Heavy Vehicles | 0 | 0 | 0 | 1.4 | 0.9 | 0 | 0 | 0 | 0 | 0 | 0 | 1.6 | 5.6 | 0 | 1.8 | 0 | 3.8 | 0 | 0 | 2.9 | 5.0 | 0 | 0 | 4.2 | 2.5 | 2.0 |



# McMahon Associates, Inc.

Transportation Engineers and Planners

*425 Commerce Drive, Suite 200*
*Fort Washington, PA 19034*

Municipality: Cheltenham Township
Location: Ashbourne / Ashmead / Front / Arbor
Counter/Countboard No.: BW

File Name : ashbourneCC03w
Site Code : 11111103
Start Date : 5/10/2011
Page No : 1

Groups Printed- Passenger Vehicles

| | Front St Southbound | | | | Arbor Rd Southwestbound | | | | Ashmead Rd Westbound | | | | Front St Northbound | | | | Ashbourne Rd Eastbound | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Hard Left | Left | Thru | Right | Hard Left | Bear Left | Bear Right | Hard Right | Left | Thru | Right | Hard Right | Left | Thru | Bear Right | Right | Left | Bear Left | Thru | Right | Int. Total |
| 07:00 | 0 | 2 | 22 | 37 | 0 | 0 | 2 | 0 | 1 | 49 | 4 | 0 | 3 | 7 | 1 | 5 | 18 | 0 | 44 | 3 | 198 |
| 07:15 | 0 | 3 | 25 | 43 | 1 | 0 | 5 | 0 | 8 | 47 | 6 | 0 | 0 | 17 | 0 | 2 | 22 | 3 | 49 | 1 | 232 |
| 07:30 | 0 | 2 | 19 | 41 | 0 | 0 | 2 | 0 | 4 | 69 | 2 | 0 | 7 | 16 | 0 | 4 | 28 | 0 | 45 | 2 | 241 |
| 07:45 | 0 | 6 | 23 | 43 | 0 | 2 | 2 | 0 | 2 | 64 | 4 | 0 | 2 | 23 | 0 | 5 | 34 | 0 | 52 | 4 | 266 |
| Total | 0 | 13 | 89 | 164 | 1 | 2 | 11 | 0 | 15 | 229 | 16 | 0 | 12 | 63 | 1 | 16 | 102 | 3 | 190 | 10 | 937 |
| 08:00 | 2 | 3 | 14 | 38 | 0 | 0 | 1 | 0 | 4 | 53 | 2 | 0 | 4 | 14 | 0 | 3 | 32 | 0 | 39 | 3 | 212 |
| 08:15 | 0 | 6 | 18 | 39 | 0 | 1 | 2 | 1 | 1 | 62 | 7 | 0 | 3 | 13 | 1 | 3 | 33 | 1 | 34 | 6 | 231 |
| 08:30 | 0 | 6 | 28 | 33 | 0 | 0 | 2 | 0 | 10 | 43 | 4 | 0 | 3 | 17 | 0 | 4 | 26 | 1 | 34 | 10 | 221 |
| 08:45 | 0 | 3 | 39 | 41 | 0 | 1 | 3 | 0 | 10 | 31 | 4 | 1 | 4 | 24 | 0 | 1 | 29 | 0 | 29 | 30 | 250 |
| Total | 2 | 18 | 99 | 151 | 0 | 2 | 8 | 1 | 25 | 189 | 17 | 1 | 14 | 68 | 1 | 11 | 120 | 2 | 136 | 49 | 914 |
| *** BREAK *** | | | | | | | | | | | | | | | | | | | | | |
| 16:00 | 0 | 3 | 17 | 35 | 0 | 1 | 1 | 0 | 4 | 51 | 6 | 0 | 2 | 27 | 0 | 2 | 32 | 1 | 36 | 7 | 225 |
| 16:15 | 0 | 6 | 8 | 53 | 0 | 0 | 0 | 0 | 9 | 64 | 5 | 0 | 3 | 20 | 0 | 3 | 33 | 5 | 37 | 5 | 251 |
| 16:30 | 0 | 6 | 18 | 23 | 0 | 1 | 3 | 1 | 2 | 60 | 4 | 1 | 2 | 15 | 0 | 3 | 32 | 4 | 43 | 6 | 224 |
| 16:45 | 0 | 7 | 12 | 32 | 0 | 0 | 2 | 0 | 7 | 70 | 8 | 0 | 2 | 12 | 0 | 3 | 53 | 5 | 46 | 2 | 261 |
| Total | 0 | 22 | 55 | 143 | 0 | 2 | 6 | 1 | 22 | 245 | 23 | 1 | 9 | 74 | 0 | 11 | 150 | 15 | 162 | 20 | 961 |
| 17:00 | 0 | 4 | 18 | 29 | 0 | 1 | 2 | 2 | 5 | 63 | 6 | 0 | 2 | 22 | 0 | 3 | 39 | 4 | 39 | 5 | 244 |
| 17:15 | 1 | 1 | 20 | 33 | 0 | 0 | 1 | 0 | 1 | 62 | 4 | 0 | 1 | 24 | 0 | 5 | 57 | 3 | 58 | 6 | 277 |
| 17:30 | 1 | 2 | 19 | 38 | 0 | 0 | 2 | 1 | 3 | 53 | 3 | 1 | 2 | 14 | 0 | 2 | 51 | 7 | 52 | 5 | 256 |
| 17:45 | 1 | 1 | 13 | 41 | 0 | 2 | 1 | 0 | 5 | 64 | 4 | 0 | 4 | 17 | 1 | 5 | 43 | 6 | 54 | 7 | 269 |
| Total | 3 | 8 | 70 | 141 | 0 | 3 | 6 | 3 | 14 | 242 | 17 | 1 | 9 | 77 | 1 | 15 | 190 | 20 | 203 | 23 | 1046 |
| Grand Total | 5 | 61 | 313 | 599 | 1 | 9 | 31 | 5 | 76 | 905 | 73 | 3 | 44 | 282 | 3 | 53 | 562 | 40 | 691 | 102 | 3858 |
| Apprch % | 0.5 | 6.2 | 32 | 61.2 | 2.2 | 19.6 | 67.4 | 10.9 | 7.2 | 85.6 | 6.9 | 0.3 | 11.5 | 73.8 | 0.8 | 13.9 | 40.3 | 2.9 | 49.5 | 7.3 | |
| Total % | 0.1 | 1.6 | 8.1 | 15.5 | 0 | 0.2 | 0.8 | 0.1 | 2 | 23.5 | 1.9 | 0.1 | 1.1 | 7.3 | 0.1 | 1.4 | 14.6 | 1 | 17.9 | 2.6 | |

# McMahon Associates, Inc.

Transportation Engineers and Planners

*425 Commerce Drive, Suite 200*
*Fort Washington, PA 19034*

Municipality: Cheltenham Township
Location: Ashbourne / Ashmead / Front / Arbor
Counter/Countboard No.: BW

File Name : ashbourneCC03w
Site Code : 11111103
Start Date : 5/10/2011
Page No : 1

Groups Printed- Heavy Vehicles

| | Front St Southbound | | | | Arbor Rd Southwestbound | | | | Ashmead Rd Westbound | | | | Front St Northbound | | | | Ashbourne Rd Eastbound | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Hard Left | Left | Thru | Right | Hard Left | Bear Left | Bear Right | Hard Right | Left | Thru | Right | Hard Right | Left | Thru | Bear Right | Right | Left | Bear Left | Thru | Right | Int. Total |
| 07:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 1 | 0 | 7 |
| 07:15 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 4 | 0 | 0 | 0 | 6 |
| 07:30 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 0 | 0 | 0 | 8 |
| 07:45 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 3 | 0 | 1 | 0 | 8 |
| Total | 0 | 0 | 0 | 5 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 1 | 0 | 1 | 18 | 0 | 2 | 0 | 29 |
| 08:00 | 0 | 0 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 3 | 1 | 0 | 0 | 1 | 0 | 0 | 4 | 0 | 0 | 1 | 15 |
| 08:15 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 0 | 0 | 6 |
| 08:30 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 5 |
| 08:45 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 4 |
| Total | 0 | 0 | 0 | 8 | 0 | 0 | 0 | 0 | 0 | 3 | 1 | 0 | 1 | 1 | 0 | 0 | 15 | 0 | 0 | 1 | 30 |
| *** BREAK *** | | | | | | | | | | | | | | | | | | | | | |
| 16:00 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 6 | 0 | 1 | 0 | 12 |
| 16:15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 2 | 0 | 0 | 0 | 4 |
| 16:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 0 | 0 | 0 | 3 |
| 16:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 3 |
| Total | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 5 | 0 | 1 | 12 | 0 | 1 | 0 | 22 |
| 17:00 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 2 | 0 | 0 | 3 | 0 | 0 | 0 | 8 |
| 17:15 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 5 |
| 17:30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 1 | 0 | 0 | 2 | 0 | 0 | 0 | 5 |
| 17:45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 1 | 3 |
| Total | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 4 | 1 | 0 | 0 | 3 | 0 | 0 | 10 | 0 | 0 | 1 | 21 |
| Grand Total | 0 | 0 | 0 | 16 | 0 | 0 | 0 | 0 | 1 | 10 | 2 | 0 | 1 | 10 | 0 | 2 | 55 | 0 | 3 | 2 | 102 |
| Apprch % | 0 | 0 | 0 | 100 | 0 | 0 | 0 | 0 | 7.7 | 76.9 | 15.4 | 0 | 7.7 | 76.9 | 0 | 15.4 | 91.7 | 0 | 5 | 3.3 | |
| Total % | 0 | 0 | 0 | 15.7 | 0 | 0 | 0 | 0 | 1 | 9.8 | 2 | 0 | 1 | 9.8 | 0 | 2 | 53.9 | 0 | 2.9 | 2 | |

# McMahon Associates, Inc.

Transportation Engineers and Planners

*425 Commerce Drive, Suite 200*
*Fort Washington, PA 19034*

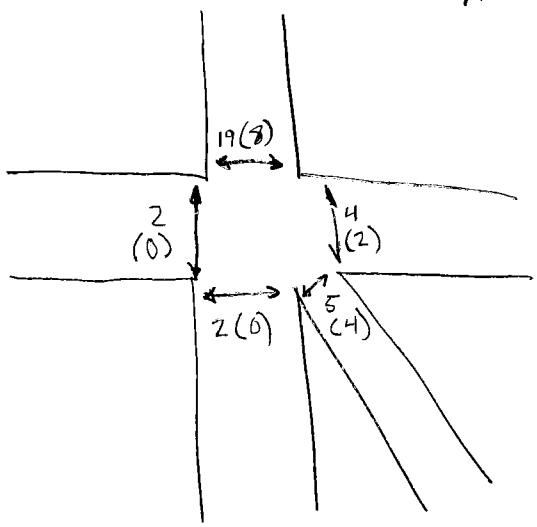
Municipality: Cheltenham Township
Location: Ashbourne / Ashmead / Front / Arbor
Counter/Countboard No.: BW

File Name : ashbourneCC03w
Site Code : 11111103
Start Date : 5/10/2011
Page No : 1

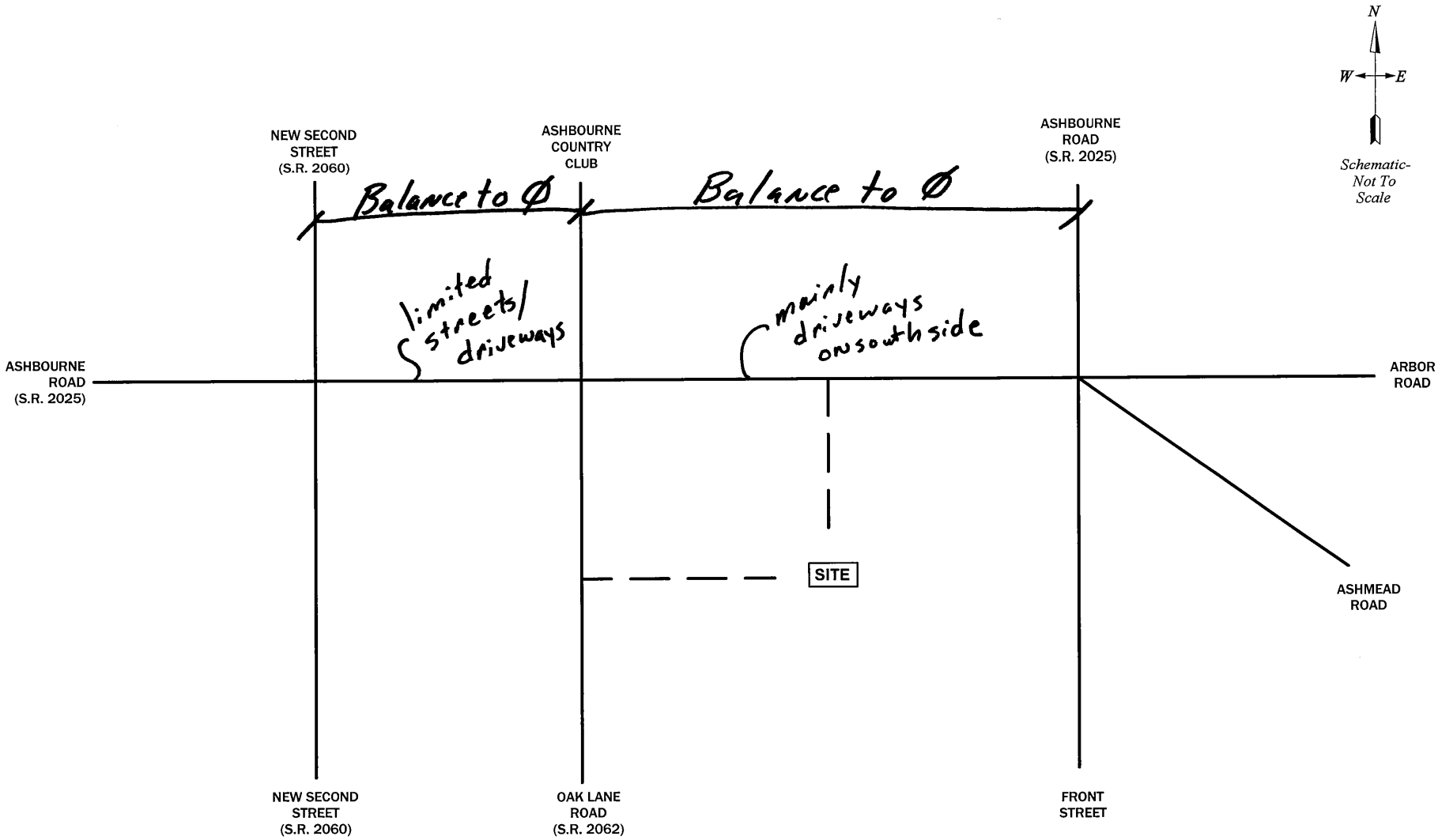
Groups Printed- Pedestrians

| | Front St Southbound | Arbor Rd Southwestbound | Ashmead Rd Westbound | Front St Northbound | Ashbourne Rd Eastbound | |
|---|---|---|---|---|---|---|
| Start Time | E/W Peds | N/S Peds | N/S Peds | E/W Peds | N/S Peds | Int. Total |
| 07:00 | 5 | 1 | 2 | 0 | 1 | 9 |
| 07:15 | 6 | 1 | 1 | 1 | 0 | 9 |
| 07:30 | 5 | 2 | 4 | 1 | 0 | 12 |
| 07:45 | 5 | 1 | 0 | 0 | 1 | 7 |
| Total | 21 | 5 | 7 | 2 | 2 | 37 |
| 08:00 | 3 | 0 | 0 | 0 | 1 | 4 |
| 08:15 | 5 | 1 | 1 | 0 | 0 | 7 |
| 08:30 | 4 | 1 | 8 | 0 | 0 | 13 |
| 08:45 | 5 | 1 | 13 | 0 | 2 | 21 |
| Total | 17 | 3 | 22 | 0 | 3 | 45 |
| *** BREAK *** | | | | | | |
| 16:00 | 4 | 1 | 0 | 1 | 0 | 6 |
| 16:15 | 5 | 0 | 2 | 0 | 0 | 7 |
| 16:30 | 3 | 1 | 3 | 0 | 0 | 7 |
| 16:45 | 3 | 0 | 1 | 0 | 0 | 4 |
| Total | 15 | 2 | 6 | 1 | 0 | 24 |
| 17:00 | 4 | 0 | 0 | 0 | 0 | 4 |
| 17:15 | 1 | 1 | 2 | 0 | 0 | 4 |
| 17:30 | 3 | 0 | 2 | 0 | 0 | 5 |
| 17:45 | 0 | 1 | 0 | 0 | 0 | 1 |
| Total | 8 | 2 | 4 | 0 | 0 | 14 |
| Grand Total | 61 | 12 | 39 | 3 | 5 | 120 |
| Apprch % | 100 | 100 | 100 | 100 | 100 | |
| Total % | 50.8 | 10 | 32.5 | 2.5 | 4.2 | |

AM (PM)



# Volume Balancing Notes




# RESIDENTIAL DEVELOPMENT

## CHELTENHAM TOWNSHIP, MONTGOMERY COUNTY, PA

McMAHON
TRANSPORTATION ENGINEERS & PLANNERS

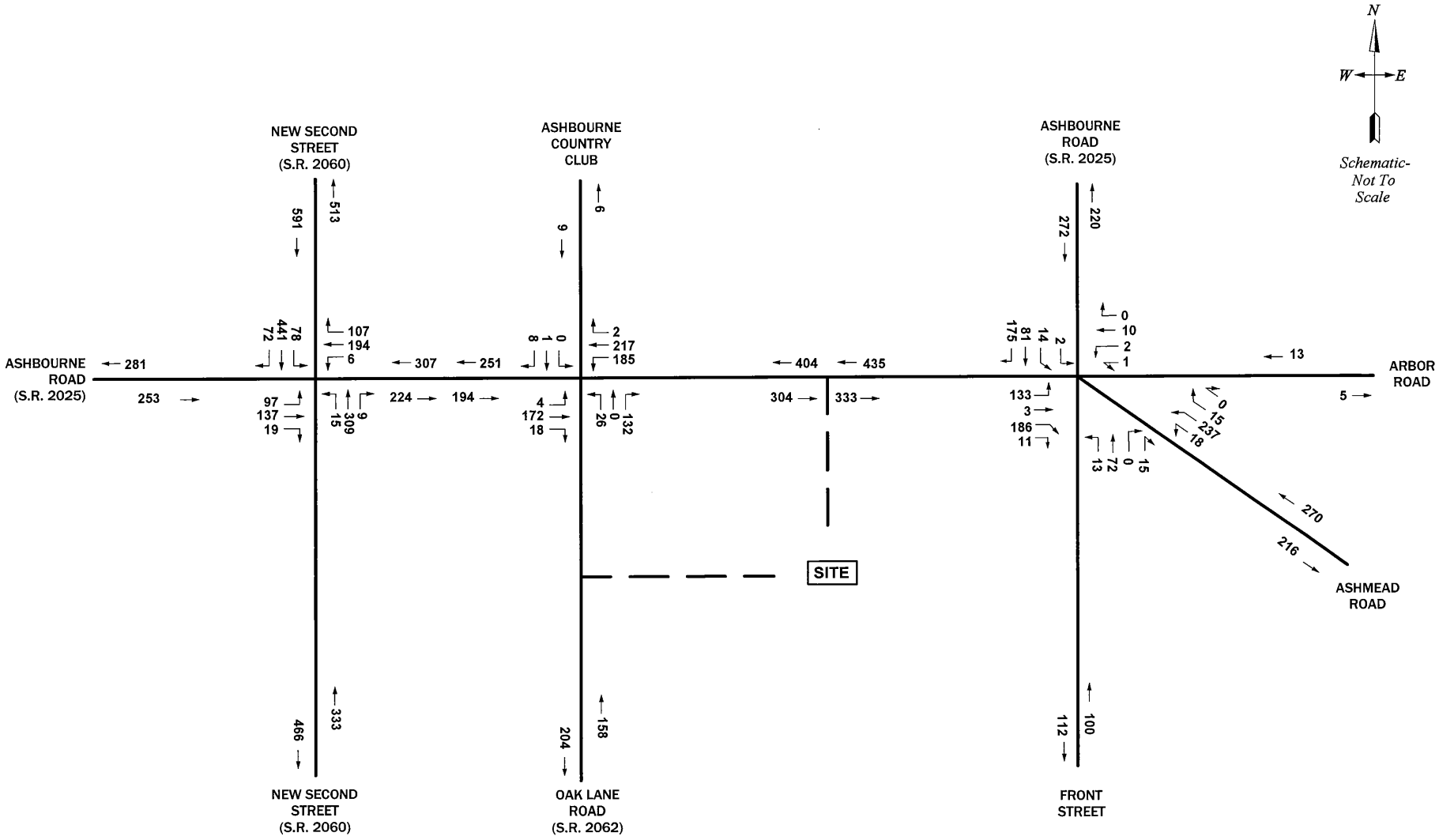



**FIGURE A**

UNBALANCED

Existing Weekday Morning Peak Hour Traffic Volumes

# RESIDENTIAL DEVELOPMENT

## CHELTENHAM TOWNSHIP, MONTGOMERY COUNTY, PA

McMAHON
TRANSPORTATION ENGINEERS & PLANNERS

*(5/2/11-SAK) i:\Eng\811173\Dwg\Figures\Figure A.dwg*

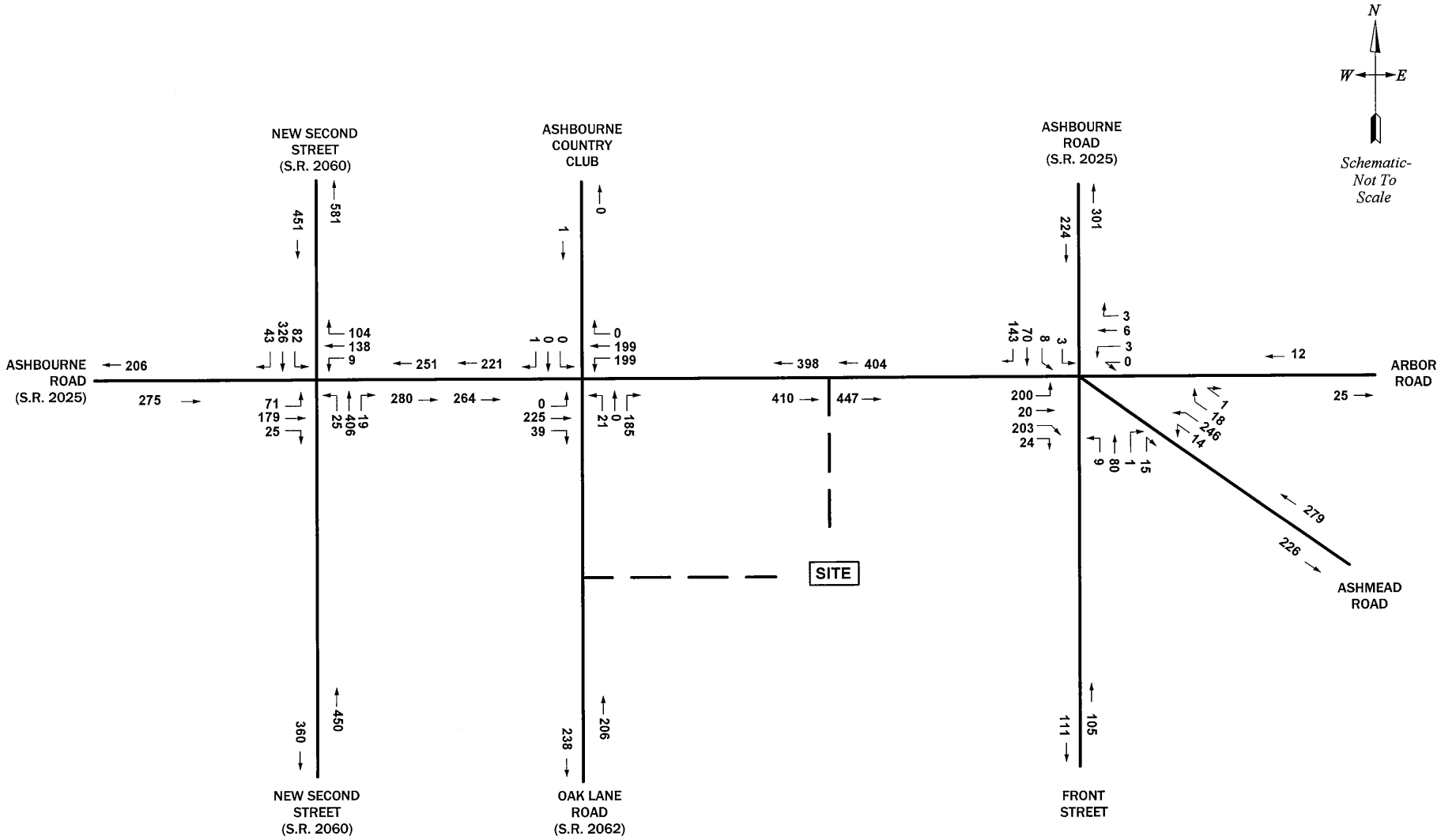



**FIGURE B**

UNBALANCED

Existing Weekday Afternoon Peak Hour Traffic Volumes

# RESIDENTIAL DEVELOPMENT

## CHELTENHAM TOWNSHIP, MONTGOMERY COUNTY, PA

McMAHON
TRANSPORTATION ENGINEERS & PLANNERS

*(5/2/11-SAK) i:\Eng\811173\Dwg\Figures\Figure B.dwg*

# APPENDIX E

# HCM Methodology

## CAPACITY/LEVEL-OF-SERVICE ANALYSIS METHODOLOGY

The detailed capacity/level-of-service analysis contained in this traffic impact study was performed in accordance with the standard techniques contained in the "Highway Capacity Manual".[1] By definition, capacity represents "the maximum rate of flow that can reasonably be expected to pass a point on a uniform section of a lane or roadway under prevailing roadway, traffic, and control conditions." The level of functioning of an intersection or a uniform section of a lane or roadway can be expressed in terms of levels of service. Level of service (LOS) is defined as "a qualitative measure describing operational conditions within a traffic stream, and their perception by motorists and/or passengers". Such measures include "speed and travel time, freedom to maneuver, traffic interruptions, comfort and convenience, and safety."

At unsignalized intersections, a methodology for evaluating the relative functioning of intersections controlled by stop or yield signs has been developed, and is based on several assumptions, including:

- Major street flows are not affected by the minor (stop-sign controlled) street movements.
- Left turns from the major street to the minor street are influenced only by opposing major street through flow.
- Minor street left turns are impeded by all major street traffic plus opposing minor street traffic.
- Minor street through traffic is impeded by all major street traffic.
- Minor street right turns are impeded only by the major street traffic coming from the left.

The concept of stop-controlled or yield-controlled intersection analysis is based on the estimate of average total delay on minor streets. The methodology of analysis relies on three elements: the size and distribution of gaps in the major traffic stream, the usefulness of these gaps to the minor stream drivers, and the relative priority of the various traffic streams at the intersection. The results of the analysis provide an estimate of average total delay for the various critical movements at the unsignalized intersections. Correlation between average total delay and the respective levels of service are provided for unsignalized intersections as follows:

---

(1) *Transportation Research Board, Special Report 209, Highway Capacity Manual, published by the Transportation Research Board, Washington, DC, Updated 2000.*

*Unsignalized Intersections*

| Level of Service | Description | Control Delay Per Vehicle (seconds) |
|---|---|---|
| A | Little or no delay | ≤ 10.0 |
| B | Short traffic delays | 10.1 to 15.0 |
| C | Average traffic delays | 15.1 to 25.0 |
| D | Long traffic delays | 25.1 to 35.0 |
| E | Very long traffic delays | 35.1 to 50.0 |
| F | Demand exceeds capacity of the lane or approach | > 50.0 |

At signalized intersections, an additional element must be considered: time allocation. Level of service is based primarily on the average control delay per vehicle for various movements within the intersection. Volume/capacity relationships also affect level of service. Thus, both volume/capacity and delay must be considered to evaluate the overall operation of a signalized intersection. Correlation between average delay per vehicle and the respective levels of service are provided for signalized intersections as follows:

*Signalized Intersections*

| Level of Service | Description | Control Delay Per Vehicle (seconds) |
|---|---|---|
| A | Very low delay, high quality flow | ≤ 10.0 |
| B | Low delay, good traffic flow | 10.1 to 20.0 |
| C | Average delay, stable traffic flow | 20.1 to 35.0 |
| D | Longer delay, approach capacity flow | 35.1 to 55.0 |
| E | Limit of acceptable delay, capacity flow | 55.1 to 80.0 |
| F | Unacceptable delay, forced flow | > 80.0 |

# APPENDIX F

## 2011 Existing Capacity/Level-of-Service Analysis Worksheets

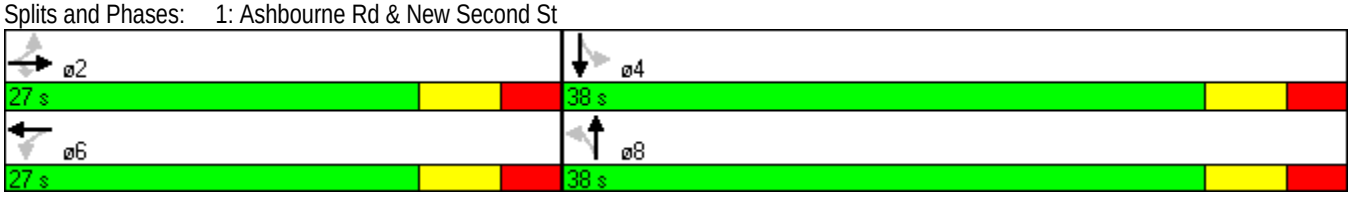
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (vph) | 97 | 139 | 19 | 6 | 194 | 107 | 15 | 309 | 9 | 78 | 441 | 72 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width (ft) | 12 | 12 | 14 | 16 | 16 | 16 | 16 | 16 | 16 | 12 | 12 | 12 |
| Grade (%) | | -9% | | | 8% | | | 3% | | | -2% | |
| Storage Length (ft) | 0 | | 110 | 0 | | 0 | 0 | | 0 | 0 | | 0 |
| Storage Lanes | 0 | | 1 | 0 | | 0 | 0 | | 0 | 0 | | 0 |
| Taper Length (ft) | 25 | | 75 | 25 | | 25 | 25 | | 25 | 25 | | 25 |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Ped Bike Factor | | | | | | | | | | | | |
| Frt | | | 0.850 | | 0.951 | | | 0.994 | | | 0.980 | |
| Flt Protected | | 0.977 | | | 0.998 | | | 0.997 | | | 0.993 | |
| Satd. Flow (prot) | 0 | 1857 | 1622 | 0 | 1878 | 0 | 0 | 2083 | 0 | 0 | 1784 | 0 |
| Flt Permitted | | 0.599 | | | 0.983 | | | 0.943 | | | 0.876 | |
| Satd. Flow (perm) | 0 | 1139 | 1622 | 0 | 1850 | 0 | 0 | 1970 | 0 | 0 | 1573 | 0 |
| Right Turn on Red | | | Yes | | | No | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | | 36 | | | | | 5 | | | 18 | |
| Link Speed (mph) | | 25 | | | 25 | | | 35 | | | 35 | |
| Link Distance (ft) | | 500 | | | 2250 | | | 500 | | | 500 | |
| Travel Time (s) | | 13.6 | | | 61.4 | | | 9.7 | | | 9.7 | |
| Confl. Peds. (#/hr) | | | | | | | | | | | | |
| Confl. Bikes (#/hr) | | | | | | | | | | | | |
| Peak Hour Factor | 0.69 | 0.90 | 0.53 | 0.50 | 0.87 | 0.81 | 0.63 | 0.79 | 0.45 | 0.78 | 0.87 | 0.69 |
| Growth Factor | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% |
| Heavy Vehicles (%) | 6% | 3% | 11% | 0% | 2% | 9% | 0% | 1% | 0% | 12% | 3% | 6% |
| Bus Blockages (#/hr) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Parking (#/hr) | | | | | | | | | | | | |
| Mid-Block Traffic (%) | | 0% | | | 0% | | | 0% | | | 0% | |
| Adj. Flow (vph) | 141 | 154 | 36 | 12 | 223 | 132 | 24 | 391 | 20 | 100 | 507 | 104 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 295 | 36 | 0 | 367 | 0 | 0 | 435 | 0 | 0 | 711 | 0 |
| Number of Detectors | 1 | 0 | 0 | 1 | 0 | | 1 | 0 | | 1 | 0 | |
| Detector Template | | | | | | | | | | | | |
| Leading Detector (ft) | 35 | 0 | 0 | 35 | 0 | | 35 | 0 | | 35 | 0 | |
| Trailing Detector (ft) | -5 | 0 | 0 | -5 | 0 | | -5 | 0 | | -5 | 0 | |
| Turn Type | Perm | | Perm | Perm | | | Perm | | | Perm | | |
| Protected Phases | | 2 | | | 6 | | | 8 | | | 4 | |
| Permitted Phases | 2 | | 2 | 6 | | | 8 | | | 4 | | |
| Detector Phase | 2 | 2 | 2 | 6 | 6 | | 8 | 8 | | 4 | 4 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 20.0 | 20.0 | 20.0 | 20.0 | 20.0 | | 31.0 | 31.0 | | 31.0 | 31.0 | |
| Minimum Split (s) | 27.0 | 27.0 | 27.0 | 27.0 | 27.0 | | 38.0 | 38.0 | | 38.0 | 38.0 | |
| Total Split (s) | 27.0 | 27.0 | 27.0 | 27.0 | 27.0 | 0.0 | 38.0 | 38.0 | 0.0 | 38.0 | 38.0 | 0.0 |
| Total Split (%) | 41.5% | 41.5% | 41.5% | 41.5% | 41.5% | 0.0% | 58.5% | 58.5% | 0.0% | 58.5% | 58.5% | 0.0% |
| Maximum Green (s) | 20.0 | 20.0 | 20.0 | 20.0 | 20.0 | | 31.0 | 31.0 | | 31.0 | 31.0 | |
| Yellow Time (s) | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | | 4.0 | 4.0 | | 4.0 | 4.0 | |
| All-Red Time (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | |
| Lost Time Adjust (s) | -1.0 | 0.0 | 0.0 | -1.0 | 0.0 | 0.0 | -1.0 | 0.0 | 0.0 | -1.0 | 0.0 | 0.0 |
| Total Lost Time (s) | 6.0 | 7.0 | 7.0 | 6.0 | 7.0 | 4.0 | 6.0 | 7.0 | 4.0 | 6.0 | 7.0 | 4.0 |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lead/Lag | | | | | | | | | | | | |
| Lead-Lag Optimize? | | | | | | | | | | | | |
| Vehicle Extension (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | |
| Minimum Gap (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | |
| Time Before Reduce (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Time To Reduce (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Recall Mode | Max | Max | Max | Max | Max | | Max | Max | | Max | Max | |
| Walk Time (s) | | | | | | | | | | | | |
| Flash Dont Walk (s) | | | | | | | | | | | | |
| Pedestrian Calls (#/hr) | | | | | | | | | | | | |
| v/c Ratio | | 0.84 | 0.07 | | 0.64 | | | 0.46 | | | 0.94 | |
| Control Delay | | 45.6 | 6.6 | | 25.7 | | | 13.3 | | | 38.8 | |
| Queue Delay | | 0.0 | 0.0 | | 0.0 | | | 0.0 | | | 0.0 | |
| Total Delay | | 45.6 | 6.6 | | 25.7 | | | 13.3 | | | 38.8 | |
| Queue Length 50th (ft) | | 108 | 0 | | 124 | | | 107 | | | 245 | |
| Queue Length 95th (ft) | | #237 | 6 | | 198 | | | 145 | | | #442 | |
| Internal Link Dist (ft) | | 420 | | | 2170 | | | 420 | | | 420 | |
| Turn Bay Length (ft) | | | 110 | | | | | | | | | |
| Base Capacity (vph) | | 350 | 524 | | 569 | | | 942 | | | 760 | |
| Starvation Cap Reductn | | 0 | 0 | | 0 | | | 0 | | | 0 | |
| Spillback Cap Reductn | | 0 | 0 | | 0 | | | 0 | | | 0 | |
| Storage Cap Reductn | | 0 | 0 | | 0 | | | 0 | | | 0 | |
| Reduced v/c Ratio | | 0.84 | 0.07 | | 0.64 | | | 0.46 | | | 0.94 | |

## Intersection Summary

Area Type: Other
Cycle Length: 65
Actuated Cycle Length: 65
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow
Natural Cycle: 75
Control Type: Pretimed
# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 1: Ashbourne Rd & New Second St



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (vph) | 97 | 139 | 19 | 6 | 194 | 107 | 15 | 309 | 9 | 78 | 441 | 72 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width | 12 | 12 | 14 | 16 | 16 | 16 | 16 | 16 | 16 | 12 | 12 | 12 |
| Grade (%) | | -9% | | | 8% | | | 3% | | | -2% | |
| Total Lost time (s) | | 7.0 | 7.0 | | 7.0 | | | 7.0 | | | 7.0 | |
| Lane Util. Factor | | 1.00 | 1.00 | | 1.00 | | | 1.00 | | | 1.00 | |
| Frt | | 1.00 | 0.85 | | 0.95 | | | 0.99 | | | 0.98 | |
| Flt Protected | | 0.98 | 1.00 | | 1.00 | | | 1.00 | | | 0.99 | |
| Satd. Flow (prot) | | 1857 | 1622 | | 1880 | | | 2083 | | | 1784 | |
| Flt Permitted | | 0.60 | 1.00 | | 0.98 | | | 0.94 | | | 0.88 | |
| Satd. Flow (perm) | | 1138 | 1622 | | 1850 | | | 1970 | | | 1574 | |
| Peak-hour factor, PHF | 0.69 | 0.90 | 0.53 | 0.50 | 0.87 | 0.81 | 0.63 | 0.79 | 0.45 | 0.78 | 0.87 | 0.69 |
| Adj. Flow (vph) | 141 | 154 | 36 | 12 | 223 | 132 | 24 | 391 | 20 | 100 | 507 | 104 |
| RTOR Reduction (vph) | 0 | 0 | 25 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 9 | 0 |
| Lane Group Flow (vph) | 0 | 295 | 11 | 0 | 367 | 0 | 0 | 432 | 0 | 0 | 702 | 0 |
| Heavy Vehicles (%) | 6% | 3% | 11% | 0% | 2% | 9% | 0% | 1% | 0% | 12% | 3% | 6% |
| Turn Type | Perm | | Perm | Perm | | | Perm | | | Perm | | |
| Protected Phases | | 2 | | | 6 | | | 8 | | | 4 | |
| Permitted Phases | 2 | | 2 | 6 | | | 8 | | | 4 | | |
| Actuated Green, G (s) | | 20.0 | 20.0 | | 20.0 | | | 31.0 | | | 31.0 | |
| Effective Green, g (s) | | 20.0 | 20.0 | | 20.0 | | | 31.0 | | | 31.0 | |
| Actuated g/C Ratio | | 0.31 | 0.31 | | 0.31 | | | 0.48 | | | 0.48 | |
| Clearance Time (s) | | 7.0 | 7.0 | | 7.0 | | | 7.0 | | | 7.0 | |
| Lane Grp Cap (vph) | | 350 | 499 | | 569 | | | 940 | | | 751 | |
| v/s Ratio Prot | | | | | | | | | | | | |
| v/s Ratio Perm | | c0.26 | 0.01 | | 0.20 | | | 0.22 | | | c0.45 | |
| v/c Ratio | | 0.84 | 0.02 | | 0.64 | | | 0.46 | | | 0.93 | |
| Uniform Delay, d1 | | 21.0 | 15.7 | | 19.4 | | | 11.4 | | | 16.0 | |
| Progression Factor | | 1.00 | 1.00 | | 1.00 | | | 1.00 | | | 1.00 | |
| Incremental Delay, d2 | | 21.2 | 0.1 | | 5.6 | | | 1.6 | | | 20.2 | |
| Delay (s) | | 42.2 | 15.8 | | 25.0 | | | 13.0 | | | 36.3 | |
| Level of Service | | D | B | | C | | | B | | | D | |
| Approach Delay (s) | | 39.4 | | | 25.0 | | | 13.0 | | | 36.3 | |
| Approach LOS | | D | | | C | | | B | | | D | |

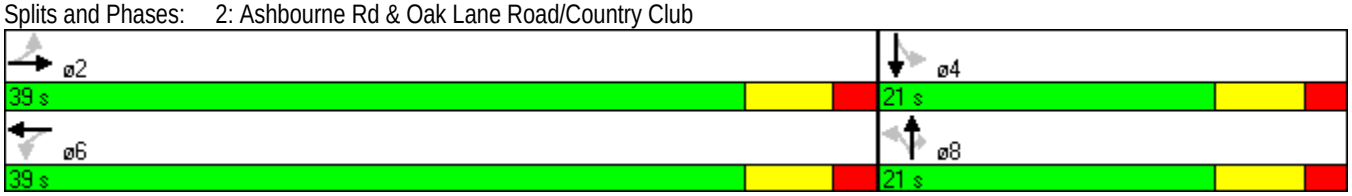
| Intersection Summary | | | |
|---|---|---|---|
| HCM Average Control Delay | 29.1 | HCM Level of Service | C |
| HCM Volume to Capacity ratio | 0.90 | | |
| Actuated Cycle Length (s) | 65.0 | Sum of lost time (s) | 14.0 |
| Intersection Capacity Utilization | 109.4% | ICU Level of Service | H |
| Analysis Period (min) | 15 | | |
| c Critical Lane Group | | | |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (vph) | 4 | 201 | 21 | 185 | 267 | 2 | 32 | 0 | 132 | 0 | 1 | 8 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width (ft) | 11 | 11 | 11 | 10 | 12 | 12 | 11 | 11 | 14 | 10 | 10 | 10 |
| Grade (%) | | 1% | | | 1% | | | -2% | | | 1% | |
| Storage Length (ft) | 140 | | 0 | 150 | | 0 | 0 | | 45 | 0 | | 0 |
| Storage Lanes | 1 | | 0 | 1 | | 0 | 0 | | 1 | 0 | | 0 |
| Taper Length (ft) | 75 | | 25 | 75 | | 25 | 25 | | 75 | 25 | | 25 |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Ped Bike Factor | | | | | | | | | | | | |
| Frt | | 0.984 | | | 0.996 | | | | 0.850 | | 0.887 | |
| Flt Protected | 0.950 | | | 0.950 | | | | 0.950 | | | | |
| Satd. Flow (prot) | 1157 | 1732 | 0 | 1538 | 1865 | 0 | 0 | 1762 | 1567 | 0 | 1189 | 0 |
| Flt Permitted | 0.568 | | | 0.593 | | | | 0.742 | | | | |
| Satd. Flow (perm) | 692 | 1732 | 0 | 960 | 1865 | 0 | 0 | 1376 | 1567 | 0 | 1189 | 0 |
| Right Turn on Red | | | No | | | Yes | | | Yes | | | No |
| Satd. Flow (RTOR) | | | | | 3 | | | | 183 | | | |
| Link Speed (mph) | | 35 | | | 35 | | | 35 | | | 35 | |
| Link Distance (ft) | | 2250 | | | 750 | | | 500 | | | 300 | |
| Travel Time (s) | | 43.8 | | | 14.6 | | | 9.7 | | | 5.8 | |
| Confl. Peds. (#/hr) | | | | | | | | | | | | |
| Confl. Bikes (#/hr) | | | | | | | | | | | | |
| Peak Hour Factor | 0.50 | 0.83 | 0.75 | 0.86 | 0.86 | 0.25 | 0.65 | 0.25 | 0.72 | 0.25 | 0.25 | 0.40 |
| Growth Factor | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% |
| Heavy Vehicles (%) | 50% | 3% | 11% | 9% | 1% | 0% | 0% | 0% | 11% | 0% | 0% | 38% |
| Bus Blockages (#/hr) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Parking (#/hr) | | | | | | | | | | | | |
| Mid-Block Traffic (%) | | 0% | | | 0% | | | 0% | | | 0% | |
| Adj. Flow (vph) | 8 | 242 | 28 | 215 | 310 | 8 | 49 | 0 | 183 | 0 | 4 | 20 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 8 | 270 | 0 | 215 | 318 | 0 | 0 | 49 | 183 | 0 | 24 | 0 |
| Number of Detectors | 0 | 0 | | 0 | 0 | | 1 | 1 | 1 | 1 | 1 | |
| Detector Template | | | | | | | | | | | | |
| Leading Detector (ft) | 0 | 0 | | 0 | 0 | | 35 | 35 | 35 | 20 | 20 | |
| Trailing Detector (ft) | 0 | 0 | | 0 | 0 | | -5 | -5 | -5 | -5 | -5 | |
| Turn Type | Perm | | | Perm | | | Perm | | Perm | Perm | | |
| Protected Phases | | 2 | | | 6 | | | 8 | | | 4 | |
| Permitted Phases | 2 | | | 6 | | | 8 | | 8 | 4 | | |
| Detector Phase | 2 | 2 | | 6 | 6 | | 8 | 8 | 8 | 4 | 4 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 33.0 | 33.0 | | 33.0 | 33.0 | | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | |
| Minimum Split (s) | 39.0 | 39.0 | | 39.0 | 39.0 | | 9.0 | 9.0 | 9.0 | 9.0 | 9.0 | |
| Total Split (s) | 39.0 | 39.0 | 0.0 | 39.0 | 39.0 | 0.0 | 21.0 | 21.0 | 21.0 | 21.0 | 21.0 | 0.0 |
| Total Split (%) | 65.0% | 65.0% | 0.0% | 65.0% | 65.0% | 0.0% | 35.0% | 35.0% | 35.0% | 35.0% | 35.0% | 0.0% |
| Maximum Green (s) | 33.0 | 33.0 | | 33.0 | 33.0 | | 15.0 | 15.0 | 15.0 | 15.0 | 15.0 | |
| Yellow Time (s) | 4.0 | 4.0 | | 4.0 | 4.0 | | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | |
| All-Red Time (s) | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | |
| Lost Time Adjust (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | -2.0 | 0.0 | 0.0 | -2.0 | 0.0 | 0.0 |
| Total Lost Time (s) | 6.0 | 6.0 | 4.0 | 6.0 | 6.0 | 4.0 | 4.0 | 6.0 | 6.0 | 4.0 | 6.0 | 4.0 |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lead/Lag | | | | | | | | | | | | |
| Lead-Lag Optimize? | | | | | | | | | | | | |
| Vehicle Extension (s) | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | |
| Minimum Gap (s) | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | |
| Time Before Reduce (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| Time To Reduce (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| Recall Mode | Min | Min | | Min | Min | | None | None | None | None | None | |
| Walk Time (s) | | | | | | | | | | | | |
| Flash Dont Walk (s) | | | | | | | | | | | | |
| Pedestrian Calls (#/hr) | | | | | | | | | | | | |
| v/c Ratio | 0.02 | 0.22 | | 0.32 | 0.24 | | | 0.25 | 0.48 | | 0.14 | |
| Control Delay | 4.5 | 5.0 | | 6.7 | 5.0 | | | 23.0 | 8.7 | | 21.3 | |
| Queue Delay | 0.0 | 0.0 | | 0.0 | 0.0 | | | 0.0 | 0.0 | | 0.0 | |
| Total Delay | 4.5 | 5.0 | | 6.7 | 5.0 | | | 23.0 | 8.7 | | 21.3 | |
| Queue Length 50th (ft) | 1 | 30 | | 26 | 35 | | | 14 | 0 | | 7 | |
| Queue Length 95th (ft) | 3 | 61 | | 64 | 73 | | | 10 | 22 | | 6 | |
| Internal Link Dist (ft) | | 2170 | | | 670 | | | 420 | | | 220 | |
| Turn Bay Length (ft) | 140 | | | 150 | | | | | 45 | | | |
| Base Capacity (vph) | 483 | 1207 | | 669 | 1301 | | | 387 | 573 | | 335 | |
| Starvation Cap Reductn | 0 | 0 | | 0 | 0 | | | 0 | 0 | | 0 | |
| Spillback Cap Reductn | 0 | 0 | | 0 | 0 | | | 0 | 0 | | 0 | |
| Storage Cap Reductn | 0 | 0 | | 0 | 0 | | | 0 | 0 | | 0 | |
| Reduced v/c Ratio | 0.02 | 0.22 | | 0.32 | 0.24 | | | 0.13 | 0.32 | | 0.07 | |

| Intersection Summary | |
|---|---|
| Area Type: | Other |
| Cycle Length: 60 | |
| Actuated Cycle Length: 53.3 | |
| Natural Cycle: 50 | |
| Control Type: Actuated-Uncoordinated | |

Splits and Phases: 2: Ashbourne Rd & Oak Lane Road/Country Club



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (vph) | 4 | 201 | 21 | 185 | 267 | 2 | 32 | 0 | 132 | 0 | 1 | 8 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width | 11 | 11 | 11 | 10 | 12 | 12 | 11 | 11 | 14 | 10 | 10 | 10 |
| Grade (%) | | 1% | | | 1% | | | -2% | | | 1% | |
| Total Lost time (s) | 6.0 | 6.0 | | 6.0 | 6.0 | | | 6.0 | 6.0 | | 6.0 | |
| Lane Util. Factor | 1.00 | 1.00 | | 1.00 | 1.00 | | | 1.00 | 1.00 | | 1.00 | |
| Frt | 1.00 | 0.98 | | 1.00 | 1.00 | | | 1.00 | 0.85 | | 0.89 | |
| Flt Protected | 0.95 | 1.00 | | 0.95 | 1.00 | | | 0.95 | 1.00 | | 1.00 | |
| Satd. Flow (prot) | 1157 | 1733 | | 1538 | 1865 | | | 1762 | 1567 | | 1189 | |
| Flt Permitted | 0.57 | 1.00 | | 0.59 | 1.00 | | | 0.74 | 1.00 | | 1.00 | |
| Satd. Flow (perm) | 692 | 1733 | | 960 | 1865 | | | 1376 | 1567 | | 1189 | |
| Peak-hour factor, PHF | 0.50 | 0.83 | 0.75 | 0.86 | 0.86 | 0.25 | 0.65 | 0.25 | 0.72 | 0.25 | 0.25 | 0.40 |
| Adj. Flow (vph) | 8 | 242 | 28 | 215 | 310 | 8 | 49 | 0 | 183 | 0 | 4 | 20 |
| RTOR Reduction (vph) | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 161 | 0 | 0 | 0 |
| Lane Group Flow (vph) | 8 | 270 | 0 | 215 | 317 | 0 | 0 | 49 | 22 | 0 | 24 | 0 |
| Heavy Vehicles (%) | 50% | 3% | 11% | 9% | 1% | 0% | 0% | 0% | 11% | 0% | 0% | 38% |
| Turn Type | Perm | | | Perm | | | Perm | | Perm | Perm | | |
| Protected Phases | | 2 | | | 6 | | | 8 | | | 4 | |
| Permitted Phases | 2 | | | 6 | | | 8 | | 8 | 4 | | |
| Actuated Green, G (s) | 36.0 | 36.0 | | 36.0 | 36.0 | | | 6.5 | 6.5 | | 6.5 | |
| Effective Green, g (s) | 36.0 | 36.0 | | 36.0 | 36.0 | | | 6.5 | 6.5 | | 6.5 | |
| Actuated g/C Ratio | 0.66 | 0.66 | | 0.66 | 0.66 | | | 0.12 | 0.12 | | 0.12 | |
| Clearance Time (s) | 6.0 | 6.0 | | 6.0 | 6.0 | | | 6.0 | 6.0 | | 6.0 | |
| Vehicle Extension (s) | 3.0 | 3.0 | | 3.0 | 3.0 | | | 3.0 | 3.0 | | 3.0 | |
| Lane Grp Cap (vph) | 457 | 1145 | | 634 | 1232 | | | 164 | 187 | | 142 | |
| v/s Ratio Prot | | 0.16 | | | 0.17 | | | | | | 0.02 | |
| v/s Ratio Perm | 0.01 | | | c0.22 | | | | c0.04 | 0.01 | | | |
| v/c Ratio | 0.02 | 0.24 | | 0.34 | 0.26 | | | 0.30 | 0.12 | | 0.17 | |
| Uniform Delay, d1 | 3.2 | 3.7 | | 4.0 | 3.8 | | | 21.9 | 21.4 | | 21.6 | |
| Progression Factor | 1.00 | 1.00 | | 1.00 | 1.00 | | | 1.00 | 1.00 | | 1.00 | |
| Incremental Delay, d2 | 0.0 | 0.1 | | 0.3 | 0.1 | | | 1.0 | 0.3 | | 0.6 | |
| Delay (s) | 3.2 | 3.8 | | 4.4 | 3.9 | | | 22.9 | 21.7 | | 22.1 | |
| Level of Service | A | A | | A | A | | | C | C | | C | |
| Approach Delay (s) | | 3.8 | | | 4.1 | | | 22.0 | | | 22.1 | |
| Approach LOS | | A | | | A | | | C | | | C | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM Average Control Delay | 8.3 | HCM Level of Service | A |
| HCM Volume to Capacity ratio | 0.33 | | |
| Actuated Cycle Length (s) | 54.5 | Sum of lost time (s) | 12.0 |
| Intersection Capacity Utilization | 78.4% | ICU Level of Service | D |
| Analysis Period (min) | 15 | | |

c Critical Lane Group

| Lane Group | EBL | EBT | EBR | EBR2 | WBL2 | WBL | WBT | NBL | NBT | NBR2 | SBL2 | SBL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (vph) | 133 | 3 | 186 | 11 | 1 | 2 | 10 | 14 | 72 | 15 | 2 | 14 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width (ft) | 16 | 16 | 16 | 16 | 12 | 12 | 12 | 16 | 16 | 16 | 16 | 16 |
| Grade (%) | | -2% | | | | | 3% | | 4% | | | |
| Storage Length (ft) | 0 | | 0 | | | 0 | | 0 | | | | 0 |
| Storage Lanes | 0 | | 0 | | | 0 | | 0 | | | | 0 |
| Taper Length (ft) | 25 | | 25 | | | 25 | | 25 | | | | 25 |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Ped Bike Factor | | | | | | | | | | | | |
| Frt | | 0.921 | | | | | | | 0.982 | | | |
| Flt Protected | | 0.981 | | | | | 0.982 | | 0.990 | | | |
| Satd. Flow (prot) | 0 | 1856 | 0 | 0 | 0 | 0 | 1838 | 0 | 1993 | 0 | 0 | 0 |
| Flt Permitted | | 0.981 | | | | | 0.982 | | 0.873 | | | |
| Satd. Flow (perm) | 0 | 1856 | 0 | 0 | 0 | 0 | 1838 | 0 | 1758 | 0 | 0 | 0 |
| Right Turn on Red | | | | No | | | | | | No | | |
| Satd. Flow (RTOR) | | | | | | | | | | | | |
| Link Speed (mph) | | 40 | | | | | 35 | | 25 | | | |
| Link Distance (ft) | | 600 | | | | | 528 | | 500 | | | |
| Travel Time (s) | | 10.2 | | | | | 10.3 | | 13.6 | | | |
| Confl. Peds. (#/hr) | | | | | | | | | | | | |
| Confl. Bikes (#/hr) | | | | | | | | | | | | |
| Peak Hour Factor | 0.90 | 0.25 | 0.88 | 0.69 | 0.25 | 0.25 | 0.50 | 0.46 | 0.75 | 0.75 | 0.25 | 0.58 |
| Growth Factor | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% |
| Heavy Vehicles (%) | 13% | 0% | 1% | 9% | 0% | 0% | 0% | 0% | 3% | 7% | 0% | 0% |
| Bus Blockages (#/hr) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Parking (#/hr) | | | | | | | | | | | | |
| Mid-Block Traffic (%) | | 0% | | | | | 0% | | 0% | | | |
| Adj. Flow (vph) | 148 | 12 | 211 | 16 | 4 | 8 | 20 | 30 | 96 | 20 | 8 | 24 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 387 | 0 | 0 | 0 | 0 | 32 | 0 | 146 | 0 | 0 | 0 |
| Number of Detectors | 1 | 1 | | | 1 | 1 | 1 | 1 | 1 | | 2 | 2 |
| Detector Template | | | | | | | | | | | | |
| Leading Detector (ft) | 35 | 35 | | | 35 | 35 | 35 | 35 | 35 | | 70 | 70 |
| Trailing Detector (ft) | -5 | -5 | | | -5 | -5 | -5 | -5 | -5 | | -5 | -5 |
| Turn Type | Split | | | | Split | Split | | Perm | | | Perm | Perm |
| Protected Phases | 4 | 4 | | | 8 | 8 | 8 | | 2 | | | |
| Permitted Phases | | | | | | | | 2 | | | 6 | 6 |
| Detector Phase | 4 | 4 | | | 8 | 8 | 8 | 2 | 2 | | 6 | 6 |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 8.0 | 8.0 | | | 5.0 | 5.0 | 5.0 | 8.0 | 8.0 | | 8.0 | 8.0 |
| Minimum Split (s) | 14.0 | 14.0 | | | 11.0 | 11.0 | 11.0 | 14.0 | 14.0 | | 14.0 | 14.0 |
| Total Split (s) | 46.0 | 46.0 | 0.0 | 0.0 | 21.0 | 21.0 | 21.0 | 51.0 | 51.0 | 0.0 | 51.0 | 51.0 |
| Total Split (%) | 28.0% | 28.0% | 0.0% | 0.0% | 12.8% | 12.8% | 12.8% | 31.1% | 31.1% | 0.0% | 31.1% | 31.1% |
| Maximum Green (s) | 40.0 | 40.0 | | | 15.0 | 15.0 | 15.0 | 45.0 | 45.0 | | 45.0 | 45.0 |
| Yellow Time (s) | 4.0 | 4.0 | | | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | | 4.0 | 4.0 |
| All-Red Time (s) | 2.0 | 2.0 | | | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | | 2.0 | 2.0 |
| Lost Time Adjust (s) | -2.0 | 0.0 | 0.0 | 0.0 | -2.0 | -2.0 | 0.0 | -2.0 | 0.0 | 0.0 | -2.0 | -2.0 |
| Total Lost Time (s) | 4.0 | 6.0 | 4.0 | 4.0 | 4.0 | 4.0 | 6.0 | 4.0 | 6.0 | 4.0 | 4.0 | 4.0 |

| Lane Group | SBT | SBR | NWL2 | NWL | NWR |
|---|---|---|---|---|---|
| Lane Configurations | | | | | |
| Volume (vph) | 81 | 183 | 18 | 247 | 15 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width (ft) | 16 | 16 | 16 | 16 | 16 |
| Grade (%) | 0% | | | 6% | |
| Storage Length (ft) | | 0 | | 0 | 0 |
| Storage Lanes | | 0 | | 1 | 0 |
| Taper Length (ft) | | 25 | | 25 | 25 |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Ped Bike Factor | | | | | |
| Frt | 0.921 | | | 0.991 | |
| Flt Protected | 0.995 | | | 0.956 | |
| Satd. Flow (prot) | 1906 | 0 | 0 | 1937 | 0 |
| Flt Permitted | 0.957 | | | 0.956 | |
| Satd. Flow (perm) | 1833 | 0 | 0 | 1937 | 0 |
| Right Turn on Red | | No | | | |
| Satd. Flow (RTOR) | | | | | |
| Link Speed (mph) | 35 | | | 25 | |
| Link Distance (ft) | 500 | | | 574 | |
| Travel Time (s) | 9.7 | | | 15.7 | |
| Confl. Peds. (#/hr) | | | | | |
| Confl. Bikes (#/hr) | | | | | |
| Peak Hour Factor | 0.81 | 0.97 | 0.56 | 0.86 | 0.63 |
| Growth Factor | 100% | 100% | 100% | 100% | 100% |
| Heavy Vehicles (%) | 0% | 6% | 0% | 2% | 7% |
| Bus Blockages (#/hr) | 0 | 0 | 0 | 0 | 0 |
| Parking (#/hr) | | | | | |
| Mid-Block Traffic (%) | 0% | | | 0% | |
| Adj. Flow (vph) | 100 | 189 | 32 | 287 | 24 |
| Shared Lane Traffic (%) | | | | | |
| Lane Group Flow (vph) | 321 | 0 | 0 | 343 | 0 |
| Number of Detectors | 4 | | 1 | 1 | |
| Detector Template | | | | | |
| Leading Detector (ft) | 66 | | 35 | 35 | |
| Trailing Detector (ft) | -5 | | -5 | -5 | |
| Turn Type | | | Split | | |
| Protected Phases | 6 | | 9 | 9 | |
| Permitted Phases | | | | | |
| Detector Phase | 6 | | 9 | 9 | |
| Switch Phase | | | | | |
| Minimum Initial (s) | 8.0 | | 8.0 | 8.0 | |
| Minimum Split (s) | 14.0 | | 14.0 | 14.0 | |
| Total Split (s) | 51.0 | 0.0 | 46.0 | 46.0 | 0.0 |
| Total Split (%) | 31.1% | 0.0% | 28.0% | 28.0% | 0.0% |
| Maximum Green (s) | 45.0 | | 40.0 | 40.0 | |
| Yellow Time (s) | 4.0 | | 4.0 | 4.0 | |
| All-Red Time (s) | 2.0 | | 2.0 | 2.0 | |
| Lost Time Adjust (s) | 0.0 | 0.0 | -2.0 | 0.0 | 0.0 |
| Total Lost Time (s) | 6.0 | 4.0 | 4.0 | 6.0 | 4.0 |

| Lane Group | EBL | EBT | EBR | EBR2 | WBL2 | WBL | WBT | NBL | NBT | NBR2 | SBL2 | SBL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lead/Lag | | | | | | | | | | | | |
| Lead-Lag Optimize? | | | | | | | | | | | | |
| Vehicle Extension (s) | 5.0 | 5.0 | | | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | | 5.0 | 5.0 |
| Minimum Gap (s) | 3.0 | 3.0 | | | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | | 3.0 | 3.0 |
| Time Before Reduce (s) | 0.0 | 0.0 | | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 |
| Time To Reduce (s) | 0.0 | 0.0 | | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 |
| Recall Mode | None | None | | | None | None | None | Max | Max | | Max | Max |
| Walk Time (s) | | | | | | | | | | | | |
| Flash Dont Walk (s) | | | | | | | | | | | | |
| Pedestrian Calls (#/hr) | | | | | | | | | | | | |
| v/c Ratio | | 0.83 | | | | | 0.24 | | 0.25 | | | |
| Control Delay | | 68.0 | | | | | 72.7 | | 41.6 | | | |
| Queue Delay | | 0.0 | | | | | 0.0 | | 0.0 | | | |
| Total Delay | | 68.0 | | | | | 72.7 | | 41.6 | | | |
| Queue Length 50th (ft) | | 363 | | | | | 31 | | 112 | | | |
| Queue Length 95th (ft) | | 117 | | | | | 39 | | 155 | | | |
| Internal Link Dist (ft) | | 520 | | | | | 448 | | 420 | | | |
| Turn Bay Length (ft) | | | | | | | | | | | | |
| Base Capacity (vph) | | 539 | | | | | 200 | | 574 | | | |
| Starvation Cap Reductn | | 0 | | | | | 0 | | 0 | | | |
| Spillback Cap Reductn | | 0 | | | | | 0 | | 0 | | | |
| Storage Cap Reductn | | 0 | | | | | 0 | | 0 | | | |
| Reduced v/c Ratio | | 0.72 | | | | | 0.16 | | 0.25 | | | |

| Intersection Summary | |
|---|---|
| Area Type: | Other |
| Cycle Length: 164 | |
| Actuated Cycle Length: 141.4 | |
| Natural Cycle: 90 | |
| Control Type: Actuated-Uncoordinated | |

Splits and Phases: 5: Ashbourne Rd & Front St

| Lane Group | SBT | SBR | NWL2 | NWL | NWR |
|---|---|---|---|---|---|
| Lead/Lag | | | | | |
| Lead-Lag Optimize? | | | | | |
| Vehicle Extension (s) | 5.0 | | 5.0 | 5.0 | |
| Minimum Gap (s) | 3.0 | | 3.0 | 3.0 | |
| Time Before Reduce (s) | 0.0 | | 0.0 | 0.0 | |
| Time To Reduce (s) | 0.0 | | 0.0 | 0.0 | |
| Recall Mode | Max | | None | None | |
| Walk Time (s) | | | | | |
| Flash Dont Walk (s) | | | | | |
| Pedestrian Calls (#/hr) | | | | | |
| v/c Ratio | 0.54 | | | 0.78 | |
| Control Delay | 47.3 | | | 66.4 | |
| Queue Delay | 0.0 | | | 0.0 | |
| Total Delay | 47.3 | | | 66.4 | |
| Queue Length 50th (ft) | 274 | | | 326 | |
| Queue Length 95th (ft) | 362 | | | 431 | |
| Internal Link Dist (ft) | 420 | | | 494 | |
| Turn Bay Length (ft) | | | | | |
| Base Capacity (vph) | 598 | | | 562 | |
| Starvation Cap Reductn | 0 | | | 0 | |
| Spillback Cap Reductn | 0 | | | 0 | |
| Storage Cap Reductn | 0 | | | 0 | |
| Reduced v/c Ratio | 0.54 | | | 0.61 | |

Intersection Summary

| Movement | EBL | EBT | EBR | EBR2 | WBL2 | WBL | WBT | NBL | NBT | NBR2 | SBL2 | SBL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (vph) | 133 | 3 | 186 | 11 | 1 | 2 | 10 | 14 | 72 | 15 | 2 | 14 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width | 16 | 16 | 16 | 16 | 12 | 12 | 12 | 16 | 16 | 16 | 16 | 16 |
| Grade (%) | | -2% | | | | | 3% | | 4% | | | |
| Total Lost time (s) | | 6.0 | | | | | 6.0 | | 6.0 | | | |
| Lane Util. Factor | | 1.00 | | | | | 1.00 | | 1.00 | | | |
| Frt | | 0.92 | | | | | 1.00 | | 0.98 | | | |
| Flt Protected | | 0.98 | | | | | 0.98 | | 0.99 | | | |
| Satd. Flow (prot) | | 1856 | | | | | 1837 | | 1992 | | | |
| Flt Permitted | | 0.98 | | | | | 0.98 | | 0.87 | | | |
| Satd. Flow (perm) | | 1856 | | | | | 1837 | | 1756 | | | |
| Peak-hour factor, PHF | 0.90 | 0.25 | 0.88 | 0.69 | 0.25 | 0.25 | 0.50 | 0.46 | 0.75 | 0.75 | 0.25 | 0.58 |
| Adj. Flow (vph) | 148 | 12 | 211 | 16 | 4 | 8 | 20 | 30 | 96 | 20 | 8 | 24 |
| RTOR Reduction (vph) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Lane Group Flow (vph) | 0 | 387 | 0 | 0 | 0 | 0 | 32 | 0 | 146 | 0 | 0 | 0 |
| Heavy Vehicles (%) | 13% | 0% | 1% | 9% | 0% | 0% | 0% | 0% | 3% | 7% | 0% | 0% |
| Turn Type | Split | | | | Split | Split | | Perm | | | Perm | Perm |
| Protected Phases | 4 | 4 | | | 8 | 8 | 8 | | 2 | | | |
| Permitted Phases | | | | | | | | 2 | | | 6 | 6 |
| Actuated Green, G (s) | | 35.4 | | | | | 6.2 | | 46.1 | | | |
| Effective Green, g (s) | | 35.4 | | | | | 6.2 | | 46.1 | | | |
| Actuated g/C Ratio | | 0.25 | | | | | 0.04 | | 0.32 | | | |
| Clearance Time (s) | | 6.0 | | | | | 6.0 | | 6.0 | | | |
| Vehicle Extension (s) | | 5.0 | | | | | 5.0 | | 5.0 | | | |
| Lane Grp Cap (vph) | | 457 | | | | | 79 | | 563 | | | |
| v/s Ratio Prot | | c0.21 | | | | | c0.02 | | | | | |
| v/s Ratio Perm | | | | | | | | | 0.08 | | | |
| v/c Ratio | | 0.85 | | | | | 0.41 | | 0.26 | | | |
| Uniform Delay, d1 | | 51.6 | | | | | 67.0 | | 36.2 | | | |
| Progression Factor | | 1.00 | | | | | 1.00 | | 1.00 | | | |
| Incremental Delay, d2 | | 14.8 | | | | | 7.0 | | 1.1 | | | |
| Delay (s) | | 66.4 | | | | | 73.9 | | 37.3 | | | |
| Level of Service | | E | | | | | E | | D | | | |
| Approach Delay (s) | | 66.4 | | | | | 73.9 | | 37.3 | | | |
| Approach LOS | | E | | | | | E | | D | | | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM Average Control Delay | 56.6 | HCM Level of Service | E |
| HCM Volume to Capacity ratio | 0.69 | | |
| Actuated Cycle Length (s) | 143.7 | Sum of lost time (s) | 24.0 |
| Intersection Capacity Utilization | 75.3% | ICU Level of Service | D |
| Analysis Period (min) | 15 | | |

c Critical Lane Group

| Movement | SBT | SBR | NWL2 | NWL | NWR |
|---|---|---|---|---|---|
| Lane Configurations | | | | | |
| Volume (vph) | 81 | 183 | 18 | 247 | 15 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width | 16 | 16 | 16 | 16 | 16 |
| Grade (%) | 0% | | | 6% | |
| Total Lost time (s) | 6.0 | | | 6.0 | |
| Lane Util. Factor | 1.00 | | | 1.00 | |
| Frt | 0.92 | | | 0.99 | |
| Flt Protected | 1.00 | | | 0.96 | |
| Satd. Flow (prot) | 1905 | | | 1935 | |
| Flt Permitted | 0.96 | | | 0.96 | |
| Satd. Flow (perm) | 1831 | | | 1935 | |
| Peak-hour factor, PHF | 0.81 | 0.97 | 0.56 | 0.86 | 0.63 |
| Adj. Flow (vph) | 100 | 189 | 32 | 287 | 24 |
| RTOR Reduction (vph) | 0 | 0 | 0 | 0 | 0 |
| Lane Group Flow (vph) | 321 | 0 | 0 | 343 | 0 |
| Heavy Vehicles (%) | 0% | 6% | 0% | 2% | 7% |
| Turn Type | | | Split | | |
| Protected Phases | 6 | | 9 | 9 | |
| Permitted Phases | | | | | |
| Actuated Green, G (s) | 46.1 | | | 32.0 | |
| Effective Green, g (s) | 46.1 | | | 32.0 | |
| Actuated g/C Ratio | 0.32 | | | 0.22 | |
| Clearance Time (s) | 6.0 | | | 6.0 | |
| Vehicle Extension (s) | 5.0 | | | 5.0 | |
| Lane Grp Cap (vph) | 587 | | | 431 | |
| v/s Ratio Prot | | | | c0.18 | |
| v/s Ratio Perm | c0.18 | | | | |
| v/c Ratio | 0.55 | | | 0.80 | |
| Uniform Delay, d1 | 40.2 | | | 52.8 | |
| Progression Factor | 1.00 | | | 1.00 | |
| Incremental Delay, d2 | 3.6 | | | 11.2 | |
| Delay (s) | 43.8 | | | 63.9 | |
| Level of Service | D | | | E | |
| Approach Delay (s) | 43.8 | | | 63.9 | |
| Approach LOS | D | | | E | |

| Intersection Summary |
|---|

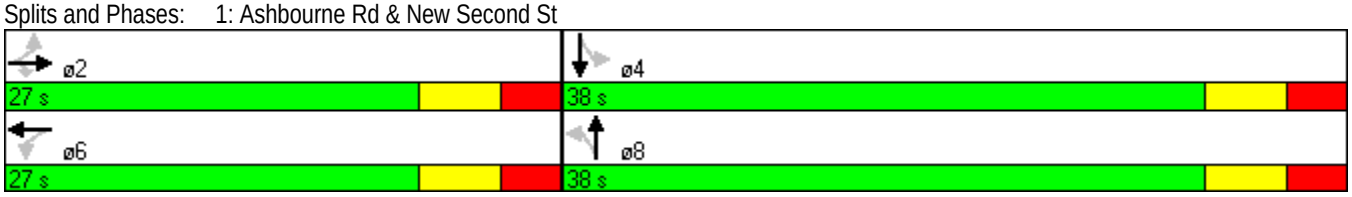
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (vph) | 71 | 187 | 25 | 9 | 138 | 104 | 25 | 406 | 20 | 86 | 326 | 43 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width (ft) | 12 | 12 | 14 | 16 | 16 | 16 | 16 | 16 | 16 | 12 | 12 | 12 |
| Grade (%) | | -9% | | | 8% | | | 3% | | | -2% | |
| Storage Length (ft) | 0 | | 110 | 0 | | 0 | 0 | | 0 | 0 | | 0 |
| Storage Lanes | 0 | | 1 | 0 | | 0 | 0 | | 0 | 0 | | 0 |
| Taper Length (ft) | 25 | | 75 | 25 | | 25 | 25 | | 25 | 25 | | 25 |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Ped Bike Factor | | | | | | | | | | | | |
| Frt | | | 0.850 | | 0.935 | | | 0.994 | | | 0.985 | |
| Flt Protected | | 0.986 | | | 0.998 | | | 0.997 | | | 0.990 | |
| Satd. Flow (prot) | 0 | 1938 | 1607 | 0 | 1893 | 0 | 0 | 2083 | 0 | 0 | 1854 | 0 |
| Flt Permitted | | 0.752 | | | 0.980 | | | 0.940 | | | 0.781 | |
| Satd. Flow (perm) | 0 | 1478 | 1607 | 0 | 1858 | 0 | 0 | 1964 | 0 | 0 | 1463 | 0 |
| Right Turn on Red | | | Yes | | | No | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | | 32 | | | | | 5 | | | 13 | |
| Link Speed (mph) | | 25 | | | 25 | | | 35 | | | 35 | |
| Link Distance (ft) | | 500 | | | 2250 | | | 500 | | | 500 | |
| Travel Time (s) | | 13.6 | | | 61.4 | | | 9.7 | | | 9.7 | |
| Confl. Peds. (#/hr) | | | | | | | | | | | | |
| Confl. Bikes (#/hr) | | | | | | | | | | | | |
| Peak Hour Factor | 0.85 | 0.90 | 0.78 | 0.75 | 0.89 | 0.67 | 0.69 | 0.84 | 0.79 | 0.79 | 0.88 | 0.72 |
| Growth Factor | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% |
| Heavy Vehicles (%) | 1% | 1% | 12% | 0% | 1% | 3% | 0% | 1% | 0% | 0% | 1% | 2% |
| Bus Blockages (#/hr) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Parking (#/hr) | | | | | | | | | | | | |
| Mid-Block Traffic (%) | | 0% | | | 0% | | | 0% | | | 0% | |
| Adj. Flow (vph) | 84 | 208 | 32 | 12 | 155 | 155 | 36 | 483 | 25 | 109 | 370 | 60 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 292 | 32 | 0 | 322 | 0 | 0 | 544 | 0 | 0 | 539 | 0 |
| Number of Detectors | 1 | 0 | 0 | 1 | 0 | | 1 | 0 | | 1 | 0 | |
| Detector Template | | | | | | | | | | | | |
| Leading Detector (ft) | 35 | 0 | 0 | 35 | 0 | | 35 | 0 | | 35 | 0 | |
| Trailing Detector (ft) | -5 | 0 | 0 | -5 | 0 | | -5 | 0 | | -5 | 0 | |
| Turn Type | Perm | | Perm | Perm | | | Perm | | | Perm | | |
| Protected Phases | | 2 | | | 6 | | | 8 | | | 4 | |
| Permitted Phases | 2 | | 2 | 6 | | | 8 | | | 4 | | |
| Detector Phase | 2 | 2 | 2 | 6 | 6 | | 8 | 8 | | 4 | 4 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 20.0 | 20.0 | 20.0 | 20.0 | 20.0 | | 31.0 | 31.0 | | 31.0 | 31.0 | |
| Minimum Split (s) | 27.0 | 27.0 | 27.0 | 27.0 | 27.0 | | 38.0 | 38.0 | | 38.0 | 38.0 | |
| Total Split (s) | 27.0 | 27.0 | 27.0 | 27.0 | 27.0 | 0.0 | 38.0 | 38.0 | 0.0 | 38.0 | 38.0 | 0.0 |
| Total Split (%) | 41.5% | 41.5% | 41.5% | 41.5% | 41.5% | 0.0% | 58.5% | 58.5% | 0.0% | 58.5% | 58.5% | 0.0% |
| Maximum Green (s) | 20.0 | 20.0 | 20.0 | 20.0 | 20.0 | | 31.0 | 31.0 | | 31.0 | 31.0 | |
| Yellow Time (s) | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | | 4.0 | 4.0 | | 4.0 | 4.0 | |
| All-Red Time (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | |
| Lost Time Adjust (s) | -1.0 | 0.0 | 0.0 | -1.0 | 0.0 | 0.0 | -1.0 | 0.0 | 0.0 | -1.0 | 0.0 | 0.0 |
| Total Lost Time (s) | 6.0 | 7.0 | 7.0 | 6.0 | 7.0 | 4.0 | 6.0 | 7.0 | 4.0 | 6.0 | 7.0 | 4.0 |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lead/Lag | | | | | | | | | | | | |
| Lead-Lag Optimize? | | | | | | | | | | | | |
| Vehicle Extension (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | |
| Minimum Gap (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | |
| Time Before Reduce (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Time To Reduce (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Recall Mode | Max | Max | Max | Max | Max | | Max | Max | | Max | Max | |
| Walk Time (s) | | | | | | | | | | | | |
| Flash Dont Walk (s) | | | | | | | | | | | | |
| Pedestrian Calls (#/hr) | | | | | | | | | | | | |
| v/c Ratio | | 0.64 | 0.06 | | 0.56 | | | 0.58 | | | 0.76 | |
| Control Delay | | 27.1 | 6.9 | | 23.4 | | | 15.3 | | | 22.9 | |
| Queue Delay | | 0.0 | 0.0 | | 0.0 | | | 0.0 | | | 0.0 | |
| Total Delay | | 27.1 | 6.9 | | 23.4 | | | 15.3 | | | 22.9 | |
| Queue Length 50th (ft) | | 99 | 0 | | 106 | | | 145 | | | 162 | |
| Queue Length 95th (ft) | | 176 | 13 | | 176 | | | 208 | | | #291 | |
| Internal Link Dist (ft) | | 420 | | | 2170 | | | 420 | | | 420 | |
| Turn Bay Length (ft) | | | 110 | | | | | | | | | |
| Base Capacity (vph) | | 455 | 517 | | 572 | | | 939 | | | 705 | |
| Starvation Cap Reductn | | 0 | 0 | | 0 | | | 0 | | | 0 | |
| Spillback Cap Reductn | | 0 | 0 | | 0 | | | 0 | | | 0 | |
| Storage Cap Reductn | | 0 | 0 | | 0 | | | 0 | | | 0 | |
| Reduced v/c Ratio | | 0.64 | 0.06 | | 0.56 | | | 0.58 | | | 0.76 | |

## Intersection Summary

Area Type: Other
Cycle Length: 65
Actuated Cycle Length: 65
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow
Natural Cycle: 65
Control Type: Pretimed
# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 1: Ashbourne Rd & New Second St



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (vph) | 71 | 187 | 25 | 9 | 138 | 104 | 25 | 406 | 20 | 86 | 326 | 43 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width | 12 | 12 | 14 | 16 | 16 | 16 | 16 | 16 | 16 | 12 | 12 | 12 |
| Grade (%) | | -9% | | | 8% | | | 3% | | | -2% | |
| Total Lost time (s) | | 7.0 | 7.0 | | 7.0 | | | 7.0 | | | 7.0 | |
| Lane Util. Factor | | 1.00 | 1.00 | | 1.00 | | | 1.00 | | | 1.00 | |
| Frt | | 1.00 | 0.85 | | 0.94 | | | 0.99 | | | 0.98 | |
| Flt Protected | | 0.99 | 1.00 | | 1.00 | | | 1.00 | | | 0.99 | |
| Satd. Flow (prot) | | 1938 | 1607 | | 1893 | | | 2082 | | | 1854 | |
| Flt Permitted | | 0.75 | 1.00 | | 0.98 | | | 0.94 | | | 0.78 | |
| Satd. Flow (perm) | | 1479 | 1607 | | 1859 | | | 1965 | | | 1463 | |
| Peak-hour factor, PHF | 0.85 | 0.90 | 0.78 | 0.75 | 0.89 | 0.67 | 0.69 | 0.84 | 0.79 | 0.79 | 0.88 | 0.72 |
| Adj. Flow (vph) | 84 | 208 | 32 | 12 | 155 | 155 | 36 | 483 | 25 | 109 | 370 | 60 |
| RTOR Reduction (vph) | 0 | 0 | 22 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 7 | 0 |
| Lane Group Flow (vph) | 0 | 292 | 10 | 0 | 322 | 0 | 0 | 541 | 0 | 0 | 532 | 0 |
| Heavy Vehicles (%) | 1% | 1% | 12% | 0% | 1% | 3% | 0% | 1% | 0% | 0% | 1% | 2% |
| Turn Type | Perm | | Perm | Perm | | | Perm | | | Perm | | |
| Protected Phases | | 2 | | | 6 | | | 8 | | | 4 | |
| Permitted Phases | 2 | | 2 | 6 | | | 8 | | | 4 | | |
| Actuated Green, G (s) | | 20.0 | 20.0 | | 20.0 | | | 31.0 | | | 31.0 | |
| Effective Green, g (s) | | 20.0 | 20.0 | | 20.0 | | | 31.0 | | | 31.0 | |
| Actuated g/C Ratio | | 0.31 | 0.31 | | 0.31 | | | 0.48 | | | 0.48 | |
| Clearance Time (s) | | 7.0 | 7.0 | | 7.0 | | | 7.0 | | | 7.0 | |
| Lane Grp Cap (vph) | | 455 | 494 | | 572 | | | 937 | | | 698 | |
| v/s Ratio Prot | | | | | | | | | | | | |
| v/s Ratio Perm | | c0.20 | 0.01 | | 0.17 | | | 0.28 | | | c0.36 | |
| v/c Ratio | | 0.64 | 0.02 | | 0.56 | | | 0.58 | | | 0.76 | |
| Uniform Delay, d1 | | 19.4 | 15.7 | | 18.8 | | | 12.3 | | | 14.0 | |
| Progression Factor | | 1.00 | 1.00 | | 1.00 | | | 1.00 | | | 1.00 | |
| Incremental Delay, d2 | | 6.8 | 0.1 | | 4.0 | | | 2.6 | | | 7.7 | |
| Delay (s) | | 26.2 | 15.7 | | 22.8 | | | 14.9 | | | 21.7 | |
| Level of Service | | C | B | | C | | | B | | | C | |
| Approach Delay (s) | | 25.2 | | | 22.8 | | | 14.9 | | | 21.7 | |
| Approach LOS | | C | | | C | | | B | | | C | |

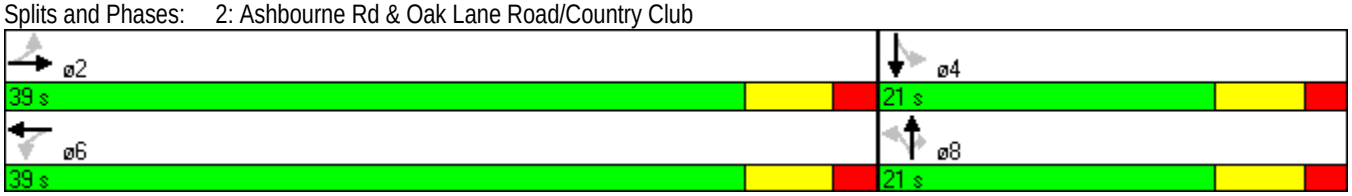
| Intersection Summary | | | |
|---|---|---|---|
| HCM Average Control Delay | 20.4 | HCM Level of Service | C |
| HCM Volume to Capacity ratio | 0.72 | | |
| Actuated Cycle Length (s) | 65.0 | Sum of lost time (s) | 14.0 |
| Intersection Capacity Utilization | 102.0% | ICU Level of Service | G |
| Analysis Period (min) | 15 | | |
| c Critical Lane Group | | | |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (vph) | 0 | 252 | 41 | 199 | 226 | 0 | 24 | 0 | 195 | 0 | 0 | 1 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width (ft) | 11 | 11 | 11 | 10 | 12 | 12 | 11 | 11 | 14 | 10 | 10 | 10 |
| Grade (%) | | 1% | | | 1% | | | -2% | | | 1% | |
| Storage Length (ft) | 140 | | 0 | 150 | | 0 | 0 | | 45 | 0 | | 0 |
| Storage Lanes | 1 | | 0 | 1 | | 0 | 0 | | 1 | 0 | | 0 |
| Taper Length (ft) | 75 | | 25 | 75 | | 25 | 25 | | 75 | 25 | | 25 |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Ped Bike Factor | | | | | | | | | | | | |
| Frt | | 0.973 | | | | | | | 0.850 | | 0.865 | |
| Flt Protected | | | | 0.950 | | | | 0.950 | | | | |
| Satd. Flow (prot) | 1827 | 1769 | 0 | 1596 | 1872 | 0 | 0 | 1546 | 1673 | 0 | 1526 | 0 |
| Flt Permitted | | | | 0.550 | | | | 0.755 | | | | |
| Satd. Flow (perm) | 1827 | 1769 | 0 | 924 | 1872 | 0 | 0 | 1229 | 1673 | 0 | 1526 | 0 |
| Right Turn on Red | | | No | | | Yes | | | Yes | | | No |
| Satd. Flow (RTOR) | | | | | | | | | 224 | | | |
| Link Speed (mph) | | 35 | | | 35 | | | 35 | | | 35 | |
| Link Distance (ft) | | 2250 | | | 738 | | | 500 | | | 300 | |
| Travel Time (s) | | 43.8 | | | 14.4 | | | 9.7 | | | 5.8 | |
| Confl. Peds. (#/hr) | | | | | | | | | | | | |
| Confl. Bikes (#/hr) | | | | | | | | | | | | |
| Peak Hour Factor | 0.25 | 0.87 | 0.65 | 0.91 | 0.94 | 0.25 | 0.88 | 0.25 | 0.87 | 0.25 | 0.25 | 0.25 |
| Growth Factor | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% |
| Heavy Vehicles (%) | 0% | 0% | 3% | 5% | 1% | 0% | 14% | 0% | 4% | 0% | 0% | 0% |
| Bus Blockages (#/hr) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Parking (#/hr) | | | | | | | | | | | | |
| Mid-Block Traffic (%) | | 0% | | | 0% | | | 0% | | | 0% | |
| Adj. Flow (vph) | 0 | 290 | 63 | 219 | 240 | 0 | 27 | 0 | 224 | 0 | 0 | 4 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 353 | 0 | 219 | 240 | 0 | 0 | 27 | 224 | 0 | 4 | 0 |
| Number of Detectors | 0 | 0 | | 0 | 0 | | 1 | 1 | 1 | 1 | 1 | |
| Detector Template | | | | | | | | | | | | |
| Leading Detector (ft) | 0 | 0 | | 0 | 0 | | 35 | 35 | 35 | 20 | 20 | |
| Trailing Detector (ft) | 0 | 0 | | 0 | 0 | | -5 | -5 | -5 | -5 | -5 | |
| Turn Type | Perm | | | Perm | | | Perm | | Perm | Perm | | |
| Protected Phases | | 2 | | | 6 | | | 8 | | | 4 | |
| Permitted Phases | 2 | | | 6 | | | 8 | | 8 | 4 | | |
| Detector Phase | 2 | 2 | | 6 | 6 | | 8 | 8 | 8 | 4 | 4 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 33.0 | 33.0 | | 33.0 | 33.0 | | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | |
| Minimum Split (s) | 39.0 | 39.0 | | 39.0 | 39.0 | | 9.0 | 9.0 | 9.0 | 9.0 | 9.0 | |
| Total Split (s) | 39.0 | 39.0 | 0.0 | 39.0 | 39.0 | 0.0 | 21.0 | 21.0 | 21.0 | 21.0 | 21.0 | 0.0 |
| Total Split (%) | 65.0% | 65.0% | 0.0% | 65.0% | 65.0% | 0.0% | 35.0% | 35.0% | 35.0% | 35.0% | 35.0% | 0.0% |
| Maximum Green (s) | 33.0 | 33.0 | | 33.0 | 33.0 | | 15.0 | 15.0 | 15.0 | 15.0 | 15.0 | |
| Yellow Time (s) | 4.0 | 4.0 | | 4.0 | 4.0 | | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | |
| All-Red Time (s) | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | |
| Lost Time Adjust (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | -2.0 | 0.0 | 0.0 | -2.0 | 0.0 | 0.0 |
| Total Lost Time (s) | 6.0 | 6.0 | 4.0 | 6.0 | 6.0 | 4.0 | 4.0 | 6.0 | 6.0 | 4.0 | 6.0 | 4.0 |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lead/Lag | | | | | | | | | | | | |
| Lead-Lag Optimize? | | | | | | | | | | | | |
| Vehicle Extension (s) | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | |
| Minimum Gap (s) | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | |
| Time Before Reduce (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| Time To Reduce (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| Recall Mode | Min | Min | | Min | Min | | None | None | None | None | None | |
| Walk Time (s) | | | | | | | | | | | | |
| Flash Dont Walk (s) | | | | | | | | | | | | |
| Pedestrian Calls (#/hr) | | | | | | | | | | | | |
| v/c Ratio | | 0.32 | | 0.38 | 0.20 | | | 0.16 | 0.53 | | 0.02 | |
| Control Delay | | 5.8 | | 7.5 | 5.0 | | | 21.7 | 8.6 | | 19.0 | |
| Queue Delay | | 0.0 | | 0.0 | 0.0 | | | 0.0 | 0.0 | | 0.0 | |
| Total Delay | | 5.8 | | 7.5 | 5.0 | | | 21.7 | 8.6 | | 19.0 | |
| Queue Length 50th (ft) | | 39 | | 25 | 24 | | | 8 | 0 | | 1 | |
| Queue Length 95th (ft) | | 88 | | 74 | 60 | | | 7 | 42 | | 2 | |
| Internal Link Dist (ft) | | 2170 | | | 658 | | | 420 | | | 220 | |
| Turn Bay Length (ft) | | | | 150 | | | | | 45 | | | |
| Base Capacity (vph) | | 1117 | | 584 | 1182 | | | 353 | 640 | | 438 | |
| Starvation Cap Reductn | | 0 | | 0 | 0 | | | 0 | 0 | | 0 | |
| Spillback Cap Reductn | | 0 | | 0 | 0 | | | 0 | 0 | | 0 | |
| Storage Cap Reductn | | 0 | | 0 | 0 | | | 0 | 0 | | 0 | |
| Reduced v/c Ratio | | 0.32 | | 0.38 | 0.20 | | | 0.08 | 0.35 | | 0.01 | |

| Intersection Summary | |
|---|---|
| Area Type: | Other |
| Cycle Length: 60 | |
| Actuated Cycle Length: 52.3 | |
| Natural Cycle: 50 | |
| Control Type: Actuated-Uncoordinated | |

Splits and Phases: 2: Ashbourne Rd & Oak Lane Road/Country Club



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (vph) | 0 | 252 | 41 | 199 | 226 | 0 | 24 | 0 | 195 | 0 | 0 | 1 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width | 11 | 11 | 11 | 10 | 12 | 12 | 11 | 11 | 14 | 10 | 10 | 10 |
| Grade (%) | | 1% | | | 1% | | | -2% | | | 1% | |
| Total Lost time (s) | | 6.0 | | 6.0 | 6.0 | | | 6.0 | 6.0 | | 6.0 | |
| Lane Util. Factor | | 1.00 | | 1.00 | 1.00 | | | 1.00 | 1.00 | | 1.00 | |
| Frt | | 0.97 | | 1.00 | 1.00 | | | 1.00 | 0.85 | | 0.86 | |
| Flt Protected | | 1.00 | | 0.95 | 1.00 | | | 0.95 | 1.00 | | 1.00 | |
| Satd. Flow (prot) | | 1769 | | 1596 | 1872 | | | 1546 | 1673 | | 1526 | |
| Flt Permitted | | 1.00 | | 0.55 | 1.00 | | | 0.76 | 1.00 | | 1.00 | |
| Satd. Flow (perm) | | 1769 | | 924 | 1872 | | | 1229 | 1673 | | 1526 | |
| Peak-hour factor, PHF | 0.25 | 0.87 | 0.65 | 0.91 | 0.94 | 0.25 | 0.88 | 0.25 | 0.87 | 0.25 | 0.25 | 0.25 |
| Adj. Flow (vph) | 0 | 290 | 63 | 219 | 240 | 0 | 27 | 0 | 224 | 0 | 0 | 4 |
| RTOR Reduction (vph) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 193 | 0 | 0 | 0 |
| Lane Group Flow (vph) | 0 | 353 | 0 | 219 | 240 | 0 | 0 | 27 | 31 | 0 | 4 | 0 |
| Heavy Vehicles (%) | 0% | 0% | 3% | 5% | 1% | 0% | 14% | 0% | 4% | 0% | 0% | 0% |
| Turn Type | Perm | | | Perm | | | Perm | | Perm | Perm | | |
| Protected Phases | | 2 | | | 6 | | | 8 | | | 4 | |
| Permitted Phases | 2 | | | 6 | | | 8 | | 8 | 4 | | |
| Actuated Green, G (s) | | 33.0 | | 33.0 | 33.0 | | | 7.3 | 7.3 | | 7.3 | |
| Effective Green, g (s) | | 33.0 | | 33.0 | 33.0 | | | 7.3 | 7.3 | | 7.3 | |
| Actuated g/C Ratio | | 0.63 | | 0.63 | 0.63 | | | 0.14 | 0.14 | | 0.14 | |
| Clearance Time (s) | | 6.0 | | 6.0 | 6.0 | | | 6.0 | 6.0 | | 6.0 | |
| Vehicle Extension (s) | | 3.0 | | 3.0 | 3.0 | | | 3.0 | 3.0 | | 3.0 | |
| Lane Grp Cap (vph) | | 1116 | | 583 | 1181 | | | 172 | 234 | | 213 | |
| v/s Ratio Prot | | 0.20 | | | 0.13 | | | | | | 0.00 | |
| v/s Ratio Perm | | | | c0.24 | | | | c0.02 | 0.02 | | | |
| v/c Ratio | | 0.32 | | 0.38 | 0.20 | | | 0.16 | 0.13 | | 0.02 | |
| Uniform Delay, d1 | | 4.4 | | 4.7 | 4.1 | | | 19.8 | 19.7 | | 19.4 | |
| Progression Factor | | 1.00 | | 1.00 | 1.00 | | | 1.00 | 1.00 | | 1.00 | |
| Incremental Delay, d2 | | 0.2 | | 0.4 | 0.1 | | | 0.4 | 0.3 | | 0.0 | |
| Delay (s) | | 4.6 | | 5.1 | 4.2 | | | 20.2 | 20.0 | | 19.4 | |
| Level of Service | | A | | A | A | | | C | B | | B | |
| Approach Delay (s) | | 4.6 | | | 4.6 | | | 20.0 | | | 19.4 | |
| Approach LOS | | A | | | A | | | C | | | B | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM Average Control Delay | 8.3 | HCM Level of Service | A |
| HCM Volume to Capacity ratio | 0.34 | | |
| Actuated Cycle Length (s) | 52.3 | Sum of lost time (s) | 12.0 |
| Intersection Capacity Utilization | 78.0% | ICU Level of Service | D |
| Analysis Period (min) | 15 | | |

c Critical Lane Group

| Lane Group | EBL | EBT | EBR | EBR2 | WBL | WBT | WBR | NBL | NBT | NBR | NBR2 | SBL2 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (vph) | 200 | 20 | 203 | 24 | 3 | 6 | 3 | 10 | 80 | 1 | 15 | 3 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width (ft) | 16 | 16 | 16 | 16 | 12 | 12 | 12 | 16 | 16 | 16 | 16 | 16 |
| Grade (%) | | -2% | | | | 3% | | | 4% | | | |
| Storage Length (ft) | 0 | | 0 | | 0 | | 0 | 0 | | 0 | | |
| Storage Lanes | 0 | | 0 | | 0 | | 0 | 0 | | 0 | | |
| Taper Length (ft) | 25 | | 25 | | 25 | | 25 | 25 | | 25 | | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Ped Bike Factor | | | | | | | | | | | | |
| Frt | | 0.933 | | | | 0.955 | | | 0.977 | | | |
| Flt Protected | | 0.978 | | | | 0.984 | | | 0.994 | | | |
| Satd. Flow (prot) | 0 | 1936 | 0 | 0 | 0 | 1759 | 0 | 0 | 1994 | 0 | 0 | 0 |
| Flt Permitted | | 0.978 | | | | 0.984 | | | 0.938 | | | |
| Satd. Flow (perm) | 0 | 1936 | 0 | 0 | 0 | 1759 | 0 | 0 | 1882 | 0 | 0 | 0 |
| Right Turn on Red | | | | No | | | No | | | | No | |
| Satd. Flow (RTOR) | | | | | | | | | | | | |
| Link Speed (mph) | | 40 | | | | 35 | | | 25 | | | |
| Link Distance (ft) | | 612 | | | | 527 | | | 500 | | | |
| Travel Time (s) | | 10.4 | | | | 10.3 | | | 13.6 | | | |
| Confl. Peds. (#/hr) | | | | | | | | | | | | |
| Confl. Bikes (#/hr) | | | | | | | | | | | | |
| Peak Hour Factor | 0.83 | 0.71 | 0.88 | 0.75 | 0.38 | 0.75 | 0.38 | 0.56 | 0.83 | 0.25 | 0.75 | 0.75 |
| Growth Factor | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% |
| Heavy Vehicles (%) | 5% | 0% | 0% | 4% | 0% | 0% | 0% | 0% | 4% | 0% | 0% | 0% |
| Bus Blockages (#/hr) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Parking (#/hr) | | | | | | | | | | | | |
| Mid-Block Traffic (%) | | 0% | | | | 0% | | | 0% | | | |
| Adj. Flow (vph) | 241 | 28 | 231 | 32 | 8 | 8 | 8 | 18 | 96 | 4 | 20 | 4 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 532 | 0 | 0 | 0 | 24 | 0 | 0 | 138 | 0 | 0 | 0 |
| Number of Detectors | 1 | 1 | | | 1 | 1 | | 1 | 1 | | | 2 |
| Detector Template | | | | | | | | | | | | |
| Leading Detector (ft) | 35 | 35 | | | 35 | 35 | | 35 | 35 | | | 70 |
| Trailing Detector (ft) | -5 | -5 | | | -5 | -5 | | -5 | -5 | | | -5 |
| Turn Type | Split | | | | Split | | | Perm | | | | Perm |
| Protected Phases | 4 | 4 | | | 8 | 8 | | | 2 | | | |
| Permitted Phases | | | | | | | | 2 | | | | 6 |
| Detector Phase | 4 | 4 | | | 8 | 8 | | 2 | 2 | | | 6 |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 8.0 | 8.0 | | | 5.0 | 5.0 | | 8.0 | 8.0 | | | 8.0 |
| Minimum Split (s) | 14.0 | 14.0 | | | 11.0 | 11.0 | | 14.0 | 14.0 | | | 14.0 |
| Total Split (s) | 46.0 | 46.0 | 0.0 | 0.0 | 21.0 | 21.0 | 0.0 | 51.0 | 51.0 | 0.0 | 0.0 | 51.0 |
| Total Split (%) | 28.0% | 28.0% | 0.0% | 0.0% | 12.8% | 12.8% | 0.0% | 31.1% | 31.1% | 0.0% | 0.0% | 31.1% |
| Maximum Green (s) | 40.0 | 40.0 | | | 15.0 | 15.0 | | 45.0 | 45.0 | | | 45.0 |
| Yellow Time (s) | 4.0 | 4.0 | | | 4.0 | 4.0 | | 4.0 | 4.0 | | | 4.0 |
| All-Red Time (s) | 2.0 | 2.0 | | | 2.0 | 2.0 | | 2.0 | 2.0 | | | 2.0 |
| Lost Time Adjust (s) | -2.0 | 0.0 | 0.0 | 0.0 | -2.0 | 0.0 | 0.0 | -2.0 | 0.0 | 0.0 | 0.0 | -2.0 |
| Total Lost Time (s) | 4.0 | 6.0 | 4.0 | 4.0 | 4.0 | 6.0 | 4.0 | 4.0 | 6.0 | 4.0 | 4.0 | 4.0 |

| Lane Group | SBL | SBT | SBR | NWL2 | NWL | NWR | NWR2 |
|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | |
| Volume (vph) | 8 | 70 | 150 | 14 | 259 | 18 | 1 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width (ft) | 16 | 16 | 16 | 16 | 16 | 16 | 16 |
| Grade (%) | | 0% | | | 6% | | |
| Storage Length (ft) | 0 | | 0 | | 0 | 0 | |
| Storage Lanes | 0 | | 0 | | 1 | 0 | |
| Taper Length (ft) | 25 | | 25 | | 25 | 25 | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Ped Bike Factor | | | | | | | |
| Frt | | 0.915 | | | 0.988 | | |
| Flt Protected | | 0.996 | | | 0.956 | | |
| Satd. Flow (prot) | 0 | 1950 | 0 | 0 | 1931 | 0 | 0 |
| Flt Permitted | | 0.972 | | | 0.956 | | |
| Satd. Flow (perm) | 0 | 1903 | 0 | 0 | 1931 | 0 | 0 |
| Right Turn on Red | | | No | | | | No |
| Satd. Flow (RTOR) | | | | | | | |
| Link Speed (mph) | | 35 | | | 25 | | |
| Link Distance (ft) | | 500 | | | 573 | | |
| Travel Time (s) | | 9.7 | | | 15.6 | | |
| Confl. Peds. (#/hr) | | | | | | | |
| Confl. Bikes (#/hr) | | | | | | | |
| Peak Hour Factor | 0.50 | 0.88 | 0.87 | 0.70 | 0.95 | 0.75 | 0.25 |
| Growth Factor | 100% | 100% | 100% | 100% | 100% | 100% | 100% |
| Heavy Vehicles (%) | 0% | 0% | 1% | 0% | 2% | 6% | 0% |
| Bus Blockages (#/hr) | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Parking (#/hr) | | | | | | | |
| Mid-Block Traffic (%) | | 0% | | | 0% | | |
| Adj. Flow (vph) | 16 | 80 | 172 | 20 | 273 | 24 | 4 |
| Shared Lane Traffic (%) | | | | | | | |
| Lane Group Flow (vph) | 0 | 272 | 0 | 0 | 321 | 0 | 0 |
| Number of Detectors | 2 | 4 | | 1 | 1 | | |
| Detector Template | | | | | | | |
| Leading Detector (ft) | 70 | 66 | | 35 | 35 | | |
| Trailing Detector (ft) | -5 | -1 | | -5 | -5 | | |
| Turn Type | Perm | | | Split | | | |
| Protected Phases | | 6 | | 9 | 9 | | |
| Permitted Phases | 6 | | | | | | |
| Detector Phase | 6 | 6 | | 9 | 9 | | |
| Switch Phase | | | | | | | |
| Minimum Initial (s) | 8.0 | 8.0 | | 8.0 | 8.0 | | |
| Minimum Split (s) | 14.0 | 14.0 | | 14.0 | 14.0 | | |
| Total Split (s) | 51.0 | 51.0 | 0.0 | 46.0 | 46.0 | 0.0 | 0.0 |
| Total Split (%) | 31.1% | 31.1% | 0.0% | 28.0% | 28.0% | 0.0% | 0.0% |
| Maximum Green (s) | 45.0 | 45.0 | | 40.0 | 40.0 | | |
| Yellow Time (s) | 4.0 | 4.0 | | 4.0 | 4.0 | | |
| All-Red Time (s) | 2.0 | 2.0 | | 2.0 | 2.0 | | |
| Lost Time Adjust (s) | -2.0 | 0.0 | 0.0 | -2.0 | 0.0 | 0.0 | 0.0 |
| Total Lost Time (s) | 4.0 | 6.0 | 4.0 | 4.0 | 6.0 | 4.0 | 4.0 |

| Lane Group | EBL | EBT | EBR | EBR2 | WBL | WBT | WBR | NBL | NBT | NBR | NBR2 | SBL2 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lead/Lag | | | | | | | | | | | | |
| Lead-Lag Optimize? | | | | | | | | | | | | |
| Vehicle Extension (s) | 5.0 | 5.0 | | | 5.0 | 5.0 | | 5.0 | 5.0 | | | 5.0 |
| Minimum Gap (s) | 3.0 | 3.0 | | | 3.0 | 3.0 | | 3.0 | 3.0 | | | 3.0 |
| Time Before Reduce (s) | 0.0 | 0.0 | | | 0.0 | 0.0 | | 0.0 | 0.0 | | | 0.0 |
| Time To Reduce (s) | 0.0 | 0.0 | | | 0.0 | 0.0 | | 0.0 | 0.0 | | | 0.0 |
| Recall Mode | None | None | | | None | None | | Max | Max | | | Max |
| Walk Time (s) | | | | | | | | | | | | |
| Flash Dont Walk (s) | | | | | | | | | | | | |
| Pedestrian Calls (#/hr) | | | | | | | | | | | | |
| v/c Ratio | | 0.98 | | | | 0.20 | | | 0.23 | | | |
| Control Delay | | 84.8 | | | | 72.2 | | | 40.9 | | | |
| Queue Delay | | 0.0 | | | | 0.0 | | | 0.0 | | | |
| Total Delay | | 84.8 | | | | 72.2 | | | 40.9 | | | |
| Queue Length 50th (ft) | | ~557 | | | | 23 | | | 103 | | | |
| Queue Length 95th (ft) | | #579 | | | | 48 | | | 162 | | | |
| Internal Link Dist (ft) | | 532 | | | | 447 | | | 420 | | | |
| Turn Bay Length (ft) | | | | | | | | | | | | |
| Base Capacity (vph) | | 545 | | | | 186 | | | 596 | | | |
| Starvation Cap Reductn | | 0 | | | | 0 | | | 0 | | | |
| Spillback Cap Reductn | | 0 | | | | 0 | | | 0 | | | |
| Storage Cap Reductn | | 0 | | | | 0 | | | 0 | | | |
| Reduced v/c Ratio | | 0.98 | | | | 0.13 | | | 0.23 | | | |

## Intersection Summary

Area Type: Other
Cycle Length: 164
Actuated Cycle Length: 143.8
Natural Cycle: 90
Control Type: Actuated-Uncoordinated
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 5: Ashbourne Rd & Front St

| Lane Group | SBL | SBT | SBR | NWL2 | NWL | NWR | NWR2 |
|---|---|---|---|---|---|---|---|
| Lead/Lag | | | | | | | |
| Lead-Lag Optimize? | | | | | | | |
| Vehicle Extension (s) | 5.0 | 5.0 | | 5.0 | 5.0 | | |
| Minimum Gap (s) | 3.0 | 3.0 | | 3.0 | 3.0 | | |
| Time Before Reduce (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | |
| Time To Reduce (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | |
| Recall Mode | Max | Max | | None | None | | |
| Walk Time (s) | | | | | | | |
| Flash Dont Walk (s) | | | | | | | |
| Pedestrian Calls (#/hr) | | | | | | | |
| v/c Ratio | | 0.45 | | | 0.79 | | |
| Control Delay | | 45.0 | | | 68.9 | | |
| Queue Delay | | 0.0 | | | 0.0 | | |
| Total Delay | | 45.0 | | | 68.9 | | |
| Queue Length 50th (ft) | | 219 | | | 301 | | |
| Queue Length 95th (ft) | | 331 | | | 422 | | |
| Internal Link Dist (ft) | | 420 | | | 493 | | |
| Turn Bay Length (ft) | | | | | | | |
| Base Capacity (vph) | | 602 | | | 543 | | |
| Starvation Cap Reductn | | 0 | | | 0 | | |
| Spillback Cap Reductn | | 0 | | | 0 | | |
| Storage Cap Reductn | | 0 | | | 0 | | |
| Reduced v/c Ratio | | 0.45 | | | 0.59 | | |

Intersection Summary

| Movement | EBL | EBT | EBR | EBR2 | WBL | WBT | WBR | NBL | NBT | NBR | NBR2 | SBL2 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (vph) | 200 | 20 | 203 | 24 | 3 | 6 | 3 | 10 | 80 | 1 | 15 | 3 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width | 16 | 16 | 16 | 16 | 12 | 12 | 12 | 16 | 16 | 16 | 16 | 16 |
| Grade (%) | | -2% | | | | 3% | | | 4% | | | |
| Total Lost time (s) | | 6.0 | | | | 6.0 | | | 6.0 | | | |
| Lane Util. Factor | | 1.00 | | | | 1.00 | | | 1.00 | | | |
| Frt | | 0.93 | | | | 0.95 | | | 0.98 | | | |
| Flt Protected | | 0.98 | | | | 0.98 | | | 0.99 | | | |
| Satd. Flow (prot) | | 1936 | | | | 1758 | | | 1992 | | | |
| Flt Permitted | | 0.98 | | | | 0.98 | | | 0.94 | | | |
| Satd. Flow (perm) | | 1936 | | | | 1758 | | | 1880 | | | |
| Peak-hour factor, PHF | 0.83 | 0.71 | 0.88 | 0.75 | 0.38 | 0.75 | 0.38 | 0.56 | 0.83 | 0.25 | 0.75 | 0.75 |
| Adj. Flow (vph) | 241 | 28 | 231 | 32 | 8 | 8 | 8 | 18 | 96 | 4 | 20 | 4 |
| RTOR Reduction (vph) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Lane Group Flow (vph) | 0 | 532 | 0 | 0 | 0 | 24 | 0 | 0 | 138 | 0 | 0 | 0 |
| Heavy Vehicles (%) | 5% | 0% | 0% | 4% | 0% | 0% | 0% | 0% | 4% | 0% | 0% | 0% |
| Turn Type | Split | | | | Split | | | Perm | | | | Perm |
| Protected Phases | 4 | 4 | | | 8 | 8 | | | 2 | | | |
| Permitted Phases | | | | | | | | 2 | | | | 6 |
| Actuated Green, G (s) | | 40.5 | | | | 6.0 | | | 45.5 | | | |
| Effective Green, g (s) | | 40.5 | | | | 6.0 | | | 45.5 | | | |
| Actuated g/C Ratio | | 0.28 | | | | 0.04 | | | 0.31 | | | |
| Clearance Time (s) | | 6.0 | | | | 6.0 | | | 6.0 | | | |
| Vehicle Extension (s) | | 5.0 | | | | 5.0 | | | 5.0 | | | |
| Lane Grp Cap (vph) | | 536 | | | | 72 | | | 585 | | | |
| v/s Ratio Prot | | c0.27 | | | | c0.01 | | | | | | |
| v/s Ratio Perm | | | | | | | | | 0.07 | | | |
| v/c Ratio | | 0.99 | | | | 0.33 | | | 0.24 | | | |
| Uniform Delay, d1 | | 52.7 | | | | 68.2 | | | 37.5 | | | |
| Progression Factor | | 1.00 | | | | 1.00 | | | 1.00 | | | |
| Incremental Delay, d2 | | 36.9 | | | | 5.6 | | | 0.9 | | | |
| Delay (s) | | 89.6 | | | | 73.8 | | | 38.4 | | | |
| Level of Service | | F | | | | E | | | D | | | |
| Approach Delay (s) | | 89.6 | | | | 73.8 | | | 38.4 | | | |
| Approach LOS | | F | | | | E | | | D | | | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM Average Control Delay | 68.5 | HCM Level of Service | E |
| HCM Volume to Capacity ratio | 0.71 | | |
| Actuated Cycle Length (s) | 146.3 | Sum of lost time (s) | 24.0 |
| Intersection Capacity Utilization | 79.5% | ICU Level of Service | D |
| Analysis Period (min) | 15 | | |

c Critical Lane Group

| Movement | SBL | SBT | SBR | NWL2 | NWL | NWR | NWR2 |
|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | |
| Volume (vph) | 8 | 70 | 150 | 14 | 259 | 18 | 1 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width | 16 | 16 | 16 | 16 | 16 | 16 | 16 |
| Grade (%) | | 0% | | | 6% | | |
| Total Lost time (s) | | 6.0 | | | 6.0 | | |
| Lane Util. Factor | | 1.00 | | | 1.00 | | |
| Frt | | 0.91 | | | 0.99 | | |
| Flt Protected | | 1.00 | | | 0.96 | | |
| Satd. Flow (prot) | | 1950 | | | 1933 | | |
| Flt Permitted | | 0.97 | | | 0.96 | | |
| Satd. Flow (perm) | | 1903 | | | 1933 | | |
| Peak-hour factor, PHF | 0.50 | 0.88 | 0.87 | 0.70 | 0.95 | 0.75 | 0.25 |
| Adj. Flow (vph) | 16 | 80 | 172 | 20 | 273 | 24 | 4 |
| RTOR Reduction (vph) | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Lane Group Flow (vph) | 0 | 272 | 0 | 0 | 321 | 0 | 0 |
| Heavy Vehicles (%) | 0% | 0% | 1% | 0% | 2% | 6% | 0% |
| Turn Type | Perm | | | Split | | | |
| Protected Phases | | 6 | | 9 | 9 | | |
| Permitted Phases | 6 | | | | | | |
| Actuated Green, G (s) | | 45.5 | | | 30.3 | | |
| Effective Green, g (s) | | 45.5 | | | 30.3 | | |
| Actuated g/C Ratio | | 0.31 | | | 0.21 | | |
| Clearance Time (s) | | 6.0 | | | 6.0 | | |
| Vehicle Extension (s) | | 5.0 | | | 5.0 | | |
| Lane Grp Cap (vph) | | 592 | | | 400 | | |
| v/s Ratio Prot | | | | | c0.17 | | |
| v/s Ratio Perm | | c0.14 | | | | | |
| v/c Ratio | | 0.46 | | | 0.80 | | |
| Uniform Delay, d1 | | 40.5 | | | 55.2 | | |
| Progression Factor | | 1.00 | | | 1.00 | | |
| Incremental Delay, d2 | | 2.6 | | | 12.5 | | |
| Delay (s) | | 43.1 | | | 67.7 | | |
| Level of Service | | D | | | E | | |
| Approach Delay (s) | | 43.1 | | | 67.7 | | |
| Approach LOS | | D | | | E | | |

| Intersection Summary |
|---|

# APPENDIX G

# Auxiliary Lane Warrants

## Ashbourne Road (S.R. 2025) and Site Access
## Left-Turn Lane Volume Adjustments

| Time Period | 2013 Future with Development | |
|---|---|---|
| | Weekday Morning | Weekday Afternoon |
| **Opposing Volumes** | | |
| Initial Throughs | 350 | 457 |
| $P_{Heavy\ Vehicles}$ | 0.06 | 0.03 |
| $E_{Terrain}$ | 1.5 | 1.5 |
| $T_{adjustment}$ | 1.030 | 1.015 |
| Adjusted Throughs | 361 | 464 |
| Initial Right Turns | 1 | 2 |
| $P_{Heavy\ Vehicles}$ | 0.00 | 0.00 |
| $E_{Terrain}$ | 1.5 | 1.5 |
| $T_{adjustment}$ | 1.000 | 1.000 |
| Adjusted Right Turns | 1 | 2 |
| **Adjusted Opposing Volumes** | **362** | **466** |
| **Advancing Volumes** | | |
| Initial Left Turns | 2 | 4 |
| $P_{Heavy\ Vehicles}$ | 0.06 | 0.03 |
| $E_{Terrain}$ | 1.5 | 1.5 |
| $T_{adjustment}$ | 1.030 | 1.015 |
| Adjusted Left Turns | 2 | 4 |
| Initial Throughs | 466 | 451 |
| $P_{Heavy\ Vehicles}$ | 0.05 | 0.03 |
| $E_{Terrain}$ | 1.5 | 1.5 |
| $T_{adjustment}$ | 1.025 | 1.015 |
| Adjusted Throughs | 478 | 458 |
| **Adjusted Advancing Volumes** | **480** | **462** |
| Percent Lefts | 0% | 1% |
| Turn Demand Volume (1) | Low | Low |
| Posted Speed Limit | 35 | 35 |
| Is a separate turn-lane warranted? (2) | No | No |

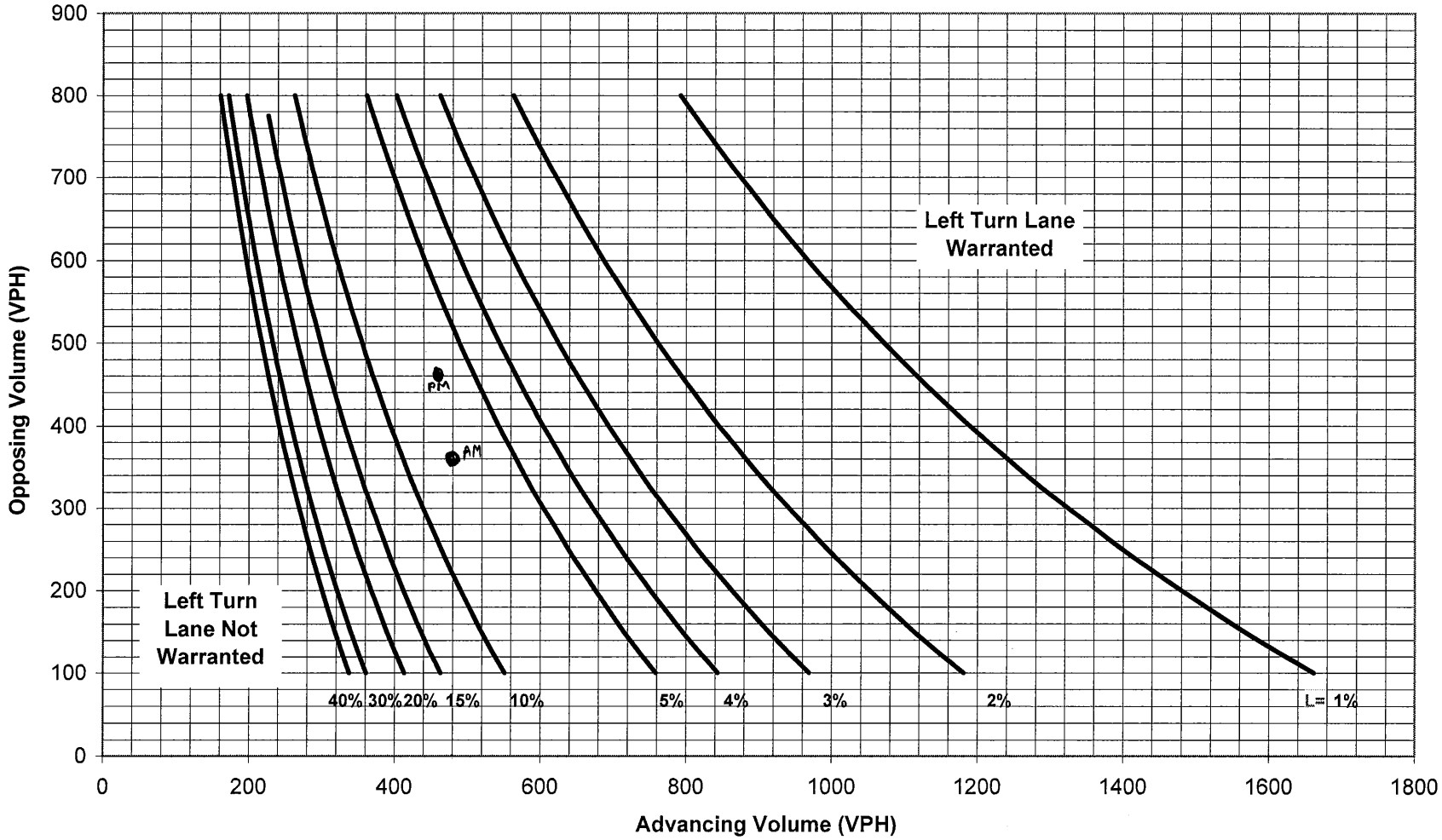
(1) From Table 1 of Chapter 11 of Publication 46, LOW is considered 10% or less of approach traffic volume.

(2) From Figure 1 of Chapter 11 of Publication 46.

Ashbourne Road Access

**Figure 1. Warrant for left turn lanes on two-lane roadways (speeds to 35 mph, unsignalized and signalized intersections)**

(L = % Left Turns in Advancing Volume)



## Ashbourne Road (S.R. 2025) and Site Access
## Right-Turn Lane Volume Adjustments

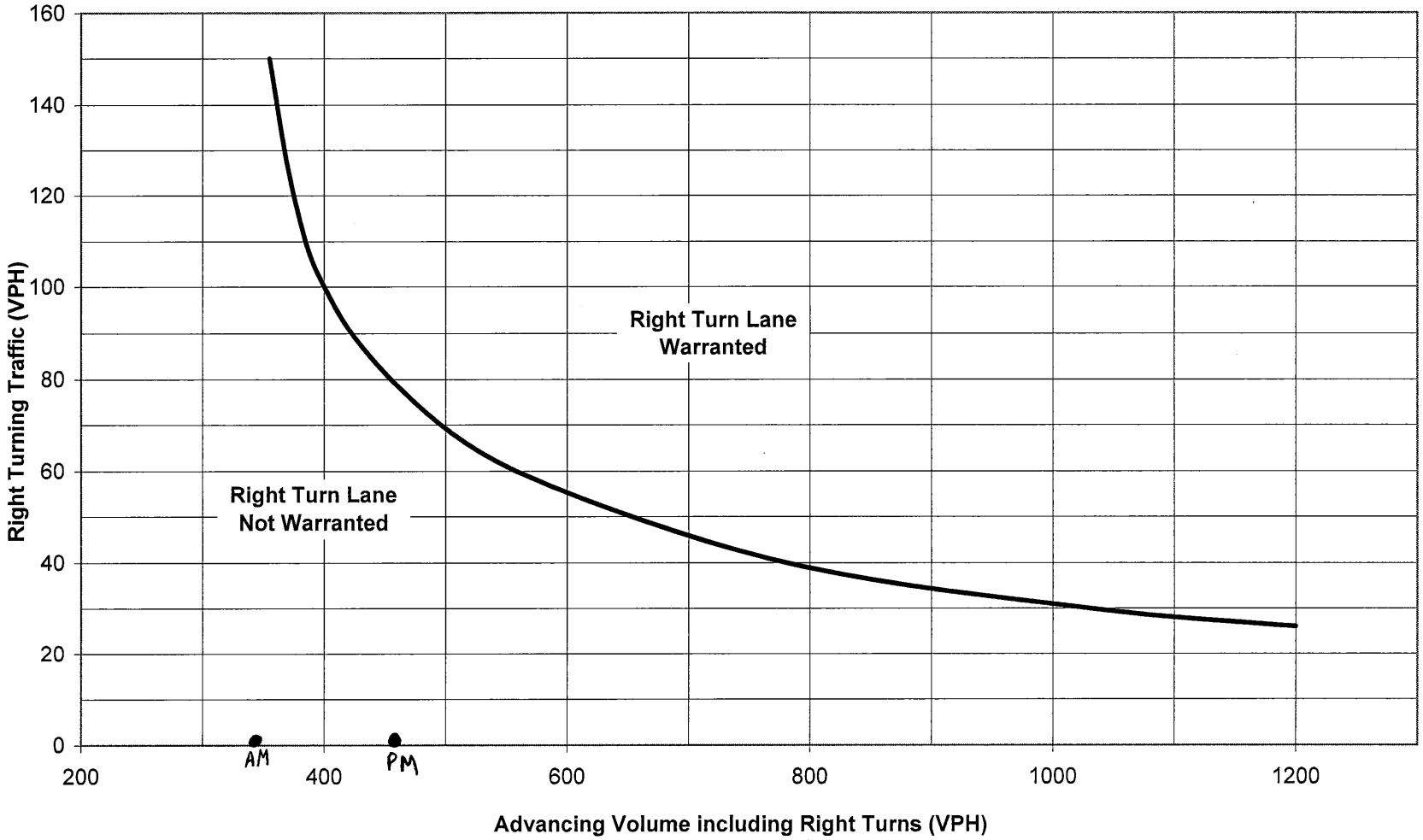
| Time Period | 2013 Future with Development | |
|---|---|---|
| | Weekday Morning | Weekday Afternoon |
| **Adjustment Factors** | | |
| Initial Right Turns | 1 | 2 |
| $P_{Heavy\ Vehicles}$ | 0.00 | 0.00 |
| $E_{Terrain}$ | 1.5 | 1.5 |
| $T_{adjustment}$ | 1.000 | 1.000 |
| Initial Throughs | 350 | 457 |
| $P_{Heavy\ Vehicles}$ | 0.06 | 0.03 |
| $E_{Terrain}$ | 1.5 | 1.5 |
| $T_{adjustment}$ | 1.030 | 1.015 |
| **Adjusted Volumes** | | |
| Right Turns | 1 | 2 |
| Throughs | 361 | 464 |
| Total Approach | 362 | 466 |
| Percent Rights | 0% | 0% |
| Turn Demand Volume (1) | Low | Low |
| Posted Speed Limit | 35 | 35 |
| Is a separate turn-lane warranted? (2) | No | No |

(1) From Table 1 of Chapter 11 of Publication 46, LOW is considered 10% or less of approach traffic volume.

(2) From Figure 9 of Chapter 11 of Publication 46.

Ashbourne Road Access

**Figure 9. Warrant for right turn lanes on two-lane roadways (40 mph or lower speeds, unsignalized and signalized intersections)**



## Oak Lane Road (S.R. 2062) and Site Access
## Left-Turn Lane Volume Adjustments

| Time Period | 2013 Future with Development | |
|---|---|---|
| | Weekday Morning | Weekday Afternoon |
| **Opposing Volumes** | | |
| Initial Throughs | 173 | 223 |
| $P_{Heavy\ Vehicles}$ | 0.10 | 0.05 |
| $E_{Terrain}$ | 1.5 | 1.5 |
| $T_{adjustment}$ | 1.050 | 1.025 |
| Adjusted Throughs | 182 | 229 |
| Initial Right Turns | 1 | 2 |
| $P_{Heavy\ Vehicles}$ | 0.00 | 0.00 |
| $E_{Terrain}$ | 1.5 | 1.5 |
| $T_{adjustment}$ | 1.000 | 1.000 |
| Adjusted Right Turns | 1 | 2 |
| **Adjusted Opposing Volumes** | **183** | **231** |
| **Advancing Volumes** | | |
| Initial Left Turns | 0 | 0 |
| $P_{Heavy\ Vehicles}$ | 0.06 | 0.03 |
| $E_{Terrain}$ | 1.5 | 1.5 |
| $T_{adjustment}$ | 1.030 | 1.015 |
| Adjusted Left Turns | 0 | 0 |
| Initial Throughs | 212 | 253 |
| $P_{Heavy\ Vehicles}$ | 0.09 | 0.05 |
| $E_{Terrain}$ | 1.5 | 1.5 |
| $T_{adjustment}$ | 1.045 | 1.025 |
| Adjusted Throughs | 222 | 259 |
| **Adjusted Advancing Volumes** | **222** | **259** |
| Percent Lefts | 0% | 0% |
| Turn Demand Volume (1) | Low | Low |
| Posted Speed Limit | 35 | 35 |
| Is a separate turn-lane warranted? (2) | No | No |

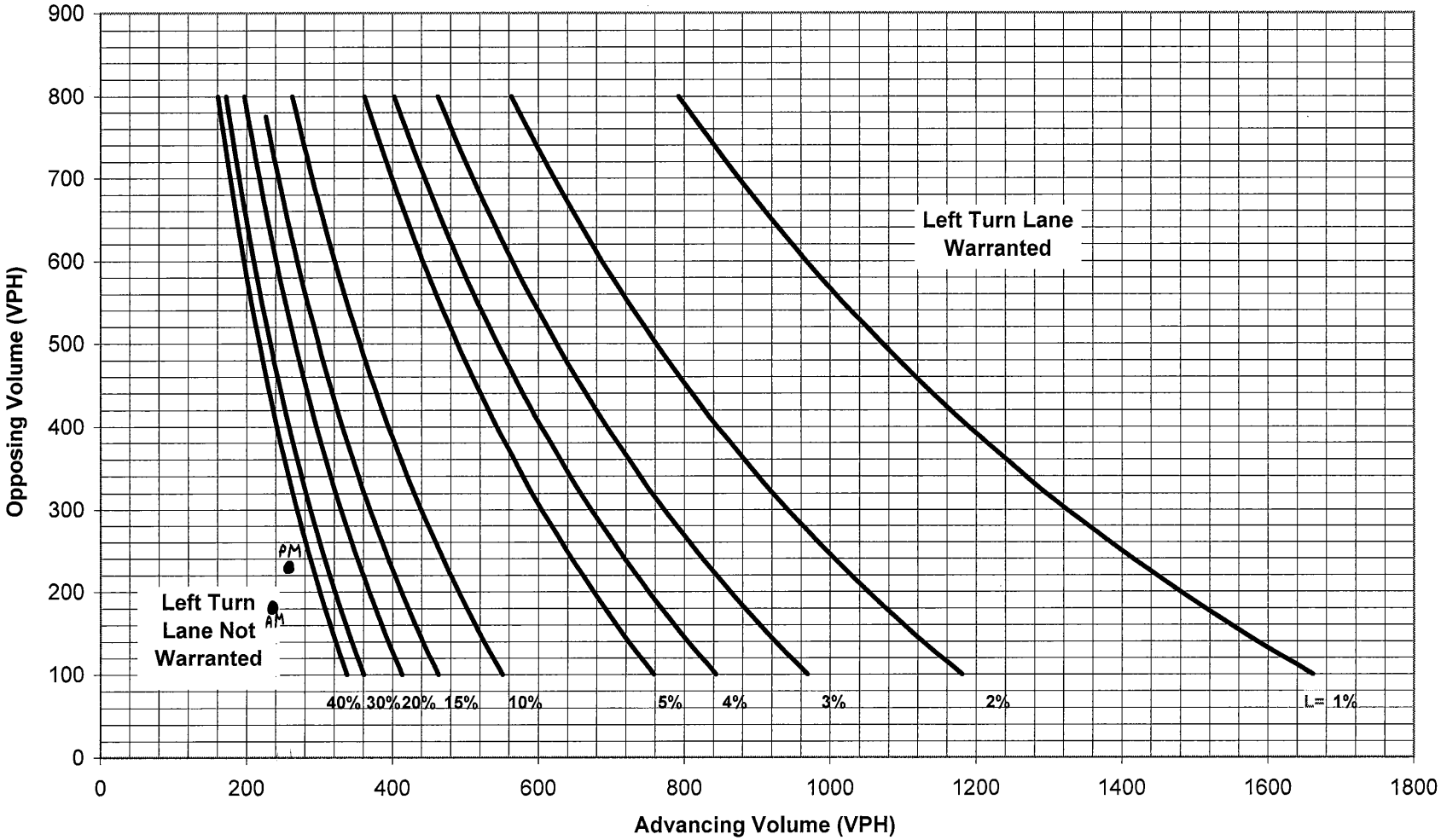
(1) From Table 1 of Chapter 11 of Publication 46, LOW is considered 10% or less of approach traffic volume.

(2) From Figure 1 of Chapter 11 of Publication 46.

Oak Lane Road Access

**Figure 1. Warrant for left turn lanes on two-lane roadways (speeds to 35 mph, unsignalized and signalized intersections)**

(L = % Left Turns in Advancing Volume)



## Oak Lane Road (S.R. 2062) and Site Access
## Right-Turn Lane Volume Adjustments

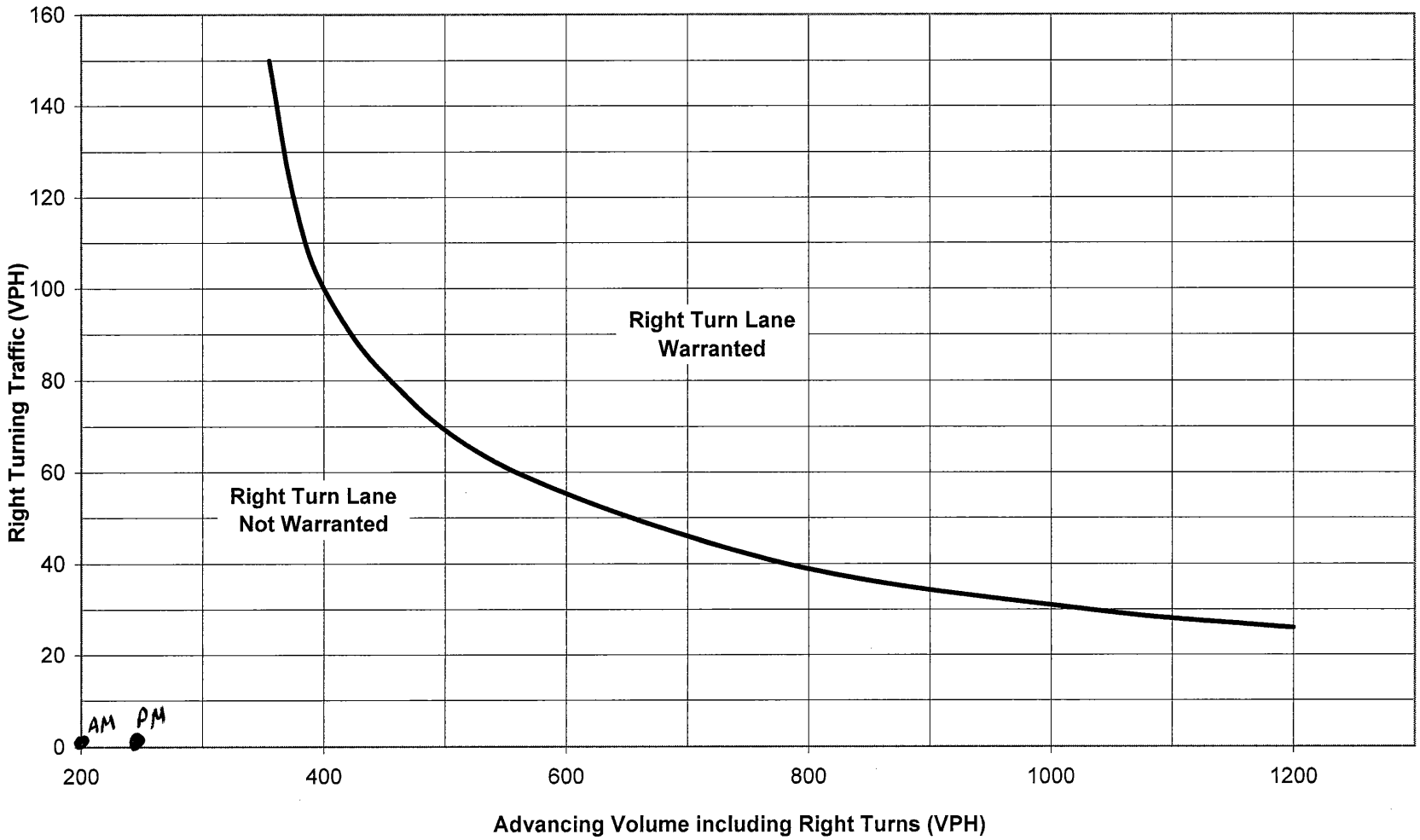
| Time Period | 2013 Future with Development | |
|---|---|---|
| | Weekday Morning | Weekday Afternoon |
| **Adjustment Factors** | | |
| Initial Right Turns | 1 | 2 |
| $P_{Heavy\ Vehicles}$ | 0.00 | 0.00 |
| $E_{Terrain}$ | 1.5 | 1.5 |
| $T_{adjustment}$ | 1.000 | 1.000 |
| Initial Throughs | 173 | 223 |
| $P_{Heavy\ Vehicles}$ | 0.10 | 0.05 |
| $E_{Terrain}$ | 1.5 | 1.5 |
| $T_{adjustment}$ | 1.050 | 1.025 |
| **Adjusted Volumes** | | |
| Right Turns | 1 | 2 |
| Throughs | 182 | 229 |
| Total Approach | 183 | 231 |
| Percent Rights | 1% | 1% |
| Turn Demand Volume (1) | Low | Low |
| Posted Speed Limit | 35 | 35 |
| Is a separate turn-lane warranted? (2) | No | No |

(1) From Table 1 of Chapter 11 of Publication 46, LOW is considered 10% or less of approach traffic volume.

(2) From Figure 9 of Chapter 11 of Publication 46.

Oak Lane Road Access

**Figure 9. Warrant for right turn lanes on two-lane roadways (40 mph or lower speeds, unsignalized and signalized intersections)**



# APPENDIX H

# M-950S Driveway Sight Distance Worksheets

Ashbourne Road Access

M-950S (3-04)
PENNDOT

# DRIVEWAY SIGHT DISTANCE MEASUREMENTS

## (FOR LOCAL ROADS, USE PENNDOT PUB 70)

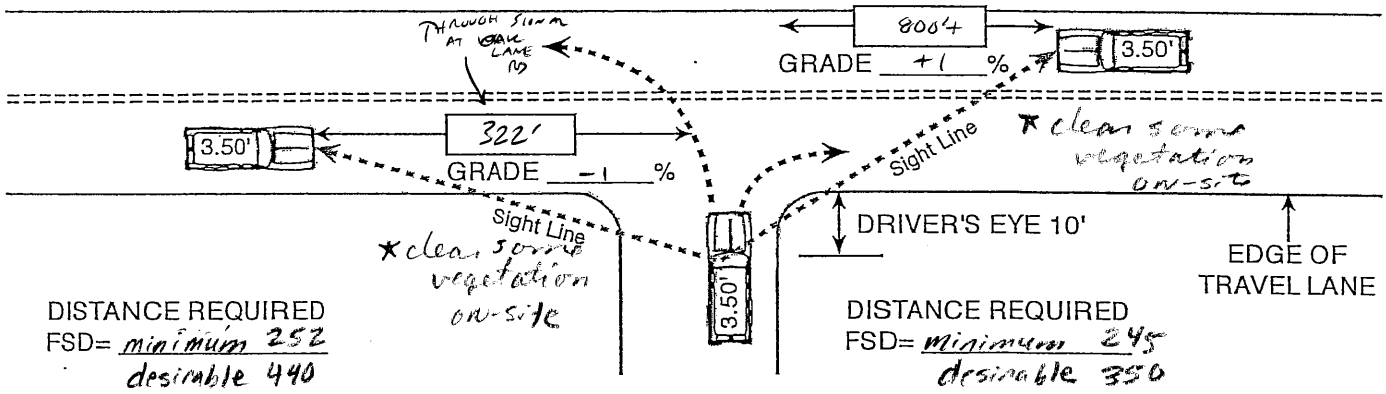
APPLICANT _____ APPLICATION NO. _____

S.R. 2025 SEG. 0060 OFFSET 0225 LEGAL SPEED LIMIT 35 mph

MEASURED BY NB DATE 5/7/12

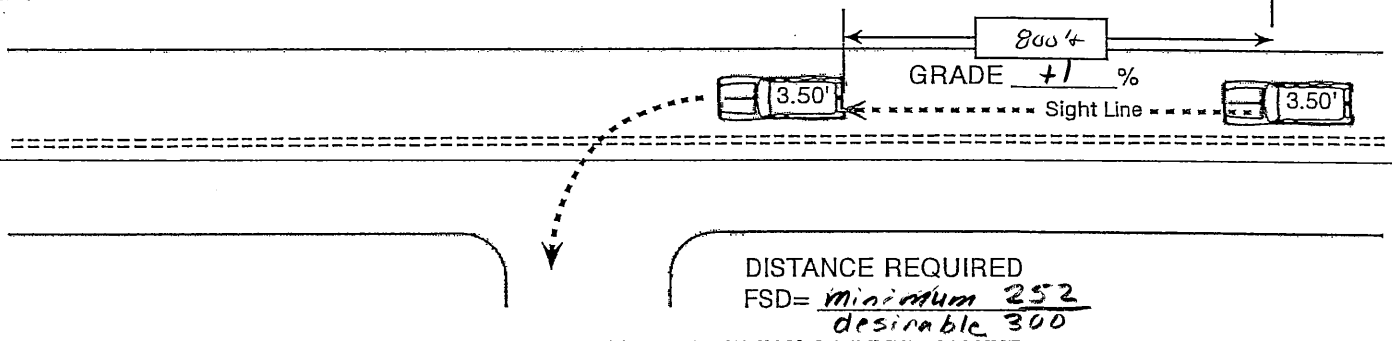
FOR DEPARTMENT USE ONLY: Safe-Running Speed _____ 85th Percentile Speed 43 mph

**A**



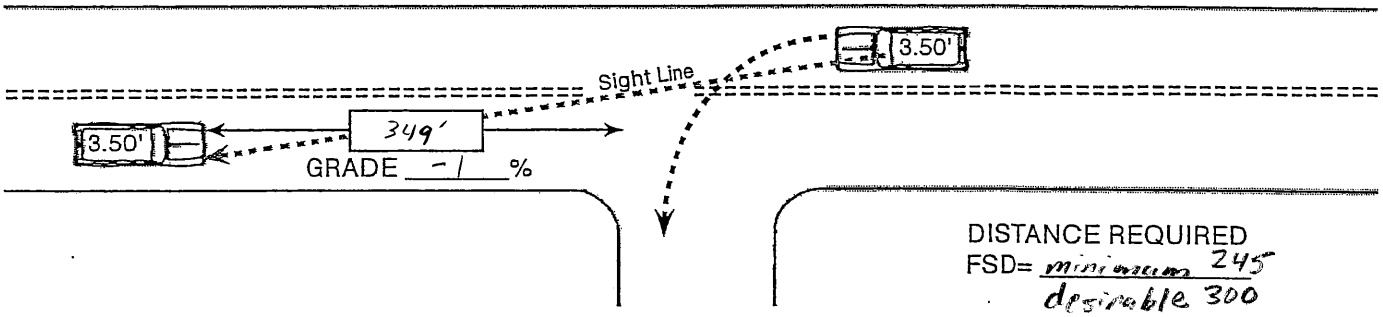

THE MAXIMUM LENGTH OF ROADWAY ALONG WHICH A DRIVER AT A DRIVEWAY LOCATION CAN CONTINUOUSLY SEE ANOTHER VEHICLE APPROACHING ON THE ROADWAY.

**B**




THE MAXIMUM LENGTH OF ROADWAY ALONG WHICH A DRIVER ON THE ROADWAY CAN CONTINUOUSLY SEE THE REAR OF A VEHICLE WHICH IS LOCATED IN THE DRIVER'S TRAVEL LANE AND WHICH IS POSITIONED TO MAKE A LEFT TURN INTO A DRIVEWAY.

**C**




THE MAXIMUM LENGTH OF ROADWAY ALONG WHICH A DRIVER OF A VEHICLE INTENDING TO MAKE A LEFT TURN INTO A DRIVEWAY CAN CONTINUOUSLY SEE A VEHICLE APPROACHING FROM THE OPPOSITE DIRECTION.

Oak Lane Road Access

M-950S (3-04)
PENNDOT

# DRIVEWAY SIGHT DISTANCE MEASUREMENTS

## (FOR LOCAL ROADS, USE PENNDOT PUB 70)

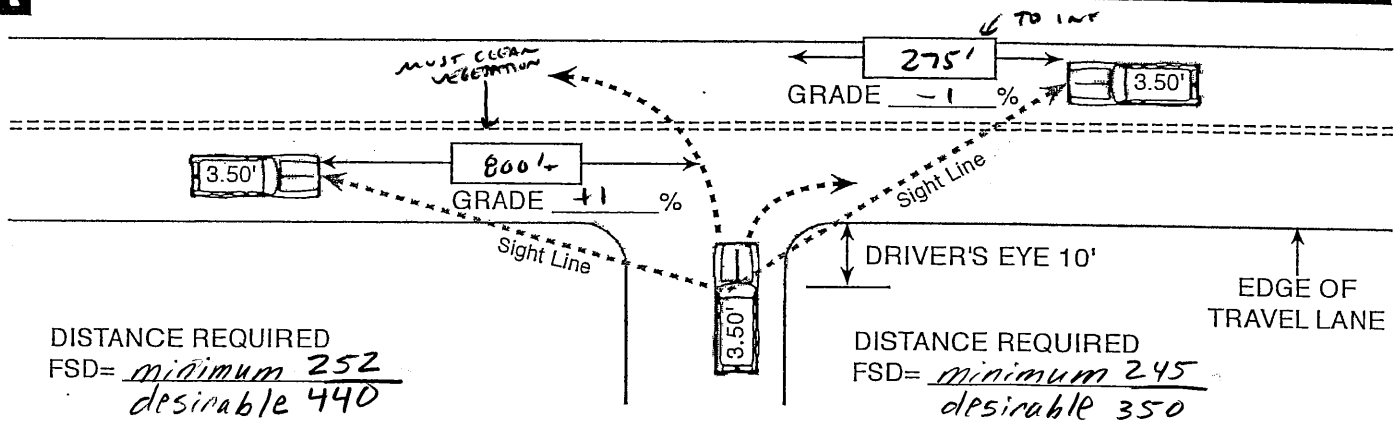
APPLICANT _____ APPLICATION NO. _____

S.R. 2062 SEG. 0020 OFFSET 1997 LEGAL SPEED LIMIT 35 MPH

MEASURED BY NDB DATE 8/19/11

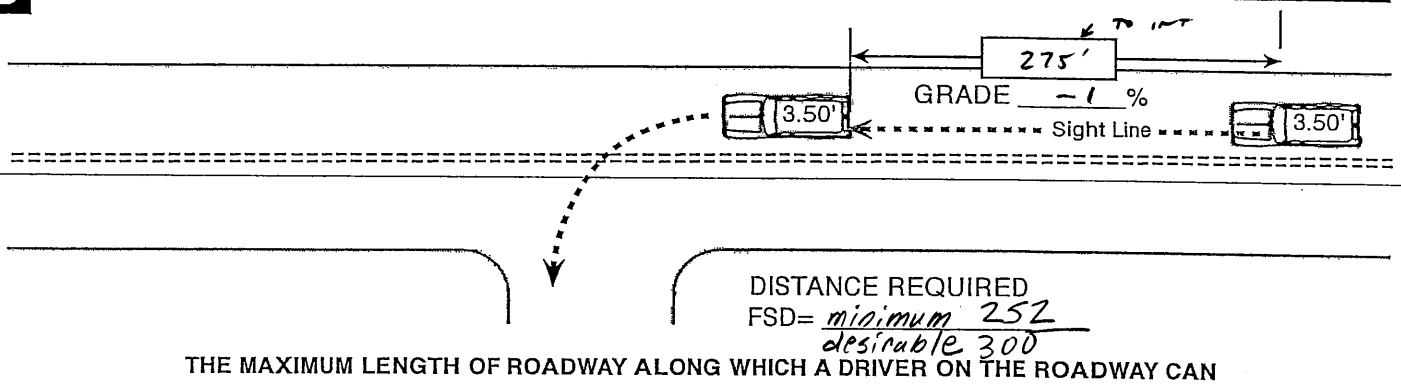
FOR DEPARTMENT USE ONLY: Safe-Running Speed _____ 85th Percentile Speed 40 mph

**A**



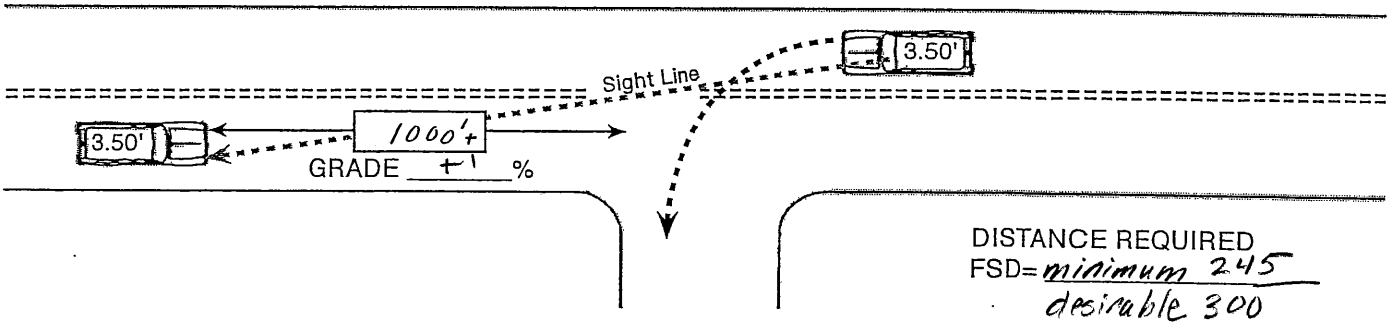

THE MAXIMUM LENGTH OF ROADWAY ALONG WHICH A DRIVER AT A DRIVEWAY LOCATION CAN CONTINUOUSLY SEE ANOTHER VEHICLE APPROACHING ON THE ROADWAY.

**B**




THE MAXIMUM LENGTH OF ROADWAY ALONG WHICH A DRIVER ON THE ROADWAY CAN CONTINUOUSLY SEE THE REAR OF A VEHICLE WHICH IS LOCATED IN THE DRIVER'S TRAVEL LANE AND WHICH IS POSITIONED TO MAKE A LEFT TURN INTO A DRIVEWAY.

**C**




THE MAXIMUM LENGTH OF ROADWAY ALONG WHICH A DRIVER OF A VEHICLE INTENDING TO MAKE A LEFT TURN INTO A DRIVEWAY CAN CONTINUOUSLY SEE A VEHICLE APPROACHING FROM THE OPPOSITE DIRECTION.

# APPENDIX I

# Cheltenham Elementary School

# TRAFFIC IMPACT STUDY

# CHELTENHAM ELEMENTARY SCHOOL

**Front Street**
**Ashbourne Road (S.R. 2025)**

**Cheltenham Township**
**Montgomery County**
**Pennsylvania**

**Prepared by:**

**HORNER & CANTER ASSOCIATES**
**A Professional Corporation**
**Transportation and Traffic Engineering**
**5049 Swamp Road, Suite 303**
**P.O. Box 554**
**Fountainville, Pennsylvania 18923**

**July 29, 2011**

**David H. Horner, P.E., PTOE**
**Professional Engineer**
**PA Lic. No. PE-043105-E**

**File No. 11-006**

## SITE TRAFFIC

The estimation of the amount of traffic a development proposal will generate is dependent upon the type and site of the use and, in some cases site-specific operating characteristics. For the proposed reconstruction of the existing Cheltenham Elementary School, the existing site-generated traffic has been documented through the conduct of traffic counts during the peak activity hours of a typical school day.

Table 1 below summarizes the existing peak hour traffic generation for the school.

**Table 1**
**Existing Peak Period Site Traffic Volumes**
**Cheltenham Elementary School**

| | Weekday AM Peak | | | Weekday PM Peak | | |
|---|---|---|---|---|---|---|
| | In | Out | Total | In | Out | Total |
| Existing School | 52 | 20 | 72 | 24 | 60 | 84 |

The capacity of the reconstructed school will be 600 students. While the enrollment is not expected to reach this capacity upon the opening of the school in 2013, for the purpose of this report we have assumed a "worst-case" enrollment increase from the existing 408 students to the 600 student capacity. This is an increase of approximately 47%. To project the future school-generated traffic, therefore, we increased the existing school-generated traffic volumes by 47% as shown in Table 2.

| Table 2<br>Projected Peak Period Site Traffic Volumes<br>Cheltenham Elementary School | | | | | | |
|---|---|---|---|---|---|---|
| | Weekday AM Peak | | | Weekday PM Peak | | |
| | In | Out | Total | In | Out | Total |
| Existing (408 students) | 52 | 20 | 72 | 24 | 60 | 84 |
| Future (600 students) | 76 | 30 | 106 | 35 | 88 | 123 |
| **Projected Traffic Increases** | **24** | **10** | **34** | **11** | **28** | **39** |

The projected traffic increases represent the additional traffic that would be generated by the reconstructed school at full capacity. In conjunction with the reconstruction of the school and the modifications to the on-site circulation, the school driveways will also be modified in terms of their operation. The Front Street access driveway will be limited to school buses and authorized staff only. The Ashbourne Road access driveway will be for passenger vehicles, including access for the parent drop-offs and pick-ups. Thus, in addition to the projected traffic increases related to the projected enrollment increases, the school-generated traffic volumes are redistributed to the study area based on the change in operating characteristics of the school driveways.

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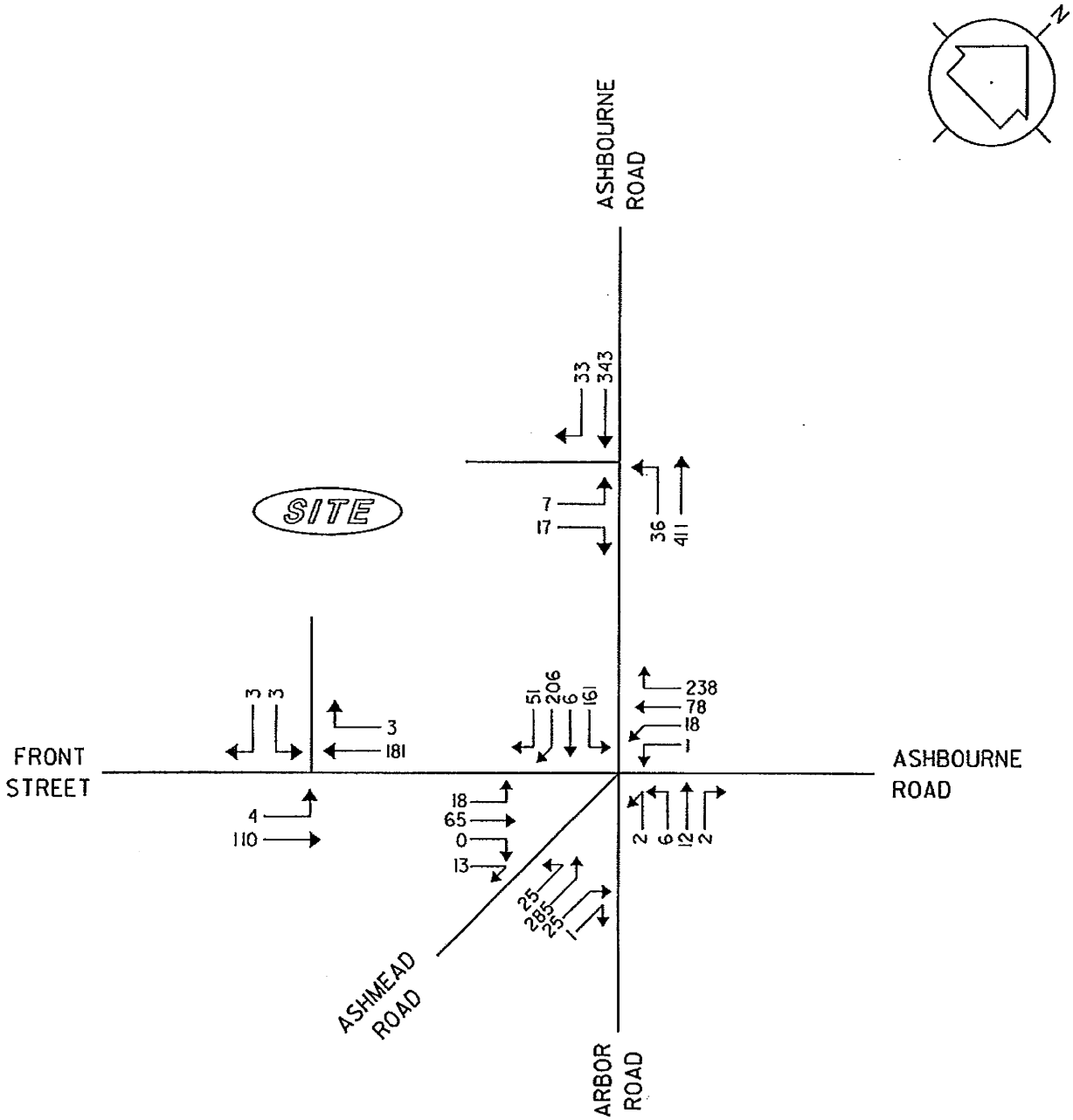


FIGURE 5
FUTURE 2013 BUILD
WEEKDAY AM PEAK HOUR TRAFFIC VOLUMES

# CHELTENHAM ELEMENTARY SCHOOL

CHELTENHAM TOWNSHIP, MONTGOMERY COUNTY, PA

11-006
JULY 2011

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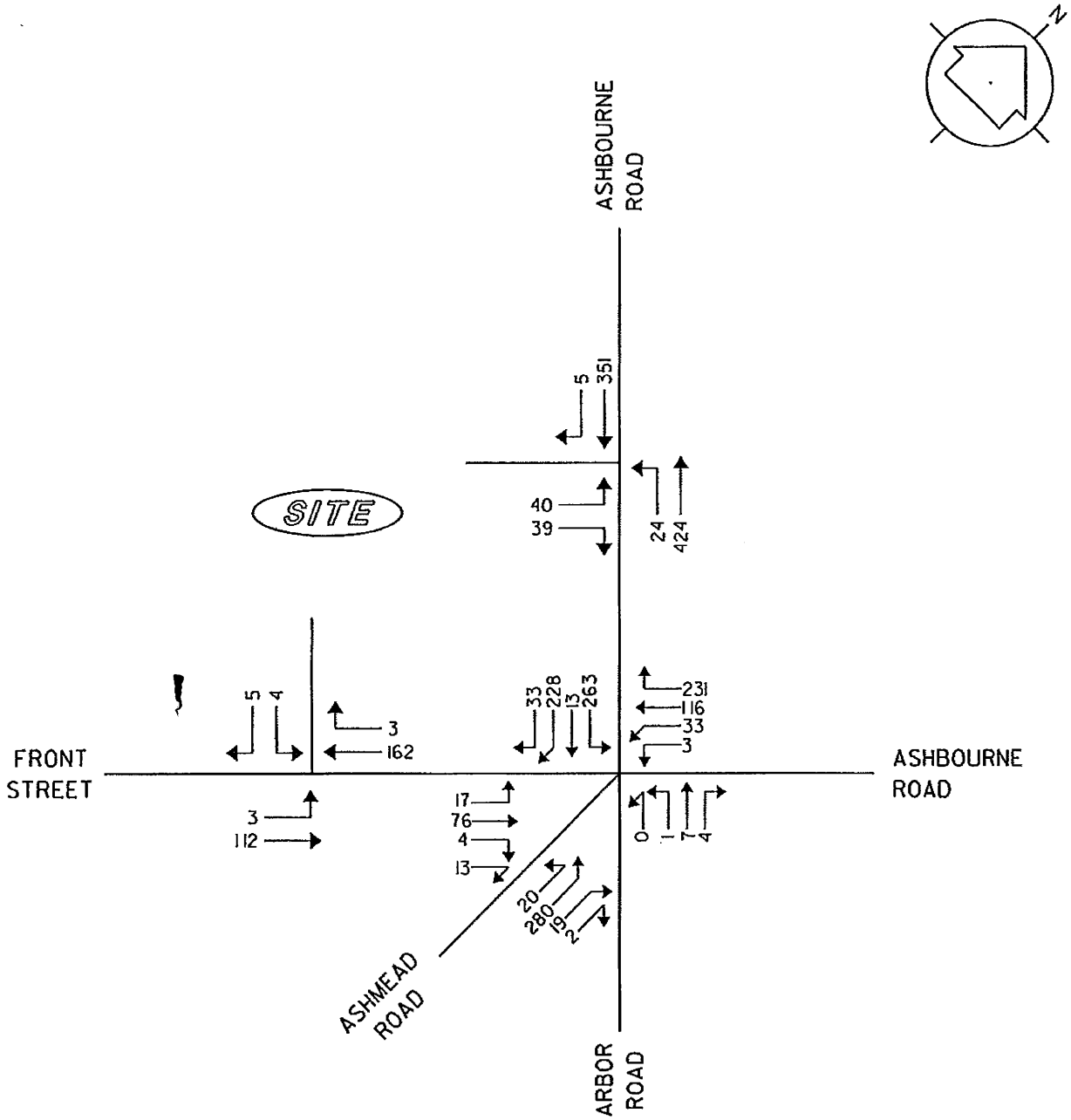


FIGURE 6
FUTURE 2013 BUILD
WEEKDAY PM PEAK HOUR TRAFFIC VOLUMES

# CHELTENHAM ELEMENTARY SCHOOL

CHELTENHAM TOWNSHIP, MONTGOMERY COUNTY, PA

11-006
JULY 2011

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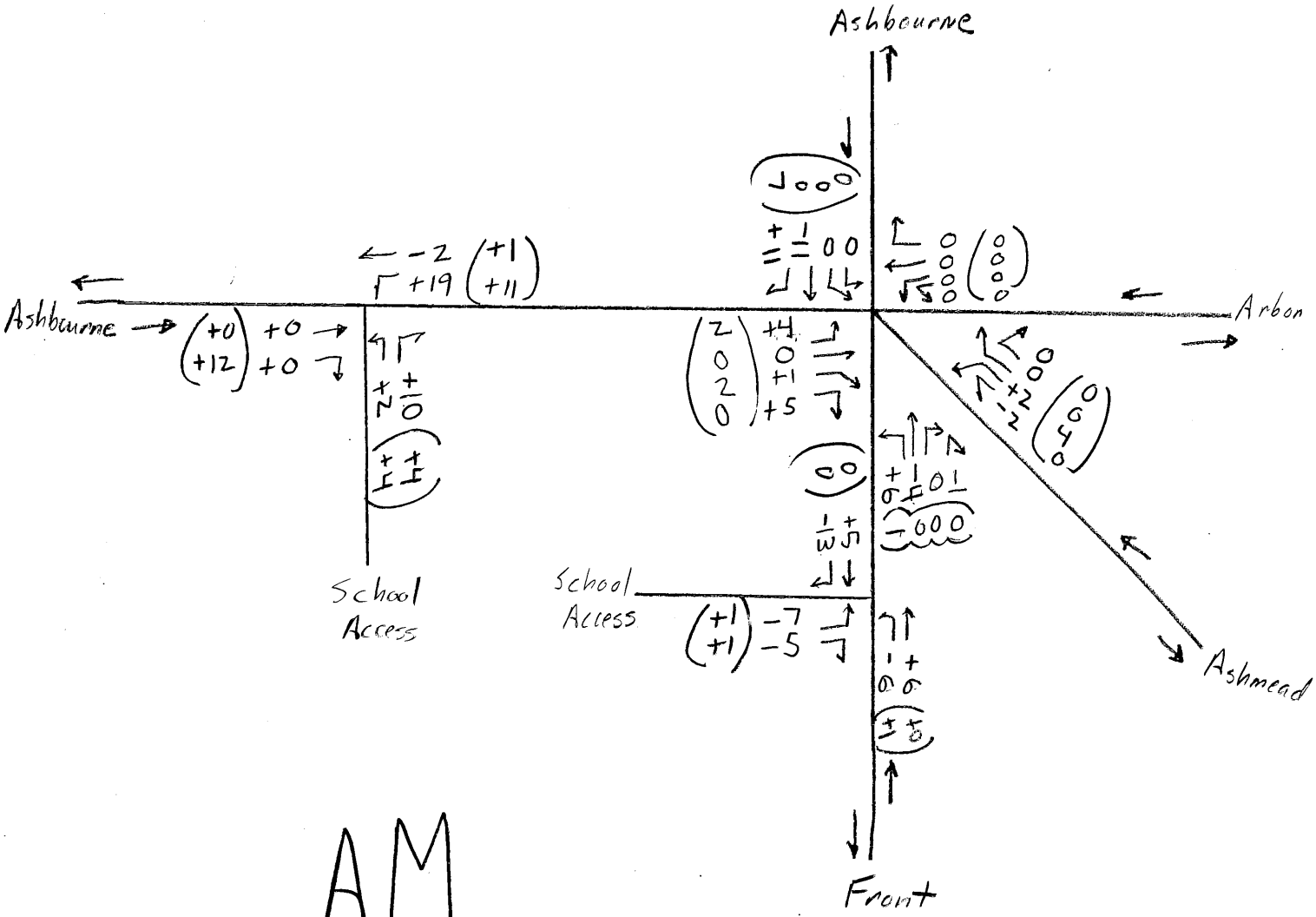
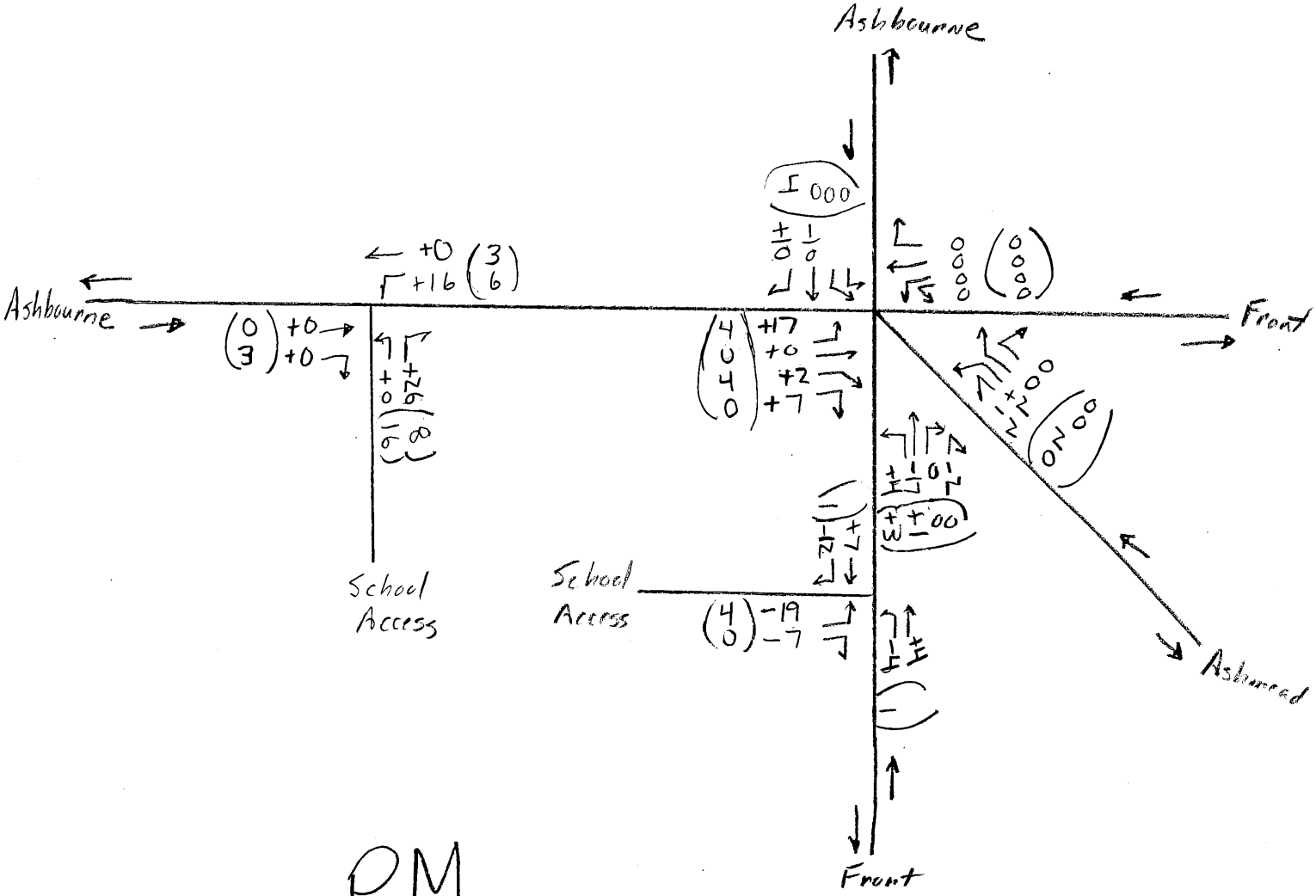



# AM

Redistributed
(New Trips)




# PM

Redistributed
(New Trips)

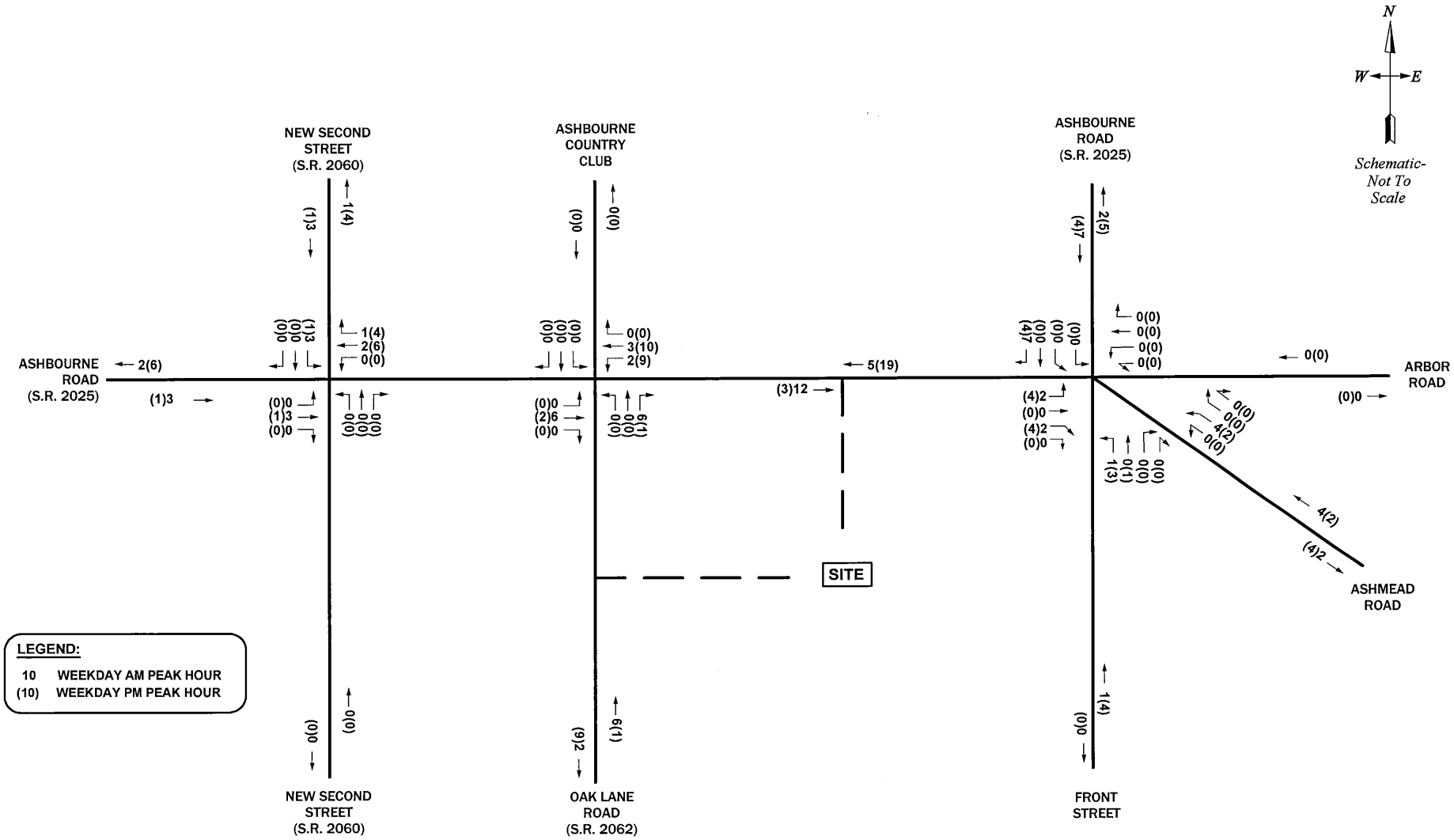



**FIGURE C-1**

Additonal Trips for Cheltenham Elementary School

# RESIDENTIAL DEVELOPMENT

## CHELTENHAM TOWNSHIP, MONTGOMERY COUNTY, PA

McMAHON
TRANSPORTATION ENGINEERS & PLANNERS

(6/17/12-SAK) i:\Eng\811173.12\Dwg\Figures\05-2012\Figure C-1.dwg

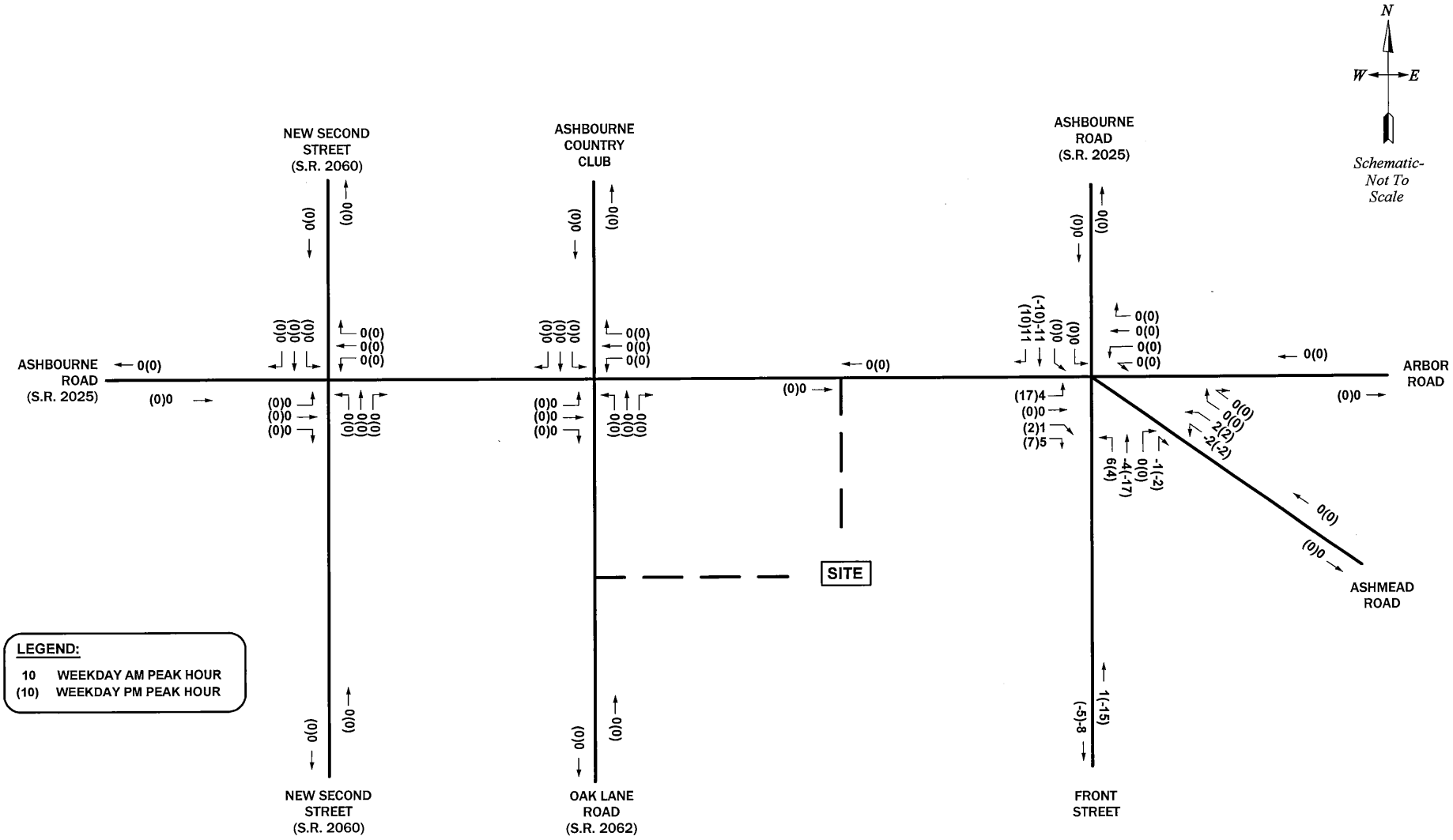



**FIGURE C-2**

Additonal Trips for Cheltenham Elementary School

# RESIDENTIAL DEVELOPMENT

## CHELTENHAM TOWNSHIP, MONTGOMERY COUNTY, PA

McMAHON
TRANSPORTATION ENGINEERS & PLANNERS

(6/17/12-SAK) i:\Eng\811173.12\Dwg\Figures\05-2012\Figure C-2.dwg

# APPENDIX J

# Volume Spreadsheets

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# INTERSECTION VOLUME SUMMARY
## New Second Street/Ashbourne Road

Asbourne Residential Development
I:\eng\811173\Traffic\2012-05\SDS\[SDS-(2013).xls]
2013 Build-Out Year

**Weekday 7-9 AM**

| Traffic Component | | EASTBOUND Ashbourne Road | | | NORTHBOUND New Second Street | | | WESTBOUND Ashbourne Road | | | SOUTHBOUND New Second Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | L | S | R | L | S | R | L | S | R | L | S | R |
| EXISTING TRAFFIC | | 97 | 137 | 19 | 15 | 309 | 9 | 6 | 194 | 107 | 78 | 441 | 72 |
| Seasonal Adjustment Factor | 1.000 | 97 | 137 | 19 | 15 | 309 | 9 | 6 | 194 | 107 | 78 | 441 | 72 |
| Balancing Adjustments | | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **ADJUSTED EXISTING TRAFFIC** | | **97** | **139** | **19** | **15** | **309** | **9** | **6** | **194** | **107** | **78** | **441** | **72** |
| Background Growth | 1.53 % | 1 | 2 | 0 | 0 | 5 | 0 | 0 | 3 | 2 | 1 | 7 | 1 |
| EXISTING W/ BACKGROUND | | 98 | 141 | 19 | 15 | 314 | 9 | 6 | 197 | 109 | 79 | 448 | 73 |
| TOTAL "OTHER" DEVELOPMENTS | | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 2 | 1 | 3 | 0 | 0 |
| Additional Elementary School Trips | | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 2 | 1 | 3 | 0 | 0 |
| Redistributed Elementary School Trips | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Adjustments | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **FUTURE TRAFFIC W/O PROJECT** | | **98** | **144** | **19** | **15** | **314** | **9** | **6** | **199** | **110** | **82** | **448** | **73** |
| **TOTAL "NEW" SITE TRAFFIC** | | **0** | **1** | **0** | **0** | **0** | **0** | **0** | **1** | **1** | **0** | **0** | **0** |
| Kerlin Farms (79 age-restricted units) | | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 |
| | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-By Traffic | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Adjustments | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **FUTURE TRAFFIC W/ PROJECT** | | **98** | **145** | **19** | **15** | **314** | **9** | **6** | **200** | **111** | **82** | **448** | **73** |
| "New" Site Traffic % of Total | *0.0%* | 0.0 | 0.7 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.5 | 0.9 | 0.0 | 0.0 | 0.0 |

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# INTERSECTION VOLUME SUMMARY
## Oak Lane Road/CountryClub/Ashbourne Road

Asbourne Residential Development
I:\eng\811173\Traffic\2012-05\SDS\[SDS-(2013).xls]
2013 Build-Out Year

**Weekday 7-9 AM**

| Traffic Component | | EASTBOUND Ashbourne Road | | | NORTHBOUND Oak Lane Road/CountryClub | | | WESTBOUND Ashbourne Road | | | SOUTHBOUND Oak Lane Road/CountryClub | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | L | S | R | L | S | R | L | S | R | L | S | R |
| EXISTING TRAFFIC | | 4 | 172 | 18 | 26 | 0 | 132 | 185 | 217 | 2 | 0 | 1 | 8 |
| Seasonal Adjustment Factor | 1.000 | 4 | 172 | 18 | 26 | 0 | 132 | 185 | 217 | 2 | 0 | 1 | 8 |
| Balancing Adjustments | | 0 | 29 | 3 | 6 | 0 | 0 | 0 | 50 | 0 | 0 | 0 | 0 |
| **ADJUSTED EXISTING TRAFFIC** | | **4** | **201** | **21** | **32** | **0** | **132** | **185** | **267** | **2** | **0** | **1** | **8** |
| Background Growth | 1.53 % | 0 | 3 | 0 | 1 | 0 | 2 | 3 | 4 | 0 | 0 | 0 | 0 |
| EXISTING W/ BACKGROUND | | 4 | 204 | 21 | 33 | 0 | 134 | 188 | 271 | 2 | 0 | 1 | 8 |
| TOTAL "OTHER" DEVELOPMENTS | | 0 | 6 | 0 | 0 | 0 | 6 | 2 | 3 | 0 | 0 | 0 | 0 |
| Additional Elementary School Trips | | 0 | 6 | 0 | 0 | 0 | 6 | 2 | 3 | 0 | 0 | 0 | 0 |
| Redistributed Elementary School Trips | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Adjustments | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **FUTURE TRAFFIC W/O PROJECT** | | **4** | **210** | **21** | **33** | **0** | **140** | **190** | **274** | **2** | **0** | **1** | **8** |
| **TOTAL "NEW" SITE TRAFFIC** | | **0** | **1** | **0** | **0** | **0** | **0** | **0** | **2** | **0** | **0** | **0** | **0** |
| Kerlin Farms (79 age-restricted units) | | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 |
| | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-By Traffic | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Adjustments | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **FUTURE TRAFFIC W/ PROJECT** | | **4** | **211** | **21** | **33** | **0** | **140** | **190** | **276** | **2** | **0** | **1** | **8** |
| "New" Site Traffic % of Total | *0.0%* | 0.0 | 0.5 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.7 | 0.0 | 0.0 | 0.0 | 0.0 |

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# INTERSECTION VOLUME SUMMARY
## Access/Ashbourne Road

Asbourne Residential Development
I:\eng\811173\Traffic\2012-05\SDS\[SDS-(2013).xls]
2013 Build-Out Year

**Weekday 7-9 AM**

| Traffic Component | | EASTBOUND Ashbourne Road | | | NORTHBOUND Access | | | WESTBOUND Ashbourne Road | | | SOUTHBOUND Access | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | L | S | R | L | S | R | L | S | R | L | S | R |
| EXISTING TRAFFIC | | 0 | 333 | 0 | 0 | 0 | 0 | 0 | 454 | 0 | 0 | 0 | 0 |
| Seasonal Adjustment Factor | 1.000 | 0 | 333 | 0 | 0 | 0 | 0 | 0 | 454 | 0 | 0 | 0 | 0 |
| Balancing Adjustments | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **ADJUSTED EXISTING TRAFFIC** | | **0** | **333** | **0** | **0** | **0** | **0** | **0** | **454** | **0** | **0** | **0** | **0** |
| Background Growth | 1.53 % | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 7 | 0 | 0 | 0 | 0 |
| EXISTING W/ BACKGROUND | | 0 | 338 | 0 | 0 | 0 | 0 | 0 | 461 | 0 | 0 | 0 | 0 |
| TOTAL "OTHER" DEVELOPMENTS | | 0 | 12 | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 0 | 0 | 0 |
| Additional Elementary School Trips | | 0 | 12 | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 0 | 0 | 0 |
| Redistributed Elementary School Trips | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Adjustments | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **FUTURE TRAFFIC W/O PROJECT** | | **0** | **350** | **0** | **0** | **0** | **0** | **0** | **466** | **0** | **0** | **0** | **0** |
| **TOTAL "NEW" SITE TRAFFIC** | | **0** | **0** | **1** | **2** | **0** | **3** | **2** | **0** | **0** | **0** | **0** | **0** |
| Kerlin Farms (79 age-restricted units) | | 0 | 0 | 1 | 2 | 0 | 3 | 2 | 0 | 0 | 0 | 0 | 0 |
| | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-By Traffic | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Adjustments | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **FUTURE TRAFFIC W/ PROJECT** | | **0** | **350** | **1** | **2** | **0** | **3** | **2** | **466** | **0** | **0** | **0** | **0** |
| "New" Site Traffic % of Total | *0.0%* | 0.0 | 0.0 | 100.0 | 100.0 | 0.0 | 100.0 | 100.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

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# INTERSECTION VOLUME SUMMARY
## Oak Lane Road/Access

Asbourne Residential Development
I:\eng\811173\Traffic\2012-05\SDS\[SDS-(2013).xls]
2013 Build-Out Year

**Weekday 7-9 AM**

| Traffic Component | | EASTBOUND Access | | | NORTHBOUND Oak Lane Road | | | WESTBOUND Access | | | SOUTHBOUND Oak Lane Road | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | L | S | R | L | S | R | L | S | R | L | S | R |
| EXISTING TRAFFIC | | 0 | 0 | 0 | 0 | 164 | 0 | 0 | 0 | 0 | 0 | 204 | 0 |
| Seasonal Adjustment Factor | 1.000 | 0 | 0 | 0 | 0 | 164 | 0 | 0 | 0 | 0 | 0 | 204 | 0 |
| Balancing Adjustments | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **ADJUSTED EXISTING TRAFFIC** | | **0** | **0** | **0** | **0** | **164** | **0** | **0** | **0** | **0** | **0** | **204** | **0** |
| Background Growth | 1.53 % | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 6 | 0 |
| EXISTING W/ BACKGROUND | | 0 | 0 | 0 | 0 | 167 | 0 | 0 | 0 | 0 | 0 | 210 | 0 |
| TOTAL "OTHER" DEVELOPMENTS | | 0 | 0 | 0 | 0 | 6 | 0 | 0 | 0 | 0 | 0 | 2 | 0 |
| Additional Elementary School Trips | | 0 | 0 | 0 | 0 | 6 | 0 | 0 | 0 | 0 | 0 | 2 | 0 |
| Redistributed Elementary School Trips | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Adjustments | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **FUTURE TRAFFIC W/O PROJECT** | | **0** | **0** | **0** | **0** | **173** | **0** | **0** | **0** | **0** | **0** | **212** | **0** |
| **TOTAL "NEW" SITE TRAFFIC** | | **0** | **0** | **0** | **0** | **0** | **1** | **1** | **0** | **0** | **0** | **0** | **0** |
| Kerlin Farms (79 age-restricted units) | | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 |
| | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-By Traffic | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Adjustments | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **FUTURE TRAFFIC W/ PROJECT** | | **0** | **0** | **0** | **0** | **173** | **1** | **1** | **0** | **0** | **0** | **212** | **0** |
| "New" Site Traffic % of Total | *0.0%* | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 | 100.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

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# INTERSECTION VOLUME SUMMARY
## Ashbourne/Front/Ashbourne/Ashmead

Asbourne Residential Development
I:\eng\811173\Traffic\2012-05\SDS\[SDS-(
2013 Build-Out Year

**Weekday 7-9 AM**

| Traffic Component | | EASTBOUND Ashbourne to | | | NORTHBOUND Front to | | | WESTBOUND Ashmead Rd to | | | SOUTHBOUND Ashbourne to | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Ashbrn (N | Ashmead | Front | Ashbn (W | Ashbn (N | Ashmead | Front | Ashbn (W | Ashbn (N | Ashmead | Front | Ashbn (W) |
| EXISTING TRAFFIC | | 133 | 186 | 11 | 13 | 72 | 15 | 18 | 237 | 15 | 14 | 81 | 175 |
| Seasonal Adjustment Factor | 1.000 | 133 | 186 | 11 | 13 | 72 | 15 | 18 | 237 | 15 | 14 | 81 | 175 |
| Balancing Adjustments | | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 10 | 0 | 0 | 0 | 8 |
| **ADJUSTED EXISTING TRAFFIC** | | **133** | **186** | **11** | **14** | **72** | **15** | **18** | **247** | **15** | **14** | **81** | **183** |
| Background Growth | 1.53 % | 2 | 3 | 0 | 0 | 1 | 0 | 0 | 4 | 0 | 0 | 1 | 3 |
| EXISTING W/ BACKGROUND | | 135 | 189 | 11 | 14 | 73 | 15 | 18 | 251 | 15 | 14 | 82 | 186 |
| TOTAL "OTHER" DEVELOPMENTS | | 4 | 1 | 5 | 6 | -4 | -1 | -2 | 2 | 0 | 0 | -11 | 11 |
| Additional Elementary School Trips | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Redistributed Elementary School Trips | | 4 | 1 | 5 | 6 | -4 | -1 | -2 | 2 | 0 | 0 | -11 | 11 |
| Other Adjustments | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **FUTURE TRAFFIC W/O PROJECT** | | **139** | **190** | **16** | **20** | **69** | **14** | **16** | **253** | **15** | **14** | **71** | **197** |
| **TOTAL "NEW" SITE TRAFFIC** | | **1** | **2** | **0** | **0** | **0** | **0** | **0** | **1** | **0** | **0** | **0** | **1** |
| Kerlin Farms (79 age-restricted units) | | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 |
| | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-By Traffic | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Adjustments | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **FUTURE TRAFFIC W/ PROJECT** | | **140** | **192** | **16** | **20** | **69** | **14** | **16** | **254** | **15** | **14** | **71** | **198** |
| "New" Site Traffic % of Total | *0.0%* | 0.7 | 1.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.4 | 0.0 | 0.0 | 0.0 | 0.5 |

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# INTERSECTION VOLUME SUMMARY
## Arbor Enter/Arbor Exit

Asbourne Residential Development
I:\eng\811173\Traffic\2012-05\SDS\[SDS-(2013).xls]
2013 Build-Out Year

**Weekday 7-9 AM**

| Traffic Component | | EASTBOUND Arbor Road Exit to Ashbr (N) | Ashbr (W | Front | NORTHBOUND Arbor Road Enter from Ashbr (W | Front | Ashmd | WESTBOUND Arbor Road Exit to L | Ashmd | R | SOUTHBOUND Arbor Road Enter from Ashbr (N) | S | R |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| EXISTING TRAFFIC | | 0 | 10 | 2 | 3 | 0 | 0 | 0 | 1 | 0 | 2 | 0 | 0 |
| Seasonal Adjustment Factor | 1.000 | 0 | 10 | 2 | 3 | 0 | 0 | 0 | 1 | 0 | 2 | 0 | 0 |
| Balancing Adjustments | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **ADJUSTED EXISTING TRAFFIC** | | **0** | **10** | **2** | **3** | **0** | **0** | **0** | **1** | **0** | **2** | **0** | **0** |
| Background Growth | 1.53 % | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| EXISTING W/ BACKGROUND | | 0 | 10 | 2 | 3 | 0 | 0 | 0 | 1 | 0 | 2 | 0 | 0 |
| TOTAL "OTHER" DEVELOPMENTS | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Additional Elementary School Trips | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Redistributed Elementary School Trips | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Adjustments | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **FUTURE TRAFFIC W/O PROJECT** | | **0** | **10** | **2** | **3** | **0** | **0** | **0** | **1** | **0** | **2** | **0** | **0** |
| **TOTAL "NEW" SITE TRAFFIC** | | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** |
| Kerlin Farms (79 age-restricted units) | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-By Traffic | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Adjustments | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **FUTURE TRAFFIC W/ PROJECT** | | **0** | **10** | **2** | **3** | **0** | **0** | **0** | **1** | **0** | **2** | **0** | **0** |
| "New" Site Traffic % of 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 | 0.0 |

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# INTERSECTION VOLUME SUMMARY
## New Second Street/Ashbourne Road

Asbourne Residential Development
I:\eng\811173\Traffic\2012-05\SDS\[SDS-(2013).xls]
2013 Build-Out Year

**Weekday 4-6 PM**

| Traffic Component | | EASTBOUND Ashbourne Road | | | NORTHBOUND New Second Street | | | WESTBOUND Ashbourne Road | | | SOUTHBOUND New Second Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | L | S | R | L | S | R | L | S | R | L | S | R |
| EXISTING TRAFFIC | | 71 | 179 | 25 | 25 | 406 | 19 | 9 | 138 | 104 | 82 | 326 | 43 |
| Seasonal Adjustment Factor | 1.000 | 71 | 179 | 25 | 25 | 406 | 19 | 9 | 138 | 104 | 82 | 326 | 43 |
| Balancing Adjustments | | 0 | 8 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 4 | 0 | 0 |
| **ADJUSTED EXISTING TRAFFIC** | | **71** | **187** | **25** | **25** | **406** | **20** | **9** | **138** | **104** | **86** | **326** | **43** |
| Background Growth | 1.53 % | 1 | 4 | 0 | 0 | 6 | 0 | 0 | 2 | 2 | 1 | 5 | 1 |
| EXISTING W/ BACKGROUND | | 72 | 191 | 25 | 25 | 412 | 20 | 9 | 140 | 106 | 87 | 331 | 44 |
| TOTAL "OTHER" DEVELOPMENTS | | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 6 | 4 | 1 | 0 | 0 |
| Additional Elementary School Trips | | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 6 | 4 | 1 | 0 | 0 |
| Redistributed Elementary School Trips | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Adjustments | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **FUTURE TRAFFIC W/O PROJECT** | | **72** | **192** | **25** | **25** | **412** | **20** | **9** | **146** | **110** | **88** | **331** | **44** |
| **TOTAL "NEW" SITE TRAFFIC** | | **0** | **1** | **0** | **0** | **0** | **0** | **0** | **1** | **1** | **1** | **0** | **0** |
| Kerlin Farms (79 age-restricted units) | | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 0 | 0 |
| | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-By Traffic | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Adjustments | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **FUTURE TRAFFIC W/ PROJECT** | | **72** | **193** | **25** | **25** | **412** | **20** | **9** | **147** | **111** | **89** | **331** | **44** |
| "New" Site Traffic % of Total | *0.0%* | 0.0 | 0.5 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.7 | 0.9 | 1.1 | 0.0 | 0.0 |

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# INTERSECTION VOLUME SUMMARY
## Oak Lane Road/CountryClub/Ashbourne Road

Asbourne Residential Development
I:\eng\811173\Traffic\2012-05\SDS\[SDS-(2013).xls]
2013 Build-Out Year

**Weekday 4-6 PM**

| Traffic Component | | EASTBOUND Ashbourne Road | | | NORTHBOUND Oak Lane Road/CountryClub | | | WESTBOUND Ashbourne Road | | | SOUTHBOUND Oak Lane Road/CountryClub | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | L | S | R | L | S | R | L | S | R | L | S | R |
| EXISTING TRAFFIC | | 0 | 225 | 39 | 21 | 0 | 185 | 199 | 199 | 0 | 0 | 0 | 1 |
| Seasonal Adjustment Factor | 1.000 | 0 | 225 | 39 | 21 | 0 | 185 | 199 | 199 | 0 | 0 | 0 | 1 |
| Balancing Adjustments | | 0 | 27 | 2 | 3 | 0 | 10 | 0 | 27 | 0 | 0 | 0 | 0 |
| **ADJUSTED EXISTING TRAFFIC** | | **0** | **252** | **41** | **24** | **0** | **195** | **199** | **226** | **0** | **0** | **0** | **1** |
| Background Growth | 1.53 % | 0 | 4 | 1 | 0 | 0 | 3 | 3 | 4 | 0 | 0 | 0 | 0 |
| EXISTING W/ BACKGROUND | | 0 | 256 | 42 | 24 | 0 | 198 | 202 | 230 | 0 | 0 | 0 | 1 |
| TOTAL "OTHER" DEVELOPMENTS | | 0 | 2 | 0 | 0 | 0 | 1 | 9 | 10 | 0 | 0 | 0 | 0 |
| Additional Elementary School Trips | | 0 | 2 | 0 | 0 | 0 | 1 | 9 | 10 | 0 | 0 | 0 | 0 |
| Redistributed Elementary School Trips | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Adjustments | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **FUTURE TRAFFIC W/O PROJECT** | | **0** | **258** | **42** | **24** | **0** | **199** | **211** | **240** | **0** | **0** | **0** | **1** |
| **TOTAL "NEW" SITE TRAFFIC** | | **0** | **2** | **0** | **0** | **0** | **0** | **0** | **2** | **0** | **0** | **0** | **0** |
| Kerlin Farms (79 age-restricted units) | | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 |
| | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-By Traffic | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Adjustments | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **FUTURE TRAFFIC W/ PROJECT** | | **0** | **260** | **42** | **24** | **0** | **199** | **211** | **242** | **0** | **0** | **0** | **1** |
| "New" Site Traffic % of Total | *0.0%* | 0.0 | 0.8 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.8 | 0.0 | 0.0 | 0.0 | 0.0 |

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# INTERSECTION VOLUME SUMMARY
## Access/Ashbourne Road

Asbourne Residential Development
I:\eng\811173\Traffic\2012-05\SDS\[SDS-(2013).xls]
2013 Build-Out Year

**Weekday 4-6 PM**

| Traffic Component | | EASTBOUND Ashbourne Road | | | NORTHBOUND Access | | | WESTBOUND Ashbourne Road | | | SOUTHBOUND Access | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | L | S | R | L | S | R | L | S | R | L | S | R |
| EXISTING TRAFFIC | | 0 | 447 | 0 | 0 | 0 | 0 | 0 | 425 | 0 | 0 | 0 | 0 |
| Seasonal Adjustment Factor | 1.000 | 0 | 447 | 0 | 0 | 0 | 0 | 0 | 425 | 0 | 0 | 0 | 0 |
| Balancing Adjustments | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **ADJUSTED EXISTING TRAFFIC** | | **0** | **447** | **0** | **0** | **0** | **0** | **0** | **425** | **0** | **0** | **0** | **0** |
| Background Growth | 1.53 % | 0 | 7 | 0 | 0 | 0 | 0 | 0 | 7 | 0 | 0 | 0 | 0 |
| EXISTING W/ BACKGROUND | | 0 | 454 | 0 | 0 | 0 | 0 | 0 | 432 | 0 | 0 | 0 | 0 |
| TOTAL "OTHER" DEVELOPMENTS | | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 19 | 0 | 0 | 0 | 0 |
| Additional Elementary School Trips | | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 19 | 0 | 0 | 0 | 0 |
| Redistributed Elementary School Trips | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Adjustments | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **FUTURE TRAFFIC W/O PROJECT** | | **0** | **457** | **0** | **0** | **0** | **0** | **0** | **451** | **0** | **0** | **0** | **0** |
| **TOTAL "NEW" SITE TRAFFIC** | | **0** | **0** | **2** | **2** | **0** | **2** | **4** | **0** | **0** | **0** | **0** | **0** |
| Kerlin Farms (79 age-restricted units) | | 0 | 0 | 2 | 2 | 0 | 2 | 4 | 0 | 0 | 0 | 0 | 0 |
| | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-By Traffic | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Adjustments | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **FUTURE TRAFFIC W/ PROJECT** | | **0** | **457** | **2** | **2** | **0** | **2** | **4** | **451** | **0** | **0** | **0** | **0** |
| "New" Site Traffic % of Total | *0.0%* | 0.0 | 0.0 | 100.0 | 100.0 | 0.0 | 100.0 | 100.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

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# INTERSECTION VOLUME SUMMARY
## Oak Lane Road/Access

Asbourne Residential Development
I:\eng\811173\Traffic\2012-05\SDS\[SDS-(2013).xls]
2013 Build-Out Year

**Weekday 4-6 PM**

| Traffic Component | | EASTBOUND Access | | | NORTHBOUND Oak Lane Road | | | WESTBOUND Access | | | SOUTHBOUND Oak Lane Road | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | L | S | R | L | S | R | L | S | R | L | S | R |
| EXISTING TRAFFIC | | 0 | 0 | 0 | 0 | 219 | 0 | 0 | 0 | 0 | 0 | 240 | 0 |
| Seasonal Adjustment Factor | 1.000 | 0 | 0 | 0 | 0 | 219 | 0 | 0 | 0 | 0 | 0 | 240 | 0 |
| Balancing Adjustments | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **ADJUSTED EXISTING TRAFFIC** | | **0** | **0** | **0** | **0** | **219** | **0** | **0** | **0** | **0** | **0** | **240** | **0** |
| Background Growth | 1.53 % | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 4 | 0 |
| EXISTING W/ BACKGROUND | | 0 | 0 | 0 | 0 | 222 | 0 | 0 | 0 | 0 | 0 | 244 | 0 |
| TOTAL "OTHER" DEVELOPMENTS | | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 9 | 0 |
| Additional Elementary School Trips | | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 9 | 0 |
| Redistributed Elementary School Trips | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Adjustments | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **FUTURE TRAFFIC W/O PROJECT** | | **0** | **0** | **0** | **0** | **223** | **0** | **0** | **0** | **0** | **0** | **253** | **0** |
| **TOTAL "NEW" SITE TRAFFIC** | | **0** | **0** | **0** | **0** | **0** | **2** | **1** | **0** | **0** | **0** | **0** | **0** |
| Kerlin Farms (79 age-restricted units) | | 0 | 0 | 0 | 0 | 0 | 2 | 1 | 0 | 0 | 0 | 0 | 0 |
| | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-By Traffic | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Adjustments | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **FUTURE TRAFFIC W/ PROJECT** | | **0** | **0** | **0** | **0** | **223** | **2** | **1** | **0** | **0** | **0** | **253** | **0** |
| "New" Site Traffic % of Total | *0.0%* | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 | 100.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

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# INTERSECTION VOLUME SUMMARY
## Ashbourne/Front/Ashbourne/Ashmead

Asbourne Residential Development
I:\eng\811173\Traffic\2012-05\SDS\[SDS-(2013).xls]
2013 Build-Out Year

**Weekday 4-6 PM**

| Traffic Component | | EASTBOUND Ashbourne to | | | NORTHBOUND Front to | | | WESTBOUND Ashmead Rd to | | | SOUTHBOUND Ashbourne to | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Ashbrn (N | Ashmead | Front | Ashbn (W | Ashbn (N | Ashmead | Front | Ashbn (W | Ashbn (N | Ashmead | Front | Ashbn (W) |
| EXISTING TRAFFIC | | 200 | 203 | 24 | 9 | 80 | 15 | 14 | 246 | 18 | 8 | 70 | 143 |
| Seasonal Adjustment Factor | 1.000 | 200 | 203 | 24 | 9 | 80 | 15 | 14 | 246 | 18 | 8 | 70 | 143 |
| Balancing Adjustments | | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 13 | 0 | 0 | 0 | 7 |
| **ADJUSTED EXISTING TRAFFIC** | | **200** | **203** | **24** | **10** | **80** | **15** | **14** | **259** | **18** | **8** | **70** | **150** |
| Background Growth | 1.53 % | 3 | 4 | 0 | 0 | 1 | 0 | 0 | 5 | 0 | 0 | 1 | 2 |
| EXISTING W/ BACKGROUND | | 203 | 207 | 24 | 10 | 81 | 15 | 14 | 264 | 18 | 8 | 71 | 152 |
| TOTAL "OTHER" DEVELOPMENTS | | 17 | 2 | 7 | 4 | -17 | -2 | -2 | 2 | 0 | 0 | -10 | 10 |
| Additional Elementary School Trips | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Redistributed Elementary School Trips | | 17 | 2 | 7 | 4 | -17 | -2 | -2 | 2 | 0 | 0 | -10 | 10 |
| Other Adjustments | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **FUTURE TRAFFIC W/O PROJECT** | | **220** | **209** | **31** | **14** | **64** | **13** | **12** | **266** | **18** | **8** | **61** | **162** |
| **TOTAL "NEW" SITE TRAFFIC** | | **1** | **1** | **0** | **0** | **0** | **0** | **0** | **2** | **0** | **0** | **0** | **2** |
| Kerlin Farms (79 age-restricted units) | | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 2 |
| | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-By Traffic | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Adjustments | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **FUTURE TRAFFIC W/ PROJECT** | | **221** | **210** | **31** | **14** | **64** | **13** | **12** | **268** | **18** | **8** | **61** | **164** |
| "New" Site Traffic % of Total | *0.0%* | 0.5 | 0.5 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.7 | 0.0 | 0.0 | 0.0 | 1.2 |

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# INTERSECTION VOLUME SUMMARY
## Arbor Enter/Arbor Exit

Asbourne Residential Development
I:\eng\811173\Traffic\2012-05\SDS\[SDS-(2013).xls]
2013 Build-Out Year

**Weekday 4-6 PM**

| Traffic Component | | EASTBOUND Arbor Road Exit to | | | NORTHBOUND Arbor Road Enter from | | | WESTBOUND Arbor Road Exit to | | | SOUTHBOUND Arbor Road Enter from | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Ashbr (N) | Ashbr (W | Front | Ashbr (W | Front | Ashmd | L | Ashmd | R | Ashbr (N) | S | R |
| EXISTING TRAFFIC | | 3 | 6 | 3 | 20 | 1 | 1 | 0 | 0 | 0 | 3 | 0 | 0 |
| Seasonal Adjustment Factor | 1.000 | 3 | 6 | 3 | 20 | 1 | 1 | 0 | 0 | 0 | 3 | 0 | 0 |
| Balancing Adjustments | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **ADJUSTED EXISTING TRAFFIC** | | **3** | **6** | **3** | **20** | **1** | **1** | **0** | **0** | **0** | **3** | **0** | **0** |
| Background Growth | 1.53 % | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| EXISTING W/ BACKGROUND | | 3 | 6 | 3 | 20 | 1 | 1 | 0 | 0 | 0 | 3 | 0 | 0 |
| TOTAL "OTHER" DEVELOPMENTS | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Additional Elementary School Trips | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Redistributed Elementary School Trips | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Adjustments | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **FUTURE TRAFFIC W/O PROJECT** | | **3** | **6** | **3** | **20** | **1** | **1** | **0** | **0** | **0** | **3** | **0** | **0** |
| **TOTAL "NEW" SITE TRAFFIC** | | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** |
| Kerlin Farms (79 age-restricted units) | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-By Traffic | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Adjustments | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **FUTURE TRAFFIC W/ PROJECT** | | **3** | **6** | **3** | **20** | **1** | **1** | **0** | **0** | **0** | **3** | **0** | **0** |
| "New" Site Traffic % of 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 | 0.0 |

# APPENDIX K

# 2013 Future without Development Capacity/Level-of-Service Analysis Worksheets

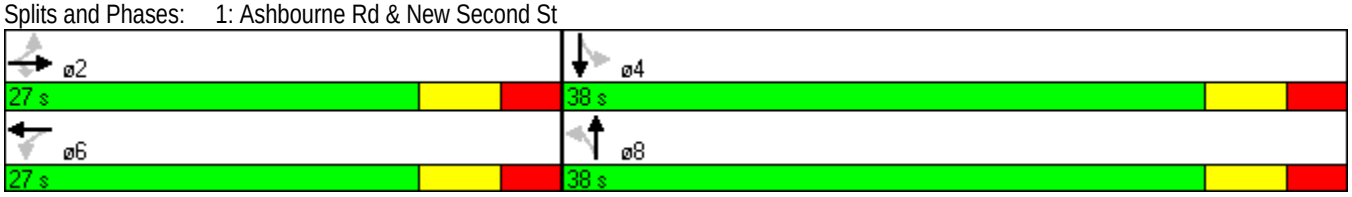
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (vph) | 98 | 144 | 19 | 6 | 199 | 110 | 15 | 314 | 9 | 82 | 448 | 73 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width (ft) | 12 | 12 | 14 | 16 | 16 | 16 | 16 | 16 | 16 | 12 | 12 | 12 |
| Grade (%) | | -9% | | | 8% | | | 3% | | | -2% | |
| Storage Length (ft) | 0 | | 110 | 0 | | 0 | 0 | | 0 | 0 | | 0 |
| Storage Lanes | 0 | | 1 | 0 | | 0 | 0 | | 0 | 0 | | 0 |
| Taper Length (ft) | 25 | | 75 | 25 | | 25 | 25 | | 25 | 25 | | 25 |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Ped Bike Factor | | | | | | | | | | | | |
| Frt | | | 0.850 | | 0.951 | | | 0.994 | | | 0.980 | |
| Flt Protected | | 0.977 | | | 0.998 | | | 0.997 | | | 0.993 | |
| Satd. Flow (prot) | 0 | 1858 | 1622 | 0 | 1878 | 0 | 0 | 2083 | 0 | 0 | 1783 | 0 |
| Flt Permitted | | 0.592 | | | 0.983 | | | 0.942 | | | 0.868 | |
| Satd. Flow (perm) | 0 | 1126 | 1622 | 0 | 1850 | 0 | 0 | 1968 | 0 | 0 | 1559 | 0 |
| Right Turn on Red | | | Yes | | | No | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | | 36 | | | | | 5 | | | 18 | |
| Link Speed (mph) | | 25 | | | 25 | | | 35 | | | 35 | |
| Link Distance (ft) | | 500 | | | 2250 | | | 500 | | | 500 | |
| Travel Time (s) | | 13.6 | | | 61.4 | | | 9.7 | | | 9.7 | |
| Confl. Peds. (#/hr) | | | | | | | | | | | | |
| Confl. Bikes (#/hr) | | | | | | | | | | | | |
| Peak Hour Factor | 0.69 | 0.90 | 0.53 | 0.50 | 0.87 | 0.81 | 0.63 | 0.79 | 0.45 | 0.78 | 0.87 | 0.69 |
| Growth Factor | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% |
| Heavy Vehicles (%) | 6% | 3% | 11% | 0% | 2% | 9% | 0% | 1% | 0% | 12% | 3% | 6% |
| Bus Blockages (#/hr) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Parking (#/hr) | | | | | | | | | | | | |
| Mid-Block Traffic (%) | | 0% | | | 0% | | | 0% | | | 0% | |
| Adj. Flow (vph) | 142 | 160 | 36 | 12 | 229 | 136 | 24 | 397 | 20 | 105 | 515 | 106 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 302 | 36 | 0 | 377 | 0 | 0 | 441 | 0 | 0 | 726 | 0 |
| Number of Detectors | 1 | 0 | 0 | 1 | 0 | | 1 | 0 | | 1 | 0 | |
| Detector Template | | | | | | | | | | | | |
| Leading Detector (ft) | 35 | 0 | 0 | 35 | 0 | | 35 | 0 | | 35 | 0 | |
| Trailing Detector (ft) | -5 | 0 | 0 | -5 | 0 | | -5 | 0 | | -5 | 0 | |
| Turn Type | Perm | | Perm | Perm | | | Perm | | | Perm | | |
| Protected Phases | | 2 | | | 6 | | | 8 | | | 4 | |
| Permitted Phases | 2 | | 2 | 6 | | | 8 | | | 4 | | |
| Detector Phase | 2 | 2 | 2 | 6 | 6 | | 8 | 8 | | 4 | 4 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 20.0 | 20.0 | 20.0 | 20.0 | 20.0 | | 31.0 | 31.0 | | 31.0 | 31.0 | |
| Minimum Split (s) | 27.0 | 27.0 | 27.0 | 27.0 | 27.0 | | 38.0 | 38.0 | | 38.0 | 38.0 | |
| Total Split (s) | 27.0 | 27.0 | 27.0 | 27.0 | 27.0 | 0.0 | 38.0 | 38.0 | 0.0 | 38.0 | 38.0 | 0.0 |
| Total Split (%) | 41.5% | 41.5% | 41.5% | 41.5% | 41.5% | 0.0% | 58.5% | 58.5% | 0.0% | 58.5% | 58.5% | 0.0% |
| Maximum Green (s) | 20.0 | 20.0 | 20.0 | 20.0 | 20.0 | | 31.0 | 31.0 | | 31.0 | 31.0 | |
| Yellow Time (s) | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | | 4.0 | 4.0 | | 4.0 | 4.0 | |
| All-Red Time (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | |
| Lost Time Adjust (s) | -1.0 | 0.0 | 0.0 | -1.0 | 0.0 | 0.0 | -1.0 | 0.0 | 0.0 | -1.0 | 0.0 | 0.0 |
| Total Lost Time (s) | 6.0 | 7.0 | 7.0 | 6.0 | 7.0 | 4.0 | 6.0 | 7.0 | 4.0 | 6.0 | 7.0 | 4.0 |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lead/Lag | | | | | | | | | | | | |
| Lead-Lag Optimize? | | | | | | | | | | | | |
| Vehicle Extension (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | |
| Minimum Gap (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | |
| Time Before Reduce (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Time To Reduce (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Recall Mode | Max | Max | Max | Max | Max | | Max | Max | | Max | Max | |
| Walk Time (s) | | | | | | | | | | | | |
| Flash Dont Walk (s) | | | | | | | | | | | | |
| Pedestrian Calls (#/hr) | | | | | | | | | | | | |
| v/c Ratio | | 0.87 | 0.07 | | 0.66 | | | 0.47 | | | 0.96 | |
| Control Delay | | 49.9 | 6.6 | | 26.2 | | | 13.4 | | | 44.3 | |
| Queue Delay | | 0.0 | 0.0 | | 0.0 | | | 0.0 | | | 0.0 | |
| Total Delay | | 49.9 | 6.6 | | 26.2 | | | 13.4 | | | 44.3 | |
| Queue Length 50th (ft) | | 112 | 0 | | 128 | | | 109 | | | 256 | |
| Queue Length 95th (ft) | | #247 | 6 | | 204 | | | 148 | | | #460 | |
| Internal Link Dist (ft) | | 420 | | | 2170 | | | 420 | | | 420 | |
| Turn Bay Length (ft) | | | 110 | | | | | | | | | |
| Base Capacity (vph) | | 346 | 524 | | 569 | | | 941 | | | 753 | |
| Starvation Cap Reductn | | 0 | 0 | | 0 | | | 0 | | | 0 | |
| Spillback Cap Reductn | | 0 | 0 | | 0 | | | 0 | | | 0 | |
| Storage Cap Reductn | | 0 | 0 | | 0 | | | 0 | | | 0 | |
| Reduced v/c Ratio | | 0.87 | 0.07 | | 0.66 | | | 0.47 | | | 0.96 | |

## Intersection Summary

Area Type: Other
Cycle Length: 65
Actuated Cycle Length: 65
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow
Natural Cycle: 70
Control Type: Pretimed
# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 1: Ashbourne Rd & New Second St



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (vph) | 98 | 144 | 19 | 6 | 199 | 110 | 15 | 314 | 9 | 82 | 448 | 73 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width | 12 | 12 | 14 | 16 | 16 | 16 | 16 | 16 | 16 | 12 | 12 | 12 |
| Grade (%) | | -9% | | | 8% | | | 3% | | | -2% | |
| Total Lost time (s) | | 7.0 | 7.0 | | 7.0 | | | 7.0 | | | 7.0 | |
| Lane Util. Factor | | 1.00 | 1.00 | | 1.00 | | | 1.00 | | | 1.00 | |
| Frt | | 1.00 | 0.85 | | 0.95 | | | 0.99 | | | 0.98 | |
| Flt Protected | | 0.98 | 1.00 | | 1.00 | | | 1.00 | | | 0.99 | |
| Satd. Flow (prot) | | 1858 | 1622 | | 1880 | | | 2084 | | | 1783 | |
| Flt Permitted | | 0.59 | 1.00 | | 0.98 | | | 0.94 | | | 0.87 | |
| Satd. Flow (perm) | | 1125 | 1622 | | 1850 | | | 1969 | | | 1560 | |
| Peak-hour factor, PHF | 0.69 | 0.90 | 0.53 | 0.50 | 0.87 | 0.81 | 0.63 | 0.79 | 0.45 | 0.78 | 0.87 | 0.69 |
| Adj. Flow (vph) | 142 | 160 | 36 | 12 | 229 | 136 | 24 | 397 | 20 | 105 | 515 | 106 |
| RTOR Reduction (vph) | 0 | 0 | 25 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 9 | 0 |
| Lane Group Flow (vph) | 0 | 302 | 11 | 0 | 377 | 0 | 0 | 438 | 0 | 0 | 717 | 0 |
| Heavy Vehicles (%) | 6% | 3% | 11% | 0% | 2% | 9% | 0% | 1% | 0% | 12% | 3% | 6% |
| Turn Type | Perm | | Perm | Perm | | | Perm | | | Perm | | |
| Protected Phases | | 2 | | | 6 | | | 8 | | | 4 | |
| Permitted Phases | 2 | | 2 | 6 | | | 8 | | | 4 | | |
| Actuated Green, G (s) | | 20.0 | 20.0 | | 20.0 | | | 31.0 | | | 31.0 | |
| Effective Green, g (s) | | 20.0 | 20.0 | | 20.0 | | | 31.0 | | | 31.0 | |
| Actuated g/C Ratio | | 0.31 | 0.31 | | 0.31 | | | 0.48 | | | 0.48 | |
| Clearance Time (s) | | 7.0 | 7.0 | | 7.0 | | | 7.0 | | | 7.0 | |
| Lane Grp Cap (vph) | | 346 | 499 | | 569 | | | 939 | | | 744 | |
| v/s Ratio Prot | | | | | | | | | | | | |
| v/s Ratio Perm | | c0.27 | 0.01 | | 0.20 | | | 0.22 | | | c0.46 | |
| v/c Ratio | | 0.87 | 0.02 | | 0.66 | | | 0.47 | | | 0.96 | |
| Uniform Delay, d1 | | 21.3 | 15.7 | | 19.6 | | | 11.4 | | | 16.4 | |
| Progression Factor | | 1.00 | 1.00 | | 1.00 | | | 1.00 | | | 1.00 | |
| Incremental Delay, d2 | | 24.9 | 0.1 | | 6.0 | | | 1.7 | | | 25.1 | |
| Delay (s) | | 46.2 | 15.8 | | 25.5 | | | 13.1 | | | 41.6 | |
| Level of Service | | D | B | | C | | | B | | | D | |
| Approach Delay (s) | | 42.9 | | | 25.5 | | | 13.1 | | | 41.6 | |
| Approach LOS | | D | | | C | | | B | | | D | |

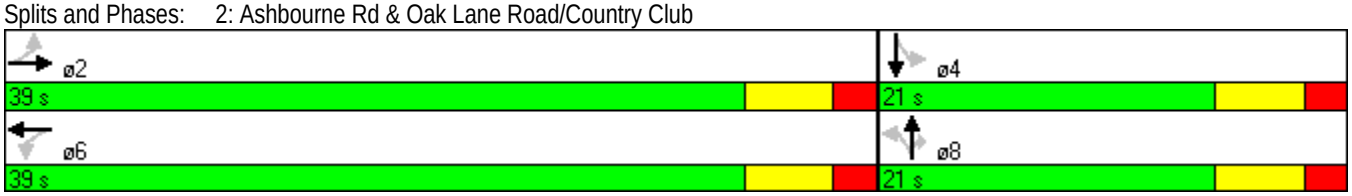
| Intersection Summary | | | |
|---|---|---|---|
| HCM Average Control Delay | 31.9 | HCM Level of Service | C |
| HCM Volume to Capacity ratio | 0.93 | | |
| Actuated Cycle Length (s) | 65.0 | Sum of lost time (s) | 14.0 |
| Intersection Capacity Utilization | 112.3% | ICU Level of Service | H |
| Analysis Period (min) | 15 | | |
| c Critical Lane Group | | | |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (vph) | 4 | 210 | 21 | 190 | 274 | 2 | 33 | 0 | 140 | 0 | 1 | 8 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width (ft) | 11 | 11 | 11 | 10 | 12 | 12 | 11 | 11 | 14 | 10 | 10 | 10 |
| Grade (%) | | 1% | | | 1% | | | -2% | | | 1% | |
| Storage Length (ft) | 140 | | 0 | 150 | | 0 | 0 | | 45 | 0 | | 0 |
| Storage Lanes | 1 | | 0 | 1 | | 0 | 0 | | 1 | 0 | | 0 |
| Taper Length (ft) | 75 | | 25 | 75 | | 25 | 25 | | 75 | 25 | | 25 |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Ped Bike Factor | | | | | | | | | | | | |
| Frt | | 0.985 | | | 0.996 | | | | 0.850 | | 0.887 | |
| Flt Protected | 0.950 | | | 0.950 | | | | 0.950 | | | | |
| Satd. Flow (prot) | 1157 | 1734 | 0 | 1538 | 1865 | 0 | 0 | 1762 | 1567 | 0 | 1189 | 0 |
| Flt Permitted | 0.563 | | | 0.587 | | | | 0.742 | | | | |
| Satd. Flow (perm) | 686 | 1734 | 0 | 950 | 1865 | 0 | 0 | 1376 | 1567 | 0 | 1189 | 0 |
| Right Turn on Red | | | No | | | Yes | | | Yes | | | No |
| Satd. Flow (RTOR) | | | | | 3 | | | | 194 | | | |
| Link Speed (mph) | | 35 | | | 35 | | | 35 | | | 35 | |
| Link Distance (ft) | | 2250 | | | 690 | | | 500 | | | 300 | |
| Travel Time (s) | | 43.8 | | | 13.4 | | | 9.7 | | | 5.8 | |
| Confl. Peds. (#/hr) | | | | | | | | | | | | |
| Confl. Bikes (#/hr) | | | | | | | | | | | | |
| Peak Hour Factor | 0.50 | 0.83 | 0.75 | 0.86 | 0.86 | 0.25 | 0.65 | 0.25 | 0.72 | 0.25 | 0.25 | 0.40 |
| Growth Factor | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% |
| Heavy Vehicles (%) | 50% | 3% | 11% | 9% | 1% | 0% | 0% | 0% | 11% | 0% | 0% | 38% |
| Bus Blockages (#/hr) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Parking (#/hr) | | | | | | | | | | | | |
| Mid-Block Traffic (%) | | 0% | | | 0% | | | 0% | | | 0% | |
| Adj. Flow (vph) | 8 | 253 | 28 | 221 | 319 | 8 | 51 | 0 | 194 | 0 | 4 | 20 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 8 | 281 | 0 | 221 | 327 | 0 | 0 | 51 | 194 | 0 | 24 | 0 |
| Number of Detectors | 0 | 0 | | 0 | 0 | | 1 | 1 | 1 | 1 | 1 | |
| Detector Template | | | | | | | | | | | | |
| Leading Detector (ft) | 0 | 0 | | 0 | 0 | | 35 | 35 | 35 | 20 | 20 | |
| Trailing Detector (ft) | 0 | 0 | | 0 | 0 | | -5 | -5 | -5 | -5 | -5 | |
| Turn Type | Perm | | | Perm | | | Perm | | Perm | Perm | | |
| Protected Phases | | 2 | | | 6 | | | 8 | | | 4 | |
| Permitted Phases | 2 | | | 6 | | | 8 | | 8 | 4 | | |
| Detector Phase | 2 | 2 | | 6 | 6 | | 8 | 8 | 8 | 4 | 4 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 33.0 | 33.0 | | 33.0 | 33.0 | | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | |
| Minimum Split (s) | 39.0 | 39.0 | | 39.0 | 39.0 | | 9.0 | 9.0 | 9.0 | 9.0 | 9.0 | |
| Total Split (s) | 39.0 | 39.0 | 0.0 | 39.0 | 39.0 | 0.0 | 21.0 | 21.0 | 21.0 | 21.0 | 21.0 | 0.0 |
| Total Split (%) | 65.0% | 65.0% | 0.0% | 65.0% | 65.0% | 0.0% | 35.0% | 35.0% | 35.0% | 35.0% | 35.0% | 0.0% |
| Maximum Green (s) | 33.0 | 33.0 | | 33.0 | 33.0 | | 15.0 | 15.0 | 15.0 | 15.0 | 15.0 | |
| Yellow Time (s) | 4.0 | 4.0 | | 4.0 | 4.0 | | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | |
| All-Red Time (s) | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | |
| Lost Time Adjust (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | -2.0 | 0.0 | 0.0 | -2.0 | 0.0 | 0.0 |
| Total Lost Time (s) | 6.0 | 6.0 | 4.0 | 6.0 | 6.0 | 4.0 | 4.0 | 6.0 | 6.0 | 4.0 | 6.0 | 4.0 |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lead/Lag | | | | | | | | | | | | |
| Lead-Lag Optimize? | | | | | | | | | | | | |
| Vehicle Extension (s) | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | |
| Minimum Gap (s) | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | |
| Time Before Reduce (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| Time To Reduce (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| Recall Mode | Min | Min | | Min | Min | | None | None | None | None | None | |
| Walk Time (s) | | | | | | | | | | | | |
| Flash Dont Walk (s) | | | | | | | | | | | | |
| Pedestrian Calls (#/hr) | | | | | | | | | | | | |
| v/c Ratio | 0.02 | 0.26 | | 0.37 | 0.28 | | | 0.26 | 0.49 | | 0.14 | |
| Control Delay | 4.8 | 5.5 | | 7.5 | 5.5 | | | 23.0 | 8.6 | | 21.1 | |
| Queue Delay | 0.0 | 0.0 | | 0.0 | 0.0 | | | 0.0 | 0.0 | | 0.0 | |
| Total Delay | 4.8 | 5.5 | | 7.5 | 5.5 | | | 23.0 | 8.6 | | 21.1 | |
| Queue Length 50th (ft) | 1 | 31 | | 27 | 37 | | | 14 | 0 | | 7 | |
| Queue Length 95th (ft) | 3 | 66 | | 69 | 78 | | | 10 | 22 | | 6 | |
| Internal Link Dist (ft) | | 2170 | | | 610 | | | 420 | | | 220 | |
| Turn Bay Length (ft) | 140 | | | 150 | | | | | 45 | | | |
| Base Capacity (vph) | 433 | 1095 | | 600 | 1179 | | | 385 | 578 | | 332 | |
| Starvation Cap Reductn | 0 | 0 | | 0 | 0 | | | 0 | 0 | | 0 | |
| Spillback Cap Reductn | 0 | 0 | | 0 | 0 | | | 0 | 0 | | 0 | |
| Storage Cap Reductn | 0 | 0 | | 0 | 0 | | | 0 | 0 | | 0 | |
| Reduced v/c Ratio | 0.02 | 0.26 | | 0.37 | 0.28 | | | 0.13 | 0.34 | | 0.07 | |

| Intersection Summary | |
|---|---|
| Area Type: | Other |
| Cycle Length: 60 | |
| Actuated Cycle Length: 53.7 | |
| Natural Cycle: 50 | |
| Control Type: Actuated-Uncoordinated | |

Splits and Phases: 2: Ashbourne Rd & Oak Lane Road/Country Club



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (vph) | 4 | 210 | 21 | 190 | 274 | 2 | 33 | 0 | 140 | 0 | 1 | 8 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width | 11 | 11 | 11 | 10 | 12 | 12 | 11 | 11 | 14 | 10 | 10 | 10 |
| Grade (%) | | 1% | | | 1% | | | -2% | | | 1% | |
| Total Lost time (s) | 6.0 | 6.0 | | 6.0 | 6.0 | | | 6.0 | 6.0 | | 6.0 | |
| Lane Util. Factor | 1.00 | 1.00 | | 1.00 | 1.00 | | | 1.00 | 1.00 | | 1.00 | |
| Frt | 1.00 | 0.99 | | 1.00 | 1.00 | | | 1.00 | 0.85 | | 0.89 | |
| Flt Protected | 0.95 | 1.00 | | 0.95 | 1.00 | | | 0.95 | 1.00 | | 1.00 | |
| Satd. Flow (prot) | 1157 | 1734 | | 1538 | 1865 | | | 1762 | 1567 | | 1189 | |
| Flt Permitted | 0.56 | 1.00 | | 0.59 | 1.00 | | | 0.74 | 1.00 | | 1.00 | |
| Satd. Flow (perm) | 686 | 1734 | | 950 | 1865 | | | 1376 | 1567 | | 1189 | |
| Peak-hour factor, PHF | 0.50 | 0.83 | 0.75 | 0.86 | 0.86 | 0.25 | 0.65 | 0.25 | 0.72 | 0.25 | 0.25 | 0.40 |
| Adj. Flow (vph) | 8 | 253 | 28 | 221 | 319 | 8 | 51 | 0 | 194 | 0 | 4 | 20 |
| RTOR Reduction (vph) | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 166 | 0 | 0 | 0 |
| Lane Group Flow (vph) | 8 | 281 | 0 | 221 | 326 | 0 | 0 | 51 | 28 | 0 | 24 | 0 |
| Heavy Vehicles (%) | 50% | 3% | 11% | 9% | 1% | 0% | 0% | 0% | 11% | 0% | 0% | 38% |
| Turn Type | Perm | | | Perm | | | Perm | | Perm | Perm | | |
| Protected Phases | | 2 | | | 6 | | | 8 | | | 4 | |
| Permitted Phases | 2 | | | 6 | | | 8 | | 8 | 4 | | |
| Actuated Green, G (s) | 33.9 | 33.9 | | 33.9 | 33.9 | | | 7.8 | 7.8 | | 7.8 | |
| Effective Green, g (s) | 33.9 | 33.9 | | 33.9 | 33.9 | | | 7.8 | 7.8 | | 7.8 | |
| Actuated g/C Ratio | 0.63 | 0.63 | | 0.63 | 0.63 | | | 0.15 | 0.15 | | 0.15 | |
| Clearance Time (s) | 6.0 | 6.0 | | 6.0 | 6.0 | | | 6.0 | 6.0 | | 6.0 | |
| Vehicle Extension (s) | 3.0 | 3.0 | | 3.0 | 3.0 | | | 3.0 | 3.0 | | 3.0 | |
| Lane Grp Cap (vph) | 433 | 1095 | | 600 | 1177 | | | 200 | 228 | | 173 | |
| v/s Ratio Prot | | 0.16 | | | 0.17 | | | | | | 0.02 | |
| v/s Ratio Perm | 0.01 | | | c0.23 | | | | c0.04 | 0.02 | | | |
| v/c Ratio | 0.02 | 0.26 | | 0.37 | 0.28 | | | 0.26 | 0.12 | | 0.14 | |
| Uniform Delay, d1 | 3.7 | 4.4 | | 4.8 | 4.4 | | | 20.4 | 20.0 | | 20.0 | |
| Progression Factor | 1.00 | 1.00 | | 1.00 | 1.00 | | | 1.00 | 1.00 | | 1.00 | |
| Incremental Delay, d2 | 0.0 | 0.1 | | 0.4 | 0.1 | | | 0.7 | 0.2 | | 0.4 | |
| Delay (s) | 3.7 | 4.5 | | 5.1 | 4.6 | | | 21.0 | 20.2 | | 20.4 | |
| Level of Service | A | A | | A | A | | | C | C | | C | |
| Approach Delay (s) | | 4.5 | | | 4.8 | | | 20.4 | | | 20.4 | |
| Approach LOS | | A | | | A | | | C | | | C | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM Average Control Delay | 8.5 | HCM Level of Service | A |
| HCM Volume to Capacity ratio | 0.35 | | |
| Actuated Cycle Length (s) | 53.7 | Sum of lost time (s) | 12.0 |
| Intersection Capacity Utilization | 78.5% | ICU Level of Service | D |
| Analysis Period (min) | 15 | | |

c Critical Lane Group

| Lane Group | EBL | EBT | EBR | EBR2 | WBL2 | WBL | WBT | NBL | NBT | NBR2 | SBL2 | SBL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (vph) | 139 | 3 | 190 | 16 | 1 | 2 | 10 | 20 | 69 | 14 | 2 | 14 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width (ft) | 16 | 16 | 16 | 16 | 12 | 12 | 12 | 16 | 16 | 16 | 16 | 16 |
| Grade (%) | | -2% | | | | | 3% | | 4% | | | |
| Storage Length (ft) | 0 | | 0 | | | 0 | | 0 | | | | 0 |
| Storage Lanes | 0 | | 0 | | | 0 | | 0 | | | | 0 |
| Taper Length (ft) | 25 | | 25 | | | 25 | | 25 | | | | 25 |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Ped Bike Factor | | | | | | | | | | | | |
| Frt | | 0.920 | | | | | | | 0.983 | | | |
| Flt Protected | | 0.981 | | | | | 0.982 | | 0.986 | | | |
| Satd. Flow (prot) | 0 | 1852 | 0 | 0 | 0 | 0 | 1838 | 0 | 1992 | 0 | 0 | 0 |
| Flt Permitted | | 0.981 | | | | | 0.982 | | 0.769 | | | |
| Satd. Flow (perm) | 0 | 1852 | 0 | 0 | 0 | 0 | 1838 | 0 | 1554 | 0 | 0 | 0 |
| Right Turn on Red | | | | No | | | | | | No | | |
| Satd. Flow (RTOR) | | | | | | | | | | | | |
| Link Speed (mph) | | 40 | | | | | 35 | | 25 | | | |
| Link Distance (ft) | | 660 | | | | | 528 | | 500 | | | |
| Travel Time (s) | | 11.3 | | | | | 10.3 | | 13.6 | | | |
| Confl. Peds. (#/hr) | | | | | | | | | | | | |
| Confl. Bikes (#/hr) | | | | | | | | | | | | |
| Peak Hour Factor | 0.90 | 0.25 | 0.88 | 0.69 | 0.25 | 0.25 | 0.50 | 0.46 | 0.75 | 0.75 | 0.25 | 0.58 |
| Growth Factor | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% |
| Heavy Vehicles (%) | 13% | 0% | 1% | 9% | 0% | 0% | 0% | 0% | 3% | 7% | 0% | 0% |
| Bus Blockages (#/hr) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Parking (#/hr) | | | | | | | | | | | | |
| Mid-Block Traffic (%) | | 0% | | | | | 0% | | 0% | | | |
| Adj. Flow (vph) | 154 | 12 | 216 | 23 | 4 | 8 | 20 | 43 | 92 | 19 | 8 | 24 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 405 | 0 | 0 | 0 | 0 | 32 | 0 | 154 | 0 | 0 | 0 |
| Number of Detectors | 1 | 1 | | | 1 | 1 | 1 | 1 | 1 | | 2 | 2 |
| Detector Template | | | | | | | | | | | | |
| Leading Detector (ft) | 35 | 35 | | | 35 | 35 | 35 | 35 | 35 | | 70 | 70 |
| Trailing Detector (ft) | -5 | -5 | | | -5 | -5 | -5 | -5 | -5 | | -5 | -5 |
| Turn Type | Split | | | | Perm | Split | | Perm | | | Perm | Perm |
| Protected Phases | 4 | 4 | | | | 8 | 8 | | 2 | | | |
| Permitted Phases | | | | | 8 | | | 2 | | | 6 | 6 |
| Detector Phase | 4 | 4 | | | 8 | 8 | 8 | 2 | 2 | | 6 | 6 |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 8.0 | 8.0 | | | 5.0 | 5.0 | 5.0 | 8.0 | 8.0 | | 8.0 | 8.0 |
| Minimum Split (s) | 14.0 | 14.0 | | | 11.0 | 11.0 | 11.0 | 14.0 | 14.0 | | 14.0 | 14.0 |
| Total Split (s) | 46.0 | 46.0 | 0.0 | 0.0 | 21.0 | 21.0 | 21.0 | 51.0 | 51.0 | 0.0 | 51.0 | 51.0 |
| Total Split (%) | 28.0% | 28.0% | 0.0% | 0.0% | 12.8% | 12.8% | 12.8% | 31.1% | 31.1% | 0.0% | 31.1% | 31.1% |
| Maximum Green (s) | 40.0 | 40.0 | | | 15.0 | 15.0 | 15.0 | 45.0 | 45.0 | | 45.0 | 45.0 |
| Yellow Time (s) | 4.0 | 4.0 | | | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | | 4.0 | 4.0 |
| All-Red Time (s) | 2.0 | 2.0 | | | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | | 2.0 | 2.0 |
| Lost Time Adjust (s) | -2.0 | 0.0 | 0.0 | 0.0 | -2.0 | -2.0 | 0.0 | -2.0 | 0.0 | 0.0 | -2.0 | -2.0 |
| Total Lost Time (s) | 4.0 | 6.0 | 4.0 | 4.0 | 4.0 | 4.0 | 6.0 | 4.0 | 6.0 | 4.0 | 4.0 | 4.0 |

| Lane Group | SBT | SBR | NWL2 | NWL | NWR |
|---|---|---|---|---|---|
| Lane Configurations | | | | | |
| Volume (vph) | 71 | 197 | 16 | 253 | 15 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width (ft) | 16 | 16 | 16 | 16 | 16 |
| Grade (%) | 0% | | | 6% | |
| Storage Length (ft) | | 0 | | 0 | 0 |
| Storage Lanes | | 0 | | 1 | 0 |
| Taper Length (ft) | | 25 | | 25 | 25 |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Ped Bike Factor | | | | | |
| Frt | 0.915 | | | 0.991 | |
| Flt Protected | 0.995 | | | 0.956 | |
| Satd. Flow (prot) | 1889 | 0 | 0 | 1937 | 0 |
| Flt Permitted | 0.956 | | | 0.956 | |
| Satd. Flow (perm) | 1815 | 0 | 0 | 1937 | 0 |
| Right Turn on Red | | No | | | |
| Satd. Flow (RTOR) | | | | | |
| Link Speed (mph) | 35 | | | 25 | |
| Link Distance (ft) | 500 | | | 574 | |
| Travel Time (s) | 9.7 | | | 15.7 | |
| Confl. Peds. (#/hr) | | | | | |
| Confl. Bikes (#/hr) | | | | | |
| Peak Hour Factor | 0.81 | 0.97 | 0.56 | 0.86 | 0.63 |
| Growth Factor | 100% | 100% | 100% | 100% | 100% |
| Heavy Vehicles (%) | 0% | 6% | 0% | 2% | 7% |
| Bus Blockages (#/hr) | 0 | 0 | 0 | 0 | 0 |
| Parking (#/hr) | | | | | |
| Mid-Block Traffic (%) | 0% | | | 0% | |
| Adj. Flow (vph) | 88 | 203 | 29 | 294 | 24 |
| Shared Lane Traffic (%) | | | | | |
| Lane Group Flow (vph) | 323 | 0 | 0 | 347 | 0 |
| Number of Detectors | 4 | | 1 | 1 | |
| Detector Template | | | | | |
| Leading Detector (ft) | 66 | | 35 | 35 | |
| Trailing Detector (ft) | -5 | | -5 | -5 | |
| Turn Type | | | Split | | |
| Protected Phases | 6 | | 9 | 9 | |
| Permitted Phases | | | | | |
| Detector Phase | 6 | | 9 | 9 | |
| Switch Phase | | | | | |
| Minimum Initial (s) | 8.0 | | 8.0 | 8.0 | |
| Minimum Split (s) | 14.0 | | 14.0 | 14.0 | |
| Total Split (s) | 51.0 | 0.0 | 46.0 | 46.0 | 0.0 |
| Total Split (%) | 31.1% | 0.0% | 28.0% | 28.0% | 0.0% |
| Maximum Green (s) | 45.0 | | 40.0 | 40.0 | |
| Yellow Time (s) | 4.0 | | 4.0 | 4.0 | |
| All-Red Time (s) | 2.0 | | 2.0 | 2.0 | |
| Lost Time Adjust (s) | 0.0 | 0.0 | -2.0 | 0.0 | 0.0 |
| Total Lost Time (s) | 6.0 | 4.0 | 4.0 | 6.0 | 4.0 |

| Lane Group | EBL | EBT | EBR | EBR2 | WBL2 | WBL | WBT | NBL | NBT | NBR2 | SBL2 | SBL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lead/Lag | | | | | | | | | | | | |
| Lead-Lag Optimize? | | | | | | | | | | | | |
| Vehicle Extension (s) | 5.0 | 5.0 | | | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | | 5.0 | 5.0 |
| Minimum Gap (s) | 3.0 | 3.0 | | | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | | 3.0 | 3.0 |
| Time Before Reduce (s) | 0.0 | 0.0 | | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 |
| Time To Reduce (s) | 0.0 | 0.0 | | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 |
| Recall Mode | None | None | | | None | None | None | Max | Max | | Max | Max |
| Walk Time (s) | | | | | | | | | | | | |
| Flash Dont Walk (s) | | | | | | | | | | | | |
| Pedestrian Calls (#/hr) | | | | | | | | | | | | |
| v/c Ratio | | 0.87 | | | | | 0.25 | | 0.32 | | | |
| Control Delay | | 73.6 | | | | | 74.1 | | 44.6 | | | |
| Queue Delay | | 0.0 | | | | | 0.0 | | 0.0 | | | |
| Total Delay | | 73.6 | | | | | 74.1 | | 44.6 | | | |
| Queue Length 50th (ft) | | 386 | | | | | 31 | | 121 | | | |
| Queue Length 95th (ft) | | 122 | | | | | 39 | | 165 | | | |
| Internal Link Dist (ft) | | 580 | | | | | 448 | | 420 | | | |
| Turn Bay Length (ft) | | | | | | | | | | | | |
| Base Capacity (vph) | | 518 | | | | | 193 | | 488 | | | |
| Starvation Cap Reductn | | 0 | | | | | 0 | | 0 | | | |
| Spillback Cap Reductn | | 0 | | | | | 0 | | 0 | | | |
| Storage Cap Reductn | | 0 | | | | | 0 | | 0 | | | |
| Reduced v/c Ratio | | 0.78 | | | | | 0.17 | | 0.32 | | | |

| Intersection Summary | |
|---|---|
| Area Type: | Other |
| Cycle Length: 164 | |
| Actuated Cycle Length: 146 | |
| Natural Cycle: 90 | |
| Control Type: Actuated-Uncoordinated | |

Splits and Phases: 5: Ashbourne Rd & Front St

| Lane Group | SBT | SBR | NWL2 | NWL | NWR |
|---|---|---|---|---|---|
| Lead/Lag | | | | | |
| Lead-Lag Optimize? | | | | | |
| Vehicle Extension (s) | 5.0 | | 5.0 | 5.0 | |
| Minimum Gap (s) | 3.0 | | 3.0 | 3.0 | |
| Time Before Reduce (s) | 0.0 | | 0.0 | 0.0 | |
| Time To Reduce (s) | 0.0 | | 0.0 | 0.0 | |
| Recall Mode | Max | | None | None | |
| Walk Time (s) | | | | | |
| Flash Dont Walk (s) | | | | | |
| Pedestrian Calls (#/hr) | | | | | |
| v/c Ratio | 0.57 | | | 0.81 | |
| Control Delay | 50.1 | | | 70.2 | |
| Queue Delay | 0.0 | | | 0.0 | |
| Total Delay | 50.1 | | | 70.2 | |
| Queue Length 50th (ft) | 279 | | | 332 | |
| Queue Length 95th (ft) | 364 | | | 435 | |
| Internal Link Dist (ft) | 420 | | | 494 | |
| Turn Bay Length (ft) | | | | | |
| Base Capacity (vph) | 570 | | | 541 | |
| Starvation Cap Reductn | 0 | | | 0 | |
| Spillback Cap Reductn | 0 | | | 0 | |
| Storage Cap Reductn | 0 | | | 0 | |
| Reduced v/c Ratio | 0.57 | | | 0.64 | |

Intersection Summary

| Movement | EBL | EBT | EBR | EBR2 | WBL2 | WBL | WBT | NBL | NBT | NBR2 | SBL2 | SBL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (vph) | 139 | 3 | 190 | 16 | 1 | 2 | 10 | 20 | 69 | 14 | 2 | 14 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width | 16 | 16 | 16 | 16 | 12 | 12 | 12 | 16 | 16 | 16 | 16 | 16 |
| Grade (%) | | -2% | | | | | 3% | | 4% | | | |
| Total Lost time (s) | | 6.0 | | | | | 6.0 | | 6.0 | | | |
| Lane Util. Factor | | 1.00 | | | | | 1.00 | | 1.00 | | | |
| Frt | | 0.92 | | | | | 1.00 | | 0.98 | | | |
| Flt Protected | | 0.98 | | | | | 0.98 | | 0.99 | | | |
| Satd. Flow (prot) | | 1853 | | | | | 1837 | | 1994 | | | |
| Flt Permitted | | 0.98 | | | | | 0.98 | | 0.77 | | | |
| Satd. Flow (perm) | | 1853 | | | | | 1837 | | 1554 | | | |
| Peak-hour factor, PHF | 0.90 | 0.25 | 0.88 | 0.69 | 0.25 | 0.25 | 0.50 | 0.46 | 0.75 | 0.75 | 0.25 | 0.58 |
| Adj. Flow (vph) | 154 | 12 | 216 | 23 | 4 | 8 | 20 | 43 | 92 | 19 | 8 | 24 |
| RTOR Reduction (vph) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Lane Group Flow (vph) | 0 | 405 | 0 | 0 | 0 | 0 | 32 | 0 | 154 | 0 | 0 | 0 |
| Heavy Vehicles (%) | 13% | 0% | 1% | 9% | 0% | 0% | 0% | 0% | 3% | 7% | 0% | 0% |
| Turn Type | Split | | | | Perm | Split | | Perm | | | Perm | Perm |
| Protected Phases | 4 | 4 | | | | 8 | 8 | | 2 | | | |
| Permitted Phases | | | | | 8 | | | 2 | | | 6 | 6 |
| Actuated Green, G (s) | | 36.6 | | | | | 8.2 | | 45.9 | | | |
| Effective Green, g (s) | | 36.6 | | | | | 8.2 | | 45.9 | | | |
| Actuated g/C Ratio | | 0.25 | | | | | 0.06 | | 0.31 | | | |
| Clearance Time (s) | | 6.0 | | | | | 6.0 | | 6.0 | | | |
| Vehicle Extension (s) | | 5.0 | | | | | 5.0 | | 5.0 | | | |
| Lane Grp Cap (vph) | | 461 | | | | | 102 | | 485 | | | |
| v/s Ratio Prot | | c0.22 | | | | | c0.02 | | | | | |
| v/s Ratio Perm | | | | | | | | | 0.10 | | | |
| v/c Ratio | | 0.88 | | | | | 0.31 | | 0.32 | | | |
| Uniform Delay, d1 | | 53.1 | | | | | 66.7 | | 38.6 | | | |
| Progression Factor | | 1.00 | | | | | 1.00 | | 1.00 | | | |
| Incremental Delay, d2 | | 18.3 | | | | | 3.7 | | 1.7 | | | |
| Delay (s) | | 71.4 | | | | | 70.4 | | 40.4 | | | |
| Level of Service | | E | | | | | E | | D | | | |
| Approach Delay (s) | | 71.4 | | | | | 70.4 | | 40.4 | | | |
| Approach LOS | | E | | | | | E | | D | | | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM Average Control Delay | 60.1 | HCM Level of Service | E |
| HCM Volume to Capacity ratio | 0.71 | | |
| Actuated Cycle Length (s) | 147.1 | Sum of lost time (s) | 24.0 |
| Intersection Capacity Utilization | 76.0% | ICU Level of Service | D |
| Analysis Period (min) | 15 | | |

c Critical Lane Group

| Movement | SBT | SBR | NWL2 | NWL | NWR |
|---|---|---|---|---|---|
| Lane Configurations | | | | | |
| Volume (vph) | 71 | 197 | 16 | 253 | 15 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width | 16 | 16 | 16 | 16 | 16 |
| Grade (%) | 0% | | | 6% | |
| Total Lost time (s) | 6.0 | | | 6.0 | |
| Lane Util. Factor | 1.00 | | | 1.00 | |
| Frt | 0.92 | | | 0.99 | |
| Flt Protected | 1.00 | | | 0.96 | |
| Satd. Flow (prot) | 1890 | | | 1935 | |
| Flt Permitted | 0.96 | | | 0.96 | |
| Satd. Flow (perm) | 1815 | | | 1935 | |
| Peak-hour factor, PHF | 0.81 | 0.97 | 0.56 | 0.86 | 0.63 |
| Adj. Flow (vph) | 88 | 203 | 29 | 294 | 24 |
| RTOR Reduction (vph) | 0 | 0 | 0 | 0 | 0 |
| Lane Group Flow (vph) | 323 | 0 | 0 | 347 | 0 |
| Heavy Vehicles (%) | 0% | 6% | 0% | 2% | 7% |
| Turn Type | | | Split | | |
| Protected Phases | 6 | | 9 | 9 | |
| Permitted Phases | | | | | |
| Actuated Green, G (s) | 45.9 | | | 32.4 | |
| Effective Green, g (s) | 45.9 | | | 32.4 | |
| Actuated g/C Ratio | 0.31 | | | 0.22 | |
| Clearance Time (s) | 6.0 | | | 6.0 | |
| Vehicle Extension (s) | 5.0 | | | 5.0 | |
| Lane Grp Cap (vph) | 566 | | | 426 | |
| v/s Ratio Prot | | | | c0.18 | |
| v/s Ratio Perm | c0.18 | | | | |
| v/c Ratio | 0.57 | | | 0.81 | |
| Uniform Delay, d1 | 42.4 | | | 54.5 | |
| Progression Factor | 1.00 | | | 1.00 | |
| Incremental Delay, d2 | 4.1 | | | 12.8 | |
| Delay (s) | 46.5 | | | 67.2 | |
| Level of Service | D | | | E | |
| Approach Delay (s) | 46.5 | | | 67.2 | |
| Approach LOS | D | | | E | |

| Intersection Summary |
|---|

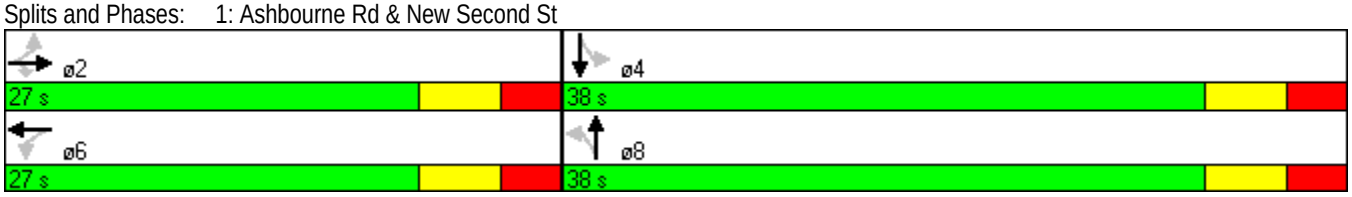
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (vph) | 72 | 192 | 25 | 9 | 146 | 110 | 25 | 412 | 20 | 88 | 331 | 44 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width (ft) | 12 | 12 | 14 | 16 | 16 | 16 | 16 | 16 | 16 | 12 | 12 | 12 |
| Grade (%) | | -9% | | | 8% | | | 3% | | | -2% | |
| Storage Length (ft) | 0 | | 110 | 0 | | 0 | 0 | | 0 | 0 | | 0 |
| Storage Lanes | 0 | | 1 | 0 | | 0 | 0 | | 0 | 0 | | 0 |
| Taper Length (ft) | 25 | | 75 | 25 | | 25 | 25 | | 25 | 25 | | 25 |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Ped Bike Factor | | | | | | | | | | | | |
| Frt | | | 0.850 | | 0.935 | | | 0.994 | | | 0.985 | |
| Flt Protected | | 0.986 | | | 0.998 | | | 0.997 | | | 0.990 | |
| Satd. Flow (prot) | 0 | 1938 | 1607 | 0 | 1892 | 0 | 0 | 2083 | 0 | 0 | 1854 | 0 |
| Flt Permitted | | 0.736 | | | 0.981 | | | 0.940 | | | 0.775 | |
| Satd. Flow (perm) | 0 | 1447 | 1607 | 0 | 1860 | 0 | 0 | 1964 | 0 | 0 | 1452 | 0 |
| Right Turn on Red | | | Yes | | | No | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | | 32 | | | | | 5 | | | 13 | |
| Link Speed (mph) | | 25 | | | 25 | | | 35 | | | 35 | |
| Link Distance (ft) | | 500 | | | 2250 | | | 500 | | | 500 | |
| Travel Time (s) | | 13.6 | | | 61.4 | | | 9.7 | | | 9.7 | |
| Confl. Peds. (#/hr) | | | | | | | | | | | | |
| Confl. Bikes (#/hr) | | | | | | | | | | | | |
| Peak Hour Factor | 0.85 | 0.90 | 0.78 | 0.75 | 0.89 | 0.67 | 0.69 | 0.84 | 0.79 | 0.79 | 0.88 | 0.72 |
| Growth Factor | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% |
| Heavy Vehicles (%) | 1% | 1% | 12% | 0% | 1% | 3% | 0% | 1% | 0% | 0% | 1% | 2% |
| Bus Blockages (#/hr) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Parking (#/hr) | | | | | | | | | | | | |
| Mid-Block Traffic (%) | | 0% | | | 0% | | | 0% | | | 0% | |
| Adj. Flow (vph) | 85 | 213 | 32 | 12 | 164 | 164 | 36 | 490 | 25 | 111 | 376 | 61 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 298 | 32 | 0 | 340 | 0 | 0 | 551 | 0 | 0 | 548 | 0 |
| Number of Detectors | 1 | 0 | 0 | 1 | 0 | | 1 | 0 | | 1 | 0 | |
| Detector Template | | | | | | | | | | | | |
| Leading Detector (ft) | 35 | 0 | 0 | 35 | 0 | | 35 | 0 | | 35 | 0 | |
| Trailing Detector (ft) | -5 | 0 | 0 | -5 | 0 | | -5 | 0 | | -5 | 0 | |
| Turn Type | Perm | | Perm | Perm | | | Perm | | | Perm | | |
| Protected Phases | | 2 | | | 6 | | | 8 | | | 4 | |
| Permitted Phases | 2 | | 2 | 6 | | | 8 | | | 4 | | |
| Detector Phase | 2 | 2 | 2 | 6 | 6 | | 8 | 8 | | 4 | 4 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 20.0 | 20.0 | 20.0 | 20.0 | 20.0 | | 31.0 | 31.0 | | 31.0 | 31.0 | |
| Minimum Split (s) | 27.0 | 27.0 | 27.0 | 27.0 | 27.0 | | 38.0 | 38.0 | | 38.0 | 38.0 | |
| Total Split (s) | 27.0 | 27.0 | 27.0 | 27.0 | 27.0 | 0.0 | 38.0 | 38.0 | 0.0 | 38.0 | 38.0 | 0.0 |
| Total Split (%) | 41.5% | 41.5% | 41.5% | 41.5% | 41.5% | 0.0% | 58.5% | 58.5% | 0.0% | 58.5% | 58.5% | 0.0% |
| Maximum Green (s) | 20.0 | 20.0 | 20.0 | 20.0 | 20.0 | | 31.0 | 31.0 | | 31.0 | 31.0 | |
| Yellow Time (s) | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | | 4.0 | 4.0 | | 4.0 | 4.0 | |
| All-Red Time (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | |
| Lost Time Adjust (s) | -1.0 | 0.0 | 0.0 | -1.0 | 0.0 | 0.0 | -1.0 | 0.0 | 0.0 | -1.0 | 0.0 | 0.0 |
| Total Lost Time (s) | 6.0 | 7.0 | 7.0 | 6.0 | 7.0 | 4.0 | 6.0 | 7.0 | 4.0 | 6.0 | 7.0 | 4.0 |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lead/Lag | | | | | | | | | | | | |
| Lead-Lag Optimize? | | | | | | | | | | | | |
| Vehicle Extension (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | |
| Minimum Gap (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | |
| Time Before Reduce (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Time To Reduce (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Recall Mode | Max | Max | Max | Max | Max | | Max | Max | | Max | Max | |
| Walk Time (s) | | | | | | | | | | | | |
| Flash Dont Walk (s) | | | | | | | | | | | | |
| Pedestrian Calls (#/hr) | | | | | | | | | | | | |
| v/c Ratio | | 0.67 | 0.06 | | 0.59 | | | 0.59 | | | 0.78 | |
| Control Delay | | 28.6 | 6.9 | | 24.2 | | | 15.4 | | | 24.1 | |
| Queue Delay | | 0.0 | 0.0 | | 0.0 | | | 0.0 | | | 0.0 | |
| Total Delay | | 28.6 | 6.9 | | 24.2 | | | 15.4 | | | 24.1 | |
| Queue Length 50th (ft) | | 102 | 0 | | 113 | | | 148 | | | 166 | |
| Queue Length 95th (ft) | | #189 | 13 | | 187 | | | 212 | | | #325 | |
| Internal Link Dist (ft) | | 420 | | | 2170 | | | 420 | | | 420 | |
| Turn Bay Length (ft) | | | 110 | | | | | | | | | |
| Base Capacity (vph) | | 445 | 517 | | 572 | | | 939 | | | 699 | |
| Starvation Cap Reductn | | 0 | 0 | | 0 | | | 0 | | | 0 | |
| Spillback Cap Reductn | | 0 | 0 | | 0 | | | 0 | | | 0 | |
| Storage Cap Reductn | | 0 | 0 | | 0 | | | 0 | | | 0 | |
| Reduced v/c Ratio | | 0.67 | 0.06 | | 0.59 | | | 0.59 | | | 0.78 | |

## Intersection Summary

Area Type: Other
Cycle Length: 65
Actuated Cycle Length: 65
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow
Natural Cycle: 65
Control Type: Pretimed
# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 1: Ashbourne Rd & New Second St



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (vph) | 72 | 192 | 25 | 9 | 146 | 110 | 25 | 412 | 20 | 88 | 331 | 44 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width | 12 | 12 | 14 | 16 | 16 | 16 | 16 | 16 | 16 | 12 | 12 | 12 |
| Grade (%) | | -9% | | | 8% | | | 3% | | | -2% | |
| Total Lost time (s) | | 7.0 | 7.0 | | 7.0 | | | 7.0 | | | 7.0 | |
| Lane Util. Factor | | 1.00 | 1.00 | | 1.00 | | | 1.00 | | | 1.00 | |
| Frt | | 1.00 | 0.85 | | 0.93 | | | 0.99 | | | 0.98 | |
| Flt Protected | | 0.99 | 1.00 | | 1.00 | | | 1.00 | | | 0.99 | |
| Satd. Flow (prot) | | 1938 | 1607 | | 1893 | | | 2083 | | | 1854 | |
| Flt Permitted | | 0.74 | 1.00 | | 0.98 | | | 0.94 | | | 0.78 | |
| Satd. Flow (perm) | | 1448 | 1607 | | 1860 | | | 1965 | | | 1452 | |
| Peak-hour factor, PHF | 0.85 | 0.90 | 0.78 | 0.75 | 0.89 | 0.67 | 0.69 | 0.84 | 0.79 | 0.79 | 0.88 | 0.72 |
| Adj. Flow (vph) | 85 | 213 | 32 | 12 | 164 | 164 | 36 | 490 | 25 | 111 | 376 | 61 |
| RTOR Reduction (vph) | 0 | 0 | 22 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 7 | 0 |
| Lane Group Flow (vph) | 0 | 298 | 10 | 0 | 340 | 0 | 0 | 548 | 0 | 0 | 541 | 0 |
| Heavy Vehicles (%) | 1% | 1% | 12% | 0% | 1% | 3% | 0% | 1% | 0% | 0% | 1% | 2% |
| Turn Type | Perm | | Perm | Perm | | | Perm | | | Perm | | |
| Protected Phases | | 2 | | | 6 | | | 8 | | | 4 | |
| Permitted Phases | 2 | | 2 | 6 | | | 8 | | | 4 | | |
| Actuated Green, G (s) | | 20.0 | 20.0 | | 20.0 | | | 31.0 | | | 31.0 | |
| Effective Green, g (s) | | 20.0 | 20.0 | | 20.0 | | | 31.0 | | | 31.0 | |
| Actuated g/C Ratio | | 0.31 | 0.31 | | 0.31 | | | 0.48 | | | 0.48 | |
| Clearance Time (s) | | 7.0 | 7.0 | | 7.0 | | | 7.0 | | | 7.0 | |
| Lane Grp Cap (vph) | | 446 | 494 | | 572 | | | 937 | | | 692 | |
| v/s Ratio Prot | | | | | | | | | | | | |
| v/s Ratio Perm | | c0.21 | 0.01 | | 0.18 | | | 0.28 | | | c0.37 | |
| v/c Ratio | | 0.67 | 0.02 | | 0.59 | | | 0.59 | | | 0.78 | |
| Uniform Delay, d1 | | 19.6 | 15.7 | | 19.1 | | | 12.3 | | | 14.2 | |
| Progression Factor | | 1.00 | 1.00 | | 1.00 | | | 1.00 | | | 1.00 | |
| Incremental Delay, d2 | | 7.7 | 0.1 | | 4.5 | | | 2.7 | | | 8.6 | |
| Delay (s) | | 27.3 | 15.7 | | 23.6 | | | 15.0 | | | 22.8 | |
| Level of Service | | C | B | | C | | | B | | | C | |
| Approach Delay (s) | | 26.2 | | | 23.6 | | | 15.0 | | | 22.8 | |
| Approach LOS | | C | | | C | | | B | | | C | |

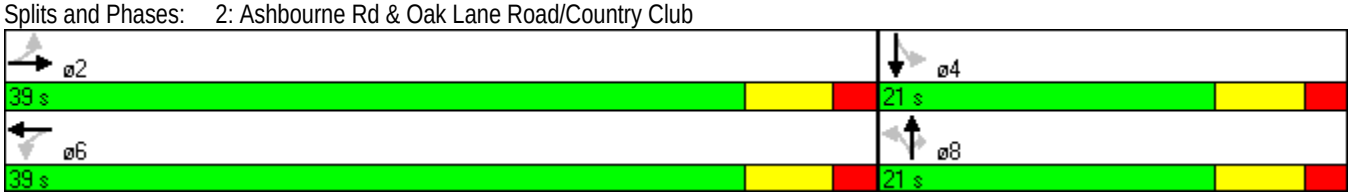
| Intersection Summary | | | |
|---|---|---|---|
| HCM Average Control Delay | 21.1 | HCM Level of Service | C |
| HCM Volume to Capacity ratio | 0.74 | | |
| Actuated Cycle Length (s) | 65.0 | Sum of lost time (s) | 14.0 |
| Intersection Capacity Utilization | 103.3% | ICU Level of Service | G |
| Analysis Period (min) | 15 | | |
| c Critical Lane Group | | | |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (vph) | 0 | 258 | 42 | 211 | 240 | 0 | 24 | 0 | 199 | 0 | 0 | 1 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width (ft) | 11 | 11 | 11 | 10 | 12 | 12 | 11 | 11 | 14 | 10 | 10 | 10 |
| Grade (%) | | 1% | | | 1% | | | -2% | | | 1% | |
| Storage Length (ft) | 140 | | 0 | 150 | | 0 | 0 | | 45 | 0 | | 0 |
| Storage Lanes | 1 | | 0 | 1 | | 0 | 0 | | 1 | 0 | | 0 |
| Taper Length (ft) | 75 | | 25 | 75 | | 25 | 25 | | 75 | 25 | | 25 |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Ped Bike Factor | | | | | | | | | | | | |
| Frt | | 0.973 | | | | | | | 0.850 | | 0.865 | |
| Flt Protected | | | | 0.950 | | | | 0.950 | | | | |
| Satd. Flow (prot) | 1827 | 1769 | 0 | 1596 | 1872 | 0 | 0 | 1546 | 1673 | 0 | 1526 | 0 |
| Flt Permitted | | | | 0.545 | | | | 0.755 | | | | |
| Satd. Flow (perm) | 1827 | 1769 | 0 | 916 | 1872 | 0 | 0 | 1229 | 1673 | 0 | 1526 | 0 |
| Right Turn on Red | | | No | | | Yes | | | Yes | | | No |
| Satd. Flow (RTOR) | | | | | | | | | 229 | | | |
| Link Speed (mph) | | 35 | | | 35 | | | 35 | | | 35 | |
| Link Distance (ft) | | 2250 | | | 719 | | | 500 | | | 300 | |
| Travel Time (s) | | 43.8 | | | 14.0 | | | 9.7 | | | 5.8 | |
| Confl. Peds. (#/hr) | | | | | | | | | | | | |
| Confl. Bikes (#/hr) | | | | | | | | | | | | |
| Peak Hour Factor | 0.25 | 0.87 | 0.65 | 0.91 | 0.94 | 0.25 | 0.88 | 0.25 | 0.87 | 0.25 | 0.25 | 0.25 |
| Growth Factor | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% |
| Heavy Vehicles (%) | 0% | 0% | 3% | 5% | 1% | 0% | 14% | 0% | 4% | 0% | 0% | 0% |
| Bus Blockages (#/hr) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Parking (#/hr) | | | | | | | | | | | | |
| Mid-Block Traffic (%) | | 0% | | | 0% | | | 0% | | | 0% | |
| Adj. Flow (vph) | 0 | 297 | 65 | 232 | 255 | 0 | 27 | 0 | 229 | 0 | 0 | 4 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 362 | 0 | 232 | 255 | 0 | 0 | 27 | 229 | 0 | 4 | 0 |
| Number of Detectors | 0 | 0 | | 0 | 0 | | 1 | 1 | 1 | 1 | 1 | |
| Detector Template | | | | | | | | | | | | |
| Leading Detector (ft) | 0 | 0 | | 0 | 0 | | 35 | 35 | 35 | 20 | 20 | |
| Trailing Detector (ft) | 0 | 0 | | 0 | 0 | | -5 | -5 | -5 | -5 | -5 | |
| Turn Type | Perm | | | Perm | | | Perm | | Perm | Perm | | |
| Protected Phases | | 2 | | | 6 | | | 8 | | | 4 | |
| Permitted Phases | 2 | | | 6 | | | 8 | | 8 | 4 | | |
| Detector Phase | 2 | 2 | | 6 | 6 | | 8 | 8 | 8 | 4 | 4 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 33.0 | 33.0 | | 33.0 | 33.0 | | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | |
| Minimum Split (s) | 39.0 | 39.0 | | 39.0 | 39.0 | | 9.0 | 9.0 | 9.0 | 9.0 | 9.0 | |
| Total Split (s) | 39.0 | 39.0 | 0.0 | 39.0 | 39.0 | 0.0 | 21.0 | 21.0 | 21.0 | 21.0 | 21.0 | 0.0 |
| Total Split (%) | 65.0% | 65.0% | 0.0% | 65.0% | 65.0% | 0.0% | 35.0% | 35.0% | 35.0% | 35.0% | 35.0% | 0.0% |
| Maximum Green (s) | 33.0 | 33.0 | | 33.0 | 33.0 | | 15.0 | 15.0 | 15.0 | 15.0 | 15.0 | |
| Yellow Time (s) | 4.0 | 4.0 | | 4.0 | 4.0 | | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | |
| All-Red Time (s) | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | |
| Lost Time Adjust (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | -2.0 | 0.0 | 0.0 | -2.0 | 0.0 | 0.0 |
| Total Lost Time (s) | 6.0 | 6.0 | 4.0 | 6.0 | 6.0 | 4.0 | 4.0 | 6.0 | 6.0 | 4.0 | 6.0 | 4.0 |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lead/Lag | | | | | | | | | | | | |
| Lead-Lag Optimize? | | | | | | | | | | | | |
| Vehicle Extension (s) | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | |
| Minimum Gap (s) | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | |
| Time Before Reduce (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| Time To Reduce (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| Recall Mode | Min | Min | | Min | Min | | None | None | None | None | None | |
| Walk Time (s) | | | | | | | | | | | | |
| Flash Dont Walk (s) | | | | | | | | | | | | |
| Pedestrian Calls (#/hr) | | | | | | | | | | | | |
| v/c Ratio | | 0.32 | | 0.40 | 0.22 | | | 0.16 | 0.53 | | 0.02 | |
| Control Delay | | 5.8 | | 7.9 | 5.1 | | | 21.6 | 8.6 | | 19.0 | |
| Queue Delay | | 0.0 | | 0.0 | 0.0 | | | 0.0 | 0.0 | | 0.0 | |
| Total Delay | | 5.8 | | 7.9 | 5.1 | | | 21.6 | 8.6 | | 19.0 | |
| Queue Length 50th (ft) | | 40 | | 27 | 26 | | | 8 | 0 | | 1 | |
| Queue Length 95th (ft) | | 91 | | 81 | 64 | | | 7 | 42 | | 2 | |
| Internal Link Dist (ft) | | 2170 | | | 639 | | | 420 | | | 220 | |
| Turn Bay Length (ft) | | | | 150 | | | | | 45 | | | |
| Base Capacity (vph) | | 1117 | | 578 | 1181 | | | 353 | 643 | | 438 | |
| Starvation Cap Reductn | | 0 | | 0 | 0 | | | 0 | 0 | | 0 | |
| Spillback Cap Reductn | | 0 | | 0 | 0 | | | 0 | 0 | | 0 | |
| Storage Cap Reductn | | 0 | | 0 | 0 | | | 0 | 0 | | 0 | |
| Reduced v/c Ratio | | 0.32 | | 0.40 | 0.22 | | | 0.08 | 0.36 | | 0.01 | |

| Intersection Summary | |
|---|---|
| Area Type: | Other |
| Cycle Length: 60 | |
| Actuated Cycle Length: 52.4 | |
| Natural Cycle: 50 | |
| Control Type: Actuated-Uncoordinated | |

Splits and Phases: 2: Ashbourne Rd & Oak Lane Road/Country Club



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (vph) | 0 | 258 | 42 | 211 | 240 | 0 | 24 | 0 | 199 | 0 | 0 | 1 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width | 11 | 11 | 11 | 10 | 12 | 12 | 11 | 11 | 14 | 10 | 10 | 10 |
| Grade (%) | | 1% | | | 1% | | | -2% | | | 1% | |
| Total Lost time (s) | | 6.0 | | 6.0 | 6.0 | | | 6.0 | 6.0 | | 6.0 | |
| Lane Util. Factor | | 1.00 | | 1.00 | 1.00 | | | 1.00 | 1.00 | | 1.00 | |
| Frt | | 0.97 | | 1.00 | 1.00 | | | 1.00 | 0.85 | | 0.86 | |
| Flt Protected | | 1.00 | | 0.95 | 1.00 | | | 0.95 | 1.00 | | 1.00 | |
| Satd. Flow (prot) | | 1769 | | 1596 | 1872 | | | 1546 | 1673 | | 1526 | |
| Flt Permitted | | 1.00 | | 0.55 | 1.00 | | | 0.76 | 1.00 | | 1.00 | |
| Satd. Flow (perm) | | 1769 | | 916 | 1872 | | | 1229 | 1673 | | 1526 | |
| Peak-hour factor, PHF | 0.25 | 0.87 | 0.65 | 0.91 | 0.94 | 0.25 | 0.88 | 0.25 | 0.87 | 0.25 | 0.25 | 0.25 |
| Adj. Flow (vph) | 0 | 297 | 65 | 232 | 255 | 0 | 27 | 0 | 229 | 0 | 0 | 4 |
| RTOR Reduction (vph) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 197 | 0 | 0 | 0 |
| Lane Group Flow (vph) | 0 | 362 | 0 | 232 | 255 | 0 | 0 | 27 | 32 | 0 | 4 | 0 |
| Heavy Vehicles (%) | 0% | 0% | 3% | 5% | 1% | 0% | 14% | 0% | 4% | 0% | 0% | 0% |
| Turn Type | Perm | | | Perm | | | Perm | | Perm | Perm | | |
| Protected Phases | | 2 | | | 6 | | | 8 | | | 4 | |
| Permitted Phases | 2 | | | 6 | | | 8 | | 8 | 4 | | |
| Actuated Green, G (s) | | 33.0 | | 33.0 | 33.0 | | | 7.3 | 7.3 | | 7.3 | |
| Effective Green, g (s) | | 33.0 | | 33.0 | 33.0 | | | 7.3 | 7.3 | | 7.3 | |
| Actuated g/C Ratio | | 0.63 | | 0.63 | 0.63 | | | 0.14 | 0.14 | | 0.14 | |
| Clearance Time (s) | | 6.0 | | 6.0 | 6.0 | | | 6.0 | 6.0 | | 6.0 | |
| Vehicle Extension (s) | | 3.0 | | 3.0 | 3.0 | | | 3.0 | 3.0 | | 3.0 | |
| Lane Grp Cap (vph) | | 1116 | | 578 | 1181 | | | 172 | 234 | | 213 | |
| v/s Ratio Prot | | 0.20 | | | 0.14 | | | | | | 0.00 | |
| v/s Ratio Perm | | | | c0.25 | | | | c0.02 | 0.02 | | | |
| v/c Ratio | | 0.32 | | 0.40 | 0.22 | | | 0.16 | 0.14 | | 0.02 | |
| Uniform Delay, d1 | | 4.5 | | 4.8 | 4.1 | | | 19.8 | 19.7 | | 19.4 | |
| Progression Factor | | 1.00 | | 1.00 | 1.00 | | | 1.00 | 1.00 | | 1.00 | |
| Incremental Delay, d2 | | 0.2 | | 0.5 | 0.1 | | | 0.4 | 0.3 | | 0.0 | |
| Delay (s) | | 4.6 | | 5.2 | 4.2 | | | 20.2 | 20.0 | | 19.4 | |
| Level of Service | | A | | A | A | | | C | C | | B | |
| Approach Delay (s) | | 4.6 | | | 4.7 | | | 20.0 | | | 19.4 | |
| Approach LOS | | A | | | A | | | C | | | B | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM Average Control Delay | 8.3 | HCM Level of Service | A |
| HCM Volume to Capacity ratio | 0.36 | | |
| Actuated Cycle Length (s) | 52.3 | Sum of lost time (s) | 12.0 |
| Intersection Capacity Utilization | 78.0% | ICU Level of Service | D |
| Analysis Period (min) | 15 | | |

c Critical Lane Group

| Lane Group | EBL | EBT | EBR | EBR2 | WBL | WBT | WBR | NBL | NBT | NBR | NBR2 | SBL2 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (vph) | 220 | 20 | 209 | 31 | 3 | 6 | 3 | 14 | 64 | 1 | 13 | 3 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width (ft) | 16 | 16 | 16 | 16 | 12 | 12 | 12 | 16 | 16 | 16 | 16 | 16 |
| Grade (%) | | -2% | | | | 3% | | | 4% | | | |
| Storage Length (ft) | 0 | | 0 | | 0 | | 0 | 0 | | 0 | | |
| Storage Lanes | 0 | | 0 | | 0 | | 0 | 0 | | 0 | | |
| Taper Length (ft) | 25 | | 25 | | 25 | | 25 | 25 | | 25 | | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Ped Bike Factor | | | | | | | | | | | | |
| Frt | | 0.934 | | | | 0.955 | | | 0.977 | | | |
| Flt Protected | | 0.977 | | | | 0.984 | | | 0.990 | | | |
| Satd. Flow (prot) | 0 | 1934 | 0 | 0 | 0 | 1759 | 0 | 0 | 1991 | 0 | 0 | 0 |
| Flt Permitted | | 0.977 | | | | 0.984 | | | 0.903 | | | |
| Satd. Flow (perm) | 0 | 1934 | 0 | 0 | 0 | 1759 | 0 | 0 | 1816 | 0 | 0 | 0 |
| Right Turn on Red | | | | No | | | No | | | | No | |
| Satd. Flow (RTOR) | | | | | | | | | | | | |
| Link Speed (mph) | | 40 | | | | 35 | | | 25 | | | |
| Link Distance (ft) | | 631 | | | | 527 | | | 500 | | | |
| Travel Time (s) | | 10.8 | | | | 10.3 | | | 13.6 | | | |
| Confl. Peds. (#/hr) | | | | | | | | | | | | |
| Confl. Bikes (#/hr) | | | | | | | | | | | | |
| Peak Hour Factor | 0.83 | 0.71 | 0.88 | 0.75 | 0.38 | 0.75 | 0.38 | 0.56 | 0.83 | 0.25 | 0.75 | 0.75 |
| Growth Factor | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% |
| Heavy Vehicles (%) | 5% | 0% | 0% | 4% | 0% | 0% | 0% | 0% | 4% | 0% | 0% | 0% |
| Bus Blockages (#/hr) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Parking (#/hr) | | | | | | | | | | | | |
| Mid-Block Traffic (%) | | 0% | | | | 0% | | | 0% | | | |
| Adj. Flow (vph) | 265 | 28 | 238 | 41 | 8 | 8 | 8 | 25 | 77 | 4 | 17 | 4 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 572 | 0 | 0 | 0 | 24 | 0 | 0 | 123 | 0 | 0 | 0 |
| Number of Detectors | 1 | 1 | | | 1 | 1 | | 1 | 1 | | | 2 |
| Detector Template | | | | | | | | | | | | |
| Leading Detector (ft) | 35 | 35 | | | 35 | 35 | | 35 | 35 | | | 70 |
| Trailing Detector (ft) | -5 | -5 | | | -5 | -5 | | -5 | -5 | | | -5 |
| Turn Type | Split | | | | Split | | | Perm | | | | Perm |
| Protected Phases | 4 | 4 | | | 8 | 8 | | | 2 | | | |
| Permitted Phases | | | | | | | | 2 | | | | 6 |
| Detector Phase | 4 | 4 | | | 8 | 8 | | 2 | 2 | | | 6 |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 8.0 | 8.0 | | | 5.0 | 5.0 | | 8.0 | 8.0 | | | 8.0 |
| Minimum Split (s) | 14.0 | 14.0 | | | 11.0 | 11.0 | | 14.0 | 14.0 | | | 14.0 |
| Total Split (s) | 46.0 | 46.0 | 0.0 | 0.0 | 21.0 | 21.0 | 0.0 | 51.0 | 51.0 | 0.0 | 0.0 | 51.0 |
| Total Split (%) | 28.0% | 28.0% | 0.0% | 0.0% | 12.8% | 12.8% | 0.0% | 31.1% | 31.1% | 0.0% | 0.0% | 31.1% |
| Maximum Green (s) | 40.0 | 40.0 | | | 15.0 | 15.0 | | 45.0 | 45.0 | | | 45.0 |
| Yellow Time (s) | 4.0 | 4.0 | | | 4.0 | 4.0 | | 4.0 | 4.0 | | | 4.0 |
| All-Red Time (s) | 2.0 | 2.0 | | | 2.0 | 2.0 | | 2.0 | 2.0 | | | 2.0 |
| Lost Time Adjust (s) | -2.0 | 0.0 | 0.0 | 0.0 | -2.0 | 0.0 | 0.0 | -2.0 | 0.0 | 0.0 | 0.0 | -2.0 |
| Total Lost Time (s) | 4.0 | 6.0 | 4.0 | 4.0 | 4.0 | 6.0 | 4.0 | 4.0 | 6.0 | 4.0 | 4.0 | 4.0 |

| Lane Group | SBL | SBT | SBR | NWL2 | NWL | NWR | NWR2 |
|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | |
| Volume (vph) | 8 | 61 | 162 | 12 | 266 | 18 | 1 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width (ft) | 16 | 16 | 16 | 16 | 16 | 16 | 16 |
| Grade (%) | | 0% | | | 6% | | |
| Storage Length (ft) | 0 | | 0 | | 0 | 0 | |
| Storage Lanes | 0 | | 0 | | 1 | 0 | |
| Taper Length (ft) | 25 | | 25 | | 25 | 25 | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Ped Bike Factor | | | | | | | |
| Frt | | 0.909 | | | 0.988 | | |
| Flt Protected | | 0.996 | | | 0.956 | | |
| Satd. Flow (prot) | 0 | 1936 | 0 | 0 | 1931 | 0 | 0 |
| Flt Permitted | | 0.974 | | | 0.956 | | |
| Satd. Flow (perm) | 0 | 1894 | 0 | 0 | 1931 | 0 | 0 |
| Right Turn on Red | | | No | | | | No |
| Satd. Flow (RTOR) | | | | | | | |
| Link Speed (mph) | | 35 | | | 25 | | |
| Link Distance (ft) | | 500 | | | 573 | | |
| Travel Time (s) | | 9.7 | | | 15.6 | | |
| Confl. Peds. (#/hr) | | | | | | | |
| Confl. Bikes (#/hr) | | | | | | | |
| Peak Hour Factor | 0.50 | 0.88 | 0.87 | 0.70 | 0.95 | 0.75 | 0.25 |
| Growth Factor | 100% | 100% | 100% | 100% | 100% | 100% | 100% |
| Heavy Vehicles (%) | 0% | 0% | 1% | 0% | 2% | 6% | 0% |
| Bus Blockages (#/hr) | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Parking (#/hr) | | | | | | | |
| Mid-Block Traffic (%) | | 0% | | | 0% | | |
| Adj. Flow (vph) | 16 | 69 | 186 | 17 | 280 | 24 | 4 |
| Shared Lane Traffic (%) | | | | | | | |
| Lane Group Flow (vph) | 0 | 275 | 0 | 0 | 325 | 0 | 0 |
| Number of Detectors | 2 | 4 | | 1 | 1 | | |
| Detector Template | | | | | | | |
| Leading Detector (ft) | 70 | 66 | | 35 | 35 | | |
| Trailing Detector (ft) | -5 | -1 | | -5 | -5 | | |
| Turn Type | Perm | | | Split | | | |
| Protected Phases | | 6 | | 9 | 9 | | |
| Permitted Phases | 6 | | | | | | |
| Detector Phase | 6 | 6 | | 9 | 9 | | |
| Switch Phase | | | | | | | |
| Minimum Initial (s) | 8.0 | 8.0 | | 8.0 | 8.0 | | |
| Minimum Split (s) | 14.0 | 14.0 | | 14.0 | 14.0 | | |
| Total Split (s) | 51.0 | 51.0 | 0.0 | 46.0 | 46.0 | 0.0 | 0.0 |
| Total Split (%) | 31.1% | 31.1% | 0.0% | 28.0% | 28.0% | 0.0% | 0.0% |
| Maximum Green (s) | 45.0 | 45.0 | | 40.0 | 40.0 | | |
| Yellow Time (s) | 4.0 | 4.0 | | 4.0 | 4.0 | | |
| All-Red Time (s) | 2.0 | 2.0 | | 2.0 | 2.0 | | |
| Lost Time Adjust (s) | -2.0 | 0.0 | 0.0 | -2.0 | 0.0 | 0.0 | 0.0 |
| Total Lost Time (s) | 4.0 | 6.0 | 4.0 | 4.0 | 6.0 | 4.0 | 4.0 |

| Lane Group | EBL | EBT | EBR | EBR2 | WBL | WBT | WBR | NBL | NBT | NBR | NBR2 | SBL2 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lead/Lag | | | | | | | | | | | | |
| Lead-Lag Optimize? | | | | | | | | | | | | |
| Vehicle Extension (s) | 5.0 | 5.0 | | | 5.0 | 5.0 | | 5.0 | 5.0 | | | 5.0 |
| Minimum Gap (s) | 3.0 | 3.0 | | | 3.0 | 3.0 | | 3.0 | 3.0 | | | 3.0 |
| Time Before Reduce (s) | 0.0 | 0.0 | | | 0.0 | 0.0 | | 0.0 | 0.0 | | | 0.0 |
| Time To Reduce (s) | 0.0 | 0.0 | | | 0.0 | 0.0 | | 0.0 | 0.0 | | | 0.0 |
| Recall Mode | None | None | | | None | None | | Max | Max | | | Max |
| Walk Time (s) | | | | | | | | | | | | |
| Flash Dont Walk (s) | | | | | | | | | | | | |
| Pedestrian Calls (#/hr) | | | | | | | | | | | | |
| v/c Ratio | | 1.05 | | | | 0.20 | | | 0.21 | | | |
| Control Delay | | 102.9 | | | | 72.3 | | | 40.9 | | | |
| Queue Delay | | 0.0 | | | | 0.0 | | | 0.0 | | | |
| Total Delay | | 102.9 | | | | 72.3 | | | 40.9 | | | |
| Queue Length 50th (ft) | | ~643 | | | | 23 | | | 91 | | | |
| Queue Length 95th (ft) | | #652 | | | | 48 | | | 147 | | | |
| Internal Link Dist (ft) | | 551 | | | | 447 | | | 420 | | | |
| Turn Bay Length (ft) | | | | | | | | | | | | |
| Base Capacity (vph) | | 543 | | | | 185 | | | 574 | | | |
| Starvation Cap Reductn | | 0 | | | | 0 | | | 0 | | | |
| Spillback Cap Reductn | | 0 | | | | 0 | | | 0 | | | |
| Storage Cap Reductn | | 0 | | | | 0 | | | 0 | | | |
| Reduced v/c Ratio | | 1.05 | | | | 0.13 | | | 0.21 | | | |

| Intersection Summary | |
|---|---|
| Area Type: | Other |
| Cycle Length: 164 | |
| Actuated Cycle Length: 144.1 | |
| Natural Cycle: 90 | |
| Control Type: Actuated-Uncoordinated | |

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 5: Ashbourne Rd & Front St

| Lane Group | SBL | SBT | SBR | NWL2 | NWL | NWR | NWR2 |
|---|---|---|---|---|---|---|---|
| Lead/Lag | | | | | | | |
| Lead-Lag Optimize? | | | | | | | |
| Vehicle Extension (s) | 5.0 | 5.0 | | 5.0 | 5.0 | | |
| Minimum Gap (s) | 3.0 | 3.0 | | 3.0 | 3.0 | | |
| Time Before Reduce (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | |
| Time To Reduce (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | |
| Recall Mode | Max | Max | | None | None | | |
| Walk Time (s) | | | | | | | |
| Flash Dont Walk (s) | | | | | | | |
| Pedestrian Calls (#/hr) | | | | | | | |
| v/c Ratio | | 0.46 | | | 0.79 | | |
| Control Delay | | 45.3 | | | 69.1 | | |
| Queue Delay | | 0.0 | | | 0.0 | | |
| Total Delay | | 45.3 | | | 69.1 | | |
| Queue Length 50th (ft) | | 223 | | | 306 | | |
| Queue Length 95th (ft) | | 336 | | | 428 | | |
| Internal Link Dist (ft) | | 420 | | | 493 | | |
| Turn Bay Length (ft) | | | | | | | |
| Base Capacity (vph) | | 598 | | | 542 | | |
| Starvation Cap Reductn | | 0 | | | 0 | | |
| Spillback Cap Reductn | | 0 | | | 0 | | |
| Storage Cap Reductn | | 0 | | | 0 | | |
| Reduced v/c Ratio | | 0.46 | | | 0.60 | | |

Intersection Summary

| Movement | EBL | EBT | EBR | EBR2 | WBL | WBT | WBR | NBL | NBT | NBR | NBR2 | SBL2 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (vph) | 220 | 20 | 209 | 31 | 3 | 6 | 3 | 14 | 64 | 1 | 13 | 3 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width | 16 | 16 | 16 | 16 | 12 | 12 | 12 | 16 | 16 | 16 | 16 | 16 |
| Grade (%) | | -2% | | | | 3% | | | 4% | | | |
| Total Lost time (s) | | 6.0 | | | | 6.0 | | | 6.0 | | | |
| Lane Util. Factor | | 1.00 | | | | 1.00 | | | 1.00 | | | |
| Frt | | 0.93 | | | | 0.95 | | | 0.98 | | | |
| Flt Protected | | 0.98 | | | | 0.98 | | | 0.99 | | | |
| Satd. Flow (prot) | | 1935 | | | | 1758 | | | 1991 | | | |
| Flt Permitted | | 0.98 | | | | 0.98 | | | 0.90 | | | |
| Satd. Flow (perm) | | 1935 | | | | 1758 | | | 1816 | | | |
| Peak-hour factor, PHF | 0.83 | 0.71 | 0.88 | 0.75 | 0.38 | 0.75 | 0.38 | 0.56 | 0.83 | 0.25 | 0.75 | 0.75 |
| Adj. Flow (vph) | 265 | 28 | 238 | 41 | 8 | 8 | 8 | 25 | 77 | 4 | 17 | 4 |
| RTOR Reduction (vph) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Lane Group Flow (vph) | 0 | 572 | 0 | 0 | 0 | 24 | 0 | 0 | 123 | 0 | 0 | 0 |
| Heavy Vehicles (%) | 5% | 0% | 0% | 4% | 0% | 0% | 0% | 0% | 4% | 0% | 0% | 0% |
| Turn Type | Split | | | | Split | | | Perm | | | | Perm |
| Protected Phases | 4 | 4 | | | 8 | 8 | | | 2 | | | |
| Permitted Phases | | | | | | | | 2 | | | | 6 |
| Actuated Green, G (s) | | 40.5 | | | | 6.0 | | | 45.5 | | | |
| Effective Green, g (s) | | 40.5 | | | | 6.0 | | | 45.5 | | | |
| Actuated g/C Ratio | | 0.28 | | | | 0.04 | | | 0.31 | | | |
| Clearance Time (s) | | 6.0 | | | | 6.0 | | | 6.0 | | | |
| Vehicle Extension (s) | | 5.0 | | | | 5.0 | | | 5.0 | | | |
| Lane Grp Cap (vph) | | 535 | | | | 72 | | | 564 | | | |
| v/s Ratio Prot | | c0.30 | | | | c0.01 | | | | | | |
| v/s Ratio Perm | | | | | | | | | 0.07 | | | |
| v/c Ratio | | 1.07 | | | | 0.33 | | | 0.22 | | | |
| Uniform Delay, d1 | | 53.0 | | | | 68.4 | | | 37.4 | | | |
| Progression Factor | | 1.00 | | | | 1.00 | | | 1.00 | | | |
| Incremental Delay, d2 | | 58.7 | | | | 5.6 | | | 0.9 | | | |
| Delay (s) | | 111.7 | | | | 74.0 | | | 38.3 | | | |
| Level of Service | | F | | | | E | | | D | | | |
| Approach Delay (s) | | 111.7 | | | | 74.0 | | | 38.3 | | | |
| Approach LOS | | F | | | | E | | | D | | | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM Average Control Delay | 79.2 | HCM Level of Service | E |
| HCM Volume to Capacity ratio | 0.74 | | |
| Actuated Cycle Length (s) | 146.6 | Sum of lost time (s) | 24.0 |
| Intersection Capacity Utilization | 81.2% | ICU Level of Service | D |
| Analysis Period (min) | 15 | | |

c Critical Lane Group

| Movement | SBL | SBT | SBR | NWL2 | NWL | NWR | NWR2 |
|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | |
| Volume (vph) | 8 | 61 | 162 | 12 | 266 | 18 | 1 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width | 16 | 16 | 16 | 16 | 16 | 16 | 16 |
| Grade (%) | | 0% | | | 6% | | |
| Total Lost time (s) | | 6.0 | | | 6.0 | | |
| Lane Util. Factor | | 1.00 | | | 1.00 | | |
| Frt | | 0.91 | | | 0.99 | | |
| Flt Protected | | 1.00 | | | 0.96 | | |
| Satd. Flow (prot) | | 1937 | | | 1932 | | |
| Flt Permitted | | 0.97 | | | 0.96 | | |
| Satd. Flow (perm) | | 1893 | | | 1932 | | |
| Peak-hour factor, PHF | 0.50 | 0.88 | 0.87 | 0.70 | 0.95 | 0.75 | 0.25 |
| Adj. Flow (vph) | 16 | 69 | 186 | 17 | 280 | 24 | 4 |
| RTOR Reduction (vph) | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Lane Group Flow (vph) | 0 | 275 | 0 | 0 | 325 | 0 | 0 |
| Heavy Vehicles (%) | 0% | 0% | 1% | 0% | 2% | 6% | 0% |
| Turn Type | Perm | | | Split | | | |
| Protected Phases | | 6 | | 9 | 9 | | |
| Permitted Phases | 6 | | | | | | |
| Actuated Green, G (s) | | 45.5 | | | 30.6 | | |
| Effective Green, g (s) | | 45.5 | | | 30.6 | | |
| Actuated g/C Ratio | | 0.31 | | | 0.21 | | |
| Clearance Time (s) | | 6.0 | | | 6.0 | | |
| Vehicle Extension (s) | | 5.0 | | | 5.0 | | |
| Lane Grp Cap (vph) | | 588 | | | 403 | | |
| v/s Ratio Prot | | | | | c0.17 | | |
| v/s Ratio Perm | | c0.15 | | | | | |
| v/c Ratio | | 0.47 | | | 0.81 | | |
| Uniform Delay, d1 | | 40.8 | | | 55.2 | | |
| Progression Factor | | 1.00 | | | 1.00 | | |
| Incremental Delay, d2 | | 2.7 | | | 12.7 | | |
| Delay (s) | | 43.4 | | | 67.9 | | |
| Level of Service | | D | | | E | | |
| Approach Delay (s) | | 43.4 | | | 67.9 | | |
| Approach LOS | | D | | | E | | |

| Intersection Summary |
|---|

# APPENDIX L

# 2013 Future with Development Capacity/Level-of-Service Analysis Worksheets

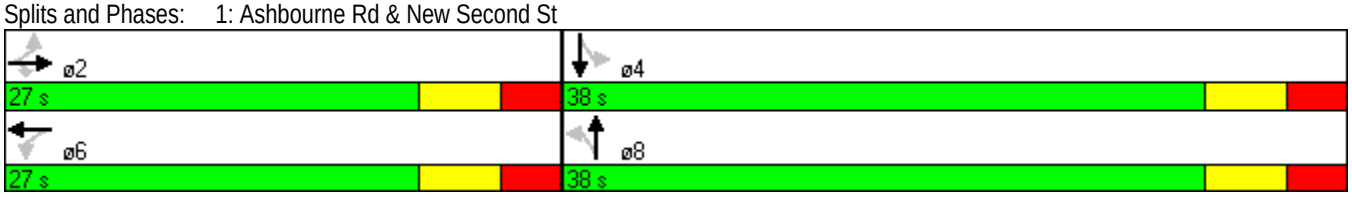
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (vph) | 98 | 145 | 19 | 6 | 200 | 111 | 15 | 314 | 9 | 82 | 448 | 73 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width (ft) | 12 | 12 | 14 | 16 | 16 | 16 | 16 | 16 | 16 | 12 | 12 | 12 |
| Grade (%) | | -9% | | | 8% | | | 3% | | | -2% | |
| Storage Length (ft) | 0 | | 110 | 0 | | 0 | 0 | | 0 | 0 | | 0 |
| Storage Lanes | 0 | | 1 | 0 | | 0 | 0 | | 0 | 0 | | 0 |
| Taper Length (ft) | 25 | | 75 | 25 | | 25 | 25 | | 25 | 25 | | 25 |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Ped Bike Factor | | | | | | | | | | | | |
| Frt | | | 0.850 | | 0.951 | | | 0.994 | | | 0.980 | |
| Flt Protected | | 0.977 | | | 0.998 | | | 0.997 | | | 0.993 | |
| Satd. Flow (prot) | 0 | 1858 | 1622 | 0 | 1878 | 0 | 0 | 2083 | 0 | 0 | 1783 | 0 |
| Flt Permitted | | 0.590 | | | 0.983 | | | 0.942 | | | 0.868 | |
| Satd. Flow (perm) | 0 | 1122 | 1622 | 0 | 1850 | 0 | 0 | 1968 | 0 | 0 | 1559 | 0 |
| Right Turn on Red | | | Yes | | | No | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | | 36 | | | | | 5 | | | 18 | |
| Link Speed (mph) | | 25 | | | 25 | | | 35 | | | 35 | |
| Link Distance (ft) | | 500 | | | 2250 | | | 500 | | | 500 | |
| Travel Time (s) | | 13.6 | | | 61.4 | | | 9.7 | | | 9.7 | |
| Confl. Peds. (#/hr) | | | | | | | | | | | | |
| Confl. Bikes (#/hr) | | | | | | | | | | | | |
| Peak Hour Factor | 0.69 | 0.90 | 0.53 | 0.50 | 0.87 | 0.81 | 0.63 | 0.79 | 0.45 | 0.78 | 0.87 | 0.69 |
| Growth Factor | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% |
| Heavy Vehicles (%) | 6% | 3% | 11% | 0% | 2% | 9% | 0% | 1% | 0% | 12% | 3% | 6% |
| Bus Blockages (#/hr) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Parking (#/hr) | | | | | | | | | | | | |
| Mid-Block Traffic (%) | | 0% | | | 0% | | | 0% | | | 0% | |
| Adj. Flow (vph) | 142 | 161 | 36 | 12 | 230 | 137 | 24 | 397 | 20 | 105 | 515 | 106 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 303 | 36 | 0 | 379 | 0 | 0 | 441 | 0 | 0 | 726 | 0 |
| Number of Detectors | 1 | 0 | 0 | 1 | 0 | | 1 | 0 | | 1 | 0 | |
| Detector Template | | | | | | | | | | | | |
| Leading Detector (ft) | 35 | 0 | 0 | 35 | 0 | | 35 | 0 | | 35 | 0 | |
| Trailing Detector (ft) | -5 | 0 | 0 | -5 | 0 | | -5 | 0 | | -5 | 0 | |
| Turn Type | Perm | | Perm | Perm | | | Perm | | | Perm | | |
| Protected Phases | | 2 | | | 6 | | | 8 | | | 4 | |
| Permitted Phases | 2 | | 2 | 6 | | | 8 | | | 4 | | |
| Detector Phase | 2 | 2 | 2 | 6 | 6 | | 8 | 8 | | 4 | 4 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 20.0 | 20.0 | 20.0 | 20.0 | 20.0 | | 31.0 | 31.0 | | 31.0 | 31.0 | |
| Minimum Split (s) | 27.0 | 27.0 | 27.0 | 27.0 | 27.0 | | 38.0 | 38.0 | | 38.0 | 38.0 | |
| Total Split (s) | 27.0 | 27.0 | 27.0 | 27.0 | 27.0 | 0.0 | 38.0 | 38.0 | 0.0 | 38.0 | 38.0 | 0.0 |
| Total Split (%) | 41.5% | 41.5% | 41.5% | 41.5% | 41.5% | 0.0% | 58.5% | 58.5% | 0.0% | 58.5% | 58.5% | 0.0% |
| Maximum Green (s) | 20.0 | 20.0 | 20.0 | 20.0 | 20.0 | | 31.0 | 31.0 | | 31.0 | 31.0 | |
| Yellow Time (s) | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | | 4.0 | 4.0 | | 4.0 | 4.0 | |
| All-Red Time (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | |
| Lost Time Adjust (s) | -1.0 | 0.0 | 0.0 | -1.0 | 0.0 | 0.0 | -1.0 | 0.0 | 0.0 | -1.0 | 0.0 | 0.0 |
| Total Lost Time (s) | 6.0 | 7.0 | 7.0 | 6.0 | 7.0 | 4.0 | 6.0 | 7.0 | 4.0 | 6.0 | 7.0 | 4.0 |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lead/Lag | | | | | | | | | | | | |
| Lead-Lag Optimize? | | | | | | | | | | | | |
| Vehicle Extension (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | |
| Minimum Gap (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | |
| Time Before Reduce (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Time To Reduce (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Recall Mode | Max | Max | Max | Max | Max | | Max | Max | | Max | Max | |
| Walk Time (s) | | | | | | | | | | | | |
| Flash Dont Walk (s) | | | | | | | | | | | | |
| Pedestrian Calls (#/hr) | | | | | | | | | | | | |
| v/c Ratio | | 0.88 | 0.07 | | 0.67 | | | 0.47 | | | 0.96 | |
| Control Delay | | 50.7 | 6.6 | | 26.4 | | | 13.4 | | | 44.3 | |
| Queue Delay | | 0.0 | 0.0 | | 0.0 | | | 0.0 | | | 0.0 | |
| Total Delay | | 50.7 | 6.6 | | 26.4 | | | 13.4 | | | 44.3 | |
| Queue Length 50th (ft) | | 113 | 0 | | 129 | | | 109 | | | 256 | |
| Queue Length 95th (ft) | | #247 | 6 | | 205 | | | 148 | | | #460 | |
| Internal Link Dist (ft) | | 420 | | | 2170 | | | 420 | | | 420 | |
| Turn Bay Length (ft) | | | 110 | | | | | | | | | |
| Base Capacity (vph) | | 345 | 524 | | 569 | | | 941 | | | 753 | |
| Starvation Cap Reductn | | 0 | 0 | | 0 | | | 0 | | | 0 | |
| Spillback Cap Reductn | | 0 | 0 | | 0 | | | 0 | | | 0 | |
| Storage Cap Reductn | | 0 | 0 | | 0 | | | 0 | | | 0 | |
| Reduced v/c Ratio | | 0.88 | 0.07 | | 0.67 | | | 0.47 | | | 0.96 | |

## Intersection Summary

Area Type: Other
Cycle Length: 65
Actuated Cycle Length: 65
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow
Natural Cycle: 70
Control Type: Pretimed
# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 1: Ashbourne Rd & New Second St



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (vph) | 98 | 145 | 19 | 6 | 200 | 111 | 15 | 314 | 9 | 82 | 448 | 73 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width | 12 | 12 | 14 | 16 | 16 | 16 | 16 | 16 | 16 | 12 | 12 | 12 |
| Grade (%) | | -9% | | | 8% | | | 3% | | | -2% | |
| Total Lost time (s) | | 7.0 | 7.0 | | 7.0 | | | 7.0 | | | 7.0 | |
| Lane Util. Factor | | 1.00 | 1.00 | | 1.00 | | | 1.00 | | | 1.00 | |
| Frt | | 1.00 | 0.85 | | 0.95 | | | 0.99 | | | 0.98 | |
| Flt Protected | | 0.98 | 1.00 | | 1.00 | | | 1.00 | | | 0.99 | |
| Satd. Flow (prot) | | 1858 | 1622 | | 1879 | | | 2084 | | | 1783 | |
| Flt Permitted | | 0.59 | 1.00 | | 0.98 | | | 0.94 | | | 0.87 | |
| Satd. Flow (perm) | | 1122 | 1622 | | 1850 | | | 1969 | | | 1560 | |
| Peak-hour factor, PHF | 0.69 | 0.90 | 0.53 | 0.50 | 0.87 | 0.81 | 0.63 | 0.79 | 0.45 | 0.78 | 0.87 | 0.69 |
| Adj. Flow (vph) | 142 | 161 | 36 | 12 | 230 | 137 | 24 | 397 | 20 | 105 | 515 | 106 |
| RTOR Reduction (vph) | 0 | 0 | 25 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 9 | 0 |
| Lane Group Flow (vph) | 0 | 303 | 11 | 0 | 379 | 0 | 0 | 438 | 0 | 0 | 717 | 0 |
| Heavy Vehicles (%) | 6% | 3% | 11% | 0% | 2% | 9% | 0% | 1% | 0% | 12% | 3% | 6% |
| Turn Type | Perm | | Perm | Perm | | | Perm | | | Perm | | |
| Protected Phases | | 2 | | | 6 | | | 8 | | | 4 | |
| Permitted Phases | 2 | | 2 | 6 | | | 8 | | | 4 | | |
| Actuated Green, G (s) | | 20.0 | 20.0 | | 20.0 | | | 31.0 | | | 31.0 | |
| Effective Green, g (s) | | 20.0 | 20.0 | | 20.0 | | | 31.0 | | | 31.0 | |
| Actuated g/C Ratio | | 0.31 | 0.31 | | 0.31 | | | 0.48 | | | 0.48 | |
| Clearance Time (s) | | 7.0 | 7.0 | | 7.0 | | | 7.0 | | | 7.0 | |
| Lane Grp Cap (vph) | | 345 | 499 | | 569 | | | 939 | | | 744 | |
| v/s Ratio Prot | | | | | | | | | | | | |
| v/s Ratio Perm | | c0.27 | 0.01 | | 0.20 | | | 0.22 | | | c0.46 | |
| v/c Ratio | | 0.88 | 0.02 | | 0.67 | | | 0.47 | | | 0.96 | |
| Uniform Delay, d1 | | 21.3 | 15.7 | | 19.6 | | | 11.4 | | | 16.4 | |
| Progression Factor | | 1.00 | 1.00 | | 1.00 | | | 1.00 | | | 1.00 | |
| Incremental Delay, d2 | | 25.6 | 0.1 | | 6.1 | | | 1.7 | | | 25.1 | |
| Delay (s) | | 47.0 | 15.8 | | 25.7 | | | 13.1 | | | 41.6 | |
| Level of Service | | D | B | | C | | | B | | | D | |
| Approach Delay (s) | | 43.7 | | | 25.7 | | | 13.1 | | | 41.6 | |
| Approach LOS | | D | | | C | | | B | | | D | |

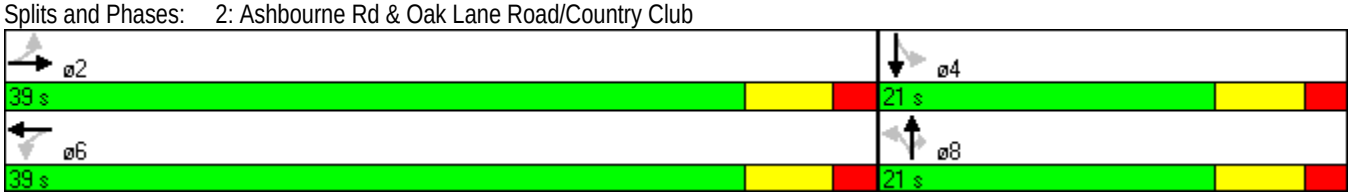
| Intersection Summary | | | |
|---|---|---|---|
| HCM Average Control Delay | 32.1 | HCM Level of Service | C |
| HCM Volume to Capacity ratio | 0.93 | | |
| Actuated Cycle Length (s) | 65.0 | Sum of lost time (s) | 14.0 |
| Intersection Capacity Utilization | 112.4% | ICU Level of Service | H |
| Analysis Period (min) | 15 | | |
| c Critical Lane Group | | | |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (vph) | 4 | 211 | 21 | 190 | 276 | 2 | 33 | 0 | 140 | 0 | 1 | 8 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width (ft) | 11 | 11 | 11 | 10 | 12 | 12 | 11 | 11 | 14 | 10 | 10 | 10 |
| Grade (%) | | 1% | | | 1% | | | -2% | | | 1% | |
| Storage Length (ft) | 140 | | 0 | 150 | | 0 | 0 | | 150 | 0 | | 0 |
| Storage Lanes | 1 | | 0 | 1 | | 0 | 0 | | 1 | 0 | | 0 |
| Taper Length (ft) | 75 | | 25 | 75 | | 25 | 25 | | 75 | 25 | | 25 |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Ped Bike Factor | | | | | | | | | | | | |
| Frt | | 0.985 | | | 0.996 | | | | 0.850 | | 0.887 | |
| Flt Protected | 0.950 | | | 0.950 | | | | 0.950 | | | | |
| Satd. Flow (prot) | 1157 | 1734 | 0 | 1538 | 1865 | 0 | 0 | 1762 | 1567 | 0 | 1189 | 0 |
| Flt Permitted | 0.562 | | | 0.587 | | | | 0.742 | | | | |
| Satd. Flow (perm) | 685 | 1734 | 0 | 950 | 1865 | 0 | 0 | 1376 | 1567 | 0 | 1189 | 0 |
| Right Turn on Red | | | No | | | Yes | | | Yes | | | No |
| Satd. Flow (RTOR) | | | | | 3 | | | | 194 | | | |
| Link Speed (mph) | | 35 | | | 35 | | | 35 | | | 35 | |
| Link Distance (ft) | | 2250 | | | 325 | | | 280 | | | 300 | |
| Travel Time (s) | | 43.8 | | | 6.3 | | | 5.5 | | | 5.8 | |
| Confl. Peds. (#/hr) | | | | | | | | | | | | |
| Confl. Bikes (#/hr) | | | | | | | | | | | | |
| Peak Hour Factor | 0.50 | 0.83 | 0.75 | 0.86 | 0.86 | 0.25 | 0.65 | 0.25 | 0.72 | 0.25 | 0.25 | 0.40 |
| Growth Factor | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% |
| Heavy Vehicles (%) | 50% | 3% | 11% | 9% | 1% | 0% | 0% | 0% | 11% | 0% | 0% | 38% |
| Bus Blockages (#/hr) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Parking (#/hr) | | | | | | | | | | | | |
| Mid-Block Traffic (%) | | 0% | | | 0% | | | 0% | | | 0% | |
| Adj. Flow (vph) | 8 | 254 | 28 | 221 | 321 | 8 | 51 | 0 | 194 | 0 | 4 | 20 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 8 | 282 | 0 | 221 | 329 | 0 | 0 | 51 | 194 | 0 | 24 | 0 |
| Number of Detectors | 0 | 0 | | 0 | 0 | | 1 | 1 | 1 | 1 | 1 | |
| Detector Template | | | | | | | | | | | | |
| Leading Detector (ft) | 0 | 0 | | 0 | 0 | | 35 | 35 | 35 | 20 | 20 | |
| Trailing Detector (ft) | 0 | 0 | | 0 | 0 | | -5 | -5 | -5 | -5 | -5 | |
| Turn Type | Perm | | | Perm | | | Perm | | Perm | Perm | | |
| Protected Phases | | 2 | | | 6 | | | 8 | | | 4 | |
| Permitted Phases | 2 | | | 6 | | | 8 | | 8 | 4 | | |
| Detector Phase | 2 | 2 | | 6 | 6 | | 8 | 8 | 8 | 4 | 4 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 33.0 | 33.0 | | 33.0 | 33.0 | | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | |
| Minimum Split (s) | 39.0 | 39.0 | | 39.0 | 39.0 | | 9.0 | 9.0 | 9.0 | 9.0 | 9.0 | |
| Total Split (s) | 39.0 | 39.0 | 0.0 | 39.0 | 39.0 | 0.0 | 21.0 | 21.0 | 21.0 | 21.0 | 21.0 | 0.0 |
| Total Split (%) | 65.0% | 65.0% | 0.0% | 65.0% | 65.0% | 0.0% | 35.0% | 35.0% | 35.0% | 35.0% | 35.0% | 0.0% |
| Maximum Green (s) | 33.0 | 33.0 | | 33.0 | 33.0 | | 15.0 | 15.0 | 15.0 | 15.0 | 15.0 | |
| Yellow Time (s) | 4.0 | 4.0 | | 4.0 | 4.0 | | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | |
| All-Red Time (s) | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | |
| Lost Time Adjust (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | -2.0 | 0.0 | 0.0 | -2.0 | 0.0 | 0.0 |
| Total Lost Time (s) | 6.0 | 6.0 | 4.0 | 6.0 | 6.0 | 4.0 | 4.0 | 6.0 | 6.0 | 4.0 | 6.0 | 4.0 |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lead/Lag | | | | | | | | | | | | |
| Lead-Lag Optimize? | | | | | | | | | | | | |
| Vehicle Extension (s) | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | |
| Minimum Gap (s) | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | |
| Time Before Reduce (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| Time To Reduce (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| Recall Mode | Min | Min | | Min | Min | | None | None | None | None | None | |
| Walk Time (s) | | | | | | | | | | | | |
| Flash Dont Walk (s) | | | | | | | | | | | | |
| Pedestrian Calls (#/hr) | | | | | | | | | | | | |
| v/c Ratio | 0.02 | 0.26 | | 0.37 | 0.28 | | | 0.26 | 0.49 | | 0.14 | |
| Control Delay | 4.8 | 5.5 | | 7.5 | 5.6 | | | 23.0 | 8.6 | | 21.1 | |
| Queue Delay | 0.0 | 0.0 | | 0.0 | 0.0 | | | 0.0 | 0.0 | | 0.0 | |
| Total Delay | 4.8 | 5.5 | | 7.5 | 5.6 | | | 23.0 | 8.6 | | 21.1 | |
| Queue Length 50th (ft) | 1 | 31 | | 27 | 37 | | | 14 | 0 | | 7 | |
| Queue Length 95th (ft) | 3 | 66 | | 69 | 78 | | | 10 | 22 | | 6 | |
| Internal Link Dist (ft) | | 2170 | | | 245 | | | 200 | | | 220 | |
| Turn Bay Length (ft) | 140 | | | 150 | | | | | 150 | | | |
| Base Capacity (vph) | 433 | 1095 | | 600 | 1179 | | | 385 | 578 | | 332 | |
| Starvation Cap Reductn | 0 | 0 | | 0 | 0 | | | 0 | 0 | | 0 | |
| Spillback Cap Reductn | 0 | 0 | | 0 | 0 | | | 0 | 0 | | 0 | |
| Storage Cap Reductn | 0 | 0 | | 0 | 0 | | | 0 | 0 | | 0 | |
| Reduced v/c Ratio | 0.02 | 0.26 | | 0.37 | 0.28 | | | 0.13 | 0.34 | | 0.07 | |

| Intersection Summary | |
|---|---|
| Area Type: | Other |
| Cycle Length: 60 | |
| Actuated Cycle Length: 53.7 | |
| Natural Cycle: 50 | |
| Control Type: Actuated-Uncoordinated | |

Splits and Phases: 2: Ashbourne Rd & Oak Lane Road/Country Club



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (vph) | 4 | 211 | 21 | 190 | 276 | 2 | 33 | 0 | 140 | 0 | 1 | 8 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width | 11 | 11 | 11 | 10 | 12 | 12 | 11 | 11 | 14 | 10 | 10 | 10 |
| Grade (%) | | 1% | | | 1% | | | -2% | | | 1% | |
| Total Lost time (s) | 6.0 | 6.0 | | 6.0 | 6.0 | | | 6.0 | 6.0 | | 6.0 | |
| Lane Util. Factor | 1.00 | 1.00 | | 1.00 | 1.00 | | | 1.00 | 1.00 | | 1.00 | |
| Frt | 1.00 | 0.99 | | 1.00 | 1.00 | | | 1.00 | 0.85 | | 0.89 | |
| Flt Protected | 0.95 | 1.00 | | 0.95 | 1.00 | | | 0.95 | 1.00 | | 1.00 | |
| Satd. Flow (prot) | 1157 | 1734 | | 1538 | 1865 | | | 1762 | 1567 | | 1189 | |
| Flt Permitted | 0.56 | 1.00 | | 0.59 | 1.00 | | | 0.74 | 1.00 | | 1.00 | |
| Satd. Flow (perm) | 685 | 1734 | | 950 | 1865 | | | 1376 | 1567 | | 1189 | |
| Peak-hour factor, PHF | 0.50 | 0.83 | 0.75 | 0.86 | 0.86 | 0.25 | 0.65 | 0.25 | 0.72 | 0.25 | 0.25 | 0.40 |
| Adj. Flow (vph) | 8 | 254 | 28 | 221 | 321 | 8 | 51 | 0 | 194 | 0 | 4 | 20 |
| RTOR Reduction (vph) | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 166 | 0 | 0 | 0 |
| Lane Group Flow (vph) | 8 | 282 | 0 | 221 | 328 | 0 | 0 | 51 | 28 | 0 | 24 | 0 |
| Heavy Vehicles (%) | 50% | 3% | 11% | 9% | 1% | 0% | 0% | 0% | 11% | 0% | 0% | 38% |
| Turn Type | Perm | | | Perm | | | Perm | | Perm | Perm | | |
| Protected Phases | | 2 | | | 6 | | | 8 | | | 4 | |
| Permitted Phases | 2 | | | 6 | | | 8 | | 8 | 4 | | |
| Actuated Green, G (s) | 33.9 | 33.9 | | 33.9 | 33.9 | | | 7.8 | 7.8 | | 7.8 | |
| Effective Green, g (s) | 33.9 | 33.9 | | 33.9 | 33.9 | | | 7.8 | 7.8 | | 7.8 | |
| Actuated g/C Ratio | 0.63 | 0.63 | | 0.63 | 0.63 | | | 0.15 | 0.15 | | 0.15 | |
| Clearance Time (s) | 6.0 | 6.0 | | 6.0 | 6.0 | | | 6.0 | 6.0 | | 6.0 | |
| Vehicle Extension (s) | 3.0 | 3.0 | | 3.0 | 3.0 | | | 3.0 | 3.0 | | 3.0 | |
| Lane Grp Cap (vph) | 432 | 1095 | | 600 | 1177 | | | 200 | 228 | | 173 | |
| v/s Ratio Prot | | 0.16 | | | 0.18 | | | | | | 0.02 | |
| v/s Ratio Perm | 0.01 | | | c0.23 | | | | c0.04 | 0.02 | | | |
| v/c Ratio | 0.02 | 0.26 | | 0.37 | 0.28 | | | 0.26 | 0.12 | | 0.14 | |
| Uniform Delay, d1 | 3.7 | 4.4 | | 4.8 | 4.4 | | | 20.4 | 20.0 | | 20.0 | |
| Progression Factor | 1.00 | 1.00 | | 1.00 | 1.00 | | | 1.00 | 1.00 | | 1.00 | |
| Incremental Delay, d2 | 0.0 | 0.1 | | 0.4 | 0.1 | | | 0.7 | 0.2 | | 0.4 | |
| Delay (s) | 3.7 | 4.5 | | 5.1 | 4.6 | | | 21.0 | 20.2 | | 20.4 | |
| Level of Service | A | A | | A | A | | | C | C | | C | |
| Approach Delay (s) | | 4.5 | | | 4.8 | | | 20.4 | | | 20.4 | |
| Approach LOS | | A | | | A | | | C | | | C | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM Average Control Delay | 8.5 | HCM Level of Service | A |
| HCM Volume to Capacity ratio | 0.35 | | |
| Actuated Cycle Length (s) | 53.7 | Sum of lost time (s) | 12.0 |
| Intersection Capacity Utilization | 78.5% | ICU Level of Service | D |
| Analysis Period (min) | 15 | | |

c Critical Lane Group

| Lane Group | EBT | EBR | WBL | WBT | NBL | NBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (vph) | 350 | 1 | 2 | 466 | 2 | 3 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width (ft) | 12 | 12 | 12 | 12 | 12 | 12 |
| Grade (%) | -2% | | | 1% | 0% | |
| Storage Length (ft) | | 0 | 0 | | 0 | 0 |
| Storage Lanes | | 0 | 0 | | 1 | 0 |
| Taper Length (ft) | | 25 | 25 | | 25 | 25 |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Ped Bike Factor | | | | | | |
| Frt | | | | | 0.919 | |
| Flt Protected | | | | | 0.980 | |
| Satd. Flow (prot) | 1811 | 0 | 0 | 1801 | 1711 | 0 |
| Flt Permitted | | | | | 0.980 | |
| Satd. Flow (perm) | 1811 | 0 | 0 | 1801 | 1711 | 0 |
| Link Speed (mph) | 35 | | | 35 | 25 | |
| Link Distance (ft) | 325 | | | 455 | 200 | |
| Travel Time (s) | 6.3 | | | 8.9 | 5.5 | |
| Confl. Peds. (#/hr) | | | | | | |
| Confl. Bikes (#/hr) | | | | | | |
| Peak Hour Factor | 0.89 | 0.90 | 0.90 | 0.92 | 0.90 | 0.90 |
| Growth Factor | 100% | 100% | 100% | 100% | 100% | 100% |
| Heavy Vehicles (%) | 6% | 0% | 0% | 5% | 0% | 0% |
| Bus Blockages (#/hr) | 0 | 0 | 0 | 0 | 0 | 0 |
| Parking (#/hr) | | | | | | |
| Mid-Block Traffic (%) | 0% | | | 0% | 0% | |
| Adj. Flow (vph) | 393 | 1 | 2 | 507 | 2 | 3 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 394 | 0 | 0 | 509 | 5 | 0 |
| Sign Control | Free | | | Free | Stop | |

| Intersection Summary | |
|---|---|
| Area Type: | Other |
| Control Type: Unsignalized | |

| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (veh/h) | 350 | 1 | 2 | 466 | 2 | 3 |
| Sign Control | Free | | | Free | Stop | |
| Grade | -2% | | | 1% | 0% | |
| Peak Hour Factor | 0.89 | 0.90 | 0.90 | 0.92 | 0.90 | 0.90 |
| Hourly flow rate (vph) | 393 | 1 | 2 | 507 | 2 | 3 |
| Pedestrians | | | | | | |
| Lane Width (ft) | | | | | | |
| Walking Speed (ft/s) | | | | | | |
| Percent Blockage | | | | | | |
| Right turn flare (veh) | | | | | | |
| Median type | None | | | None | | |
| Median storage veh) | | | | | | |
| Upstream signal (ft) | 325 | | | 1025 | | |
| pX, platoon unblocked | | | 0.99 | | 0.99 | 0.99 |
| vC, conflicting volume | | | 394 | | 905 | 394 |
| vC1, stage 1 conf vol | | | | | | |
| vC2, stage 2 conf vol | | | | | | |
| vCu, unblocked vol | | | 385 | | 900 | 384 |
| tC, single (s) | | | 4.1 | | 6.4 | 6.2 |
| tC, 2 stage (s) | | | | | | |
| tF (s) | | | 2.2 | | 3.5 | 3.3 |
| p0 queue free % | | | 100 | | 99 | 99 |
| cM capacity (veh/h) | | | 1175 | | 308 | 662 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 |
|---|---|---|---|
| Volume Total | 394 | 509 | 6 |
| Volume Left | 0 | 2 | 2 |
| Volume Right | 1 | 0 | 3 |
| cSH | 1700 | 1175 | 454 |
| Volume to Capacity | 0.23 | 0.00 | 0.01 |
| Queue Length 95th (ft) | 0 | 0 | 1 |
| Control Delay (s) | 0.0 | 0.1 | 13.0 |
| Lane LOS | | A | B |
| Approach Delay (s) | 0.0 | 0.1 | 13.0 |
| Approach LOS | | | B |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 0.1 | | |
| Intersection Capacity Utilization | 36.1% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |

| Lane Group | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (vph) | 1 | 0 | 173 | 1 | 0 | 212 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width (ft) | 12 | 12 | 12 | 12 | 12 | 12 |
| Grade (%) | 0% | | -2% | | | 0% |
| Storage Length (ft) | 0 | 0 | | 0 | 0 | |
| Storage Lanes | 1 | 0 | | 0 | 0 | |
| Taper Length (ft) | 25 | 25 | | 25 | 25 | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Ped Bike Factor | | | | | | |
| Frt | | | 0.999 | | | |
| Flt Protected | 0.950 | | | | | |
| Satd. Flow (prot) | 1805 | 0 | 1743 | 0 | 0 | 1743 |
| Flt Permitted | 0.950 | | | | | |
| Satd. Flow (perm) | 1805 | 0 | 1743 | 0 | 0 | 1743 |
| Link Speed (mph) | 25 | | 35 | | | 35 |
| Link Distance (ft) | 250 | | 260 | | | 280 |
| Travel Time (s) | 6.8 | | 5.1 | | | 5.5 |
| Confl. Peds. (#/hr) | | | | | | |
| Confl. Bikes (#/hr) | | | | | | |
| Peak Hour Factor | 0.90 | 0.90 | 0.76 | 0.90 | 0.90 | 0.88 |
| Growth Factor | 100% | 100% | 100% | 100% | 100% | 100% |
| Heavy Vehicles (%) | 0% | 0% | 10% | 0% | 0% | 9% |
| Bus Blockages (#/hr) | 0 | 0 | 0 | 0 | 0 | 0 |
| Parking (#/hr) | | | | | | |
| Mid-Block Traffic (%) | 0% | | 0% | | | 0% |
| Adj. Flow (vph) | 1 | 0 | 228 | 1 | 0 | 241 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 1 | 0 | 229 | 0 | 0 | 241 |
| Sign Control | Stop | | Free | | | Free |

| Intersection Summary | |
|---|---|
| Area Type: | Other |
| Control Type: Unsignalized | |

| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (veh/h) | 1 | 0 | 173 | 1 | 0 | 212 |
| Sign Control | Stop | | Free | | | Free |
| Grade | 0% | | -2% | | | 0% |
| Peak Hour Factor | 0.90 | 0.90 | 0.76 | 0.90 | 0.90 | 0.88 |
| Hourly flow rate (vph) | 1 | 0 | 228 | 1 | 0 | 241 |
| Pedestrians | | | | | | |
| Lane Width (ft) | | | | | | |
| Walking Speed (ft/s) | | | | | | |
| Percent Blockage | | | | | | |
| Right turn flare (veh) | | | | | | |
| Median type | | | None | | | None |
| Median storage veh) | | | | | | |
| Upstream signal (ft) | | | | | | 280 |
| pX, platoon unblocked | 0.98 | | | | | |
| vC, conflicting volume | 469 | 228 | | | 229 | |
| vC1, stage 1 conf vol | | | | | | |
| vC2, stage 2 conf vol | | | | | | |
| vCu, unblocked vol | 453 | 228 | | | 229 | |
| tC, single (s) | 6.4 | 6.2 | | | 4.1 | |
| tC, 2 stage (s) | | | | | | |
| tF (s) | 3.5 | 3.3 | | | 2.2 | |
| p0 queue free % | 100 | 100 | | | 100 | |
| cM capacity (veh/h) | 560 | 816 | | | 1351 | |

| Direction, Lane # | WB 1 | NB 1 | SB 1 |
|---|---|---|---|
| Volume Total | 1 | 229 | 241 |
| Volume Left | 1 | 0 | 0 |
| Volume Right | 0 | 1 | 0 |
| cSH | 560 | 1700 | 1351 |
| Volume to Capacity | 0.00 | 0.13 | 0.00 |
| Queue Length 95th (ft) | 0 | 0 | 0 |
| Control Delay (s) | 11.4 | 0.0 | 0.0 |
| Lane LOS | B | | |
| Approach Delay (s) | 11.4 | 0.0 | 0.0 |
| Approach LOS | B | | |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 0.0 | | |
| Intersection Capacity Utilization | 21.2% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |

| Lane Group | EBL | EBT | EBR | EBR2 | WBL2 | WBL | WBT | NBL | NBT | NBR2 | SBL2 | SBL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (vph) | 140 | 3 | 192 | 16 | 1 | 2 | 10 | 20 | 69 | 14 | 2 | 14 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width (ft) | 16 | 16 | 16 | 16 | 12 | 12 | 12 | 16 | 16 | 16 | 16 | 16 |
| Grade (%) | | -2% | | | | | 3% | | 4% | | | |
| Storage Length (ft) | 0 | | 0 | | | 0 | | 0 | | | | 0 |
| Storage Lanes | 0 | | 0 | | | 0 | | 0 | | | | 0 |
| Taper Length (ft) | 25 | | 25 | | | 25 | | 25 | | | | 25 |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Ped Bike Factor | | | | | | | | | | | | |
| Frt | | 0.920 | | | | | | | 0.983 | | | |
| Flt Protected | | 0.981 | | | | | 0.982 | | 0.986 | | | |
| Satd. Flow (prot) | 0 | 1852 | 0 | 0 | 0 | 0 | 1838 | 0 | 1992 | 0 | 0 | 0 |
| Flt Permitted | | 0.981 | | | | | 0.982 | | 0.766 | | | |
| Satd. Flow (perm) | 0 | 1852 | 0 | 0 | 0 | 0 | 1838 | 0 | 1548 | 0 | 0 | 0 |
| Right Turn on Red | | | | No | | | | | | No | | |
| Satd. Flow (RTOR) | | | | | | | | | | | | |
| Link Speed (mph) | | 40 | | | | | 35 | | 25 | | | |
| Link Distance (ft) | | 570 | | | | | 528 | | 500 | | | |
| Travel Time (s) | | 9.7 | | | | | 10.3 | | 13.6 | | | |
| Confl. Peds. (#/hr) | | | | | | | | | | | | |
| Confl. Bikes (#/hr) | | | | | | | | | | | | |
| Peak Hour Factor | 0.90 | 0.25 | 0.88 | 0.69 | 0.25 | 0.25 | 0.50 | 0.46 | 0.75 | 0.75 | 0.25 | 0.58 |
| Growth Factor | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% |
| Heavy Vehicles (%) | 13% | 0% | 1% | 9% | 0% | 0% | 0% | 0% | 3% | 7% | 0% | 0% |
| Bus Blockages (#/hr) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Parking (#/hr) | | | | | | | | | | | | |
| Mid-Block Traffic (%) | | 0% | | | | | 0% | | 0% | | | |
| Adj. Flow (vph) | 156 | 12 | 218 | 23 | 4 | 8 | 20 | 43 | 92 | 19 | 8 | 24 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 409 | 0 | 0 | 0 | 0 | 32 | 0 | 154 | 0 | 0 | 0 |
| Number of Detectors | 1 | 1 | | | 1 | 1 | 1 | 1 | 1 | | 2 | 2 |
| Detector Template | | | | | | | | | | | | |
| Leading Detector (ft) | 35 | 35 | | | 35 | 35 | 35 | 35 | 35 | | 70 | 70 |
| Trailing Detector (ft) | -5 | -5 | | | -5 | -5 | -5 | -5 | -5 | | -5 | -5 |
| Turn Type | Split | | | | Perm | Split | | Perm | | | Perm | Perm |
| Protected Phases | 4 | 4 | | | | 8 | 8 | | 2 | | | |
| Permitted Phases | | | | | 8 | | | 2 | | | 6 | 6 |
| Detector Phase | 4 | 4 | | | 8 | 8 | 8 | 2 | 2 | | 6 | 6 |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 8.0 | 8.0 | | | 5.0 | 5.0 | 5.0 | 8.0 | 8.0 | | 8.0 | 8.0 |
| Minimum Split (s) | 14.0 | 14.0 | | | 11.0 | 11.0 | 11.0 | 14.0 | 14.0 | | 14.0 | 14.0 |
| Total Split (s) | 46.0 | 46.0 | 0.0 | 0.0 | 21.0 | 21.0 | 21.0 | 51.0 | 51.0 | 0.0 | 51.0 | 51.0 |
| Total Split (%) | 28.0% | 28.0% | 0.0% | 0.0% | 12.8% | 12.8% | 12.8% | 31.1% | 31.1% | 0.0% | 31.1% | 31.1% |
| Maximum Green (s) | 40.0 | 40.0 | | | 15.0 | 15.0 | 15.0 | 45.0 | 45.0 | | 45.0 | 45.0 |
| Yellow Time (s) | 4.0 | 4.0 | | | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | | 4.0 | 4.0 |
| All-Red Time (s) | 2.0 | 2.0 | | | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | | 2.0 | 2.0 |
| Lost Time Adjust (s) | -2.0 | 0.0 | 0.0 | 0.0 | -2.0 | -2.0 | 0.0 | -2.0 | 0.0 | 0.0 | -2.0 | -2.0 |
| Total Lost Time (s) | 4.0 | 6.0 | 4.0 | 4.0 | 4.0 | 4.0 | 6.0 | 4.0 | 6.0 | 4.0 | 4.0 | 4.0 |

| Lane Group | SBT | SBR | NWL2 | NWL | NWR |
|---|---|---|---|---|---|
| Lane Configurations | | | | | |
| Volume (vph) | 71 | 198 | 16 | 254 | 15 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width (ft) | 16 | 16 | 16 | 16 | 16 |
| Grade (%) | 0% | | | 6% | |
| Storage Length (ft) | | 0 | | 0 | 0 |
| Storage Lanes | | 0 | | 1 | 0 |
| Taper Length (ft) | | 25 | | 25 | 25 |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Ped Bike Factor | | | | | |
| Frt | 0.915 | | | 0.991 | |
| Flt Protected | 0.995 | | | 0.956 | |
| Satd. Flow (prot) | 1889 | 0 | 0 | 1937 | 0 |
| Flt Permitted | 0.956 | | | 0.956 | |
| Satd. Flow (perm) | 1815 | 0 | 0 | 1937 | 0 |
| Right Turn on Red | | No | | | |
| Satd. Flow (RTOR) | | | | | |
| Link Speed (mph) | 35 | | | 25 | |
| Link Distance (ft) | 500 | | | 574 | |
| Travel Time (s) | 9.7 | | | 15.7 | |
| Confl. Peds. (#/hr) | | | | | |
| Confl. Bikes (#/hr) | | | | | |
| Peak Hour Factor | 0.81 | 0.97 | 0.56 | 0.86 | 0.63 |
| Growth Factor | 100% | 100% | 100% | 100% | 100% |
| Heavy Vehicles (%) | 0% | 6% | 0% | 2% | 7% |
| Bus Blockages (#/hr) | 0 | 0 | 0 | 0 | 0 |
| Parking (#/hr) | | | | | |
| Mid-Block Traffic (%) | 0% | | | 0% | |
| Adj. Flow (vph) | 88 | 204 | 29 | 295 | 24 |
| Shared Lane Traffic (%) | | | | | |
| Lane Group Flow (vph) | 324 | 0 | 0 | 348 | 0 |
| Number of Detectors | 4 | | 1 | 1 | |
| Detector Template | | | | | |
| Leading Detector (ft) | 66 | | 35 | 35 | |
| Trailing Detector (ft) | -5 | | -5 | -5 | |
| Turn Type | | | Split | | |
| Protected Phases | 6 | | 9 | 9 | |
| Permitted Phases | | | | | |
| Detector Phase | 6 | | 9 | 9 | |
| Switch Phase | | | | | |
| Minimum Initial (s) | 8.0 | | 8.0 | 8.0 | |
| Minimum Split (s) | 14.0 | | 14.0 | 14.0 | |
| Total Split (s) | 51.0 | 0.0 | 46.0 | 46.0 | 0.0 |
| Total Split (%) | 31.1% | 0.0% | 28.0% | 28.0% | 0.0% |
| Maximum Green (s) | 45.0 | | 40.0 | 40.0 | |
| Yellow Time (s) | 4.0 | | 4.0 | 4.0 | |
| All-Red Time (s) | 2.0 | | 2.0 | 2.0 | |
| Lost Time Adjust (s) | 0.0 | 0.0 | -2.0 | 0.0 | 0.0 |
| Total Lost Time (s) | 6.0 | 4.0 | 4.0 | 6.0 | 4.0 |

| Lane Group | EBL | EBT | EBR | EBR2 | WBL2 | WBL | WBT | NBL | NBT | NBR2 | SBL2 | SBL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lead/Lag | | | | | | | | | | | | |
| Lead-Lag Optimize? | | | | | | | | | | | | |
| Vehicle Extension (s) | 5.0 | 5.0 | | | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | | 5.0 | 5.0 |
| Minimum Gap (s) | 3.0 | 3.0 | | | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | | 3.0 | 3.0 |
| Time Before Reduce (s) | 0.0 | 0.0 | | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 |
| Time To Reduce (s) | 0.0 | 0.0 | | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 |
| Recall Mode | None | None | | | None | None | None | Max | Max | | Max | Max |
| Walk Time (s) | | | | | | | | | | | | |
| Flash Dont Walk (s) | | | | | | | | | | | | |
| Pedestrian Calls (#/hr) | | | | | | | | | | | | |
| v/c Ratio | | 0.88 | | | | | 0.25 | | 0.32 | | | |
| Control Delay | | 74.1 | | | | | 74.1 | | 44.7 | | | |
| Queue Delay | | 0.0 | | | | | 0.0 | | 0.0 | | | |
| Total Delay | | 74.1 | | | | | 74.1 | | 44.7 | | | |
| Queue Length 50th (ft) | | 392 | | | | | 31 | | 122 | | | |
| Queue Length 95th (ft) | | 124 | | | | | 39 | | 165 | | | |
| Internal Link Dist (ft) | | 490 | | | | | 448 | | 420 | | | |
| Turn Bay Length (ft) | | | | | | | | | | | | |
| Base Capacity (vph) | | 516 | | | | | 192 | | 485 | | | |
| Starvation Cap Reductn | | 0 | | | | | 0 | | 0 | | | |
| Spillback Cap Reductn | | 0 | | | | | 0 | | 0 | | | |
| Storage Cap Reductn | | 0 | | | | | 0 | | 0 | | | |
| Reduced v/c Ratio | | 0.79 | | | | | 0.17 | | 0.32 | | | |

| Intersection Summary | |
|---|---|
| Area Type: | Other |
| Cycle Length: 164 | |
| Actuated Cycle Length: 146.3 | |
| Natural Cycle: 90 | |
| Control Type: Actuated-Uncoordinated | |

Splits and Phases: 5: Ashbourne Rd & Front St

| Lane Group | SBT | SBR | NWL2 | NWL | NWR |
|---|---|---|---|---|---|
| Lead/Lag | | | | | |
| Lead-Lag Optimize? | | | | | |
| Vehicle Extension (s) | 5.0 | | 5.0 | 5.0 | |
| Minimum Gap (s) | 3.0 | | 3.0 | 3.0 | |
| Time Before Reduce (s) | 0.0 | | 0.0 | 0.0 | |
| Time To Reduce (s) | 0.0 | | 0.0 | 0.0 | |
| Recall Mode | Max | | None | None | |
| Walk Time (s) | | | | | |
| Flash Dont Walk (s) | | | | | |
| Pedestrian Calls (#/hr) | | | | | |
| v/c Ratio | 0.57 | | | 0.81 | |
| Control Delay | 50.3 | | | 70.4 | |
| Queue Delay | 0.0 | | | 0.0 | |
| Total Delay | 50.3 | | | 70.4 | |
| Queue Length 50th (ft) | 281 | | | 334 | |
| Queue Length 95th (ft) | 365 | | | 438 | |
| Internal Link Dist (ft) | 420 | | | 494 | |
| Turn Bay Length (ft) | | | | | |
| Base Capacity (vph) | 569 | | | 540 | |
| Starvation Cap Reductn | 0 | | | 0 | |
| Spillback Cap Reductn | 0 | | | 0 | |
| Storage Cap Reductn | 0 | | | 0 | |
| Reduced v/c Ratio | 0.57 | | | 0.64 | |

Intersection Summary

| Movement | EBL | EBT | EBR | EBR2 | WBL2 | WBL | WBT | NBL | NBT | NBR2 | SBL2 | SBL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (vph) | 140 | 3 | 192 | 16 | 1 | 2 | 10 | 20 | 69 | 14 | 2 | 14 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width | 16 | 16 | 16 | 16 | 12 | 12 | 12 | 16 | 16 | 16 | 16 | 16 |
| Grade (%) | | -2% | | | | | 3% | | 4% | | | |
| Total Lost time (s) | | 6.0 | | | | | 6.0 | | 6.0 | | | |
| Lane Util. Factor | | 1.00 | | | | | 1.00 | | 1.00 | | | |
| Frt | | 0.92 | | | | | 1.00 | | 0.98 | | | |
| Flt Protected | | 0.98 | | | | | 0.98 | | 0.99 | | | |
| Satd. Flow (prot) | | 1853 | | | | | 1837 | | 1994 | | | |
| Flt Permitted | | 0.98 | | | | | 0.98 | | 0.77 | | | |
| Satd. Flow (perm) | | 1853 | | | | | 1837 | | 1549 | | | |
| Peak-hour factor, PHF | 0.90 | 0.25 | 0.88 | 0.69 | 0.25 | 0.25 | 0.50 | 0.46 | 0.75 | 0.75 | 0.25 | 0.58 |
| Adj. Flow (vph) | 156 | 12 | 218 | 23 | 4 | 8 | 20 | 43 | 92 | 19 | 8 | 24 |
| RTOR Reduction (vph) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Lane Group Flow (vph) | 0 | 409 | 0 | 0 | 0 | 0 | 32 | 0 | 154 | 0 | 0 | 0 |
| Heavy Vehicles (%) | 13% | 0% | 1% | 9% | 0% | 0% | 0% | 0% | 3% | 7% | 0% | 0% |
| Turn Type | Split | | | | Perm | Split | | Perm | | | Perm | Perm |
| Protected Phases | 4 | 4 | | | | 8 | 8 | | 2 | | | |
| Permitted Phases | | | | | 8 | | | 2 | | | 6 | 6 |
| Actuated Green, G (s) | | 36.9 | | | | | 8.2 | | 45.9 | | | |
| Effective Green, g (s) | | 36.9 | | | | | 8.2 | | 45.9 | | | |
| Actuated g/C Ratio | | 0.25 | | | | | 0.06 | | 0.31 | | | |
| Clearance Time (s) | | 6.0 | | | | | 6.0 | | 6.0 | | | |
| Vehicle Extension (s) | | 5.0 | | | | | 5.0 | | 5.0 | | | |
| Lane Grp Cap (vph) | | 464 | | | | | 102 | | 482 | | | |
| v/s Ratio Prot | | c0.22 | | | | | c0.02 | | | | | |
| v/s Ratio Perm | | | | | | | | | 0.10 | | | |
| v/c Ratio | | 0.88 | | | | | 0.31 | | 0.32 | | | |
| Uniform Delay, d1 | | 53.2 | | | | | 66.9 | | 38.9 | | | |
| Progression Factor | | 1.00 | | | | | 1.00 | | 1.00 | | | |
| Incremental Delay, d2 | | 18.7 | | | | | 3.7 | | 1.7 | | | |
| Delay (s) | | 71.9 | | | | | 70.6 | | 40.6 | | | |
| Level of Service | | E | | | | | E | | D | | | |
| Approach Delay (s) | | 71.9 | | | | | 70.6 | | 40.6 | | | |
| Approach LOS | | E | | | | | E | | D | | | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM Average Control Delay | 60.5 | HCM Level of Service | E |
| HCM Volume to Capacity ratio | 0.71 | | |
| Actuated Cycle Length (s) | 147.5 | Sum of lost time (s) | 24.0 |
| Intersection Capacity Utilization | 76.3% | ICU Level of Service | D |
| Analysis Period (min) | 15 | | |

c Critical Lane Group

| Movement | SBT | SBR | NWL2 | NWL | NWR |
|---|---|---|---|---|---|
| Lane Configurations | | | | | |
| Volume (vph) | 71 | 198 | 16 | 254 | 15 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width | 16 | 16 | 16 | 16 | 16 |
| Grade (%) | 0% | | | 6% | |
| Total Lost time (s) | 6.0 | | | 6.0 | |
| Lane Util. Factor | 1.00 | | | 1.00 | |
| Frt | 0.92 | | | 0.99 | |
| Flt Protected | 1.00 | | | 0.96 | |
| Satd. Flow (prot) | 1889 | | | 1935 | |
| Flt Permitted | 0.96 | | | 0.96 | |
| Satd. Flow (perm) | 1814 | | | 1935 | |
| Peak-hour factor, PHF | 0.81 | 0.97 | 0.56 | 0.86 | 0.63 |
| Adj. Flow (vph) | 88 | 204 | 29 | 295 | 24 |
| RTOR Reduction (vph) | 0 | 0 | 0 | 0 | 0 |
| Lane Group Flow (vph) | 324 | 0 | 0 | 348 | 0 |
| Heavy Vehicles (%) | 0% | 6% | 0% | 2% | 7% |
| Turn Type | | | Split | | |
| Protected Phases | 6 | | 9 | 9 | |
| Permitted Phases | | | | | |
| Actuated Green, G (s) | 45.9 | | | 32.5 | |
| Effective Green, g (s) | 45.9 | | | 32.5 | |
| Actuated g/C Ratio | 0.31 | | | 0.22 | |
| Clearance Time (s) | 6.0 | | | 6.0 | |
| Vehicle Extension (s) | 5.0 | | | 5.0 | |
| Lane Grp Cap (vph) | 564 | | | 426 | |
| v/s Ratio Prot | | | | c0.18 | |
| v/s Ratio Perm | c0.18 | | | | |
| v/c Ratio | 0.57 | | | 0.82 | |
| Uniform Delay, d1 | 42.6 | | | 54.7 | |
| Progression Factor | 1.00 | | | 1.00 | |
| Incremental Delay, d2 | 4.2 | | | 12.9 | |
| Delay (s) | 46.8 | | | 67.6 | |
| Level of Service | D | | | E | |
| Approach Delay (s) | 46.8 | | | 67.6 | |
| Approach LOS | D | | | E | |

| Intersection Summary |
|---|

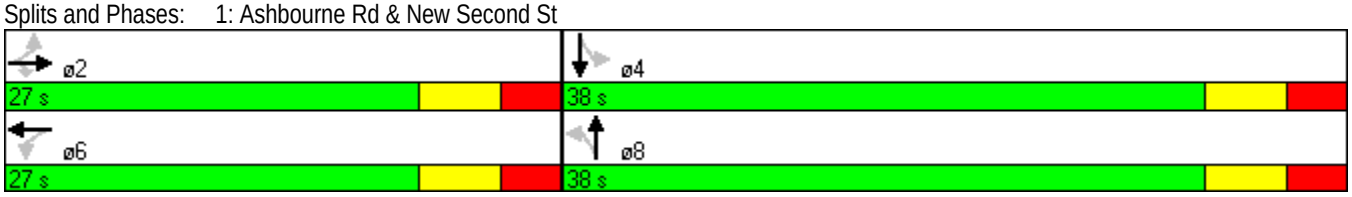
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (vph) | 72 | 193 | 25 | 9 | 147 | 111 | 25 | 412 | 20 | 89 | 331 | 44 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width (ft) | 12 | 12 | 14 | 16 | 16 | 16 | 16 | 16 | 16 | 12 | 12 | 12 |
| Grade (%) | | -9% | | | 8% | | | 3% | | | -2% | |
| Storage Length (ft) | 0 | | 110 | 0 | | 0 | 0 | | 0 | 0 | | 0 |
| Storage Lanes | 0 | | 1 | 0 | | 0 | 0 | | 0 | 0 | | 0 |
| Taper Length (ft) | 25 | | 75 | 25 | | 25 | 25 | | 25 | 25 | | 25 |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Ped Bike Factor | | | | | | | | | | | | |
| Frt | | | 0.850 | | 0.935 | | | 0.994 | | | 0.985 | |
| Flt Protected | | 0.986 | | | 0.998 | | | 0.997 | | | 0.990 | |
| Satd. Flow (prot) | 0 | 1938 | 1607 | 0 | 1892 | 0 | 0 | 2083 | 0 | 0 | 1855 | 0 |
| Flt Permitted | | 0.734 | | | 0.981 | | | 0.940 | | | 0.771 | |
| Satd. Flow (perm) | 0 | 1443 | 1607 | 0 | 1860 | 0 | 0 | 1964 | 0 | 0 | 1444 | 0 |
| Right Turn on Red | | | Yes | | | No | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | | 32 | | | | | 5 | | | 13 | |
| Link Speed (mph) | | 25 | | | 25 | | | 35 | | | 35 | |
| Link Distance (ft) | | 500 | | | 2250 | | | 500 | | | 500 | |
| Travel Time (s) | | 13.6 | | | 61.4 | | | 9.7 | | | 9.7 | |
| Confl. Peds. (#/hr) | | | | | | | | | | | | |
| Confl. Bikes (#/hr) | | | | | | | | | | | | |
| Peak Hour Factor | 0.85 | 0.90 | 0.78 | 0.75 | 0.89 | 0.67 | 0.69 | 0.84 | 0.79 | 0.79 | 0.88 | 0.72 |
| Growth Factor | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% |
| Heavy Vehicles (%) | 1% | 1% | 12% | 0% | 1% | 3% | 0% | 1% | 0% | 0% | 1% | 2% |
| Bus Blockages (#/hr) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Parking (#/hr) | | | | | | | | | | | | |
| Mid-Block Traffic (%) | | 0% | | | 0% | | | 0% | | | 0% | |
| Adj. Flow (vph) | 85 | 214 | 32 | 12 | 165 | 166 | 36 | 490 | 25 | 113 | 376 | 61 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 299 | 32 | 0 | 343 | 0 | 0 | 551 | 0 | 0 | 550 | 0 |
| Number of Detectors | 1 | 0 | 0 | 1 | 0 | | 1 | 0 | | 1 | 0 | |
| Detector Template | | | | | | | | | | | | |
| Leading Detector (ft) | 35 | 0 | 0 | 35 | 0 | | 35 | 0 | | 35 | 0 | |
| Trailing Detector (ft) | -5 | 0 | 0 | -5 | 0 | | -5 | 0 | | -5 | 0 | |
| Turn Type | Perm | | Perm | Perm | | | Perm | | | Perm | | |
| Protected Phases | | 2 | | | 6 | | | 8 | | | 4 | |
| Permitted Phases | 2 | | 2 | 6 | | | 8 | | | 4 | | |
| Detector Phase | 2 | 2 | 2 | 6 | 6 | | 8 | 8 | | 4 | 4 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 20.0 | 20.0 | 20.0 | 20.0 | 20.0 | | 31.0 | 31.0 | | 31.0 | 31.0 | |
| Minimum Split (s) | 27.0 | 27.0 | 27.0 | 27.0 | 27.0 | | 38.0 | 38.0 | | 38.0 | 38.0 | |
| Total Split (s) | 27.0 | 27.0 | 27.0 | 27.0 | 27.0 | 0.0 | 38.0 | 38.0 | 0.0 | 38.0 | 38.0 | 0.0 |
| Total Split (%) | 41.5% | 41.5% | 41.5% | 41.5% | 41.5% | 0.0% | 58.5% | 58.5% | 0.0% | 58.5% | 58.5% | 0.0% |
| Maximum Green (s) | 20.0 | 20.0 | 20.0 | 20.0 | 20.0 | | 31.0 | 31.0 | | 31.0 | 31.0 | |
| Yellow Time (s) | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | | 4.0 | 4.0 | | 4.0 | 4.0 | |
| All-Red Time (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | |
| Lost Time Adjust (s) | -1.0 | 0.0 | 0.0 | -1.0 | 0.0 | 0.0 | -1.0 | 0.0 | 0.0 | -1.0 | 0.0 | 0.0 |
| Total Lost Time (s) | 6.0 | 7.0 | 7.0 | 6.0 | 7.0 | 4.0 | 6.0 | 7.0 | 4.0 | 6.0 | 7.0 | 4.0 |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lead/Lag | | | | | | | | | | | | |
| Lead-Lag Optimize? | | | | | | | | | | | | |
| Vehicle Extension (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | |
| Minimum Gap (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | |
| Time Before Reduce (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Time To Reduce (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Recall Mode | Max | Max | Max | Max | Max | | Max | Max | | Max | Max | |
| Walk Time (s) | | | | | | | | | | | | |
| Flash Dont Walk (s) | | | | | | | | | | | | |
| Pedestrian Calls (#/hr) | | | | | | | | | | | | |
| v/c Ratio | | 0.67 | 0.06 | | 0.60 | | | 0.59 | | | 0.79 | |
| Control Delay | | 28.9 | 6.9 | | 24.3 | | | 15.4 | | | 24.7 | |
| Queue Delay | | 0.0 | 0.0 | | 0.0 | | | 0.0 | | | 0.0 | |
| Total Delay | | 28.9 | 6.9 | | 24.3 | | | 15.4 | | | 24.7 | |
| Queue Length 50th (ft) | | 102 | 0 | | 114 | | | 148 | | | 168 | |
| Queue Length 95th (ft) | | #202 | 13 | | 189 | | | 212 | | | #328 | |
| Internal Link Dist (ft) | | 420 | | | 2170 | | | 420 | | | 420 | |
| Turn Bay Length (ft) | | | 110 | | | | | | | | | |
| Base Capacity (vph) | | 444 | 517 | | 572 | | | 939 | | | 695 | |
| Starvation Cap Reductn | | 0 | 0 | | 0 | | | 0 | | | 0 | |
| Spillback Cap Reductn | | 0 | 0 | | 0 | | | 0 | | | 0 | |
| Storage Cap Reductn | | 0 | 0 | | 0 | | | 0 | | | 0 | |
| Reduced v/c Ratio | | 0.67 | 0.06 | | 0.60 | | | 0.59 | | | 0.79 | |

## Intersection Summary

Area Type: Other
Cycle Length: 65
Actuated Cycle Length: 65
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow
Natural Cycle: 65
Control Type: Pretimed
# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 1: Ashbourne Rd & New Second St



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (vph) | 72 | 193 | 25 | 9 | 147 | 111 | 25 | 412 | 20 | 89 | 331 | 44 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width | 12 | 12 | 14 | 16 | 16 | 16 | 16 | 16 | 16 | 12 | 12 | 12 |
| Grade (%) | | -9% | | | 8% | | | 3% | | | -2% | |
| Total Lost time (s) | | 7.0 | 7.0 | | 7.0 | | | 7.0 | | | 7.0 | |
| Lane Util. Factor | | 1.00 | 1.00 | | 1.00 | | | 1.00 | | | 1.00 | |
| Frt | | 1.00 | 0.85 | | 0.93 | | | 0.99 | | | 0.99 | |
| Flt Protected | | 0.99 | 1.00 | | 1.00 | | | 1.00 | | | 0.99 | |
| Satd. Flow (prot) | | 1938 | 1607 | | 1892 | | | 2083 | | | 1854 | |
| Flt Permitted | | 0.73 | 1.00 | | 0.98 | | | 0.94 | | | 0.77 | |
| Satd. Flow (perm) | | 1443 | 1607 | | 1860 | | | 1964 | | | 1444 | |
| Peak-hour factor, PHF | 0.85 | 0.90 | 0.78 | 0.75 | 0.89 | 0.67 | 0.69 | 0.84 | 0.79 | 0.79 | 0.88 | 0.72 |
| Adj. Flow (vph) | 85 | 214 | 32 | 12 | 165 | 166 | 36 | 490 | 25 | 113 | 376 | 61 |
| RTOR Reduction (vph) | 0 | 0 | 22 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 7 | 0 |
| Lane Group Flow (vph) | 0 | 299 | 10 | 0 | 343 | 0 | 0 | 548 | 0 | 0 | 543 | 0 |
| Heavy Vehicles (%) | 1% | 1% | 12% | 0% | 1% | 3% | 0% | 1% | 0% | 0% | 1% | 2% |
| Turn Type | Perm | | Perm | Perm | | | Perm | | | Perm | | |
| Protected Phases | | 2 | | | 6 | | | 8 | | | 4 | |
| Permitted Phases | 2 | | 2 | 6 | | | 8 | | | 4 | | |
| Actuated Green, G (s) | | 20.0 | 20.0 | | 20.0 | | | 31.0 | | | 31.0 | |
| Effective Green, g (s) | | 20.0 | 20.0 | | 20.0 | | | 31.0 | | | 31.0 | |
| Actuated g/C Ratio | | 0.31 | 0.31 | | 0.31 | | | 0.48 | | | 0.48 | |
| Clearance Time (s) | | 7.0 | 7.0 | | 7.0 | | | 7.0 | | | 7.0 | |
| Lane Grp Cap (vph) | | 444 | 494 | | 572 | | | 937 | | | 689 | |
| v/s Ratio Prot | | | | | | | | | | | | |
| v/s Ratio Perm | | c0.21 | 0.01 | | 0.18 | | | 0.28 | | | c0.38 | |
| v/c Ratio | | 0.67 | 0.02 | | 0.60 | | | 0.59 | | | 0.79 | |
| Uniform Delay, d1 | | 19.6 | 15.7 | | 19.1 | | | 12.3 | | | 14.3 | |
| Progression Factor | | 1.00 | 1.00 | | 1.00 | | | 1.00 | | | 1.00 | |
| Incremental Delay, d2 | | 7.9 | 0.1 | | 4.6 | | | 2.7 | | | 8.9 | |
| Delay (s) | | 27.6 | 15.7 | | 23.7 | | | 15.0 | | | 23.2 | |
| Level of Service | | C | B | | C | | | B | | | C | |
| Approach Delay (s) | | 26.4 | | | 23.7 | | | 15.0 | | | 23.2 | |
| Approach LOS | | C | | | C | | | B | | | C | |

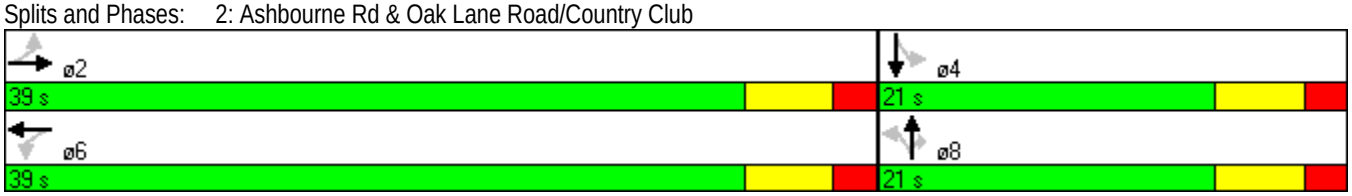
| Intersection Summary | | | |
|---|---|---|---|
| HCM Average Control Delay | 21.3 | HCM Level of Service | C |
| HCM Volume to Capacity ratio | 0.74 | | |
| Actuated Cycle Length (s) | 65.0 | Sum of lost time (s) | 14.0 |
| Intersection Capacity Utilization | 103.7% | ICU Level of Service | G |
| Analysis Period (min) | 15 | | |
| c Critical Lane Group | | | |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (vph) | 0 | 260 | 42 | 211 | 242 | 0 | 24 | 0 | 199 | 0 | 0 | 1 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width (ft) | 11 | 11 | 11 | 10 | 12 | 12 | 11 | 11 | 14 | 10 | 10 | 10 |
| Grade (%) | | 1% | | | 1% | | | -2% | | | 1% | |
| Storage Length (ft) | 140 | | 0 | 150 | | 0 | 0 | | 150 | 0 | | 0 |
| Storage Lanes | 1 | | 0 | 1 | | 0 | 0 | | 1 | 0 | | 0 |
| Taper Length (ft) | 75 | | 25 | 75 | | 25 | 25 | | 75 | 25 | | 25 |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Ped Bike Factor | | | | | | | | | | | | |
| Frt | | 0.973 | | | | | | | 0.850 | | 0.865 | |
| Flt Protected | | | | 0.950 | | | | 0.950 | | | | |
| Satd. Flow (prot) | 1827 | 1769 | 0 | 1596 | 1872 | 0 | 0 | 1546 | 1673 | 0 | 1526 | 0 |
| Flt Permitted | | | | 0.544 | | | | 0.755 | | | | |
| Satd. Flow (perm) | 1827 | 1769 | 0 | 914 | 1872 | 0 | 0 | 1229 | 1673 | 0 | 1526 | 0 |
| Right Turn on Red | | | No | | | Yes | | | Yes | | | No |
| Satd. Flow (RTOR) | | | | | | | | | 229 | | | |
| Link Speed (mph) | | 35 | | | 35 | | | 35 | | | 35 | |
| Link Distance (ft) | | 2250 | | | 325 | | | 280 | | | 300 | |
| Travel Time (s) | | 43.8 | | | 6.3 | | | 5.5 | | | 5.8 | |
| Confl. Peds. (#/hr) | | | | | | | | | | | | |
| Confl. Bikes (#/hr) | | | | | | | | | | | | |
| Peak Hour Factor | 0.25 | 0.87 | 0.65 | 0.91 | 0.94 | 0.25 | 0.88 | 0.25 | 0.87 | 0.25 | 0.25 | 0.25 |
| Growth Factor | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% |
| Heavy Vehicles (%) | 0% | 0% | 3% | 5% | 1% | 0% | 14% | 0% | 4% | 0% | 0% | 0% |
| Bus Blockages (#/hr) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Parking (#/hr) | | | | | | | | | | | | |
| Mid-Block Traffic (%) | | 0% | | | 0% | | | 0% | | | 0% | |
| Adj. Flow (vph) | 0 | 299 | 65 | 232 | 257 | 0 | 27 | 0 | 229 | 0 | 0 | 4 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 364 | 0 | 232 | 257 | 0 | 0 | 27 | 229 | 0 | 4 | 0 |
| Number of Detectors | 0 | 0 | | 0 | 0 | | 1 | 1 | 1 | 1 | 1 | |
| Detector Template | | | | | | | | | | | | |
| Leading Detector (ft) | 0 | 0 | | 0 | 0 | | 35 | 35 | 35 | 20 | 20 | |
| Trailing Detector (ft) | 0 | 0 | | 0 | 0 | | -5 | -5 | -5 | -5 | -5 | |
| Turn Type | Perm | | | Perm | | | Perm | | Perm | Perm | | |
| Protected Phases | | 2 | | | 6 | | | 8 | | | 4 | |
| Permitted Phases | 2 | | | 6 | | | 8 | | 8 | 4 | | |
| Detector Phase | 2 | 2 | | 6 | 6 | | 8 | 8 | 8 | 4 | 4 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 33.0 | 33.0 | | 33.0 | 33.0 | | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | |
| Minimum Split (s) | 39.0 | 39.0 | | 39.0 | 39.0 | | 9.0 | 9.0 | 9.0 | 9.0 | 9.0 | |
| Total Split (s) | 39.0 | 39.0 | 0.0 | 39.0 | 39.0 | 0.0 | 21.0 | 21.0 | 21.0 | 21.0 | 21.0 | 0.0 |
| Total Split (%) | 65.0% | 65.0% | 0.0% | 65.0% | 65.0% | 0.0% | 35.0% | 35.0% | 35.0% | 35.0% | 35.0% | 0.0% |
| Maximum Green (s) | 33.0 | 33.0 | | 33.0 | 33.0 | | 15.0 | 15.0 | 15.0 | 15.0 | 15.0 | |
| Yellow Time (s) | 4.0 | 4.0 | | 4.0 | 4.0 | | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | |
| All-Red Time (s) | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | |
| Lost Time Adjust (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | -2.0 | 0.0 | 0.0 | -2.0 | 0.0 | 0.0 |
| Total Lost Time (s) | 6.0 | 6.0 | 4.0 | 6.0 | 6.0 | 4.0 | 4.0 | 6.0 | 6.0 | 4.0 | 6.0 | 4.0 |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lead/Lag | | | | | | | | | | | | |
| Lead-Lag Optimize? | | | | | | | | | | | | |
| Vehicle Extension (s) | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | |
| Minimum Gap (s) | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | |
| Time Before Reduce (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| Time To Reduce (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| Recall Mode | Min | Min | | Min | Min | | None | None | None | None | None | |
| Walk Time (s) | | | | | | | | | | | | |
| Flash Dont Walk (s) | | | | | | | | | | | | |
| Pedestrian Calls (#/hr) | | | | | | | | | | | | |
| v/c Ratio | | 0.33 | | 0.40 | 0.22 | | | 0.16 | 0.53 | | 0.02 | |
| Control Delay | | 5.9 | | 7.9 | 5.1 | | | 21.6 | 8.6 | | 19.0 | |
| Queue Delay | | 0.0 | | 0.0 | 0.0 | | | 0.0 | 0.0 | | 0.0 | |
| Total Delay | | 5.9 | | 7.9 | 5.1 | | | 21.6 | 8.6 | | 19.0 | |
| Queue Length 50th (ft) | | 40 | | 27 | 26 | | | 8 | 0 | | 1 | |
| Queue Length 95th (ft) | | 91 | | 81 | 65 | | | 7 | 42 | | 2 | |
| Internal Link Dist (ft) | | 2170 | | | 245 | | | 200 | | | 220 | |
| Turn Bay Length (ft) | | | | 150 | | | | | 150 | | | |
| Base Capacity (vph) | | 1117 | | 577 | 1181 | | | 353 | 643 | | 438 | |
| Starvation Cap Reductn | | 0 | | 0 | 0 | | | 0 | 0 | | 0 | |
| Spillback Cap Reductn | | 0 | | 0 | 0 | | | 0 | 0 | | 0 | |
| Storage Cap Reductn | | 0 | | 0 | 0 | | | 0 | 0 | | 0 | |
| Reduced v/c Ratio | | 0.33 | | 0.40 | 0.22 | | | 0.08 | 0.36 | | 0.01 | |

| Intersection Summary | |
|---|---|
| Area Type: | Other |
| Cycle Length: 60 | |
| Actuated Cycle Length: 52.4 | |
| Natural Cycle: 50 | |
| Control Type: Actuated-Uncoordinated | |

Splits and Phases: 2: Ashbourne Rd & Oak Lane Road/Country Club



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (vph) | 0 | 260 | 42 | 211 | 242 | 0 | 24 | 0 | 199 | 0 | 0 | 1 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width | 11 | 11 | 11 | 10 | 12 | 12 | 11 | 11 | 14 | 10 | 10 | 10 |
| Grade (%) | | 1% | | | 1% | | | -2% | | | 1% | |
| Total Lost time (s) | | 6.0 | | 6.0 | 6.0 | | | 6.0 | 6.0 | | 6.0 | |
| Lane Util. Factor | | 1.00 | | 1.00 | 1.00 | | | 1.00 | 1.00 | | 1.00 | |
| Frt | | 0.97 | | 1.00 | 1.00 | | | 1.00 | 0.85 | | 0.86 | |
| Flt Protected | | 1.00 | | 0.95 | 1.00 | | | 0.95 | 1.00 | | 1.00 | |
| Satd. Flow (prot) | | 1769 | | 1596 | 1872 | | | 1546 | 1673 | | 1526 | |
| Flt Permitted | | 1.00 | | 0.54 | 1.00 | | | 0.76 | 1.00 | | 1.00 | |
| Satd. Flow (perm) | | 1769 | | 914 | 1872 | | | 1229 | 1673 | | 1526 | |
| Peak-hour factor, PHF | 0.25 | 0.87 | 0.65 | 0.91 | 0.94 | 0.25 | 0.88 | 0.25 | 0.87 | 0.25 | 0.25 | 0.25 |
| Adj. Flow (vph) | 0 | 299 | 65 | 232 | 257 | 0 | 27 | 0 | 229 | 0 | 0 | 4 |
| RTOR Reduction (vph) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 197 | 0 | 0 | 0 |
| Lane Group Flow (vph) | 0 | 364 | 0 | 232 | 257 | 0 | 0 | 27 | 32 | 0 | 4 | 0 |
| Heavy Vehicles (%) | 0% | 0% | 3% | 5% | 1% | 0% | 14% | 0% | 4% | 0% | 0% | 0% |
| Turn Type | Perm | | | Perm | | | Perm | | Perm | Perm | | |
| Protected Phases | | 2 | | | 6 | | | 8 | | | 4 | |
| Permitted Phases | 2 | | | 6 | | | 8 | | 8 | 4 | | |
| Actuated Green, G (s) | | 33.0 | | 33.0 | 33.0 | | | 7.3 | 7.3 | | 7.3 | |
| Effective Green, g (s) | | 33.0 | | 33.0 | 33.0 | | | 7.3 | 7.3 | | 7.3 | |
| Actuated g/C Ratio | | 0.63 | | 0.63 | 0.63 | | | 0.14 | 0.14 | | 0.14 | |
| Clearance Time (s) | | 6.0 | | 6.0 | 6.0 | | | 6.0 | 6.0 | | 6.0 | |
| Vehicle Extension (s) | | 3.0 | | 3.0 | 3.0 | | | 3.0 | 3.0 | | 3.0 | |
| Lane Grp Cap (vph) | | 1116 | | 577 | 1181 | | | 172 | 234 | | 213 | |
| v/s Ratio Prot | | 0.21 | | | 0.14 | | | | | | 0.00 | |
| v/s Ratio Perm | | | | c0.25 | | | | c0.02 | 0.02 | | | |
| v/c Ratio | | 0.33 | | 0.40 | 0.22 | | | 0.16 | 0.14 | | 0.02 | |
| Uniform Delay, d1 | | 4.5 | | 4.8 | 4.1 | | | 19.8 | 19.7 | | 19.4 | |
| Progression Factor | | 1.00 | | 1.00 | 1.00 | | | 1.00 | 1.00 | | 1.00 | |
| Incremental Delay, d2 | | 0.2 | | 0.5 | 0.1 | | | 0.4 | 0.3 | | 0.0 | |
| Delay (s) | | 4.7 | | 5.2 | 4.2 | | | 20.2 | 20.0 | | 19.4 | |
| Level of Service | | A | | A | A | | | C | C | | B | |
| Approach Delay (s) | | 4.7 | | | 4.7 | | | 20.0 | | | 19.4 | |
| Approach LOS | | A | | | A | | | C | | | B | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM Average Control Delay | 8.3 | HCM Level of Service | A |
| HCM Volume to Capacity ratio | 0.36 | | |
| Actuated Cycle Length (s) | 52.3 | Sum of lost time (s) | 12.0 |
| Intersection Capacity Utilization | 78.0% | ICU Level of Service | D |
| Analysis Period (min) | 15 | | |

c Critical Lane Group

| Lane Group | EBT | EBR | WBL | WBT | NBL | NBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (vph) | 457 | 2 | 4 | 451 | 2 | 2 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width (ft) | 12 | 12 | 12 | 12 | 12 | 12 |
| Grade (%) | -2% | | | 1% | 0% | |
| Storage Length (ft) | | 0 | 0 | | 0 | 0 |
| Storage Lanes | | 0 | 0 | | 1 | 0 |
| Taper Length (ft) | | 25 | 25 | | 25 | 25 |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Ped Bike Factor | | | | | | |
| Frt | 0.999 | | | | 0.932 | |
| Flt Protected | | | | | 0.976 | |
| Satd. Flow (prot) | 1861 | 0 | 0 | 1836 | 1728 | 0 |
| Flt Permitted | | | | | 0.976 | |
| Satd. Flow (perm) | 1861 | 0 | 0 | 1836 | 1728 | 0 |
| Link Speed (mph) | 35 | | | 35 | 35 | |
| Link Distance (ft) | 325 | | | 505 | 200 | |
| Travel Time (s) | 6.3 | | | 9.8 | 3.9 | |
| Confl. Peds. (#/hr) | | | | | | |
| Confl. Bikes (#/hr) | | | | | | |
| Peak Hour Factor | 0.88 | 0.90 | 0.90 | 0.97 | 0.90 | 0.90 |
| Growth Factor | 100% | 100% | 100% | 100% | 100% | 100% |
| Heavy Vehicles (%) | 3% | 0% | 0% | 3% | 0% | 0% |
| Bus Blockages (#/hr) | 0 | 0 | 0 | 0 | 0 | 0 |
| Parking (#/hr) | | | | | | |
| Mid-Block Traffic (%) | 0% | | | 0% | 0% | |
| Adj. Flow (vph) | 519 | 2 | 4 | 465 | 2 | 2 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 521 | 0 | 0 | 469 | 4 | 0 |
| Sign Control | Free | | | Free | Stop | |

| Intersection Summary | |
|---|---|
| Area Type: | Other |
| Control Type: Unsignalized | |

| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (veh/h) | 457 | 2 | 4 | 451 | 2 | 2 |
| Sign Control | Free | | | Free | Stop | |
| Grade | -2% | | | 1% | 0% | |
| Peak Hour Factor | 0.88 | 0.90 | 0.90 | 0.97 | 0.90 | 0.90 |
| Hourly flow rate (vph) | 519 | 2 | 4 | 465 | 2 | 2 |
| Pedestrians | | | | | | |
| Lane Width (ft) | | | | | | |
| Walking Speed (ft/s) | | | | | | |
| Percent Blockage | | | | | | |
| Right turn flare (veh) | | | | | | |
| Median type | None | | | None | | |
| Median storage veh) | | | | | | |
| Upstream signal (ft) | 325 | | | 1025 | | |
| pX, platoon unblocked | | | 0.95 | | 0.95 | 0.95 |
| vC, conflicting volume | | | 522 | | 994 | 520 |
| vC1, stage 1 conf vol | | | | | | |
| vC2, stage 2 conf vol | | | | | | |
| vCu, unblocked vol | | | 473 | | 969 | 472 |
| tC, single (s) | | | 4.1 | | 6.4 | 6.2 |
| tC, 2 stage (s) | | | | | | |
| tF (s) | | | 2.2 | | 3.5 | 3.3 |
| p0 queue free % | | | 100 | | 99 | 100 |
| cM capacity (veh/h) | | | 1048 | | 269 | 568 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 |
|---|---|---|---|
| Volume Total | 522 | 469 | 4 |
| Volume Left | 0 | 4 | 2 |
| Volume Right | 2 | 0 | 2 |
| cSH | 1700 | 1048 | 365 |
| Volume to Capacity | 0.31 | 0.00 | 0.01 |
| Queue Length 95th (ft) | 0 | 0 | 1 |
| Control Delay (s) | 0.0 | 0.1 | 15.0 |
| Lane LOS | | A | B |
| Approach Delay (s) | 0.0 | 0.1 | 15.0 |
| Approach LOS | | | B |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 0.1 | | |
| Intersection Capacity Utilization | 36.9% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |

| Lane Group | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (vph) | 1 | 0 | 223 | 2 | 0 | 253 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width (ft) | 12 | 12 | 12 | 12 | 12 | 12 |
| Grade (%) | 0% | | -2% | | | 0% |
| Storage Length (ft) | 0 | 0 | | 0 | 0 | |
| Storage Lanes | 1 | 0 | | 0 | 0 | |
| Taper Length (ft) | 25 | 25 | | 25 | 25 | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Ped Bike Factor | | | | | | |
| Frt | | | 0.999 | | | |
| Flt Protected | 0.950 | | | | | |
| Satd. Flow (prot) | 1805 | 0 | 1826 | 0 | 0 | 1810 |
| Flt Permitted | 0.950 | | | | | |
| Satd. Flow (perm) | 1805 | 0 | 1826 | 0 | 0 | 1810 |
| Link Speed (mph) | 25 | | 35 | | | 35 |
| Link Distance (ft) | 233 | | 200 | | | 280 |
| Travel Time (s) | 6.4 | | 3.9 | | | 5.5 |
| Confl. Peds. (#/hr) | | | | | | |
| Confl. Bikes (#/hr) | | | | | | |
| Peak Hour Factor | 0.90 | 0.90 | 0.87 | 0.90 | 0.90 | 0.96 |
| Growth Factor | 100% | 100% | 100% | 100% | 100% | 100% |
| Heavy Vehicles (%) | 0% | 0% | 5% | 0% | 0% | 5% |
| Bus Blockages (#/hr) | 0 | 0 | 0 | 0 | 0 | 0 |
| Parking (#/hr) | | | | | | |
| Mid-Block Traffic (%) | 0% | | 0% | | | 0% |
| Adj. Flow (vph) | 1 | 0 | 256 | 2 | 0 | 264 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 1 | 0 | 258 | 0 | 0 | 264 |
| Sign Control | Stop | | Free | | | Free |

| Intersection Summary | |
|---|---|
| Area Type: | Other |
| Control Type: Unsignalized | |

| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (veh/h) | 1 | 0 | 223 | 2 | 0 | 253 |
| Sign Control | Stop | | Free | | | Free |
| Grade | 0% | | -2% | | | 0% |
| Peak Hour Factor | 0.90 | 0.90 | 0.87 | 0.90 | 0.90 | 0.96 |
| Hourly flow rate (vph) | 1 | 0 | 256 | 2 | 0 | 264 |
| Pedestrians | | | | | | |
| Lane Width (ft) | | | | | | |
| Walking Speed (ft/s) | | | | | | |
| Percent Blockage | | | | | | |
| Right turn flare (veh) | | | | | | |
| Median type | | | None | | | None |
| Median storage veh) | | | | | | |
| Upstream signal (ft) | | | | | | 280 |
| pX, platoon unblocked | 0.99 | | | | | |
| vC, conflicting volume | 521 | 257 | | | 259 | |
| vC1, stage 1 conf vol | | | | | | |
| vC2, stage 2 conf vol | | | | | | |
| vCu, unblocked vol | 512 | 257 | | | 259 | |
| tC, single (s) | 6.4 | 6.2 | | | 4.1 | |
| tC, 2 stage (s) | | | | | | |
| tF (s) | 3.5 | 3.3 | | | 2.2 | |
| p0 queue free % | 100 | 100 | | | 100 | |
| cM capacity (veh/h) | 521 | 786 | | | 1318 | |

| Direction, Lane # | WB 1 | NB 1 | SB 1 |
|---|---|---|---|
| Volume Total | 1 | 259 | 264 |
| Volume Left | 1 | 0 | 0 |
| Volume Right | 0 | 2 | 0 |
| cSH | 521 | 1700 | 1318 |
| Volume to Capacity | 0.00 | 0.15 | 0.00 |
| Queue Length 95th (ft) | 0 | 0 | 0 |
| Control Delay (s) | 11.9 | 0.0 | 0.0 |
| Lane LOS | B | | |
| Approach Delay (s) | 11.9 | 0.0 | 0.0 |
| Approach LOS | B | | |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 0.0 | | |
| Intersection Capacity Utilization | 23.3% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |

| Lane Group | EBL | EBT | EBR | EBR2 | WBL | WBT | WBR | NBL | NBT | NBR | NBR2 | SBL2 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (vph) | 221 | 20 | 210 | 31 | 3 | 6 | 3 | 14 | 64 | 1 | 13 | 3 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width (ft) | 16 | 16 | 16 | 16 | 12 | 12 | 12 | 16 | 16 | 16 | 16 | 16 |
| Grade (%) | | -2% | | | | 3% | | | 4% | | | |
| Storage Length (ft) | 0 | | 0 | | 0 | | 0 | 0 | | 0 | | |
| Storage Lanes | 0 | | 0 | | 0 | | 0 | 0 | | 0 | | |
| Taper Length (ft) | 25 | | 25 | | 25 | | 25 | 25 | | 25 | | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Ped Bike Factor | | | | | | | | | | | | |
| Frt | | 0.934 | | | | 0.955 | | | 0.977 | | | |
| Flt Protected | | 0.977 | | | | 0.984 | | | 0.990 | | | |
| Satd. Flow (prot) | 0 | 1934 | 0 | 0 | 0 | 1759 | 0 | 0 | 1991 | 0 | 0 | 0 |
| Flt Permitted | | 0.977 | | | | 0.984 | | | 0.902 | | | |
| Satd. Flow (perm) | 0 | 1934 | 0 | 0 | 0 | 1759 | 0 | 0 | 1814 | 0 | 0 | 0 |
| Right Turn on Red | | | | No | | | No | | | | No | |
| Satd. Flow (RTOR) | | | | | | | | | | | | |
| Link Speed (mph) | | 40 | | | | 35 | | | 25 | | | |
| Link Distance (ft) | | 520 | | | | 527 | | | 500 | | | |
| Travel Time (s) | | 8.9 | | | | 10.3 | | | 13.6 | | | |
| Confl. Peds. (#/hr) | | | | | | | | | | | | |
| Confl. Bikes (#/hr) | | | | | | | | | | | | |
| Peak Hour Factor | 0.83 | 0.71 | 0.88 | 0.75 | 0.38 | 0.75 | 0.38 | 0.56 | 0.83 | 0.25 | 0.75 | 0.75 |
| Growth Factor | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% |
| Heavy Vehicles (%) | 5% | 0% | 0% | 4% | 0% | 0% | 0% | 0% | 4% | 0% | 0% | 0% |
| Bus Blockages (#/hr) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Parking (#/hr) | | | | | | | | | | | | |
| Mid-Block Traffic (%) | | 0% | | | | 0% | | | 0% | | | |
| Adj. Flow (vph) | 266 | 28 | 239 | 41 | 8 | 8 | 8 | 25 | 77 | 4 | 17 | 4 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 574 | 0 | 0 | 0 | 24 | 0 | 0 | 123 | 0 | 0 | 0 |
| Number of Detectors | 1 | 1 | | | 1 | 1 | | 1 | 1 | | | 2 |
| Detector Template | | | | | | | | | | | | |
| Leading Detector (ft) | 35 | 35 | | | 35 | 35 | | 35 | 35 | | | 70 |
| Trailing Detector (ft) | -5 | -5 | | | -5 | -5 | | -5 | -5 | | | -5 |
| Turn Type | Split | | | | Split | | | Perm | | | | Perm |
| Protected Phases | 4 | 4 | | | 8 | 8 | | | 2 | | | |
| Permitted Phases | | | | | | | | 2 | | | | 6 |
| Detector Phase | 4 | 4 | | | 8 | 8 | | 2 | 2 | | | 6 |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 8.0 | 8.0 | | | 5.0 | 5.0 | | 8.0 | 8.0 | | | 8.0 |
| Minimum Split (s) | 14.0 | 14.0 | | | 11.0 | 11.0 | | 14.0 | 14.0 | | | 14.0 |
| Total Split (s) | 46.0 | 46.0 | 0.0 | 0.0 | 21.0 | 21.0 | 0.0 | 51.0 | 51.0 | 0.0 | 0.0 | 51.0 |
| Total Split (%) | 28.0% | 28.0% | 0.0% | 0.0% | 12.8% | 12.8% | 0.0% | 31.1% | 31.1% | 0.0% | 0.0% | 31.1% |
| Maximum Green (s) | 40.0 | 40.0 | | | 15.0 | 15.0 | | 45.0 | 45.0 | | | 45.0 |
| Yellow Time (s) | 4.0 | 4.0 | | | 4.0 | 4.0 | | 4.0 | 4.0 | | | 4.0 |
| All-Red Time (s) | 2.0 | 2.0 | | | 2.0 | 2.0 | | 2.0 | 2.0 | | | 2.0 |
| Lost Time Adjust (s) | -2.0 | 0.0 | 0.0 | 0.0 | -2.0 | 0.0 | 0.0 | -2.0 | 0.0 | 0.0 | 0.0 | -2.0 |
| Total Lost Time (s) | 4.0 | 6.0 | 4.0 | 4.0 | 4.0 | 6.0 | 4.0 | 4.0 | 6.0 | 4.0 | 4.0 | 4.0 |

| Lane Group | SBL | SBT | SBR | NWL2 | NWL | NWR | NWR2 |
|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | |
| Volume (vph) | 8 | 61 | 164 | 12 | 268 | 18 | 1 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width (ft) | 16 | 16 | 16 | 16 | 16 | 16 | 16 |
| Grade (%) | | 0% | | | 6% | | |
| Storage Length (ft) | 0 | | 0 | | 0 | 0 | |
| Storage Lanes | 0 | | 0 | | 1 | 0 | |
| Taper Length (ft) | 25 | | 25 | | 25 | 25 | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Ped Bike Factor | | | | | | | |
| Frt | | 0.908 | | | 0.988 | | |
| Flt Protected | | 0.996 | | | 0.956 | | |
| Satd. Flow (prot) | 0 | 1934 | 0 | 0 | 1931 | 0 | 0 |
| Flt Permitted | | 0.974 | | | 0.956 | | |
| Satd. Flow (perm) | 0 | 1892 | 0 | 0 | 1931 | 0 | 0 |
| Right Turn on Red | | | No | | | | No |
| Satd. Flow (RTOR) | | | | | | | |
| Link Speed (mph) | | 35 | | | 25 | | |
| Link Distance (ft) | | 500 | | | 573 | | |
| Travel Time (s) | | 9.7 | | | 15.6 | | |
| Confl. Peds. (#/hr) | | | | | | | |
| Confl. Bikes (#/hr) | | | | | | | |
| Peak Hour Factor | 0.50 | 0.88 | 0.87 | 0.70 | 0.95 | 0.75 | 0.25 |
| Growth Factor | 100% | 100% | 100% | 100% | 100% | 100% | 100% |
| Heavy Vehicles (%) | 0% | 0% | 1% | 0% | 2% | 6% | 0% |
| Bus Blockages (#/hr) | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Parking (#/hr) | | | | | | | |
| Mid-Block Traffic (%) | | 0% | | | 0% | | |
| Adj. Flow (vph) | 16 | 69 | 189 | 17 | 282 | 24 | 4 |
| Shared Lane Traffic (%) | | | | | | | |
| Lane Group Flow (vph) | 0 | 278 | 0 | 0 | 327 | 0 | 0 |
| Number of Detectors | 2 | 4 | | 1 | 1 | | |
| Detector Template | | | | | | | |
| Leading Detector (ft) | 70 | 66 | | 35 | 35 | | |
| Trailing Detector (ft) | -5 | -1 | | -5 | -5 | | |
| Turn Type | Perm | | | Split | | | |
| Protected Phases | | 6 | | 9 | 9 | | |
| Permitted Phases | 6 | | | | | | |
| Detector Phase | 6 | 6 | | 9 | 9 | | |
| Switch Phase | | | | | | | |
| Minimum Initial (s) | 8.0 | 8.0 | | 8.0 | 8.0 | | |
| Minimum Split (s) | 14.0 | 14.0 | | 14.0 | 14.0 | | |
| Total Split (s) | 51.0 | 51.0 | 0.0 | 46.0 | 46.0 | 0.0 | 0.0 |
| Total Split (%) | 31.1% | 31.1% | 0.0% | 28.0% | 28.0% | 0.0% | 0.0% |
| Maximum Green (s) | 45.0 | 45.0 | | 40.0 | 40.0 | | |
| Yellow Time (s) | 4.0 | 4.0 | | 4.0 | 4.0 | | |
| All-Red Time (s) | 2.0 | 2.0 | | 2.0 | 2.0 | | |
| Lost Time Adjust (s) | -2.0 | 0.0 | 0.0 | -2.0 | 0.0 | 0.0 | 0.0 |
| Total Lost Time (s) | 4.0 | 6.0 | 4.0 | 4.0 | 6.0 | 4.0 | 4.0 |

| Lane Group | EBL | EBT | EBR | EBR2 | WBL | WBT | WBR | NBL | NBT | NBR | NBR2 | SBL2 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lead/Lag | | | | | | | | | | | | |
| Lead-Lag Optimize? | | | | | | | | | | | | |
| Vehicle Extension (s) | 5.0 | 5.0 | | | 5.0 | 5.0 | | 5.0 | 5.0 | | | 5.0 |
| Minimum Gap (s) | 3.0 | 3.0 | | | 3.0 | 3.0 | | 3.0 | 3.0 | | | 3.0 |
| Time Before Reduce (s) | 0.0 | 0.0 | | | 0.0 | 0.0 | | 0.0 | 0.0 | | | 0.0 |
| Time To Reduce (s) | 0.0 | 0.0 | | | 0.0 | 0.0 | | 0.0 | 0.0 | | | 0.0 |
| Recall Mode | None | None | | | None | None | | Max | Max | | | Max |
| Walk Time (s) | | | | | | | | | | | | |
| Flash Dont Walk (s) | | | | | | | | | | | | |
| Pedestrian Calls (#/hr) | | | | | | | | | | | | |
| v/c Ratio | | 1.06 | | | | 0.20 | | | 0.22 | | | |
| Control Delay | | 104.2 | | | | 72.4 | | | 41.0 | | | |
| Queue Delay | | 0.0 | | | | 0.0 | | | 0.0 | | | |
| Total Delay | | 104.2 | | | | 72.4 | | | 41.0 | | | |
| Queue Length 50th (ft) | | ~648 | | | | 23 | | | 91 | | | |
| Queue Length 95th (ft) | | #656 | | | | 48 | | | 147 | | | |
| Internal Link Dist (ft) | | 440 | | | | 447 | | | 420 | | | |
| Turn Bay Length (ft) | | | | | | | | | | | | |
| Base Capacity (vph) | | 543 | | | | 185 | | | 572 | | | |
| Starvation Cap Reductn | | 0 | | | | 0 | | | 0 | | | |
| Spillback Cap Reductn | | 0 | | | | 0 | | | 0 | | | |
| Storage Cap Reductn | | 0 | | | | 0 | | | 0 | | | |
| Reduced v/c Ratio | | 1.06 | | | | 0.13 | | | 0.22 | | | |

## Intersection Summary

Area Type: Other
Cycle Length: 164
Actuated Cycle Length: 144.2
Natural Cycle: 90
Control Type: Actuated-Uncoordinated
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 5: Ashbourne Rd & Front St

| Lane Group | SBL | SBT | SBR | NWL2 | NWL | NWR | NWR2 |
|---|---|---|---|---|---|---|---|
| Lead/Lag | | | | | | | |
| Lead-Lag Optimize? | | | | | | | |
| Vehicle Extension (s) | 5.0 | 5.0 | | 5.0 | 5.0 | | |
| Minimum Gap (s) | 3.0 | 3.0 | | 3.0 | 3.0 | | |
| Time Before Reduce (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | |
| Time To Reduce (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | |
| Recall Mode | Max | Max | | None | None | | |
| Walk Time (s) | | | | | | | |
| Flash Dont Walk (s) | | | | | | | |
| Pedestrian Calls (#/hr) | | | | | | | |
| v/c Ratio | | 0.47 | | | 0.80 | | |
| Control Delay | | 45.5 | | | 69.3 | | |
| Queue Delay | | 0.0 | | | 0.0 | | |
| Total Delay | | 45.5 | | | 69.3 | | |
| Queue Length 50th (ft) | | 226 | | | 308 | | |
| Queue Length 95th (ft) | | 339 | | | 431 | | |
| Internal Link Dist (ft) | | 420 | | | 493 | | |
| Turn Bay Length (ft) | | | | | | | |
| Base Capacity (vph) | | 597 | | | 542 | | |
| Starvation Cap Reductn | | 0 | | | 0 | | |
| Spillback Cap Reductn | | 0 | | | 0 | | |
| Storage Cap Reductn | | 0 | | | 0 | | |
| Reduced v/c Ratio | | 0.47 | | | 0.60 | | |

Intersection Summary

| Movement | EBL | EBT | EBR | EBR2 | WBL | WBT | WBR | NBL | NBT | NBR | NBR2 | SBL2 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (vph) | 221 | 20 | 210 | 31 | 3 | 6 | 3 | 14 | 64 | 1 | 13 | 3 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width | 16 | 16 | 16 | 16 | 12 | 12 | 12 | 16 | 16 | 16 | 16 | 16 |
| Grade (%) | | -2% | | | | 3% | | | 4% | | | |
| Total Lost time (s) | | 6.0 | | | | 6.0 | | | 6.0 | | | |
| Lane Util. Factor | | 1.00 | | | | 1.00 | | | 1.00 | | | |
| Frt | | 0.93 | | | | 0.95 | | | 0.98 | | | |
| Flt Protected | | 0.98 | | | | 0.98 | | | 0.99 | | | |
| Satd. Flow (prot) | | 1935 | | | | 1758 | | | 1991 | | | |
| Flt Permitted | | 0.98 | | | | 0.98 | | | 0.90 | | | |
| Satd. Flow (perm) | | 1935 | | | | 1758 | | | 1815 | | | |
| Peak-hour factor, PHF | 0.83 | 0.71 | 0.88 | 0.75 | 0.38 | 0.75 | 0.38 | 0.56 | 0.83 | 0.25 | 0.75 | 0.75 |
| Adj. Flow (vph) | 266 | 28 | 239 | 41 | 8 | 8 | 8 | 25 | 77 | 4 | 17 | 4 |
| RTOR Reduction (vph) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Lane Group Flow (vph) | 0 | 574 | 0 | 0 | 0 | 24 | 0 | 0 | 123 | 0 | 0 | 0 |
| Heavy Vehicles (%) | 5% | 0% | 0% | 4% | 0% | 0% | 0% | 0% | 4% | 0% | 0% | 0% |
| Turn Type | Split | | | | Split | | | Perm | | | | Perm |
| Protected Phases | 4 | 4 | | | 8 | 8 | | | 2 | | | |
| Permitted Phases | | | | | | | | 2 | | | | 6 |
| Actuated Green, G (s) | | 40.5 | | | | 6.0 | | | 45.5 | | | |
| Effective Green, g (s) | | 40.5 | | | | 6.0 | | | 45.5 | | | |
| Actuated g/C Ratio | | 0.28 | | | | 0.04 | | | 0.31 | | | |
| Clearance Time (s) | | 6.0 | | | | 6.0 | | | 6.0 | | | |
| Vehicle Extension (s) | | 5.0 | | | | 5.0 | | | 5.0 | | | |
| Lane Grp Cap (vph) | | 534 | | | | 72 | | | 563 | | | |
| v/s Ratio Prot | | c0.30 | | | | c0.01 | | | | | | |
| v/s Ratio Perm | | | | | | | | | 0.07 | | | |
| v/c Ratio | | 1.07 | | | | 0.33 | | | 0.22 | | | |
| Uniform Delay, d1 | | 53.1 | | | | 68.4 | | | 37.4 | | | |
| Progression Factor | | 1.00 | | | | 1.00 | | | 1.00 | | | |
| Incremental Delay, d2 | | 60.6 | | | | 5.6 | | | 0.9 | | | |
| Delay (s) | | 113.7 | | | | 74.0 | | | 38.3 | | | |
| Level of Service | | F | | | | E | | | D | | | |
| Approach Delay (s) | | 113.7 | | | | 74.0 | | | 38.3 | | | |
| Approach LOS | | F | | | | E | | | D | | | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM Average Control Delay | 80.1 | HCM Level of Service | F |
| HCM Volume to Capacity ratio | 0.75 | | |
| Actuated Cycle Length (s) | 146.7 | Sum of lost time (s) | 24.0 |
| Intersection Capacity Utilization | 81.5% | ICU Level of Service | D |
| Analysis Period (min) | 15 | | |

c Critical Lane Group

| Movement | SBL | SBT | SBR | NWL2 | NWL | NWR | NWR2 |
|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | |
| Volume (vph) | 8 | 61 | 164 | 12 | 268 | 18 | 1 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width | 16 | 16 | 16 | 16 | 16 | 16 | 16 |
| Grade (%) | | 0% | | | 6% | | |
| Total Lost time (s) | | 6.0 | | | 6.0 | | |
| Lane Util. Factor | | 1.00 | | | 1.00 | | |
| Frt | | 0.91 | | | 0.99 | | |
| Flt Protected | | 1.00 | | | 0.96 | | |
| Satd. Flow (prot) | | 1936 | | | 1932 | | |
| Flt Permitted | | 0.97 | | | 0.96 | | |
| Satd. Flow (perm) | | 1892 | | | 1932 | | |
| Peak-hour factor, PHF | 0.50 | 0.88 | 0.87 | 0.70 | 0.95 | 0.75 | 0.25 |
| Adj. Flow (vph) | 16 | 69 | 189 | 17 | 282 | 24 | 4 |
| RTOR Reduction (vph) | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Lane Group Flow (vph) | 0 | 278 | 0 | 0 | 327 | 0 | 0 |
| Heavy Vehicles (%) | 0% | 0% | 1% | 0% | 2% | 6% | 0% |
| Turn Type | Perm | | | Split | | | |
| Protected Phases | | 6 | | 9 | 9 | | |
| Permitted Phases | 6 | | | | | | |
| Actuated Green, G (s) | | 45.5 | | | 30.7 | | |
| Effective Green, g (s) | | 45.5 | | | 30.7 | | |
| Actuated g/C Ratio | | 0.31 | | | 0.21 | | |
| Clearance Time (s) | | 6.0 | | | 6.0 | | |
| Vehicle Extension (s) | | 5.0 | | | 5.0 | | |
| Lane Grp Cap (vph) | | 587 | | | 404 | | |
| v/s Ratio Prot | | | | | c0.17 | | |
| v/s Ratio Perm | | c0.15 | | | | | |
| v/c Ratio | | 0.47 | | | 0.81 | | |
| Uniform Delay, d1 | | 40.9 | | | 55.2 | | |
| Progression Factor | | 1.00 | | | 1.00 | | |
| Incremental Delay, d2 | | 2.7 | | | 12.8 | | |
| Delay (s) | | 43.6 | | | 68.1 | | |
| Level of Service | | D | | | E | | |
| Approach Delay (s) | | 43.6 | | | 68.1 | | |
| Approach LOS | | D | | | E | | |

| Intersection Summary |
|---|

# APPENDIX M

# Supplemental Analysis for the Redevelopment of the Ashbourne Country Club

## Site Characteristics

This section presents the details regarding the proposed site, including the incremental increase in traffic volumes generated by the development during the peak hours and the distribution of this site traffic to the study area roadways, as well as the proposed site access configuration, traffic control, and sight distance requirements.

### *Trip Generation*

Traffic volumes generated by the proposed development, consisting of 166 total dwelling units, was prepared based on data compiled in the Institute of Transportation Engineers' publication, *Trip Generation, 8th Edition.* The Institute of Transportation Engineers is an international educational and scientific association of transportation professionals that facilitates the application of technology and scientific principals related to the research, planning, design, implementation, operation, and management of any mode of transportation. The *Trip Generation* is a multi-volume report that provides a summary of the trip generation data that has been collected and then presents rates and/or equations that can then be utilized for a particular land use code to estimate its trip generation characteristics.

The anticipated trip generation characteristics for the residential development are based upon Land Use Code 210 – Single-Family Detached Housing and Land Use Code 230 – Residential Condominiums/Townhomes. **Table 2** presents the anticipated vehicular trip generation characteristics for the the proposed development redevelopment of the Ashbourne Country Club.

**Table 2 – Vehicular Trip Generation (1)**

| Land Use | Size (units) | Daily | Weekday Morning Peak Hour | | | Weekday Afternoon Peak Hour | | |
|---|---|---|---|---|---|---|---|---|
| | | | In | Out | Total | In | Out | Total |
| Townhomes (2) | 80 | 530 | 7 | 36 | 43 | 34 | 17 | 50 |
| Single-Family Homes (3) | 86 | 906 | 17 | 52 | 69 | 58 | 34 | 92 |
| Total | 166 | 1,436 | 24 | 88 | 112 | 92 | 51 | 143 |

(1) Based on ITE's *Trip Generation, Eighth Edition.*
(2) Based upon ITE Land Use Code 230 – Residential Condominiums/Townhomes.
(3) Based upon ITE Land Use Code 210 –Single-Family Detached Housing.

As shown, the ITE data indicates the redevelopment of the Ashbourne Country Club would, on average, generate approximately 112 total trips (inbound and outbound) during the morning peak hour and approximately 143 total trips (inbound and outbound) during the afternoon peak hour. It should be noted that this site was previously a golf course with a country club, but as the site has been inoperational for the past few years, no trips credits were assumed for the previous on-site use.

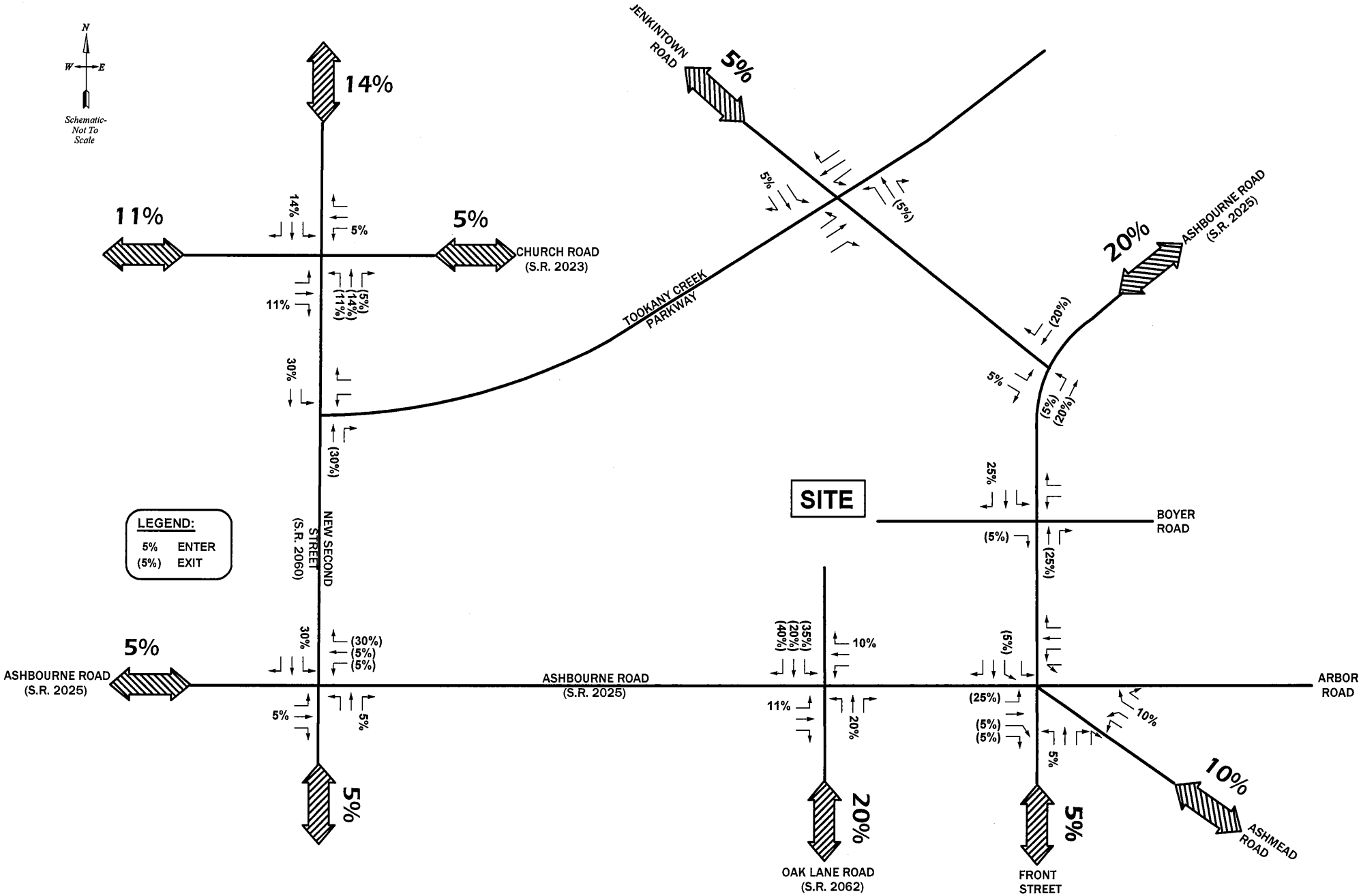



**FIGURE 4A**

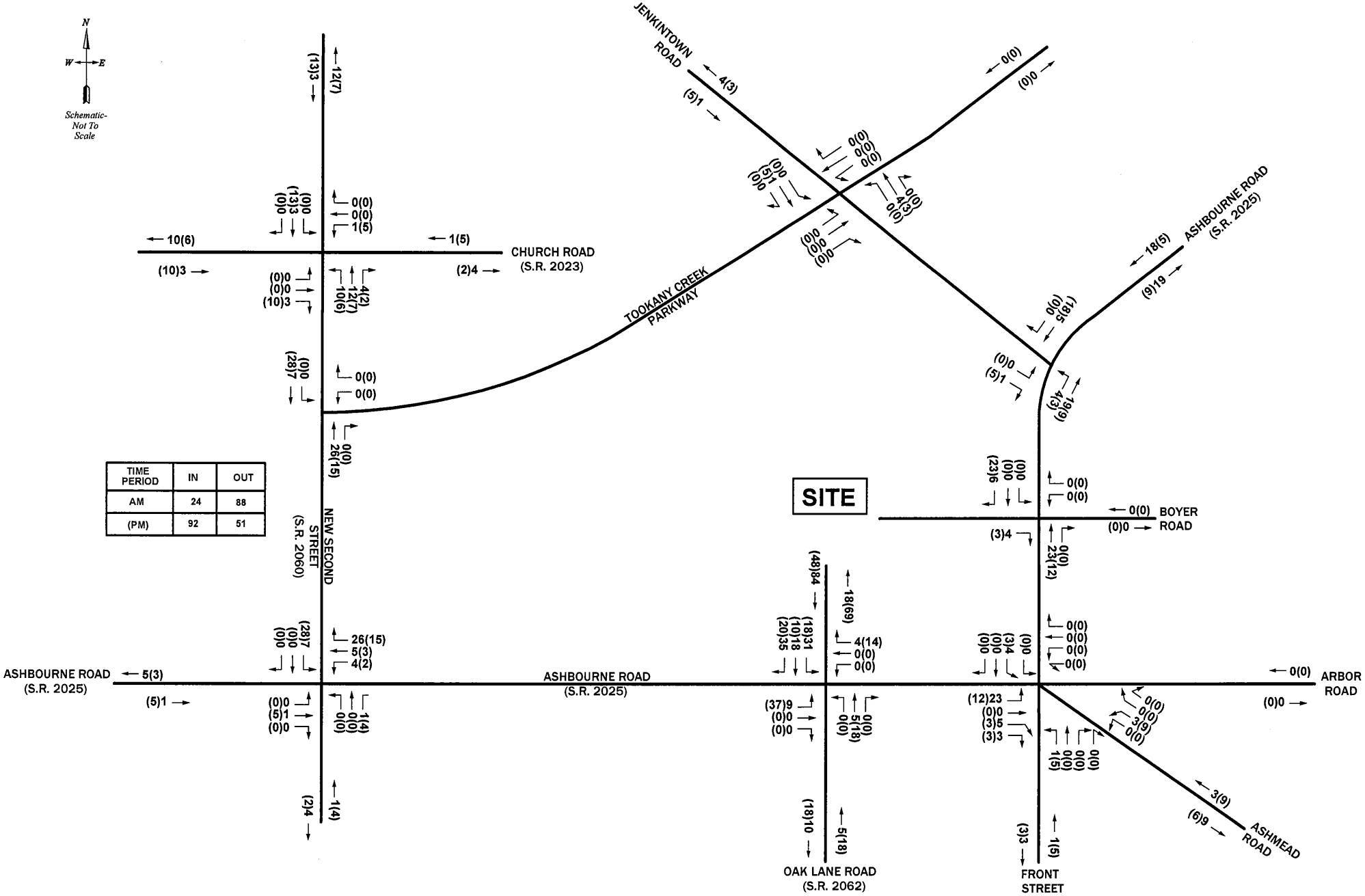
"New" Trip Distribution

# ASHBOURNE COUNTRY CLUB REDEVELOPMENT

**CHELTENHAM TOWNSHIP, MONTGOMERY COUNTY, PA**

McMAHON
TRANSPORTATION ENGINEERS & PLANNERS

*(5/29/12-LSW) i:\Eng\809015\Dwg\Figures\05-2012\Figure4A.dwg*




| TIME PERIOD | IN | OUT |
|---|---|---|
| AM | 24 | 88 |
| (PM) | 92 | 51 |

**FIGURE 4B**

"New" Trip Assignment

# ASHBOURNE COUNTRY CLUB REDEVELOPMENT

**CHELTENHAM TOWNSHIP, MONTGOMERY COUNTY, PA**

McMAHON TRANSPORTATION ENGINEERS & PLANNERS

(6/5/12-SAK) i:\Eng\809015\Dwg\Figures\05-2012\Figure4B.dwg

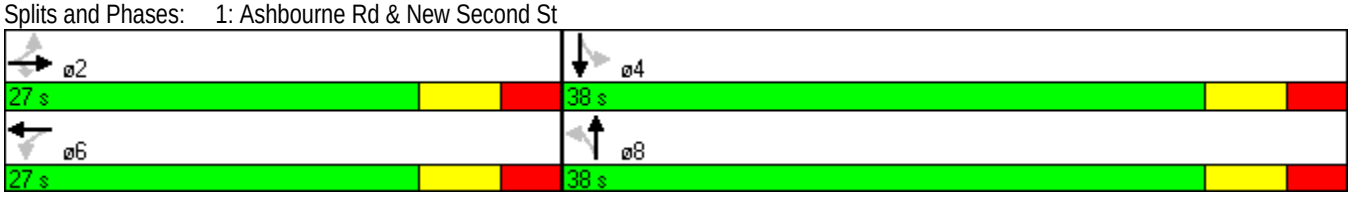
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (vph) | 98 | 146 | 19 | 10 | 205 | 137 | 15 | 314 | 10 | 89 | 448 | 73 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width (ft) | 12 | 12 | 14 | 16 | 16 | 16 | 16 | 16 | 16 | 12 | 12 | 12 |
| Grade (%) | | -9% | | | 8% | | | 3% | | | -2% | |
| Storage Length (ft) | 0 | | 110 | 0 | | 0 | 0 | | 0 | 0 | | 0 |
| Storage Lanes | 0 | | 1 | 0 | | 0 | 0 | | 0 | 0 | | 0 |
| Taper Length (ft) | 25 | | 75 | 25 | | 25 | 25 | | 25 | 25 | | 25 |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Ped Bike Factor | | | | | | | | | | | | |
| Frt | | | 0.850 | | 0.946 | | | 0.993 | | | 0.981 | |
| Flt Protected | | 0.977 | | | 0.998 | | | 0.997 | | | 0.992 | |
| Satd. Flow (prot) | 0 | 1858 | 1622 | 0 | 1864 | 0 | 0 | 2081 | 0 | 0 | 1781 | 0 |
| Flt Permitted | | 0.547 | | | 0.971 | | | 0.942 | | | 0.854 | |
| Satd. Flow (perm) | 0 | 1040 | 1622 | 0 | 1814 | 0 | 0 | 1966 | 0 | 0 | 1534 | 0 |
| Right Turn on Red | | | Yes | | | No | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | | 36 | | | | | 6 | | | 18 | |
| Link Speed (mph) | | 25 | | | 25 | | | 35 | | | 35 | |
| Link Distance (ft) | | 500 | | | 2250 | | | 500 | | | 500 | |
| Travel Time (s) | | 13.6 | | | 61.4 | | | 9.7 | | | 9.7 | |
| Confl. Peds. (#/hr) | | | | | | | | | | | | |
| Confl. Bikes (#/hr) | | | | | | | | | | | | |
| Peak Hour Factor | 0.69 | 0.90 | 0.53 | 0.50 | 0.87 | 0.81 | 0.63 | 0.79 | 0.45 | 0.78 | 0.87 | 0.69 |
| Growth Factor | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% |
| Heavy Vehicles (%) | 6% | 3% | 11% | 0% | 2% | 9% | 0% | 1% | 0% | 12% | 3% | 6% |
| Bus Blockages (#/hr) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Parking (#/hr) | | | | | | | | | | | | |
| Mid-Block Traffic (%) | | 0% | | | 0% | | | 0% | | | 0% | |
| Adj. Flow (vph) | 142 | 162 | 36 | 20 | 236 | 169 | 24 | 397 | 22 | 114 | 515 | 106 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 304 | 36 | 0 | 425 | 0 | 0 | 443 | 0 | 0 | 735 | 0 |
| Number of Detectors | 1 | 0 | 0 | 1 | 0 | | 1 | 0 | | 1 | 0 | |
| Detector Template | | | | | | | | | | | | |
| Leading Detector (ft) | 35 | 0 | 0 | 35 | 0 | | 35 | 0 | | 35 | 0 | |
| Trailing Detector (ft) | -5 | 0 | 0 | -5 | 0 | | -5 | 0 | | -5 | 0 | |
| Turn Type | Perm | | Perm | Perm | | | Perm | | | Perm | | |
| Protected Phases | | 2 | | | 6 | | | 8 | | | 4 | |
| Permitted Phases | 2 | | 2 | 6 | | | 8 | | | 4 | | |
| Detector Phase | 2 | 2 | 2 | 6 | 6 | | 8 | 8 | | 4 | 4 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 20.0 | 20.0 | 20.0 | 20.0 | 20.0 | | 31.0 | 31.0 | | 31.0 | 31.0 | |
| Minimum Split (s) | 27.0 | 27.0 | 27.0 | 27.0 | 27.0 | | 38.0 | 38.0 | | 38.0 | 38.0 | |
| Total Split (s) | 27.0 | 27.0 | 27.0 | 27.0 | 27.0 | 0.0 | 38.0 | 38.0 | 0.0 | 38.0 | 38.0 | 0.0 |
| Total Split (%) | 41.5% | 41.5% | 41.5% | 41.5% | 41.5% | 0.0% | 58.5% | 58.5% | 0.0% | 58.5% | 58.5% | 0.0% |
| Maximum Green (s) | 20.0 | 20.0 | 20.0 | 20.0 | 20.0 | | 31.0 | 31.0 | | 31.0 | 31.0 | |
| Yellow Time (s) | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | | 4.0 | 4.0 | | 4.0 | 4.0 | |
| All-Red Time (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | |
| Lost Time Adjust (s) | -1.0 | 0.0 | 0.0 | -1.0 | 0.0 | 0.0 | -1.0 | 0.0 | 0.0 | -1.0 | 0.0 | 0.0 |
| Total Lost Time (s) | 6.0 | 7.0 | 7.0 | 6.0 | 7.0 | 4.0 | 6.0 | 7.0 | 4.0 | 6.0 | 7.0 | 4.0 |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lead/Lag | | | | | | | | | | | | |
| Lead-Lag Optimize? | | | | | | | | | | | | |
| Vehicle Extension (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | |
| Minimum Gap (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | |
| Time Before Reduce (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Time To Reduce (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Recall Mode | Max | Max | Max | Max | Max | | Max | Max | | Max | Max | |
| Walk Time (s) | | | | | | | | | | | | |
| Flash Dont Walk (s) | | | | | | | | | | | | |
| Pedestrian Calls (#/hr) | | | | | | | | | | | | |
| v/c Ratio | | 0.95 | 0.07 | | 0.76 | | | 0.47 | | | 0.99 | |
| Control Delay | | 65.7 | 6.6 | | 31.4 | | | 13.4 | | | 51.0 | |
| Queue Delay | | 0.0 | 0.0 | | 0.0 | | | 0.0 | | | 0.0 | |
| Total Delay | | 65.7 | 6.6 | | 31.4 | | | 13.4 | | | 51.0 | |
| Queue Length 50th (ft) | | 116 | 0 | | 150 | | | 110 | | | 267 | |
| Queue Length 95th (ft) | | #259 | 6 | | #263 | | | 148 | | | #474 | |
| Internal Link Dist (ft) | | 420 | | | 2170 | | | 420 | | | 420 | |
| Turn Bay Length (ft) | | | 110 | | | | | | | | | |
| Base Capacity (vph) | | 320 | 524 | | 558 | | | 941 | | | 741 | |
| Starvation Cap Reductn | | 0 | 0 | | 0 | | | 0 | | | 0 | |
| Spillback Cap Reductn | | 0 | 0 | | 0 | | | 0 | | | 0 | |
| Storage Cap Reductn | | 0 | 0 | | 0 | | | 0 | | | 0 | |
| Reduced v/c Ratio | | 0.95 | 0.07 | | 0.76 | | | 0.47 | | | 0.99 | |

## Intersection Summary

Area Type: Other
Cycle Length: 65
Actuated Cycle Length: 65
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow
Natural Cycle: 80
Control Type: Pretimed
# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 1: Ashbourne Rd & New Second St



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (vph) | 98 | 146 | 19 | 10 | 205 | 137 | 15 | 314 | 10 | 89 | 448 | 73 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width | 12 | 12 | 14 | 16 | 16 | 16 | 16 | 16 | 16 | 12 | 12 | 12 |
| Grade (%) | | -9% | | | 8% | | | 3% | | | -2% | |
| Total Lost time (s) | | 7.0 | 7.0 | | 7.0 | | | 7.0 | | | 7.0 | |
| Lane Util. Factor | | 1.00 | 1.00 | | 1.00 | | | 1.00 | | | 1.00 | |
| Frt | | 1.00 | 0.85 | | 0.95 | | | 0.99 | | | 0.98 | |
| Flt Protected | | 0.98 | 1.00 | | 1.00 | | | 1.00 | | | 0.99 | |
| Satd. Flow (prot) | | 1858 | 1622 | | 1864 | | | 2082 | | | 1781 | |
| Flt Permitted | | 0.55 | 1.00 | | 0.97 | | | 0.94 | | | 0.85 | |
| Satd. Flow (perm) | | 1040 | 1622 | | 1815 | | | 1967 | | | 1532 | |
| Peak-hour factor, PHF | 0.69 | 0.90 | 0.53 | 0.50 | 0.87 | 0.81 | 0.63 | 0.79 | 0.45 | 0.78 | 0.87 | 0.69 |
| Adj. Flow (vph) | 142 | 162 | 36 | 20 | 236 | 169 | 24 | 397 | 22 | 114 | 515 | 106 |
| RTOR Reduction (vph) | 0 | 0 | 25 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 9 | 0 |
| Lane Group Flow (vph) | 0 | 304 | 11 | 0 | 425 | 0 | 0 | 440 | 0 | 0 | 726 | 0 |
| Heavy Vehicles (%) | 6% | 3% | 11% | 0% | 2% | 9% | 0% | 1% | 0% | 12% | 3% | 6% |
| Turn Type | Perm | | Perm | Perm | | | Perm | | | Perm | | |
| Protected Phases | | 2 | | | 6 | | | 8 | | | 4 | |
| Permitted Phases | 2 | | 2 | 6 | | | 8 | | | 4 | | |
| Actuated Green, G (s) | | 20.0 | 20.0 | | 20.0 | | | 31.0 | | | 31.0 | |
| Effective Green, g (s) | | 20.0 | 20.0 | | 20.0 | | | 31.0 | | | 31.0 | |
| Actuated g/C Ratio | | 0.31 | 0.31 | | 0.31 | | | 0.48 | | | 0.48 | |
| Clearance Time (s) | | 7.0 | 7.0 | | 7.0 | | | 7.0 | | | 7.0 | |
| Lane Grp Cap (vph) | | 320 | 499 | | 558 | | | 938 | | | 731 | |
| v/s Ratio Prot | | | | | | | | | | | | |
| v/s Ratio Perm | | c0.29 | 0.01 | | 0.23 | | | 0.22 | | | c0.47 | |
| v/c Ratio | | 0.95 | 0.02 | | 0.76 | | | 0.47 | | | 0.99 | |
| Uniform Delay, d1 | | 22.0 | 15.7 | | 20.3 | | | 11.5 | | | 16.9 | |
| Progression Factor | | 1.00 | 1.00 | | 1.00 | | | 1.00 | | | 1.00 | |
| Incremental Delay, d2 | | 39.1 | 0.1 | | 9.5 | | | 1.7 | | | 31.5 | |
| Delay (s) | | 61.1 | 15.8 | | 29.8 | | | 13.1 | | | 48.4 | |
| Level of Service | | E | B | | C | | | B | | | D | |
| Approach Delay (s) | | 56.3 | | | 29.8 | | | 13.1 | | | 48.4 | |
| Approach LOS | | E | | | C | | | B | | | D | |

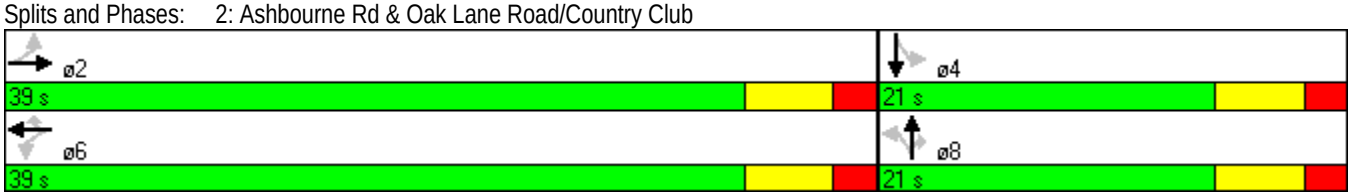
| Intersection Summary | | | |
|---|---|---|---|
| HCM Average Control Delay | 37.7 | HCM Level of Service | D |
| HCM Volume to Capacity ratio | 0.98 | | |
| Actuated Cycle Length (s) | 65.0 | Sum of lost time (s) | 14.0 |
| Intersection Capacity Utilization | 117.6% | ICU Level of Service | H |
| Analysis Period (min) | 15 | | |
| c Critical Lane Group | | | |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (vph) | 13 | 211 | 21 | 190 | 276 | 6 | 33 | 5 | 140 | 31 | 19 | 43 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width (ft) | 11 | 11 | 11 | 10 | 12 | 14 | 11 | 11 | 14 | 10 | 10 | 10 |
| Grade (%) | | 1% | | | 1% | | | -2% | | | 1% | |
| Storage Length (ft) | 140 | | 0 | 150 | | 75 | 0 | | 150 | 0 | | 0 |
| Storage Lanes | 1 | | 0 | 1 | | 1 | 0 | | 1 | 0 | | 0 |
| Taper Length (ft) | 75 | | 25 | 75 | | 75 | 25 | | 75 | 25 | | 25 |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Ped Bike Factor | | | | | | | | | | | | |
| Frt | | 0.985 | | | | 0.850 | | | 0.850 | | 0.959 | |
| Flt Protected | 0.950 | | | 0.950 | | | | 0.957 | | | 0.989 | |
| Satd. Flow (prot) | 1702 | 1734 | 0 | 1538 | 1872 | 1680 | 0 | 1772 | 1567 | 0 | 1641 | 0 |
| Flt Permitted | 0.566 | | | 0.587 | | | | 0.715 | | | 0.910 | |
| Satd. Flow (perm) | 1014 | 1734 | 0 | 950 | 1872 | 1680 | 0 | 1324 | 1567 | 0 | 1510 | 0 |
| Right Turn on Red | | | No | | | Yes | | | Yes | | | No |
| Satd. Flow (RTOR) | | | | | | 7 | | | 194 | | | |
| Link Speed (mph) | | 35 | | | 35 | | | 35 | | | 35 | |
| Link Distance (ft) | | 2250 | | | 325 | | | 280 | | | 300 | |
| Travel Time (s) | | 43.8 | | | 6.3 | | | 5.5 | | | 5.8 | |
| Confl. Peds. (#/hr) | | | | | | | | | | | | |
| Confl. Bikes (#/hr) | | | | | | | | | | | | |
| Peak Hour Factor | 0.90 | 0.83 | 0.75 | 0.86 | 0.86 | 0.90 | 0.65 | 0.90 | 0.72 | 0.90 | 0.25 | 0.90 |
| Growth Factor | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% |
| Heavy Vehicles (%) | 2% | 3% | 11% | 9% | 1% | 2% | 0% | 2% | 11% | 2% | 2% | 2% |
| Bus Blockages (#/hr) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Parking (#/hr) | | | | | | | | | | | | |
| Mid-Block Traffic (%) | | 0% | | | 0% | | | 0% | | | 0% | |
| Adj. Flow (vph) | 14 | 254 | 28 | 221 | 321 | 7 | 51 | 6 | 194 | 34 | 76 | 48 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 14 | 282 | 0 | 221 | 321 | 7 | 0 | 57 | 194 | 0 | 158 | 0 |
| Number of Detectors | 0 | 0 | | 1 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | |
| Detector Template | | | | | | | | | | | | |
| Leading Detector (ft) | 0 | 0 | | 35 | 0 | 5 | 35 | 35 | 35 | 20 | 20 | |
| Trailing Detector (ft) | 0 | 0 | | -5 | 0 | 0 | -5 | -5 | -5 | -5 | -5 | |
| Turn Type | Perm | | | Perm | | Perm | Perm | | Perm | Perm | | |
| Protected Phases | | 2 | | | 6 | | | 8 | | | 4 | |
| Permitted Phases | 2 | | | 6 | | 6 | 8 | | 8 | 4 | | |
| Detector Phase | 2 | 2 | | 6 | 6 | 6 | 8 | 8 | 8 | 4 | 4 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 33.0 | 33.0 | | 33.0 | 33.0 | 33.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | |
| Minimum Split (s) | 39.0 | 39.0 | | 39.0 | 39.0 | 39.0 | 9.0 | 9.0 | 9.0 | 9.0 | 9.0 | |
| Total Split (s) | 39.0 | 39.0 | 0.0 | 39.0 | 39.0 | 39.0 | 21.0 | 21.0 | 21.0 | 21.0 | 21.0 | 0.0 |
| Total Split (%) | 65.0% | 65.0% | 0.0% | 65.0% | 65.0% | 65.0% | 35.0% | 35.0% | 35.0% | 35.0% | 35.0% | 0.0% |
| Maximum Green (s) | 33.0 | 33.0 | | 33.0 | 33.0 | 33.0 | 15.0 | 15.0 | 15.0 | 15.0 | 15.0 | |
| Yellow Time (s) | 4.0 | 4.0 | | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | |
| All-Red Time (s) | 2.0 | 2.0 | | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | |
| Lost Time Adjust (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | -2.0 | 0.0 | 0.0 | -2.0 | 0.0 | 0.0 |
| Total Lost Time (s) | 6.0 | 6.0 | 4.0 | 6.0 | 6.0 | 6.0 | 4.0 | 6.0 | 6.0 | 4.0 | 6.0 | 4.0 |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lead/Lag | | | | | | | | | | | | |
| Lead-Lag Optimize? | | | | | | | | | | | | |
| Vehicle Extension (s) | 3.0 | 3.0 | | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | |
| Minimum Gap (s) | 3.0 | 3.0 | | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | |
| Time Before Reduce (s) | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| Time To Reduce (s) | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| Recall Mode | Min | Min | | Min | Min | Min | None | None | None | None | None | |
| Walk Time (s) | | | | | | | | | | | | |
| Flash Dont Walk (s) | | | | | | | | | | | | |
| Pedestrian Calls (#/hr) | | | | | | | | | | | | |
| v/c Ratio | 0.02 | 0.27 | | 0.39 | 0.29 | 0.01 | | 0.22 | 0.42 | | 0.54 | |
| Control Delay | 6.0 | 7.1 | | 9.6 | 7.1 | 3.8 | | 20.7 | 6.6 | | 27.4 | |
| Queue Delay | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | |
| Total Delay | 6.0 | 7.1 | | 9.6 | 7.1 | 3.8 | | 20.7 | 6.6 | | 27.4 | |
| Queue Length 50th (ft) | 2 | 40 | | 34 | 46 | 0 | | 16 | 0 | | 48 | |
| Queue Length 95th (ft) | 9 | 79 | | 82 | 92 | 4 | | 42 | 21 | | 23 | |
| Internal Link Dist (ft) | | 2170 | | | 245 | | | 200 | | | 220 | |
| Turn Bay Length (ft) | 140 | | | 150 | | 75 | | | 150 | | | |
| Base Capacity (vph) | 600 | 1026 | | 562 | 1107 | 996 | | 356 | 563 | | 406 | |
| Starvation Cap Reductn | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | | 0 | |
| Spillback Cap Reductn | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | | 0 | |
| Storage Cap Reductn | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | | 0 | |
| Reduced v/c Ratio | 0.02 | 0.27 | | 0.39 | 0.29 | 0.01 | | 0.16 | 0.34 | | 0.39 | |

| Intersection Summary | |
|---|---|
| Area Type: | Other |
| Cycle Length: 60 | |
| Actuated Cycle Length: 56 | |
| Natural Cycle: 55 | |
| Control Type: Actuated-Uncoordinated | |

Splits and Phases: 2: Ashbourne Rd & Oak Lane Road/Country Club



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (vph) | 13 | 211 | 21 | 190 | 276 | 6 | 33 | 5 | 140 | 31 | 19 | 43 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width | 11 | 11 | 11 | 10 | 12 | 14 | 11 | 11 | 14 | 10 | 10 | 10 |
| Grade (%) | | 1% | | | 1% | | | -2% | | | 1% | |
| Total Lost time (s) | 6.0 | 6.0 | | 6.0 | 6.0 | 6.0 | | 6.0 | 6.0 | | 6.0 | |
| Lane Util. Factor | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | |
| Frt | 1.00 | 0.99 | | 1.00 | 1.00 | 0.85 | | 1.00 | 0.85 | | 0.96 | |
| Flt Protected | 0.95 | 1.00 | | 0.95 | 1.00 | 1.00 | | 0.96 | 1.00 | | 0.99 | |
| Satd. Flow (prot) | 1702 | 1734 | | 1538 | 1872 | 1680 | | 1772 | 1567 | | 1641 | |
| Flt Permitted | 0.57 | 1.00 | | 0.59 | 1.00 | 1.00 | | 0.72 | 1.00 | | 0.91 | |
| Satd. Flow (perm) | 1014 | 1734 | | 950 | 1872 | 1680 | | 1324 | 1567 | | 1510 | |
| Peak-hour factor, PHF | 0.90 | 0.83 | 0.75 | 0.86 | 0.86 | 0.90 | 0.65 | 0.90 | 0.72 | 0.90 | 0.25 | 0.90 |
| Adj. Flow (vph) | 14 | 254 | 28 | 221 | 321 | 7 | 51 | 6 | 194 | 34 | 76 | 48 |
| RTOR Reduction (vph) | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 157 | 0 | 0 | 0 |
| Lane Group Flow (vph) | 14 | 282 | 0 | 221 | 321 | 4 | 0 | 57 | 37 | 0 | 158 | 0 |
| Heavy Vehicles (%) | 2% | 3% | 11% | 9% | 1% | 2% | 0% | 2% | 11% | 2% | 2% | 2% |
| Turn Type | Perm | | | Perm | | Perm | Perm | | Perm | Perm | | |
| Protected Phases | | 2 | | | 6 | | | 8 | | | 4 | |
| Permitted Phases | 2 | | | 6 | | 6 | 8 | | 8 | 4 | | |
| Actuated Green, G (s) | 33.1 | 33.1 | | 33.1 | 33.1 | 33.1 | | 10.8 | 10.8 | | 10.8 | |
| Effective Green, g (s) | 33.1 | 33.1 | | 33.1 | 33.1 | 33.1 | | 10.8 | 10.8 | | 10.8 | |
| Actuated g/C Ratio | 0.59 | 0.59 | | 0.59 | 0.59 | 0.59 | | 0.19 | 0.19 | | 0.19 | |
| Clearance Time (s) | 6.0 | 6.0 | | 6.0 | 6.0 | 6.0 | | 6.0 | 6.0 | | 6.0 | |
| Vehicle Extension (s) | 3.0 | 3.0 | | 3.0 | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | |
| Lane Grp Cap (vph) | 600 | 1027 | | 563 | 1108 | 995 | | 256 | 303 | | 292 | |
| v/s Ratio Prot | | 0.16 | | | 0.17 | | | | | | | |
| v/s Ratio Perm | 0.01 | | | c0.23 | | 0.00 | | 0.04 | 0.02 | | c0.10 | |
| v/c Ratio | 0.02 | 0.27 | | 0.39 | 0.29 | 0.00 | | 0.22 | 0.12 | | 0.54 | |
| Uniform Delay, d1 | 4.7 | 5.6 | | 6.1 | 5.6 | 4.7 | | 19.0 | 18.6 | | 20.3 | |
| Progression Factor | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | |
| Incremental Delay, d2 | 0.0 | 0.1 | | 0.5 | 0.1 | 0.0 | | 0.4 | 0.2 | | 2.0 | |
| Delay (s) | 4.7 | 5.7 | | 6.5 | 5.8 | 4.7 | | 19.5 | 18.8 | | 22.4 | |
| Level of Service | A | A | | A | A | A | | B | B | | C | |
| Approach Delay (s) | | 5.7 | | | 6.0 | | | 19.0 | | | 22.4 | |
| Approach LOS | | A | | | A | | | B | | | C | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM Average Control Delay | 10.6 | HCM Level of Service | B |
| HCM Volume to Capacity ratio | 0.43 | | |
| Actuated Cycle Length (s) | 55.9 | Sum of lost time (s) | 12.0 |
| Intersection Capacity Utilization | 82.0% | ICU Level of Service | E |
| Analysis Period (min) | 15 | | |

c Critical Lane Group

| Lane Group | EBT | EBR | WBL | WBT | NBL | NBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (vph) | 381 | 1 | 2 | 470 | 2 | 3 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width (ft) | 12 | 12 | 12 | 12 | 12 | 12 |
| Grade (%) | -2% | | | 1% | 0% | |
| Storage Length (ft) | | 0 | 0 | | 0 | 0 |
| Storage Lanes | | 0 | 0 | | 1 | 0 |
| Taper Length (ft) | | 25 | 25 | | 25 | 25 |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Ped Bike Factor | | | | | | |
| Frt | | | | | 0.919 | |
| Flt Protected | | | | | 0.980 | |
| Satd. Flow (prot) | 1811 | 0 | 0 | 1801 | 1711 | 0 |
| Flt Permitted | | | | | 0.980 | |
| Satd. Flow (perm) | 1811 | 0 | 0 | 1801 | 1711 | 0 |
| Link Speed (mph) | 35 | | | 35 | 25 | |
| Link Distance (ft) | 325 | | | 475 | 200 | |
| Travel Time (s) | 6.3 | | | 9.3 | 5.5 | |
| Confl. Peds. (#/hr) | | | | | | |
| Confl. Bikes (#/hr) | | | | | | |
| Peak Hour Factor | 0.89 | 0.90 | 0.90 | 0.92 | 0.90 | 0.90 |
| Growth Factor | 100% | 100% | 100% | 100% | 100% | 100% |
| Heavy Vehicles (%) | 6% | 0% | 0% | 5% | 0% | 0% |
| Bus Blockages (#/hr) | 0 | 0 | 0 | 0 | 0 | 0 |
| Parking (#/hr) | | | | | | |
| Mid-Block Traffic (%) | 0% | | | 0% | 0% | |
| Adj. Flow (vph) | 428 | 1 | 2 | 511 | 2 | 3 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 429 | 0 | 0 | 513 | 5 | 0 |
| Sign Control | Free | | | Free | Stop | |

| Intersection Summary | |
|---|---|
| Area Type: | Other |
| Control Type: Unsignalized | |

| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (veh/h) | 381 | 1 | 2 | 470 | 2 | 3 |
| Sign Control | Free | | | Free | Stop | |
| Grade | -2% | | | 1% | 0% | |
| Peak Hour Factor | 0.89 | 0.90 | 0.90 | 0.92 | 0.90 | 0.90 |
| Hourly flow rate (vph) | 428 | 1 | 2 | 511 | 2 | 3 |
| Pedestrians | | | | | | |
| Lane Width (ft) | | | | | | |
| Walking Speed (ft/s) | | | | | | |
| Percent Blockage | | | | | | |
| Right turn flare (veh) | | | | | | |
| Median type | None | | | None | | |
| Median storage veh) | | | | | | |
| Upstream signal (ft) | 325 | | | 1025 | | |
| pX, platoon unblocked | | | 0.98 | | 0.98 | 0.98 |
| vC, conflicting volume | | | 429 | | 944 | 429 |
| vC1, stage 1 conf vol | | | | | | |
| vC2, stage 2 conf vol | | | | | | |
| vCu, unblocked vol | | | 402 | | 930 | 402 |
| tC, single (s) | | | 4.1 | | 6.4 | 6.2 |
| tC, 2 stage (s) | | | | | | |
| tF (s) | | | 2.2 | | 3.5 | 3.3 |
| p0 queue free % | | | 100 | | 99 | 99 |
| cM capacity (veh/h) | | | 1139 | | 291 | 637 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 |
|---|---|---|---|
| Volume Total | 429 | 513 | 6 |
| Volume Left | 0 | 2 | 2 |
| Volume Right | 1 | 0 | 3 |
| cSH | 1700 | 1139 | 432 |
| Volume to Capacity | 0.25 | 0.00 | 0.01 |
| Queue Length 95th (ft) | 0 | 0 | 1 |
| Control Delay (s) | 0.0 | 0.1 | 13.4 |
| Lane LOS | | A | B |
| Approach Delay (s) | 0.0 | 0.1 | 13.4 |
| Approach LOS | | | B |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 0.1 | | |
| Intersection Capacity Utilization | 36.3% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |

| Lane Group | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (vph) | 1 | 0 | 178 | 1 | 0 | 230 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width (ft) | 12 | 12 | 12 | 12 | 12 | 12 |
| Grade (%) | 0% | | -2% | | | 0% |
| Storage Length (ft) | 0 | 0 | | 0 | 0 | |
| Storage Lanes | 1 | 0 | | 0 | 0 | |
| Taper Length (ft) | 25 | 25 | | 25 | 25 | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Ped Bike Factor | | | | | | |
| Frt | | | 0.999 | | | |
| Flt Protected | 0.950 | | | | | |
| Satd. Flow (prot) | 1805 | 0 | 1743 | 0 | 0 | 1743 |
| Flt Permitted | 0.950 | | | | | |
| Satd. Flow (perm) | 1805 | 0 | 1743 | 0 | 0 | 1743 |
| Link Speed (mph) | 25 | | 35 | | | 35 |
| Link Distance (ft) | 250 | | 260 | | | 280 |
| Travel Time (s) | 6.8 | | 5.1 | | | 5.5 |
| Confl. Peds. (#/hr) | | | | | | |
| Confl. Bikes (#/hr) | | | | | | |
| Peak Hour Factor | 0.90 | 0.90 | 0.76 | 0.90 | 0.90 | 0.88 |
| Growth Factor | 100% | 100% | 100% | 100% | 100% | 100% |
| Heavy Vehicles (%) | 0% | 0% | 10% | 0% | 0% | 9% |
| Bus Blockages (#/hr) | 0 | 0 | 0 | 0 | 0 | 0 |
| Parking (#/hr) | | | | | | |
| Mid-Block Traffic (%) | 0% | | 0% | | | 0% |
| Adj. Flow (vph) | 1 | 0 | 234 | 1 | 0 | 261 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 1 | 0 | 235 | 0 | 0 | 261 |
| Sign Control | Stop | | Free | | | Free |

| Intersection Summary | |
|---|---|
| Area Type: | Other |
| Control Type: Unsignalized | |

| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (veh/h) | 1 | 0 | 178 | 1 | 0 | 230 |
| Sign Control | Stop | | Free | | | Free |
| Grade | 0% | | -2% | | | 0% |
| Peak Hour Factor | 0.90 | 0.90 | 0.76 | 0.90 | 0.90 | 0.88 |
| Hourly flow rate (vph) | 1 | 0 | 234 | 1 | 0 | 261 |
| Pedestrians | | | | | | |
| Lane Width (ft) | | | | | | |
| Walking Speed (ft/s) | | | | | | |
| Percent Blockage | | | | | | |
| Right turn flare (veh) | | | | | | |
| Median type | | | None | | | None |
| Median storage veh) | | | | | | |
| Upstream signal (ft) | | | | | | 280 |
| pX, platoon unblocked | | | | | | |
| vC, conflicting volume | 496 | 235 | | | 235 | |
| vC1, stage 1 conf vol | | | | | | |
| vC2, stage 2 conf vol | | | | | | |
| vCu, unblocked vol | 496 | 235 | | | 235 | |
| tC, single (s) | 6.4 | 6.2 | | | 4.1 | |
| tC, 2 stage (s) | | | | | | |
| tF (s) | 3.5 | 3.3 | | | 2.2 | |
| p0 queue free % | 100 | 100 | | | 100 | |
| cM capacity (veh/h) | 537 | 809 | | | 1344 | |

| Direction, Lane # | WB 1 | NB 1 | SB 1 |
|---|---|---|---|
| Volume Total | 1 | 235 | 261 |
| Volume Left | 1 | 0 | 0 |
| Volume Right | 0 | 1 | 0 |
| cSH | 537 | 1700 | 1344 |
| Volume to Capacity | 0.00 | 0.14 | 0.00 |
| Queue Length 95th (ft) | 0 | 0 | 0 |
| Control Delay (s) | 11.7 | 0.0 | 0.0 |
| Lane LOS | B | | |
| Approach Delay (s) | 11.7 | 0.0 | 0.0 |
| Approach LOS | B | | |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 0.0 | | |
| Intersection Capacity Utilization | 22.1% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |

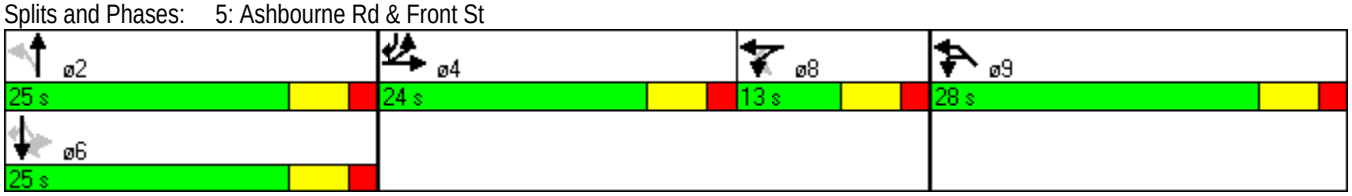
| Lane Group | EBL | EBT | EBR | EBR2 | WBL2 | WBL | WBT | NBL | NBT | NBR2 | SBL2 | SBL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (vph) | 165 | 3 | 199 | 19 | 1 | 2 | 10 | 22 | 69 | 14 | 2 | 18 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width (ft) | 10 | 11 | 11 | 11 | 12 | 12 | 12 | 16 | 16 | 16 | 11 | 11 |
| Grade (%) | | -2% | | | | | 3% | | 4% | | | |
| Storage Length (ft) | 200 | | 0 | | | 0 | | 0 | | | | 0 |
| Storage Lanes | 1 | | 0 | | | 0 | | 0 | | | | 0 |
| Taper Length (ft) | 75 | | 25 | | | 25 | | 25 | | | | 25 |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Ped Bike Factor | | | | | | | | | | | | |
| Frt | | 0.857 | | | | | | | 0.984 | | | |
| Flt Protected | 0.950 | | | | | | 0.982 | | 0.985 | | | |
| Satd. Flow (prot) | 1506 | 1562 | 0 | 0 | 0 | 0 | 1838 | 0 | 1994 | 0 | 0 | 0 |
| Flt Permitted | 0.950 | | | | | | 0.982 | | 0.865 | | | |
| Satd. Flow (perm) | 1506 | 1562 | 0 | 0 | 0 | 0 | 1838 | 0 | 1751 | 0 | 0 | 0 |
| Right Turn on Red | | | | No | | | | | | No | | |
| Satd. Flow (RTOR) | | | | | | | | | | | | |
| Link Speed (mph) | | 40 | | | | | 35 | | 25 | | | |
| Link Distance (ft) | | 550 | | | | | 528 | | 500 | | | |
| Travel Time (s) | | 9.4 | | | | | 10.3 | | 13.6 | | | |
| Confl. Peds. (#/hr) | | | | | | | | | | | | |
| Confl. Bikes (#/hr) | | | | | | | | | | | | |
| Peak Hour Factor | 0.90 | 0.25 | 0.88 | 0.69 | 0.25 | 0.25 | 0.50 | 0.46 | 0.75 | 0.75 | 0.25 | 0.58 |
| Growth Factor | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% |
| Heavy Vehicles (%) | 13% | 0% | 1% | 9% | 0% | 0% | 0% | 0% | 3% | 7% | 0% | 0% |
| Bus Blockages (#/hr) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Parking (#/hr) | | | | | | | | | | | | |
| Mid-Block Traffic (%) | | 0% | | | | | 0% | | 0% | | | |
| Adj. Flow (vph) | 183 | 12 | 226 | 28 | 4 | 8 | 20 | 48 | 92 | 19 | 8 | 31 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 183 | 266 | 0 | 0 | 0 | 0 | 32 | 0 | 159 | 0 | 0 | 0 |
| Number of Detectors | 1 | 1 | | | 1 | 1 | 1 | 1 | 1 | | 2 | 2 |
| Detector Template | | | | | | | | | | | | |
| Leading Detector (ft) | 35 | 35 | | | 35 | 35 | 35 | 35 | 35 | | 70 | 70 |
| Trailing Detector (ft) | -5 | -5 | | | -5 | -5 | -5 | -5 | -5 | | -5 | -5 |
| Turn Type | Split | | | | Perm | Split | | Perm | | | Perm | Perm |
| Protected Phases | 4 | 4 | | | | 8 | 8 | | 2 | | | |
| Permitted Phases | | | | | 8 | | | 2 | | | 6 | 6 |
| Detector Phase | 4 | 4 | | | 8 | 8 | 8 | 2 | 2 | | 6 | 6 |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 8.0 | 8.0 | | | 5.0 | 5.0 | 5.0 | 8.0 | 8.0 | | 8.0 | 8.0 |
| Minimum Split (s) | 14.0 | 14.0 | | | 11.0 | 11.0 | 11.0 | 14.0 | 14.0 | | 14.0 | 14.0 |
| Total Split (s) | 24.0 | 24.0 | 0.0 | 0.0 | 13.0 | 13.0 | 13.0 | 25.0 | 25.0 | 0.0 | 25.0 | 25.0 |
| Total Split (%) | 26.7% | 26.7% | 0.0% | 0.0% | 14.4% | 14.4% | 14.4% | 27.8% | 27.8% | 0.0% | 27.8% | 27.8% |
| Maximum Green (s) | 18.0 | 18.0 | | | 7.0 | 7.0 | 7.0 | 19.0 | 19.0 | | 19.0 | 19.0 |
| Yellow Time (s) | 4.0 | 4.0 | | | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | | 4.0 | 4.0 |
| All-Red Time (s) | 2.0 | 2.0 | | | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | | 2.0 | 2.0 |
| Lost Time Adjust (s) | 0.0 | 0.0 | 0.0 | 0.0 | -2.0 | -2.0 | 0.0 | -2.0 | 0.0 | 0.0 | -2.0 | -2.0 |
| Total Lost Time (s) | 6.0 | 6.0 | 4.0 | 4.0 | 4.0 | 4.0 | 6.0 | 4.0 | 6.0 | 4.0 | 4.0 | 4.0 |

| Lane Group | SBT | SBR | NWL2 | NWL | NWR |
|---|---|---|---|---|---|
| Lane Configurations | | | | | |
| Volume (vph) | 71 | 205 | 16 | 261 | 15 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width (ft) | 11 | 14 | 16 | 16 | 16 |
| Grade (%) | 0% | | | 6% | |
| Storage Length (ft) | | 250 | | 0 | 0 |
| Storage Lanes | | 1 | | 1 | 0 |
| Taper Length (ft) | | 75 | | 25 | 25 |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Ped Bike Factor | | | | | |
| Frt | | 0.850 | | 0.991 | |
| Flt Protected | 0.985 | | | 0.955 | |
| Satd. Flow (prot) | 1809 | 1625 | 0 | 1935 | 0 |
| Flt Permitted | 0.878 | | | 0.955 | |
| Satd. Flow (perm) | 1613 | 1625 | 0 | 1935 | 0 |
| Right Turn on Red | | No | | | |
| Satd. Flow (RTOR) | | | | | |
| Link Speed (mph) | 35 | | | 25 | |
| Link Distance (ft) | 500 | | | 574 | |
| Travel Time (s) | 9.7 | | | 15.7 | |
| Confl. Peds. (#/hr) | | | | | |
| Confl. Bikes (#/hr) | | | | | |
| Peak Hour Factor | 0.81 | 0.97 | 0.56 | 0.86 | 0.63 |
| Growth Factor | 100% | 100% | 100% | 100% | 100% |
| Heavy Vehicles (%) | 0% | 6% | 0% | 2% | 7% |
| Bus Blockages (#/hr) | 0 | 0 | 0 | 0 | 0 |
| Parking (#/hr) | | | | | |
| Mid-Block Traffic (%) | 0% | | | 0% | |
| Adj. Flow (vph) | 88 | 211 | 29 | 303 | 24 |
| Shared Lane Traffic (%) | | | | | |
| Lane Group Flow (vph) | 127 | 211 | 0 | 356 | 0 |
| Number of Detectors | 4 | 1 | 1 | 1 | |
| Detector Template | | | | | |
| Leading Detector (ft) | 66 | 35 | 35 | 35 | |
| Trailing Detector (ft) | -5 | -5 | -5 | -5 | |
| Turn Type | | pm+ov | Split | | |
| Protected Phases | 6 | 4 | 9 | 9 | |
| Permitted Phases | | 6 | | | |
| Detector Phase | 6 | 4 | 9 | 9 | |
| Switch Phase | | | | | |
| Minimum Initial (s) | 8.0 | 8.0 | 8.0 | 8.0 | |
| Minimum Split (s) | 14.0 | 14.0 | 14.0 | 14.0 | |
| Total Split (s) | 25.0 | 24.0 | 28.0 | 28.0 | 0.0 |
| Total Split (%) | 27.8% | 26.7% | 31.1% | 31.1% | 0.0% |
| Maximum Green (s) | 19.0 | 18.0 | 22.0 | 22.0 | |
| Yellow Time (s) | 4.0 | 4.0 | 4.0 | 4.0 | |
| All-Red Time (s) | 2.0 | 2.0 | 2.0 | 2.0 | |
| Lost Time Adjust (s) | 0.0 | 0.0 | -2.0 | 0.0 | 0.0 |
| Total Lost Time (s) | 6.0 | 6.0 | 4.0 | 6.0 | 4.0 |

| Lane Group | EBL | EBT | EBR | EBR2 | WBL2 | WBL | WBT | NBL | NBT | NBR2 | SBL2 | SBL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lead/Lag | | | | | | | | | | | | |
| Lead-Lag Optimize? | | | | | | | | | | | | |
| Vehicle Extension (s) | 5.0 | 5.0 | | | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | | 5.0 | 5.0 |
| Minimum Gap (s) | 3.0 | 3.0 | | | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | | 3.0 | 3.0 |
| Time Before Reduce (s) | 0.0 | 0.0 | | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 |
| Time To Reduce (s) | 0.0 | 0.0 | | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 |
| Recall Mode | None | None | | | None | None | None | Max | Max | | Max | Max |
| Walk Time (s) | | | | | | | | | | | | |
| Flash Dont Walk (s) | | | | | | | | | | | | |
| Pedestrian Calls (#/hr) | | | | | | | | | | | | |
| v/c Ratio | 0.57 | 0.80 | | | | | 0.20 | | 0.38 | | | |
| Control Delay | 38.9 | 52.1 | | | | | 41.8 | | 32.4 | | | |
| Queue Delay | 0.0 | 0.0 | | | | | 0.0 | | 0.0 | | | |
| Total Delay | 38.9 | 52.1 | | | | | 41.8 | | 32.4 | | | |
| Queue Length 50th (ft) | 96 | 147 | | | | | 17 | | 79 | | | |
| Queue Length 95th (ft) | 166 | 54 | | | | | 25 | | 112 | | | |
| Internal Link Dist (ft) | | 470 | | | | | 448 | | 420 | | | |
| Turn Bay Length (ft) | 200 | | | | | | | | | | | |
| Base Capacity (vph) | 336 | 349 | | | | | 160 | | 413 | | | |
| Starvation Cap Reductn | 0 | 0 | | | | | 0 | | 0 | | | |
| Spillback Cap Reductn | 0 | 0 | | | | | 0 | | 0 | | | |
| Storage Cap Reductn | 0 | 0 | | | | | 0 | | 0 | | | |
| Reduced v/c Ratio | 0.54 | 0.76 | | | | | 0.20 | | 0.38 | | | |

| Intersection Summary | |
|---|---|
| Area Type: | Other |
| Cycle Length: 90 | |
| Actuated Cycle Length: 81.9 | |
| Natural Cycle: 65 | |
| Control Type: Actuated-Uncoordinated | |
| # 95th percentile volume exceeds capacity, queue may be longer. | |
| Queue shown is maximum after two cycles. | |

Splits and Phases: 5: Ashbourne Rd & Front St



| Lane Group | SBT | SBR | NWL2 | NWL | NWR |
|---|---|---|---|---|---|
| Lead/Lag | | | | | |
| Lead-Lag Optimize? | | | | | |
| Vehicle Extension (s) | 5.0 | 5.0 | 5.0 | 5.0 | |
| Minimum Gap (s) | 3.0 | 3.0 | 3.0 | 3.0 | |
| Time Before Reduce (s) | 0.0 | 0.0 | 0.0 | 0.0 | |
| Time To Reduce (s) | 0.0 | 0.0 | 0.0 | 0.0 | |
| Recall Mode | Max | None | None | None | |
| Walk Time (s) | | | | | |
| Flash Dont Walk (s) | | | | | |
| Pedestrian Calls (#/hr) | | | | | |
| v/c Ratio | 0.33 | 0.25 | | 0.77 | |
| Control Delay | 31.9 | 13.6 | | 42.3 | |
| Queue Delay | 0.0 | 0.0 | | 0.0 | |
| Total Delay | 31.9 | 13.6 | | 42.3 | |
| Queue Length 50th (ft) | 62 | 69 | | 188 | |
| Queue Length 95th (ft) | 102 | 116 | | #273 | |
| Internal Link Dist (ft) | 420 | | | 494 | |
| Turn Bay Length (ft) | | 250 | | | |
| Base Capacity (vph) | 381 | 867 | | 528 | |
| Starvation Cap Reductn | 0 | 0 | | 0 | |
| Spillback Cap Reductn | 0 | 0 | | 0 | |
| Storage Cap Reductn | 0 | 0 | | 0 | |
| Reduced v/c Ratio | 0.33 | 0.24 | | 0.67 | |

Intersection Summary

| Movement | EBL | EBT | EBR | EBR2 | WBL2 | WBL | WBT | NBL | NBT | NBR2 | SBL2 | SBL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (vph) | 165 | 3 | 199 | 19 | 1 | 2 | 10 | 22 | 69 | 14 | 2 | 18 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width | 10 | 11 | 11 | 11 | 12 | 12 | 12 | 16 | 16 | 16 | 11 | 11 |
| Grade (%) | | -2% | | | | | 3% | | 4% | | | |
| Total Lost time (s) | 6.0 | 6.0 | | | | | 6.0 | | 6.0 | | | |
| Lane Util. Factor | 1.00 | 1.00 | | | | | 1.00 | | 1.00 | | | |
| Frt | 1.00 | 0.86 | | | | | 1.00 | | 0.98 | | | |
| Flt Protected | 0.95 | 1.00 | | | | | 0.98 | | 0.99 | | | |
| Satd. Flow (prot) | 1506 | 1561 | | | | | 1837 | | 1994 | | | |
| Flt Permitted | 0.95 | 1.00 | | | | | 0.98 | | 0.86 | | | |
| Satd. Flow (perm) | 1506 | 1561 | | | | | 1837 | | 1751 | | | |
| Peak-hour factor, PHF | 0.90 | 0.25 | 0.88 | 0.69 | 0.25 | 0.25 | 0.50 | 0.46 | 0.75 | 0.75 | 0.25 | 0.58 |
| Adj. Flow (vph) | 183 | 12 | 226 | 28 | 4 | 8 | 20 | 48 | 92 | 19 | 8 | 31 |
| RTOR Reduction (vph) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Lane Group Flow (vph) | 183 | 266 | 0 | 0 | 0 | 0 | 32 | 0 | 159 | 0 | 0 | 0 |
| Heavy Vehicles (%) | 13% | 0% | 1% | 9% | 0% | 0% | 0% | 0% | 3% | 7% | 0% | 0% |
| Turn Type | Split | | | | Perm | Split | | Perm | | | Perm | Perm |
| Protected Phases | 4 | 4 | | | | 8 | 8 | | 2 | | | |
| Permitted Phases | | | | | 8 | | | 2 | | | 6 | 6 |
| Actuated Green, G (s) | 17.5 | 17.5 | | | | | 3.8 | | 19.3 | | | |
| Effective Green, g (s) | 17.5 | 17.5 | | | | | 3.8 | | 19.3 | | | |
| Actuated g/C Ratio | 0.21 | 0.21 | | | | | 0.05 | | 0.23 | | | |
| Clearance Time (s) | 6.0 | 6.0 | | | | | 6.0 | | 6.0 | | | |
| Vehicle Extension (s) | 5.0 | 5.0 | | | | | 5.0 | | 5.0 | | | |
| Lane Grp Cap (vph) | 313 | 324 | | | | | 83 | | 401 | | | |
| v/s Ratio Prot | 0.12 | c0.17 | | | | | c0.02 | | | | | |
| v/s Ratio Perm | | | | | | | | | c0.09 | | | |
| v/c Ratio | 0.58 | 0.82 | | | | | 0.39 | | 0.40 | | | |
| Uniform Delay, d1 | 30.1 | 31.9 | | | | | 39.1 | | 27.6 | | | |
| Progression Factor | 1.00 | 1.00 | | | | | 1.00 | | 1.00 | | | |
| Incremental Delay, d2 | 4.3 | 16.9 | | | | | 6.1 | | 2.9 | | | |
| Delay (s) | 34.4 | 48.8 | | | | | 45.2 | | 30.5 | | | |
| Level of Service | C | D | | | | | D | | C | | | |
| Approach Delay (s) | | 42.9 | | | | | 45.2 | | 30.5 | | | |
| Approach LOS | | D | | | | | D | | C | | | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM Average Control Delay | 35.2 | HCM Level of Service | D |
| HCM Volume to Capacity ratio | 0.65 | | |
| Actuated Cycle Length (s) | 84.3 | Sum of lost time (s) | 24.0 |
| Intersection Capacity Utilization | 59.4% | ICU Level of Service | B |
| Analysis Period (min) | 15 | | |

c Critical Lane Group

| Movement | SBT | SBR | NWL2 | NWL | NWR |
|---|---|---|---|---|---|
| Lane Configurations | | | | | |
| Volume (vph) | 71 | 205 | 16 | 261 | 15 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width | 11 | 14 | 16 | 16 | 16 |
| Grade (%) | 0% | | | 6% | |
| Total Lost time (s) | 6.0 | 6.0 | | 6.0 | |
| Lane Util. Factor | 1.00 | 1.00 | | 1.00 | |
| Frt | 1.00 | 0.85 | | 0.99 | |
| Flt Protected | 0.98 | 1.00 | | 0.96 | |
| Satd. Flow (prot) | 1809 | 1625 | | 1935 | |
| Flt Permitted | 0.88 | 1.00 | | 0.96 | |
| Satd. Flow (perm) | 1612 | 1625 | | 1935 | |
| Peak-hour factor, PHF | 0.81 | 0.97 | 0.56 | 0.86 | 0.63 |
| Adj. Flow (vph) | 88 | 211 | 29 | 303 | 24 |
| RTOR Reduction (vph) | 0 | 0 | 0 | 0 | 0 |
| Lane Group Flow (vph) | 127 | 211 | 0 | 356 | 0 |
| Heavy Vehicles (%) | 0% | 6% | 0% | 2% | 7% |
| Turn Type | | pm+ov | Split | | |
| Protected Phases | 6 | 4 | 9 | 9 | |
| Permitted Phases | | 6 | | | |
| Actuated Green, G (s) | 19.3 | 36.8 | | 19.7 | |
| Effective Green, g (s) | 19.3 | 36.8 | | 19.7 | |
| Actuated g/C Ratio | 0.23 | 0.44 | | 0.23 | |
| Clearance Time (s) | 6.0 | 6.0 | | 6.0 | |
| Vehicle Extension (s) | 5.0 | 5.0 | | 5.0 | |
| Lane Grp Cap (vph) | 369 | 825 | | 452 | |
| v/s Ratio Prot | | 0.05 | | c0.18 | |
| v/s Ratio Perm | 0.08 | 0.08 | | | |
| v/c Ratio | 0.34 | 0.26 | | 0.79 | |
| Uniform Delay, d1 | 27.2 | 15.1 | | 30.3 | |
| Progression Factor | 1.00 | 1.00 | | 1.00 | |
| Incremental Delay, d2 | 2.5 | 0.3 | | 10.1 | |
| Delay (s) | 29.7 | 15.4 | | 40.5 | |
| Level of Service | C | B | | D | |
| Approach Delay (s) | 20.8 | | | 40.5 | |
| Approach LOS | C | | | D | |

| Intersection Summary |
|---|

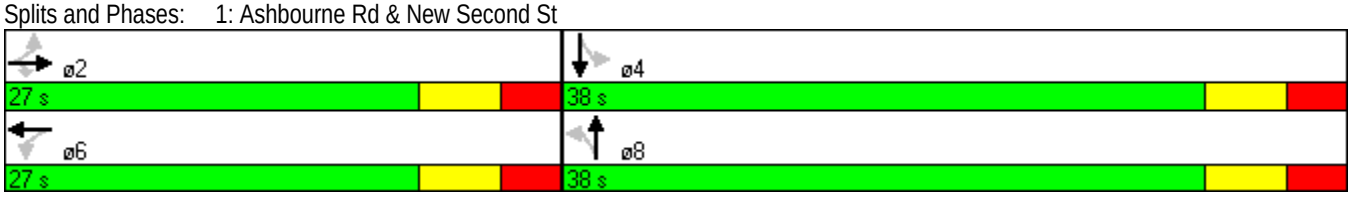
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (vph) | 72 | 198 | 25 | 12 | 150 | 125 | 25 | 412 | 25 | 116 | 331 | 44 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width (ft) | 12 | 12 | 14 | 16 | 16 | 16 | 16 | 16 | 16 | 12 | 12 | 12 |
| Grade (%) | | -9% | | | 8% | | | 3% | | | -2% | |
| Storage Length (ft) | 0 | | 110 | 0 | | 0 | 0 | | 0 | 0 | | 0 |
| Storage Lanes | 0 | | 1 | 0 | | 0 | 0 | | 0 | 0 | | 0 |
| Taper Length (ft) | 25 | | 75 | 25 | | 25 | 25 | | 25 | 25 | | 25 |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Ped Bike Factor | | | | | | | | | | | | |
| Frt | | | 0.850 | | 0.932 | | | 0.992 | | | 0.986 | |
| Flt Protected | | 0.986 | | | 0.998 | | | 0.997 | | | 0.988 | |
| Satd. Flow (prot) | 0 | 1938 | 1607 | 0 | 1886 | 0 | 0 | 2079 | 0 | 0 | 1854 | 0 |
| Flt Permitted | | 0.711 | | | 0.975 | | | 0.938 | | | 0.708 | |
| Satd. Flow (perm) | 0 | 1398 | 1607 | 0 | 1842 | 0 | 0 | 1956 | 0 | 0 | 1328 | 0 |
| Right Turn on Red | | | Yes | | | No | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | | 32 | | | | | 6 | | | 12 | |
| Link Speed (mph) | | 25 | | | 25 | | | 35 | | | 35 | |
| Link Distance (ft) | | 500 | | | 2250 | | | 500 | | | 500 | |
| Travel Time (s) | | 13.6 | | | 61.4 | | | 9.7 | | | 9.7 | |
| Confl. Peds. (#/hr) | | | | | | | | | | | | |
| Confl. Bikes (#/hr) | | | | | | | | | | | | |
| Peak Hour Factor | 0.85 | 0.90 | 0.78 | 0.75 | 0.89 | 0.67 | 0.69 | 0.84 | 0.79 | 0.79 | 0.88 | 0.72 |
| Growth Factor | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% |
| Heavy Vehicles (%) | 1% | 1% | 12% | 0% | 1% | 3% | 0% | 1% | 0% | 0% | 1% | 2% |
| Bus Blockages (#/hr) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Parking (#/hr) | | | | | | | | | | | | |
| Mid-Block Traffic (%) | | 0% | | | 0% | | | 0% | | | 0% | |
| Adj. Flow (vph) | 85 | 220 | 32 | 16 | 169 | 187 | 36 | 490 | 32 | 147 | 376 | 61 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 305 | 32 | 0 | 372 | 0 | 0 | 558 | 0 | 0 | 584 | 0 |
| Number of Detectors | 1 | 0 | 0 | 1 | 0 | | 1 | 0 | | 1 | 0 | |
| Detector Template | | | | | | | | | | | | |
| Leading Detector (ft) | 35 | 0 | 0 | 35 | 0 | | 35 | 0 | | 35 | 0 | |
| Trailing Detector (ft) | -5 | 0 | 0 | -5 | 0 | | -5 | 0 | | -5 | 0 | |
| Turn Type | Perm | | Perm | Perm | | | Perm | | | Perm | | |
| Protected Phases | | 2 | | | 6 | | | 8 | | | 4 | |
| Permitted Phases | 2 | | 2 | 6 | | | 8 | | | 4 | | |
| Detector Phase | 2 | 2 | 2 | 6 | 6 | | 8 | 8 | | 4 | 4 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 20.0 | 20.0 | 20.0 | 20.0 | 20.0 | | 31.0 | 31.0 | | 31.0 | 31.0 | |
| Minimum Split (s) | 27.0 | 27.0 | 27.0 | 27.0 | 27.0 | | 38.0 | 38.0 | | 38.0 | 38.0 | |
| Total Split (s) | 27.0 | 27.0 | 27.0 | 27.0 | 27.0 | 0.0 | 38.0 | 38.0 | 0.0 | 38.0 | 38.0 | 0.0 |
| Total Split (%) | 41.5% | 41.5% | 41.5% | 41.5% | 41.5% | 0.0% | 58.5% | 58.5% | 0.0% | 58.5% | 58.5% | 0.0% |
| Maximum Green (s) | 20.0 | 20.0 | 20.0 | 20.0 | 20.0 | | 31.0 | 31.0 | | 31.0 | 31.0 | |
| Yellow Time (s) | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | | 4.0 | 4.0 | | 4.0 | 4.0 | |
| All-Red Time (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | |
| Lost Time Adjust (s) | -1.0 | 0.0 | 0.0 | -1.0 | 0.0 | 0.0 | -1.0 | 0.0 | 0.0 | -1.0 | 0.0 | 0.0 |
| Total Lost Time (s) | 6.0 | 7.0 | 7.0 | 6.0 | 7.0 | 4.0 | 6.0 | 7.0 | 4.0 | 6.0 | 7.0 | 4.0 |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lead/Lag | | | | | | | | | | | | |
| Lead-Lag Optimize? | | | | | | | | | | | | |
| Vehicle Extension (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | |
| Minimum Gap (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | |
| Time Before Reduce (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Time To Reduce (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Recall Mode | Max | Max | Max | Max | Max | | Max | Max | | Max | Max | |
| Walk Time (s) | | | | | | | | | | | | |
| Flash Dont Walk (s) | | | | | | | | | | | | |
| Pedestrian Calls (#/hr) | | | | | | | | | | | | |
| v/c Ratio | | 0.71 | 0.06 | | 0.66 | | | 0.60 | | | 0.91 | |
| Control Delay | | 31.2 | 6.9 | | 26.1 | | | 15.6 | | | 38.0 | |
| Queue Delay | | 0.0 | 0.0 | | 0.0 | | | 0.0 | | | 0.0 | |
| Total Delay | | 31.2 | 6.9 | | 26.1 | | | 15.6 | | | 38.0 | |
| Queue Length 50th (ft) | | 106 | 0 | | 126 | | | 150 | | | 198 | |
| Queue Length 95th (ft) | | #214 | 13 | | 208 | | | 215 | | | #386 | |
| Internal Link Dist (ft) | | 420 | | | 2170 | | | 420 | | | 420 | |
| Turn Bay Length (ft) | | | 110 | | | | | | | | | |
| Base Capacity (vph) | | 430 | 517 | | 567 | | | 936 | | | 640 | |
| Starvation Cap Reductn | | 0 | 0 | | 0 | | | 0 | | | 0 | |
| Spillback Cap Reductn | | 0 | 0 | | 0 | | | 0 | | | 0 | |
| Storage Cap Reductn | | 0 | 0 | | 0 | | | 0 | | | 0 | |
| Reduced v/c Ratio | | 0.71 | 0.06 | | 0.66 | | | 0.60 | | | 0.91 | |

## Intersection Summary

Area Type: Other
Cycle Length: 65
Actuated Cycle Length: 65
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow
Natural Cycle: 65
Control Type: Pretimed
# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 1: Ashbourne Rd & New Second St



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (vph) | 72 | 198 | 25 | 12 | 150 | 125 | 25 | 412 | 25 | 116 | 331 | 44 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width | 12 | 12 | 14 | 16 | 16 | 16 | 16 | 16 | 16 | 12 | 12 | 12 |
| Grade (%) | | -9% | | | 8% | | | 3% | | | -2% | |
| Total Lost time (s) | | 7.0 | 7.0 | | 7.0 | | | 7.0 | | | 7.0 | |
| Lane Util. Factor | | 1.00 | 1.00 | | 1.00 | | | 1.00 | | | 1.00 | |
| Frt | | 1.00 | 0.85 | | 0.93 | | | 0.99 | | | 0.99 | |
| Flt Protected | | 0.99 | 1.00 | | 1.00 | | | 1.00 | | | 0.99 | |
| Satd. Flow (prot) | | 1939 | 1607 | | 1886 | | | 2080 | | | 1853 | |
| Flt Permitted | | 0.71 | 1.00 | | 0.98 | | | 0.94 | | | 0.71 | |
| Satd. Flow (perm) | | 1399 | 1607 | | 1843 | | | 1956 | | | 1328 | |
| Peak-hour factor, PHF | 0.85 | 0.90 | 0.78 | 0.75 | 0.89 | 0.67 | 0.69 | 0.84 | 0.79 | 0.79 | 0.88 | 0.72 |
| Adj. Flow (vph) | 85 | 220 | 32 | 16 | 169 | 187 | 36 | 490 | 32 | 147 | 376 | 61 |
| RTOR Reduction (vph) | 0 | 0 | 22 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 6 | 0 |
| Lane Group Flow (vph) | 0 | 305 | 10 | 0 | 372 | 0 | 0 | 555 | 0 | 0 | 578 | 0 |
| Heavy Vehicles (%) | 1% | 1% | 12% | 0% | 1% | 3% | 0% | 1% | 0% | 0% | 1% | 2% |
| Turn Type | Perm | | Perm | Perm | | | Perm | | | Perm | | |
| Protected Phases | | 2 | | | 6 | | | 8 | | | 4 | |
| Permitted Phases | 2 | | 2 | 6 | | | 8 | | | 4 | | |
| Actuated Green, G (s) | | 20.0 | 20.0 | | 20.0 | | | 31.0 | | | 31.0 | |
| Effective Green, g (s) | | 20.0 | 20.0 | | 20.0 | | | 31.0 | | | 31.0 | |
| Actuated g/C Ratio | | 0.31 | 0.31 | | 0.31 | | | 0.48 | | | 0.48 | |
| Clearance Time (s) | | 7.0 | 7.0 | | 7.0 | | | 7.0 | | | 7.0 | |
| Lane Grp Cap (vph) | | 430 | 494 | | 567 | | | 933 | | | 633 | |
| v/s Ratio Prot | | | | | | | | | | | | |
| v/s Ratio Perm | | c0.22 | 0.01 | | 0.20 | | | 0.28 | | | c0.44 | |
| v/c Ratio | | 0.71 | 0.02 | | 0.66 | | | 0.59 | | | 0.91 | |
| Uniform Delay, d1 | | 19.9 | 15.7 | | 19.5 | | | 12.4 | | | 15.7 | |
| Progression Factor | | 1.00 | 1.00 | | 1.00 | | | 1.00 | | | 1.00 | |
| Incremental Delay, d2 | | 9.5 | 0.1 | | 5.8 | | | 2.8 | | | 19.8 | |
| Delay (s) | | 29.4 | 15.7 | | 25.4 | | | 15.2 | | | 35.5 | |
| Level of Service | | C | B | | C | | | B | | | D | |
| Approach Delay (s) | | 28.1 | | | 25.4 | | | 15.2 | | | 35.5 | |
| Approach LOS | | C | | | C | | | B | | | D | |

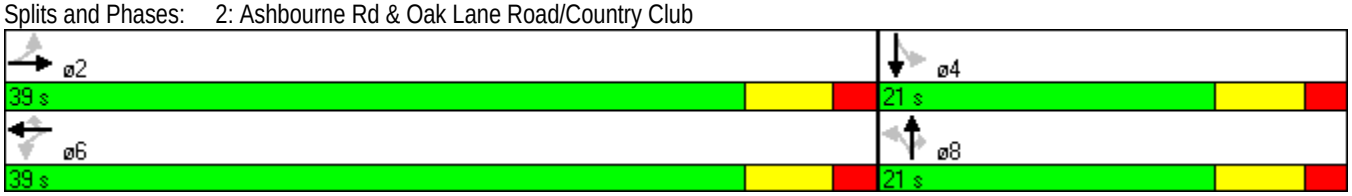
| Intersection Summary | | | |
|---|---|---|---|
| HCM Average Control Delay | 26.0 | HCM Level of Service | C |
| HCM Volume to Capacity ratio | 0.83 | | |
| Actuated Cycle Length (s) | 65.0 | Sum of lost time (s) | 14.0 |
| Intersection Capacity Utilization | 109.0% | ICU Level of Service | H |
| Analysis Period (min) | 15 | | |
| c Critical Lane Group | | | |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (vph) | 37 | 260 | 42 | 211 | 242 | 14 | 24 | 18 | 199 | 18 | 10 | 21 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width (ft) | 11 | 11 | 11 | 10 | 12 | 14 | 11 | 11 | 14 | 10 | 10 | 10 |
| Grade (%) | | 1% | | | 1% | | | -2% | | | 1% | |
| Storage Length (ft) | 140 | | 0 | 150 | | 75 | 0 | | 150 | 0 | | 0 |
| Storage Lanes | 1 | | 0 | 1 | | 1 | 0 | | 1 | 0 | | 0 |
| Taper Length (ft) | 75 | | 25 | 75 | | 75 | 25 | | 75 | 25 | | 25 |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Ped Bike Factor | | | | | | | | | | | | |
| Frt | | 0.973 | | | | 0.850 | | | 0.850 | | 0.942 | |
| Flt Protected | 0.950 | | | 0.950 | | | | 0.972 | | | 0.982 | |
| Satd. Flow (prot) | 1702 | 1769 | 0 | 1596 | 1872 | 1680 | 0 | 1656 | 1673 | 0 | 1600 | 0 |
| Flt Permitted | 0.600 | | | 0.544 | | | | 0.792 | | | 0.858 | |
| Satd. Flow (perm) | 1075 | 1769 | 0 | 914 | 1872 | 1680 | 0 | 1349 | 1673 | 0 | 1398 | 0 |
| Right Turn on Red | | | No | | | Yes | | | Yes | | | No |
| Satd. Flow (RTOR) | | | | | | 16 | | | 229 | | | |
| Link Speed (mph) | | 35 | | | 35 | | | 35 | | | 35 | |
| Link Distance (ft) | | 2250 | | | 325 | | | 280 | | | 300 | |
| Travel Time (s) | | 43.8 | | | 6.3 | | | 5.5 | | | 5.8 | |
| Confl. Peds. (#/hr) | | | | | | | | | | | | |
| Confl. Bikes (#/hr) | | | | | | | | | | | | |
| Peak Hour Factor | 0.90 | 0.87 | 0.65 | 0.91 | 0.94 | 0.90 | 0.88 | 0.90 | 0.87 | 0.90 | 0.90 | 0.90 |
| Growth Factor | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% |
| Heavy Vehicles (%) | 2% | 0% | 3% | 5% | 1% | 2% | 14% | 2% | 4% | 2% | 2% | 2% |
| Bus Blockages (#/hr) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Parking (#/hr) | | | | | | | | | | | | |
| Mid-Block Traffic (%) | | 0% | | | 0% | | | 0% | | | 0% | |
| Adj. Flow (vph) | 41 | 299 | 65 | 232 | 257 | 16 | 27 | 20 | 229 | 20 | 11 | 23 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 41 | 364 | 0 | 232 | 257 | 16 | 0 | 47 | 229 | 0 | 54 | 0 |
| Number of Detectors | 0 | 0 | | 1 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | |
| Detector Template | | | | | | | | | | | | |
| Leading Detector (ft) | 0 | 0 | | 35 | 0 | 0 | 35 | 35 | 35 | 20 | 20 | |
| Trailing Detector (ft) | 0 | 0 | | -5 | 0 | 0 | -5 | -5 | -5 | -5 | -5 | |
| Turn Type | Perm | | | Perm | | Perm | Perm | | Perm | Perm | | |
| Protected Phases | | 2 | | | 6 | | | 8 | | | 4 | |
| Permitted Phases | 2 | | | 6 | | 6 | 8 | | 8 | 4 | | |
| Detector Phase | 2 | 2 | | 6 | 6 | 6 | 8 | 8 | 8 | 4 | 4 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 33.0 | 33.0 | | 33.0 | 33.0 | 33.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | |
| Minimum Split (s) | 39.0 | 39.0 | | 39.0 | 39.0 | 39.0 | 9.0 | 9.0 | 9.0 | 9.0 | 9.0 | |
| Total Split (s) | 39.0 | 39.0 | 0.0 | 39.0 | 39.0 | 39.0 | 21.0 | 21.0 | 21.0 | 21.0 | 21.0 | 0.0 |
| Total Split (%) | 65.0% | 65.0% | 0.0% | 65.0% | 65.0% | 65.0% | 35.0% | 35.0% | 35.0% | 35.0% | 35.0% | 0.0% |
| Maximum Green (s) | 33.0 | 33.0 | | 33.0 | 33.0 | 33.0 | 15.0 | 15.0 | 15.0 | 15.0 | 15.0 | |
| Yellow Time (s) | 4.0 | 4.0 | | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | |
| All-Red Time (s) | 2.0 | 2.0 | | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | |
| Lost Time Adjust (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | -2.0 | 0.0 | 0.0 | -2.0 | 0.0 | 0.0 |
| Total Lost Time (s) | 6.0 | 6.0 | 4.0 | 6.0 | 6.0 | 6.0 | 4.0 | 6.0 | 6.0 | 4.0 | 6.0 | 4.0 |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lead/Lag | | | | | | | | | | | | |
| Lead-Lag Optimize? | | | | | | | | | | | | |
| Vehicle Extension (s) | 3.0 | 3.0 | | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | |
| Minimum Gap (s) | 3.0 | 3.0 | | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | |
| Time Before Reduce (s) | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| Time To Reduce (s) | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| Recall Mode | Min | Min | | Min | Min | Min | None | None | None | None | None | |
| Walk Time (s) | | | | | | | | | | | | |
| Flash Dont Walk (s) | | | | | | | | | | | | |
| Pedestrian Calls (#/hr) | | | | | | | | | | | | |
| v/c Ratio | 0.06 | 0.33 | | 0.41 | 0.22 | 0.02 | | 0.24 | 0.52 | | 0.26 | |
| Control Delay | 4.7 | 6.0 | | 8.2 | 5.3 | 2.5 | | 22.7 | 8.2 | | 23.1 | |
| Queue Delay | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | |
| Total Delay | 4.7 | 6.0 | | 8.2 | 5.3 | 2.5 | | 22.7 | 8.2 | | 23.1 | |
| Queue Length 50th (ft) | 4 | 43 | | 29 | 28 | 0 | | 13 | 0 | | 15 | |
| Queue Length 95th (ft) | 15 | 91 | | 81 | 65 | 6 | | 37 | 42 | | 41 | |
| Internal Link Dist (ft) | | 2170 | | | 245 | | | 200 | | | 220 | |
| Turn Bay Length (ft) | 140 | | | 150 | | 75 | | | 150 | | | |
| Base Capacity (vph) | 673 | 1108 | | 572 | 1172 | 1058 | | 384 | 640 | | 398 | |
| Starvation Cap Reductn | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | | 0 | |
| Spillback Cap Reductn | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | | 0 | |
| Storage Cap Reductn | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | | 0 | |
| Reduced v/c Ratio | 0.06 | 0.33 | | 0.41 | 0.22 | 0.02 | | 0.12 | 0.36 | | 0.14 | |

| Intersection Summary | |
|---|---|
| Area Type: | Other |
| Cycle Length: 60 | |
| Actuated Cycle Length: 52.8 | |
| Natural Cycle: 50 | |
| Control Type: Actuated-Uncoordinated | |

Splits and Phases: 2: Ashbourne Rd & Oak Lane Road/Country Club



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (vph) | 37 | 260 | 42 | 211 | 242 | 14 | 24 | 18 | 199 | 18 | 10 | 21 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width | 11 | 11 | 11 | 10 | 12 | 14 | 11 | 11 | 14 | 10 | 10 | 10 |
| Grade (%) | | 1% | | | 1% | | | -2% | | | 1% | |
| Total Lost time (s) | 6.0 | 6.0 | | 6.0 | 6.0 | 6.0 | | 6.0 | 6.0 | | 6.0 | |
| Lane Util. Factor | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | |
| Frt | 1.00 | 0.97 | | 1.00 | 1.00 | 0.85 | | 1.00 | 0.85 | | 0.94 | |
| Flt Protected | 0.95 | 1.00 | | 0.95 | 1.00 | 1.00 | | 0.97 | 1.00 | | 0.98 | |
| Satd. Flow (prot) | 1702 | 1769 | | 1596 | 1872 | 1680 | | 1656 | 1673 | | 1601 | |
| Flt Permitted | 0.60 | 1.00 | | 0.54 | 1.00 | 1.00 | | 0.79 | 1.00 | | 0.86 | |
| Satd. Flow (perm) | 1075 | 1769 | | 914 | 1872 | 1680 | | 1349 | 1673 | | 1399 | |
| Peak-hour factor, PHF | 0.90 | 0.87 | 0.65 | 0.91 | 0.94 | 0.90 | 0.88 | 0.90 | 0.87 | 0.90 | 0.90 | 0.90 |
| Adj. Flow (vph) | 41 | 299 | 65 | 232 | 257 | 16 | 27 | 20 | 229 | 20 | 11 | 23 |
| RTOR Reduction (vph) | 0 | 0 | 0 | 0 | 0 | 6 | 0 | 0 | 196 | 0 | 0 | 0 |
| Lane Group Flow (vph) | 41 | 364 | 0 | 232 | 257 | 10 | 0 | 47 | 33 | 0 | 54 | 0 |
| Heavy Vehicles (%) | 2% | 0% | 3% | 5% | 1% | 2% | 14% | 2% | 4% | 2% | 2% | 2% |
| Turn Type | Perm | | | Perm | | Perm | Perm | | Perm | Perm | | |
| Protected Phases | | 2 | | | 6 | | | 8 | | | 4 | |
| Permitted Phases | 2 | | | 6 | | 6 | 8 | | 8 | 4 | | |
| Actuated Green, G (s) | 33.0 | 33.0 | | 33.0 | 33.0 | 33.0 | | 7.7 | 7.7 | | 7.7 | |
| Effective Green, g (s) | 33.0 | 33.0 | | 33.0 | 33.0 | 33.0 | | 7.7 | 7.7 | | 7.7 | |
| Actuated g/C Ratio | 0.63 | 0.63 | | 0.63 | 0.63 | 0.63 | | 0.15 | 0.15 | | 0.15 | |
| Clearance Time (s) | 6.0 | 6.0 | | 6.0 | 6.0 | 6.0 | | 6.0 | 6.0 | | 6.0 | |
| Vehicle Extension (s) | 3.0 | 3.0 | | 3.0 | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | |
| Lane Grp Cap (vph) | 673 | 1108 | | 572 | 1172 | 1052 | | 197 | 244 | | 204 | |
| v/s Ratio Prot | | 0.21 | | | 0.14 | | | | | | | |
| v/s Ratio Perm | 0.04 | | | c0.25 | | 0.01 | | 0.03 | 0.02 | | c0.04 | |
| v/c Ratio | 0.06 | 0.33 | | 0.41 | 0.22 | 0.01 | | 0.24 | 0.14 | | 0.26 | |
| Uniform Delay, d1 | 3.8 | 4.6 | | 4.9 | 4.3 | 3.7 | | 19.9 | 19.6 | | 20.0 | |
| Progression Factor | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | |
| Incremental Delay, d2 | 0.0 | 0.2 | | 0.5 | 0.1 | 0.0 | | 0.6 | 0.3 | | 0.7 | |
| Delay (s) | 3.9 | 4.8 | | 5.4 | 4.4 | 3.7 | | 20.5 | 19.9 | | 20.7 | |
| Level of Service | A | A | | A | A | A | | C | B | | C | |
| Approach Delay (s) | | 4.7 | | | 4.8 | | | 20.0 | | | 20.7 | |
| Approach LOS | | A | | | A | | | B | | | C | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM Average Control Delay | 8.9 | HCM Level of Service | A |
| HCM Volume to Capacity ratio | 0.38 | | |
| Actuated Cycle Length (s) | 52.7 | Sum of lost time (s) | 12.0 |
| Intersection Capacity Utilization | 79.5% | ICU Level of Service | D |
| Analysis Period (min) | 15 | | |

c Critical Lane Group

| Lane Group | EBT | EBR | WBL | WBT | NBL | NBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (vph) | 475 | 2 | 4 | 465 | 2 | 2 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width (ft) | 12 | 12 | 12 | 12 | 12 | 12 |
| Grade (%) | -2% | | | 1% | 0% | |
| Storage Length (ft) | | 0 | 0 | | 0 | 0 |
| Storage Lanes | | 0 | 0 | | 1 | 0 |
| Taper Length (ft) | | 25 | 25 | | 25 | 25 |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Ped Bike Factor | | | | | | |
| Frt | | | | | 0.932 | |
| Flt Protected | | | | | 0.976 | |
| Satd. Flow (prot) | 1863 | 0 | 0 | 1836 | 1728 | 0 |
| Flt Permitted | | | | | 0.976 | |
| Satd. Flow (perm) | 1863 | 0 | 0 | 1836 | 1728 | 0 |
| Link Speed (mph) | 35 | | | 35 | 35 | |
| Link Distance (ft) | 325 | | | 495 | 200 | |
| Travel Time (s) | 6.3 | | | 9.6 | 3.9 | |
| Confl. Peds. (#/hr) | | | | | | |
| Confl. Bikes (#/hr) | | | | | | |
| Peak Hour Factor | 0.88 | 0.90 | 0.90 | 0.97 | 0.90 | 0.90 |
| Growth Factor | 100% | 100% | 100% | 100% | 100% | 100% |
| Heavy Vehicles (%) | 3% | 0% | 0% | 3% | 0% | 0% |
| Bus Blockages (#/hr) | 0 | 0 | 0 | 0 | 0 | 0 |
| Parking (#/hr) | | | | | | |
| Mid-Block Traffic (%) | 0% | | | 0% | 0% | |
| Adj. Flow (vph) | 540 | 2 | 4 | 479 | 2 | 2 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 542 | 0 | 0 | 483 | 4 | 0 |
| Sign Control | Free | | | Free | Stop | |

| Intersection Summary | |
|---|---|
| Area Type: | Other |
| Control Type: Unsignalized | |

| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (veh/h) | 475 | 2 | 4 | 465 | 2 | 2 |
| Sign Control | Free | | | Free | Stop | |
| Grade | -2% | | | 1% | 0% | |
| Peak Hour Factor | 0.88 | 0.90 | 0.90 | 0.97 | 0.90 | 0.90 |
| Hourly flow rate (vph) | 540 | 2 | 4 | 479 | 2 | 2 |
| Pedestrians | | | | | | |
| Lane Width (ft) | | | | | | |
| Walking Speed (ft/s) | | | | | | |
| Percent Blockage | | | | | | |
| Right turn flare (veh) | | | | | | |
| Median type | None | | | None | | |
| Median storage veh) | | | | | | |
| Upstream signal (ft) | 325 | | | 1025 | | |
| pX, platoon unblocked | | | 0.95 | | 0.95 | 0.95 |
| vC, conflicting volume | | | 542 | | 1029 | 541 |
| vC1, stage 1 conf vol | | | | | | |
| vC2, stage 2 conf vol | | | | | | |
| vCu, unblocked vol | | | 492 | | 1005 | 491 |
| tC, single (s) | | | 4.1 | | 6.4 | 6.2 |
| tC, 2 stage (s) | | | | | | |
| tF (s) | | | 2.2 | | 3.5 | 3.3 |
| p0 queue free % | | | 100 | | 99 | 100 |
| cM capacity (veh/h) | | | 1028 | | 256 | 553 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 |
|---|---|---|---|
| Volume Total | 542 | 484 | 4 |
| Volume Left | 0 | 4 | 2 |
| Volume Right | 2 | 0 | 2 |
| cSH | 1700 | 1028 | 350 |
| Volume to Capacity | 0.32 | 0.00 | 0.01 |
| Queue Length 95th (ft) | 0 | 0 | 1 |
| Control Delay (s) | 0.0 | 0.1 | 15.4 |
| Lane LOS | | A | C |
| Approach Delay (s) | 0.0 | 0.1 | 15.4 |
| Approach LOS | | | C |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 0.1 | | |
| Intersection Capacity Utilization | 37.7% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |

| Lane Group | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (vph) | 1 | 0 | 241 | 2 | 0 | 263 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width (ft) | 12 | 12 | 12 | 12 | 12 | 12 |
| Grade (%) | 0% | | -2% | | | 0% |
| Storage Length (ft) | 0 | 0 | | 0 | 0 | |
| Storage Lanes | 1 | 0 | | 0 | 0 | |
| Taper Length (ft) | 25 | 25 | | 25 | 25 | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Ped Bike Factor | | | | | | |
| Frt | | | 0.999 | | | |
| Flt Protected | 0.950 | | | | | |
| Satd. Flow (prot) | 1805 | 0 | 1826 | 0 | 0 | 1810 |
| Flt Permitted | 0.950 | | | | | |
| Satd. Flow (perm) | 1805 | 0 | 1826 | 0 | 0 | 1810 |
| Link Speed (mph) | 25 | | 35 | | | 35 |
| Link Distance (ft) | 233 | | 200 | | | 280 |
| Travel Time (s) | 6.4 | | 3.9 | | | 5.5 |
| Confl. Peds. (#/hr) | | | | | | |
| Confl. Bikes (#/hr) | | | | | | |
| Peak Hour Factor | 0.90 | 0.90 | 0.87 | 0.90 | 0.90 | 0.96 |
| Growth Factor | 100% | 100% | 100% | 100% | 100% | 100% |
| Heavy Vehicles (%) | 0% | 0% | 5% | 0% | 0% | 5% |
| Bus Blockages (#/hr) | 0 | 0 | 0 | 0 | 0 | 0 |
| Parking (#/hr) | | | | | | |
| Mid-Block Traffic (%) | 0% | | 0% | | | 0% |
| Adj. Flow (vph) | 1 | 0 | 277 | 2 | 0 | 274 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 1 | 0 | 279 | 0 | 0 | 274 |
| Sign Control | Stop | | Free | | | Free |

| Intersection Summary | |
|---|---|
| Area Type: | Other |

Control Type: Unsignalized

| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (veh/h) | 1 | 0 | 241 | 2 | 0 | 263 |
| Sign Control | Stop | | Free | | | Free |
| Grade | 0% | | -2% | | | 0% |
| Peak Hour Factor | 0.90 | 0.90 | 0.87 | 0.90 | 0.90 | 0.96 |
| Hourly flow rate (vph) | 1 | 0 | 277 | 2 | 0 | 274 |
| Pedestrians | | | | | | |
| Lane Width (ft) | | | | | | |
| Walking Speed (ft/s) | | | | | | |
| Percent Blockage | | | | | | |
| Right turn flare (veh) | | | | | | |
| Median type | | | None | | | None |
| Median storage veh) | | | | | | |
| Upstream signal (ft) | | | | | | 280 |
| pX, platoon unblocked | 0.99 | | | | | |
| vC, conflicting volume | 552 | 278 | | | 279 | |
| vC1, stage 1 conf vol | | | | | | |
| vC2, stage 2 conf vol | | | | | | |
| vCu, unblocked vol | 541 | 278 | | | 279 | |
| tC, single (s) | 6.4 | 6.2 | | | 4.1 | |
| tC, 2 stage (s) | | | | | | |
| tF (s) | 3.5 | 3.3 | | | 2.2 | |
| p0 queue free % | 100 | 100 | | | 100 | |
| cM capacity (veh/h) | 500 | 766 | | | 1295 | |

| Direction, Lane # | WB 1 | NB 1 | SB 1 |
|---|---|---|---|
| Volume Total | 1 | 279 | 274 |
| Volume Left | 1 | 0 | 0 |
| Volume Right | 0 | 2 | 0 |
| cSH | 500 | 1700 | 1295 |
| Volume to Capacity | 0.00 | 0.16 | 0.00 |
| Queue Length 95th (ft) | 0 | 0 | 0 |
| Control Delay (s) | 12.2 | 0.0 | 0.0 |
| Lane LOS | B | | |
| Approach Delay (s) | 12.2 | 0.0 | 0.0 |
| Approach LOS | B | | |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 0.0 | | |
| Intersection Capacity Utilization | 23.8% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |

| Lane Group | EBL | EBT | EBR | EBR2 | WBL | WBT | WBR | NBL | NBT | NBR | NBR2 | SBL2 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (vph) | 237 | 20 | 217 | 34 | 3 | 6 | 3 | 22 | 65 | 1 | 13 | 3 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width (ft) | 10 | 11 | 11 | 11 | 12 | 12 | 12 | 16 | 16 | 16 | 16 | 12 |
| Grade (%) | | -2% | | | | 3% | | | 4% | | | |
| Storage Length (ft) | 220 | | 0 | | 0 | | 0 | 0 | | 0 | | |
| Storage Lanes | 1 | | 0 | | 0 | | 0 | 0 | | 0 | | |
| Taper Length (ft) | 75 | | 25 | | 25 | | 25 | 25 | | 25 | | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Ped Bike Factor | | | | | | | | | | | | |
| Frt | | 0.863 | | | | 0.955 | | | 0.979 | | | |
| Flt Protected | 0.950 | | | | | 0.984 | | | 0.986 | | | |
| Satd. Flow (prot) | 1620 | 1592 | 0 | 0 | 0 | 1759 | 0 | 0 | 1992 | 0 | 0 | 0 |
| Flt Permitted | 0.950 | | | | | 0.984 | | | 0.882 | | | |
| Satd. Flow (perm) | 1620 | 1592 | 0 | 0 | 0 | 1759 | 0 | 0 | 1782 | 0 | 0 | 0 |
| Right Turn on Red | | | | No | | | No | | | | No | |
| Satd. Flow (RTOR) | | | | | | | | | | | | |
| Link Speed (mph) | | 40 | | | | 35 | | | 25 | | | |
| Link Distance (ft) | | 530 | | | | 527 | | | 500 | | | |
| Travel Time (s) | | 9.0 | | | | 10.3 | | | 13.6 | | | |
| Confl. Peds. (#/hr) | | | | | | | | | | | | |
| Confl. Bikes (#/hr) | | | | | | | | | | | | |
| Peak Hour Factor | 0.83 | 0.71 | 0.88 | 0.75 | 0.38 | 0.75 | 0.38 | 0.56 | 0.83 | 0.25 | 0.75 | 0.75 |
| Growth Factor | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% |
| Heavy Vehicles (%) | 5% | 0% | 0% | 4% | 0% | 0% | 0% | 0% | 4% | 0% | 0% | 0% |
| Bus Blockages (#/hr) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Parking (#/hr) | | | | | | | | | | | | |
| Mid-Block Traffic (%) | | 0% | | | | 0% | | | 0% | | | |
| Adj. Flow (vph) | 286 | 28 | 247 | 45 | 8 | 8 | 8 | 39 | 78 | 4 | 17 | 4 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 286 | 320 | 0 | 0 | 0 | 24 | 0 | 0 | 138 | 0 | 0 | 0 |
| Number of Detectors | 1 | 1 | | | 1 | 1 | | 1 | 1 | | | 2 |
| Detector Template | | | | | | | | | | | | |
| Leading Detector (ft) | 35 | 35 | | | 35 | 35 | | 35 | 35 | | | 70 |
| Trailing Detector (ft) | -5 | -5 | | | -5 | -5 | | -5 | -5 | | | -5 |
| Turn Type | Split | | | | Split | | | Perm | | | | Perm |
| Protected Phases | 4 | 4 | | | 8 | 8 | | | 2 | | | |
| Permitted Phases | | | | | | | | 2 | | | | 6 |
| Detector Phase | 4 | 4 | | | 8 | 8 | | 2 | 2 | | | 6 |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 8.0 | 8.0 | | | 5.0 | 5.0 | | 8.0 | 8.0 | | | 8.0 |
| Minimum Split (s) | 14.0 | 14.0 | | | 11.0 | 11.0 | | 14.0 | 14.0 | | | 14.0 |
| Total Split (s) | 28.0 | 28.0 | 0.0 | 0.0 | 13.0 | 13.0 | 0.0 | 22.0 | 22.0 | 0.0 | 0.0 | 22.0 |
| Total Split (%) | 31.1% | 31.1% | 0.0% | 0.0% | 14.4% | 14.4% | 0.0% | 24.4% | 24.4% | 0.0% | 0.0% | 24.4% |
| Maximum Green (s) | 22.0 | 22.0 | | | 7.0 | 7.0 | | 16.0 | 16.0 | | | 16.0 |
| Yellow Time (s) | 4.0 | 4.0 | | | 4.0 | 4.0 | | 4.0 | 4.0 | | | 4.0 |
| All-Red Time (s) | 2.0 | 2.0 | | | 2.0 | 2.0 | | 2.0 | 2.0 | | | 2.0 |
| Lost Time Adjust (s) | 0.0 | 0.0 | 0.0 | 0.0 | -2.0 | 0.0 | 0.0 | -2.0 | 0.0 | 0.0 | 0.0 | -2.0 |
| Total Lost Time (s) | 6.0 | 6.0 | 4.0 | 4.0 | 4.0 | 6.0 | 4.0 | 4.0 | 6.0 | 4.0 | 4.0 | 4.0 |

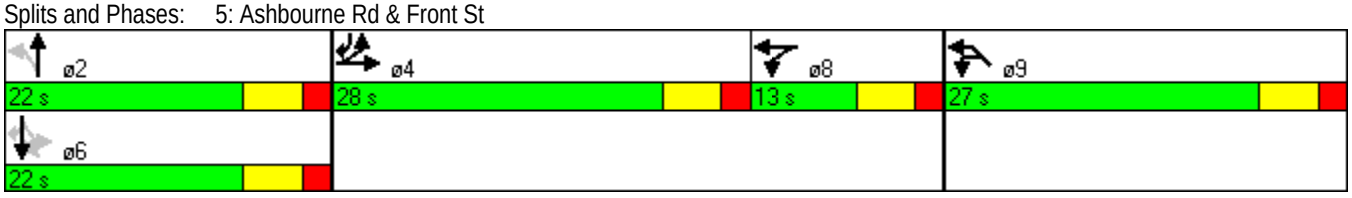
| Lane Group | SBL | SBT | SBR | NWL2 | NWL | NWR | NWR2 |
|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | |
| Volume (vph) | 11 | 61 | 168 | 12 | 279 | 18 | 1 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width (ft) | 12 | 12 | 14 | 16 | 16 | 16 | 16 |
| Grade (%) | | 0% | | | 6% | | |
| Storage Length (ft) | 0 | | 150 | | 0 | 0 | |
| Storage Lanes | 0 | | 1 | | 1 | 0 | |
| Taper Length (ft) | 25 | | 75 | | 25 | 25 | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Ped Bike Factor | | | | | | | |
| Frt | | | 0.850 | | 0.989 | | |
| Flt Protected | | 0.987 | | | 0.956 | | |
| Satd. Flow (prot) | 0 | 1875 | 1706 | 0 | 1933 | 0 | 0 |
| Flt Permitted | | 0.898 | | | 0.956 | | |
| Satd. Flow (perm) | 0 | 1706 | 1706 | 0 | 1933 | 0 | 0 |
| Right Turn on Red | | | No | | | | No |
| Satd. Flow (RTOR) | | | | | | | |
| Link Speed (mph) | | 35 | | | 25 | | |
| Link Distance (ft) | | 500 | | | 573 | | |
| Travel Time (s) | | 9.7 | | | 15.6 | | |
| Confl. Peds. (#/hr) | | | | | | | |
| Confl. Bikes (#/hr) | | | | | | | |
| Peak Hour Factor | 0.50 | 0.88 | 0.87 | 0.70 | 0.95 | 0.75 | 0.25 |
| Growth Factor | 100% | 100% | 100% | 100% | 100% | 100% | 100% |
| Heavy Vehicles (%) | 0% | 0% | 1% | 0% | 2% | 6% | 0% |
| Bus Blockages (#/hr) | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Parking (#/hr) | | | | | | | |
| Mid-Block Traffic (%) | | 0% | | | 0% | | |
| Adj. Flow (vph) | 22 | 69 | 193 | 17 | 294 | 24 | 4 |
| Shared Lane Traffic (%) | | | | | | | |
| Lane Group Flow (vph) | 0 | 95 | 193 | 0 | 339 | 0 | 0 |
| Number of Detectors | 2 | 4 | 1 | 1 | 1 | | |
| Detector Template | | | | | | | |
| Leading Detector (ft) | 70 | 66 | 35 | 35 | 35 | | |
| Trailing Detector (ft) | -5 | -1 | -5 | -5 | -5 | | |
| Turn Type | Perm | | pm+ov | Split | | | |
| Protected Phases | | 6 | 4 | 9 | 9 | | |
| Permitted Phases | 6 | | 6 | | | | |
| Detector Phase | 6 | 6 | 4 | 9 | 9 | | |
| Switch Phase | | | | | | | |
| Minimum Initial (s) | 8.0 | 8.0 | 8.0 | 8.0 | 8.0 | | |
| Minimum Split (s) | 14.0 | 14.0 | 14.0 | 14.0 | 14.0 | | |
| Total Split (s) | 22.0 | 22.0 | 28.0 | 27.0 | 27.0 | 0.0 | 0.0 |
| Total Split (%) | 24.4% | 24.4% | 31.1% | 30.0% | 30.0% | 0.0% | 0.0% |
| Maximum Green (s) | 16.0 | 16.0 | 22.0 | 21.0 | 21.0 | | |
| Yellow Time (s) | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | | |
| All-Red Time (s) | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | | |
| Lost Time Adjust (s) | -2.0 | 0.0 | 0.0 | -2.0 | 0.0 | 0.0 | 0.0 |
| Total Lost Time (s) | 4.0 | 6.0 | 6.0 | 4.0 | 6.0 | 4.0 | 4.0 |

| Lane Group | EBL | EBT | EBR | EBR2 | WBL | WBT | WBR | NBL | NBT | NBR | NBR2 | SBL2 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lead/Lag | | | | | | | | | | | | |
| Lead-Lag Optimize? | | | | | | | | | | | | |
| Vehicle Extension (s) | 5.0 | 5.0 | | | 5.0 | 5.0 | | 5.0 | 5.0 | | | 5.0 |
| Minimum Gap (s) | 3.0 | 3.0 | | | 3.0 | 3.0 | | 3.0 | 3.0 | | | 3.0 |
| Time Before Reduce (s) | 0.0 | 0.0 | | | 0.0 | 0.0 | | 0.0 | 0.0 | | | 0.0 |
| Time To Reduce (s) | 0.0 | 0.0 | | | 0.0 | 0.0 | | 0.0 | 0.0 | | | 0.0 |
| Recall Mode | None | None | | | None | None | | Max | Max | | | Max |
| Walk Time (s) | | | | | | | | | | | | |
| Flash Dont Walk (s) | | | | | | | | | | | | |
| Pedestrian Calls (#/hr) | | | | | | | | | | | | |
| v/c Ratio | 0.67 | 0.76 | | | | 0.15 | | | 0.37 | | | |
| Control Delay | 36.8 | 42.3 | | | | 39.8 | | | 33.5 | | | |
| Queue Delay | 0.0 | 0.0 | | | | 0.0 | | | 0.0 | | | |
| Total Delay | 36.8 | 42.3 | | | | 39.8 | | | 33.5 | | | |
| Queue Length 50th (ft) | 117 | 135 | | | | 11 | | | 57 | | | |
| Queue Length 95th (ft) | 216 | 200 | | | | 31 | | | 116 | | | |
| Internal Link Dist (ft) | | 450 | | | | 447 | | | 420 | | | |
| Turn Bay Length (ft) | 220 | | | | | | | | | | | |
| Base Capacity (vph) | 461 | 453 | | | | 159 | | | 369 | | | |
| Starvation Cap Reductn | 0 | 0 | | | | 0 | | | 0 | | | |
| Spillback Cap Reductn | 0 | 0 | | | | 0 | | | 0 | | | |
| Storage Cap Reductn | 0 | 0 | | | | 0 | | | 0 | | | |
| Reduced v/c Ratio | 0.62 | 0.71 | | | | 0.15 | | | 0.37 | | | |

## Intersection Summary

Area Type: Other
Cycle Length: 90
Actuated Cycle Length: 78.7
Natural Cycle: 65
Control Type: Actuated-Uncoordinated
# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 5: Ashbourne Rd & Front St



| Lane Group | SBL | SBT | SBR | NWL2 | NWL | NWR | NWR2 |
|---|---|---|---|---|---|---|---|
| Lead/Lag | | | | | | | |
| Lead-Lag Optimize? | | | | | | | |
| Vehicle Extension (s) | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | | |
| Minimum Gap (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | | |
| Time Before Reduce (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | |
| Time To Reduce (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | |
| Recall Mode | Max | Max | None | None | None | | |
| Walk Time (s) | | | | | | | |
| Flash Dont Walk (s) | | | | | | | |
| Pedestrian Calls (#/hr) | | | | | | | |
| v/c Ratio | | 0.27 | 0.21 | | 0.73 | | |
| Control Delay | | 32.3 | 11.6 | | 39.8 | | |
| Queue Delay | | 0.0 | 0.0 | | 0.0 | | |
| Total Delay | | 32.3 | 11.6 | | 39.8 | | |
| Queue Length 50th (ft) | | 38 | 40 | | 143 | | |
| Queue Length 95th (ft) | | 90 | 99 | | #302 | | |
| Internal Link Dist (ft) | | 420 | | | 493 | | |
| Turn Bay Length (ft) | | | 150 | | | | |
| Base Capacity (vph) | | 353 | 970 | | 525 | | |
| Starvation Cap Reductn | | 0 | 0 | | 0 | | |
| Spillback Cap Reductn | | 0 | 0 | | 0 | | |
| Storage Cap Reductn | | 0 | 0 | | 0 | | |
| Reduced v/c Ratio | | 0.27 | 0.20 | | 0.65 | | |

Intersection Summary

| Movement | EBL | EBT | EBR | EBR2 | WBL | WBT | WBR | NBL | NBT | NBR | NBR2 | SBL2 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (vph) | 237 | 20 | 217 | 34 | 3 | 6 | 3 | 22 | 65 | 1 | 13 | 3 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width | 10 | 11 | 11 | 11 | 12 | 12 | 12 | 16 | 16 | 16 | 16 | 12 |
| Grade (%) | | -2% | | | | 3% | | | 4% | | | |
| Total Lost time (s) | 6.0 | 6.0 | | | | 6.0 | | | 6.0 | | | |
| Lane Util. Factor | 1.00 | 1.00 | | | | 1.00 | | | 1.00 | | | |
| Frt | 1.00 | 0.86 | | | | 0.95 | | | 0.98 | | | |
| Flt Protected | 0.95 | 1.00 | | | | 0.98 | | | 0.99 | | | |
| Satd. Flow (prot) | 1620 | 1592 | | | | 1758 | | | 1993 | | | |
| Flt Permitted | 0.95 | 1.00 | | | | 0.98 | | | 0.88 | | | |
| Satd. Flow (perm) | 1620 | 1592 | | | | 1758 | | | 1783 | | | |
| Peak-hour factor, PHF | 0.83 | 0.71 | 0.88 | 0.75 | 0.38 | 0.75 | 0.38 | 0.56 | 0.83 | 0.25 | 0.75 | 0.75 |
| Adj. Flow (vph) | 286 | 28 | 247 | 45 | 8 | 8 | 8 | 39 | 78 | 4 | 17 | 4 |
| RTOR Reduction (vph) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Lane Group Flow (vph) | 286 | 320 | 0 | 0 | 0 | 24 | 0 | 0 | 138 | 0 | 0 | 0 |
| Heavy Vehicles (%) | 5% | 0% | 0% | 4% | 0% | 0% | 0% | 0% | 4% | 0% | 0% | 0% |
| Turn Type | Split | | | | Split | | | Perm | | | | Perm |
| Protected Phases | 4 | 4 | | | 8 | 8 | | | 2 | | | |
| Permitted Phases | | | | | | | | 2 | | | | 6 |
| Actuated Green, G (s) | 20.7 | 20.7 | | | | 2.4 | | | 16.3 | | | |
| Effective Green, g (s) | 20.7 | 20.7 | | | | 2.4 | | | 16.3 | | | |
| Actuated g/C Ratio | 0.25 | 0.25 | | | | 0.03 | | | 0.20 | | | |
| Clearance Time (s) | 6.0 | 6.0 | | | | 6.0 | | | 6.0 | | | |
| Vehicle Extension (s) | 5.0 | 5.0 | | | | 5.0 | | | 5.0 | | | |
| Lane Grp Cap (vph) | 408 | 401 | | | | 51 | | | 354 | | | |
| v/s Ratio Prot | 0.18 | c0.20 | | | | c0.01 | | | | | | |
| v/s Ratio Perm | | | | | | | | | c0.08 | | | |
| v/c Ratio | 0.70 | 0.80 | | | | 0.47 | | | 0.39 | | | |
| Uniform Delay, d1 | 27.9 | 28.8 | | | | 39.3 | | | 28.6 | | | |
| Progression Factor | 1.00 | 1.00 | | | | 1.00 | | | 1.00 | | | |
| Incremental Delay, d2 | 6.7 | 12.1 | | | | 13.6 | | | 3.2 | | | |
| Delay (s) | 34.6 | 40.8 | | | | 52.9 | | | 31.8 | | | |
| Level of Service | C | D | | | | D | | | C | | | |
| Approach Delay (s) | | 37.9 | | | | 52.9 | | | 31.8 | | | |
| Approach LOS | | D | | | | D | | | C | | | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM Average Control Delay | 33.9 | HCM Level of Service | C |
| HCM Volume to Capacity ratio | 0.66 | | |
| Actuated Cycle Length (s) | 82.2 | Sum of lost time (s) | 24.0 |
| Intersection Capacity Utilization | 64.2% | ICU Level of Service | C |
| Analysis Period (min) | 15 | | |

c Critical Lane Group

| Movement | SBL | SBT | SBR | NWL2 | NWL | NWR | NWR2 |
|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | |
| Volume (vph) | 11 | 61 | 168 | 12 | 279 | 18 | 1 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width | 12 | 12 | 14 | 16 | 16 | 16 | 16 |
| Grade (%) | | 0% | | | 6% | | |
| Total Lost time (s) | | 6.0 | 6.0 | | 6.0 | | |
| Lane Util. Factor | | 1.00 | 1.00 | | 1.00 | | |
| Frt | | 1.00 | 0.85 | | 0.99 | | |
| Flt Protected | | 0.99 | 1.00 | | 0.96 | | |
| Satd. Flow (prot) | | 1874 | 1706 | | 1933 | | |
| Flt Permitted | | 0.90 | 1.00 | | 0.96 | | |
| Satd. Flow (perm) | | 1705 | 1706 | | 1933 | | |
| Peak-hour factor, PHF | 0.50 | 0.88 | 0.87 | 0.70 | 0.95 | 0.75 | 0.25 |
| Adj. Flow (vph) | 22 | 69 | 193 | 17 | 294 | 24 | 4 |
| RTOR Reduction (vph) | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Lane Group Flow (vph) | 0 | 95 | 193 | 0 | 339 | 0 | 0 |
| Heavy Vehicles (%) | 0% | 0% | 1% | 0% | 2% | 6% | 0% |
| Turn Type | Perm | | pm+ov | Split | | | |
| Protected Phases | | 6 | 4 | 9 | 9 | | |
| Permitted Phases | 6 | | 6 | | | | |
| Actuated Green, G (s) | | 16.3 | 37.0 | | 18.8 | | |
| Effective Green, g (s) | | 16.3 | 37.0 | | 18.8 | | |
| Actuated g/C Ratio | | 0.20 | 0.45 | | 0.23 | | |
| Clearance Time (s) | | 6.0 | 6.0 | | 6.0 | | |
| Vehicle Extension (s) | | 5.0 | 5.0 | | 5.0 | | |
| Lane Grp Cap (vph) | | 338 | 892 | | 442 | | |
| v/s Ratio Prot | | | 0.05 | | c0.18 | | |
| v/s Ratio Perm | | 0.06 | 0.06 | | | | |
| v/c Ratio | | 0.28 | 0.22 | | 0.77 | | |
| Uniform Delay, d1 | | 28.0 | 13.8 | | 29.7 | | |
| Progression Factor | | 1.00 | 1.00 | | 1.00 | | |
| Incremental Delay, d2 | | 2.1 | 0.3 | | 9.1 | | |
| Delay (s) | | 30.0 | 14.0 | | 38.8 | | |
| Level of Service | | C | B | | D | | |
| Approach Delay (s) | | 19.3 | | | 38.8 | | |
| Approach LOS | | B | | | D | | |

| Intersection Summary |
|---|