## MEMORANDUM

TO: Mike Love, PE
Rob Riley, PE, PS
Delaware County Engineers Office
CC: Steve Lark
Director of Construction Projects
Nationwide Realty Investors
FROM: Doyle R. Clear, Jr., Simon Addei, PE
Trans Associates Engineering Consultants, Inc.
DATE: May 25, 2021
SUBJECT: Northstar Developments
Properties north of US36/SR37 and west of Galena Road
Traffic Study Memorandum of Understanding
NWRINOO-16112

## Introduction

A meeting was held to discuss planned Northstar developments at the Delaware County Engineers Office (DCEO) on Wednesday, April 28, 2021. The proposed developments are located within the portion of Northstar that is located north of US36/SR37 and west of Galena Road. A preliminary plan showing the planned developments is attached for reference.

Based on the discussions and the directions received from the County, it is understood that a traffic study needs to be prepared to better define roadway system needs and potential access points for all development parcels within the study area. This study will basically refine the 2005 traffic study prepared by EMH\&T given the new land uses and new roadway plan for the area previously known as the "Commercial Area". Since the overall volume of traffic generated by land-uses in the revised land-use plan is about the same as that shown in the EMH\&T study, the primary goals of this new study will be to define: (1) basic roadway cross-sections on the supporting roadway system, (2) lane needs at the intersection of Wilson Road and the planned NorthSouth Road, (3) potential points of access for all development parcels, and (4) lane needs at site access points for the four specific development parcels currently in the development process.

Referencing the attached plan, the four specific development parcels currently being considered are:
o Commercial parcel located west of Wilson Road and southwest of the proposed Loop Road;
o Residential parcel located in the northeast quadrant of the intersection between Wilson Road and the proposed North-South Road;
o Residential parcel located in the northwest quadrant of the intersection between North Galena Road and Wilson Road; and
o Residential parcel located in the southwest quadrant of the intersection between North Galena Road and Wilson Road.

Technical studies of traffic generated by these four developments will be performed to define lane requirements at each of the planned site access points. The determination of potential access points for the
remainder of the parcels without definite development partners will be part of the long-term plan for the Northstar complex.

Prior to undertaking the traffic study, the master plan for the study area will be refined. Specific land-uses and sizes will be identified and preliminary points of access for all parcels will be defined. These items will establish the bases of the traffic study. Basic items of the traffic study are as follows:

## Study Area

- North of US36/SR37, west of Galena Road, south of Berkshire Road, and east of I-71.


## Study Years

- Design Year: 2045 (includes the build out of all parcels and roadways).
- Opening Year: 2025 (near-term with build-out of the four specific parcels and with only the northern leg of the North-South Road built between Wilson Road and the site access point of the Weiler residential development).


## Study Intersections

- Wilson Road and North-South Road.
- US36/SR37 and North-South Road.
- Access points for the four specific development parcels.


## Study Periods

- Weekday AM peak hour.
- Weekday PM peak hour.
- Average Daily Traffic (ADT) - for comparison to approved 2005 traffic study and for determining the typical section for each spine road.


## Data Collection

- Current Traffic Volumes: MORPC, ODOT, and DCEO will be consulted to determine current traffic volumes by incorporating data from the following sources:
o 2019 directional vehicle count data conducted on Wilson Road north of the Flying J truck access between US 36/SR 37and Galena Road obtained from the DCEO.
o 2018 directional vehicle count data conducted at the intersection of Galena Road and Wilson Road obtained from the Mid-Ohio Regional Planning Commission (MORPC).
o Additionally, the current count data will be compared to 2018 ODOT Certified traffic volumes as depicted in Plate 6 of 20, DEL-71-9.67, PID 90200.
- Projected volumes associated with Plate 18 of 20, DEL-71-9.67, PID 90200, will be referenced to help identify potential future conditions with full-build of the l-71 interchange.


## Growth Rate

An average annual growth rate will be calculated based on the 2018 and 2038 ADT values contained in the Certified traffic volumes.

## Trip Generation

Vehicular trip generation for the proposed developments will determined using average rates and equations contained in the ITE Trip Generation Manual (10th Edition). The vehicle trip generation rates obtained from the 10th edition of the ITE Trip Generation Manual to be used in this study are summarized in the table below.

Table 1 - Vehicle-Trip Generation Rates

| Land-Use and ITE Code (ITE Trip Generation Manual, $10^{\text {th }}$ Edition) | Vehicle-Trip Generation |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | AM Peak Hour |  |  | PM Peak Hour |  |  |
|  | Trip Rate | Directional Distribution |  | Trip Rate | Directional Distribution |  |
|  |  | Enter | Exit |  | Enter | Exit |
| General Office Building: Urban/Suburban (ITE Code 710) | 1.16/1,000 sf | 86\% | 14\% | 1.15/1,000 sf | 16\% | 84\% |
| Single-Family Detached Housing (ITE Code 210) | 0.74/DU | 25\% | 75\% | 0.99/DU | 63\% | 37\% |
| Multifamily Housing: Low-Rise (ITE Code 220) | 0.46/DU | 23\% | 77\% | 0.56/DU | 63\% | 37\% |
| Multifamily Housing: Mid-Rise (ITE Code 221) | 0.36/DU | 26\% | 74\% | 0.44/DU | 61\% | 39\% |
| Senior Adult Housing-Attached (ITE Code 252) | 0.20/DU | 35\% | 65\% | 0.26/DU | 55\% | 45\% |
| Hotel: General Urban/Suburban (ITE Code 310) | 0.47/room | 59\% | 41\% | 0.60/room | 51\% | 49\% |
| Shopping Center: General Urban/Suburban (ITE Code 820) | 0.94/1,000 sf | 62\% | 38\% | 3.81/1,000 sf | 48\% | 52\% |

## Trip Distribution

It is proposed that site generated traffic be assigned to the existing and proposed roadway systems based on trip distribution for the area prepared and submitted to DCEO on May 24, 2019, by Trans Associates as part of Acadia Sports \& Entertainment Development (see attached). However, given the location of the developments and the type of land-uses contained in the Northstar complex, it is proposed that the trip distributions be modified as follows.

- $15 \%$ to/from north via I-71,
- $15 \%$ to/from west via US 36/SR 37,
- $50 \%$ to/from south via I-71 at Exist 131B/US 36/SR 37 interchange,
- $5 \%$ to/from south (via Wilson Road and North-South Road south of US36/SR37),
- $10 \%$ to/from east via US 36/SR 37, and
- $5 \%$ to/from northeast via Galena \& Wilson intersection.


## Traffic Volumes Projections

- Long Term Volumes will be estimated by:
o Starting with the Certified 2038 traffic volumes shown in Plate 18 of DEL-71-9.67, PID 90200,
o Backing out the trips generated by the TAZ (or TAZs) that compose the area east of I-71, north of US36/SR37, west of Galena Road, and south of Berkshire Road (i.e., the subject study area) as defined in the Certified traffic volume modeling,
o Increasing the residual 2038 traffic volumes on the study area roadway system to 2045 using the calculated annual growth rate, and then
o Adding the trips generated by each of the development parcels within the defined study area.
- Near Term Volumes would be obtained by adding the following:
o Starting with the Certified 2018 traffic volumes shown in Plate 6 of DEL-71-9.67, PID 90200,
o Backing out the trips generated by the TAZ (or TAZs) that compose the area east of I-71, north of US36/SR37, west of Galena Road, and south of Berkshire Road (i.e., the subject study area) as defined in the Certified traffic volume modeling,
o Increasing the residual 2018 traffic volumes on the study area roadway system to 2025 using the calculated annual growth rate, and then
o Adding the trips generated by the defined four specific developments.
Note: projected traffic volumes will be defined at the following locations:
o Intersection of Wilson Road and North-South Road (near- and long-term),
o Intersection of US36/SR37 and North-South Road (long-term),
o Intersection of Loop Road with Wilson Road and with North-South Road (long-term), and
o All defined site access points (near- and long-term for the four specific developments and longterm for all other access points).


## Design Speed

- 45 mph for Wilson Road and North-South Road, and
- 35 mph for Loop Road.


## Traffic Signal Warrant Evaluation

- The 8-hour warrant, as defined in the Ohio Manual of Traffic Control Devices (OMUTCD), will be used to evaluate the need for signalization at the intersection of Wilson Road with the North-South Road for near- and long-term conditions.
- If a signal is not warranted with near-term volumes, estimate when a signal installation might be warranted.


## Turn Lane Warrant Evaluation

- The need for left or right turn lanes will be determined from capacity analysis for signalized intersections.
- Turn lane warrants will be applied at stop-controlled intersections based on ODOT and Delaware County published standards.


## Turn Lane Calculations Evaluation

- Lengths for capacity-driven or warranted turn lanes will be determined using the storage length calculation procedures provided in the ODOT L\&D Manual Section 401.


## Intersection Capacity Analyses

- Where applicable, intersection capacity analyses will be performed using Synchro 10 and SimTraffic software. Level-of-service criteria to be used is as follows:
o It is understood that the goal of the County is to maintain a LOS of $D$ or better during peak hours.
o All intersection approaches should operate at LOS D or better and all individual movements on the public roads should be at LOS E or better.
- Preferred signal cycle lengths will be obtained from the DCEO for the intersection of Wilson Road with the North-South Road and for the intersection of US36/SR37 and North-South Road.
- Capacity analyses will be used to determine the number of lanes and lane configuration at the two signalized intersections on the North-South Road (at Wilson and at US36/SR37) under long-term volumes.


## Reports

- A draft report will be submitted to the City for review and comment. The report will summarize study findings and recommendations regarding:
o basic roadway cross-sections on the supporting roadway system,
o lane needs at the intersection of Wilson Road and the planned North-South Road,
o potential points of access for all development parcels, and
o lane needs at site access points for the four specific development parcels currently in the development process.
- A final report will be prepared upon receipt of review comments.

Upon your approval, the traffic study will be performed in accordance with this MOU. Please let us know if you have any questions or comments.

## Attachments







## Date/Time/Volume/Average Speed/Temperature Report

| ```Device ID: }30055 Operator: BN Begin: 10/16/2019 12:00 AM End: 10/17/2019 12:00 AM Hours: 24.00 Period (min): 15``` | Location: Betwee <br> Lane: SB LL <br> Street: Wilson <br> City: <br> County: Delawa <br> State: OH | na Rd | Raw Count: 243 AADT Count: 243 AADT Factor: 1 Speed Limit: 45 |  |
| :---: | :---: | :---: | :---: | :---: |
| Date And | Period Volume | Average Speed | Roadway Temperature | Roadway Surface Wet/Dry |


| Wed, 10/16/2019 |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: |
| [00:00-00:15] | 0 | 0 MPH | 66 F | --- |
| [00:15-00:30] | 0 | 0 MPH | 66 F | --- |
| [00:30-00:45] | 0 | 0 MPH | 66 F | --- |
| [00:45-01:00] | 0 | 0 MPH | 66 F | --- |
| [01:00-01:15] | 0 | 0 MPH | 66 F | --- |
| [01:15-01:30] | 0 | 0 MPH | 66 F | --- |
| [01:30-01:45] | 0 | 0 MPH | 66 F | --- |
| [01:45-02:00] | 0 | 0 MPH | 66 F | --- |
| [02:00-02:15] | 0 | 0 MPH | 66 F | --- |
| [02:15-02:30] | 0 | 0 MPH | 66 F | --- |
| [02:30-02:45] | 0 | 0 MPH | 66 F | --- |
| [02:45-03:00] | 0 | 0 MPH | 66 F | --- |
| [03:00-03:15] | 1 | 58 MPH | 66 F | --- |
| [03:15-03:30] | 0 | 0 MPH | 66 F | --- |
| [03:30-03:45] | 0 | 0 MPH | 66 F | --- |
| [03:45-04:00] | 0 | 0 MPH | 66 F | --- |
| [04:00-04:15] | 0 | 0 MPH | 66 F | --- |
| [04:15-04:30] | 1 | 38 MPH | 66 F | --- |
| [04:30-04:45] | 1 | 0 MPH | 64 F | --- |
| [04:45-05:00] | 2 | 45 MPH | 64 F | --- |
| [05:00-05:15] | 1 | 52 MPH | 64 F | --- |
| [05:15-05:30] | 2 | 48 MPH | 63 F | --- |
| [05:30-05:45] | 2 | 60 MPH | 61 F | --- |
| [05:45-06:00] | 4 | 47 MPH | 57 F | --- |
| [06:00-06:15] | 3 | 49 MPH | 57 F | --- |
| [06:15-06:30] | 3 | 56 MPH | 55 F | --- |
| [06:30-06:45] | 6 | 47 MPH | 55 F | --- |
| [06:45-07:00] | 7 | 52 MPH | 55 F | --- |
| [07:00-07:15] | 10 | 49 MPH | 55 F | --- |
| [07:15-07:30] | 13 | 47 MPH | 55 F | --- |
| [07:30-07:45] | 6 | 47 MPH | 55 F | --- |
| [07:45-08:00] | 7 | 49 MPH | 55 F | --- |
| [08:00-08:15] | 2 | 50 MPH | 55 F | --- |
| [08:15-08:30] | 6 | 51 MPH | 55 F | --- |
| [08:30-08:45] | 2 | 53 MPH | 55 F | --- |
| [08:45-09:00] | 4 | 50 MPH | 55 F | --- |
| [09:00-09:15] | 5 | 48 MPH | 55 F | --- |
| M |  |  |  |  |

## Date/Time/Volume/Average Speed/Temperature Report

| ```Device ID: 300554 Operator: BN Begin: 10/16/2019 12:00 AM End: 10/17/2019 12:00 AM Hours: 24.00 Period (min): 15``` | Location: Betwee <br> Lane: SB LL <br> Street: Wilson City: <br> County: Delawar <br> State: OH | ena Rd | Raw Count: 243 AADT Count: 243 AADT Factor: 1 Speed Limit: 45 |  |
| :---: | :---: | :---: | :---: | :---: |
| Date And | Period Volume | Average Speed | Roadway Temperature | Roadway Surface Wet/Dry |


| Wed, 10/16/2019 |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: |
| [09:15-09:30] | 5 | 50 MPH | 55 F | --- |
| [09:30-09:45] | 4 | 48 MPH | 57 F | --- |
| [09:45-10:00] | 3 | 47 MPH | 57 F | --- |
| [10:00-10:15] | 1 | 52 MPH | 57 F | --- |
| [10:15-10:30] | 4 | 45 MPH | 61 F | --- |
| [10:30-10:45] | 9 | 51 MPH | 61 F | --- |
| [10:45-11:00] | 1 | 48 MPH | 63 F | --- |
| [11:00-11:15] | 1 | 48 MPH | 61 F | --- |
| [11:15-11:30] | 4 | 49 MPH | 59 F | --- |
| [11:30-11:45] | 3 | 48 MPH | 59 F | --- |
| [11:45-12:00] | 3 | 47 MPH | 59 F | --- |
| [12:00-12:15] | 0 | 0 MPH | 57 F | --- |
| [12:15-12:30] | 3 | 55 MPH | 57 F | --- |
| [12:30-12:45] | 5 | 45 MPH | 57 F | --- |
| [12:45-13:00] | 1 | 38 MPH | 61 F | --- |
| [13:00-13:15] | 2 | 40 MPH | 61 F | --- |
| [13:15-13:30] | 5 | 47 MPH | 61 F | --- |
| [13:30-13:45] | 1 | 42 MPH | 61 F | --- |
| [13:45-14:00] | 5 | 53 MPH | 61 F | --- |
| [14:00-14:15] | 2 | 43 MPH | 59 F | --- |
| [14:15-14:30] | 3 | 49 MPH | 59 F | --- |
| [14:30-14:45] | 2 | 67 MPH | 59 F | --- |
| [14:45-15:00] | 5 | 49 MPH | 59 F | --- |
| [15:00-15:15] | 5 | 44 MPH | 61 F | --- |
| [15:15-15:30] | 1 | 42 MPH | 61 F | --- |
| [15:30-15:45] | 3 | 57 MPH | 59 F | --- |
| [15:45-16:00] | 4 | 41 MPH | 59 F | --- |
| [16:00-16:15] | 2 | 53 MPH | 59 F | --- |
| [16:15-16:30] | 3 | 46 MPH | 59 F | --- |
| [16:30-16:45] | 8 | 48 MPH | 57 F | --- |
| [16:45-17:00] | 4 | 46 MPH | 57 F | --- |
| [17:00-17:15] | 4 | 48 MPH | 57 F | --- |
| [17:15-17:30] | 5 | 47 MPH | 55 F | --- |
| [17:30-17:45] | 4 | 44 MPH | 55 F | --- |
| [17:45-18:00] | 4 | 45 MPH | 55 F | --- |
| [18:00-18:15] | 6 | 54 MPH | 54 F | --- |
| [18:15-18:30] | 5 | 52 MPH | 54 F | --- |
| M |  |  |  | 2 |

## Date/Time/Volume/Average Speed/Temperature Report

| ```Device ID: 300554 Operator: BN Begin: 10/16/2019 12:00 AM End: 10/17/2019 12:00 AM Hours: 24.00 Period (min): }1``` | Location: Between <br> Lane: SB LL <br> Street: Wilson City: <br> County: Delawar <br> State: OH | ena Rd | Raw Co AADT Co AADT Fac Speed |  |
| :---: | :---: | :---: | :---: | :---: |
| Date And | Period Volume | Average Speed | Roadway Temperature | Roadway Surface Wet/Dry |
| Wed, 10/16/2019 |  |  |  |  |
| [18:30-18:45] | 0 | 0 MPH | 54 F | --- |
| [18:45-19:00] | 0 | 0 MPH | 54 F | --- |
| [19:00-19:15] | 0 | 0 MPH | 54 F | --- |
| [19:15-19:30] | 4 | 46 MPH | 54 F | --- |
| [19:30-19:45] | 2 | 43 MPH | 52 F | --- |
| [19:45-20:00] | 2 | 45 MPH | 52 F | --- |
| [20:00-20:15] | 1 | 38 MPH | 54 F | --- |
| [20:15-20:30] | 4 | 46 MPH | 54 F | --- |
| [20:30-20:45] | 3 | 49 MPH | 54 F | --- |
| [20:45-21:00] | 0 | 0 MPH | 54 F | --- |
| [21:00-21:15] | 2 | 43 MPH | 52 F | --- |
| [21:15-21:30] | 0 | 0 MPH | 52 F | --- |
| [21:30-21:45] | 0 | 0 MPH | 52 F | --- |
| [21:45-22:00] | 1 | 48 MPH | 52 F | --- |
| [22:00-22:15] | 1 | 58 MPH | 52 F | --- |
| [22:15-22:30] | 3 | 47 MPH | 52 F | --- |
| [22:30-22:45] | 0 | 0 MPH | 52 F | --- |
| [22:45-23:00] | 0 | 0 MPH | 52 F | --- |
| [23:00-23:15] | 1 | 38 MPH | 52 F | --- |
| [23:15-23:30] | 0 | 0 MPH | 52 F | --- |
| [23:30-23:45] | 0 | 0 MPH | 52 F | --- |
| [23:45-00:00] | 1 | 58 MPH | 52 F | --- |
| 10/16/2019 12:00 AM <br> 10/17/2019 12:00 AM | 243 | 48 MPH | 58 F |  |

## MH Corbin Traffic Analyzer Study Computer Generated Summary Report City: <br> Street: Wilson Rd <br> Location: Between SR 37 \& N Galena Rd

A study of vehicle traffic was conducted with the device having serial number 300554. The study was done in the SB LL lane at Wilson Rd in , OH in Delaware county. The study began on 10/16/2019 at 12:00 AM and concluded on 10/17/2019 at 12:00 AM, lasting a total of 24.00 hours. Traffic statistics were recorded in 15 minute time periods. The total recorded volume showed 243 vehicles passed through the location with a peak volume of 13 on 10/16/2019 at [07:15-07:30] and a minimum volume of 0 on 10/16/2019 at [12:0012:15]. The AADT count for this study was 243.

## SPEED

Chart 1 lists the values of the speed bins and the total traffic volume for each bin. At least half the vehicles were traveling in the 45-50 MPH range or lower. The average speed for all classifed vehicles was 48 MPH with $66.67 \%$ vehicles exceeding the posted speed of $45 \mathrm{MPH} .14 .35 \%$ percent of the total vehicles were traveling in excess of 55 MPH. The mode speed for this traffic study was 45 MPH and the 85th percentile was 54.76 MPH .

| $\begin{gathered} < \\ \text { to } \\ 9 \end{gathered}$ | $\begin{aligned} & 10 \\ & \text { to } \\ & 14 \end{aligned}$ | $\begin{aligned} & 15 \\ & \text { to } \\ & 19 \end{aligned}$ | $\begin{aligned} & 20 \\ & \text { to } \\ & 24 \end{aligned}$ | $\begin{aligned} & 25 \\ & \text { to } \\ & 29 \end{aligned}$ | $\begin{aligned} & 30 \\ & \text { to } \\ & 34 \end{aligned}$ | $\begin{aligned} & 35 \\ & \text { to } \\ & 39 \end{aligned}$ | $\begin{aligned} & 40 \\ & \text { to } \\ & 44 \end{aligned}$ | $\begin{aligned} & 45 \\ & \text { to } \\ & 49 \end{aligned}$ | $\begin{aligned} & 50 \\ & \text { to } \\ & 54 \end{aligned}$ | $\begin{aligned} & 55 \\ & \text { to } \\ & 59 \end{aligned}$ | $\begin{aligned} & 60 \\ & \text { to } \\ & 64 \end{aligned}$ | $\begin{aligned} & 65 \\ & \text { to } \\ & 69 \end{aligned}$ | $\begin{aligned} & 70 \\ & \text { to } \\ & 74 \end{aligned}$ | 75 to $>$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 0 | 0 | 0 | 0 | 1 | 0 | 26 | 52 | 83 | 41 | 15 | 9 | 2 | 2 | 6 |

CHART 1

## CLASSIFICATION

Chart 2 lists the values of the classification bins and the total traffic volume accumulated for each bin. Most of the vehicles classified during the study were Passenger Vehicles. The number of Passenger Vehicles in the study was 164 which represents 69 percent of the total classified vehicles. The number of Vans \& Pickups in the study was 62 which represents 26 percent of the total classified vehicles. The number of Busses \& Trucks in the study was 3 which represents 1 percent of the total classified vehicles. The number of Tractor Trailers in the study was 8 which represents 3 percent of the total classified vehicles.


CHART 2

## HEADWAY

During the peak traffic period, on 10/16/2019 at [07:15-07:30] the average headway between vehicles was 64.286 seconds. During the slowest traffic period, on 10/16/2019 at [12:00-12:15] the average headway between vehicles was 900 seconds.

## WEATHER

The roadway surface temperature over the period of the study varied between 52.00 and 66.00 degrees $F$.

## Date/Time/Volume/Average Speed/Temperature Report

| ```Device ID: }40394 Operator: BN Begin: 10/16/2019 12:00 AM End: 10/17/2019 12:00 AM Hours: 24.00 Period (min): 15``` | Location: Betwee <br> Lane: SB RL <br> Street: Wilson <br> City: <br> County: Delawa <br> State: OH | na Rd | Raw Count: 1,774 <br> AADT Count: 1,774 <br> AADT Factor: 1 <br> Speed Limit: 45 |  |
| :---: | :---: | :---: | :---: | :---: |
| Date And | Period Volume | Average Speed | Roadway Temperature | Roadway Surface Wet/Dry |


| Wed, 10/16/2019 |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: |
| [00:00-00:15] | 1 | 48 MPH | 64 F | --- |
| [00:15-00:30] | 0 | 0 MPH | 64 F | --- |
| [00:30-00:45] | 0 | 0 MPH | 66 F | --- |
| [00:45-01:00] | 1 | 28 MPH | 66 F | --- |
| [01:00-01:15] | 2 | 47 MPH | 66 F | --- |
| [01:15-01:30] | 0 | 0 MPH | 66 F | --- |
| [01:30-01:45] | 0 | 0 MPH | 66 F | --- |
| [01:45-02:00] | 0 | 0 MPH | 66 F | --- |
| [02:00-02:15] | 0 | 0 MPH | 66 F | --- |
| [02:15-02:30] | 1 | 52 MPH | 66 F | --- |
| [02:30-02:45] | 0 | 0 MPH | 66 F | --- |
| [02:45-03:00] | 0 | 0 MPH | 66 F | --- |
| [03:00-03:15] | 0 | 0 MPH | 64 F | --- |
| [03:15-03:30] | 2 | 53 MPH | 64 F | --- |
| [03:30-03:45] | 2 | 60 MPH | 66 F | --- |
| [03:45-04:00] | 5 | 54 MPH | 66 F | --- |
| [04:00-04:15] | 3 | 56 MPH | 66 F | --- |
| [04:15-04:30] | 7 | 48 MPH | 64 F | --- |
| [04:30-04:45] | 13 | 57 MPH | 64 F | --- |
| [04:45-05:00] | 12 | 60 MPH | 64 F | --- |
| [05:00-05:15] | 15 | 54 MPH | 64 F | --- |
| [05:15-05:30] | 16 | 54 MPH | 61 F | --- |
| [05:30-05:45] | 25 | 53 MPH | 59 F | --- |
| [05:45-06:00] | 26 | 54 MPH | 57 F | --- |
| [06:00-06:15] | 58 | 51 MPH | 55 F | --- |
| [06:15-06:30] | 55 | 51 MPH | 55 F | --- |
| [06:30-06:45] | 64 | 53 MPH | 55 F | --- |
| [06:45-07:00] | 73 | 52 MPH | 55 F | --- |
| [07:00-07:15] | 62 | 53 MPH | 55 F | --- |
| [07:15-07:30] | 66 | 52 MPH | 55 F | --- |
| [07:30-07:45] | 73 | 51 MPH | 55 F | --- |
| [07:45-08:00] | 38 | 52 MPH | 55 F | --- |
| [08:00-08:15] | 45 | 54 MPH | 55 F | --- |
| [08:15-08:30] | 48 | 55 MPH | 55 F | --- |
| [08:30-08:45] | 49 | 55 MPH | 55 F | --- |
| [08:45-09:00] | 39 | 56 MPH | 55 F | --- |
| [09:00-09:15] | 24 | 52 MPH | 55 F | --- |
| M |  |  |  | 1 |

## Date/Time/Volume/Average Speed/Temperature Report

| Device ID: 403948 <br> Operator: BN <br> Begin: 10/16/2019 12:00 AM <br> End: 10/17/2019 12:00 AM <br> Hours: 24.00 <br> Period (min): 15 | Location: Betwee <br> Lane: SB RL <br> Street: Wilson <br> City: <br> County: Delawa <br> State: OH | na Rd | Raw Count: 1,774 AADT Count: 1,774 AADT Factor: 1 Speed Limit: 45 |  |
| :---: | :---: | :---: | :---: | :---: |
| Date And | Period <br> Volume | Average Speed | Roadway Temperature | Roadway Surface Wet/Dry |


| Wed, 10/16/2019 |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: |
| [09:15-09:30] | 29 | 52 MPH | 55 F | --- |
| [09:30-09:45] | 37 | 54 MPH | 57 F | --- |
| [09:45-10:00] | 25 | 56 MPH | 57 F | --- |
| [10:00-10:15] | 26 | 53 MPH | 59 F | --- |
| [10:15-10:30] | 23 | 53 MPH | 61 F | --- |
| [10:30-10:45] | 17 | 55 MPH | 63 F | --- |
| [10:45-11:00] | 17 | 52 MPH | 63 F | --- |
| [11:00-11:15] | 22 | 55 MPH | 61 F | --- |
| [11:15-11:30] | 24 | 50 MPH | 59 F | --- |
| [11:30-11:45] | 34 | 54 MPH | 59 F | --- |
| [11:45-12:00] | 22 | 50 MPH | 59 F | --- |
| [12:00-12:15] | 15 | 49 MPH | 59 F | --- |
| [12:15-12:30] | 22 | 53 MPH | 57 F | --- |
| [12:30-12:45] | 22 | 52 MPH | 57 F | --- |
| [12:45-13:00] | 18 | 56 MPH | 61 F | --- |
| [13:00-13:15] | 14 | 50 MPH | 63 F | --- |
| [13:15-13:30] | 24 | 55 MPH | 61 F | --- |
| [13:30-13:45] | 15 | 50 MPH | 61 F | --- |
| [13:45-14:00] | 22 | 55 MPH | 61 F | --- |
| [14:00-14:15] | 23 | 54 MPH | 59 F | --- |
| [14:15-14:30] | 16 | 52 MPH | 59 F | --- |
| [14:30-14:45] | 11 | 51 MPH | 61 F | --- |
| [14:45-15:00] | 21 | 54 MPH | 61 F | --- |
| [15:00-15:15] | 22 | 53 MPH | 61 F | --- |
| [15:15-15:30] | 24 | 53 MPH | 61 F | --- |
| [15:30-15:45] | 21 | 56 MPH | 59 F | --- |
| [15:45-16:00] | 18 | 56 MPH | 59 F | --- |
| [16:00-16:15] | 11 | 54 MPH | 59 F | --- |
| [16:15-16:30] | 24 | 55 MPH | 59 F | --- |
| [16:30-16:45] | 20 | 57 MPH | 59 F | --- |
| [16:45-17:00] | 12 | 56 MPH | 57 F | --- |
| [17:00-17:15] | 20 | 51 MPH | 57 F | --- |
| [17:15-17:30] | 20 | 53 MPH | 55 F | --- |
| [17:30-17:45] | 16 | 58 MPH | 54 F | --- |
| [17:45-18:00] | 28 | 53 MPH | 54 F | --- |
| [18:00-18:15] | 31 | 53 MPH | 54 F | --- |
| [18:15-18:30] | 23 | 50 MPH | 54 F | --- |
| M |  |  |  | 2 |

## Date/Time/Volume/Average Speed/Temperature Report

| ```Device ID: }40394 Operator: BN Begin: 10/16/2019 12:00 AM End: 10/17/2019 12:00 AM Hours: 24.00 Period (min): }1``` | Location: Betwee <br> Lane: SB RL <br> Street: Wilson <br> City: <br> County: Delawa <br> State: OH | ena Rd | Raw Cou AADT Cou AADT Fac Speed Li |  |
| :---: | :---: | :---: | :---: | :---: |
| Date And | Period Volume | Average Speed | Roadway Temperature | Roadway Surface Wet/Dry |
| Wed, 10/16/2019 |  |  |  |  |
| [18:30-18:45] |  | 52 MPH | 54 F | --- |
| [18:45-19:00] | 22 12 | 56 MPH | 52 F | --- |
| [19:00-19:15] |  | 54 MPH | 52 F | --- |
| [19:15-19:30] | 8 12 | 49 MPH | 52 F | --- |
| [19:30-19:45] | 12 17 | 59 MPH | 52 F | --- |
| [19:45-20:00] | 17 5 | 59 MPH | 52 F | --- |
| [20:00-20:15] |  | 53 MPH | 52 F | --- |
| [20:15-20:30] | 7 8 | 54 MPH | 54 F | --- |
| [20:30-20:45] | 8 | 53 MPH | 54 F | --- |
| [20:45-21:00] | 5 8 | 47 MPH | 54 F | --- |
| [21:00-21:15] | 10 | 56 MPH | 52 F | --- |
| [21:15-21:30] | 8 | 46 MPH | 52 F | --- |
| [21:30-21:45] | 3 | 52 MPH | 52 F | --- |
| [21:45-22:00] | 10 | 51 MPH | 52 F | --- |
| [22:00-22:15] | 3 | 56 MPH | 52 F | --- |
| [22:15-22:30] | 3 | 49 MPH | 52 F | --- |
| [22:30-22:45] | 3 | 53 MPH | 52 F | --- |
| [22:45-23:00] | 3 | 54 MPH | 52 F | --- |
| [23:00-23:15] | 4 | 49 MPH | 52 F | --- |
| [23:15-23:30] | 4 | 52 MPH | 52 F | --- |
| [23:30-23:45] | 3 | 47 MPH | 52 F | --- |
| [23:45-00:00] | 2 | 53 MPH | 52 F | --- |
| 10/16/2019 12:00 AM |  |  |  |  |
| 10/17/2019 12:00 AM | 1774 | 53 MPH | 58 F |  |

## MH Corbin Traffic Analyzer Study Computer Generated Summary Report City: <br> Street: Wilson Rd <br> Location: Between SR 37 \& N Galena Rd

A study of vehicle traffic was conducted with the device having serial number 403948. The study was done in the SB RL lane at Wilson Rd in , OH in Delaware county. The study began on 10/16/2019 at 12:00 AM and concluded on 10/17/2019 at 12:00 AM, lasting a total of 24.00 hours. Traffic statistics were recorded in 15 minute time periods. The total recorded volume showed 1,774 vehicles passed through the location with a peak volume of 73 on 10/16/2019 at [06:45-07:00] and a minimum volume of 0 on 10/16/2019 at [00:15$00: 30]$. The AADT count for this study was 1,774 .

## SPEED

Chart 1 lists the values of the speed bins and the total traffic volume for each bin. At least half the vehicles were traveling in the 50-55 MPH range or lower. The average speed for all classifed vehicles was 53 MPH with $90.47 \%$ vehicles exceeding the posted speed of $45 \mathrm{MPH} .32 .84 \%$ percent of the total vehicles were traveling in excess of 55 MPH . The mode speed for this traffic study was 50 MPH and the 85th percentile was 59.76 MPH .

| $\begin{gathered} < \\ \text { to } \\ 9 \end{gathered}$ | $\begin{aligned} & 10 \\ & \text { to } \\ & 14 \end{aligned}$ | $\begin{aligned} & 15 \\ & \text { to } \\ & 19 \end{aligned}$ | $\begin{aligned} & 20 \\ & \text { to } \\ & 24 \end{aligned}$ | $\begin{aligned} & 25 \\ & \text { to } \\ & 29 \end{aligned}$ | $\begin{aligned} & 30 \\ & \text { to } \\ & 34 \end{aligned}$ | $\begin{aligned} & 35 \\ & \text { to } \\ & 39 \end{aligned}$ | $\begin{aligned} & 40 \\ & \text { to } \\ & 44 \end{aligned}$ | $\begin{aligned} & 45 \\ & \text { to } \\ & 49 \end{aligned}$ | $\begin{aligned} & 50 \\ & \text { to } \\ & 54 \end{aligned}$ | $\begin{aligned} & 55 \\ & \text { to } \\ & 59 \end{aligned}$ | $\begin{aligned} & 60 \\ & \text { to } \\ & 64 \end{aligned}$ | $\begin{aligned} & 65 \\ & \text { to } \\ & 69 \end{aligned}$ | $\begin{aligned} & 70 \\ & \text { to } \\ & 74 \end{aligned}$ | $\begin{gathered} 75 \\ \text { to } \\ > \end{gathered}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 0 | 1 | 0 | 0 | 2 | 7 | 37 | 121 | 363 | 653 | 330 | 170 | 40 | 16 | 23 |

CHART 1

## CLASSIFICATION

Chart 2 lists the values of the classification bins and the total traffic volume accumulated for each bin.
Most of the vehicles classified during the study were Vans \& Pickups. The number of Passenger Vehicles in the study was 515 which represents 29 percent of the total classified vehicles. The number of Vans \& Pickups in the study was 1138 which represents 65 percent of the total classified vehicles. The number of Busses \& Trucks in the study was 43 which represents 2 percent of the total classified vehicles. The number of Tractor Trailers in the study was 67 which represents 4 percent of the total classified vehicles.


CHART 2

## HEADWAY

During the peak traffic period, on 10/16/2019 at [06:45-07:00] the average headway between vehicles was 12.162 seconds. During the slowest traffic period, on 10/16/2019 at [00:15-00:30] the average headway between vehicles was 900 seconds.

## WEATHER

The roadway surface temperature over the period of the study varied between 52.00 and 66.00 degrees $F$.

## Date/Time/Volume/Average Speed/Temperature Report

| ```Device ID: 403947 Operator: BN Begin: 10/16/2019 12:00 AM End: 10/17/2019 12:00 AM Hours: 24.00 Period (min): 15``` | Location: Betwee <br> Lane: NB LL <br> Street: Wilson <br> City: <br> County: Delawa <br> State: OH | na Rd | Raw Count: 1,085 <br> AADT Count: 1,085 <br> AADT Factor: 1 <br> Speed Limit: 45 |  |
| :---: | :---: | :---: | :---: | :---: |
| Date And | Period Volume | Average Speed | Roadway Temperature | Roadway Surface Wet/Dry |


| Wed, 10/16/2019 |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: |
| [00:00-00:15] | 2 | 53 MPH | 64 F | --- |
| [00:15-00:30] | 1 | 58 MPH | 66 F | --- |
| [00:30-00:45] | 4 | 53 MPH | 66 F | --- |
| [00:45-01:00] | 1 | 62 MPH | 66 F | --- |
| [01:00-01:15] | 1 | 52 MPH | 66 F | --- |
| [01:15-01:30] | 1 | 52 MPH | 66 F | --- |
| [01:30-01:45] | 1 | 52 MPH | 66 F | --- |
| [01:45-02:00] | 0 | 0 MPH | 66 F | --- |
| [02:00-02:15] | 0 | 0 MPH | 66 F | --- |
| [02:15-02:30] | 0 | 0 MPH | 66 F | --- |
| [02:30-02:45] | 1 | 48 MPH | 66 F | --- |
| [02:45-03:00] | 0 | 0 MPH | 66 F | --- |
| [03:00-03:15] | 0 | 0 MPH | 66 F | --- |
| [03:15-03:30] | 2 | 55 MPH | 66 F | --- |
| [03:30-03:45] | 0 | 0 MPH | 66 F | --- |
| [03:45-04:00] | 1 | 62 MPH | 66 F | --- |
| [04:00-04:15] | 0 | 0 MPH | 66 F | --- |
| [04:15-04:30] | 1 | 48 MPH | 66 F | --- |
| [04:30-04:45] | 0 | 0 MPH | 64 F | --- |
| [04:45-05:00] | 0 | 0 MPH | 64 F | --- |
| [05:00-05:15] | 0 | 0 MPH | 64 F | --- |
| [05:15-05:30] | 0 | 0 MPH | 61 F | --- |
| [05:30-05:45] | 5 | 47 MPH | 59 F | --- |
| [05:45-06:00] | 1 | 52 MPH | 57 F | --- |
| [06:00-06:15] | 1 | 52 MPH | 57 F | --- |
| [06:15-06:30] | 1 | 58 MPH | 55 F | --- |
| [06:30-06:45] | 3 | 51 MPH | 55 F | --- |
| [06:45-07:00] | 5 | 55 MPH | 55 F | --- |
| [07:00-07:15] | 1 | 62 MPH | 55 F | --- |
| [07:15-07:30] | 5 | 47 MPH | 55 F | --- |
| [07:30-07:45] | 2 | 45 MPH | 55 F | --- |
| [07:45-08:00] | 15 | 50 MPH | 57 F | --- |
| [08:00-08:15] | 8 | 50 MPH | 57 F | --- |
| [08:15-08:30] | 9 | 52 MPH | 55 F | --- |
| [08:30-08:45] | 10 | 50 MPH | 57 F | --- |
| [08:45-09:00] | 9 | 50 MPH | 55 F | --- |
| [09:00-09:15] | 10 | 49 MPH | 55 F | --- |
|  |  |  |  |  |

## Date/Time/Volume/Average Speed/Temperature Report

| ```Device ID: 403947 Operator: BN Begin: 10/16/2019 12:00 AM End: 10/17/2019 12:00 AM Hours: 24.00 Period (min): }1``` | Location: Betwee <br> Lane: NB LL <br> Street: Wilson City: <br> County: Delawa <br> State: OH | na Rd | Raw Count: 1,085 <br> AADT Count: 1,085 <br> AADT Factor: 1 <br> Speed Limit: 45 |  |
| :---: | :---: | :---: | :---: | :---: |
| Date And | Period Volume | Average Speed | Roadway <br> Temperature | Roadway Surface Wet/Dry |


| Wed, 10/16/2019 |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: |
| [09:15-09:30] | 4 | 48 MPH | 55 F | --- |
| [09:30-09:45] | 7 | 51 MPH | 57 F | --- |
| [09:45-10:00] | 8 | 53 MPH | 57 F | --- |
| [10:00-10:15] | 4 | 55 MPH | 59 F | --- |
| [10:15-10:30] | 7 | 48 MPH | 61 F | --- |
| [10:30-10:45] | 6 | 54 MPH | 63 F | --- |
| [10:45-11:00] | 4 | 49 MPH | 63 F | --- |
| [11:00-11:15] | 10 | 55 MPH | 61 F | --- |
| [11:15-11:30] | 4 | 54 MPH | 61 F | --- |
| [11:30-11:45] | 8 | 55 MPH | 59 F | --- |
| [11:45-12:00] | 7 | 55 MPH | 59 F | --- |
| [12:00-12:15] | 11 | 55 MPH | 59 F | --- |
| [12:15-12:30] | 13 | 54 MPH | 59 F | --- |
| [12:30-12:45] | 16 | 55 MPH | 57 F | --- |
| [12:45-13:00] | 9 | 50 MPH | 61 F | --- |
| [13:00-13:15] | 16 | 54 MPH | 63 F | --- |
| [13:15-13:30] | 16 | 53 MPH | 61 F | --- |
| [13:30-13:45] | 14 | 54 MPH | 61 F | --- |
| [13:45-14:00] | 11 | 56 MPH | 61 F | --- |
| [14:00-14:15] | 15 | 52 MPH | 61 F | --- |
| [14:15-14:30] | 22 | 56 MPH | 59 F | --- |
| [14:30-14:45] | 8 | 56 MPH | 61 F | --- |
| [14:45-15:00] | 16 | 56 MPH | 61 F | --- |
| [15:00-15:15] | 19 | 54 MPH | 61 F | --- |
| [15:15-15:30] | 23 | 57 MPH | 61 F | --- |
| [15:30-15:45] | 32 | 55 MPH | 61 F | --- |
| [15:45-16:00] | 35 | 57 MPH | 61 F | --- |
| [16:00-16:15] | 31 | 56 MPH | 61 F | --- |
| [16:15-16:30] | 44 | 57 MPH | 59 F | --- |
| [16:30-16:45] | 41 | 54 MPH | 59 F | --- |
| [16:45-17:00] | 42 | 56 MPH | 57 F | --- |
| [17:00-17:15] | 45 | 55 MPH | 57 F | --- |
| [17:15-17:30] | 39 | 54 MPH | 55 F | --- |
| [17:30-17:45] | 37 | 55 MPH | 55 F | --- |
| [17:45-18:00] | 35 | 54 MPH | 55 F | --- |
| [18:00-18:15] | 29 | 55 MPH | 54 F | --- |
| [18:15-18:30] | 24 | 55 MPH | 54 F | --- |
| M |  |  |  | 2 |

## Date/Time/Volume/Average Speed/Temperature Report

|  | Location: Between <br> Lane: NB LL <br> Street: Wilson <br> City: <br> County: Delawar <br> State: OH | ena Rd | Raw Cou AADT Coun AADT Fac Speed Li |  |
| :---: | :---: | :---: | :---: | :---: |
| Date And Time Range | Period Volume | Average Speed | Roadway Temperature | Roadway Surface Wet/Dry |
| Wed, 10/16/2019 |  |  |  |  |
| [18:30-18:45] | 27 | 54 MPH | 54 F | --- |
| [18:45-19:00] | 29 | 52 MPH | 54 F | --- |
| [19:00-19:15] | 13 | 50 MPH | 52 F | --- |
| [19:15-19:30] | 17 | 51 MPH | 52 F | --- |
| [19:30-19:45] | 21 | 49 MPH | 52 F | --- |
| [19:45-20:00] | 12 | 50 MPH | 54 F | --- |
| [20:00-20:15] | 10 | 47 MPH | 54 F | --- |
| [20:15-20:30] | 18 | 53 MPH | 54 F | --- |
| [20:30-20:45] | 13 | 49 MPH | 54 F | --- |
| [20:45-21:00] | 10 | 52 MPH | 54 F | --- |
| [21:00-21:15] | 12 | 51 MPH | 54 F | --- |
| [21:15-21:30] | 14 | 47 MPH | 54 F | --- |
| [21:30-21:45] | 9 | 52 MPH | 54 F | --- |
| [21:45-22:00] | 8 | 49 MPH | 54 F | --- |
| [22:00-22:15] | 7 | 50 MPH | 54 F | --- |
| [22:15-22:30] | 12 | 50 MPH | 52 F | --- |
| [22:30-22:45] | 9 | 52 MPH | 52 F | --- |
| [22:45-23:00] | 5 | 59 MPH | 52 F | --- |
| [23:00-23:15] | 6 | 60 MPH | 52 F | --- |
| [23:15-23:30] | 8 | 49 MPH | 52 F | --- |
| [23:30-23:45] | 10 | 55 MPH | 52 F | --- |
| [23:45-00:00] | 2 | 55 MPH | 52 F | --- |
| 10/16/2019 12:00 AM 10/17/2019 12:00 AM |  |  |  |  |
| 10/17/2019 12:00 AM | 1085 | 53 MPH | 59 F |  |

## MH Corbin Traffic Analyzer Study Computer Generated Summary Report City: <br> Street: Wilson Rd <br> Location: Between SR 37 \& N Galena Rd

A study of vehicle traffic was conducted with the device having serial number 403947. The study was done in the NB LL lane at Wilson Rd in , OH in Delaware county. The study began on 10/16/2019 at 12:00 AM and concluded on 10/17/2019 at 12:00 AM, lasting a total of 24.00 hours. Traffic statistics were recorded in 15 minute time periods. The total recorded volume showed 1,085 vehicles passed through the location with a peak volume of 45 on 10/16/2019 at [17:00-17:15] and a minimum volume of 0 on 10/16/2019 at [01:45$02: 00]$. The AADT count for this study was 1,085 .

## SPEED

Chart 1 lists the values of the speed bins and the total traffic volume for each bin. At least half the vehicles were traveling in the 50-55 MPH range or lower. The average speed for all classifed vehicles was 53 MPH with $91.86 \%$ vehicles exceeding the posted speed of $45 \mathrm{MPH} .38 .11 \%$ percent of the total vehicles were traveling in excess of 55 MPH . The mode speed for this traffic study was 50 MPH and the 85th percentile was 59.96 MPH .

| $\begin{gathered} < \\ \text { to } \\ 9 \end{gathered}$ | $\begin{aligned} & 10 \\ & \text { to } \\ & 14 \end{aligned}$ | $\begin{aligned} & 15 \\ & \text { to } \\ & 19 \end{aligned}$ | $\begin{aligned} & 20 \\ & \text { to } \\ & 24 \end{aligned}$ | $\begin{aligned} & 25 \\ & \text { to } \\ & 29 \end{aligned}$ | $\begin{aligned} & 30 \\ & \text { to } \\ & 34 \end{aligned}$ | $\begin{aligned} & 35 \\ & \text { to } \\ & 39 \end{aligned}$ | 40 <br> to <br> 44 | $\begin{aligned} & 45 \\ & \text { to } \\ & 49 \end{aligned}$ | $\begin{aligned} & 50 \\ & \text { to } \\ & 54 \end{aligned}$ | $\begin{aligned} & 55 \\ & \text { to } \\ & 59 \end{aligned}$ | $\begin{aligned} & 60 \\ & \text { to } \\ & 64 \end{aligned}$ | $\begin{aligned} & 65 \\ & \text { to } \\ & 69 \end{aligned}$ | $\begin{aligned} & 70 \\ & \text { to } \\ & 74 \end{aligned}$ | $\begin{aligned} & 75 \\ & \text { to } \\ & > \end{aligned}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 0 | 0 | 0 | 0 | 0 | 3 | 13 | 72 | 229 | 352 | 251 | 116 | 26 | 13 | 6 |

CHART 1

## CLASSIFICATION

Chart 2 lists the values of the classification bins and the total traffic volume accumulated for each bin.
Most of the vehicles classified during the study were Vans \& Pickups. The number of Passenger Vehicles in the study was 289 which represents 27 percent of the total classified vehicles. The number of Vans \& Pickups in the study was 728 which represents 67 percent of the total classified vehicles. The number of Busses \& Trucks in the study was 36 which represents 3 percent of the total classified vehicles. The number of Tractor Trailers in the study was 28 which represents 3 percent of the total classified vehicles.


CHART 2

## HEADWAY

During the peak traffic period, on 10/16/2019 at [17:00-17:15] the average headway between vehicles was 19.565 seconds. During the slowest traffic period, on 10/16/2019 at [01:45-02:00] the average headway between vehicles was 900 seconds.

## WEATHER

The roadway surface temperature over the period of the study varied between 52.00 and 66.00 degrees $F$.

## Date/Time/Volume/Average Speed/Temperature Report

| ```Device ID: }40143 Operator: BN Begin: 10/16/2019 12:00 AM End: 10/17/2019 12:00 AM Hours: 24.00 Period (min): 15``` | Location: Betwee <br> Lane: NB RL <br> Street: Wilson <br> City: <br> County: Delawa <br> State: OH | na Rd | Raw Count: 554 AADT Count: 554 AADT Factor: 1 Speed Limit: 45 |  |
| :---: | :---: | :---: | :---: | :---: |
| Date And | Period Volume | Average Speed | Roadway Temperature | Roadway Surface Wet/Dry |


| Wed, 10/16/2019 |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: |
| [00:00-00:15] | 0 | 0 MPH | 66 F | --- |
| [00:15-00:30] | 2 | 50 MPH | 66 F | --- |
| [00:30-00:45] | 1 | 48 MPH | 66 F | --- |
| [00:45-01:00] | 2 | 45 MPH | 68 F | --- |
| [01:00-01:15] | 0 | 0 MPH | 66 F | --- |
| [01:15-01:30] | 3 | 44 MPH | 66 F | --- |
| [01:30-01:45] | 1 | 42 MPH | 66 F | --- |
| [01:45-02:00] | 0 | 0 MPH | 68 F | --- |
| [02:00-02:15] | 0 | 0 MPH | 68 F | --- |
| [02:15-02:30] | 0 | 0 MPH | 68 F | --- |
| [02:30-02:45] | 0 | 0 MPH | 68 F | --- |
| [02:45-03:00] | 0 | 0 MPH | 66 F | --- |
| [03:00-03:15] | 0 | 0 MPH | 66 F | --- |
| [03:15-03:30] | 0 | 0 MPH | 66 F | --- |
| [03:30-03:45] | 0 | 0 MPH | 66 F | --- |
| [03:45-04:00] | 0 | 0 MPH | 66 F | --- |
| [04:00-04:15] | 0 | 0 MPH | 66 F | --- |
| [04:15-04:30] | 0 | 0 MPH | 66 F | --- |
| [04:30-04:45] | 0 | 0 MPH | 66 F | --- |
| [04:45-05:00] | 0 | 0 MPH | 66 F | --- |
| [05:00-05:15] | 1 | 42 MPH | 64 F | --- |
| [05:15-05:30] | 0 | 0 MPH | 63 F | --- |
| [05:30-05:45] | 0 | 0 MPH | 61 F | --- |
| [05:45-06:00] | 1 | 48 MPH | 59 F | --- |
| [06:00-06:15] | 2 | 40 MPH | 57 F | --- |
| [06:15-06:30] | 3 | 41 MPH | 57 F | --- |
| [06:30-06:45] | 0 | 0 MPH | 57 F | --- |
| [06:45-07:00] | 5 | 47 MPH | 57 F | --- |
| [07:00-07:15] | 1 | 42 MPH | 57 F | --- |
| [07:15-07:30] | 6 | 48 MPH | 57 F | --- |
| [07:30-07:45] | 2 | 40 MPH | 57 F | --- |
| [07:45-08:00] | 3 | 51 MPH | 57 F | --- |
| [08:00-08:15] | 4 | 49 MPH | 57 F | --- |
| [08:15-08:30] | 4 | 49 MPH | 57 F | --- |
| [08:30-08:45] | 4 | 49 MPH | 57 F | --- |
| [08:45-09:00] | 6 | 50 MPH | 57 F | --- |
| [09:00-09:15] | 9 | 43 MPH | 57 F | --- |
| M |  |  |  |  |

## Date/Time/Volume/Average Speed/Temperature Report

| ```Device ID: 401430 Operator: BN Begin: 10/16/2019 12:00 AM End: 10/17/2019 12:00 AM Hours: 24.00 Period (min): }1``` | Location: Between <br> Lane: NB RL <br> Street: Wilson City: <br> County: Delawar <br> State: OH | ena Rd | Raw Count: 554 AADT Count: 554 AADT Factor: 1 Speed Limit: 45 |  |
| :---: | :---: | :---: | :---: | :---: |
| Date And | Period Volume | Average Speed | Roadway Temperature | Roadway Surface Wet/Dry |


| Wed, 10/16/2019 |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: |
| [09:15-09:30] | 5 | 46 MPH | 57 F | --- |
| [09:30-09:45] | 5 | 46 MPH | 59 F | --- |
| [09:45-10:00] | 4 | 48 MPH | 57 F | --- |
| [10:00-10:15] | 2 | 50 MPH | 59 F | --- |
| [10:15-10:30] | 4 | 46 MPH | 61 F | --- |
| [10:30-10:45] | 5 | 52 MPH | 63 F | --- |
| [10:45-11:00] | 2 | 55 MPH | 63 F | --- |
| [11:00-11:15] | 8 | 50 MPH | 61 F | --- |
| [11:15-11:30] | 4 | 44 MPH | 61 F | --- |
| [11:30-11:45] | 3 | 53 MPH | 61 F | --- |
| [11:45-12:00] | 8 | 48 MPH | 61 F | --- |
| [12:00-12:15] | 9 | 50 MPH | 59 F | --- |
| [12:15-12:30] | 10 | 49 MPH | 59 F | --- |
| [12:30-12:45] | 1 | 48 MPH | 59 F | --- |
| [12:45-13:00] | 14 | 49 MPH | 61 F | --- |
| [13:00-13:15] | 4 | 48 MPH | 63 F | --- |
| [13:15-13:30] | 9 | 48 MPH | 61 F | --- |
| [13:30-13:45] | 9 | 49 MPH | 63 F | --- |
| [13:45-14:00] | 6 | 44 MPH | 61 F | --- |
| [14:00-14:15] | 8 | 49 MPH | 61 F | --- |
| [14:15-14:30] | 14 | 53 MPH | 61 F | --- |
| [14:30-14:45] | 5 | 48 MPH | 61 F | --- |
| [14:45-15:00] | 13 | 50 MPH | 61 F | --- |
| [15:00-15:15] | 10 | 49 MPH | 61 F | --- |
| [15:15-15:30] | 12 | 50 MPH | 61 F | --- |
| [15:30-15:45] | 17 | 47 MPH | 61 F | --- |
| [15:45-16:00] | 12 | 50 MPH | 61 F | --- |
| [16:00-16:15] | 14 | 51 MPH | 61 F | --- |
| [16:15-16:30] | 18 | 51 MPH | 61 F | --- |
| [16:30-16:45] | 10 | 54 MPH | 59 F | --- |
| [16:45-17:00] | 19 | 53 MPH | 59 F | --- |
| [17:00-17:15] | 21 | 51 MPH | 59 F | --- |
| [17:15-17:30] | 19 | 47 MPH | 57 F | --- |
| [17:30-17:45] | 19 | 49 MPH | 55 F | --- |
| [17:45-18:00] | 14 | 50 MPH | 55 F | --- |
| [18:00-18:15] | 12 | 49 MPH | 55 F | --- |
| [18:15-18:30] | 9 | 50 MPH | 54 F | --- |
| M |  |  |  |  |

## Date/Time/Volume/Average Speed/Temperature Report

| ```Device ID: }40143 Operator: BN Begin: 10/16/2019 12:00 AM End: 10/17/2019 12:00 AM Hours: 24.00 Period (min): }1``` | Location: Between <br> Lane: NB RL <br> Street: Wilson City: <br> County: Delawar <br> State: OH | ena Rd | Raw Cou AADT Coun AADT Fac Speed Li |  |
| :---: | :---: | :---: | :---: | :---: |
| Date And Time Range | Period Volume | Average Speed | Roadway Temperature | Roadway Surface Wet/Dry |
| Wed, 10/16/2019 |  |  |  |  |
| [18:30-18:45] | 12 | 46 MPH | 54 F | --- |
| [18:45-19:00] | 11 | 48 MPH | 54 F | --- |
| [19:00-19:15] | 8 | 46 MPH | 54 F | --- |
| [19:15-19:30] | 11 | 43 MPH | 54 F | --- |
| [19:30-19:45] | 10 | 42 MPH | 54 F | --- |
| [19:45-20:00] | 11 | 48 MPH | 54 F | --- |
| [20:00-20:15] | 7 | 45 MPH | 54 F | --- |
| [20:15-20:30] | 5 | 46 MPH | 54 F | --- |
| [20:30-20:45] | 2 | 45 MPH | 54 F | --- |
| [20:45-21:00] | 2 | 45 MPH | 54 F | --- |
| [21:00-21:15] | 6 | 48 MPH | 54 F | --- |
| [21:15-21:30] | 13 | 48 MPH | 54 F | --- |
| [21:30-21:45] | 6 | 47 MPH | 54 F | --- |
| [21:45-22:00] | 4 | 50 MPH | 54 F | --- |
| [22:00-22:15] | 5 | 46 MPH | 54 F | --- |
| [22:15-22:30] | 4 | 48 MPH | 54 F | --- |
| [22:30-22:45] | 4 | 48 MPH | 52 F | --- |
| [22:45-23:00] | 1 | 48 MPH | 52 F | --- |
| [23:00-23:15] | 1 | 48 MPH | 52 F | --- |
| [23:15-23:30] | 5 | 50 MPH | 52 F | --- |
| [23:30-23:45] | 7 | 45 MPH | 52 F | --- |
| [23:45-00:00] | 1 | 52 MPH | 52 F | --- |
| 10/16/2019 12:00 AM 10/17/2019 12:00 AM | 554 | 48 MPH | 59 F |  |

## MH Corbin Traffic Analyzer Study Computer Generated Summary Report City: <br> Street: Wilson Rd <br> Location: Between SR 37 \& N Galena Rd

A study of vehicle traffic was conducted with the device having serial number 401430. The study was done in the NB RL lane at Wilson Rd in, OH in Delaware county. The study began on 10/16/2019 at 12:00 AM and concluded on 10/17/2019 at 12:00 AM, lasting a total of 24.00 hours. Traffic statistics were recorded in 15 minute time periods. The total recorded volume showed 554 vehicles passed through the location with a peak volume of 21 on 10/16/2019 at [17:00-17:15] and a minimum volume of 0 on 10/16/2019 at [00:00$00: 15]$. The AADT count for this study was 554 .

## SPEED

Chart 1 lists the values of the speed bins and the total traffic volume for each bin. At least half the vehicles were traveling in the 45-50 MPH range or lower. The average speed for all classifed vehicles was 48 MPH with $74.41 \%$ vehicles exceeding the posted speed of $45 \mathrm{MPH} .11 .07 \%$ percent of the total vehicles were traveling in excess of 55 MPH . The mode speed for this traffic study was 45 MPH and the 85th percentile was 54.12 MPH .

| < | 10 | 15 | 20 | 25 | 30 | 35 | 40 | 45 | 50 | 55 | 60 | 65 | 70 | 75 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| to | to | to | to | to | to | to | to | to | to | to | to | to | to | to |
| 9 | 14 | 19 | 24 | 29 | 34 | 39 | 44 | 49 | 54 | 59 | 64 | 69 | 74 | > |
| 0 | 0 | 0 | 0 | 1 | 2 | 31 | 107 | 224 | 125 | 44 | 11 | 5 | 1 | 0 |

CHART 1

## CLASSIFICATION

Chart 2 lists the values of the classification bins and the total traffic volume accumulated for each bin.
Most of the vehicles classified during the study were Vans \& Pickups. The number of Passenger Vehicles in the study was 258 which represents 47 percent of the total classified vehicles. The number of Vans \& Pickups in the study was 263 which represents 48 percent of the total classified vehicles. The number of Busses \& Trucks in the study was 9 which represents 2 percent of the total classified vehicles. The number of Tractor Trailers in the study was 21 which represents 4 percent of the total classified vehicles.


CHART 2

## HEADWAY

During the peak traffic period, on 10/16/2019 at [17:00-17:15] the average headway between vehicles was 40.909 seconds. During the slowest traffic period, on 10/16/2019 at [00:00-00:15] the average headway between vehicles was 900 seconds.

## WEATHER

The roadway surface temperature over the period of the study varied between 52.00 and 68.00 degrees $F$.

