

# THIRD STREET

ABBAY AVENUE/ BROOKLYN AVENUE TO JAMES H. MCGEE BLVD

DAYTON, OHIO

TARGET SPEED EVALUATION

JANUARY 28, 2025

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## INTRODUCTION

Travel speeds are a fundamental measure in indicating injury risk for all road users, especially for vulnerable users such as pedestrians and bicyclists. Studies show that higher travel speeds result in greater impact at the time of a crash, which leads to more severe injuries and fatalities. The Safe System Approach (SSA) is a recognized best practice for reducing and ultimately eliminating fatalities and serious injury crashes. The SSA includes five elements as shown in **Figure 1**. Six (6) principles of the Safe System Approach including the following:

1. Death/Serious Injury is unacceptable
2. Humans make mistakes
3. Humans are vulnerable
4. Responsibility is shared
5. Safety is proactive
6. Redundancy is crucial

The purpose of this report is to evaluate and make recommendations for a 1.54-mile segment of Broadway in Lorain, Ohio that addresses two elements of the SSA: safe speeds and safe roads.

An active transportation plan (ATP) was completed by the City in 2023. The 2023 ATP was adopted by the city commission on 09/20/23. The study identified the Third Street corridor as a high priority corridor (Figure 29) having a measure of level of traffic stress (LTS4) rating to identify a preferred treatment such as a separated bike lane (on-street or separated shared use path). A cycle track was identified as a priority project for the community (Project ID #12). A typical section developed as part of RAISE grant is shown in **Figure 2**. The ATP held two community meetings (one for information gathering and a second round including priority boards, focus groups, and 58 pop up events) and three steering committee meetings.

**Appendix A** contains an excerpt of the 2023 ATP plan, conceptual typical sections showing a cycle track on the north side of Third Street, and project information compiled for a RAISE grant application.

Note a two-way cycle track is planned on Third Street from Perry St to Robert Drive. An existing cycle track existing east of the project limits between Shannon and Horace Streets.

FIGURE 1: FHWA SAFETY SYSTEM

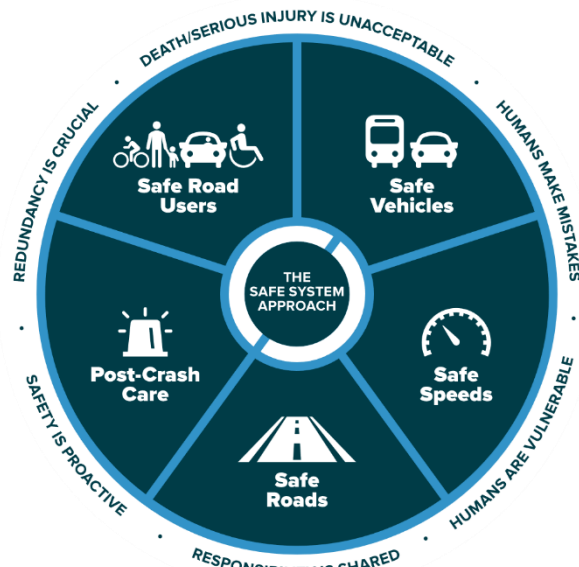
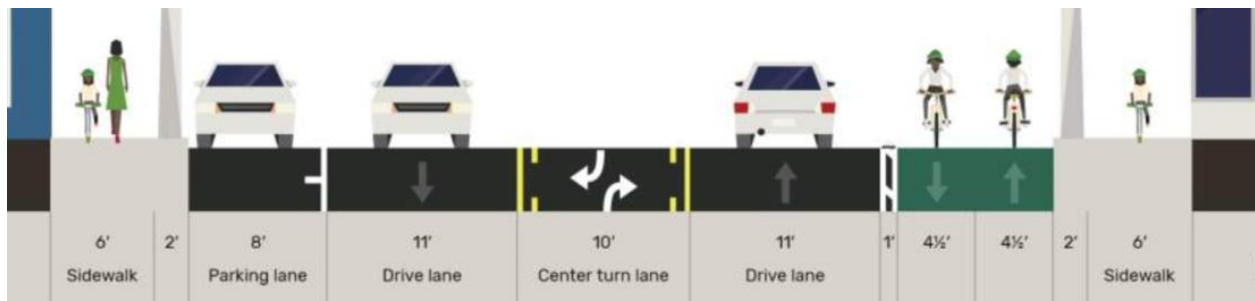


FIGURE 2: ATP TYPICAL SECTION (THIRD STREET)



## TARGET SPEED

Drivers select travel speeds based on their perceptions of the road. In the absence of a speed limit, most drivers will travel at the speed they perceive to be safe and reasonable based on the surrounding conditions. Drivers decide how fast to drive based on both the design of the road and on external cues such as speed limit signs and speeds of other drivers. Some drivers will choose to drive 5-15 MPH faster than the posted limit which is why posting higher speed limits does not increase compliance with the law. In many cases, travel speeds exceed posted speed limits because the conditions of the roadway design support speeds that are higher than the regulatory limit. Our desire is for drivers to travel at an intended speed that is enforced by design and regulation of the roadway.

Historically, designers have selected a roadway's **design speed** using factors of functional classification and terrain and then selecting geometric design parameters based on that design speed. When operating speeds of a roadway are found to be inconsistent with the design speed in which the roadway features were developed, the result is known as speed discord. Speed discord has been defined as a roadway design that produces operating speeds that are higher than the posted speed limit. Using the design speed model often results in roadways with speed discord where the desired state and the actual state do not align, and the result is poor safety performance manifested by high severity and fatal crashes.

FHWA uses the term "self-enforcing roadway" to describe a roadway that is planned and designed to encourage drivers to select operating speeds consistent with the posted speed limit. The objective of a self-enforcing road is to produce speed compliance by using geometric elements that change driver behavior. In short, the goal is to achieve alignment of the desired operating speed and actual operating speed.

The self-enforcing roadway model replaces design speed with a **target speed**. The target speed is the desired operating speed at which drivers will select for a roadway. In urban settings, the target speed is the highest speed at which vehicle should operate on a roadway that is consistent with the level of multimodal activity to provide mobility for motor vehicles and a safe environment for pedestrians, bicyclists and public transit users. The target speed is intended to

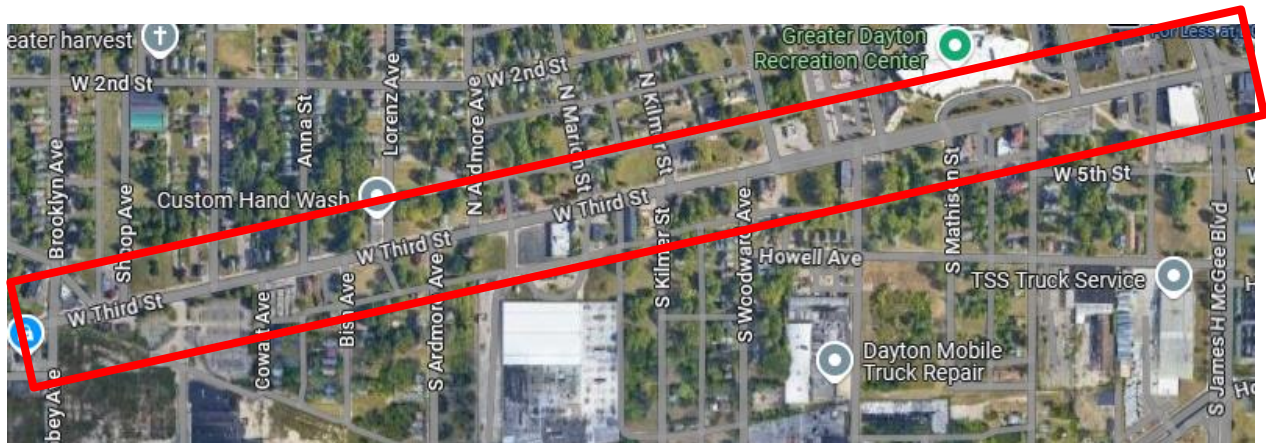
correlate with the posted regulatory speed limit and becomes the primary control used in determining geometric design values for roadway features. Properly designed self-enforcing roadways that incorporate target speed can be effective in producing speed compliance and may contribute to less severe crash outcomes. Selection of a target speed considers factors such as context of the surrounding land uses, travel modes used on the roadway, pedestrian and bicycle requirements, transit needs, design vehicle selection, and vehicular levels of service. These metrics are much broader than those typically considered when selecting design speed of a roadway.

Another important note in the discussion of design versus target speed is the use of 85<sup>th</sup> percentile speeds. The 85<sup>th</sup> percentile speed represents the speed at which 85 percent of vehicles are traveling at or below under free-flow conditions. This value has been used as the industry standard by which posted speed limits are established. However, reliance on a percentile-based system for setting speed limits focuses on current driver behavior rather than on a defined target in setting speed limits. In the target speed model, the 85<sup>th</sup> and 50<sup>th</sup> percentile speeds would be used as a tool to quantify, in a pre or post condition, if the target speed is being met and not used as the primary determiner of the posted speed limit. Recently, the Ohio DOT has implemented FHWA's USLIMITS2 (which considers crash history, presence of on-street parking and extent of pedestrian and bicycle activity) to aid in selection of speed limits.

## STUDY AREA

Third Street is oriented east/west and is Urban Minor Arterial in the City of Dayton, Ohio as shown in **Figure 3**. The total length of the study area is approximately 0.9 miles long extending from the James H. McGee Boulevard intersection to the Abbey Avenue/ Brooklyn Avenue intersection. The study area connects downtown Dayton to residential, institutional and recreational land uses to the west.

FIGURE 3: PROJECT LOCATION MAP

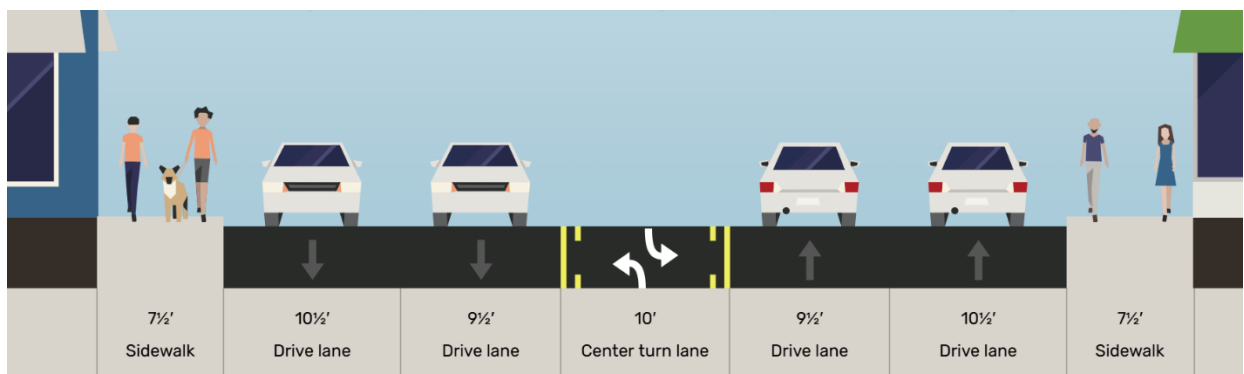


## EXISTING CONDITIONS

Third Street is an urban corridor characterized by residential and recreational/ institutional (Greater Dayton Recreational Center/ Roosevelt Elementary) land uses. Five (5) vehicular travel lanes have a variable exclusive left turn lane or two-way left turn lane (TWLTL) configuration. The urban, mixed-use environment encourages a variety of travel modes which are supported by sidewalks on both sides of Third Street as well as transit bus service. Existing conditions diagrams are included in **Appendix B**. Noteworthy elements of the existing characteristics of Third Street are summarized below:

1. **Study Limits:** 0.90 miles extending from the James H. McGee Boulevard intersection to the Abbey Avenue/ Brooklyn Avenue intersection
2. **AADT:** Average Annual Daily Traffic (AADT) volumes range from 10,153 vehicles per day (near Euclid Ave) to 7,354 vehicles per day (west of Abbey Avenue)
3. **Functional Classification:** Urban Minor Arterial
4. **Priority System:** local street
5. **Posted speed limit:** 35 MPH
6. **Right of way:** 66-68 feet
7. **Drainage:** closed system with barrier curb
8. **Typical Sections:** The existing roadway within the study limits is comprised of 5-lane section on Third Street (**Figure 4**) within the project limits. The existing pavement width is 50 feet.

FIGURE 4: EXISTING TYPICAL SECTION



9. **Sidewalk:** Existing sidewalk width 7.5-8 feet on Third St throughout the study corridor.
10. **On-street parking:** on-street parking is permitted by time of day. The Existing Conditions diagram in **Appendix B** shows the parking restrictions by subsegment.
11. **Bus transit:** RTA Route 1 serves Third Street between downtown and the west corporation limits (Olive Road). The bus route schedule is included in **Appendix B**.

**12. Signalized intersections:** There are three signalized intersections in the study limits:

- James H. McGee Boulevard
- Young Avenue
- Abbey/ Brooklyn Ave

**13. Non-signalized intersections:** There are 19 non-signalized intersections in the study limits:

- Delphos Avenue
- Shoop Avenue
- Gramont Avenue
- Cowart Avenue
- Anna Street
- Bish Avenue
- Lorenz Avenue
- S. Ardmore Avenue
- N. Ardmore Avenue
- Marion Street
- Kilmer Street
- S. Woodward Avenue
- N. Woodward Avenue
- S. Orchard Avenue
- N. Orchard Avenue
- Mathison Street
- Grosvenor Avenue
- Clemmer Street
- Haerlin Lane

## TRAFFIC DATA

Turning movement counts (TMC) were collected at the three signalized intersections using Miovision video technology. The uncounted intersections were determined to have minor impacts to the corridor operations. Counts were collected on Tuesday, July 16, 2024 from 10:00 AM to 10:00 PM except for the James H. McGee intersection (Wednesday, 06/29/22 from 6:45AM to 6:45PM). The AM peak hour was identified from 7:45-8:45 AM. The PM peak hour was identified from 4:30-5:30 PM. Traffic count reports are included in **Appendix C**.

Existing volumes were forecasted to year 2045 to estimate design hourly volumes (DHV) following the guidance under Ohio Traffic Forecasting Manual Volume 2 Section 2.7. *Peak-to-DHV Factors* and annual growth rates were applied to the 2024 TMC to project 2045 design year volumes.

1. A *Peak-to-DHV Factor* of 1.14 was applied to traffic volumes on Third Street and all the intersecting side streets.
2. An annual growth rate of 0.9% is applied to the north leg of Brooklyn Avenue. The ODOT Traffic Forecast Management System (TFMS) 0% for the remaining intersections.
3. Growth rates were not provided for the other intersecting streets, hence the 0.10% growth rate for SR-57 was assumed for these streets.

ODOT *Peak-to-DHV Factor*, TFMS output, and the design year traffic forecasts are included in **Appendix D**.

## OPERATING SPEEDS

The posted speed limit on Third Street is 35 MPH. Speed data before and after the countermeasures are implemented is a good measure of their effectiveness. ODOT proposed to leverage average speed data using output from INRIX data in addition to spot speed data from more traditional methods (i.e., radar, cameras, or mechanical methods). See **Appendix E** for historical spot speed data including data.

INRIX collects probe data using mobile phones, connected vehicles, trucks, delivery vans, and other fleet vehicles equipped with GPS telematics devices. The speed of those vehicles is calculated based on the time and distance traveled. While this may closely approximate roadways with little to no intersection traffic control (e.g., freeways, highways, etc.), in small towns and urban areas where intersections are frequent and may be stopped or signal-controlled, travel times factor in time spent stopped and slowing for these devices. Therefore, the ability to correlate spot speed data with the methodology used by INRIX that calculates travel time over distance may be challenging as the frequency of controlled intersection increase.

Several case studies were evaluated to correlate INRIX data with historical spot speed data. Based on the case studies, the following summarizes observations, limitations, and preliminary recommendations for the use of INRIX data for measuring speeds before and after proven safety countermeasures are implemented to reach a target speed:

1. When comparing 85th percentile speeds determined using INRIX versus spot speeds collected, INRIX data reports an 85th percentile as much as 10 mph lower than existing spot speed studies. While the dataset for case studies are typically not statistically significant, the discrepancy appears to be smaller when fewer signal and stop-controlled intersections are present along the corridor, consistent with our understanding of the limitations of using the travel time over distance methodology to estimate speed.
2. In all case studies, a change in the 50th and 85th percentile speed was observed, and it is therefore likely that INRIX data can confirm that speeds have been reduced, but the actual reduction will likely be higher.

Data was downloaded from INRIX for the following XD segments on the Third Street corridor. Note the segments are directionally specific, so the ID numbers listed below represent 2-way traffic and are shown for future comparison of data (i.e. the same segments must be used for any future comparisons).

- Abbey Ave to Inland Ave (449228335,449228334)
- Inland Ave to Young Ave (449228336,449228333)
- Young Ave to James H. McGee Blvd (449228332,449228337)

The XD segments used for this corridor are subsegments located within the limits of the study area. An alternate dataset of segments referred to as TMC segments was not used for analysis

since the segments are longer and often include areas that are outside of the study area.

The case studies show that evening hours better approximate free flow conditions, but hours beyond midnight are more likely to be filtered out based on a low confidence score (i.e., less than 70). Therefore, the hours between 7:00 pm to midnight were chosen for the speed evaluation. Two criteria were used to select dates for use when comparing speed data:

- Dates were chosen for a 9-day period starting on a Tuesday and ending on a Thursday, excluding Fridays through Mondays to align with ODOT District 7’s standard workflow.
- When recent speed data from ODOT is available, dates are selected to align with the date that the spot speed data was collected to allow the INRIX data to be compared to spot speed data. For Third Street, there are no historical spot speed reports available from ODOT TIMS within the study area. Therefore, the closest Station IDs on either side of the segment study area were used to select the dates. The two stations closest to the project area are Location ID#s 295799 (Between Upland Ave to Halloway St.) and 25657 (Between Euclid Ave to Paul Laurence Dunbar St) with the data collected at those locations on 08/09/22 and 07/13/22, respectively. The dates chosen for the INRIX data are 07/12/22 to 07/21/22.

The data is also filtered for low confidence scores less than 70. If there are less than 500 data points, the date range is expanded to include more data before it is analyzed to find the following statistics:

- 85<sup>th</sup> percentile
- 50th percentile
- maximum speed
- minimum speed
- 10 MPH pace

The speed statistics based on the INRIX data, in addition to spot speed data from 08/09/22 and 07/13/23 are summarized in **Table 1**. The historical spot speed data on 08/09/22 was collected using a hose counter located 234 ft west of the Halloway St intersection on Third Street (this

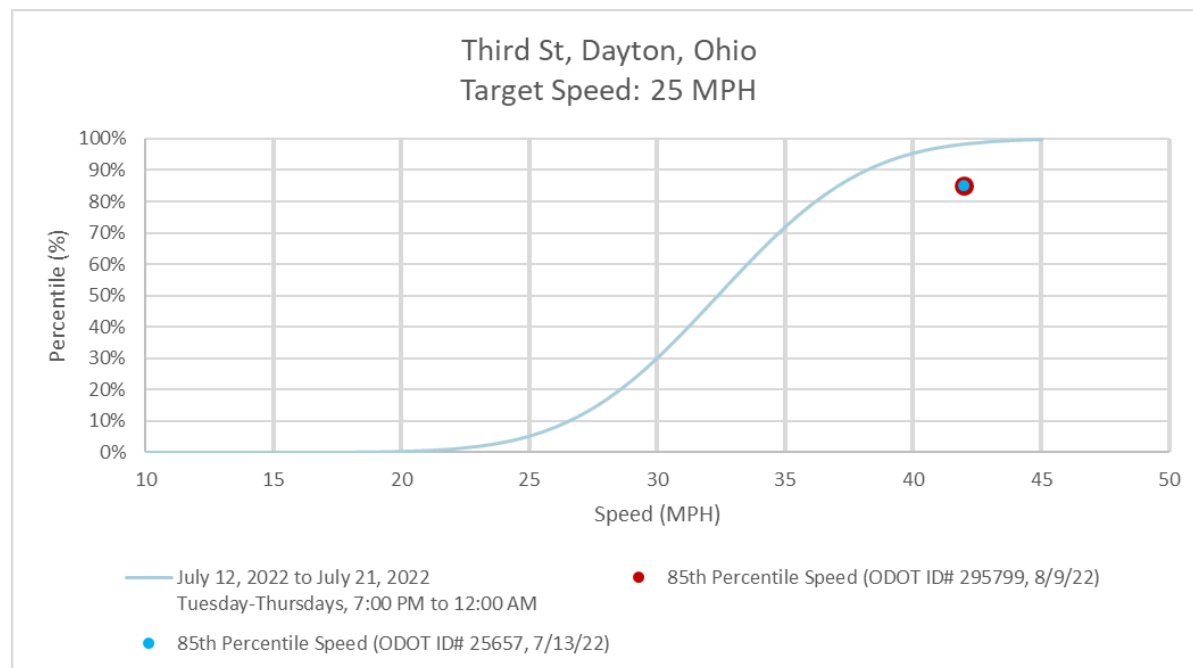
TABLE 1: SPEED DATA

	85th Percentile Speed (MPH)	50th Percentile Speed (MPH)	Max Speed (MPH)	10 MPH Pace
INRIX Data (7/12/22 – 7/21/22)	37	32	57	28 to 38 MPH
Historical Spot Speed Data (08/09/2022, ODOT, LOC. ID: 295799)	42	30 - 35	> 85	30 to 40 MPH
Historical Spot Speed Data (07/13/2022, ODOT, LOC. ID: 25657)	42	35 - 40	> 85	30 to 40 MPH

location is approximate since the metadata for the speed data could not be downloaded for this location on this date). The historical spot speed data on 7/13/23 was collected using a hose counter located 286ft east of the Euclid Ave intersection on Third Street.

The cumulative distribution of speeds from the subsegments listed above is shown in **Figure 5** based on the INRIX dataset. The blue dot represents the spot speed data from 10/19/23 whereas the red dot represents spot speed data from 10/18/23.

FIGURE 5: SPEED PROFILE



The raw data downloaded from INRIX, as well as any available recent ODOT speed data is included in **Appendix E**. This data will be used to compare to speed data after countermeasures are installed to evaluate their effectiveness.

## CRASH HISTORY

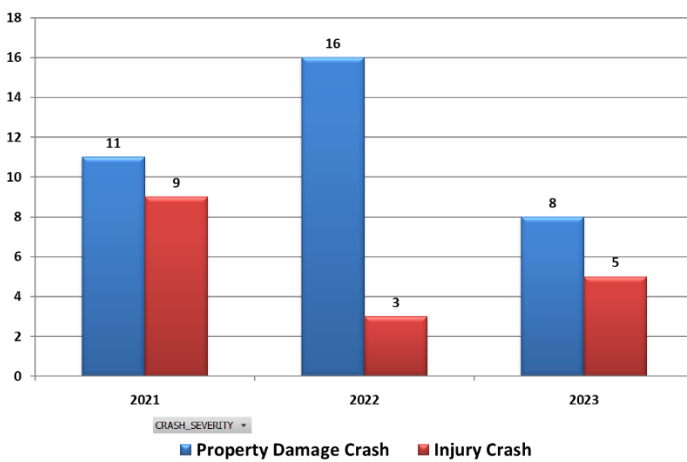
Crash data was obtained using the Transportation Information Mapping System (TIMS). A total of 183 crashes occurred on Third Street over a 3-year period (2021-2023) between but not including the Abbey/ Brooklyn Avenue intersection to the James H. McGee intersection. The following crash types and conditions are over-represented at the study intersection compared to statewide averages (shown in parenthesis). Statewide averages are for roadway type being an urban multilane undivided.

- 52 total crashes
- 17 Injury crashes = 32.7% (28.1%)
- 17 Angle crashes = 32.7% (8.8%)
- 10 sideswipe-passing crashes = 19.2% (13.2%)
- 7 fixed object crashes = 13.5% (6.4%)

Noteworthy statistics are described below with CAM Tool output in **Appendix F**. Crashes per year have remained consistent with 20 crashes in 2021, 19 crashes in 2022, and 13 crashes in 2023 as

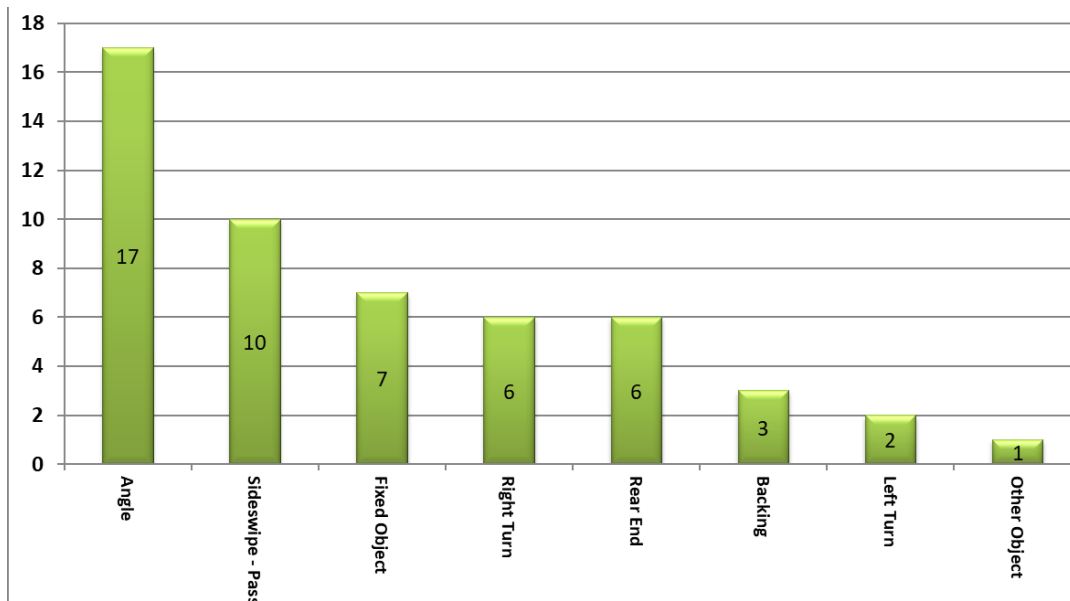
shown in **Figure 6**.

**FIGURE 6: FREQUENCY OF CRASHES BY YEAR/ SEVERITY**



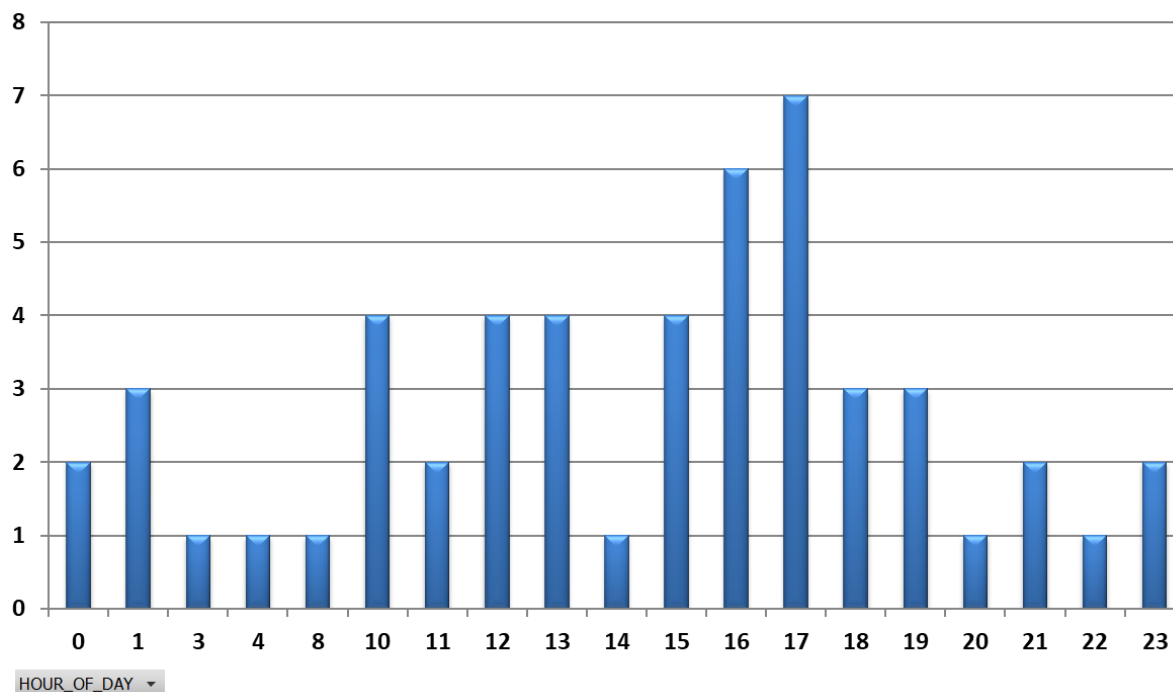
Rear end crashes are the highest frequency crash type on the corridor as shown in **Figure 7**. Angle, sideswipe passing, fixed object, and left turn crashes round out the top five crash types. There were two bicycle crashes resulting in 60% and 75% injuries, respectively.

**FIGURE 7: FREQUENCY OF CRASHES BY TYPE OF CRASH**



The majority of crashes (62%) occurred over an 8-hour period: 10AM and 6PM (**Figure 8**).

FIGURE 8: FREQUENCY OF CRASHES BY HOUR



The highest concentration of crashes occurred near the closely spaced intersections of Abbey/Brooklyn Avenue and Delphos Avenue (23 crashes or 43%).

Note that one property damage only (PDO) crash involved a vehicle (curb lane) and a city transit bus (9.5 ft inside lane) occurred on 12/13/23. No fault was assigned in the sideswipe crash.

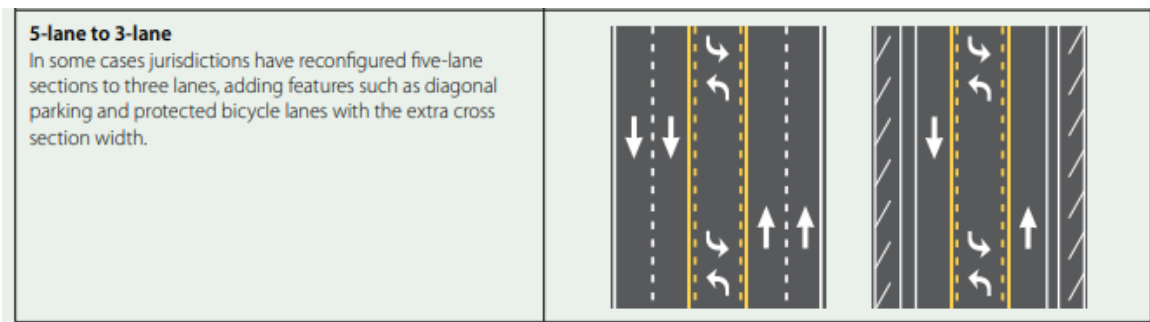
## ROAD DIET OVERVIEW

The FHWA Road Diet Informational Guide defines a road diet as removing travel lanes from a roadway and utilizing the space for other uses and travel modes. Road diets are often conversions of 4-lane undivided streets to 3 lane streets with a center two-way left-turn lane. Other roadway reconfigurations can also provide safety benefits such as a 5-lane to 3-lane reconfiguration, shown in **Figure 9**, where one through travel lane in each direction is eliminated and the extra cross section width is used for bike and parking lanes.

Road diets that reduce the number of travel lanes offer the following safety advantages:

- Potential to reduce operating speeds and speed differentials. One through lane in each direction may encourage slower and more uniform vehicle operating speeds since passing lower speed vehicles is not possible. (may reduce speed related crashes and sideswipe passing crashes)

FIGURE 9: 5-LANE TO 3-LANE REDUCTION



- Reduce the number of vehicle lanes that pedestrians cross (may reduce pedestrian crashes)
- Provide dedicated space for bicycles (may reduce bicycle crashes)
- Provide dedicated space for parked vehicles (may reduce parked vehicle and sideswipe passing crashes). Space for dedicated on-street parking is especially important on streets that use the same lane for parking and through capacity depending on the time of day.
- Mitigate or reduce “multiple threat” (crossing of multiple lanes) pedestrian crashes. This occurs when a motorist stops in one lane to allow a pedestrian to cross the street but an oncoming vehicle traveling in the same direction in an adjacent lane does not stop and strikes the pedestrian.

The Federal Highway Administration (FHWA) has determined through various studies that the acceptable range of daily traffic for a three (3) lane road diet is 15,000 to 24,000 vehicles per day. The average daily traffic volume on Third Street is approximately 10,153 vpd (estimated 2023 volume near Euclid) and 7,354 (estimated 2023 volume near Upland Avenue) based on data from the ODOT MS2 Transportation Data Management System.

## CAPACITY ANALYSIS

An important component of a road diet countermeasure is to compare the existing operating conditions of the corridor to those expected with the proposed condition. Operating conditions are measured in terms of Levels of Service (LOS), vehicle delay, vehicle queue length, and QSR (Queue-to-Storage ratio). QSR compares the 95<sup>th</sup> percentile queue to the available lane length for the movement. A QSR greater than 1 indicates that the queue would spill back to the adjacent lane (typical for turn lane), or to upstream intersection (typical for through movements). Comparing these metrics between the No Build and Build conditions helps to identify operational deficiencies that may occur due to the road diet and develop countermeasures that minimize these deficiencies.

Guidelines in the ODOT Analysis and Traffic Simulation (OATS) Manual were followed for the capacity analysis. The developed AM and PM peak 2045 DHVs, along with Heavy vehicle percentages and Peak Hour Factor (PHF) calculated from the TMCs were used in the analysis. Minimum green times and associated clearance intervals per OATS Section 5.7 were included in the analysis for all alternatives. Intersection LOS D or better, and movement LOS E or better is acceptable per OATS Section 5.9.

Capacity analyses focused on the two intersections within the Third Street study limits that have been identified as being critical to corridor operations (i.e, Abbey/ Brooklyn Avenue, James H. McGee Boulevard).

The Young Avenue intersection does not meet minimum signal warrants as outlined in the Ohio Manual of Uniform Traffic Control (OMUTCD), latest edition.

The two major intersections were included in a traffic operations model created using Synchro traffic simulation software. Signalized intersections were analyzed as part of a coordinated signal system with optimized cycle length, splits, and offsets. The alternatives were modeled as follows:

- **No Build.** This scenario models the existing Third Street with 2 EB and 2 WB through travel lanes with an auxiliary left turn lane. Existing signal phasing was applied at all intersections.
- **Build.** This scenario models the Build road-diet condition of Third Street with 1 EB and 1 WB through travel lane with an auxiliary left turn lane.

The two intersections shown in **Table 2** were found to operate at similar LOS from each other, hence no one intersection was determined to be critical to the operations of the study corridor. The intersections are expected to operate with acceptable LOS/ delays in the **Build** condition hence no change to existing signal operation is proposed. No movements result in QSR values greater than 1.

Capacity analysis results are summarized in **Table 2**. Synchro output reports are contained in **Appendix G1 (No Build)** and in **Appendix G2 (Build)**.

TABLE 2: CAPACITY ANALYSIS SUMMARY (2045)

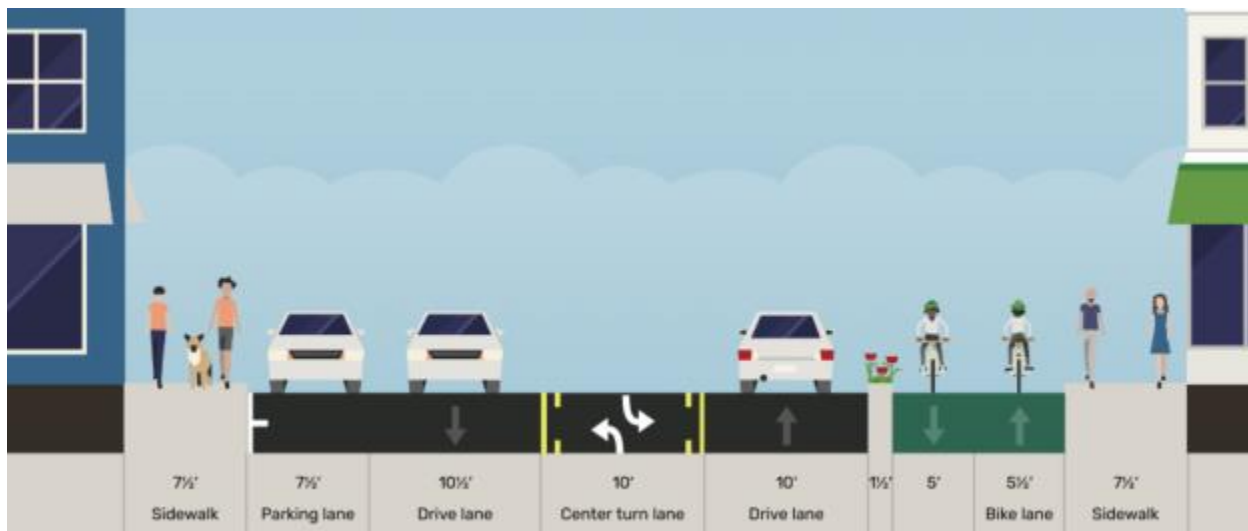
Intersection/ Approach	2045 AM								2045 PM							
	No Build				Build				No Build				Build			
	LOS (Delay, in sec)	v/c	QSR	95th%ile Queue (ft/ln)	LOS (Delay, in sec)	v/c	QSR	95th%ile Queue (ft/ln)	LOS (Delay, in sec)	v/c	QSR	95th%ile Queue (ft/ln)	LOS (Delay, in sec)	v/c	QSR	95th%ile Queue (ft/ln)
<b>Abbey/Brooklyn &amp; 3rd</b>	<b>C (20.5)</b>	-	-	-	<b>B (11.0)</b>	-	-	-	<b>B (20.0)</b>	-	-	-	<b>B (12.3)</b>	-	-	-
EB-Left	A (5.5)	0.01	0.11	8	A (6.7)	0.01	0.07	7	A (6.5)	0.04	0.26	18	A (7.9)	0.06	0.16	16
EB-Thru/Right	A (3.4)	0.1	0.12	30	A (7.0)	0.29	0.27	64	A (4.8)	0.14	0.2	49	A (9.4)	0.39	0.45	108
EB Approach	A (3.5)	-	-	-	A (7.1)	-	-	-	A (5.0)	-	-	-	A (9.3)	-	-	-
WB-Left	A (2.3)	0.05	0.03	3	A (7.2)	0.08	0.19	19	A (2.2)	0.07	0.07	6	A (8.3)	0.1	0.24	24
WB-Thru/Right	A (1.9)	0.05	0.01	1	A (7.1)	0.15	0.19	41	A (1.9)	0.12	0.1	9	A (9.7)	0.36	0.47	103
WB Approach	A (2.0)	-	-	-	A (7.2)	-	-	-	A (2.0)	-	-	-	A (9.5)	-	-	-
NB-Left	<b>D (41.3)</b>	0.43	0.78	70	B (15.0)	0.23	0.39	35	<b>D (45.0)</b>	0.54	<b>0.91</b>	82	B (15.0)	0.27	0.46	41
NB-Thru/Right	C (32.1)	0.45	0.73	110	B (13.4)	0.31	0.38	57	<b>D (38.7)</b>	0.66	1.17	176	B (15.6)	0.49	0.61	91
NB Approach	<b>D (35.1)</b>	-	-	-	B (13.9)	-	-	-	<b>D (40.3)</b>	-	-	-	B (15.5)	-	-	-
SB-Left	C (30.5)	0.11	0.43	30	B (12.7)	0.07	0.23	16	C (27.7)	0.06	0.24	17	B (11.7)	0.03	0.13	9
SB-Thru/Right	<b>D (41.9)</b>	0.63	0.99	159	B (16.1)	0.43	0.5	80	<b>D (41.3)</b>	0.67	1.14	183	B (16.5)	0.49	0.59	95
SB Approach	<b>D (40.8)</b>	-	-	-	B (15.8)	-	-	-	<b>D (40.8)</b>	-	-	-	B (16.4)	-	-	-
<b>JHM &amp; 3rd</b>																
	<b>C (25.7)</b>	-	-	-	<b>C (26.8)</b>	-	-	-	<b>C (28.6)</b>	-	-	-	<b>D (36.8)</b>	-	-	-
EB-LEFT	B (14.4)	0.06	0.22	29	B (16.8)	0.06	0.19	29	B (16.1)	0.15	0.32	41	C (21.8)	0.17	0.38	57
EB-Thru/Right	B (15.9)	0.16	0.33	56	C (23.2)	0.3	0.35	157	C (20.3)	0.29	0.42	71	C (32.7)	0.45	0.59	264
EB Approach	B (15.7)	-	-	-	C (22.3)	-	-	-	B (19.6)	-	-	-	C (30.8)	-	-	-
WB-Left	B (16.6)	0.04	0.15	22	B (16.7)	0.04	0.18	22	B (18.7)	0.15	0.32	48	C (21.7)	0.16	0.48	57
WB-Thru	C (23.7)	0.12	0.4	60	C (25.9)	0.24	0.95	124	C (28.1)	0.31	0.78	117	C (34.9)	0.48	2.25	293
WB-Right	A (2.0)	0.09	0.11	17	A (1.9)	0.09	0.12	16	A (7.6)	0.3	0.52	78	A (9.4)	0.28	0.78	102
WB Approach	B (15.9)	-	-	-	B (17.2)	-	-	-	B (19.2)	-	-	-	C (23.7)	-	-	-
NB-Left	B (16.5)	0.2	0.25	42	B (16.6)	0.2	0.25	42	B (14.7)	0.2	0.24	40	C (20.0)	0.22	0.31	52
NB-Thru/Right	<b>D (36.0)</b>	0.68	0.63	200	<b>D (36.7)</b>	0.69	0.63	203	<b>D (40.3)</b>	0.88	1.2	384	<b>D (52.2)</b>	<b>0.9</b>	1.54	493
NB Approach	C (33.9)	-	-	-	C (34.6)	-	-	-	<b>D (38.8)</b>	-	-	-	<b>D (50.3)</b>	-	-	-
SB-Left	C (23.5)	0.62	0.73	132	C (23.0)	0.61	0.73	132	C (31.2)	0.66	0.68	123	<b>D (37.4)</b>	0.66	0.77	139
SB-Thru/Right	C (26.5)	0.5	0.57	188	C (26.4)	0.5	0.57	188	C (25.6)	0.55	0.68	226	C (31.0)	0.53	0.85	279
SB Approach	C (25.7)	-	-	-	C (25.4)	-	-	-	C (26.7)	-	-	-	C (32.2)	-	-	-

## PROPOSED TYPICAL SECTION

CMT worked closely with the City of Dayton and ODOT to develop a typical section for the road diet on Third Street. The proposed typical section is shown in **Figure 10** and described below in additional detail.

- One travel lane in each direction separated by a center turn lane or center median. Minimum travel lane width is 10 feet.
- On-street parking lane on the north side of Third Street. Parking lane is 7.5-foot wide.
- Two-way separated bike lane on the south side of Third Street. The bike lane width is 10.5 feet. The bike lane is separated from the travel lane by a 1.5-foot raised median (street buffer).

FIGURE 10: PROPOSED THIRD STREET TYPICAL SECTION



## DESIGN CRITERIA

The Multimodal Design Guide (MDG) prepared and published by the Ohio Department of Transportation (July 19, 2024) is the applicable manual for implementing pedestrian and bicycle facilities within ODOT right-of-way or when outside ODOT right of way but when utilizing state and federal funding. Design guidance from the MDG was used to aid in selection of vehicle lane widths, bike lane widths and parking lane widths.

A supplemental design resource is NCHRP Report 880: Design Guide for Low Speed Multimodal Roadways (2018) which provides a best practice for low to intermediate speed (45 MPH or lower) roadways with a mix of users. The report establishes a balance between operational efficiency, comfort, safety, and convenience for various modes.

Per Section 104 of the ODOT L&D Manual, the design speed should be at least the legal speed for facilities with a legal speed of 35 MPH or less. The legal and design speed for Third Street is 35 mph.

## LANE WIDTH

Section 300 of the ODOT Location & Design Manual Volume 1 provides cross section design criteria. Figure 301-4 is shown below as **Table 3** provides lane width requirements for urban roadways.

TABLE 3: URBAN LANE/ SHOULDER WIDTHS (L&D MANUAL FIGURE 301-4)

Functional Classification	Locale	Minimum Lane Width (ft.)	Minimum Curbed Shoulder Width (ft.) (F)	
			w/o Parking	w/ Parking (E)
Interstate, Other Freeways, and Expressways (J)	All	12	10 Rt. Paved (H) 4 Med. Paved (D)	
Arterial	50 mph or more	12	8 Each Side Paved (G)	
	Less than 50 mph	11 (B)(K)	1-2 Paved (N)	7-10 Paved
Collector Streets (I)	Commercial/Industrial (L)	11 (K)(M)	1-2 Paved (N)	8-11 Paved
	Residential	10	1-2 Paved (N)	7-8 Paved
Local Streets (I)	Commercial/Industrial (L)	11 (K)(M)	1-2 Paved (N)	8 Paved
	Residential	10 (C)	1-2 Paved (N)	7 Paved

(B) On all Federal Aid Primary (FAP) roadways at least one 12 ft. lane in each direction is required. FAP listings may be obtained from Office of Technical Services' Roadway inventory reports. See Section 105.3 for more information on the lane width requirements for the FAP and National Network.

(K) To help accommodate bicycle and pedestrian traffic, 10 ft. lanes may be used in constrained environments where the legal speed is 35 mph or less and the truck and bus volumes are relatively low.

Typically, minimum lane width for low-speed arterial streets is 11 feet. Footnote K states that to help accommodate bicycle and pedestrian traffic, 10-foot lanes may be used in constrained environments where the legal speed is 35 mph or less and truck and bus volumes are relatively low. Footnote B states that one 12-foot lane in each direction is required on Federal Aid Primary roadway which does not apply to Third Street.

The proposed lane width on Third Street is 10-feet for the eastbound lane and 10.5-feet for the westbound lane. Proposed lane widths meet design criteria for urban street, constrained conditions with bicycle and pedestrian traffic.

#### PEDESTRIAN CROSSINGS

Section 2.5.1.2 of the MGD states “marked crossings should be located where there is a desire to cross due to existing or future lane use.” Examples include schools, parks, libraries, hospitals, churches, transit stops, etc. Designers should consider enhanced crossing treatments where signalized crossings exceed 600 feet.

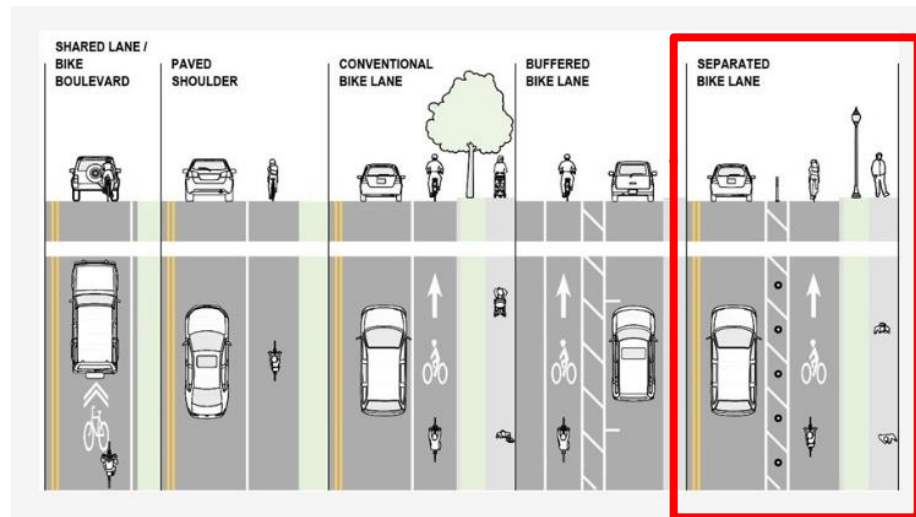
There are warranted signalized intersections on either end of Third Street (0.9 mile spacing). With distances of 1,000-1,200 feet between signalized intersections, the following mid-block pedestrian crossings are proposed to meet the suggested criteria in the MGD.

- Orchard Avenue (east leg at rec center/ school) with raised median
- Ardmore Avenue (east leg) with raised median and remove signal at Young Avenue
- Abbey/ Brooklyn Avenue (east leg)

#### SEPERATED BIKE LANES

Section 6.3 of the ODOT Multimodal Design Guide provides guidance for on-road bicycle facilities. **Figure 11** presents on-road bikeway types progressing from left to right by degree of separation from vehicular traffic. Shared lanes have the least separation from vehicular traffic and separated bike lanes have the most separation from vehicular traffic. The distinct separation from motor vehicles appeals to a wider range of cyclist types and the design of separated bike lanes prevents motor vehicles from driving, stopping or parking in the bike lane.

FIGURE 11: ON ROAD BIKEWAY TYPES (MDG FIGURE 6-10)



Separated bicycle lanes are exclusive bikeways that are physically separated from motor vehicle traffic, both horizontally and vertically. Separated bike lanes may be located at an elevation the same or different than the roadway or sidewalk and may be installed in one-way or two-way configurations. Separated bike lanes are comprised of three distinct zone:

- Bike Lane Zone: The space in which bicyclists operate. Located between the street buffer and the sidewalk buffer.
- Street Buffer Zone: The space that physically separates the bike lane from the motor vehicle lane or on-street parking lane.
- Sidewalk Buffer Zone: The space that physically separates the bike lane from the sidewalk zone.

**Design Consideration: Width**

Width requirements for separated bike lanes based on anticipated bicycle volume are presented in **Table 4** for one-way and two-way configurations. Widths are measured from the applicable edges of the bike lane (striping, face of curb, edge of gutter pan). Minimum two-way bike lane width between vertical curbs is 10-12 feet (low bicycle volume condition). The proposed bike lane width on Third Street is 10.5 feet which meets design guidance.

TABLE 4: MINIMUM SEPARATED BIKE LANE WIDTHS (MDG TABLE 6-4 AND TABLE 6-5)

Peak Hour Directional Bicyclist Volume	Minimum Two-Way Bike Lane Width (ft)		
	Between Vertical Curbs	Adjacent to One Vertical Curb	Between Sloped Curb or at Sidewalk Level
<150	10 - 12	9.5 - 11.5	9 - 11
150-350	12 - 16	11.5 - 15.5	11 - 15
>350	≥16	≥15.5	≥15
Constrained Condition*	8.5	8	7.5

**Design consideration: One-Way or Two-Way operation**

Separated bike lanes necessitate the decision to place a one-way separated bike lane on each side of the street or to place a two-way separated bike lane on one side of the street or both sides of the street. If a two-way, separated bike lane is chosen, an additional decision of which side of the street to place the bike lane is needed. The primary objectives for determining the appropriate bike lane configuration are:

- Provide clear and intuitive transition to the bicycle network
- Minimize conflict between all users (bicyclists, pedestrians, and motorist)
- Provide convenient access to destinations

One-way separated bikes lane where bicyclists travel in the direction of motorized travel are typically the easiest option to integrate into the existing operation of a roadway. Two-way, separated bike lanes introduce a counter flow movement for bicyclists and present challenges at intersections and driveway and when key destinations are on the opposite side of the street. Motorists needing to cross the separated path (at intersections or driveways) often will not anticipate bicyclists approaching from both directions. **Figure 12** summarizes separated bike-lane configurations for two-way roadways.

An on street, two-way bike lane was identified in the 2023 Active Transportation Plan – see Introduction section of this study and **Appendix A**. A typical section developed as part of RAISE grant is shown in **Figure 2**.

FIGURE 12: SEPERATED BIKE LANE CONFIGURATIONS ON 2-WAY STREETS (MDG TABLE 6-7)

	One-way SBL Pair	Two-way SBL	Median Two-way SBL
Corridor-level Planning Considerations			
Access to Destinations	Full access to both sides of street	Limited access to other side of street	Limited access to both sides of street
Network Connectivity	Accommodates two-way bicycle travel		
Crash Risk	Lower because pedestrians and turning drivers may not expect counterflow bicycle traffic	Higher because pedestrians and turning drivers may not expect counterflow bicycle traffic	Higher because pedestrians and turning drivers may not expect counterflow bicycle traffic, but median location may improve visibility and create opportunities to separate conflicts
Intersection Operations	May use existing signals phases; separate bicycle phase may be required depending on vehicle volumes	Typically requires additional signal equipment; separate bicycle phase may be required depending on vehicle volumes	

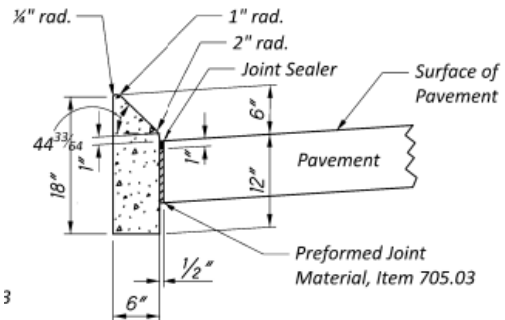
**Design consideration: Street Buffer**

Street buffer (the space between the bike lane and the motor vehicle zone) width is a central element in separated bike lane design. The minimum width of a street buffer typically is 6 feet. The constraints of the Third Street corridor requires design elements to be reduced to avoid widening of the existing roadway. The City of Dayton has successfully implemented two-way bike lane designs with a 1.5 ft buffer (i.e., existing cross section at Shannon St/ Third Street).

### Design consideration: Curbing

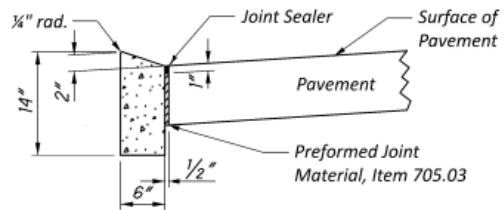
Some curb types can increase the risk of bicycle crashes if struck by a wheel or pedal. The face of curb angle (vertical, sloping or mountable) and curb height influence the functional width of the bike lane, crash risk to bicyclists, the ability to exit the bike lane to access adjacent properties, pedestrian detectability and the risk of encroachment into the bikeway by motorists. The following curb types should be used with separated bicycle lanes:

- Curb Type 10-A: sloping curbs are preferred along any separated bike lane to reduce pedal strike hazards and ease access to the sidewalk.



**TYPE 10-A**

- Curb Type 10-B: mountable curbs are traversable by bicyclists and reduce pedal strike hazards. This is the preferred curb type for separated bike lanes on an intermediate level.



**TYPE 10-B**

- Any curb type (including vertical curb) with a height of 3" or less will allow a bicyclist to ride closer to the curb without fear of a pedal strike.
- For roadway reconstruction projects, integral gutters should not be provided along a separated bike lane.

**Table 5** compares ODOT design criteria with design parameters of the preferred alternative.

TABLE 5: PROPOSED DESIGN CRITERIA SUMMARY

	Element	ODOT L&D Manual Volume 1 (For Urban Roadways)	Third Street	
		ODOT Multimodal Design Guide	Existing	Preferred Alternative 3-Lane Section with Seperated Bike Lane
Roadway	Vehicle Lane Width <sup>A</sup>	11' minimum 10' constrained, speeds < 35mph	Varies 9.5' - 10.5'	Min. 10' travel lane (does not require design exception)
	Shoulder Width <sup>A</sup>	w/out parking: 1-2 feet with parking: 7-10 feet	n/a	WB - 0' EB - 7.5'
Seperated Bike Lane	Operations <sup>B</sup>	one-way or two-way operation	n/a	Two-way operation (south side)
	Bike Lane Width <sup>C</sup>	Peak hour bicycle volume < 150: 10-12 feet between vertical curbs 9.5-11.5 feet adjacent to one vertical curb 9-11 feet between sloped curb	n/a	10.5' (between vertical or sloped curb)
	Sidewalk Buffer <sup>B</sup>	Width varies	0 feet	0 feet
	Street Buffer <sup>B</sup>	6' preferred width 2' constrained (3' with on street parking)	n/a	1.5'

<sup>A</sup> ODOT L&D Vol. 1 Figure 301-4

<sup>B</sup> MDG Section 6.3.7

<sup>C</sup> MDG Table 6-5 Min. Two-Way Seperated Bike Lane Widths

## CONCEPTUAL PLANS

Conceptual plan of the preferred alternative was developed based on the described typical section and are shown in **Figures 13 and 14**. A design speed of 35 MPH is applied following ODOT L&D Manual Section 104.1 guidance, which equals the posted speed limit. WB-62 design vehicle is accommodated. GIS-level information was used to approximate existing right-of-way limits. The following is a list of concept plan features:

1. An overhead lane use sign is proposed for the eastbound lanes in advance of the Abbey Avenue/Brooklyn Avenue intersection to notify motorists of the lane transition. The eastbound curb lane drops as a dedicated right turn lane to Abbey Avenue. The two-way bike lane begins just east of the Abbey Avenue intersection.
2. Removal of Delphos Avenue connection to Third Street is recommended to eliminate an intersection within the influence area of the Abbey Avenue intersection and reduce conflict points. Access to 2911 Third Street will be retained on Delphos and Brooklyn.
3. Removal of the existing traffic signal at Young Avenue is recommended.
4. Pedestrian crossing treatments are proposed at the following locations:
  - Raised crosswalk to cross the east leg of Third Street at Abbey Ave/Brooklyn Ave.
  - Pedestrian crossing with raised crosswalk is proposed on Third Street between Ardmore Avenue and Young Avenue.
  - Pedestrian crossing with raised crosswalk and RRFB is proposed on Third St just east of Orchard Avenue. Raised median island is proposed for pedestrian refuge.
5. Elevated bus stops are proposed on Third Street at various locations. This design (example shown in **Figure 15**) elevates the bike lane to the sidewalk level and buses remain in the travel lane for passenger loading/unloading without encroaching the bike lane.

FIGURE 15: ELEVATED BUS STOP EXAMPLE



3. An overhead lane use sign is proposed for the eastbound lanes of Third Street in advance of the James H. McGee Blvd intersection.
4. Traffic signal upgrades and improvements are proposed at the James H. McGee intersection. The modified lane configuration at this intersection will necessitate signal modifications. The westbound curb lane terminates as a channelized right turn lane with a proposed island. The signal support on the northeast corner will require replacement.

**COST ESTIMATES**

Construction costs were estimated based on the concept plan shown in **Figures 13 and 14**. **Table 6** shows an excerpt of the detailed cost estimate for Third Street which is included in **Appendix H**.

**TABLE 6: COST ESTIMATE SUMMARY**

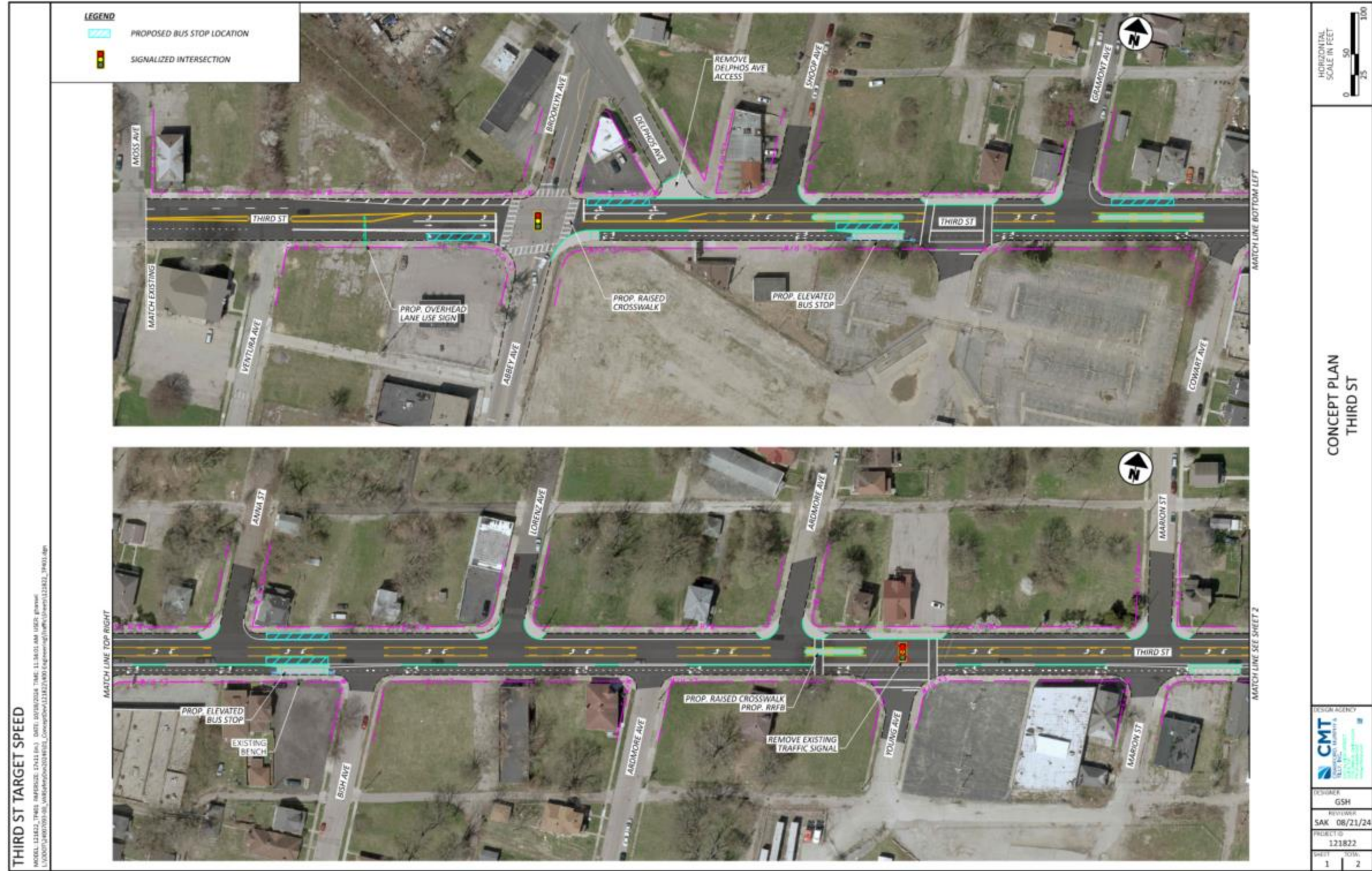
<b>SUBTOTAL ESTIMATED CONSTRUCTION COST</b>		<b>\$</b>	<b>1,570,000</b>
<b>SUBTOTAL ESTIMATED RIGHT OF WAY COST</b>		<b>\$</b>	<b>15,000</b>
		<b>\$</b>	<b>1,585,000</b>
<b>CONSTRUCTION CONTINGENCY</b>	<b>25%</b>	<b>\$</b>	<b>396,000</b>
<b>ENGINEERING, DESIGN &amp; CONSTRUCTION ADMINISTRATION</b>	<b>30%</b>	<b>\$</b>	<b>480,000</b>
		<b>\$</b>	<b>2,461,000</b>
<b>INFLATION CONTINGENCY (2025 CONSTRUCTION)</b>	<b>13.0%</b>	<b>\$</b>	<b>320,000</b>
		<b>\$</b>	<b>2,781,000</b>
<b>TOTAL ESTIMATED PROJECT COST</b>		<b>\$</b>	<b>2,780,000</b>

**FHWA SAFE SYSTEM FRAMEWORK**

The Federal Highway Administration (FHWA) has developed the Safe System Project-Based Alignment Framework (Project-Based Framework) to evaluate roadway locations and potential improvements using a Safe System Approach (SSA). This framework provides a tool that enables practitioners to compare existing street layouts and proposed alternatives. It employs a scoring matrix that focuses on three key aspects: exposure, likelihood, and severity, for both vulnerable road users and motor vehicle occupants.

The tool allows users to input information about existing roadway conditions and proposed improvements, such as roadway width, geometry, vehicle volumes, speeds, and the number of vulnerable road users. It also considers risk factors like lighting conditions, sight distance and driveway density. The tool calculates scores for exposure, likelihood, and severity for vulnerable road users and motor vehicles, combining them into a total score. Lower scores indicate better alignment with the Safe System Approach and lower crash risk, while higher scores suggest less alignment and greater crash risk for road users.

FIGURE 13: THIRD STREET CONCEPT PLAN





The tool is designed to evaluate either roadway segments or intersections but not both simultaneously. For corridors with both segment and intersection level improvements, those alternatives must be evaluated separately. Since the Third Street corridor is primarily a corridor level improvement, namely a lane reduction and separated bike lane, the tool was used for evaluating roadway segments.

To evaluate the proposed alternative for Third Street, the FHWA Project-Based Framework tool was completed for the existing and proposed conditions for the entire length of roadway in the study area. One segment was evaluated since Third Street has a consistent typical section for the entire study area.

Existing and proposed roadway widths and geometric features were obtained from the conceptual drawings included in this report. Vehicle volume and speed were obtained from publicly available data supplied by the Ohio Department of Transportation’s (ODOT) Traffic Information Mapping System (TIMS) website. The volume of vulnerable road users present was calculated based on 13-hour pedestrian counts collected at the Third Street intersections with Abbey/Brooklyn and James H. McGee, extrapolated to 24-hour pedestrian counts using a 1.15 partial count factor. The pedestrian counts include bicyclists in the crosswalk but not bicyclists using the roadway. Volume and speed inputs are summarized in **Table 7**.

TABLE 7: ATTRIBUTES USED IN THE FHWA SAFE SYSTEMS FRAMEWORK TOOL

Attribute	Third Street: Abbey Avenue to James H McGee Blvd
2023 Traffic Volume (AADT)	7,354
Vulnerable Road Users (users per day)	54
85th percentile speed (mph)	41

According to a National Association of City Transportation Officials (NACTO) report, a 5-to-3-lane road diet (i.e. re-striping lanes) can lower speeds by 4-7 mph (<https://nacto.org/wp-content/uploads/2017/11/An-Evaluation-of-Road-Diet-Projects-on-Five-Lane-and-Larger->

Roadways.pdf). Features like raised crossings and center medians can lower speeds by up to 11 mph (<https://highways.dot.gov/media/15226>). For use in this FHWA tool, a 7 MPH speed reduction was assumed to account for the speed reduction potential of the proposed lane reduction on Third Street.

Results of the FHWA framework tool for the Broadway study area are summarized in **Table 8**. With the existing 5-lane condition, an average score of 4,547 was calculated. With the proposed lane reduction and separated bike lane, the total average score for the corridor was calculated at 2,205. The nearly 50-percent reduction in total score suggests that improvements proposed on Broadway bring the corridor into closer alignment with the objectives of the Safe Systems Approach for motorists and vulnerable users of the street.

Spreadsheets are included in **Appendix I**.

**TABLE 8: FHWA SAFE SYSTEMS FRAMEWORK TOOL SCORING SUMMARY**

<b>Third Street Corridor</b>	<b>Vulnerable Users</b>	<b>Motor Vehicles</b>	<b>Total</b>
Existing Condition (5-lane section)	2,160	1,728	3,888
Proposed Condition (3-lane section with bike lane)	630	216	846

## CONCLUSIONS AND RECOMMENDATIONS

A 3-lane typical section (lane reduction) is recommended for Broadway Street to meet the goal of achieving operating speeds that are consistent with the posted speed limit of 35 MPH. The improvements have the added benefit of providing a separated, two-way bicycle lane on the corridor. Part D crash modification factors capture the safety benefits of a lane reduction. The following 3-star CMFs are associated with a 10% reduction in speed if used to calculate a benefit/cost ratio: CMF of 0.68 for fatal crashes, CMF of 0.85 for injury crashes.

# THIRD STREET TARGET SPEED EVALUATION

APPENDIX A: PROJECT DOCUMENTATION



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# DAYTON ACTIVE TRANSPORTATION PLAN

---

August 31, 2023



By..... Mr. Joseph .....

No ..... 6746-23 .....

**A RESOLUTION**

Adopting the Dayton Active Transportation Plan.

**WHEREAS**, Active transportation includes walking, biking, and other means of transportation that are generally considered human-powered; and,

**WHEREAS**, An active transportation plan provides guidance and justification for the prioritization of projects and programs that will improve the ability to walk and bike in the City of Dayton; and,

**WHEREAS**, The creation of the Dayton Active Transportation Plan occurred with extensive engagement, including targeted focus groups, pop-up tables, community events, partner newsletters and mailing lists, surveys, and social media, leading to input from more than 1,500 individuals; and,

**WHEREAS**, The City Plan Board, reviewed and approved the Dayton Active Transportation Plan at a public meeting on August 8, 2023, as case number PLN2023-00256; now therefore,

**BE IT RESOLVED BY THE COMMISSION OF THE CITY OF DAYTON:**

**Section 1.** The City shall implement the Dayton Active Transportation Plan in partnership and collaboration with neighborhoods, institutions, businesses, and other public agencies who are critical to advancing active transportation implementation in Dayton.

**Section 2.** The Dayton Active Transportation Plan is brought forth in conformance and alignment with previously adopted plans and policies, including the City of Dayton Livable Streets Policy (2010), The City of Dayton 2025 Bicycle Action Plan (2011), the Dayton Transportation Plan (2017), the Dayton Riverfront Plan (2018), the four Neighborhood Vision Plans (2019 through 2021), and Dayton Forward: 2040 Comprehensive Plan (2023).

**Section 3** The Dayton Active Transportation Plan will be used for the prioritization of projects and programs through which implementation will advance a balanced, equitable, and safe transportation network.

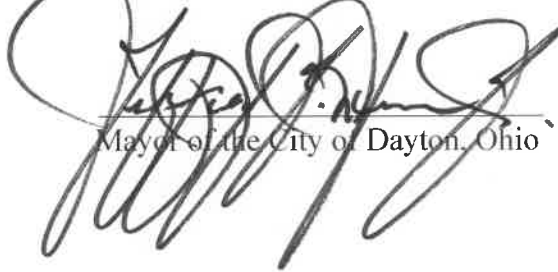
**Section 4.** The City Plan Board may, from time to time, interpret and modify the Plan by notifying the Clerk of the City Commission of such action. The Plan shall be available publicly online, accessed from the City’s official website, and also available in hard-copy form for those without home internet access.

*[Remainder of this page has been intentionally left blank]*

**Section 5.** Upon adoption, progress monitoring and reporting shall occur as specified in the plan, and such efforts shall be communicated with interested parties and the general public.

ADOPTED BY THE COMMISSION..... **Sept 20** ....., 2023

SIGNED BY THE MAYOR..... **Sept 20** ....., 2023



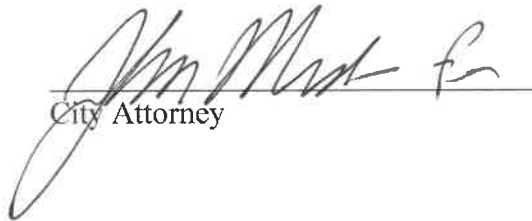
\_\_\_\_\_  
Mayor of the City of Dayton, Ohio

Attest:



\_\_\_\_\_  
Clerk of the Commission

Approved as to form:



\_\_\_\_\_  
City Attorney

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*This plan was facilitated by Toole Design, Burton Planning Services, and Greenway Collaborative and is for planning purposes and should not be used for final design of any project.*



# EXECUTIVE SUMMARY

## INTRODUCTION

Dayton is notable for its unique geography along the Great Miami River and its tributaries, the Stillwater River, Mad River, and Wolf Creek. Due to these natural amenities and relative lack of major elevation change, Dayton is ideal for active transportation pursuits, as it is part of the Miami Valley region's 350+ mile network of paved, multi-use recreational trails--the Nation's Largest Paved Trail Network--connecting schools, parks, historic landmarks, and area attractions. By establishing a clear vision and implementation plan for Dayton's Active Transportation Plan (ATP), the city can leverage this network to improve the quality of life of its residents and further cement its reputation as a recreation destination.

Dayton's neighborhoods, streets, sidewalks, and bike paths have changed substantially since the adoption of its Bicycle Action Plan in 2011. Best practices for pedestrian and bicycling plans and infrastructure have evolved, growing more inclusive with a greater emphasis on equity and accessibility. Municipalities are moving toward Active Transportation planning to ensure streets and sidewalks are more accessible and planned with more intention for all users. Over the course of the planning process for Dayton's Active Transportation Plan the team met with, spoke with, and listened to over a thousand residents. These residents' voices, experiences, concerns, and hopes for Dayton drove the recommendations and prioritization included in this document and we are eager to begin implementation with their help.

This chapter defines active transportation, describes the planning process, provides an overview of proposed projects, highlights priority projects, and touches upon next steps and implementation.

## WHAT IS ACTIVE TRANSPORTATION AND WHY IS IT IMPORTANT?

“Active Transportation” is an umbrella term for all the ways people can get around without using a motorized vehicle – walking or bicycling, using mobility assistance devices (such as wheelchairs and scooters), skating or skateboarding, and more. In short, active transportation is human-powered travel. Active transportation represents fundamental transportation modes for many Ohioans to access transit, work, school, retail stores, or any number of destinations in urban, suburban, and rural settings. Active transportation can provide many community benefits beyond personal mobility, such as improved public health, economic development, greater quality of life, and enhanced environmental quality.

Active transportation planning involves community engagement specific to the needs of people who walk and bicycle, but also those who use mobility devices, such as scooters. An active transportation plan outlines the vision, goals, and strategies needed to support safe, convenient, and accessible active transportation options. It is important and beneficial to meet the needs of people walking and bicycling by planning for and directing investments in infrastructure and programs that support active transportation options.

# EXISTING CONDITIONS

## KEY TAKEAWAYS

The project team completed an existing conditions analysis to understand the current transportation system and where safety and network improvements could be made for people using active transportation. Currently the City of Dayton has more than 1,800 miles of sidewalks, 22 miles of existing bicycle facilities in the form of bike lanes, bike paths, and sharrows, and is connected to over 350 miles of paved trails. In addition, 18 bus routes extend throughout the region which generate an estimated six million trips every year.

Several roadways and intersections were identified as part of the high-risk network due to a history of crashes and roadway characteristics, such as high speeds and volume. During the time period reviewed (2017-2021), there were 552 crashes involving bicyclists and pedestrians in the City of Dayton, 99 of which resulted in serious injuries, and 24 of which resulted in fatalities. In addition, the project team reviewed volume and speed data as well as the Ohio Department of Transportation's (ODOT's) Demand and Needs Analyses, which identified areas with strong potential for bicycling and walking. See the **Existing Conditions** chapter for a summary of all analyses and Appendix A (State of Walking and Biking) for the Demand and Needs maps.

## PROPOSED PROJECTS AND PROGRAMS

The existing conditions analysis, public input, and steering committee meetings led to the final active transportation network, see Figure 3 below. Infrastructure recommendations include adding:

- » 10 miles of sidewalks,
- » 124 miles of on-street bikeways,
- » 12 miles of shared use paths; and
- » improvements to 252 intersections.

The plan also proposes establishing supportive programs such as educational campaigns, encouragement programs, policies, and school-related programs. See the **Proposed Projects and Programs** chapter for details on the proposed bicycle and pedestrian projects and supportive programs.

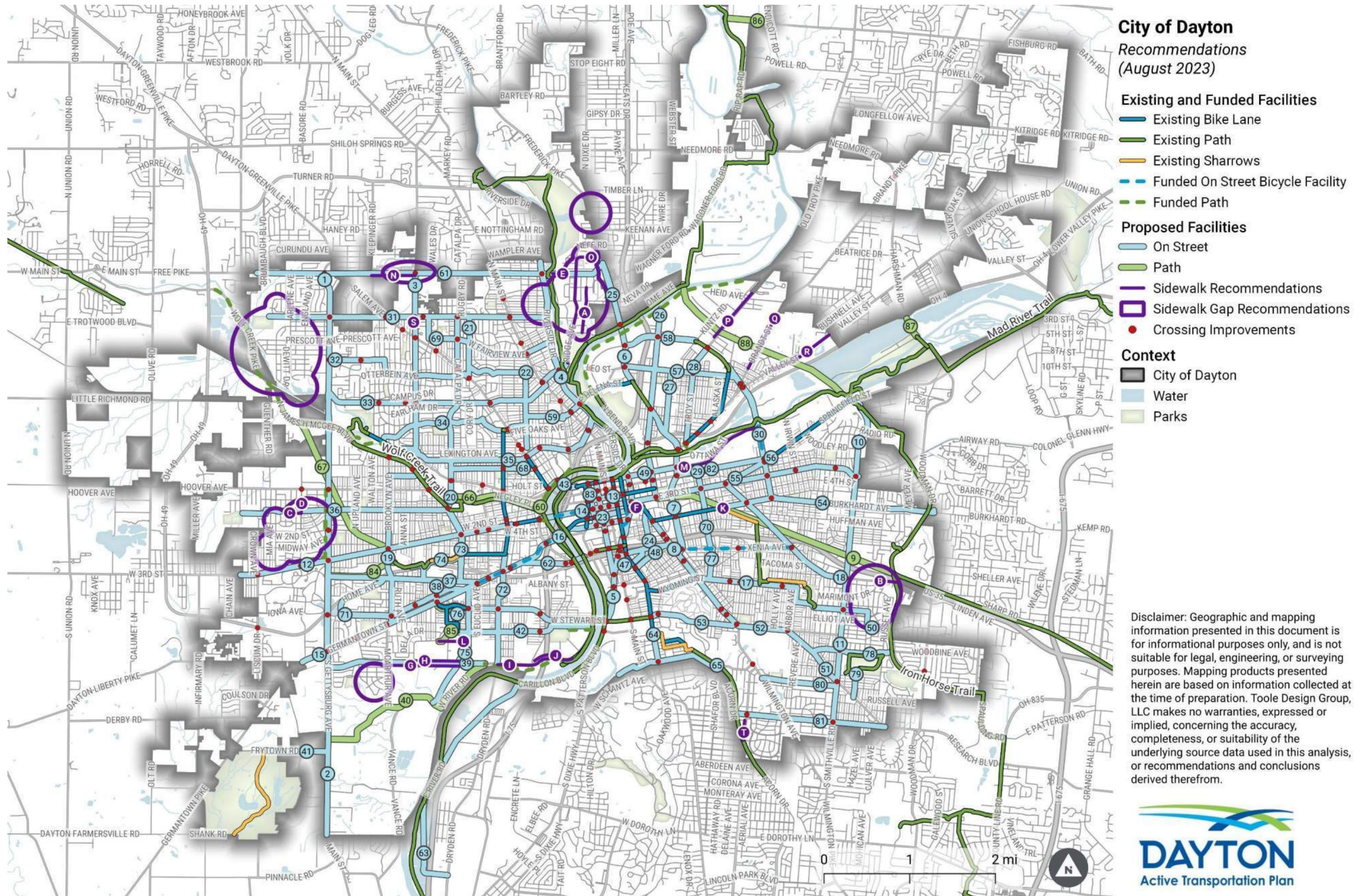


Figure 3: Proposed Recommendation

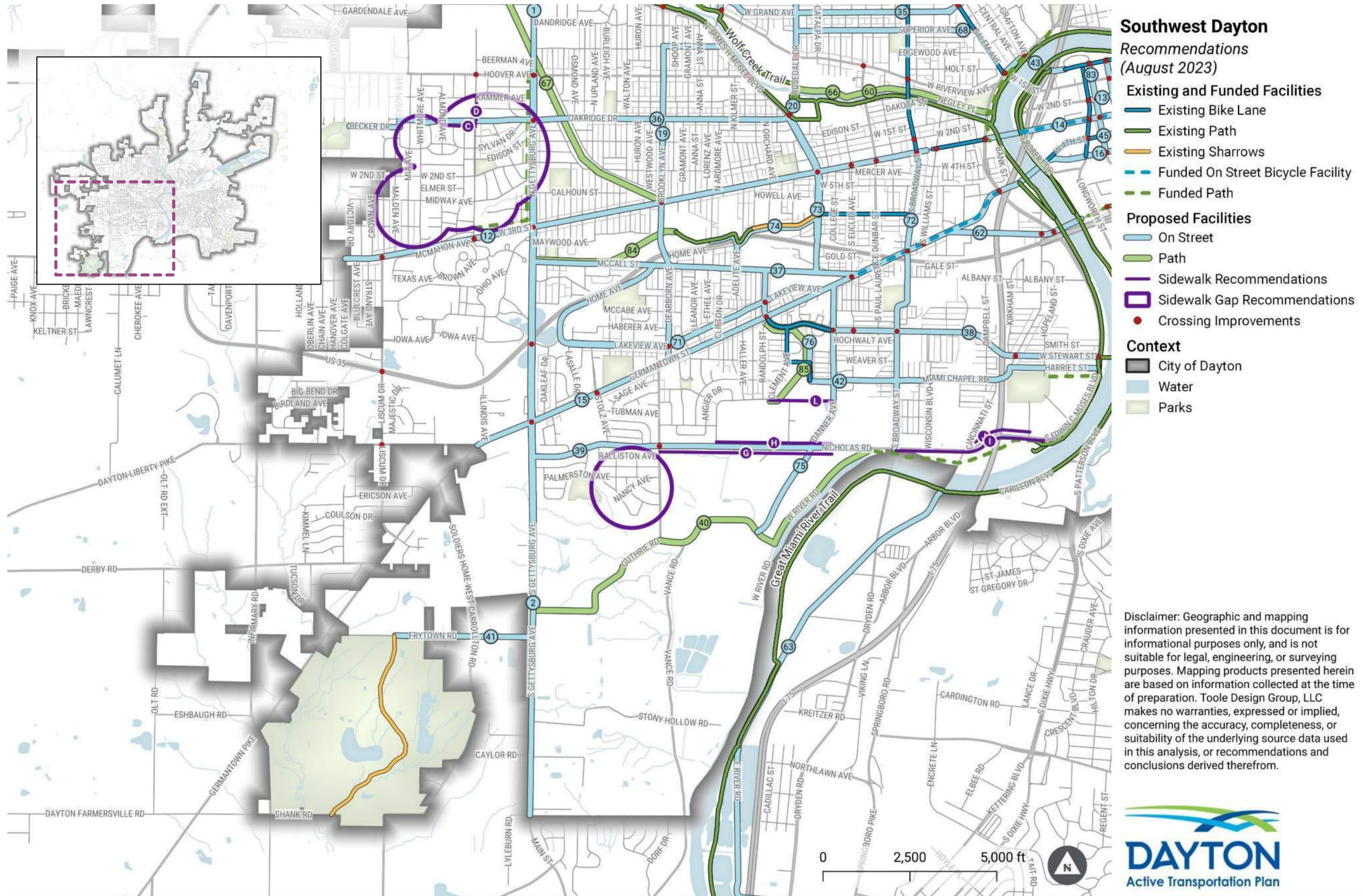


Figure 19: Proposed Recommendations - Southwest Dayton

Table 4: Bikeway Project Recommendations

Project ID	Level of Traffic Stress (LTS)	Type	Street Name	Start	End	Description	Prioritization Ranking	Candidate for SRTS
1	LTS 3	Separated Bike Lane	N Gettysburg Avenue	W Hillcrest Avenue	W 3rd Street	Create a major north/south connection through west Dayton that connects to existing facilities and multiple destinations	34	
2	LTS 4	Separated Bike Lane or Shared Use Paths	S Gettysburg Avenue	W 3rd Street	Lyleburn Road	Create a major north/south connection through west Dayton that connects multiple destinations	14	
3	LTS 3	Separated Bike Lane	Philadelphia Drive	Siebenthaler Avenue	Riverview Avenue	Create a north/south connection through northwest Dayton that connects to existing facilities	12	
4	LTS 3	Separated Bike Lane	Riverside Drive	Northern city boundary (north of Redwood Avenue)	Monument Avenue	Create a north/south connection through north Dayton that connects to existing facilities	15	Yes; Connection to Rivers Edge Montessori
5	LTS 3	Separated Bike Lane	Patterson Boulevard	E Monument Avenue	Stewart Street	Create a connection through downtown Dayton that connects to multiple facilities	3	
6	LTS 3	Separated Bike Lane	N Keowee Street	Embury Park Road	E Helena Street	Create north/south connection that connects to multiple existing facilities	52	
7	LTS 4	Separated Bike Lane or Shared Use Paths	Keowee Street	Webster Street	Wayne Avenue	Create a north/south connection through east Dayton that connects to existing facilities and multiple destinations	39	
8	LTS 3	Separated Bike Lane	Wayne Avenue	E 5th Street	Wilmington Avenue	Create a connection to the existing bike lanes on 5th Street and Wayne Avenue	16	
9	N/A	Shared Use Paths	Flight Line	Bainbridge Street	Creekside Trail	Create an east/west connection through east Dayton that connects to existing facilities and destinations (rail to trail)	18	
10	LTS 1	Bicycle Boulevard	N Smithville Road	Springfield Street	E 3rd Street	Create a connection to the existing bike lanes, trails, and parks	68	
11	LTS 4	Separated Bike Lane or Shared Use Paths	S Smithville Road	E 3rd Street	Southern city limits (south of Ashland Avenue)	Create a north/south route through east Dayton that connects to multiple destinations	25	
12	LTS 4	Separated Bike Lane or Shared Use Paths	W 3rd Street	Western city boundary (west of Bluecrest Avenue)	Williams Street	Create an east/west connection that connects to existing facilities and multiple destinations	2	Yes; Connection to Roosevelt School and connect to existing northern bike lanes to Edison Elementary School
13	LTS 3	Separated Bike Lane	2nd Street	Perry Street	St. Clair Street	Create an east/west connection in downtown that connects to existing facilities and multiple destinations	30	
14	LTS 4	Separated Bike Lane or Shared Use Paths	3rd Street	Edwin C Moses Boulevard	Eastern city boundary	Create an east/west connection through downtown that connects to existing facilities and multiple destinations	1	Yes; Connection to Roosevelt School
15	LTS 4	Separated Bike Lane or Shared Use Paths	Germantown Street	Western city limit (west of Illinois Avenue)	S Edwin C Moses Boulevard	Create an east/west connection that connects to existing facilities and multiple destinations	7	Yes; Connection to Mound Street Academy, Wogaman Middle School, and Dayton Digital Academy



**Figure 6: Visualization of Project 49 (E Monument Avenue from N Jefferson Street to N Keowee Street)**

## IMPLEMENTATION

The creation of this plan and final recommendations intentionally focused on collaboration and community input; implementation will follow the same standard. The **Implementation** chapter outlines how the city will kick-off implementation starting with its Planning, Neighborhoods & Development and Public Works Departments. The city team also identifies key stakeholders and their role in developing and activating programs and designing, funding, constructing, maintaining, and evaluating the active transportation network.

A key element of implementation is securing the appropriate funding for design and construction. Several state and federal funding sources are identified in the plan that can be used to supplement local funding sources to build out the active transportation network and fund related programming efforts. The **Funding Strategies** section provides clear justification for the importance of building out the proposed network and funding supportive programs and policies. The section highlights the substantial positive effect improved active transportation facilities have on local economies and the reduction of taxpayer funded healthcare systems over time due to an increase in active living and subsequent improvements in public health. The City will utilize the funding information provided to appropriately match financial sources to priority projects and incrementally implement the vision of a more connected, accessible, and equitable active transportation network.

During public outreach phases and in all conversation with stakeholders, maintenance was a key topic. The long-term performance of bicycle and pedestrian networks depends on both the construction of new facilities and an investment in continued maintenance. Maintaining bicycle and pedestrian facilities is

critical to ensuring those facilities are accessible, safe, and functional. The **Maintenance Activities** section includes a table with recommended maintenance activities and strategies for each facility type based on national best practices. The City will refer to this table as it moves forward with updating maintenance policies and coordinating with regional partners.

Finally, the **On-going Monitoring and Evaluation** section covers how the city and its partners will monitor and evaluate the performance of our active transportation networks. As recommendations are implemented, Dayton must be able to measure whether these investments are increasing the number of people walking and bicycling across the city. Recommendations include utilizing the Bike.Walk.Ride committee to formalize tracking processes and creating an online dashboard where annual performance metrics may be posted.

The vision for a more accessible, affordable, safe, and convenient active transportation network requires that the recommendations within this plan be activated. The city and its partners look forward to sharing updates on progress over the coming years.

## HIGHLIGHTED PRIORITY PROJECTS

### Project 12 (W 3<sup>rd</sup> Street from western city boundary to Williams Street)

This project would be a major east/west route that connects existing facilities in the Wright Dunbar Business District and multiple destinations along 3<sup>rd</sup> Street, including the Westown Shopping Center, Dayton VA Medical Center, Dayton Metro Library West Branch, and the Greater Dayton Recreation Center. Based on the Level of Traffic Stress of 4, the facility should be a separated facility. A visualization of what the facility could look like is shown in Figure 29.



Figure 29: Visualization for Project 12

Project 12 will connect two, two-way cycle tracks; one on the south side of the street in the Wright Dunbar Business District and the second, a funded but not yet constructed track on the north side of the street in front of the Westown Shopping Center. Final design of the project is yet to be determined but may include a transition from the two-way cycle track on the south side of the street to the two-way cycle track on the north side of the street or a two-way cycle track on the south side of the street to one-way buffered bike lanes. An example of a two-way cycle track transition to a two-way sidepath located in Xenia, OH from N Detroit Street to the Little Miami Scenic Trail is shown in Figure 30.



**Figure 30: Transition from two-way cycle track to sidepath in Xenia, OH (Source: Google Maps)**

An example of a two-way cycle track transition to one-way buffered bike lanes is shown in Figure 31.



**Figure 31: Transition from two-way cycle track to buffered bike lanes in Bentonville, AR.**

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### Project 49 (E Monument Avenue from N Jefferson Street to N Keowee Street)

This project would create a route that connects existing facilities and destinations along the riverfront and downtown such as Day Air Ballpark and RiverScape MetroPark. Intersection improvements could include shifting the traffic signal to a three-way stop and installing a raised intersection. Improvements along E Monument Avenue could include converting the street from one-way to two-way traffic, maintaining on-street parking on the north side of the street, and a shared bike lane. There should also be consideration for lowering the posted speed from 35 mph to 25 mph since there is a proposed shared bike lane and traffic calming features being added to the street. This could be done by creating a Downtown Business District. A visualization of what the facility could look like is shown in Figure 33.



Figure 33: Visualization of Project 49

## APPENDICES

**State of Walking and Biking Report**

**Safe Routes to Schools Maps**

**Recommendations**

Sidewalks

Bikeways

Intersections

**Recommendations (Raw Data)**

Sidewalks

Bikeways

Intersections

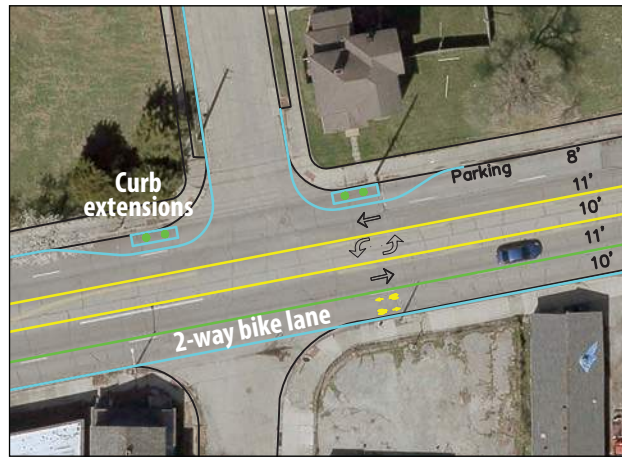
# RAISE PROJECT 4A: West Third Street (1700-3000)

## FOUR KILLED, FOUR INJURED

Dodge Avenger carrying eight family members (six of them children) on Christmas morning 2019 travelling at nearly 70 mph. Car crosses to opposite curb and hits two trees, catching fire. Two adults and two children killed, others hospitalized, including two critically injured. Road diet will slow traffic.



Curb extensions, road diet, and two-way bike lane planned for the length of Third Street to slow traffic and aid pedestrians and bicyclists.



## CRITICAL FATALITY REDUCTION MEASURES



- Traffic-calming.
- Speed reduction.
- Redesigned roadscape.
- Improved bicycle and pedestrian facilities.
- Increased visibility through street lighting.

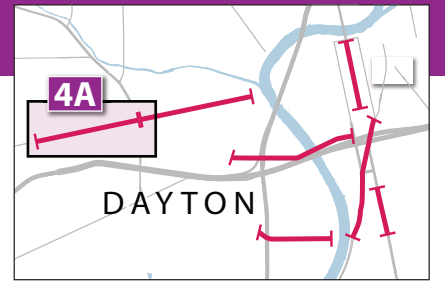
## ONE KILLED

Driver eastbound on Third loses control, hits curb, strikes tree, then utility pole. Alcohol suspected.



RAISE Grant projects (2016-2022 ODOT)

Accidents	Total: 343
Fatal	6
Incapacitating injury	16
Non-incapacitating injury	52
Possible injury	57
No injury	212
<b>Type of accident</b>	
Pedestrian	3



- Funded projects outside RAISE
- Census tract
- Bus stop
- School
- Medical/public aid facility



West Third Street in an area of historic underinvestment



- Census 1651 is in **99th Percentile** for poverty
- Census 1651 is in **99th Percentile** for unemployment
- 23%** of adults in Census 1651 without a high school diploma



Bicyclist crosses Third at Delphos. Third and Abbey intersection visible at stoplight. This section of Third is responsible for 92 accidents from 2016-2022.

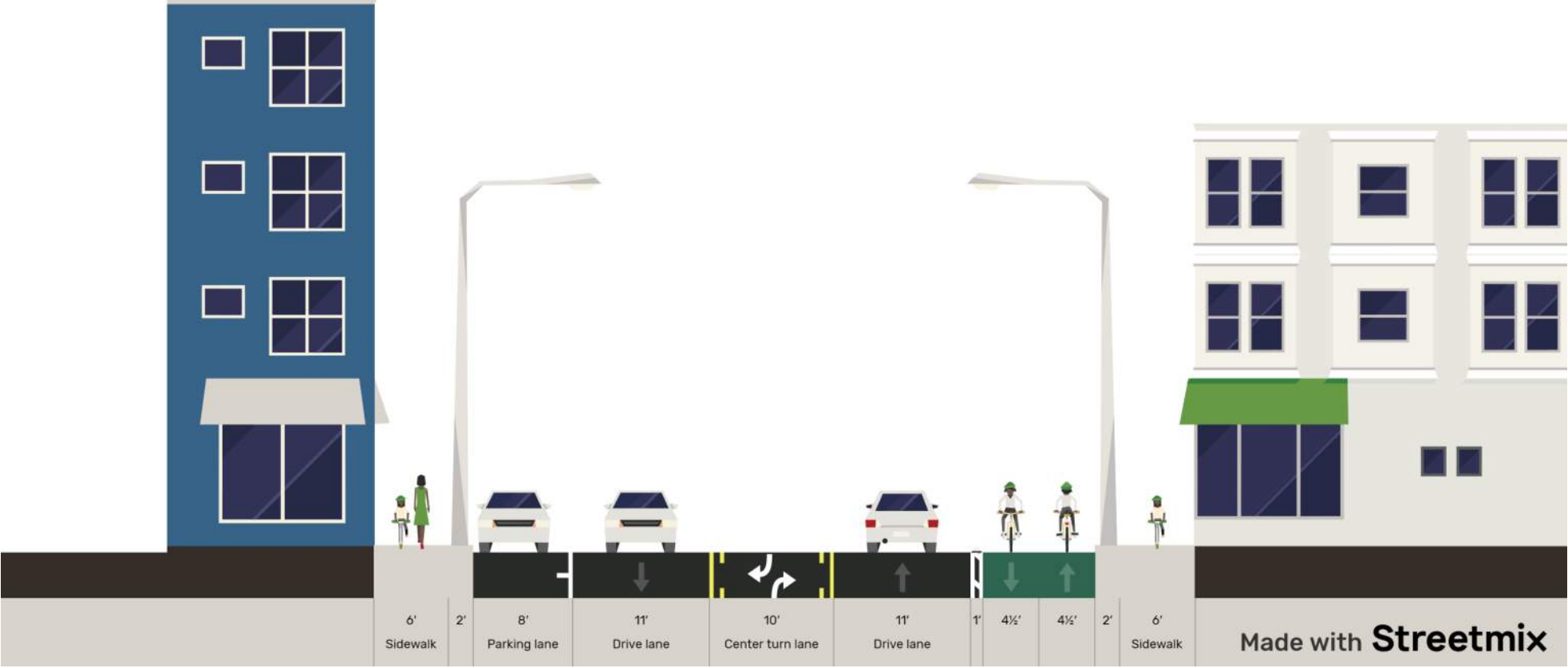


## ONE KILLED

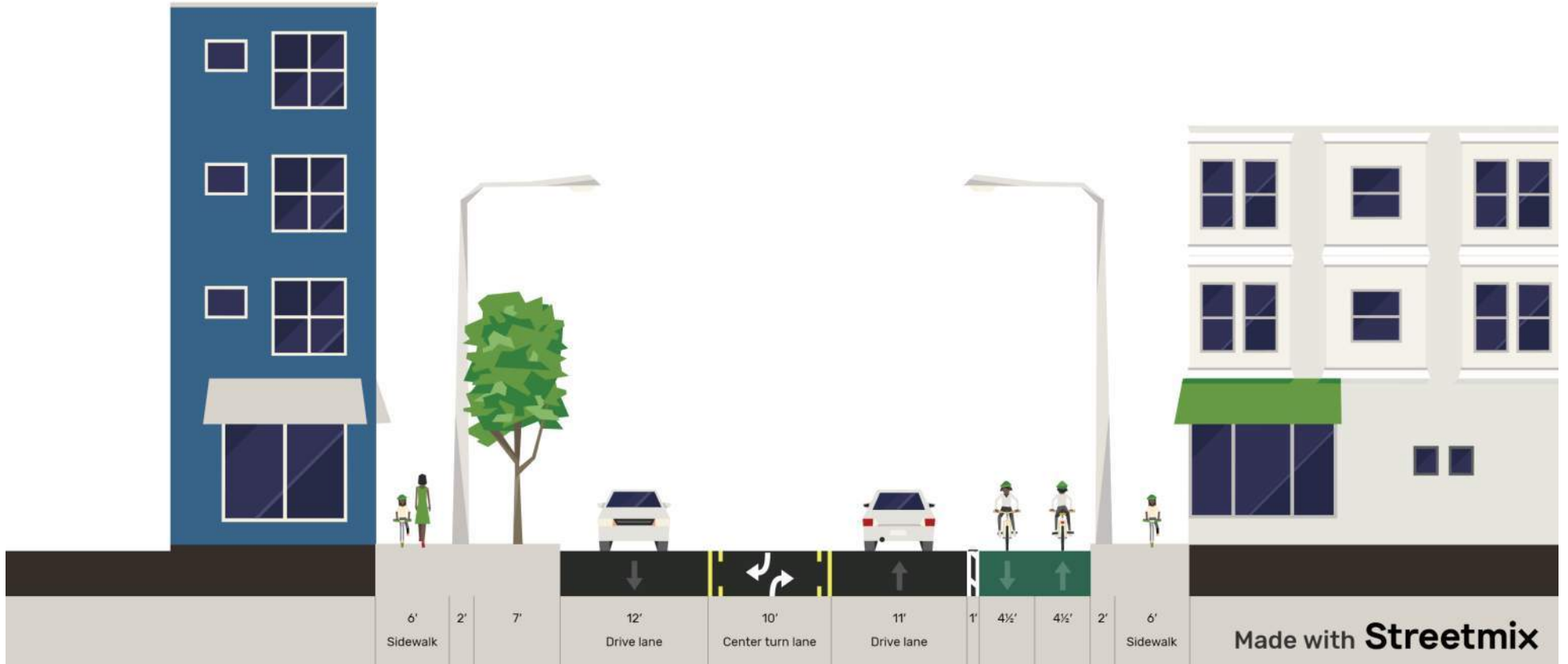
At 10 p.m., pickup travelling north on Kilmer fails to stop at stop sign and hits Jeep westbound on Third, forcing Jeep into a lightpole and killing its driver.

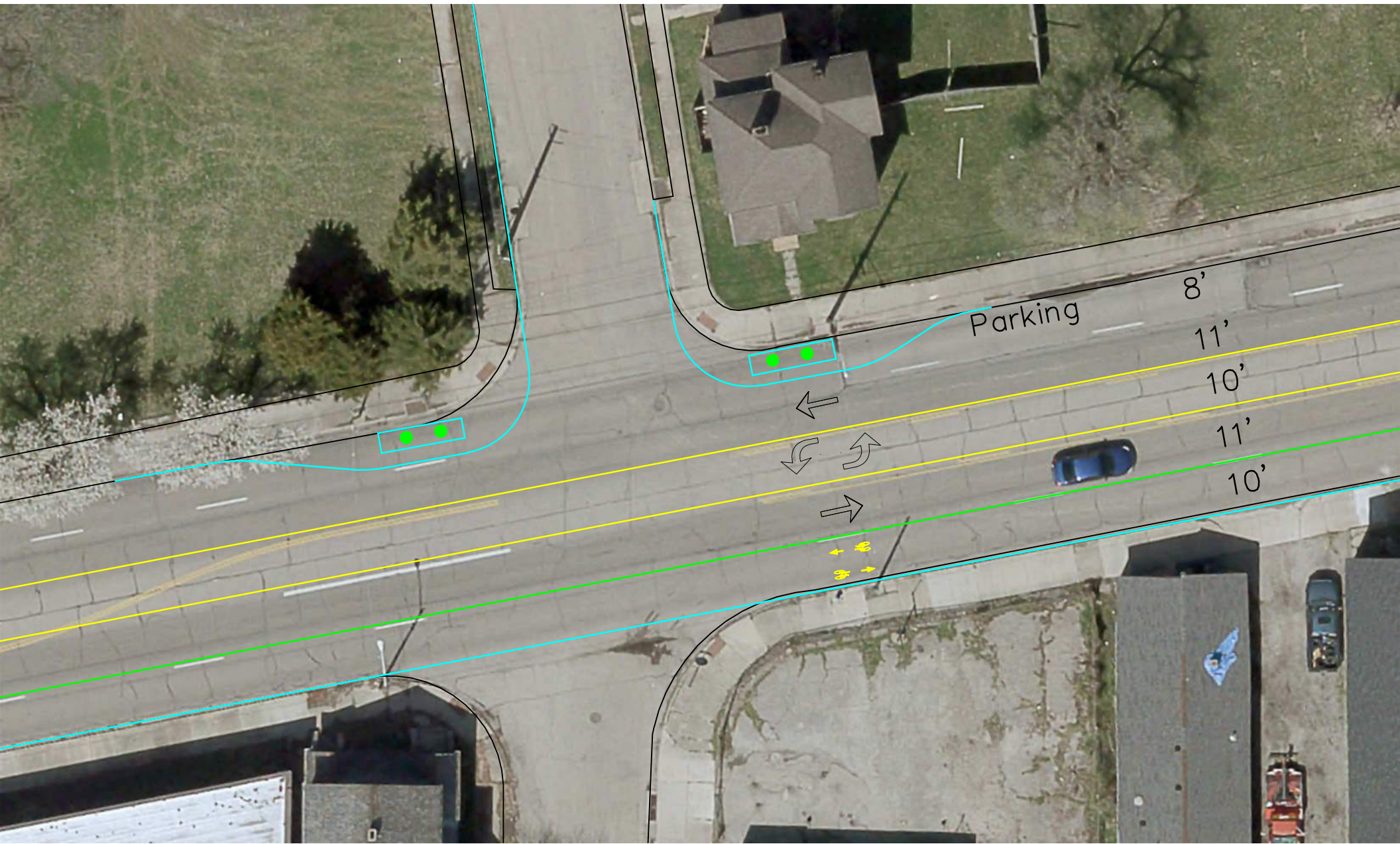
Demographic and U.S. Census Data: U.S. Climate and Economic Justice Screening Tool, <https://screeningtool.geoplatform.gov/>, accessed February 2023

# West Third Street with parking



# West Third Street at Curb Extension





Parking

8'

11'

10'

11'

10'

8'  
11'  
10'  
11'  
10'

# THIRD STREET TARGET SPEED EVALUATION





## APPENDIX B: EXISTING CONDITIONS

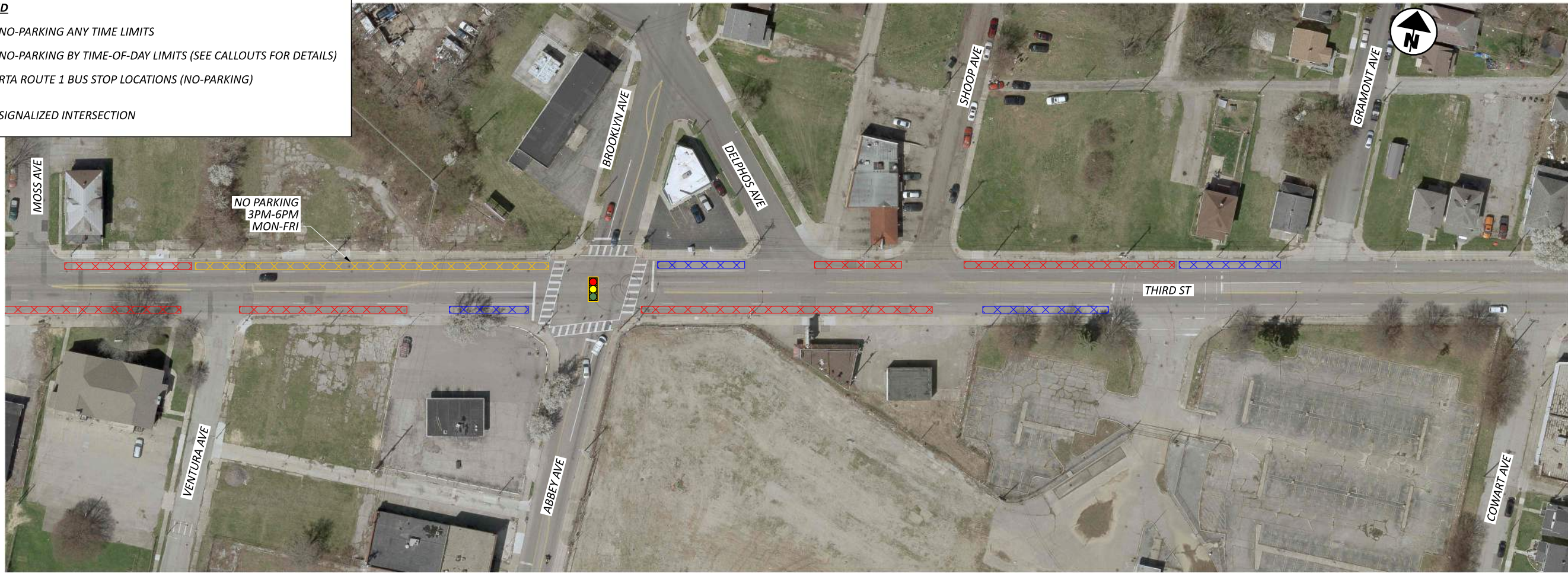


**THIRD ST TARGET SPEED**

MODEL: 121822\_UP401\_PAPER.dwg DATE: 8/22/2024 TIME: 4:15:35 PM USER: ghansel  
 L:\ODOT\24007093-00\_VARSafetyDsn20246\01\_ConceptDev\121822\400-Engineering\Utilities\Sheets\121822\_UP401.dgn

**LEGEND**

-  NO-PARKING ANY TIME LIMITS
-  NO-PARKING BY TIME-OF-DAY LIMITS (SEE CALLOUTS FOR DETAILS)
-  RTA ROUTE 1 BUS STOP LOCATIONS (NO-PARKING)
-  SIGNALIZED INTERSECTION

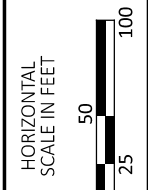


MATCH LINE BOTTOM LEFT



MATCH LINE TOP RIGHT

MATCH LINE SEE SHEET 2







**EXISTING CONDITIONS  
THIRD ST**

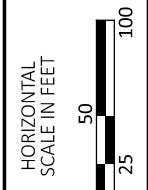
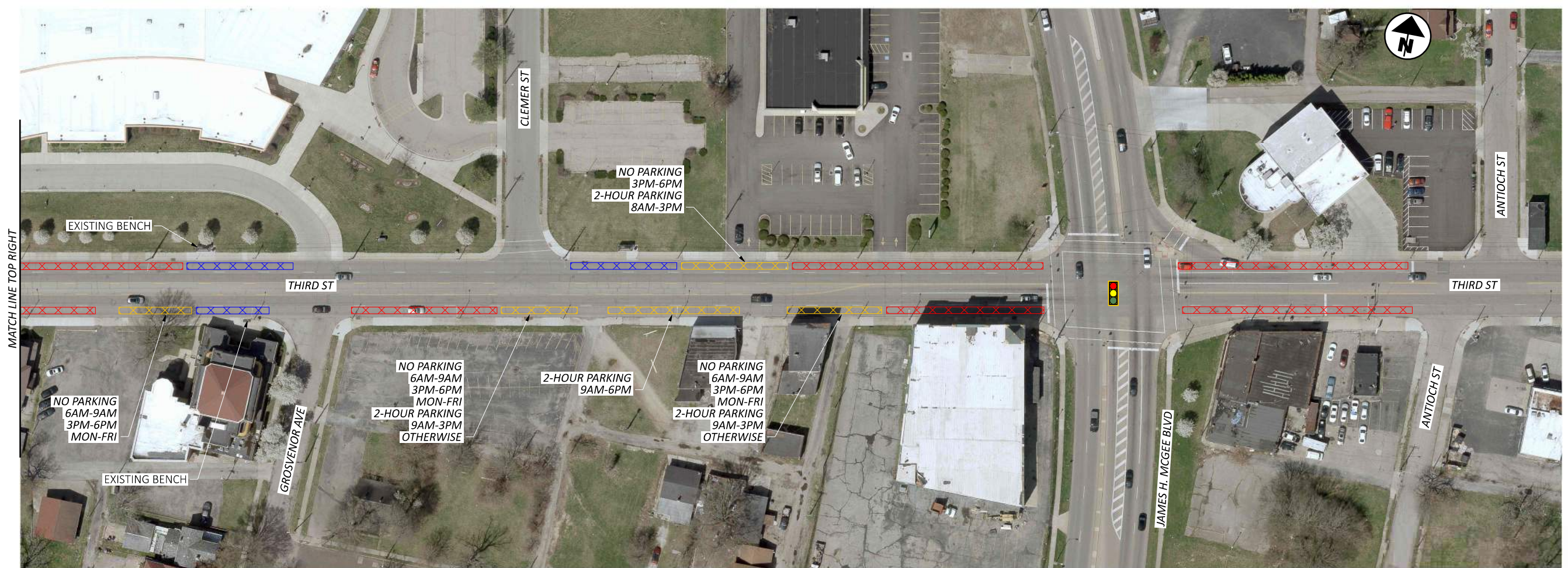
DESIGN AGENCY	
	
DESIGNER	
GSH	
REVIEWER	
SAK 08/22/24	
PROJECT ID	
121822	
SHEET	TOTAL
1	2

**THIRD ST TARGET SPEED**

MODEL: 121822\_UP402\_PAPER SIZE: 17x11 (in.) DATE: 8/22/2024 TIME: 4:15:41 PM USER: ghanseil  
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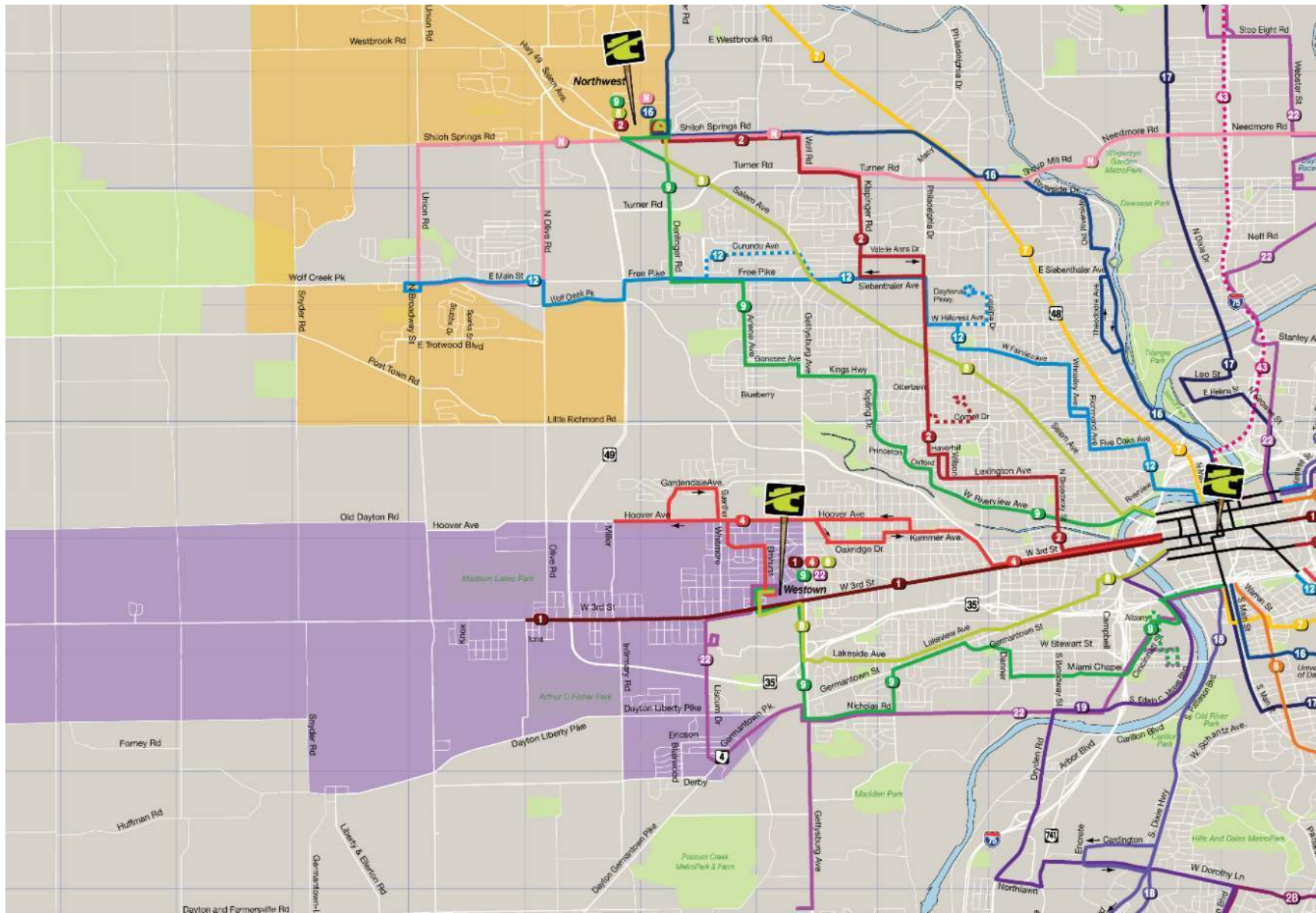
**LEGEND**

-  NO-PARKING ANY TIME LIMITS
-  NO-PARKING BY TIME-OF-DAY LIMITS (SEE CALLOUTS FOR DETAILS)
-  RTA ROUTE 1 BUS STOP LOCATIONS (NO-PARKING)
-  SIGNALIZED INTERSECTION



**EXISTING CONDITIONS  
THIRD ST**

DESIGN AGENCY	
	
DESIGNER	
GSH	
REVIEWER	
SAK 08/22/24	
PROJECT ID	
121822	
SHEET	TOTAL
2	2



# THIRD STREET TARGET SPEED EVALUATION

## APPENDIX C: TRAFFIC COUNTS



File Name: James H. McGee and Third Street

Start Date: 6/29/2022

Start Time: 6:45:00 AM

Site Code:

Comment 1: Heavy truck/dump trucks counted as trucks rather than busses

Comment 2: Counts at 10:00 AM estimated based on adjacent counts

Comment 3:

Comment 4:

Start Time	JAMES MCGEE Southbound				3RD ST Westbound				JAMES MCGEE Northbound				3RD ST Eastbound			
	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds
6:45:00 AM	4	91	24	0	14	8	1	0	4	85	5	0	4	11	4	0
7:00:00 AM	3	77	20	0	11	16	7	0	3	64	1	0	3	15	5	0
7:15:00 AM	5	98	37	0	14	22	5	0	2	95	9	0	3	18	2	1
7:30:00 AM	7	125	45	0	20	24	3	0	8	108	13	0	11	28	5	0
7:45:00 AM	4	140	64	0	10	29	3	0	6	92	8	0	5	37	5	0
8:00:00 AM	5	106	40	0	11	39	4	0	7	100	13	0	7	29	5	1
8:15:00 AM	5	107	40	0	17	23	3	0	5	96	9	0	6	31	3	0
8:30:00 AM	6	81	43	0	27	27	2	0	8	118	16	0	11	28	7	0
8:45:00 AM	12	110	46	0	24	34	7	0	10	117	10	0	6	30	8	0
9:00:00 AM	6	85	20	0	15	25	5	0	5	85	9	0	7	35	5	0
9:15:00 AM	6	85	38	0	20	34	5	0	4	81	10	0	7	43	7	0
9:30:00 AM	7	98	33	0	19	32	5	0	7	88	12	0	8	31	7	0
9:45:00 AM	8	102	31	0	18	31	2	0	7	94	6	0	7	34	5	0
10:00:00 AM	6	97	28	0	21	31	2	0	7	91	9	0	8	33	6	0
10:15:00 AM	4	91	23	0	22	30	2	0	6	89	12	0	7	30	7	0
10:30:00 AM	8	90	32	0	32	44	5	0	7	103	7	0	9	31	10	0
10:45:00 AM	46	89	26	0	19	33	7	1	8	96	9	0	7	40	7	0
11:00:00 AM	5	84	26	0	20	39	5	0	8	101	9	0	7	23	4	0
11:15:00 AM	9	72	30	0	27	40	8	1	3	101	9	0	6	33	8	1
11:30:00 AM	8	107	36	0	28	37	4	0	10	116	9	0	10	39	14	0
11:45:00 AM	7	98	40	0	40	58	5	2	8	120	10	0	11	31	8	1
12:00:00 PM	3	78	33	0	37	41	6	1	7	115	16	0	7	35	5	0
12:15:00 PM	7	89	28	0	19	43	6	2	11	103	8	0	11	44	11	0
12:30:00 PM	8	89	38	0	20	45	10	0	10	110	15	0	12	50	13	0
12:45:00 PM	5	96	43	0	25	49	8	3	11	118	6	0	9	50	7	0
1:00:00 PM	11	96	35	0	33	51	9	0	2	102	14	0	22	49	11	0
1:15:00 PM	7	118	34	0	26	50	8	1	7	150	11	1	8	41	13	1
1:30:00 PM	10	123	35	0	15	52	8	0	6	113	11	0	10	53	7	0
1:45:00 PM	6	108	33	0	29	40	8	1	11	123	9	0	9	38	12	0
2:00:00 PM	10	114	40	0	40	46	9	1	10	121	12	0	11	48	14	1
2:15:00 PM	4	110	41	0	32	69	8	0	2	145	12	0	13	48	10	0
2:30:00 PM	12	151	47	0	33	48	4	0	10	165	15	0	10	51	12	0
2:45:00 PM	8	122	39	0	33	58	8	0	14	180	12	0	25	49	5	0
3:00:00 PM	9	135	40	0	31	49	10	2	9	175	19	0	15	36	12	0
3:15:00 PM	8	127	35	0	42	66	12	0	5	184	14	0	13	40	11	1

File Name: James H. McGee and Third Street

Start Date: 6/29/2022

Start Time: 6:45:00 AM

Site Code:

Comment 1: Heavy truck/dump trucks counted as trucks rather than busses

Comment 2: Counts at 10:00 AM estimated based on adjacent counts

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Start Time	JAMES MCGEE Southbound				3RD ST Westbound				JAMES MCGEE Northbound				3RD ST Eastbound			
	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds
3:30:00 PM	9	175	43	0	55	61	12	0	7	151	18	0	16	53	4	0
3:45:00 PM	5	114	32	1	40	54	5	0	7	173	14	0	9	50	11	1
4:00:00 PM	8	124	39	0	42	46	15	0	9	147	15	0	11	53	8	1
4:15:00 PM	12	127	24	0	47	49	8	0	8	195	18	1	11	35	8	0
4:30:00 PM	10	132	37	2	48	64	17	0	11	200	14	1	10	57	12	0
4:45:00 PM	13	115	36	0	52	55	13	0	8	171	9	0	9	41	13	0
5:00:00 PM	9	148	24	1	55	74	11	0	5	203	14	0	22	42	14	1
5:15:00 PM	14	131	27	0	45	69	10	0	6	199	14	1	14	41	13	1
5:30:00 PM	14	154	29	0	41	48	10	3	7	168	18	2	15	28	15	1
5:45:00 PM	9	137	29	0	35	46	8	1	4	171	12	1	17	38	16	0
6:00:00 PM	6	157	24	0	40	47	6	1	9	141	20	1	19	38	18	0
6:15:00 PM	8	115	28	0	41	22	10	0	5	164	18	0	13	34	12	1
6:30:00 PM	9	133	22	0	33	45	6	1	7	140	17	0	21	28	15	1

**3rd and Young - TMC**

Tue Jul 16, 2024

Full Length (10 AM-7 PM, 6 AM-10 AM)

All Classes (Motorcycles, Lights, Single-Unit Trucks, Articulated Trucks, Buses, Pedestrians, Bicycles on Crosswalk)

All Movements

ID: 1207815, Location: 39.752603, -84.233688

Provided by: Crawford Murphy & Tilly Inc.

(CMT) : Columbus OH

8101 N. High Street, Columbus, OH, 43235, US

Leg Direction	3rd St WB Westbound					Young Ave NB Northbound					3rd St EB Eastbound					Int
	T	L	U	App	Ped*	R	L	U	App	Ped*	R	T	U	App	Ped*	
2024-07-16 10:00AM	46	1	0	47	0	0	0	0	0	0	0	52	0	52	0	99
10:15AM	49	0	0	49	0	1	0	0	1	0	0	58	0	58	0	108
10:30AM	63	0	0	63	0	0	0	0	0	0	1	71	0	72	0	135
10:45AM	63	2	0	65	0	1	0	0	1	0	0	75	0	75	0	141
Hourly Total	221	3	0	224	0	2	0	0	2	0	1	256	0	257	0	483
11:00AM	52	1	0	53	0	0	0	0	0	0	0	72	0	72	0	125
11:15AM	59	0	0	59	0	0	0	0	0	0	0	66	0	66	0	125
11:30AM	50	1	0	51	0	1	0	0	1	0	0	51	0	51	0	103
11:45AM	42	0	0	42	0	0	1	0	1	1	0	68	0	68	0	111
Hourly Total	203	2	0	205	0	1	1	0	2	1	0	257	0	257	0	464
12:00PM	58	0	0	58	0	2	0	0	2	1	1	61	0	62	0	122
12:15PM	61	0	0	61	0	0	0	0	0	0	1	69	0	70	0	131
12:30PM	64	2	0	66	0	1	0	0	1	0	0	80	0	80	0	147
12:45PM	76	0	0	76	0	0	1	0	1	0	0	71	0	71	0	148
Hourly Total	259	2	0	261	0	3	1	0	4	1	2	281	0	283	0	548
1:00PM	66	0	0	66	0	0	0	0	0	0	1	64	0	65	0	131
1:15PM	70	1	0	71	0	0	0	0	0	1	0	73	0	73	0	144
1:30PM	72	0	0	72	0	0	0	0	0	0	1	79	0	80	0	152
1:45PM	63	0	0	63	0	0	0	0	0	0	0	69	0	69	0	132
Hourly Total	271	1	0	272	0	0	0	0	0	1	2	285	0	287	0	559
2:00PM	64	0	0	64	1	0	0	0	0	0	0	60	0	60	0	124
2:15PM	60	0	0	60	0	0	0	0	0	0	0	58	0	58	0	118
2:30PM	78	0	0	78	0	0	0	0	0	0	0	62	0	62	0	140
2:45PM	80	1	0	81	0	2	0	0	2	0	0	77	0	77	0	160
Hourly Total	282	1	0	283	1	2	0	0	2	0	0	257	0	257	0	542
3:00PM	71	0	0	71	0	0	0	0	0	0	0	71	0	71	0	142
3:15PM	74	1	0	75	0	0	0	0	0	0	0	60	0	60	0	135
3:30PM	84	1	0	85	0	0	0	0	0	0	0	84	0	84	0	169
3:45PM	82	0	0	82	0	0	0	0	0	1	0	69	0	69	0	151
Hourly Total	311	2	0	313	0	0	0	0	0	1	0	284	0	284	0	597
4:00PM	85	0	0	85	0	2	0	0	2	0	0	76	0	76	0	163
4:15PM	89	0	0	89	0	1	0	0	1	0	0	56	0	56	0	146
4:30PM	93	0	0	93	0	3	0	0	3	0	0	74	0	74	0	170
4:45PM	81	0	0	81	0	0	0	0	0	0	0	61	0	61	0	142
Hourly Total	348	0	0	348	0	6	0	0	6	0	0	267	0	267	0	621
5:00PM	97	0	0	97	0	1	0	0	1	0	0	61	0	61	0	159
5:15PM	74	0	0	74	0	0	0	0	0	0	0	63	0	63	0	137
5:30PM	90	0	0	90	0	0	0	0	0	0	0	63	0	63	0	153
5:45PM	84	0	0	84	0	0	0	0	0	1	0	49	0	49	0	133
Hourly Total	345	0	0	345	0	1	0	0	1	1	0	236	0	236	0	582
6:00PM	69	0	0	69	0	0	0	0	0	0	0	55	0	55	0	124
6:15PM	71	0	0	71	0	0	0	0	0	1	0	51	0	51	0	122
6:30PM	68	0	0	68	0	1	0	0	1	0	0	56	0	56	0	125
6:45PM	54	0	0	54	0	0	0	0	0	0	0	43	0	43	0	97
Hourly Total	262	0	0	262	0	1	0	0	1	1	0	205	0	205	0	468
2024-07-17 6:00AM	9	1	0	10	0	0	0	0	0	0	0	7	0	7	0	17
6:15AM	9	0	0	9	0	0	0	0	0	1	0	18	0	18	0	27
6:30AM	12	0	0	12	0	0	0	0	0	0	0	30	0	30	0	42
6:45AM	22	1	0	23	0	0	0	0	0	0	0	20	0	20	0	43
Hourly Total	52	2	0	54	0	0	0	0	0	1	0	75	0	75	0	129
7:00AM	16	0	0	16	0	1	1	0	2	0	0	24	0	24	0	42
7:15AM	28	1	0	29	0	0	0	0	0	0	0	34	0	34	0	63
7:30AM	34	1	0	35	0	1	0	0	1	0	0	37	0	37	0	73

Leg Direction	3rd St WB Westbound					Young Ave NB Northbound					3rd St EB Eastbound					Int
	T	L	U	App	Ped*	R	L	U	App	Ped*	R	T	U	App	Ped*	
7:45AM	45	0	0	45	0	1	0	0	1	0	0	40	0	40	0	86
Hourly Total	123	2	0	125	0	3	1	0	4	0	0	135	0	135	0	264
8:00AM	33	2	0	35	0	0	0	0	0	1	0	38	0	38	0	73
8:15AM	29	0	0	29	0	1	0	0	1	0	0	41	0	41	0	71
8:30AM	34	0	0	34	0	0	0	0	0	0	1	45	0	46	0	80
8:45AM	40	1	0	41	0	1	1	0	2	0	0	43	0	43	0	86
Hourly Total	136	3	0	139	0	2	1	0	3	1	1	167	0	168	0	310
9:00AM	40	0	1	41	0	1	0	0	1	1	0	42	0	42	0	84
9:15AM	46	1	0	47	0	0	0	0	0	1	0	49	0	49	0	96
9:30AM	53	0	0	53	0	0	0	0	0	0	0	62	0	62	0	115
9:45AM	51	0	0	51	0	0	0	0	0	1	0	57	0	57	0	108
Hourly Total	190	1	1	192	0	1	0	0	1	3	0	210	0	210	0	403
<b>Total</b>	3003	19	1	3023	1	22	4	0	26	11	6	2915	0	2921	0	5970
<b>% Approach</b>	99.3%	0.6%	0%	-	-	84.6%	15.4%	0%	-	-	0.2%	99.8%	0%	-	-	-
<b>% Total</b>	50.3%	0.3%	0%	50.6%	-	0.4%	0.1%	0%	0.4%	-	0.1%	48.8%	0%	48.9%	-	-
<b>Motorcycles</b>	17	0	0	17	-	0	0	0	0	-	0	23	0	23	-	40
<b>% Motorcycles</b>	0.6%	0%	0%	0.6%	-	0%	0%	0%	0%	-	0%	0.8%	0%	0.8%	-	0.7%
<b>Lights</b>	2894	17	1	2912	-	16	4	0	20	-	5	2798	0	2803	-	5735
<b>% Lights</b>	96.4%	89.5%	100%	96.3%	-	72.7%	100%	0%	76.9%	-	83.3%	96.0%	0%	96.0%	-	96.1%
<b>Single-Unit Trucks</b>	50	1	0	51	-	2	0	0	2	-	0	56	0	56	-	109
<b>% Single-Unit Trucks</b>	1.7%	5.3%	0%	1.7%	-	9.1%	0%	0%	7.7%	-	0%	1.9%	0%	1.9%	-	1.8%
<b>Articulated Trucks</b>	7	1	0	8	-	4	0	0	4	-	0	4	0	4	-	16
<b>% Articulated Trucks</b>	0.2%	5.3%	0%	0.3%	-	18.2%	0%	0%	15.4%	-	0%	0.1%	0%	0.1%	-	0.3%
<b>Buses</b>	35	0	0	35	-	0	0	0	0	-	1	34	0	35	-	70
<b>% Buses</b>	1.2%	0%	0%	1.2%	-	0%	0%	0%	0%	-	16.7%	1.2%	0%	1.2%	-	1.2%
Pedestrians	-	-	-	-	1	-	-	-	-	9	-	-	-	-	-	0
% Pedestrians	-	-	-	-	100%	-	-	-	-	81.8%	-	-	-	-	-	-
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	2	-	-	-	-	-	0
% Bicycles on Crosswalk	-	-	-	-	0%	-	-	-	-	18.2%	-	-	-	-	-	-

\* Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, T: Thru, U: U-Turn

**3rd and Young - TMC**

Tue Jul 16, 2024

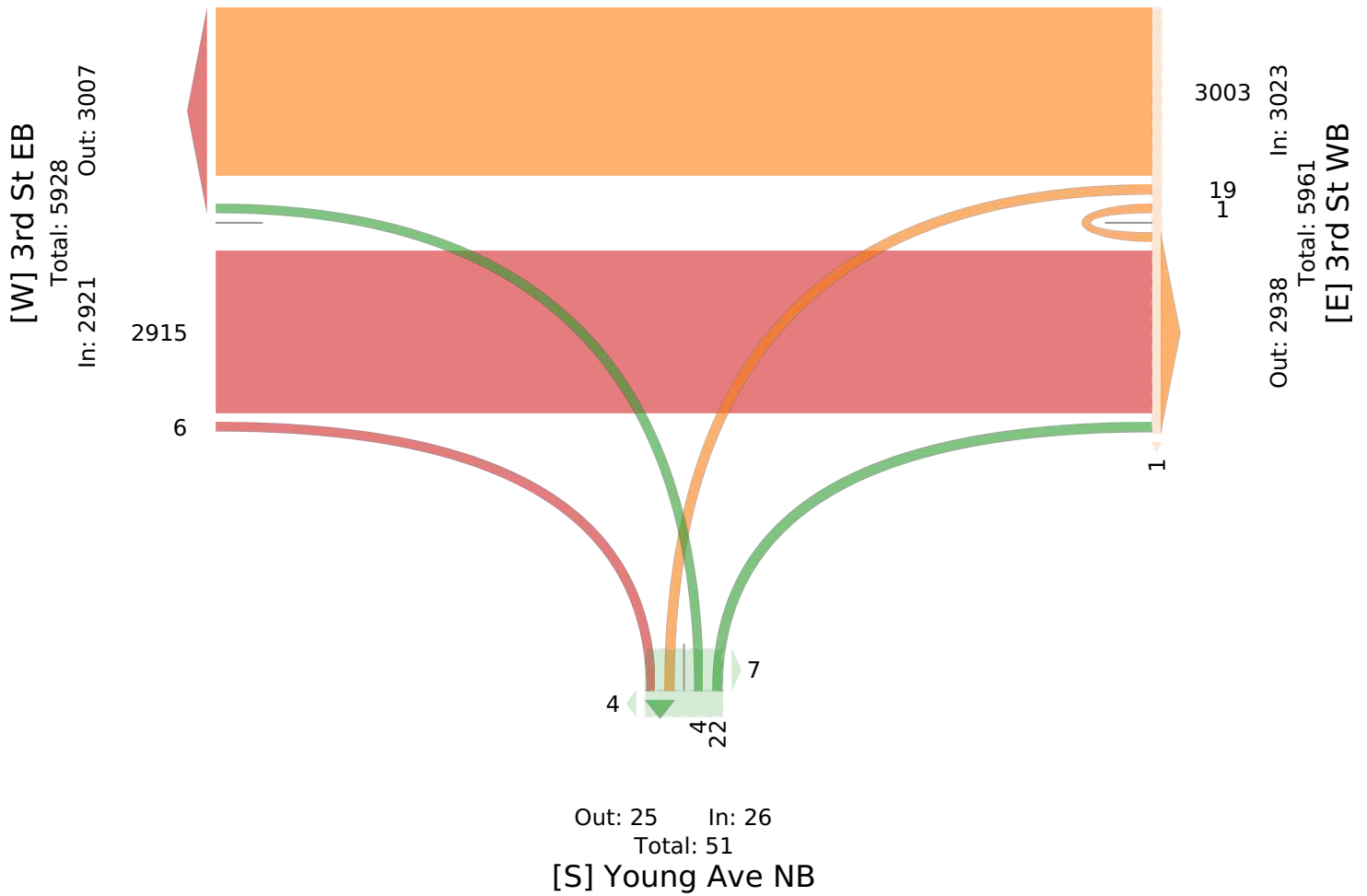
Full Length (10 AM-7 PM, 6 AM-10 AM)

All Classes (Motorcycles, Lights, Single-Unit Trucks, Articulated Trucks, Buses, Pedestrians, Bicycles on Crosswalk)

All Movements

ID: 1207815, Location: 39.752603, -84.233688

Provided by: Crawford Murphy & Tilly Inc.  
(CMT) : Columbus OH  
8101 N. High Street, Columbus, OH, 43235, US



**3rd and Young - TMC**

Tue Jul 16, 2024

AM Peak (Jul 16 2024 10AM - 11 AM)

All Classes (Motorcycles, Lights, Single-Unit Trucks, Articulated Trucks, Buses, Pedestrians, Bicycles on Crosswalk)

All Movements

ID: 1207815, Location: 39.752603, -84.233688

Provided by: Crawford Murphy & Tilly Inc.

(CMT) : Columbus OH

8101 N. High Street, Columbus, OH, 43235, US

Leg Direction	3rd St WB Westbound					Young Ave NB Northbound					3rd St EB Eastbound					
Time	T	L	U	App	Ped*	R	L	U	App	Ped*	R	T	U	App	Ped*	Int
2024-07-16 10:00AM	46	1	0	47	0	0	0	0	0	0	0	52	0	52	0	99
10:15AM	49	0	0	49	0	1	0	0	1	0	0	58	0	58	0	108
10:30AM	63	0	0	63	0	0	0	0	0	0	1	71	0	72	0	135
10:45AM	63	2	0	65	0	1	0	0	1	0	0	75	0	75	0	141
<b>Total</b>	221	3	0	224	0	2	0	0	2	0	1	256	0	257	0	483
<b>% Approach</b>	98.7%	1.3%	0%	-	-	100%	0%	0%	-	-	0.4%	99.6%	0%	-	-	-
<b>% Total</b>	45.8%	0.6%	0%	46.4%	-	0.4%	0%	0%	0.4%	-	0.2%	53.0%	0%	53.2%	-	-
<b>PHF</b>	0.877	0.375	-	0.862	-	0.500	-	-	0.500	-	0.250	0.853	-	0.857	-	0.856
<b>Motorcycles</b>	0	0	0	0	-	0	0	0	0	-	0	2	0	2	-	2
<b>% Motorcycles</b>	0%	0%	0%	0%	-	0%	0%	0%	0%	-	0%	0.8%	0%	0.8%	-	0.4%
<b>Lights</b>	212	3	0	215	-	0	0	0	0	-	1	247	0	248	-	463
<b>% Lights</b>	95.9%	100%	0%	96.0%	-	0%	0%	0%	0%	-	100%	96.5%	0%	96.5%	-	95.9%
<b>Single-Unit Trucks</b>	6	0	0	6	-	1	0	0	1	-	0	4	0	4	-	11
<b>% Single-Unit Trucks</b>	2.7%	0%	0%	2.7%	-	50.0%	0%	0%	50.0%	-	0%	1.6%	0%	1.6%	-	2.3%
<b>Articulated Trucks</b>	0	0	0	0	-	1	0	0	1	-	0	0	0	0	-	1
<b>% Articulated Trucks</b>	0%	0%	0%	0%	-	50.0%	0%	0%	50.0%	-	0%	0%	0%	0%	-	0.2%
<b>Buses</b>	3	0	0	3	-	0	0	0	0	-	0	3	0	3	-	6
<b>% Buses</b>	1.4%	0%	0%	1.3%	-	0%	0%	0%	0%	-	0%	1.2%	0%	1.2%	-	1.2%
Pedestrians	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

\* Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, T: Thru, U: U-Turn

**3rd and Young - TMC**

Tue Jul 16, 2024

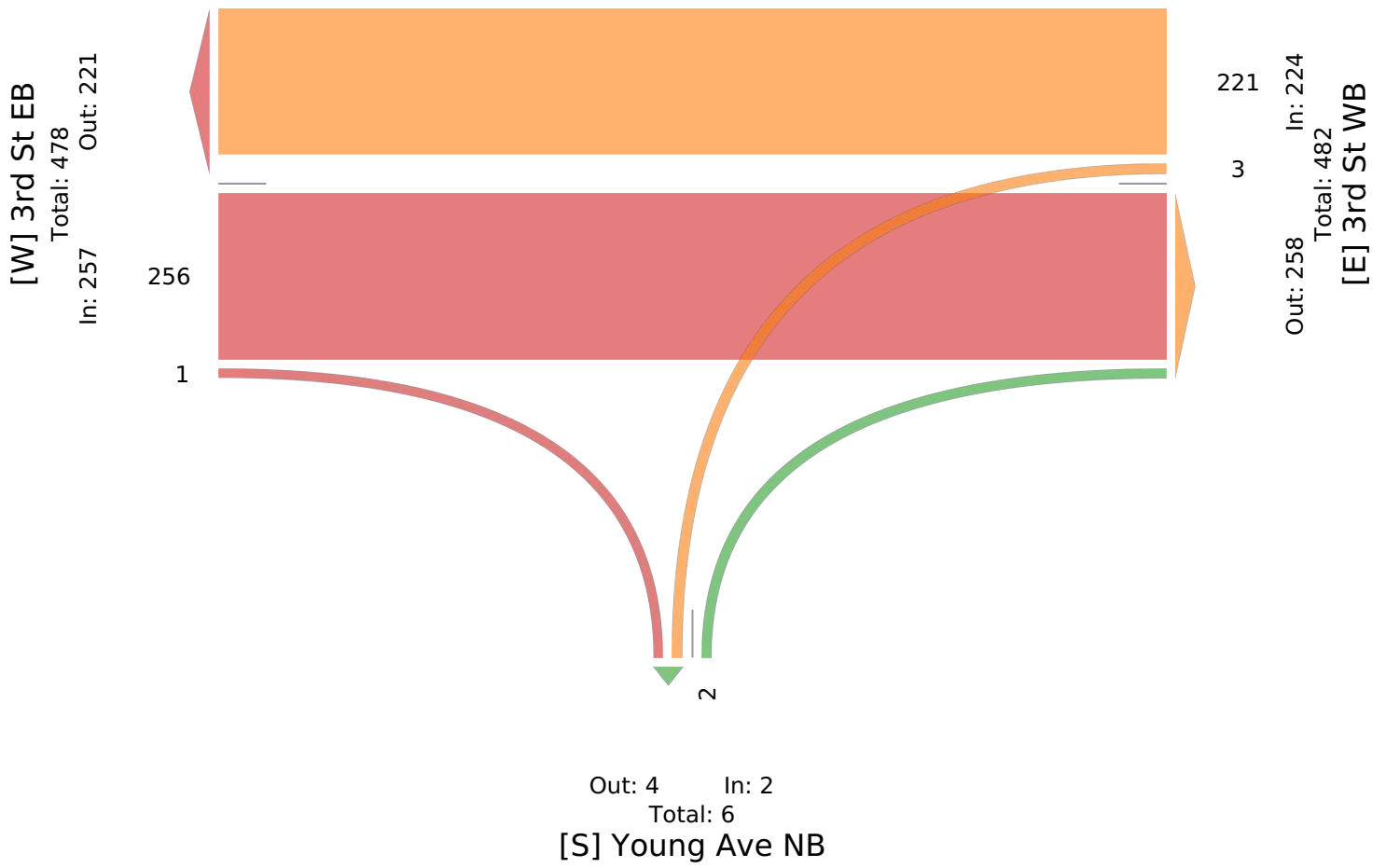
AM Peak (Jul 16 2024 10AM - 11 AM)

All Classes (Motorcycles, Lights, Single-Unit Trucks, Articulated Trucks, Buses, Pedestrians, Bicycles on Crosswalk)

All Movements

ID: 1207815, Location: 39.752603, -84.233688

Provided by: Crawford Murphy & Tilly Inc.  
(CMT) : Columbus OH  
8101 N. High Street, Columbus, OH, 43235, US



**3rd and Young - TMC**

Tue Jul 16, 2024

Midday Peak (Jul 16 2024 12:45PM - 1:45 PM)

All Classes (Motorcycles, Lights, Single-Unit Trucks, Articulated Trucks, Buses, Pedestrians, Bicycles on Crosswalk)

All Movements

ID: 1207815, Location: 39.752603, -84.233688

Provided by: Crawford Murphy & Tilly Inc.

(CMT) : Columbus OH

8101 N. High Street, Columbus, OH, 43235, US

Leg Direction	3rd St WB Westbound					Young Ave NB Northbound					3rd St EB Eastbound					
Time	T	L	U	App	Ped*	R	L	U	App	Ped*	R	T	U	App	Ped*	Int
2024-07-16 12:45PM	76	0	0	76	0	0	1	0	1	0	0	71	0	71	0	148
1:00PM	66	0	0	66	0	0	0	0	0	0	1	64	0	65	0	131
1:15PM	70	1	0	71	0	0	0	0	0	1	0	73	0	73	0	144
1:30PM	72	0	0	72	0	0	0	0	0	0	1	79	0	80	0	152
<b>Total</b>	284	1	0	285	0	0	1	0	1	1	2	287	0	289	0	575
<b>% Approach</b>	99.6%	0.4%	0%	-	-	0%	100%	0%	-	-	0.7%	99.3%	0%	-	-	-
<b>% Total</b>	49.4%	0.2%	0%	49.6%	-	0%	0.2%	0%	0.2%	-	0.3%	49.9%	0%	50.3%	-	-
<b>PHF</b>	0.934	0.250	-	0.938	-	-	0.250	-	0.250	-	0.500	0.908	-	0.903	-	0.946
<b>Motorcycles</b>	2	0	0	2	-	0	0	0	0	-	0	2	0	2	-	4
<b>% Motorcycles</b>	0.7%	0%	0%	0.7%	-	0%	0%	0%	0%	-	0%	0.7%	0%	0.7%	-	0.7%
<b>Lights</b>	273	1	0	274	-	0	1	0	1	-	2	272	0	274	-	549
<b>% Lights</b>	96.1%	100%	0%	96.1%	-	0%	100%	0%	100%	-	100%	94.8%	0%	94.8%	-	95.5%
<b>Single-Unit Trucks</b>	3	0	0	3	-	0	0	0	0	-	0	10	0	10	-	13
<b>% Single-Unit Trucks</b>	1.1%	0%	0%	1.1%	-	0%	0%	0%	0%	-	0%	3.5%	0%	3.5%	-	2.3%
<b>Articulated Trucks</b>	2	0	0	2	-	0	0	0	0	-	0	1	0	1	-	3
<b>% Articulated Trucks</b>	0.7%	0%	0%	0.7%	-	0%	0%	0%	0%	-	0%	0.3%	0%	0.3%	-	0.5%
<b>Buses</b>	4	0	0	4	-	0	0	0	0	-	0	2	0	2	-	6
<b>% Buses</b>	1.4%	0%	0%	1.4%	-	0%	0%	0%	0%	-	0%	0.7%	0%	0.7%	-	1.0%
Pedestrians	-	-	-	-	0	-	-	-	-	1	-	-	-	-	0	-
<b>% Pedestrians</b>	-	-	-	-	-	-	-	-	-	100%	-	-	-	-	-	-
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-
<b>% Bicycles on Crosswalk</b>	-	-	-	-	-	-	-	-	-	0%	-	-	-	-	-	-

\*Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, T: Thru, U: U-Turn

**3rd and Young - TMC**

Tue Jul 16, 2024

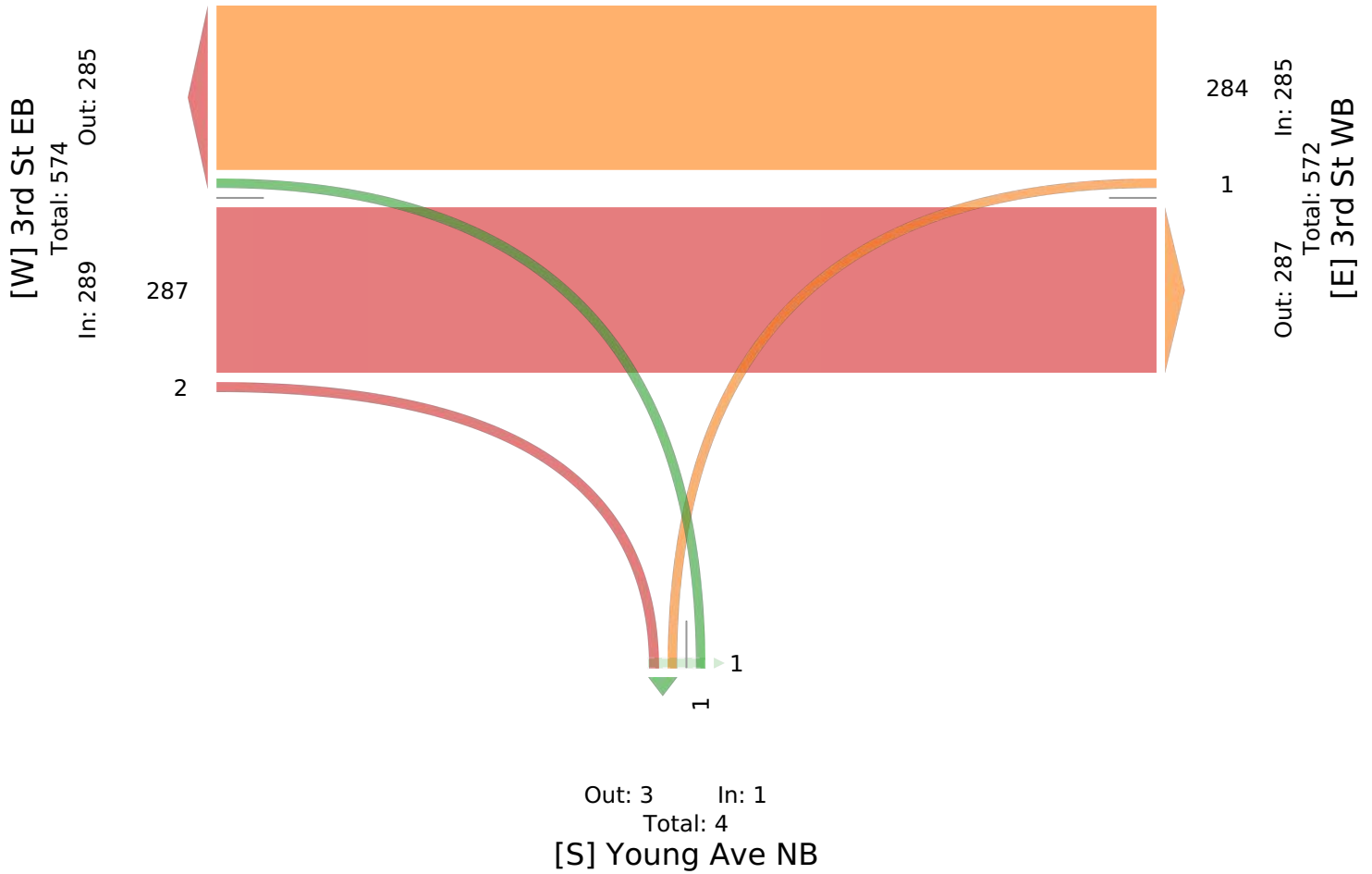
Midday Peak (Jul 16 2024 12:45PM - 1:45 PM)

All Classes (Motorcycles, Lights, Single-Unit Trucks, Articulated Trucks, Buses, Pedestrians, Bicycles on Crosswalk)

All Movements

ID: 1207815, Location: 39.752603, -84.233688

Provided by: Crawford Murphy & Tilly Inc.  
(CMT) : Columbus OH  
8101 N. High Street, Columbus, OH, 43235, US



**3rd and Young - TMC**

Tue Jul 16, 2024

PM Peak (Jul 16 2024 3:45PM - 4:45 PM) - Overall Peak Hour

All Classes (Motorcycles, Lights, Single-Unit Trucks, Articulated Trucks, Buses, Pedestrians, Bicycles on Crosswalk)

All Movements

ID: 1207815, Location: 39.752603, -84.233688

Provided by: Crawford Murphy & Tilly Inc.

(CMT) : Columbus OH

8101 N. High Street, Columbus, OH, 43235, US

Leg Direction	3rd St WB Westbound					Young Ave NB Northbound					3rd St EB Eastbound					
Time	T	L	U	App	Ped*	R	L	U	App	Ped*	R	T	U	App	Ped*	Int
2024-07-16 3:45PM	82	0	0	82	0	0	0	0	0	1	0	69	0	69	0	151
4:00PM	85	0	0	85	0	2	0	0	2	0	0	76	0	76	0	163
4:15PM	89	0	0	89	0	1	0	0	1	0	0	56	0	56	0	146
4:30PM	93	0	0	93	0	3	0	0	3	0	0	74	0	74	0	170
<b>Total</b>	349	0	0	349	0	6	0	0	6	1	0	275	0	275	0	630
<b>% Approach</b>	100%	0%	0%	-	-	100%	0%	0%	-	-	0%	100%	0%	-	-	-
<b>% Total</b>	55.4%	0%	0%	55.4%	-	1.0%	0%	0%	1.0%	-	0%	43.7%	0%	43.7%	-	-
<b>PHF</b>	0.938	-	-	0.938	-	0.500	-	-	0.500	-	-	0.905	-	0.905	-	0.926
<b>Motorcycles</b>	2	0	0	2	-	0	0	0	0	-	0	2	0	2	-	4
<b>% Motorcycles</b>	0.6%	0%	0%	0.6%	-	0%	0%	0%	0%	-	0%	0.7%	0%	0.7%	-	0.6%
<b>Lights</b>	341	0	0	341	-	6	0	0	6	-	0	266	0	266	-	613
<b>% Lights</b>	97.7%	0%	0%	97.7%	-	100%	0%	0%	100%	-	0%	96.7%	0%	96.7%	-	97.3%
<b>Single-Unit Trucks</b>	2	0	0	2	-	0	0	0	0	-	0	3	0	3	-	5
<b>% Single-Unit Trucks</b>	0.6%	0%	0%	0.6%	-	0%	0%	0%	0%	-	0%	1.1%	0%	1.1%	-	0.8%
<b>Articulated Trucks</b>	0	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0
<b>% Articulated Trucks</b>	0%	0%	0%	0%	-	0%	0%	0%	0%	-	0%	0%	0%	0%	-	0%
<b>Buses</b>	4	0	0	4	-	0	0	0	0	-	0	4	0	4	-	8
<b>% Buses</b>	1.1%	0%	0%	1.1%	-	0%	0%	0%	0%	-	0%	1.5%	0%	1.5%	-	1.3%
<b>Pedestrians</b>	-	-	-	-	0	-	-	-	-	1	-	-	-	-	0	-
<b>% Pedestrians</b>	-	-	-	-	-	-	-	-	-	100%	-	-	-	-	-	-
<b>Bicycles on Crosswalk</b>	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-
<b>% Bicycles on Crosswalk</b>	-	-	-	-	-	-	-	-	-	0%	-	-	-	-	-	-

\* Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, T: Thru, U: U-Turn

**3rd and Young - TMC**

Tue Jul 16, 2024

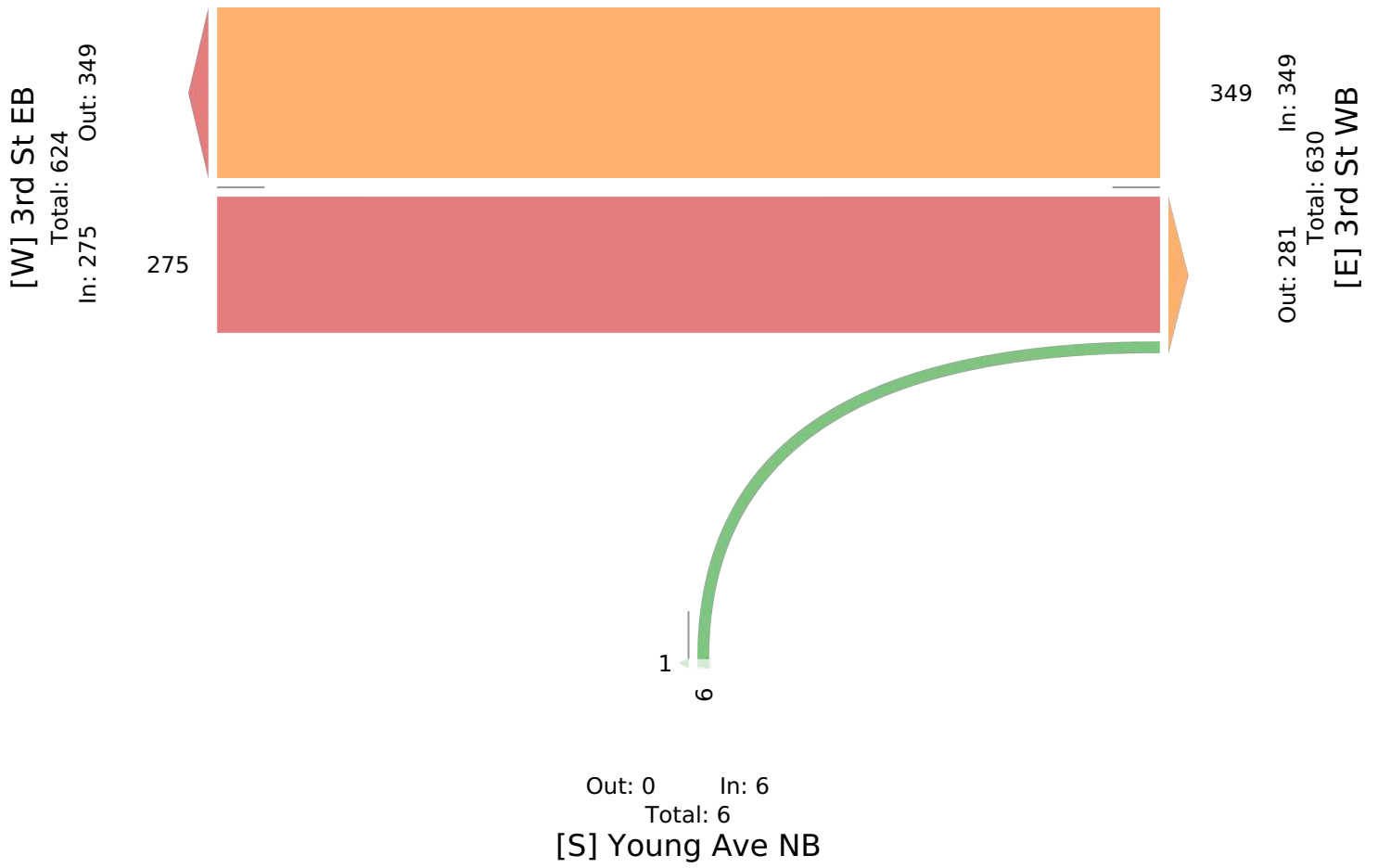
PM Peak (Jul 16 2024 3:45PM - 4:45 PM) - Overall Peak Hour

All Classes (Motorcycles, Lights, Single-Unit Trucks, Articulated Trucks, Buses, Pedestrians, Bicycles on Crosswalk)

All Movements

ID: 1207815, Location: 39.752603, -84.233688

Provided by: Crawford Murphy & Tilly Inc.  
(CMT) : Columbus OH  
8101 N. High Street, Columbus, OH, 43235, US



**3rd and Abbey/Brooklyn - TMC**

Tue Jul 16, 2024

Full Length (10 AM-7 PM, 6 AM-10 AM)

All Classes (Motorcycles, Lights, Single-Unit Trucks, Articulated Trucks, Buses, Pedestrians, Bicycles on Crosswalk)

All Movements

ID: 1207814, Location: 39.751588, -84.239994

Provided by: Crawford Murphy & Tilly Inc. (CMT) :

Columbus OH

8101 N. High Street, Columbus, OH, 43235, US

Leg Direction	Brooklyn Ave SB Southbound						3rd St WB Westbound						Abbey Ave NB Northbound						3rd St EB Eastbound						Int
	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	
2024-07-16 10:00AM	3	20	3	0	26	0	1	30	7	0	38	1	10	24	15	0	49	0	15	37	0	0	52	0	165
10:15AM	2	23	3	0	28	0	0	33	7	0	40	0	8	17	8	0	33	0	16	38	6	0	60	0	161
10:30AM	5	21	3	0	29	0	1	42	8	0	51	1	12	13	15	0	40	0	25	46	9	0	80	0	200
10:45AM	4	30	3	0	37	0	1	47	7	0	55	0	14	25	17	0	56	0	13	46	5	0	64	0	212
Hourly Total	14	94	12	0	120	0	3	152	29	0	184	2	44	79	55	0	178	0	69	167	20	0	256	0	738
11:00AM	7	33	3	0	43	1	2	37	8	0	47	1	11	19	11	0	41	2	9	50	3	0	62	0	193
11:15AM	4	21	3	0	28	0	0	36	10	0	46	2	9	35	7	0	51	1	25	48	7	0	80	0	205
11:30AM	3	31	1	0	35	0	1	32	11	0	44	0	11	16	8	0	35	2	13	37	3	0	53	0	167
11:45AM	4	24	3	0	31	1	0	36	7	0	43	0	9	32	12	0	53	0	21	42	4	0	67	0	194
Hourly Total	18	109	10	0	137	2	3	141	36	0	180	3	40	102	38	0	180	5	68	177	17	0	262	0	759
12:00PM	8	23	3	0	34	0	1	42	6	0	49	0	6	23	19	0	48	1	29	47	3	0	79	0	210
12:15PM	1	26	1	0	28	2	0	39	11	0	50	1	8	32	22	0	62	0	24	49	8	0	81	0	221
12:30PM	3	29	2	0	34	0	2	42	7	0	51	2	11	32	7	0	50	0	23	58	2	0	83	1	218
12:45PM	3	36	5	0	44	0	3	57	11	0	71	0	8	36	19	0	63	0	18	44	2	0	64	0	242
Hourly Total	15	114	11	0	140	2	6	180	35	0	221	3	33	123	67	0	223	1	94	198	15	0	307	1	891
1:00PM	7	31	3	0	41	0	1	37	11	0	49	0	10	27	13	0	50	0	17	46	2	0	65	1	205
1:15PM	9	35	2	0	46	0	0	54	7	0	61	0	11	23	15	0	49	0	24	50	8	0	82	0	238
1:30PM	6	29	6	0	41	0	0	39	13	0	52	1	10	37	11	0	58	0	20	50	7	0	77	0	228
1:45PM	4	21	2	0	27	0	1	56	10	0	67	3	11	26	13	0	50	3	19	41	2	0	62	0	206
Hourly Total	26	116	13	0	155	0	2	186	41	0	229	4	42	113	52	0	207	3	80	187	19	0	286	1	877
2:00PM	5	26	0	0	31	3	0	51	4	0	55	0	10	25	7	0	42	0	15	40	7	0	62	3	190
2:15PM	5	28	2	0	35	2	1	35	11	0	47	0	7	39	16	0	62	0	16	40	5	0	61	1	205
2:30PM	3	34	2	0	39	0	3	47	12	0	62	2	9	29	15	0	53	1	28	44	3	0	75	0	229
2:45PM	1	36	0	0	37	0	1	59	8	0	68	0	8	36	14	0	58	0	20	61	5	0	86	0	249
Hourly Total	14	124	4	0	142	5	5	192	35	0	232	2	34	129	52	0	215	1	79	185	20	0	284	4	873
3:00PM	8	30	2	0	40	2	3	50	8	0	61	0	7	53	12	0	72	0	26	47	10	0	83	1	256
3:15PM	6	34	2	0	42	1	0	50	9	0	59	0	14	50	10	0	74	0	24	42	9	0	75	0	250
3:30PM	6	44	2	0	52	0	0	62	10	0	72	0	11	57	14	0	82	0	19	54	5	0	78	0	284
3:45PM	5	40	5	0	50	0	2	63	5	0	70	1	7	45	20	0	72	0	22	49	9	0	80	0	272
Hourly Total	25	148	11	0	184	3	5	225	32	0	262	1	39	205	56	0	300	0	91	192	33	0	316	1	1062
4:00PM	5	35	2	0	42	6	1	54	11	0	66	0	15	50	26	0	91	2	24	57	9	0	90	4	289
4:15PM	1	37	1	0	39	0	0	62	8	0	70	0	6	46	16	0	68	0	20	42	11	0	73	4	250
4:30PM	7	43	2	0	52	0	1	67	9	0	77	2	9	41	21	0	71	0	22	60	5	0	87	0	287
4:45PM	2	30	1	0	33	1	0	57	8	0	65	0	8	43	14	0	65	0	14	47	8	0	69	1	232
Hourly Total	15	145	6	0	166	7	2	240	36	0	278	2	38	180	77	0	295	2	80	206	33	0	319	9	1058
5:00PM	5	44	1	0	50	0	1	69	10	0	80	0	11	34	12	0	57	0	18	53	4	0	75	0	262
5:15PM	6	37	1	0	44	3	1	56	10	0	67	0	18	38	19	0	75	0	21	46	5	0	72	0	258
5:30PM	7	33	3	0	43	0	1	61	10	0	72	0	5	27	18	0	50	0	21	45	7	0	73	0	238
5:45PM	5	25	3	0	33	1	1	62	14	0	77	0	8	42	12	0	62	2	17	40	6	0	63	1	235
Hourly Total	23	139	8	0	170	4	4	248	44	0	296	0	42	141	61	0	244	2	77	184	22	0	283	1	993
6:00PM	11	30	0	0	41	0	3	46	6	0	55	0	8	40	18	0	66	0	18	44	2	0	64	0	226
6:15PM	6	34	1	0	41	1	1	45	12	0	58	2	7	25	22	0	54	0	16	33	7	0	56	0	209
6:30PM	7	35	3	0	45	2	0	53	9	0	62	3	12	31	16	0	59	0	16	43	4	0	63	1	229
6:45PM	5	22	2	0	29	0	1	32	7	0	40	0	4	32	18	0	54	0	12	33	7	0	52	0	175
Hourly Total	29	121	6	0	156	3	5	176	34	0	215	5	31	128	74	0	233	0	62	153	20	0	235	1	839
2024-07-17 6:00AM	0	14	0	0	14	1	0	8	7	0	15	0	5	11	5	0	21	1	6	7	0	0	13	0	63
6:15AM	3	6	0	0	9	0	0	7	3	0	10	0	5	11	5	0	21	0	7	11	0	0	18	0	58
6:30AM	4	24	1	0	29	0	0	10	2	0	12	0	1	17	5	0	23	0	19	17	1	0	37	0	101
6:45AM	1	21	0	0	22	0	0	13	10	0	23	0	4	20	5	0	29	0	11	14	0	0	25	0	99
Hourly Total	8	65	1	0	74	1	0	38	22	0	60	0	15	59	20	0	94	1	43	49	1	0	93	0	321
7:00AM	2	15	1	0	18	1	0	12	4	0	16	0	2	26	10	0	38	0	11	15	0	0	26	1	98
7:15AM	1	18	2	0	21	2	0	18	7	0	25	0	7	22	4	0	33	0	14	24	0	0	38	2	117
7:30AM	2	34	0	0	36	0	0	22	2	0	24	0	6	16	3	0	25	0	14	21	1	0	36	0	121
7:45AM	2	30	2	0	34	0	0	32	9	0	41	0	8	21	16	0	45	0	17	30	0	0	47	1	167
Hourly Total	7	97	5	0	109	3	0	84	22	0	106	0	23	85	33	0	141	0	56	90	1	0	147	4	503
8:00AM	2	29	0	0	31	1	0	17	6	0	23	1	7	24	13	0	44	0	17	30	1	0	48	0	146
8:15AM	4	23	3	0	30	0	0	21	4	0	25	0	3	17	6	0	26	0	19	28	1	0	48	0	129
8:30AM	2	32	4	0	38	2	0	23	14	0	37	0	6	24	11	0	41	0	17	32	2	0	51	0	167
8:45AM	2	27	4	0	33	4	0	30	7	0	37	0	5	19	5	0	29	0	14	25	3	0	42	1	141

Leg Direction	Brooklyn Ave SB Southbound						3rd St WB Westbound						Abbey Ave NB Northbound						3rd St EB Eastbound						
Time	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	Int
Hourly Total	10	111	11	0	132	7	0	91	31	0	122	1	21	84	35	0	140	0	67	115	7	0	189	1	583
9:00AM	1	21	2	0	24	2	0	27	4	0	31	0	5	26	7	0	38	0	14	27	1	0	42	1	135
9:15AM	1	28	3	0	32	0	0	26	11	0	37	0	11	30	8	0	49	0	13	35	0	0	48	0	166
9:30AM	4	20	4	0	28	0	3	33	5	0	41	0	1	24	10	0	35	0	16	39	4	0	59	0	163
9:45AM	1	28	0	0	29	2	1	33	16	0	50	0	11	22	11	0	44	0	15	41	5	0	61	0	184
Hourly Total	7	97	9	0	113	4	4	119	36	0	159	0	28	102	36	0	166	0	58	142	10	0	210	1	648
<b>Total</b>	211	1480	107	0	1798	41	39	2072	433	0	2544	23	430	1530	656	0	2616	15	924	2045	218	0	3187	24	10145
<b>% Approach</b>	11.7%	82.3%	6.0%	0%	-	-	1.5%	81.4%	17.0%	0%	-	-	16.4%	58.5%	25.1%	0%	-	-	29.0%	64.2%	6.8%	0%	-	-	-
<b>% Total</b>	2.1%	14.6%	1.1%	0%	17.7%	-	0.4%	20.4%	4.3%	0%	25.1%	-	4.2%	15.1%	6.5%	0%	25.8%	-	9.1%	20.2%	2.1%	0%	31.4%	-	-
<b>Motorcycles</b>	0	0	0	0	0	-	1	22	7	0	30	-	3	2	2	0	7	-	1	23	0	0	24	-	61
<b>% Motorcycles</b>	0%	0%	0%	0%	0%	-	2.6%	1.1%	1.6%	0%	1.2%	-	0.7%	0.1%	0.3%	0%	0.3%	-	0.1%	1.1%	0%	0%	0.8%	-	0.6%
<b>Lights</b>	206	1445	102	0	1753	-	38	1985	414	0	2437	-	413	1472	631	0	2516	-	912	1955	211	0	3078	-	9784
<b>% Lights</b>	97.6%	97.6%	95.3%	0%	97.5%	-	97.4%	95.8%	95.6%	0%	95.8%	-	96.0%	96.2%	96.2%	0%	96.2%	-	98.7%	95.6%	96.8%	0%	96.6%	-	96.4%
<b>Single-Unit Trucks</b>	5	30	4	0	39	-	0	30	9	0	39	-	11	46	19	0	76	-	5	37	5	0	47	-	201
<b>% Single-Unit Trucks</b>	2.4%	2.0%	3.7%	0%	2.2%	-	0%	1.4%	2.1%	0%	1.5%	-	2.6%	3.0%	2.9%	0%	2.9%	-	0.5%	1.8%	2.3%	0%	1.5%	-	2.0%
<b>Articulated Trucks</b>	0	0	0	0	0	-	0	5	0	0	5	-	0	3	3	0	6	-	5	3	1	0	9	-	20
<b>% Articulated Trucks</b>	0%	0%	0%	0%	0%	-	0%	0.2%	0%	0%	0.2%	-	0%	0.2%	0.5%	0%	0.2%	-	0.5%	0.1%	0.5%	0%	0.3%	-	0.2%
<b>Buses</b>	0	5	1	0	6	-	0	30	3	0	33	-	3	7	1	0	11	-	1	27	1	0	29	-	79
<b>% Buses</b>	0%	0.3%	0.9%	0%	0.3%	-	0%	1.4%	0.7%	0%	1.3%	-	0.7%	0.5%	0.2%	0%	0.4%	-	0.1%	1.3%	0.5%	0%	0.9%	-	0.8%
Pedestrians	-	-	-	-	-	38	-	-	-	-	-	21	-	-	-	-	-	14	-	-	-	-	-	22	
% Pedestrians	-	-	-	-	-	92.7%	-	-	-	-	-	91.3%	-	-	-	-	-	93.3%	-	-	-	-	-	91.7%	-
Bicycles on Crosswalk	-	-	-	-	-	3	-	-	-	-	-	2	-	-	-	-	-	1	-	-	-	-	-	2	
% Bicycles on Crosswalk	-	-	-	-	-	7.3%	-	-	-	-	-	8.7%	-	-	-	-	-	6.7%	-	-	-	-	-	8.3%	-

\*Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, T: Thru, U: U-Turn

**3rd and Abbey/Brooklyn - TMC**

Tue Jul 16, 2024

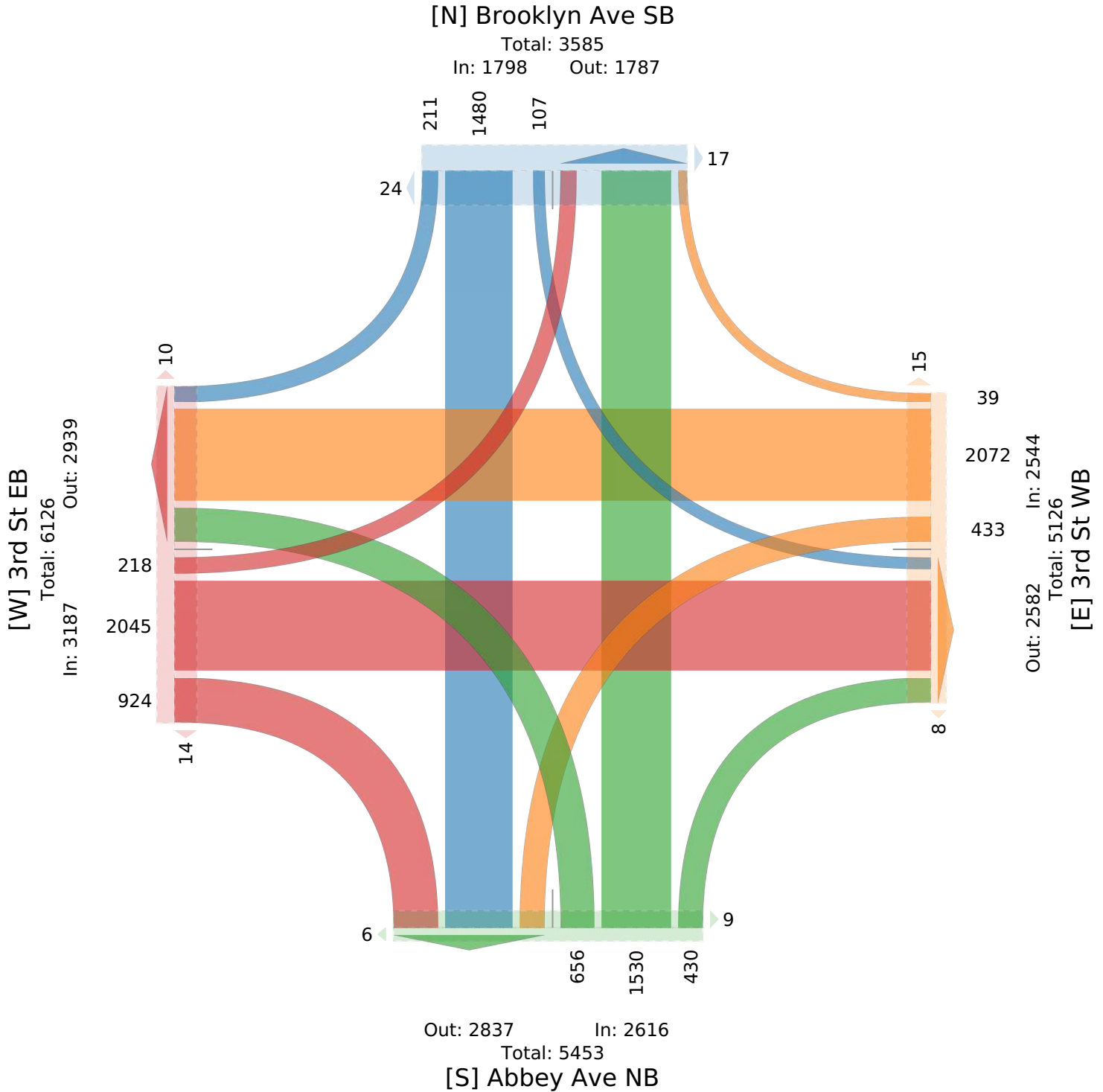
Full Length (10 AM-7 PM, 6 AM-10 AM)

All Classes (Motorcycles, Lights, Single-Unit Trucks, Articulated Trucks, Buses, Pedestrians, Bicycles on Crosswalk)

All Movements

ID: 1207814, Location: 39.751588, -84.239994

Provided by: Crawford Murphy & Tilly Inc.  
(CMT) : Columbus OH  
8101 N. High Street, Columbus, OH, 43235, US



**3rd and Abbey/Brooklyn - TMC**

Tue Jul 16, 2024

AM Peak (Jul 16 2024 10AM - 11 AM)

All Classes (Motorcycles, Lights, Single-Unit Trucks, Articulated Trucks, Buses, Pedestrians, Bicycles on Crosswalk)

All Movements

ID: 1207814, Location: 39.751588, -84.239994

Provided by: Crawford Murphy & Tilly Inc. (CMT)

: Columbus OH

8101 N. High Street, Columbus, OH, 43235, US

Leg Direction	Brooklyn Ave SB Southbound						3rd St WB Westbound						Abbey Ave NB Northbound						3rd St EB Eastbound						Int
	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	
2024-07-16 10:00AM	3	20	3	0	26	0	1	30	7	0	38	1	10	24	15	0	49	0	15	37	0	0	52	0	165
10:15AM	2	23	3	0	28	0	0	33	7	0	40	0	8	17	8	0	33	0	16	38	6	0	60	0	161
10:30AM	5	21	3	0	29	0	1	42	8	0	51	1	12	13	15	0	40	0	25	46	9	0	80	0	200
10:45AM	4	30	3	0	37	0	1	47	7	0	55	0	14	25	17	0	56	0	13	46	5	0	64	0	212
<b>Total</b>	14	94	12	0	120	0	3	152	29	0	184	2	44	79	55	0	178	0	69	167	20	0	256	0	738
<b>% Approach</b>	11.7%	78.3%	10.0%	0%	-	-	1.6%	82.6%	15.8%	0%	-	-	24.7%	44.4%	30.9%	0%	-	-	27.0%	65.2%	7.8%	0%	-	-	-
<b>% Total</b>	1.9%	12.7%	1.6%	0%	16.3%	-	0.4%	20.6%	3.9%	0%	24.9%	-	6.0%	10.7%	7.5%	0%	24.1%	-	9.3%	22.6%	2.7%	0%	34.7%	-	-
<b>PHF</b>	0.700	0.783	1.000	-	0.811	-	0.750	0.809	0.906	-	0.836	-	0.786	0.790	0.809	-	0.795	-	0.690	0.908	0.556	-	0.800	-	0.870
<b>Motorcycles</b>	0	0	0	0	0	-	0	1	0	0	1	-	0	0	0	0	0	-	0	3	0	0	3	-	4
<b>% Motorcycles</b>	0%	0%	0%	0%	0%	-	0%	0.7%	0%	0%	0.5%	-	0%	0%	0%	0%	0%	-	0%	1.8%	0%	0%	1.2%	-	0.5%
<b>Lights</b>	13	92	12	0	117	-	3	145	27	0	175	-	42	78	54	0	174	-	67	159	18	0	244	-	710
<b>% Lights</b>	92.9%	97.9%	100%	0%	97.5%	-	100%	95.4%	93.1%	0%	95.1%	-	95.5%	98.7%	98.2%	0%	97.8%	-	97.1%	95.2%	90.0%	0%	95.3%	-	96.2%
<b>Single-Unit Trucks</b>	1	2	0	0	3	-	0	3	2	0	5	-	1	1	1	0	3	-	1	3	2	0	6	-	17
<b>% Single-Unit Trucks</b>	7.1%	2.1%	0%	0%	2.5%	-	0%	2.0%	6.9%	0%	2.7%	-	2.3%	1.3%	1.8%	0%	1.7%	-	1.4%	1.8%	10.0%	0%	2.3%	-	2.3%
<b>Articulated Trucks</b>	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	1	0	0	0	1	-	1
<b>% Articulated Trucks</b>	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	1.4%	0%	0%	0%	0.4%	-	0.1%
<b>Buses</b>	0	0	0	0	0	-	0	3	0	0	3	-	1	0	0	0	1	-	0	2	0	0	2	-	6
<b>% Buses</b>	0%	0%	0%	0%	0%	-	0%	2.0%	0%	0%	1.6%	-	2.3%	0%	0%	0%	0.6%	-	0%	1.2%	0%	0%	0.8%	-	0.8%
<b>Pedestrians</b>	-	-	-	-	-	0	-	-	-	-	-	2	-	-	-	-	-	0	-	-	-	-	-	0	-
<b>% Pedestrians</b>	-	-	-	-	-	-	-	-	-	-	-	100%	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>Bicycles on Crosswalk</b>	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-
<b>% Bicycles on Crosswalk</b>	-	-	-	-	-	-	-	-	-	-	-	0%	-	-	-	-	-	-	-	-	-	-	-	-	-

\* Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, T: Thru, U: U-Turn

**3rd and Abbey/Brooklyn - TMC**

Tue Jul 16, 2024

AM Peak (Jul 16 2024 10AM - 11 AM)

All Classes (Motorcycles, Lights, Single-Unit Trucks, Articulated Trucks, Buses, Pedestrians, Bicycles on Crosswalk)

All Movements

ID: 1207814, Location: 39.751588, -84.239994

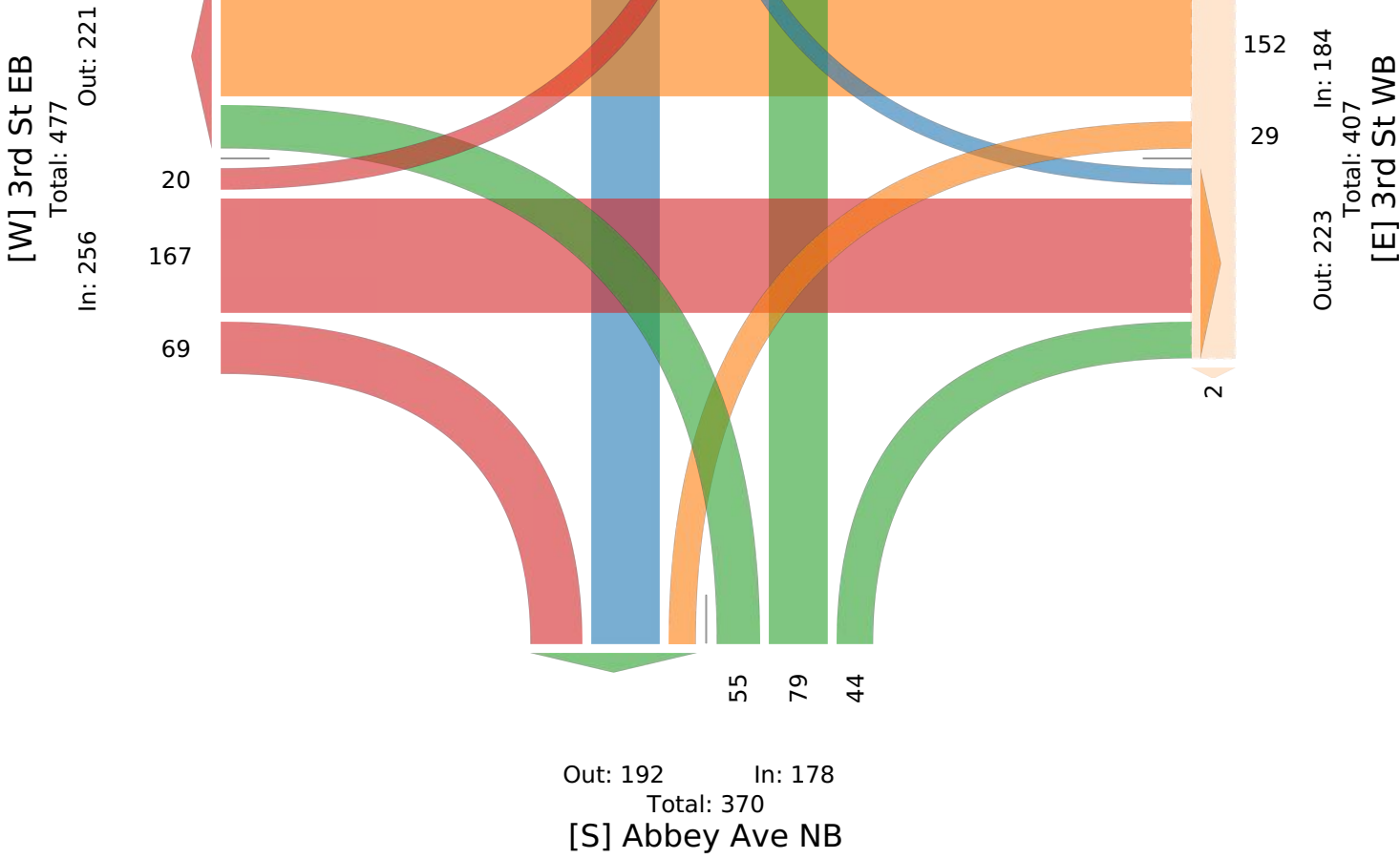
Provided by: Crawford Murphy & Tilly Inc.  
(CMT) : Columbus OH  
8101 N. High Street, Columbus, OH, 43235, US

**[N] Brooklyn Ave SB**

Total: 222

In: 120 Out: 102

14 94 12



**3rd and Abbey/Brooklyn - TMC**

Tue Jul 16, 2024

Midday Peak (Jul 16 2024 12:45PM - 1:45 PM)

All Classes (Motorcycles, Lights, Single-Unit Trucks, Articulated Trucks, Buses, Pedestrians, Bicycles on Crosswalk)

All Movements

ID: 1207814, Location: 39.751588, -84.239994

Provided by: Crawford Murphy & Tilly Inc. (CMT)

: Columbus OH

8101 N. High Street, Columbus, OH, 43235, US

Leg Direction	Brooklyn Ave SB Southbound						3rd St WB Westbound						Abbey Ave NB Northbound						3rd St EB Eastbound						Int
	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	
2024-07-16 12:45PM	3	36	5	0	<b>44</b>	0	3	57	11	0	<b>71</b>	0	8	36	19	0	<b>63</b>	0	18	44	2	0	<b>64</b>	0	<b>242</b>
1:00PM	7	31	3	0	<b>41</b>	0	1	37	11	0	<b>49</b>	0	10	27	13	0	<b>50</b>	0	17	46	2	0	<b>65</b>	1	<b>205</b>
1:15PM	9	35	2	0	<b>46</b>	0	0	54	7	0	<b>61</b>	0	11	23	15	0	<b>49</b>	0	24	50	8	0	<b>82</b>	0	<b>238</b>
1:30PM	6	29	6	0	<b>41</b>	0	0	39	13	0	<b>52</b>	1	10	37	11	0	<b>58</b>	0	20	50	7	0	<b>77</b>	0	<b>228</b>
<b>Total</b>	25	131	16	0	<b>172</b>	0	4	187	42	0	<b>233</b>	1	39	123	58	0	<b>220</b>	0	79	190	19	0	<b>288</b>	1	<b>913</b>
<b>% Approach</b>	14.5%	76.2%	9.3%	0%	-	-	1.7%	80.3%	18.0%	0%	-	-	17.7%	55.9%	26.4%	0%	-	-	27.4%	66.0%	6.6%	0%	-	-	-
<b>% Total</b>	2.7%	14.3%	1.8%	0%	<b>18.8%</b>	-	0.4%	20.5%	4.6%	0%	<b>25.5%</b>	-	4.3%	13.5%	6.4%	0%	<b>24.1%</b>	-	8.7%	20.8%	2.1%	0%	<b>31.5%</b>	-	-
<b>PHF</b>	0.694	0.910	0.667	-	<b>0.935</b>	-	0.333	0.820	0.808	-	<b>0.820</b>	-	0.886	0.831	0.763	-	<b>0.873</b>	-	0.823	0.950	0.594	-	<b>0.878</b>	-	0.943
<b>Motorcycles</b>	0	0	0	0	<b>0</b>	-	0	2	0	0	<b>2</b>	-	0	0	0	0	<b>0</b>	-	0	0	0	0	<b>0</b>	-	2
<b>% Motorcycles</b>	0%	0%	0%	0%	<b>0%</b>	-	0%	1.1%	0%	0%	<b>0.9%</b>	-	0%	0%	0%	0%	<b>0%</b>	-	0%	0%	0%	0%	<b>0%</b>	-	0.2%
<b>Lights</b>	25	129	14	0	<b>168</b>	-	4	177	40	0	<b>221</b>	-	38	119	56	0	<b>213</b>	-	77	184	19	0	<b>280</b>	-	882
<b>% Lights</b>	100%	98.5%	87.5%	0%	<b>97.7%</b>	-	100%	94.7%	95.2%	0%	<b>94.8%</b>	-	97.4%	96.7%	96.6%	0%	<b>96.8%</b>	-	97.5%	96.8%	100%	0%	<b>97.2%</b>	-	96.6%
<b>Single-Unit Trucks</b>	0	2	2	0	<b>4</b>	-	0	4	1	0	<b>5</b>	-	1	3	2	0	<b>6</b>	-	0	4	0	0	<b>4</b>	-	19
<b>% Single-Unit Trucks</b>	0%	1.5%	12.5%	0%	<b>2.3%</b>	-	0%	2.1%	2.4%	0%	<b>2.1%</b>	-	2.6%	2.4%	3.4%	0%	<b>2.7%</b>	-	0%	2.1%	0%	0%	<b>1.4%</b>	-	2.1%
<b>Articulated Trucks</b>	0	0	0	0	<b>0</b>	-	0	1	0	0	<b>1</b>	-	0	0	0	0	<b>0</b>	-	2	0	0	0	<b>2</b>	-	3
<b>% Articulated Trucks</b>	0%	0%	0%	0%	<b>0%</b>	-	0%	0.5%	0%	0%	<b>0.4%</b>	-	0%	0%	0%	0%	<b>0%</b>	-	2.5%	0%	0%	0%	<b>0.7%</b>	-	0.3%
<b>Buses</b>	0	0	0	0	<b>0</b>	-	0	3	1	0	<b>4</b>	-	0	1	0	0	<b>1</b>	-	0	2	0	0	<b>2</b>	-	7
<b>% Buses</b>	0%	0%	0%	0%	<b>0%</b>	-	0%	1.6%	2.4%	0%	<b>1.7%</b>	-	0%	0.8%	0%	0%	<b>0.5%</b>	-	0%	1.1%	0%	0%	<b>0.7%</b>	-	0.8%
Pedestrians	-	-	-	-	-	0	-	-	-	-	-	1	-	-	-	-	-	0	-	-	-	-	-	1	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	100%	-	-	-	-	-	-	-	-	-	-	-	100%	-
Bicycles on Crosswalk	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	-	0%	-	-	-	-	-	-	-	-	-	-	-	0%	-

\*Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, T: Thru, U: U-Turn

**3rd and Abbey/Brooklyn - TMC**

Tue Jul 16, 2024

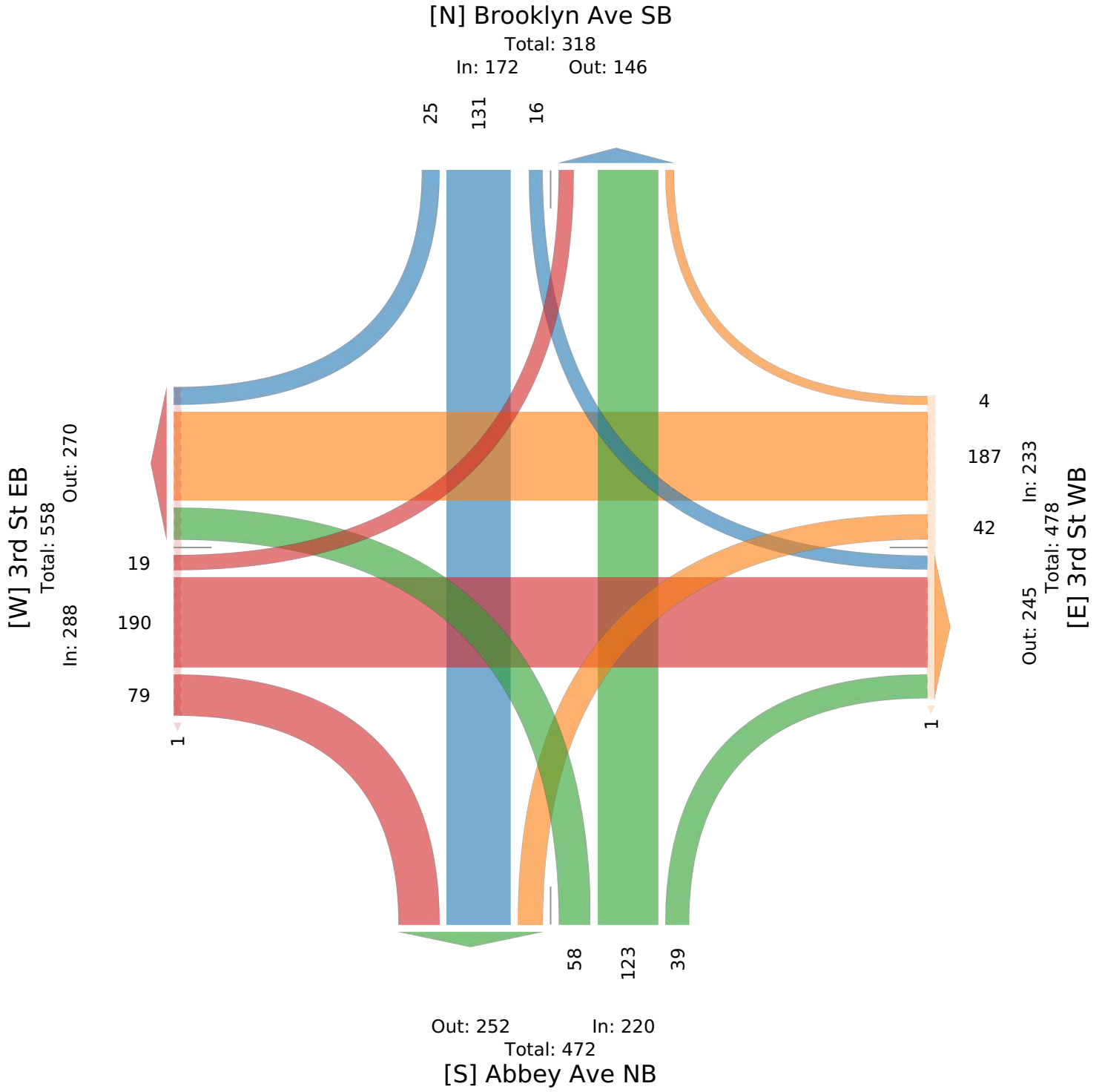
Midday Peak (Jul 16 2024 12:45PM - 1:45 PM)

All Classes (Motorcycles, Lights, Single-Unit Trucks, Articulated Trucks, Buses, Pedestrians, Bicycles on Crosswalk)

All Movements

ID: 1207814, Location: 39.751588, -84.239994

Provided by: Crawford Murphy & Tilly Inc.  
(CMT) : Columbus OH  
8101 N. High Street, Columbus, OH, 43235, US



**3rd and Abbey/Brooklyn - TMC**

Tue Jul 16, 2024

PM Peak (Jul 16 2024 3:45PM - 4:45 PM) - Overall Peak Hour

All Classes (Motorcycles, Lights, Single-Unit Trucks, Articulated Trucks, Buses, Pedestrians, Bicycles on Crosswalk)

All Movements

ID: 1207814, Location: 39.751588, -84.239994

Provided by: Crawford Murphy & Tilly Inc. (CMT) :

Columbus OH

8101 N. High Street, Columbus, OH, 43235, US

Leg Direction	Brooklyn Ave SB Southbound						3rd St WB Westbound						Abbey Ave NB Northbound						3rd St EB Eastbound						
Time	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	Int
2024-07-16 3:45PM	5	40	5	0	50	0	2	63	5	0	70	1	7	45	20	0	72	0	22	49	9	0	80	0	272
4:00PM	5	35	2	0	42	6	1	54	11	0	66	0	15	50	26	0	91	2	24	57	9	0	90	4	289
4:15PM	1	37	1	0	39	0	0	62	8	0	70	0	6	46	16	0	68	0	20	42	11	0	73	4	250
4:30PM	7	43	2	0	52	0	1	67	9	0	77	2	9	41	21	0	71	0	22	60	5	0	87	0	287
<b>Total</b>	18	155	10	0	183	6	4	246	33	0	283	3	37	182	83	0	302	2	88	208	34	0	330	8	1098
<b>% Approach</b>	9.8%	84.7%	5.5%	0%	-	-	1.4%	86.9%	11.7%	0%	-	-	12.3%	60.3%	27.5%	0%	-	-	26.7%	63.0%	10.3%	0%	-	-	-
<b>% Total</b>	1.6%	14.1%	0.9%	0%	16.7%	-	0.4%	22.4%	3.0%	0%	25.8%	-	3.4%	16.6%	7.6%	0%	27.5%	-	8.0%	18.9%	3.1%	0%	30.1%	-	-
<b>PHF</b>	0.643	0.901	0.500	-	0.880	-	0.500	0.918	0.750	-	0.919	-	0.617	0.910	0.798	-	0.830	-	0.917	0.867	0.773	-	0.917	-	0.950
<b>Motorcycles</b>	0	0	0	0	0	-	0	1	1	0	2	-	1	0	0	0	1	-	0	2	0	0	2	-	5
<b>% Motorcycles</b>	0%	0%	0%	0%	0%	-	0%	0.4%	3.0%	0%	0.7%	-	2.7%	0%	0%	0%	0.3%	-	0%	1.0%	0%	0%	0.6%	-	0.5%
<b>Lights</b>	16	150	10	0	176	-	4	241	32	0	277	-	34	173	83	0	290	-	86	201	33	0	320	-	1063
<b>% Lights</b>	88.9%	96.8%	100%	0%	96.2%	-	100%	98.0%	97.0%	0%	97.9%	-	91.9%	95.1%	100%	0%	96.0%	-	97.7%	96.6%	97.1%	0%	97.0%	-	96.8%
<b>Single-Unit Trucks</b>	2	4	0	0	6	-	0	1	0	0	1	-	2	8	0	0	10	-	1	3	1	0	5	-	22
<b>% Single-Unit Trucks</b>	11.1%	2.6%	0%	0%	3.3%	-	0%	0.4%	0%	0%	0.4%	-	5.4%	4.4%	0%	0%	3.3%	-	1.1%	1.4%	2.9%	0%	1.5%	-	2.0%
<b>Articulated Trucks</b>	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	1	0	0	0	1	-	1
<b>% Articulated Trucks</b>	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	1.1%	0%	0%	0%	0.3%	-	0.1%
<b>Buses</b>	0	1	0	0	1	-	0	3	0	0	3	-	0	1	0	0	1	-	0	2	0	0	2	-	7
<b>% Buses</b>	0%	0.6%	0%	0%	0.5%	-	0%	1.2%	0%	0%	1.1%	-	0%	0.5%	0%	0%	0.3%	-	0%	1.0%	0%	0%	0.6%	-	0.6%
<b>Pedestrians</b>	-	-	-	-	-	6	-	-	-	-	-	3	-	-	-	-	-	1	-	-	-	-	-	7	-
<b>% Pedestrians</b>	-	-	-	-	-	100%	-	-	-	-	-	100%	-	-	-	-	-	50.0%	-	-	-	-	-	87.5%	-
<b>Bicycles on Crosswalk</b>	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	1	-	-	-	-	-	1	-
<b>% Bicycles on Crosswalk</b>	-	-	-	-	-	0%	-	-	-	-	-	0%	-	-	-	-	-	50.0%	-	-	-	-	-	12.5%	-

\* Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, T: Thru, U: U-Turn

**3rd and Abbey/Brooklyn - TMC**

Tue Jul 16, 2024

PM Peak (Jul 16 2024 3:45PM - 4:45 PM) - Overall Peak Hour

All Classes (Motorcycles, Lights, Single-Unit Trucks, Articulated Trucks, Buses, Pedestrians, Bicycles on Crosswalk)

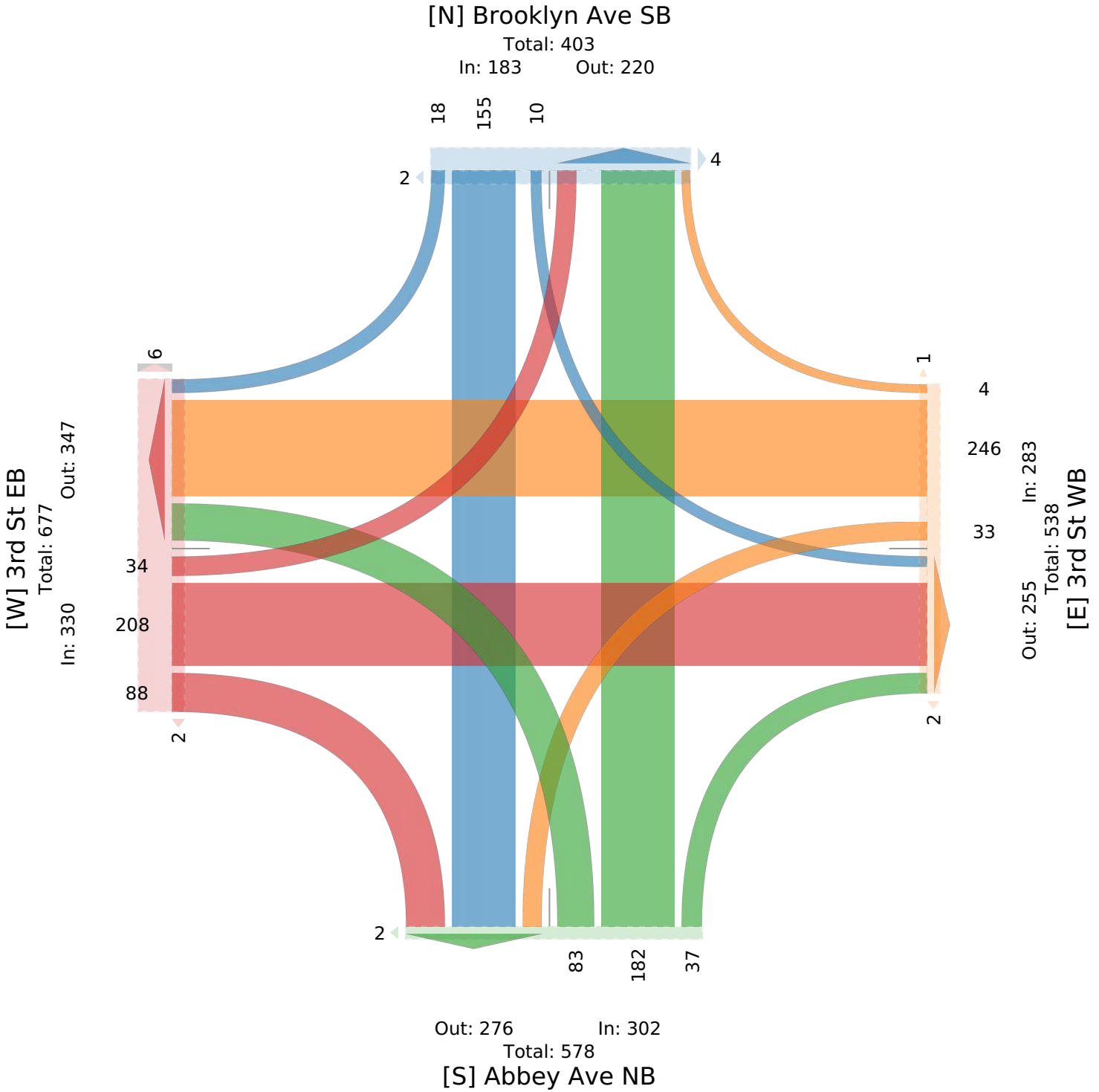
All Movements

ID: 1207814, Location: 39.751588, -84.239994

Provided by: Crawford Murphy & Tilly Inc.

(CMT) : Columbus OH

8101 N. High Street, Columbus, OH, 43235, US



# THIRD STREET TARGET SPEED EVALUATION

## APPENDIX D: DESIGN YEAR VOLUMES



**ADJUSTMENT FACTORS**

TFMS Growth Rates		Growth Factors	
Location	%/yr	21-yr	23-yr
Abbey (South Leg)	0.0%	1.00	1.00
Abbey (North Leg)	0.9%	1.19	1.21
JHM (from MVRPC)	0.0%	1.00	1.00
3rd St	0.0%	1.00	1.00
Young Ave*	0.0%	1.00	1.00

\*No TFMS rate due to local street, assume equals 3rd St rate (0%/year)

ODOT Pk-to-DHV Factor	
Location	Factor
3rd St (at JHM)	1.14
3rd St (other ints)	1.14
Abbey Ave	1.14
Young Ave*	1.14
JHM Blvd	1.14

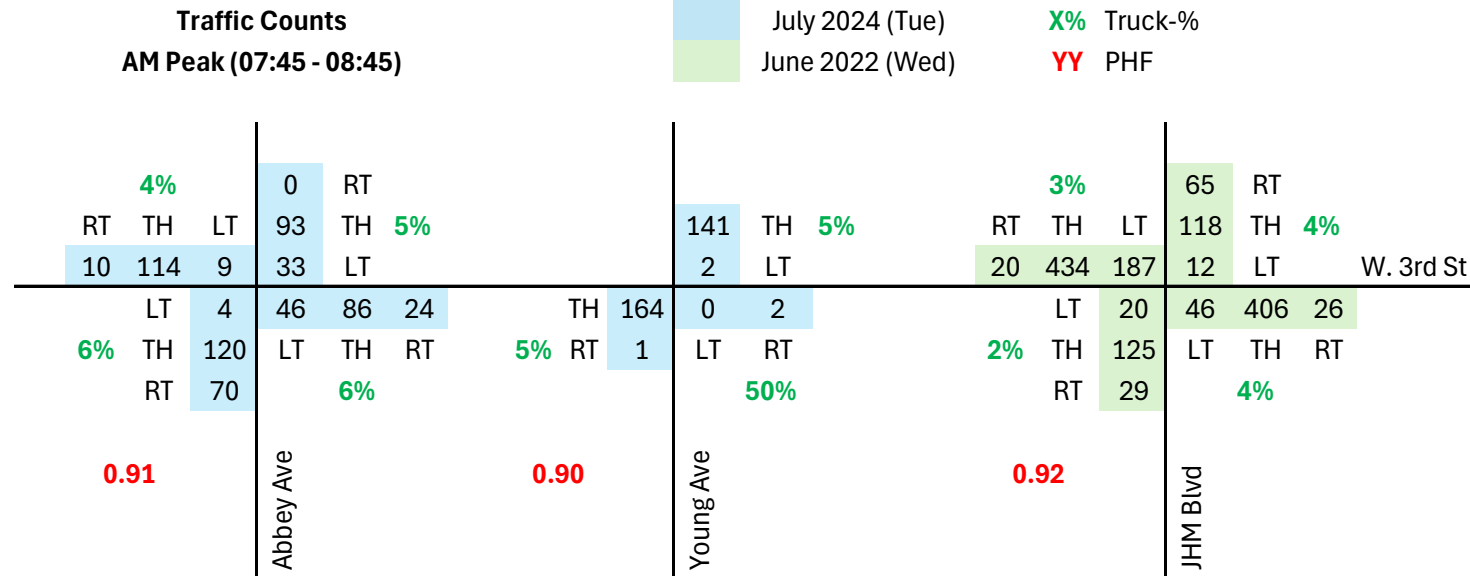
\*No ODOT factor, 1.14 is assumed to match 3rd St.

**Notes:**

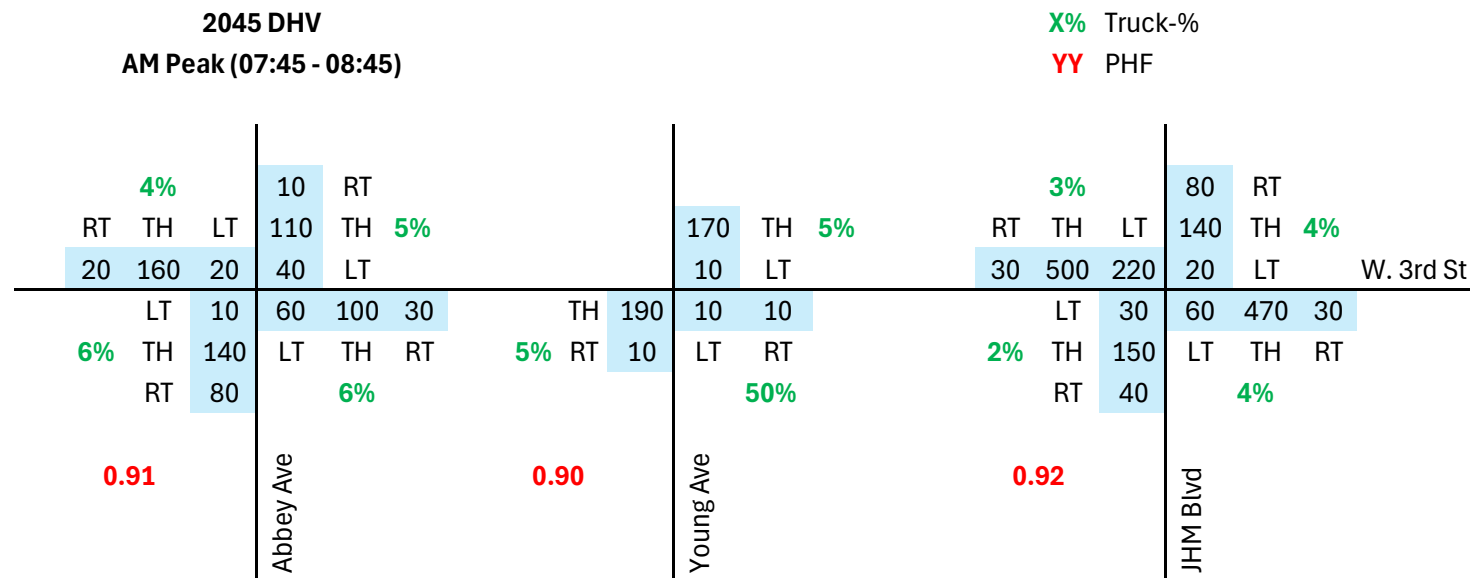
1. No balancing is performed between intersections due to driveways and intersections in between.

2. Developed 2045 DHVs are rounded up to the nearest 10 vehicles. 10 vehicles are assigned to movements with 0 vehicle.

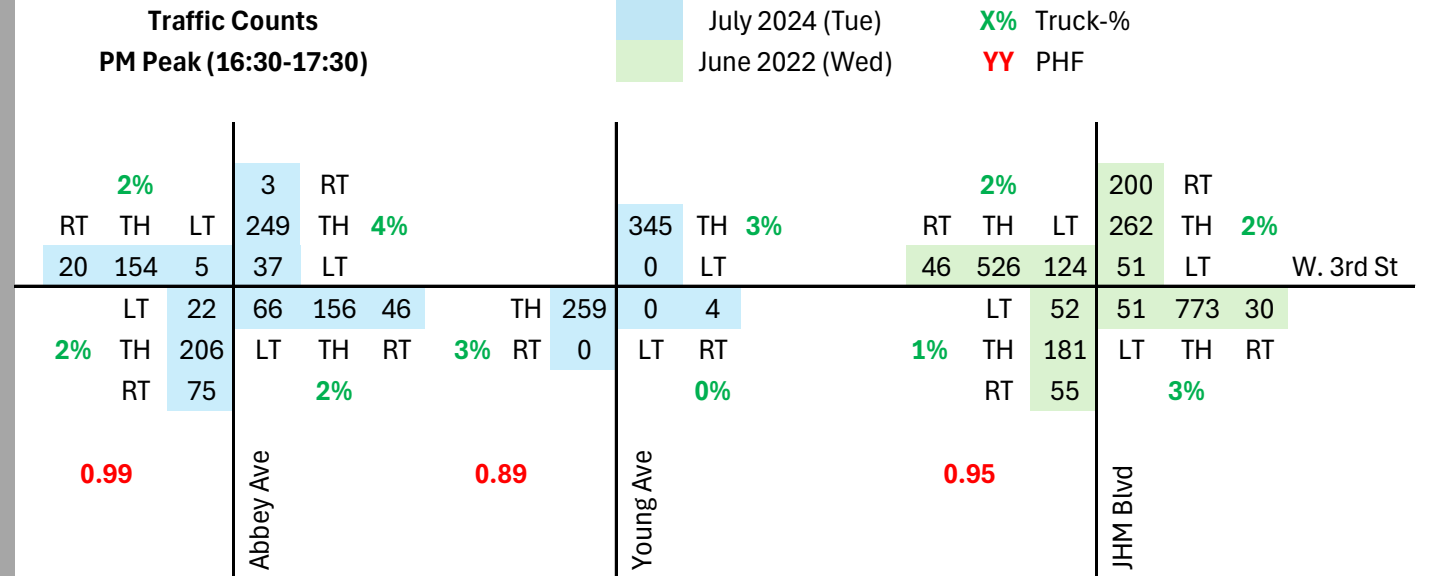
**Traffic Counts  
AM Peak (07:45 - 08:45)**



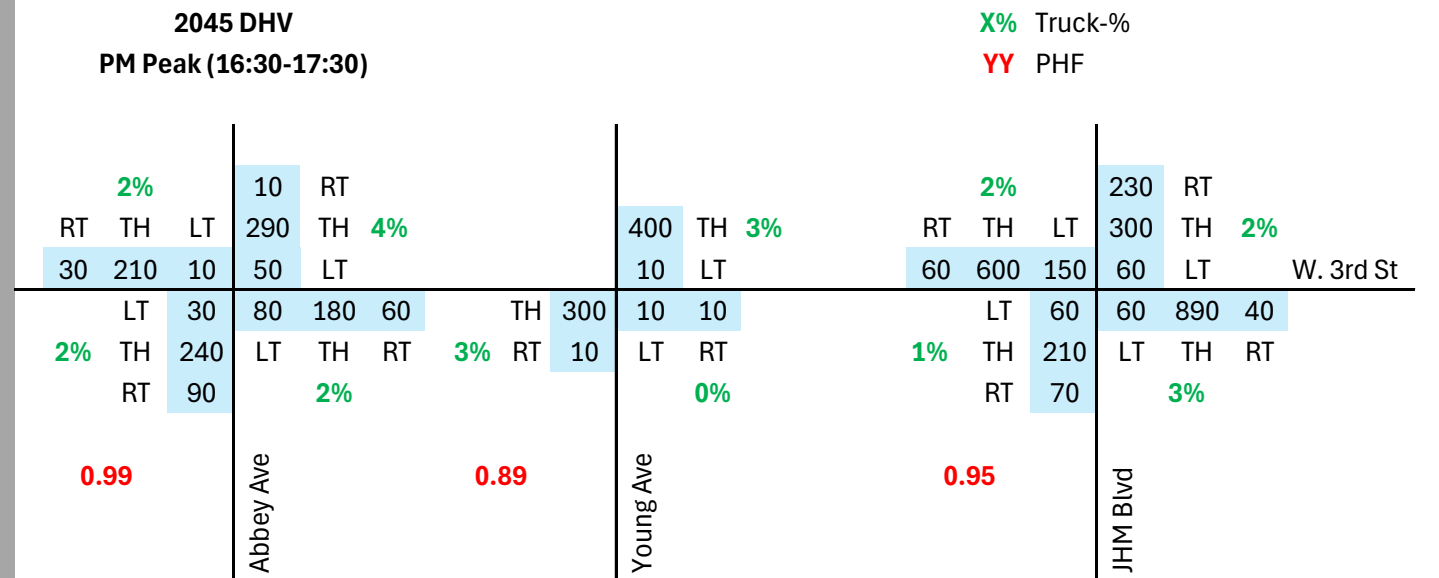
**2045 DHV  
AM Peak (07:45 - 08:45)**



**Traffic Counts  
PM Peak (16:30-17:30)**



**2045 DHV  
PM Peak (16:30-17:30)**



**PEAK HOUR to DESIGN HOUR FACTORS**  
**FUNCTIONAL CLASSIFICATION = 03, 04, 05u**  
 (Urban Principal Arterial, Urban Minor Arterial, & Urban Minor Collector)

Day Month	Monthly Average by Day-of-Week							
	WEEKDAY MON- THUR	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
January	1.25	1.81	1.27	1.25	1.25	1.23	1.18	1.61
February	1.23	1.78	1.26	1.23	1.23	1.19	1.17	1.58
March	1.18	1.63	1.20	1.18	1.17	1.17	1.12	1.47
April	1.13	1.57	1.15	1.14	1.12	1.11	1.08	1.42
May	1.10	1.47	1.12	1.10	1.10	1.07	1.06	1.35
June	1.14	1.51	1.16	1.14	1.14	1.11	1.10	1.40
July	1.14	1.54	1.16	1.14	1.13	1.14	1.11	1.45
August	1.12	1.49	1.14	1.14	1.12	1.10	1.06	1.41
September	1.12	1.53	1.15	1.13	1.13	1.09	1.05	1.42
October	1.12	1.54	1.15	1.12	1.11	1.10	1.05	1.42
November	1.16	1.63	1.17	1.15	1.15	1.15	1.08	1.52
December	1.16	1.61	1.18	1.16	1.16	1.13	1.10	1.50

**peak hour volume \* factor = design hour volume**

source: year 2018,2019,2021 Automatic Traffic Recorders (ATR) Data

ATR Stations:

2018: 15 Stations

2019: 21 Stations

2021: 22 Stations

Ohio Department of Transportation  
 Modeling & Forecasting Section  
 Nov 2022

**NOTE: These are NOT seasonal adjustment factors!!!**

Note: Insufficient data exists to produce factors for functional classes 06 and 07 Urban.

# TFMS - Segment Forecast Report

Username	Email	Script Import Date	Script Version	Model Version
Ghansel	ghansel@cmtengr.com	4/14/2020 5:30:19 PM	2020.001	2024.1900

## Forecast Summary

Project ID	Project Name	Opening Year	Design Year
		2025	2045

Project Description

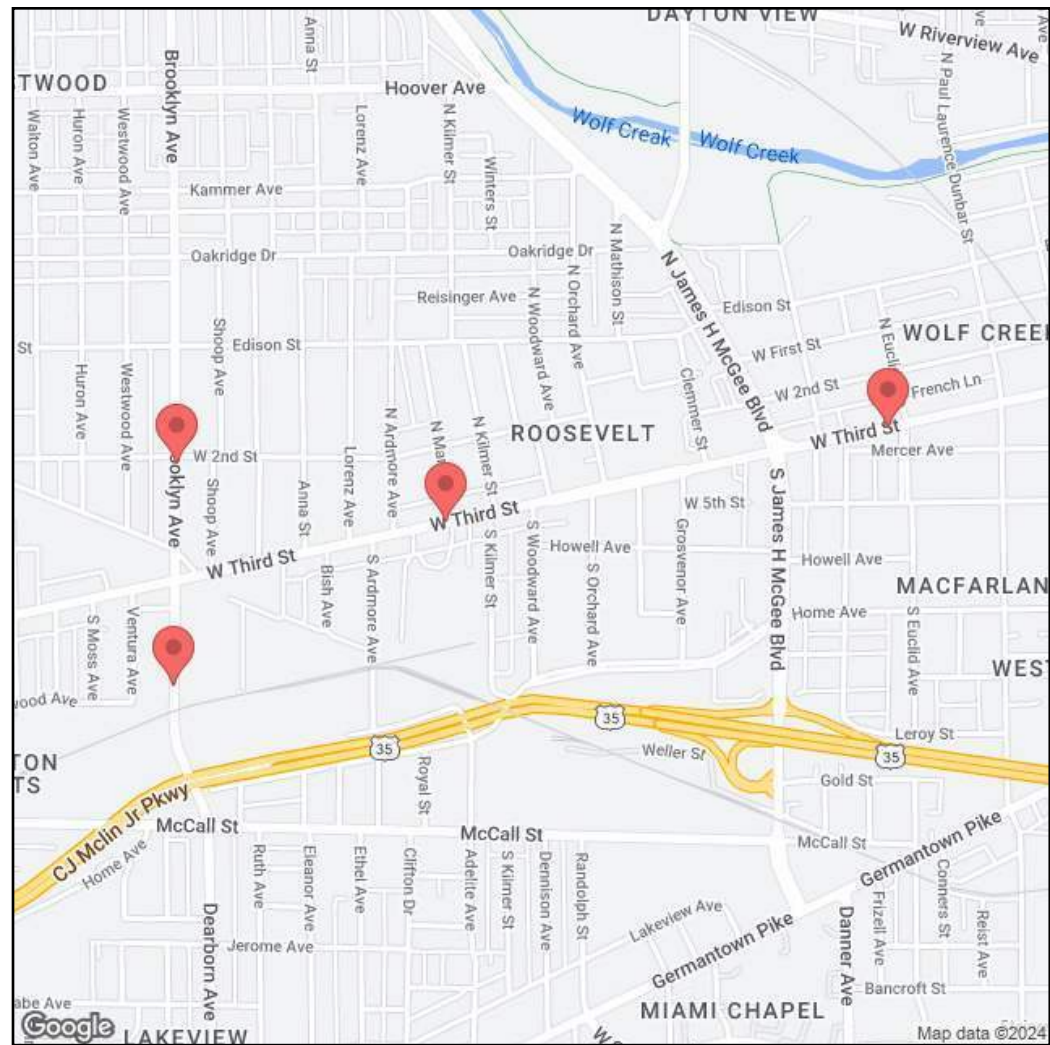
\*Users of this data need to be aware that there are limitations to the forecasts generated by this product that make it suitable only for roadway design projects which are low risk.

## Segment Information

Segment ID	LRS ID	BMP	EMP	Length	Latitude	Longitude
1906518	MMOTMR05084**C	0.060	0.353	0.293	-84.240009962415	39.7494520205998
1906519	MMOTMR05085**C	0.000	0.329	0.329	-84.2399495167272	39.7539626076397
1906643	MMOTMR05412**C	1.649	2.591	0.942	-84.2328094273331	39.7527599667212
1906644	MMOTMR05412**C	2.591	2.921	0.330	-84.2211178221882	39.7546937458023

# Forecast Information

Segment ID	2025 AADT	2045 AADT	DHV-30	K%	D%	T24%	TD%
1906518	2,700	2,700	350	13.0	53.2	0	0
1906519	1,600	1,900	250	13.0	55.5	0	0
1906643	7,400	7,400	900	12.5	60.4	2	2
1906644	10,000	10,000	1,100	10.6	56.9	2	1



**Definitions:**

- o AADT – Annual Average Daily Traffic
- o DHV30 – Design Hour Volume for 30th highest hour of the year
- o DHV30 – K \* AADT
- o K % – Design Hour Factor
- o D % – Peak Direction Factor
- o T24 % – Percent Daily Trucks
- o TD % – Percent Design Hour Trucks

Forecast Segment ID	Route	BMP	EMP
1906518	MMOTMR05084**C	0.060	0.353

## Forecast

Year	K%	T24 % (Existing)	PA AADT	PA Method	PA Growth Rate %	PA Calculated Rate %
2050	13.0	0	2,700	Model	<span style="color: blue;">●</span> -0.100	0.000
AADT	D%	TD % (Existing)	BC AADT	BC Method	BC Growth Rate %	BC Calculated Rate %
2,700	53.2	0	<span style="color: yellow;">!</span> 0	Model	<span style="color: blue;">●</span> -999999.000	0.000

● Warning: The growth rate was negative and was capped.

! Warning: FORECAST TRUCKS ZERO BECAUSE NO TRUCK COUNTS ON SEGMENT

## Regression

Method Number	PA AADT	BC AADT	AADT
1	4,608		4,608

95% Confidence Min/Max

PA Min	PA Max	BC Min	BC Max	Year
-410	9626	-18	0	2050

Method Number	PA Growth %	BC Growth %	PA Drop Count	BC Drop Count	PA AADT	BC AADT	PA Adjustment	PA Adjustment
1	2.70	0.00	0	0	4,608		4,608	
2	-999999.00	0.00	0	0				
3	-999999.00	0.00	0	0				
4	-999999.00	0.00	0	0				
5	-999999.00	0.00	0	0				
6	-999999.00	0.00	0	0				

## Adjustment Info

ID	Adjustment Methods Name	Model vs Count AADT	Adjusted AADT	Model vs Count BC	Adjusted BC	PA Growth Rate %	BC Growth Rate %
1	DIF	-2,942	2,483	-123	-18	-0.23	0.00
2	RAT	0.48	2,578	0.00		-0.12	0.00
3	MRAT	0.97	2,578	0.85		-0.12	0.00
4	RAF		2,531		-9	-0.17	0.00

Adjust Method AADT	Adjust Method BC	Selected PA Growth Rate %	Selected BC Growth Rate %
Ratio	Ratio	-0.100	0.000

### Method 1 - 4 Volume

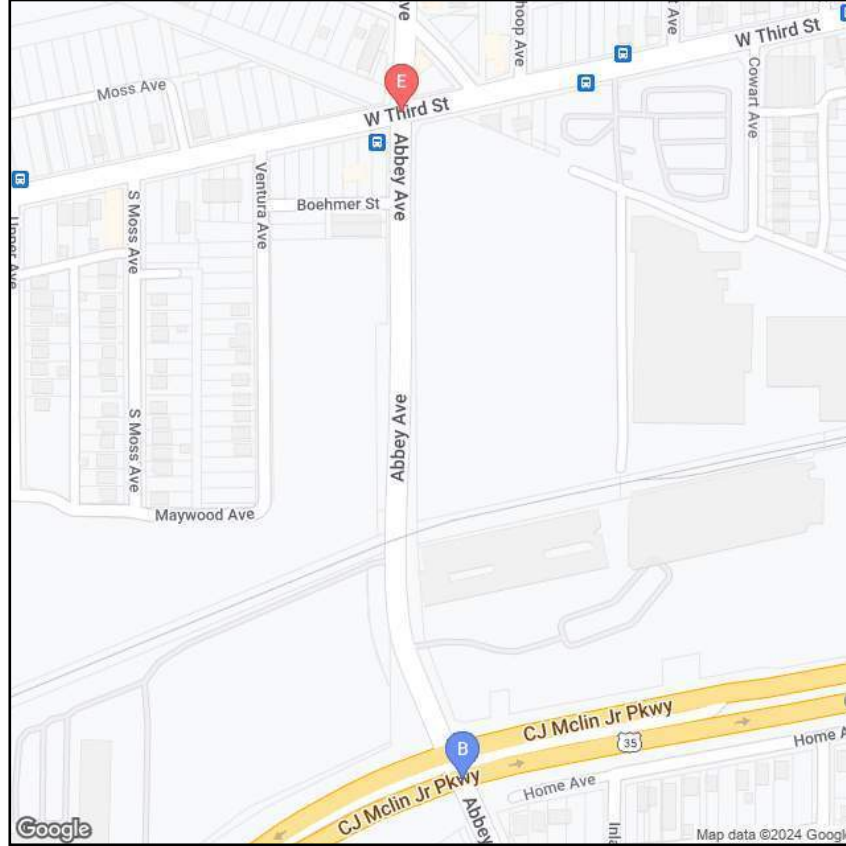
PA Min Volume	PA Max Volume	BC Min Volume	BC Max Volume	Total Min Volume	Total MaxVolume
2501	2578	-18	0	2483	2578

Process Flag:	Adjusted model to counts with process per ODOT 255 spreadsheet
Comment:	No Comment

## Historical Count

Year	All	Cars	Trucks
2020	2,448	2,448	
* 2023	2,664	2,664	

\* Pivot Point



Segment ID	LRS ID	BMP	EMP	Length	Yr 2025 AADT	Yr 2045 AADT	DHV30	K %	D %	T24 %	TD %
1906518	MMOTMR05084** C	0.060	0.353	0.293	2,700	2,700	350	13.0	53.2	0	0

Forecast Segment ID	Route	BMP	EMP
1906519	MMOTMR05085**C	0.000	0.329

# Forecast

Year	K%	T24 % (Existing)	PA AADT	PA Method	PA Growth Rate %	PA Calculated Rate %
2050	13.0	0	1,900	Model	0.900	0.900
AADT	D%	TD % (Existing)	BC AADT	BC Method	BC Growth Rate %	BC Calculated Rate %
1,900	55.5	0	! 0	Model	● -999999.000	0.000

● Warning: The growth rate was negative and was capped.

! Warning: FORECAST TRUCKS ZERO BECAUSE NO TRUCK COUNTS ON SEGMENT

# Regression

Method Number	PA AADT	BC AADT	AADT
1	2,701		2,701

95% Confidence Min/Max

PA Min	PA Max	BC Min	BC Max	Year
-239	5641	0	18	2050

Method Number	PA Growth %	BC Growth %	PA Drop Count	BC Drop Count	PA AADT	BC AADT	PA Adjustment	PA Adjustment
1	2.72	0.00	0	0	2,701		2,701	
2	-999999.00	0.00	0	0				
3	-999999.00	0.00	0	0				
4	-999999.00	0.00	0	0				
5	-999999.00	0.00	0	0				
6	-999999.00	0.00	0	0				

## Adjustment Info

ID	Adjustment Methods Name	Model vs Count AADT	Adjusted AADT	Model vs Count BC	Adjusted BC	PA Growth Rate %	BC Growth Rate %
1	DIF	-4,093	2,559	-42	18	2.34	0.00
2	RAT	0.28	1,834	0.00		0.66	0.00
3	MRAT	1.18	1,943	1.43	5	0.90	0.00
4	RAF		2,251		12	1.62	0.00

Adjust Method AADT	Adjust Method BC	Selected PA Growth Rate %	Selected BC Growth Rate %
Model Ratio	Model Ratio	0.900	0.000

### Method 1 - 4 Volume

PA Min Volume	PA Max Volume	BC Min Volume	BC Max Volume	Total Min Volume	Total MaxVolume
1834	2541	0	18	1834	2559

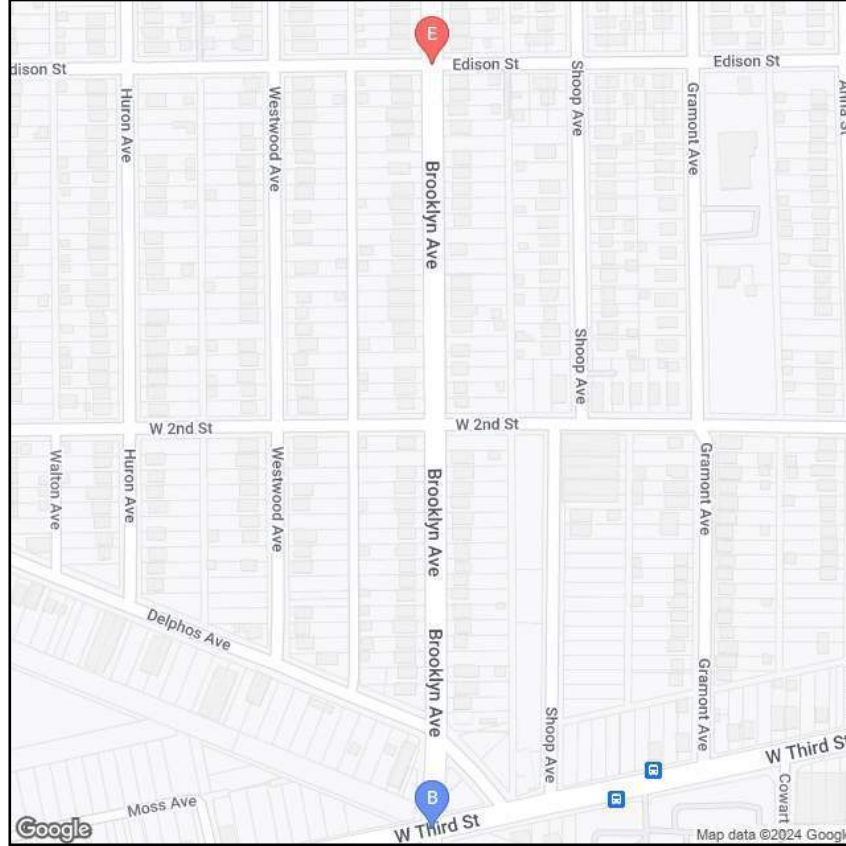
Process Flag: Adjusted model to counts with process per ODOT 255 spreadsheet

Comment: No Comment

## Historical Count

Year	All	Cars	Trucks
2020	1,431	1,431	
* 2023	1,558	1,558	

\* Pivot Point



Segment ID	LRS ID	BMP	EMP	Length	Yr 2025 AADT	Yr 2045 AADT	DHV30	K %	D %	T24 %	TD %
1906519	MMOTMR05085** C	0.000	0.329	0.329	1,600	1,900	250	13.0	55.5	0	0

Forecast Segment ID	Route	BMP	EMP
1906643	MMOTMR05412**C	1.649	2.591

# Forecast

Year	K%	T24 % (Existing)	PA AADT	PA Method	PA Growth Rate %	PA Calculated Rate %
2050	◆ 12.5	2	7,200	Average	● -3.900	0.000
AADT	D%	TD % (Existing)	BC AADT	BC Method	BC Growth Rate %	BC Calculated Rate %
7,340	◆ 60.4	2	140	Average	● -3.500	0.000

● Warning: The growth rate was negative and was capped.

◆ K/D factors from TCDS were used.

# Regression

Method Number	PA AADT	BC AADT	AADT
1	-8,901	-134	-9,035

95% Confidence Min/Max

PA Min	PA Max	BC Min	BC Max	Year
-27017	15580	-388	193	2050

Method Number	PA Growth %	BC Growth %	PA Drop Count	BC Drop Count	PA AADT	BC AADT	PA Adjustment	PA Adjustment
1	-8.27	-7.38	0	0	-9,688	-127	-8,901	-134
2	-8.27	-999999.00	3	0	-9,103		-8,901	
3	-7.78	-999999.00	0	0	-8,623		-7,943	
4	-9.25	-999999.00	3	0	-11,176		-10,815	
5	-1.05	-999999.00	0	0	5,462		5,171	
6	-999999.00	-999999.00	0	0				

## Adjustment Info

ID	Adjustment Methods Name	Model vs Count AADT	Adjusted AADT	Model vs Count BC	Adjusted BC	PA Growth Rate %	BC Growth Rate %
1	DIF	1,703	8,355	93	153	0.50	0.49
2	RAT	1.30	8,656	3.21	193	0.64	1.59
3	MRAT	1.18	8,611	1.43	181	0.62	1.26
4	RAF		8,483		167	0.56	0.88

Adjust Method AADT	Adjust Method BC	Selected PA Growth Rate %	Selected BC Growth Rate %
Average	Difference	0.600	0.500

### Method 1 - 4 Volume

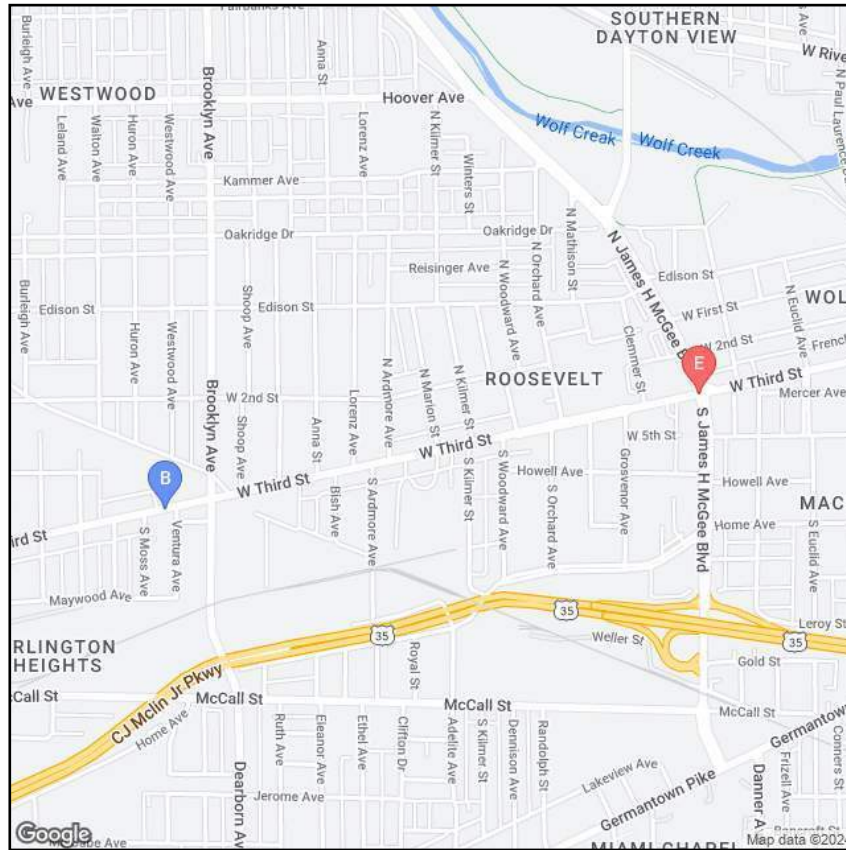
PA Min Volume	PA Max Volume	BC Min Volume	BC Max Volume	Total Min Volume	Total MaxVolume
8202	8463	153	193	8355	8656

Process Flag:	Adjusted model to counts with process per ODOT 255 spreadsheet
Comment:	No Comment

## Historical Count

Year	All	Cars	Trucks
2011	13,810	13,810	
2014	13,050	13,050	
2017	7,871	7,674	195
2020	8,507	8,320	187
* 2023	7,354	7,219	135

\* Pivot Point



Segment ID	LRS ID	BMP	EMP	Length	Yr 2025 AADT	Yr 2045 AADT	DHV30	K %	D %	T24 %	TD %
1906643	MMOTMR05412** C	1.649	2.591	0.942	7,400	7,400	900	12.5	60.4	2	2

Forecast Segment ID	Route	BMP	EMP
1906644	MMOTMR05412**C	2.591	2.921

## Forecast

Year	K%	T24 % (Existing)	PA AADT	PA Method	PA Growth Rate %	PA Calculated Rate %
2050	◆ 10.6	2	9,900	Average	● -1.200	0.000
AADT	D%	TD % (Existing)	BC AADT	BC Method	BC Growth Rate %	BC Calculated Rate %
10,140	◆ 56.9	1	240	Average	● -5.200	0.000

● Warning: The growth rate was negative and was capped.

◆ K/D factors from TCDS were used.

## Regression

Method Number	PA AADT	BC AADT	AADT
2	3,043	-471	2,572

95% Confidence Min/Max

PA Min	PA Max	BC Min	BC Max	Year
1547	10230	-709	273	2050

Method Number	PA Growth %	BC Growth %	PA Drop Count	BC Drop Count	PA AADT	BC AADT	PA Adjustment	PA Adjustment
1	-2.56	-11.37	0	0	3,009	-508	3,068	-501
2	-2.57	-10.91	3	2	3,050	-477	3,043	-471
3	-2.34	-11.89	0	0	3,643	-545	3,643	-535
4	-2.44	-12.14	3	3	3,400	-559	3,369	-551
5	-1.98	-10.39	0	0	4,672	-440	4,601	-437
6	-999999.00	-999999.00	0	0				

## Adjustment Info

ID	Adjustment Methods Name	Model vs Count AADT	Adjusted AADT	Model vs Count BC	Adjusted BC	PA Growth Rate %	BC Growth Rate %
1	DIF	-3,163	10,501	18	271	0.12	0.44
2	RAT	0.76	10,419	1.08	273	0.09	0.47
3	MRAT	1.03	10,421	1.13	273	0.09	0.47
4	RAF		10,461		272	0.10	0.46

Adjust Method AADT	Adjust Method BC	Selected PA Growth Rate %	Selected BC Growth Rate %
Average	Average	0.100	0.500

### Method 1 - 4 Volume

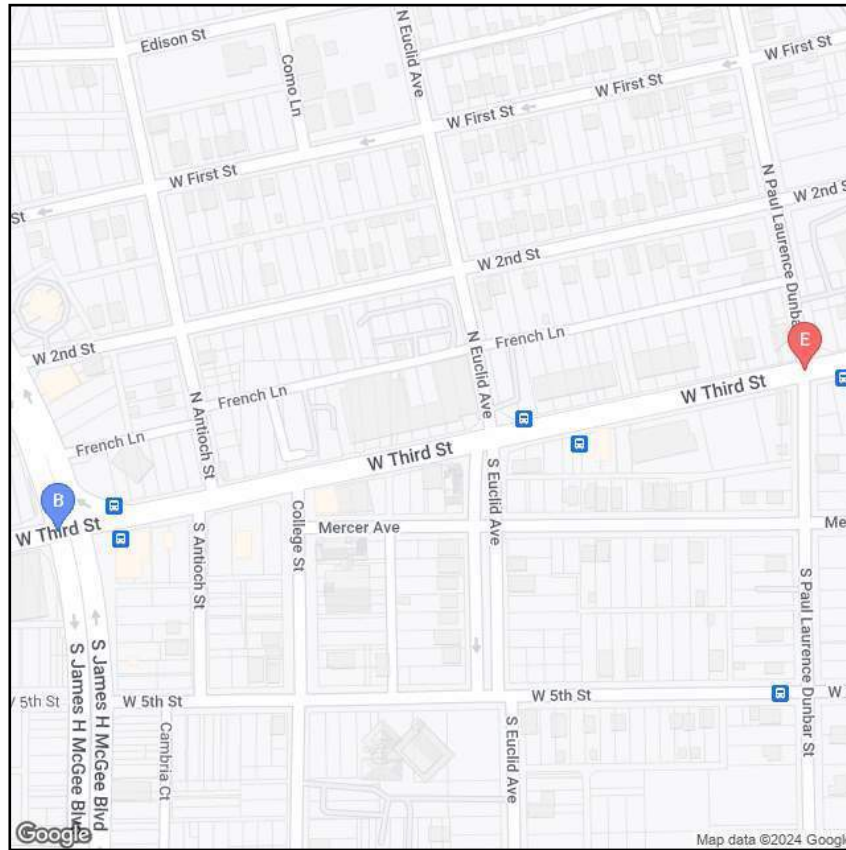
PA Min Volume	PA Max Volume	BC Min Volume	BC Max Volume	Total Min Volume	Total MaxVolume
10146	10230	271	273	10417	10503

Process Flag:	Adjusted model to counts with process per ODOT 255 spreadsheet
Comment:	No Comment

## Historical Count

Year	All	Cars	Trucks
2012	13,318	12,788	530
2014	12,609	12,107	502
2017	11,485	11,091	393
2020	11,024	10,715	309
* 2023	10,153	9,911	242

\* Pivot Point



Segment ID	LRS ID	BMP	EMP	Length	Yr 2025 AADT	Yr 2045 AADT	DHV30	K %	D %	T24 %	TD %
1906644	MMOTMR05412** C	2.591	2.921	0.330	10,000	10,000	1100	10.6	56.9	2	1

# THIRD STREET TARGET SPEED EVALUATION

APPENDIX E: SPEED DATA











Location ID	25657	Located On	W 3RD ST	Community	-
Counted By	TCDS_Combined		THIRD ST E OF EUCLID AVE, IN DAYTON	County	MONTGOMERY
Start Date	7/13/2022			Module	
Start Time	12:00:00 AM	Direction	2-WAY	Agency	ODOT
Source	TCDS_BIN_IMPORT_COMBINE	QC Status	Accepted	Owner ID	eggemanengineering

### Speed Range (mph)

Start Time	0-20	20-25	25-30	30-35	35-40	40-45	45-50	50-55	55-60	60-65	65-70	70-75	75-80	80-85	85-999	Total
11:00 PM	0	0	3	18	22	9	3	1	0	0	0	0	0	0	0	56
11:15 PM	0	1	3	11	20	13	0	2	0	0	0	0	0	0	0	50
11:30 PM	0	0	1	9	11	11	3	0	1	0	0	0	0	0	0	36
11:45 PM	0	0	6	11	17	10	0	0	0	0	0	0	0	0	0	44
<b>TOTAL</b>	<b>34</b>	<b>145</b>	<b>788</b>	<b>2875</b>	<b>4027</b>	<b>1885</b>	<b>404</b>	<b>98</b>	<b>23</b>	<b>0</b>	<b>4</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>10284</b>









Location ID	295799	Located On	W 3RD ST	Community	DAYTON
Counted By	TCDS_Combined	BETWEEN	LISCUM DR AND N JAMES H. MCGEE BLVD	County	Montgomery
Start Date	8/9/2022			Module	
Start Time	12:00:00 AM	Direction	2-WAY	Agency	ODOT
Source	TCDS_BIN_IMPORT_COMBINE	QC Status	Accepted	Owner ID	eggemanengineering

### Speed Range (mph)

Start Time	0-20	20-25	25-30	30-35	35-40	40-45	45-50	50-55	55-60	60-65	65-70	70-75	75-80	80-85	85-999	Total
10:30 PM	1	7	14	20	9	13	5	0	0	0	0	0	0	0	0	69
10:45 PM	5	6	11	7	6	0	0	0	0	0	0	0	0	0	0	35
11:00 PM	1	3	8	15	8	4	1	0	0	0	0	0	0	0	0	40
11:15 PM	0	5	10	8	15	3	1	0	0	0	0	0	0	0	0	42
11:30 PM	1	8	10	7	9	4	0	1	0	0	0	0	0	0	0	40
11:45 PM	5	10	7	14	8	4	3	0	0	0	0	0	0	0	0	51
TOTAL	108	456	1292	2136	2280	1161	342	71	21	6	4	0	1	0	1	7879

## BIG DATA FOR SPEED STUDIES

December 17, 2024

To: Scott Knebel

Organization: Crawford, Murphy, and Tilly (CMT)

From: Mariel Colman

Project: ODOT STW Safety Design Task Order - Target Speed Concept Development

**Re: Usefulness of INRIX data for Before & After Speed Comparison Summary**

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### Project Background

The goal of this project is to implement proven safety countermeasures to achieve the target speed for the corridor. To evaluate the effectiveness of the countermeasure(s) selected, before and after speed data is typically collected. ODOT has requested that instead of standard spot speed studies, INRIX data be used to gather existing speed data for later comparison to post-implementation speeds.

*INRIX collects probe data using “mobile phones, connected vehicles, trucks, delivery vans, and other fleet vehicles equipped with GPS telematics devices. The acquired raw data is then aggregated and anonymized. The data provider monitors the movement of the probes as they travel across a stretch of roadway called a segment. The amount of time it takes for the probes to travel across a segment can be used to derive near real-time traffic speeds and travel times and can be archived for look-back analysis and performance reporting.”*

In other words, speeds are inferred using travel time over a distance. While this may closely approximate roadways with little to no intersection traffic control (e.g., freeways, highways, etc.), in small towns and urban areas where intersections are frequent and may be stopped or signal-controlled, travel times factor in time spent stopped and slowing for these devices. Therefore, as the frequency and likelihood of controlled intersections go up, the use of travel time over distance to approximate speed diminishes.

In addition, during a road diet or safety improvement project, traffic control devices are often changed or retimed, which may reduce travel times. Therefore, it is possible that midblock speeds may be reduced, but because the overall travel time has decreased, this method of estimating speeds may result in a calculated speed equal to or greater than the calculated speed before changes to the roadway.

Understanding these limitations, our team has looked for other road diets that have been implemented in the last ten years with intersections similar to the study locations to understand:

- How closely the 50<sup>th</sup> and 85<sup>th</sup> percentile speeds match available spot speed studies either available via ODOT TIMS or via the community’s own speed study analysis
- If a change in speeds can be detected, and if available, how much does the change in speeds from INRIX data match the spot speed observations

- If there is a preferred time window to improve the estimation of free flow speeds (e.g. overnight) and/or if segments are available that are not within the functional intersection areas and therefore may more closely estimate free flow speeds

## Case Studies

### US 6, Lorain, Ohio

Between 2023 and 2024, the City of Lorain implemented a road diet along US 6 from the Charles Berry Bridge over the Black River to the State Route 611 underpass on the city's West Side.

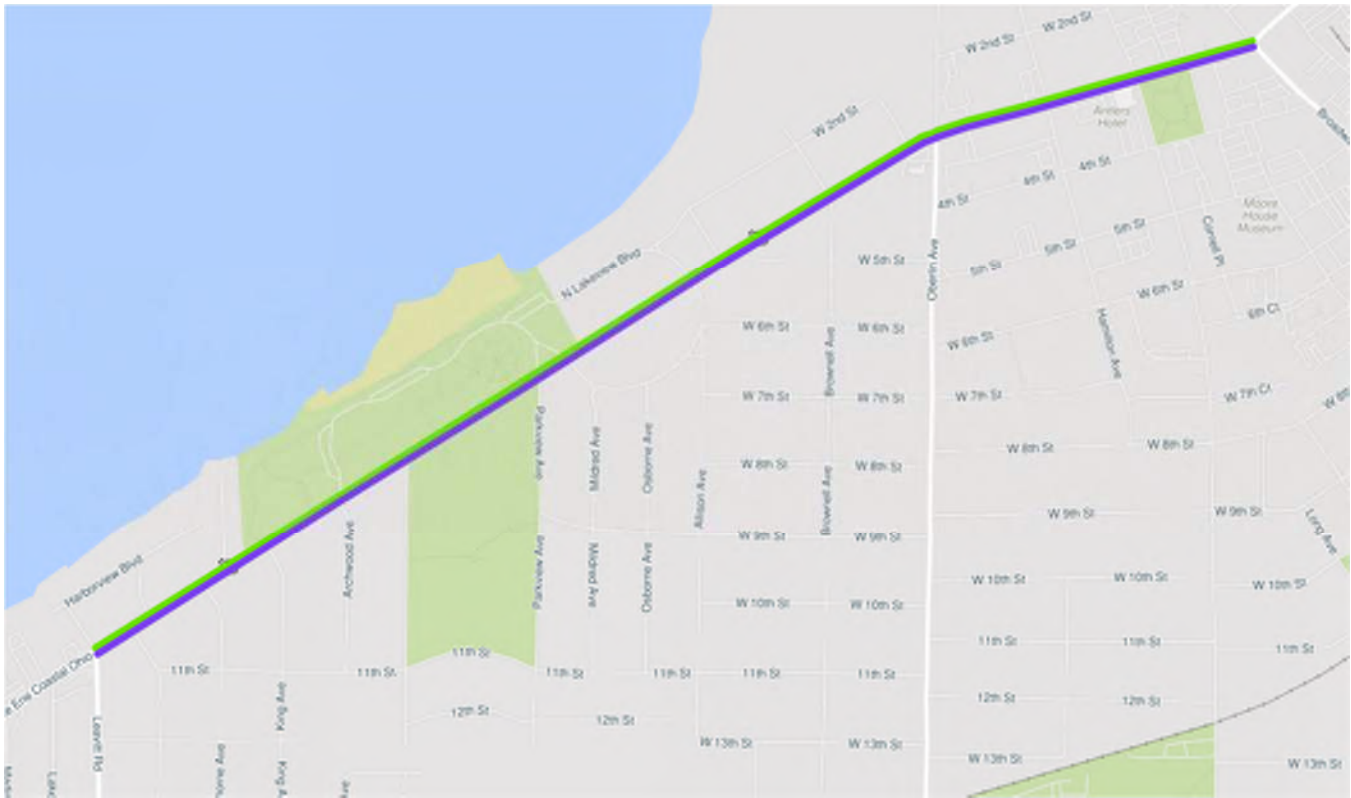
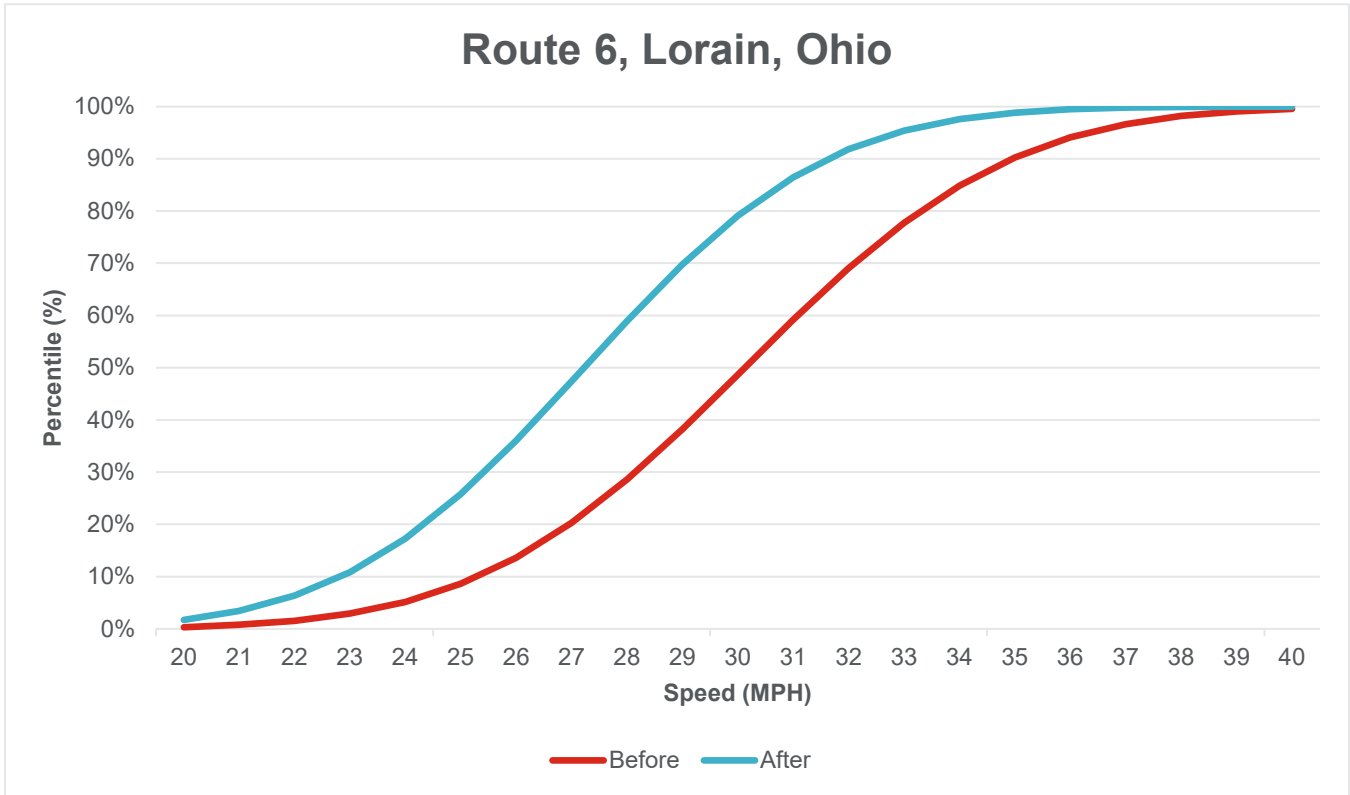


Figure 1 US 6 INRIX Segment Limits

Source / Year	Location	50 <sup>th</sup> Pctl Speed (MPH)	85 <sup>th</sup> Pctl Speed (MPH)
ODOT TIMS / 9-2020 / 24HRS	SW of Wallace Lane	40-45	48
ODOT TIMS / 9-2020 / 24HRS	W of SR58 Leavitt	35-40	38
ODOT TIMS / 9-2020 / 24HRS	W of Hamilton Ave	35-40	40
ODOT TIMS / 8-2023 / 24HRS	SW of Wallace Lane	40-45	47
ODOT TIMS / 10-2023 / 24HRS	W of SR58 Leavitt	35-40	40
ODOT TIMS / 9-2023 / 24HRS	W of Hamilton Ave	35-40	40
INRIX / 9-2020 / 24 HRS	Corridor	29	34

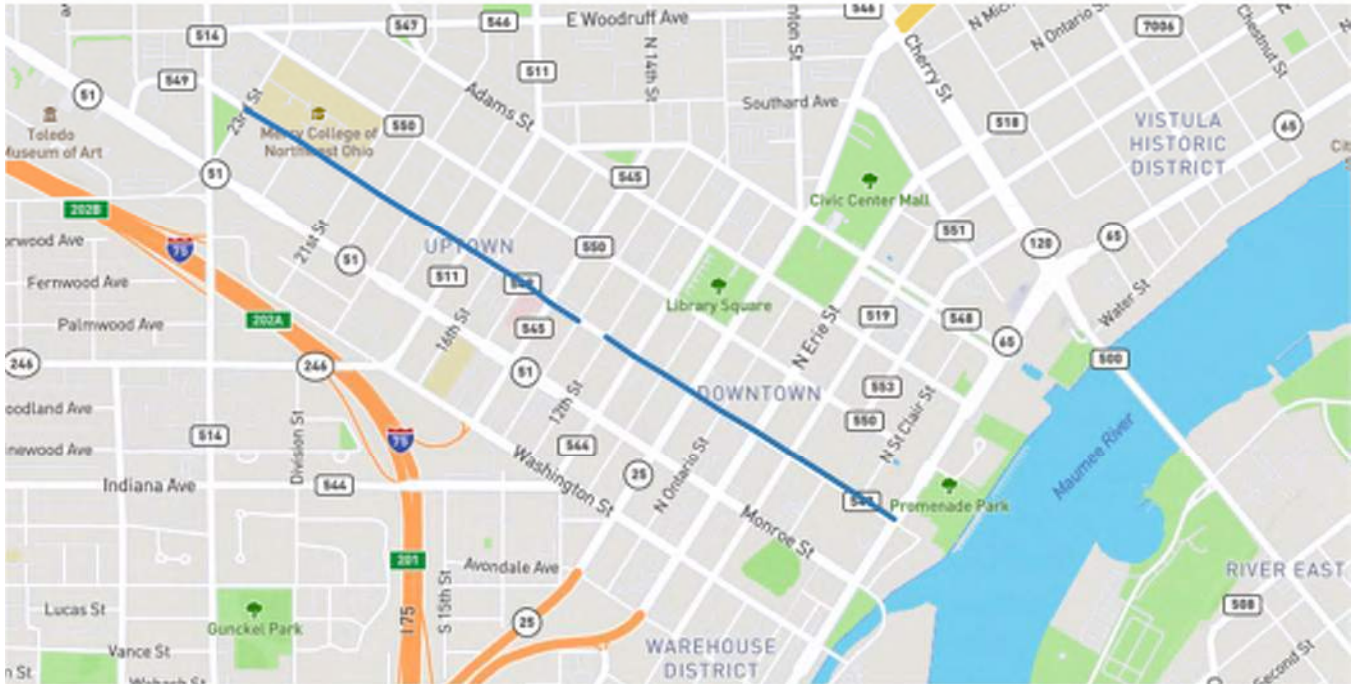
INRIX / 9-2022 / 24 HRS	Corridor	30	34
INRIX / 9-2022 / 7-12 PM	Corridor	30	34
INRIX / 9-2022 / 9 AM – 3 PM	Corridor	29	33
INRIX / 9-2024 / 24 HRS	Corridor	27	30
INRIX / 9-2024 / 7-12 PM	Corridor	28	31
INRIX / 9-2024 / 9 AM – 3 PM	Corridor	26	29



**Figure 2 US 6 All Day Speed Distribution**

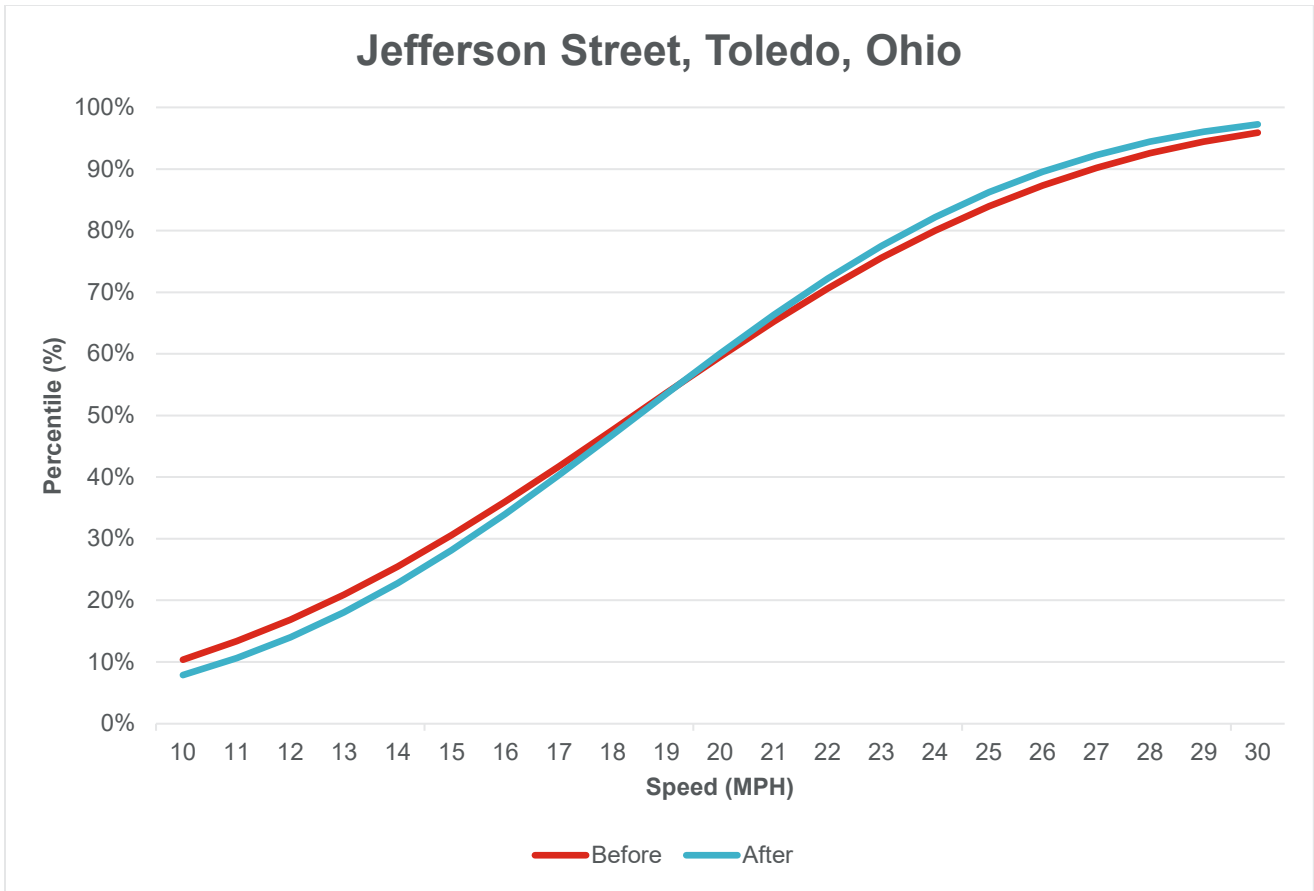
### **Jefferson Street, Toledo, Ohio**

The city of Toledo implemented a road diet in 2021 along Jefferson Street from Summit Street to 23<sup>rd</sup> Street.



**Figure 3 Jefferson Street INRIX Segment Limits**

Source / Year / Time of Day	50 <sup>th</sup> Pctl Speed (MPH)	85 <sup>th</sup> Pctl Speed (MPH)
ODOT TIMS / August 2019	25-30	30
INRIX / April 2019	18	27
INRIX / April 2024	17	25



**Figure 4 Jefferson Street All Day Speed Distribution**

### **Shoyer Road, Oakwood, Ohio**

In 2016, Oakwood implemented a road diet for Shoyer Road from Dayton-Kettering Connector to East Drive.

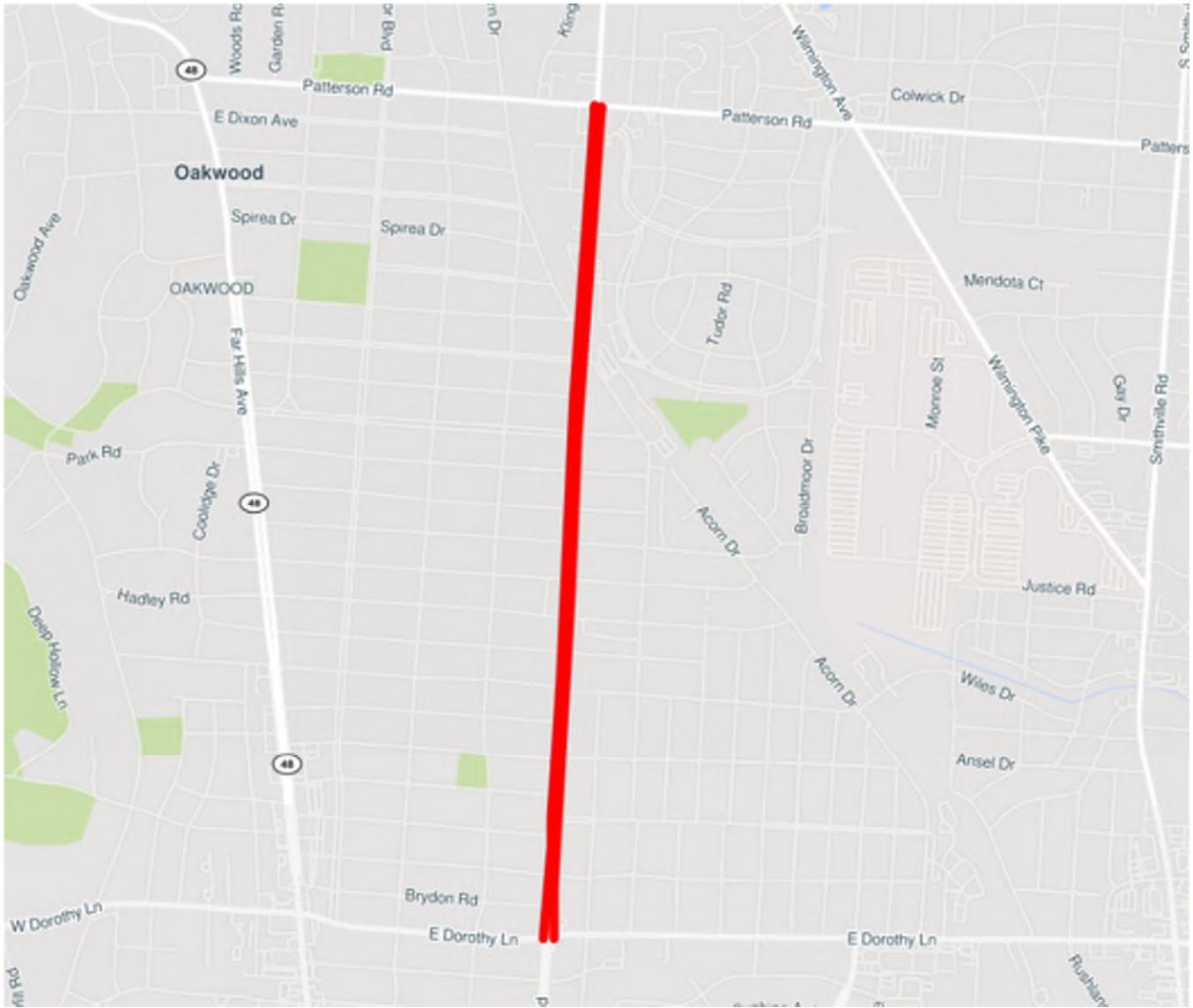


Figure 5 Shroyer Road INRIX Segment Limits

Source / Year	Location	50 <sup>th</sup> Pctl Speed (MPH)	85 <sup>th</sup> Pctl Speed (MPH)
INRIX / 9-2015 / 24 HRS	Corridor	31	33
INRIX / 9-2017 / 24 HRS	Corridor	25	30

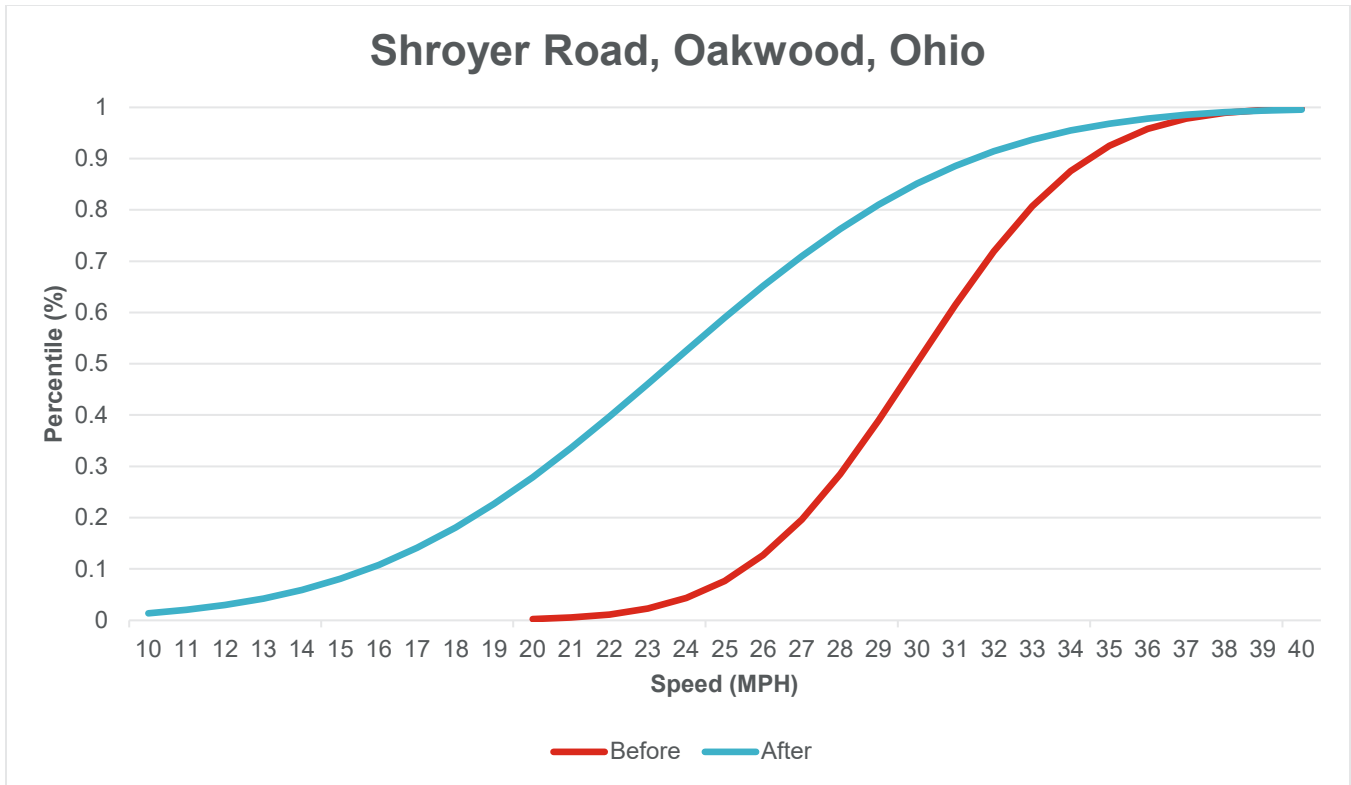


Figure 6 Shroyer Road All Day Speed Distribution

## Summary of Findings

While the use of case studies cannot conclusively answer the questions we wish to answer, they can start to help us understand the range of outcomes we may expect when using INRIX data. The following summarizes observations, limitations, and preliminary recommendations for the use of INRIX data for measuring speeds before and after proven safety countermeasures are implemented to reach a target speed:

- When comparing 85<sup>th</sup> percentile speeds determined using INRIX vs spot speeds collected, INRIX data reports an 85<sup>th</sup> percentile as much as 10mph lower than existing spot speed studies. While the case studies are limited, the discrepancy appears to be smaller when fewer signal and stop-controlled intersections are present along the corridor, consistent with our understanding of the limitations of using travel time over distance to estimate speed.
- In all case studies, a change in the 50<sup>th</sup> and 85<sup>th</sup> percentile speed was observed, and it is therefore likely that INRIX data can confirm that speeds have been reduced, but the actual reduction will likely be higher
- When comparing 24-hour distributions, consider normalizing the distribution using the vehicle volumes to show a more accurate representation of the distribution.
- While mid-day hours may show higher speeds, evenings from 7-12PM or 24hrs can also be used and may actually show higher speeds that are more indicative of free flow speeds that may be occurring when volumes are low.
- The number of segments that can be compared depend on INRIX (e.g., a designer cannot select unique start and end points). While this is a limitation, if segments are available, a comparison on a segment to segment level before and after could be reviewed and may provide more site specific performance evaluations of the implemented design, particularly on streets where implementation varies.

- Only per-minute data, not per-vehicle data, is available, meaning that across that minute, vehicle travel times are averaged. However, as travel times are often a function of how many vehicles are on the road, this averaging likely is less of a concern than how travel times are impacted based on traffic control.
- Overnight may show free flow. Based on graphing some data, though, the confidence scores of speeds after 12 AM are often less than 70 and, therefore, are not used per District 12's filtering measure.
- Community members are often concerned about the impacts of travel times. INRIX data may be an effective tool for assuaging public fears about the overall impact on their daily trips.

Sincerely,

**Maribel Colman, PE, AICP** | Senior Engineer | Associate

**TOOLE DESIGN**

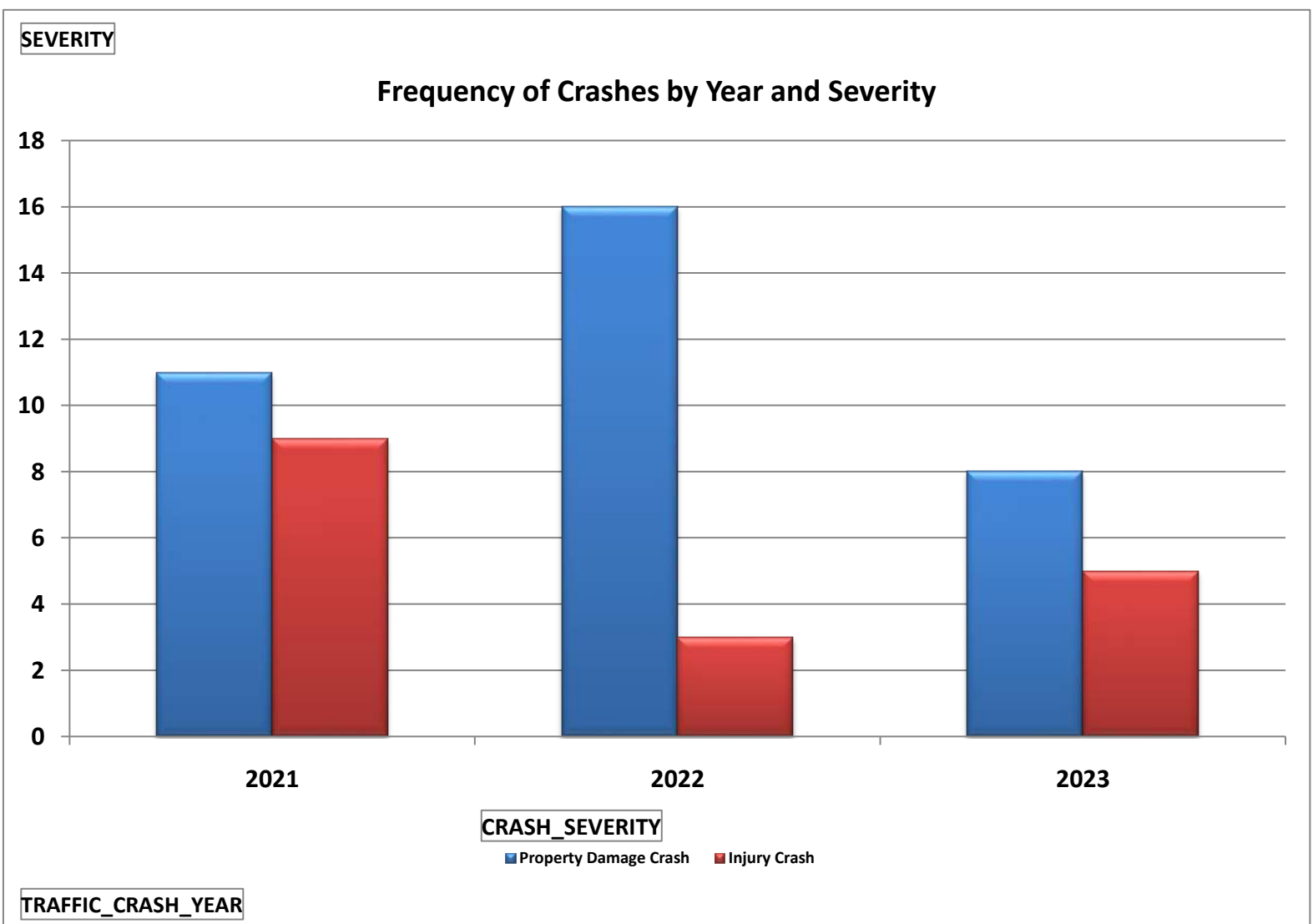
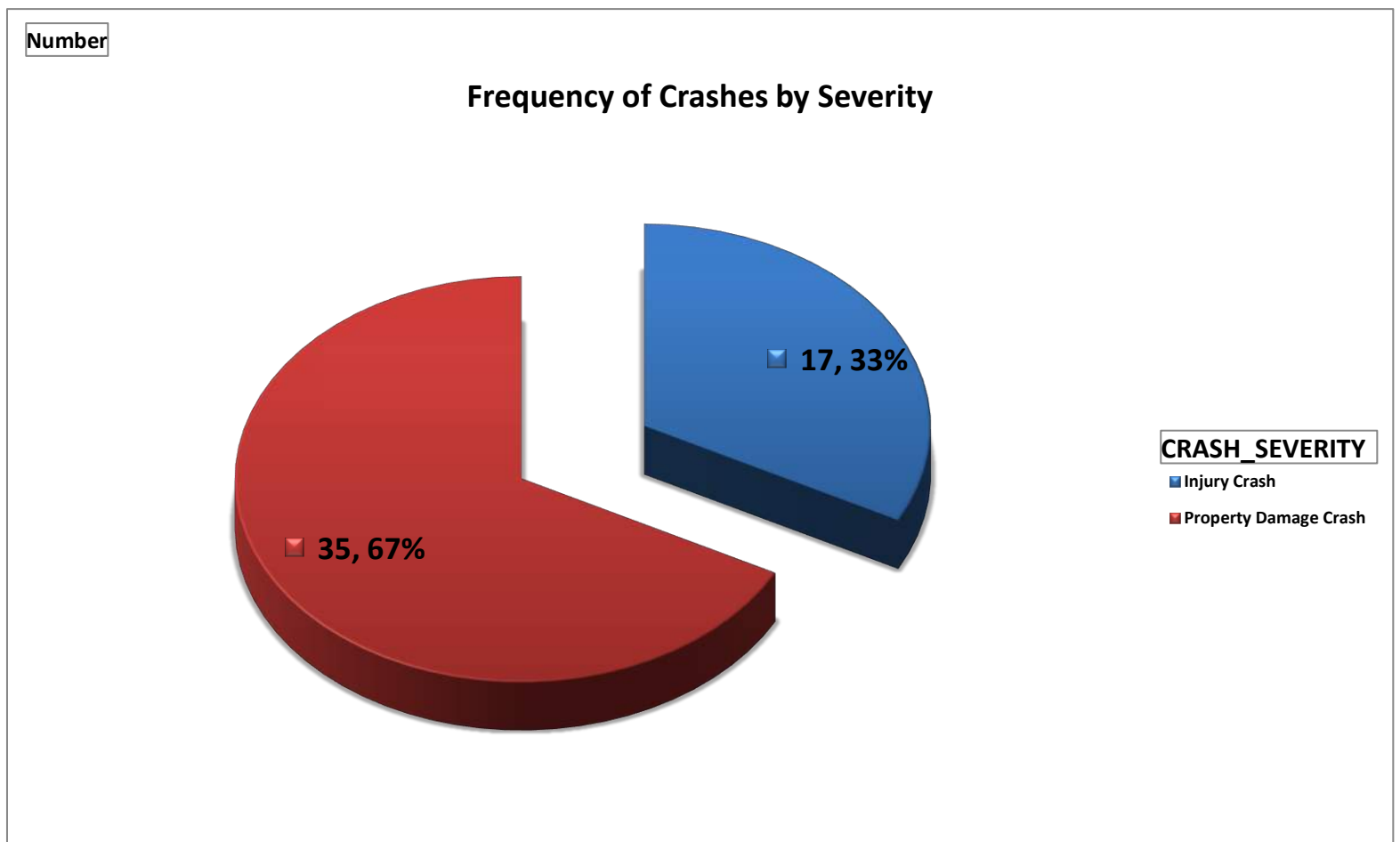
20 E. Broad Street | Columbus, OH 43215  
[mcolman@tooledesign.com](mailto:mcolman@tooledesign.com) | 614.407.9122 x452

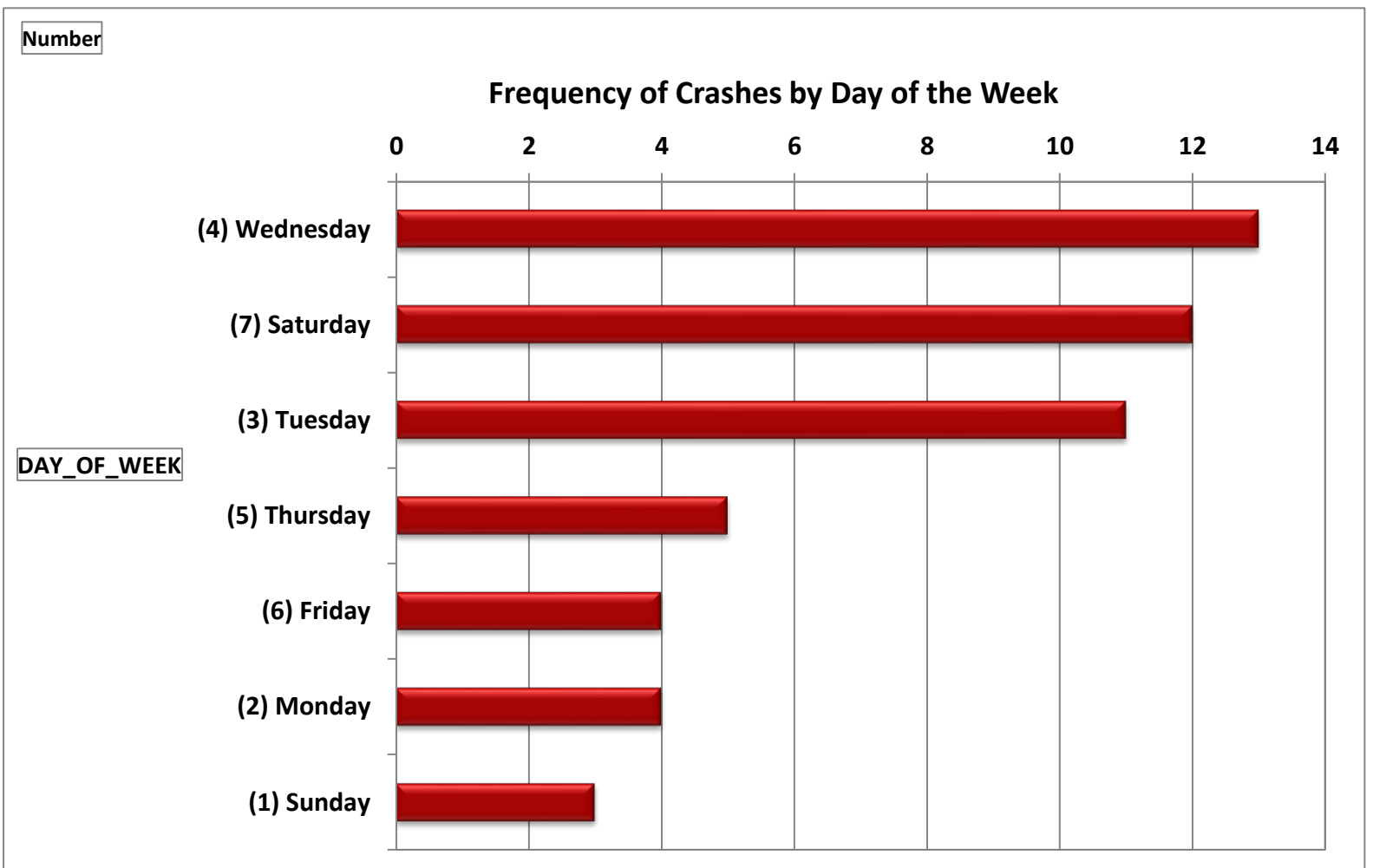
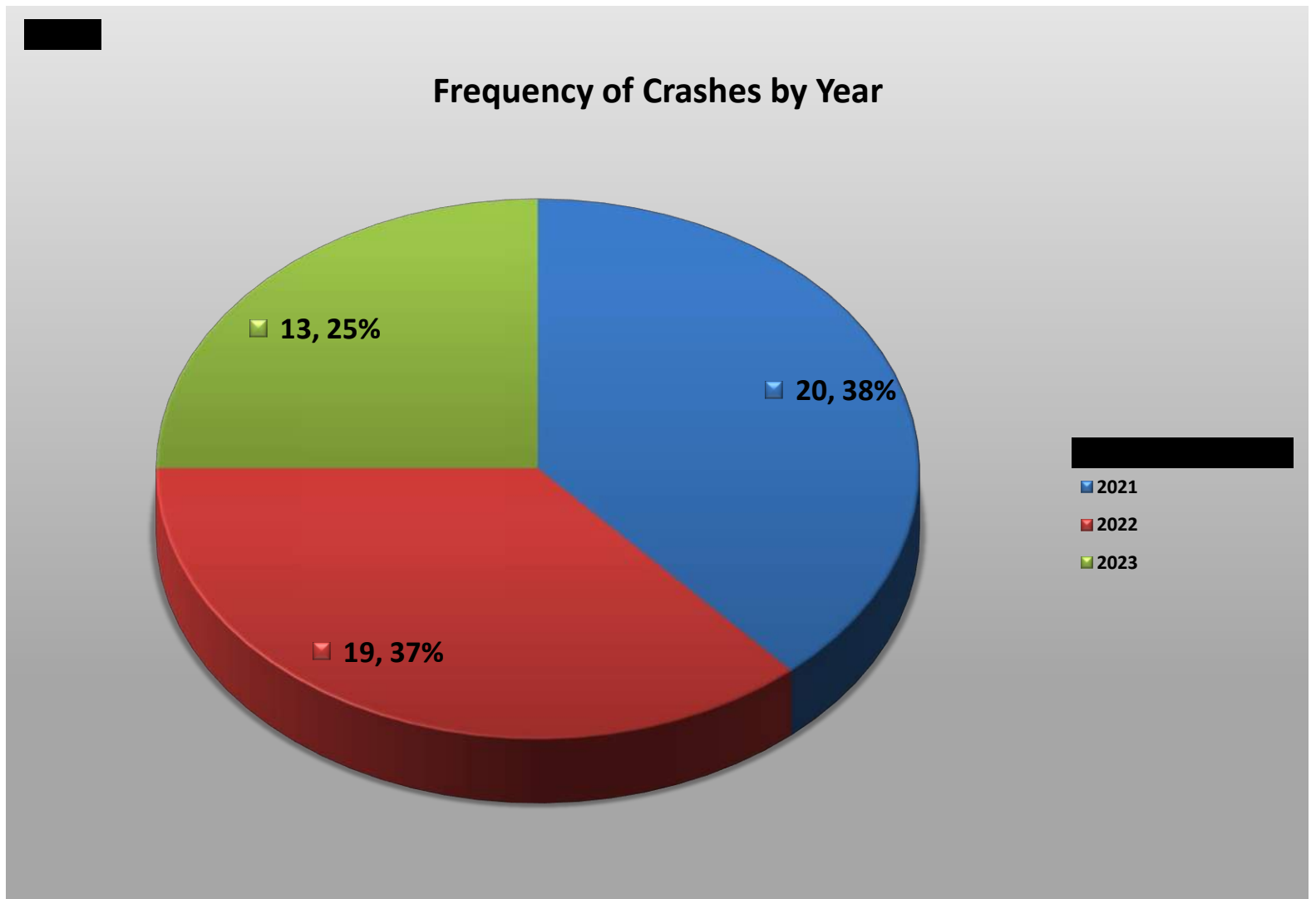
# THIRD STREET TARGET SPEED EVALUATION

## APPENDIX F: SAFETY ANALYSIS



# Third Street (Abbey Ave to James H McGee Blvd)

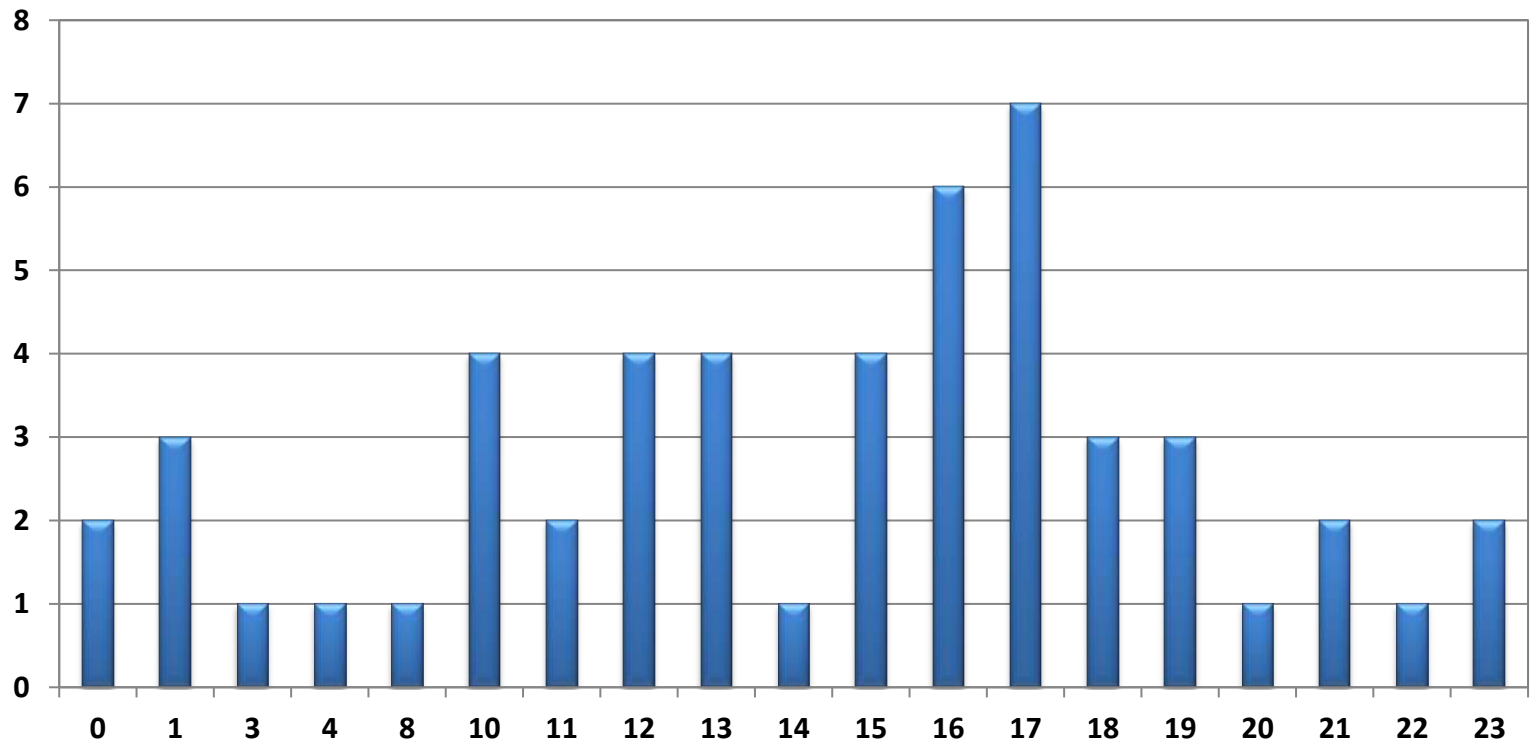




# Third Street (Abbey Ave to James H McGee Blvd)

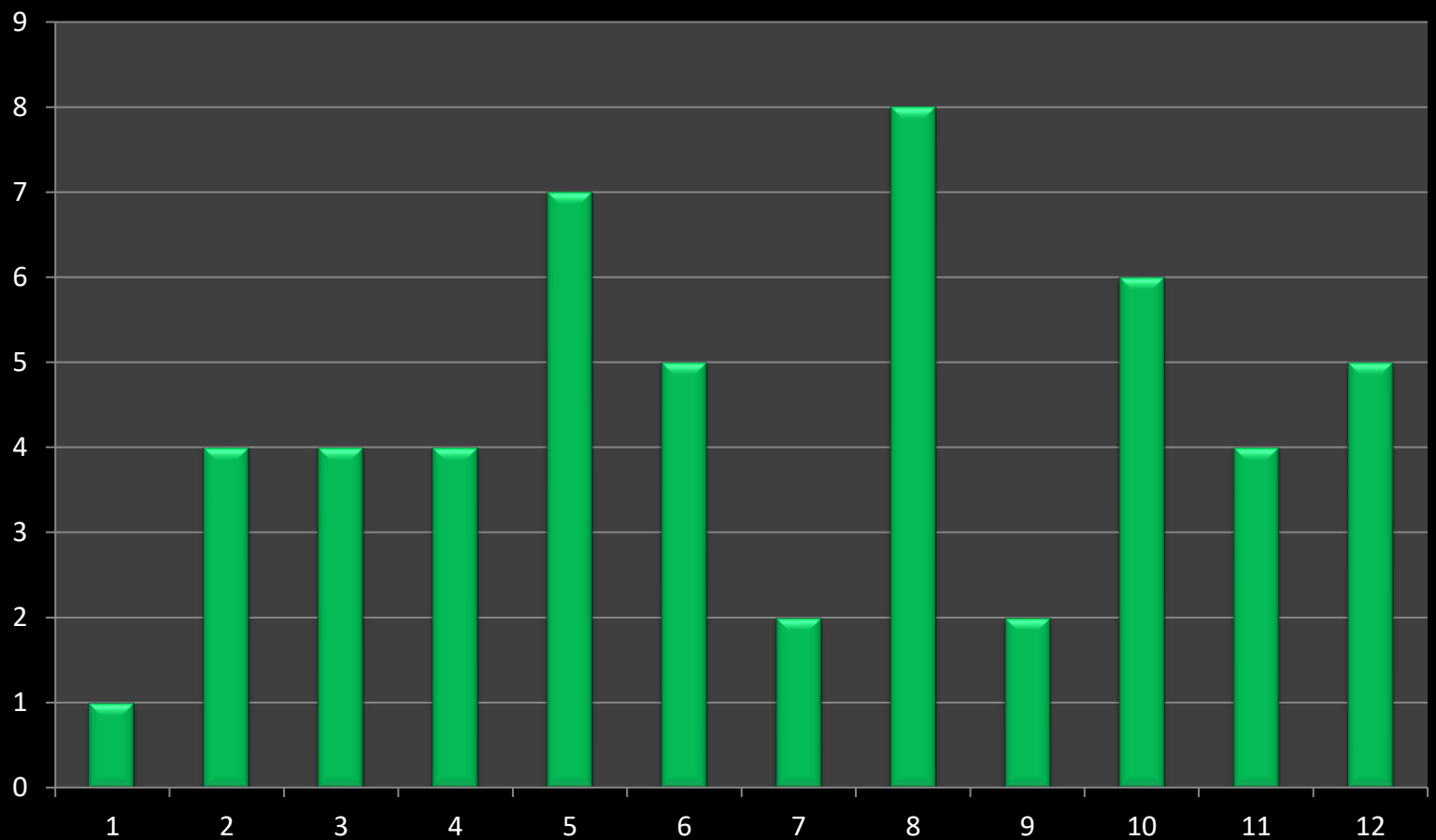


## Frequency of Crashes by Hour



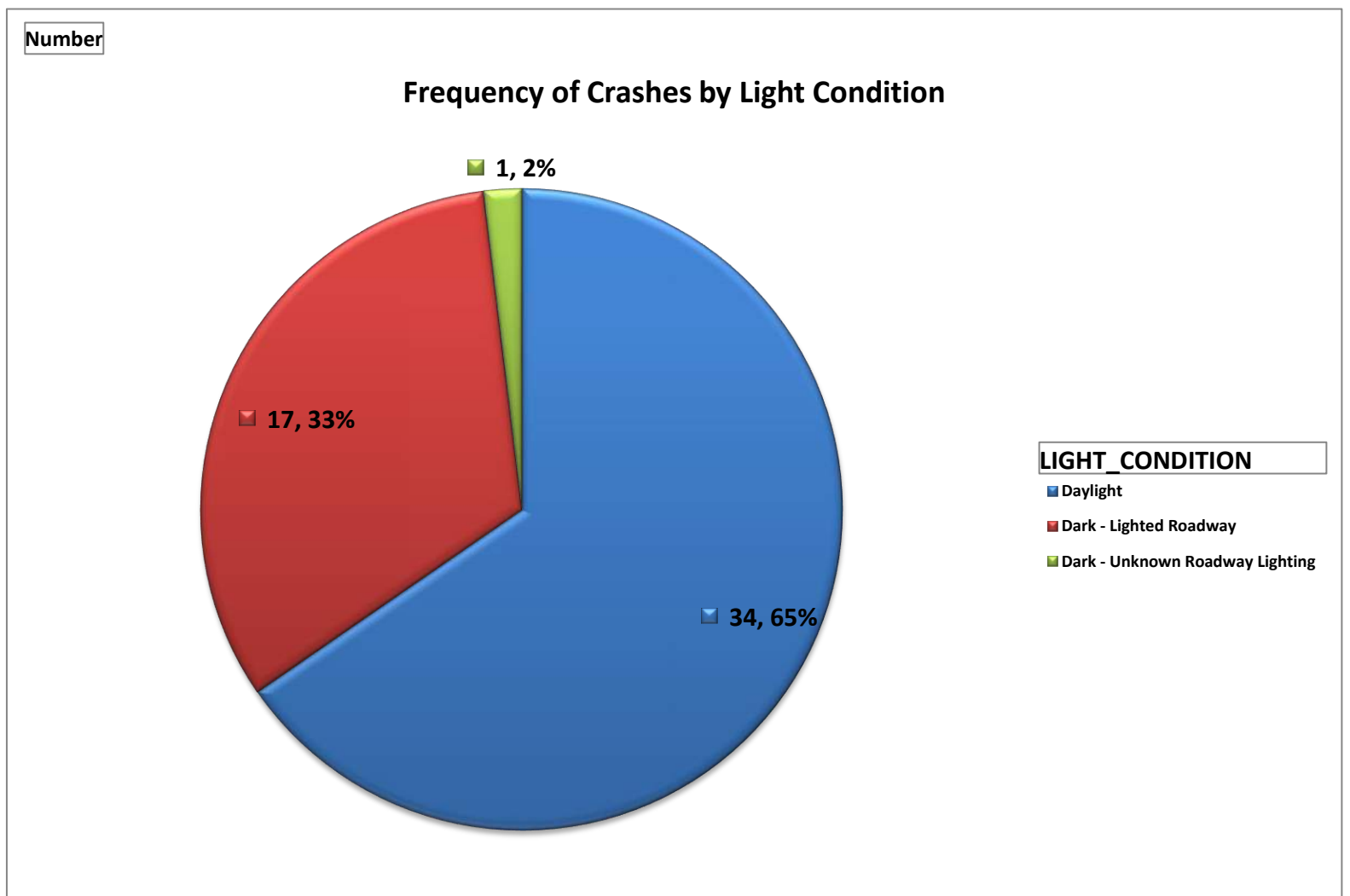
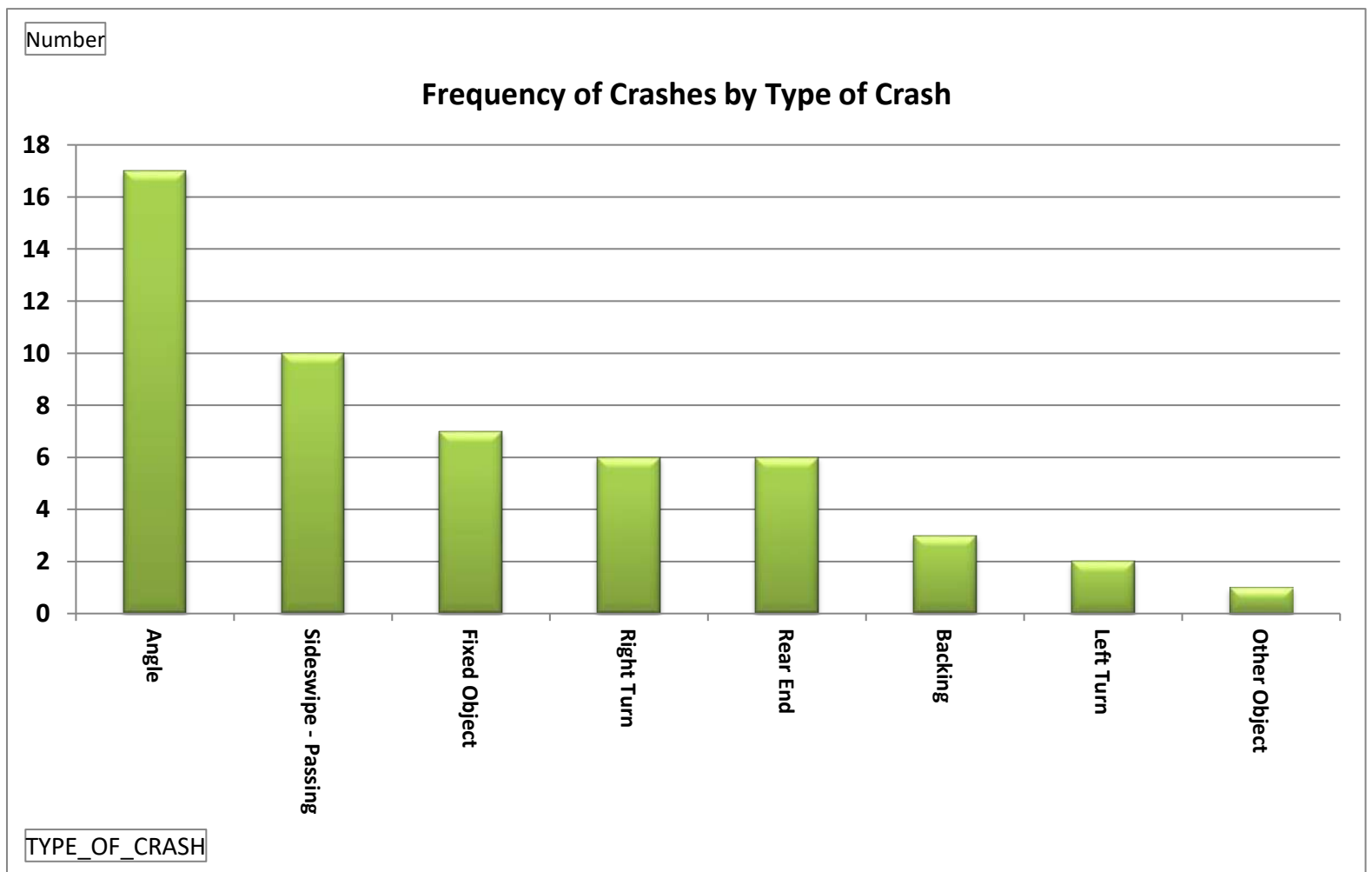
Number

## Frequency of Crashes by Month

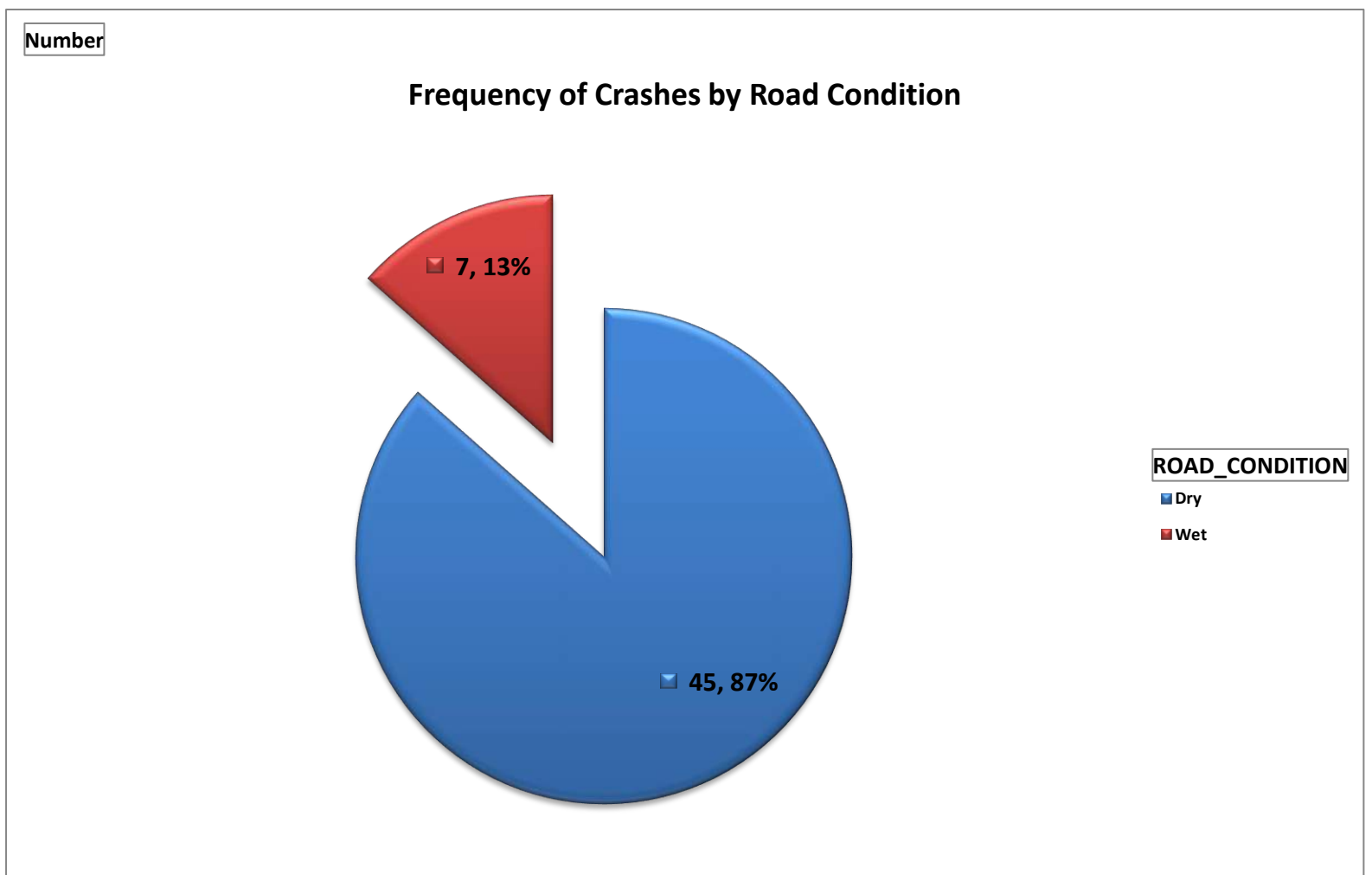
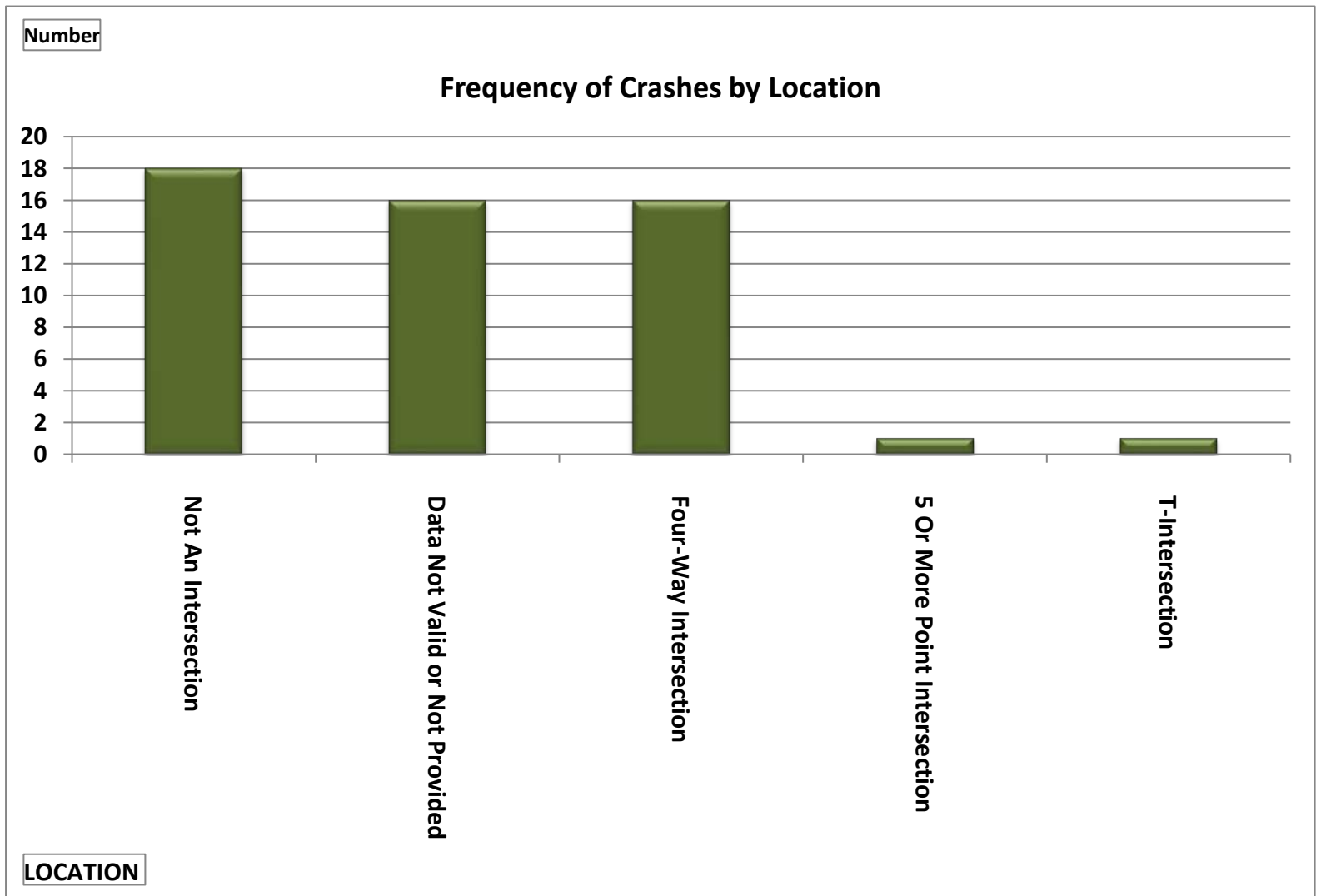


CRASH\_MONTH\_NBR

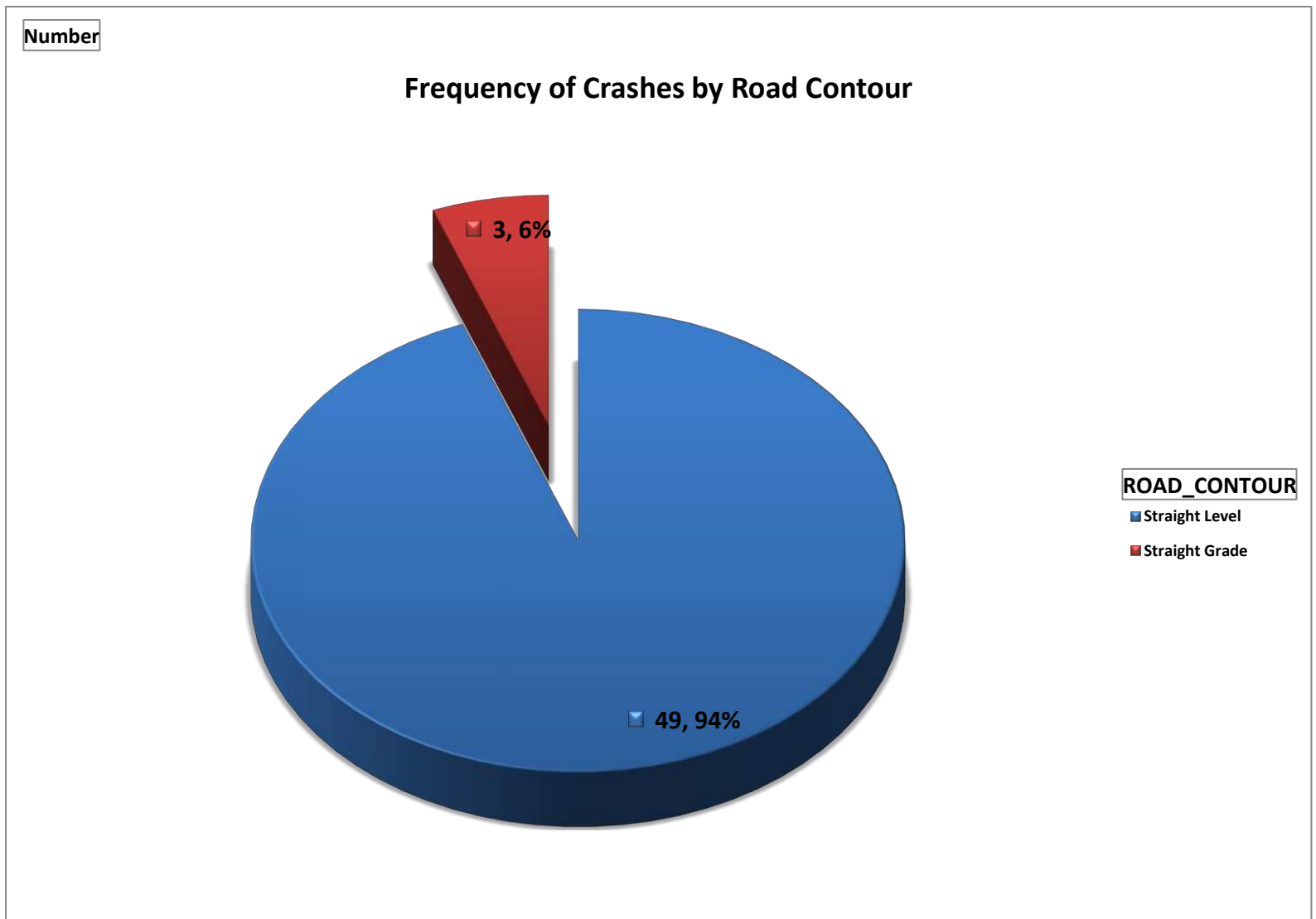
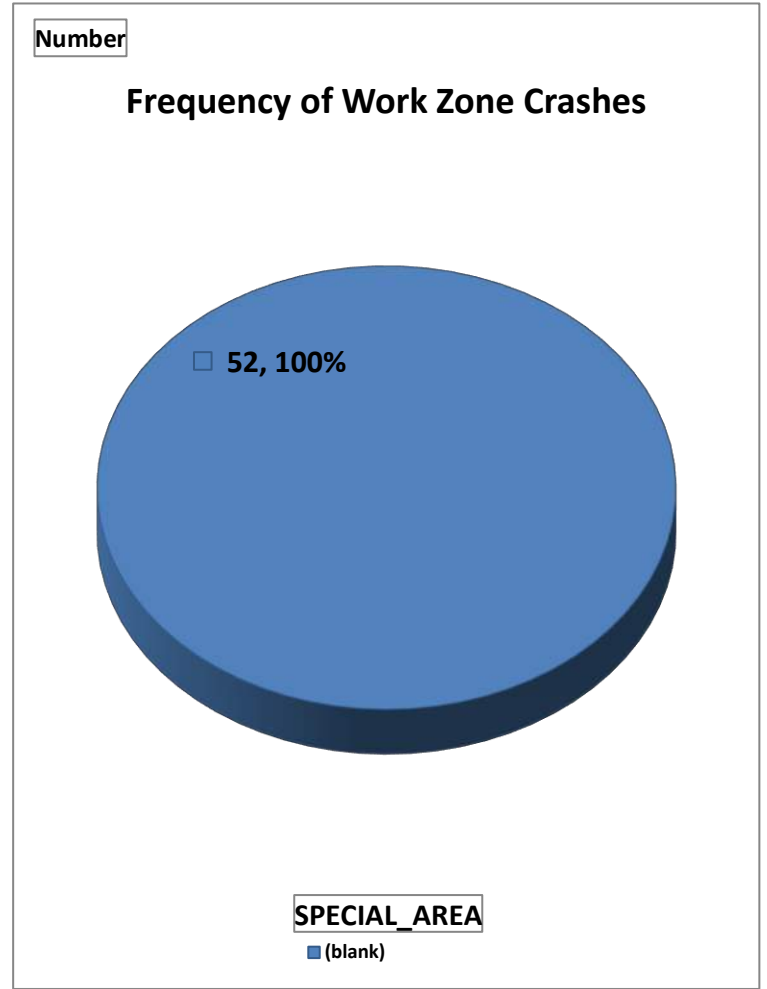
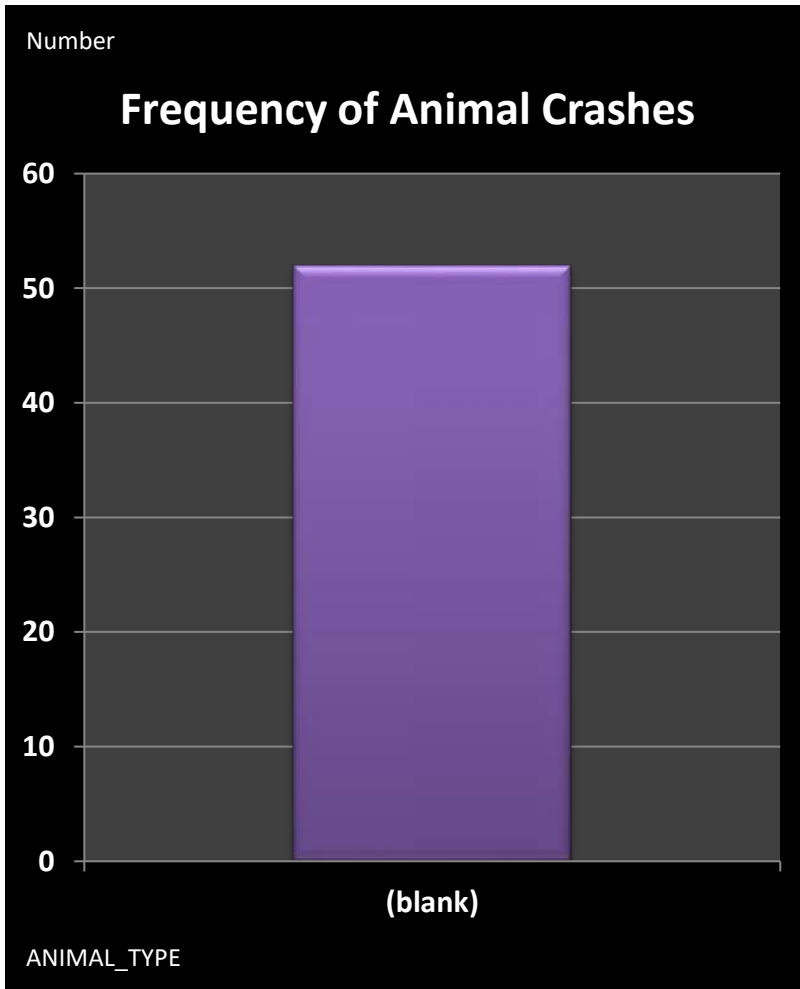
### Third Street (Abbey Ave to James H McGee Blvd)



### Third Street (Abbey Ave to James H McGee Blvd)



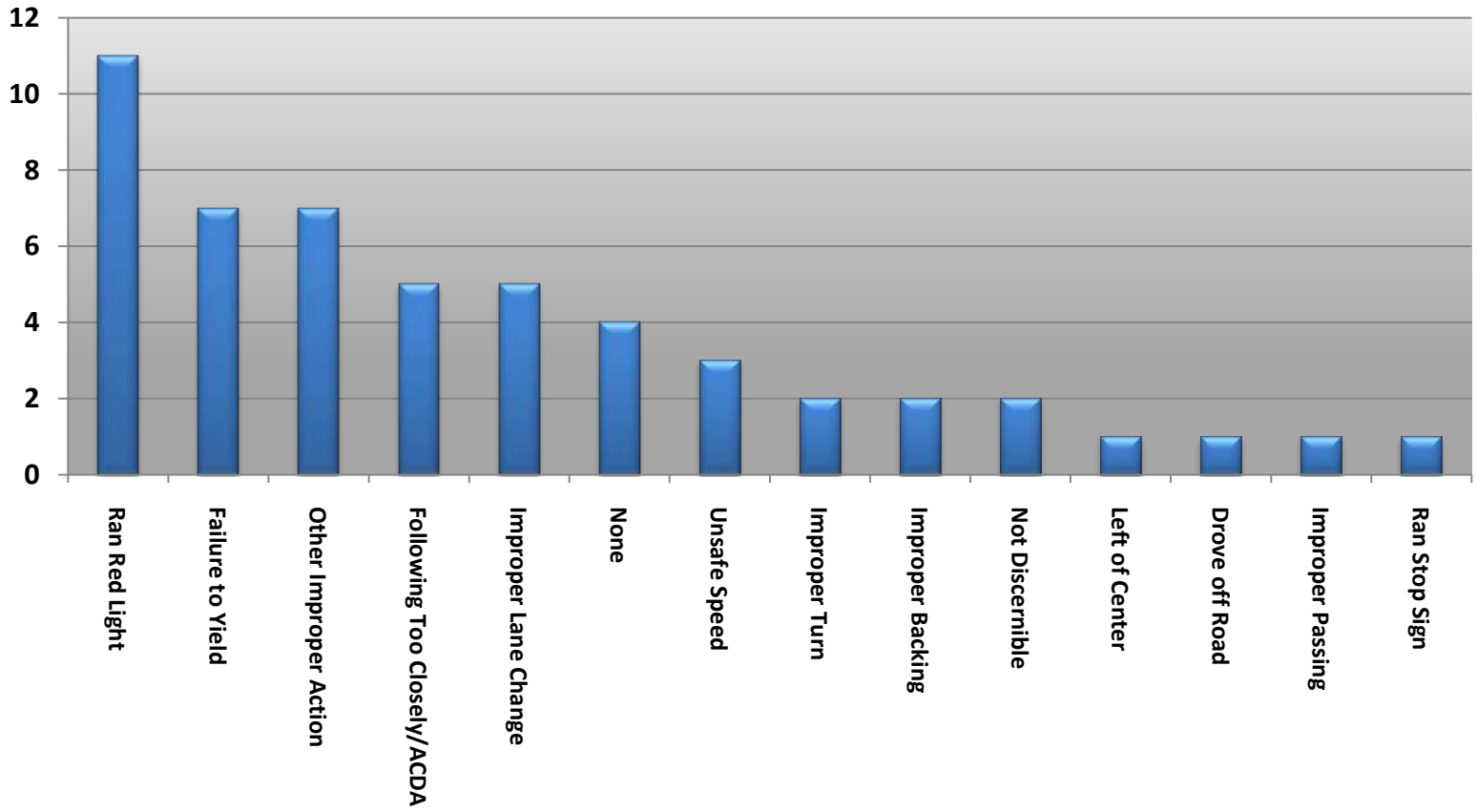
Third Street (Abbey Ave to James H McGee Blvd)



# Third Street (Abbey Ave to James H McGee Blvd)

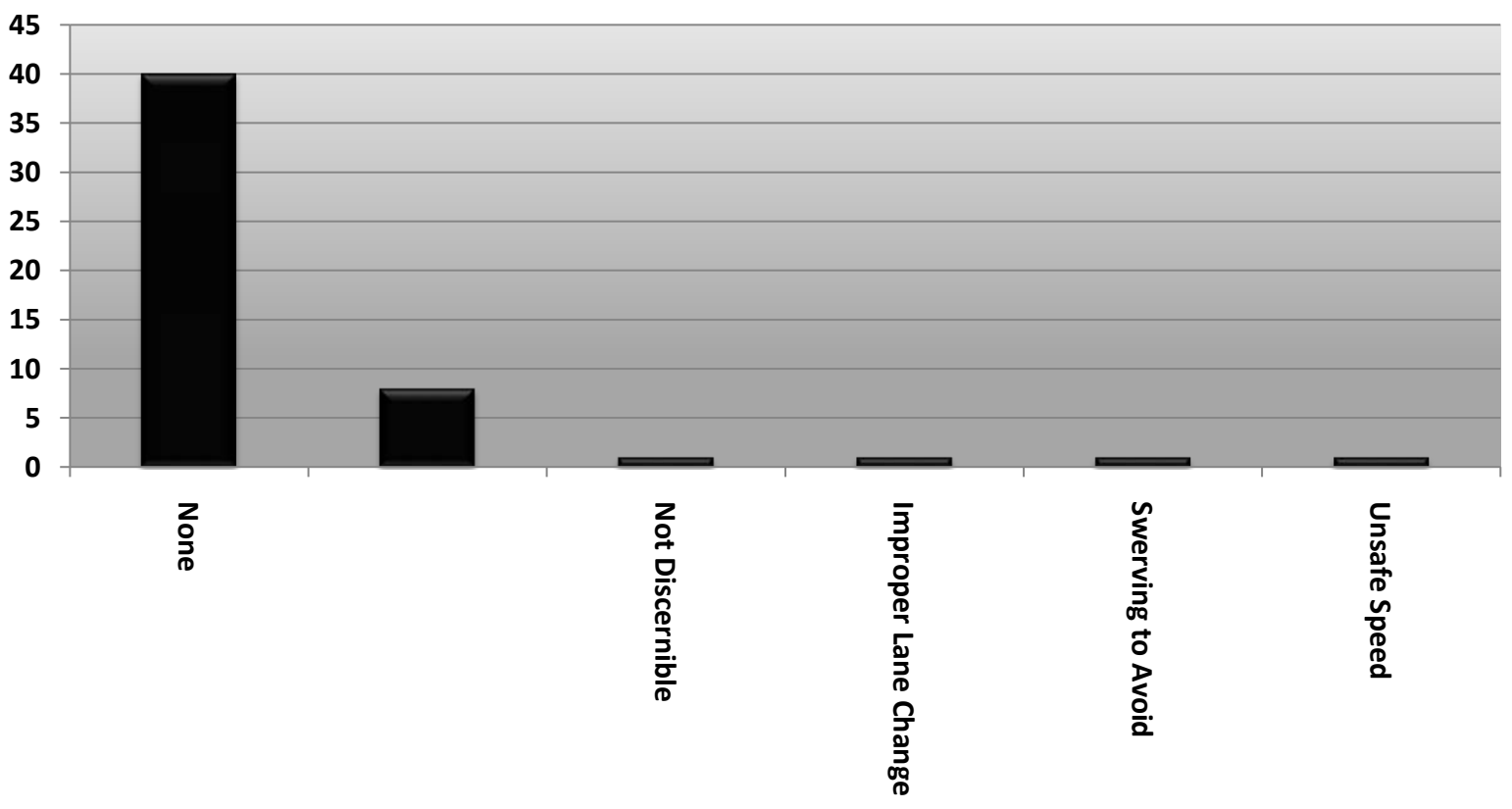


### Frequency of Crashes by Contributing Factor 1



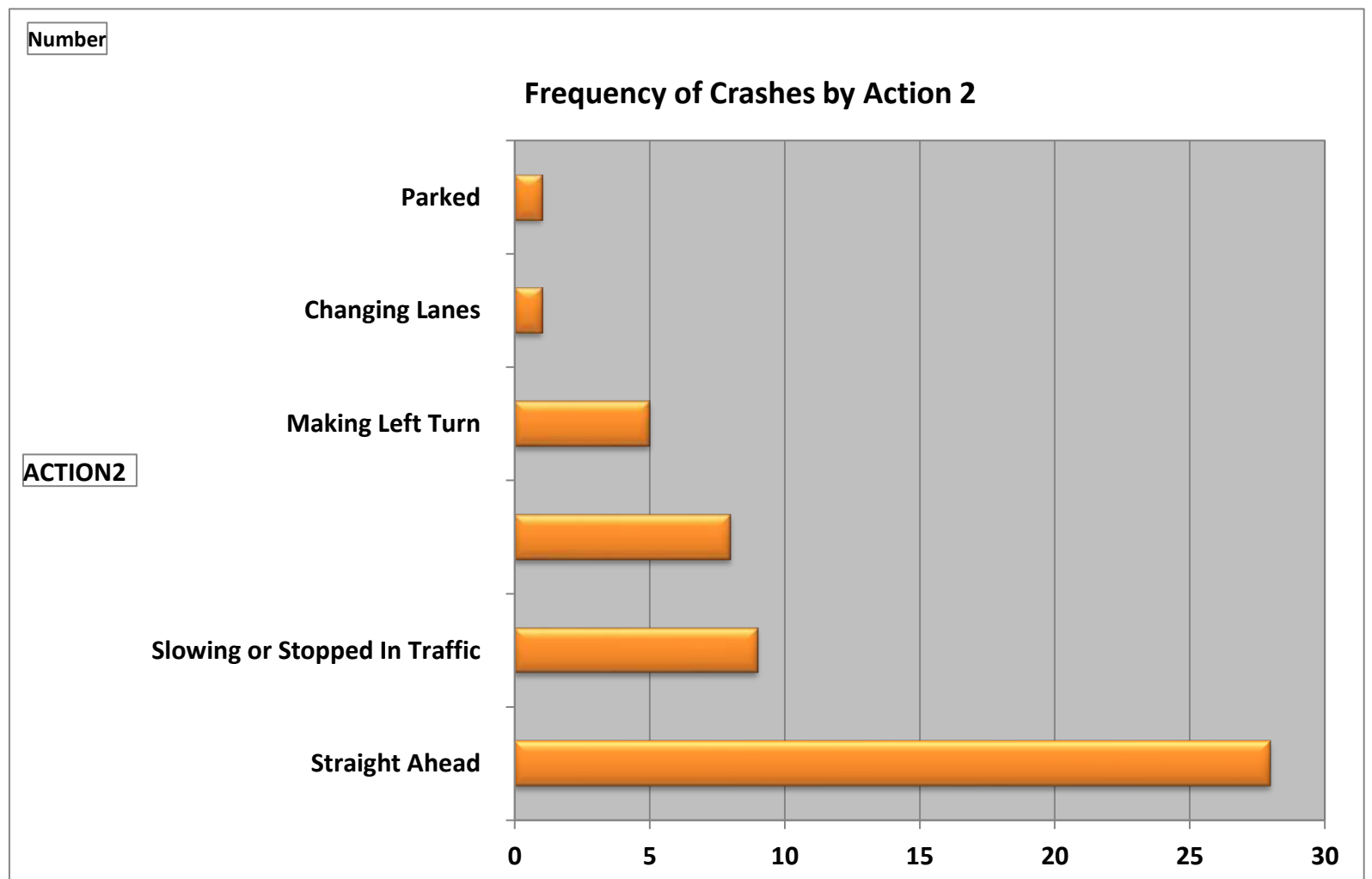
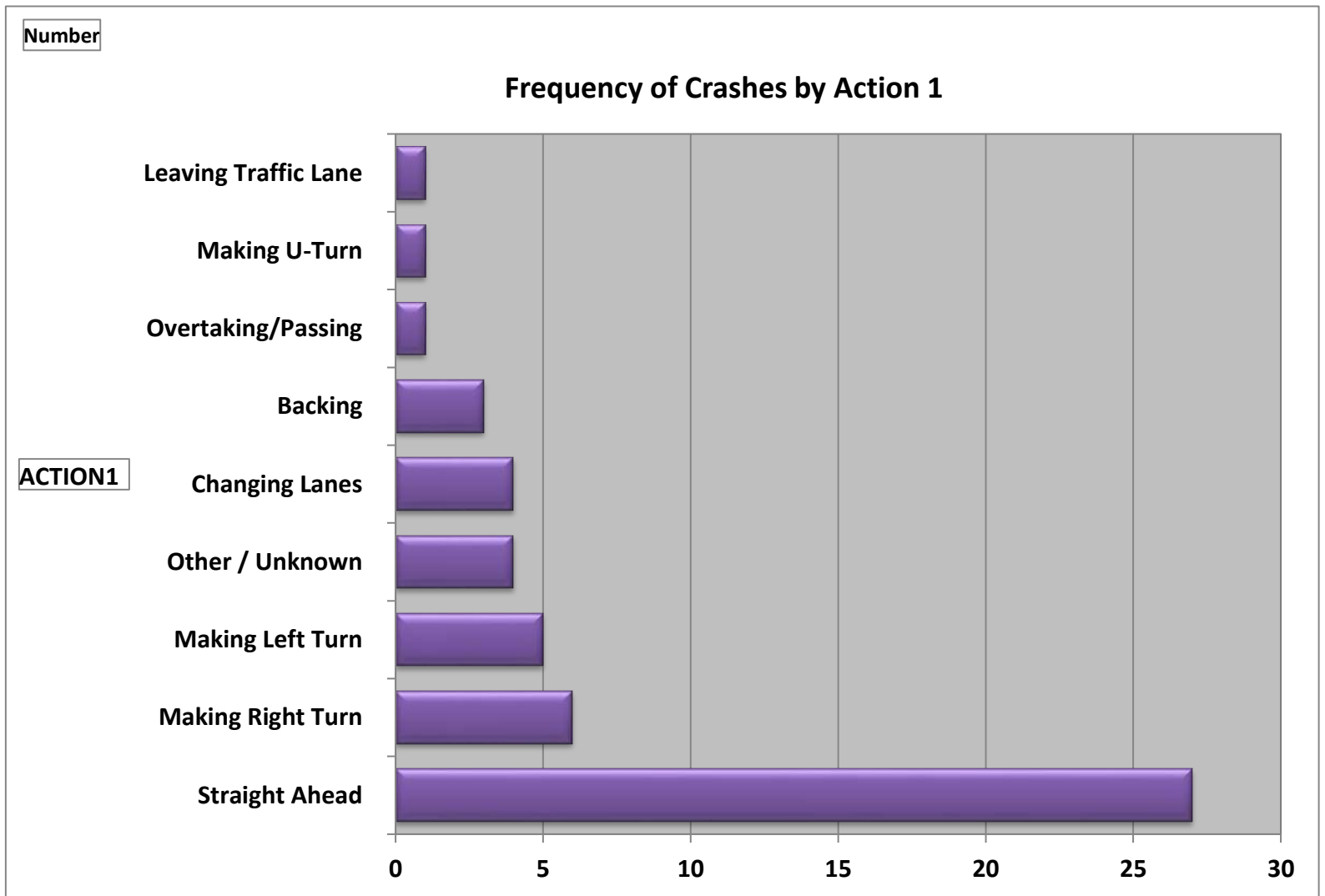
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### Frequency of Crashes by Contributing Factor 2

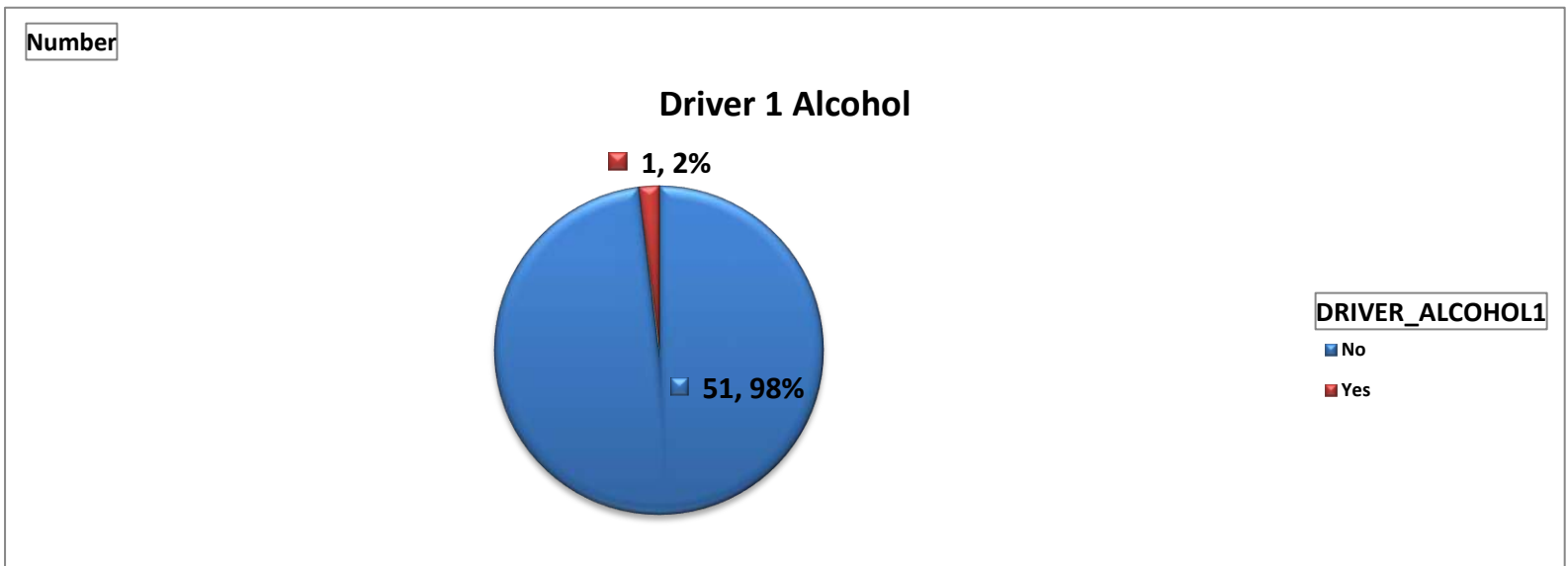
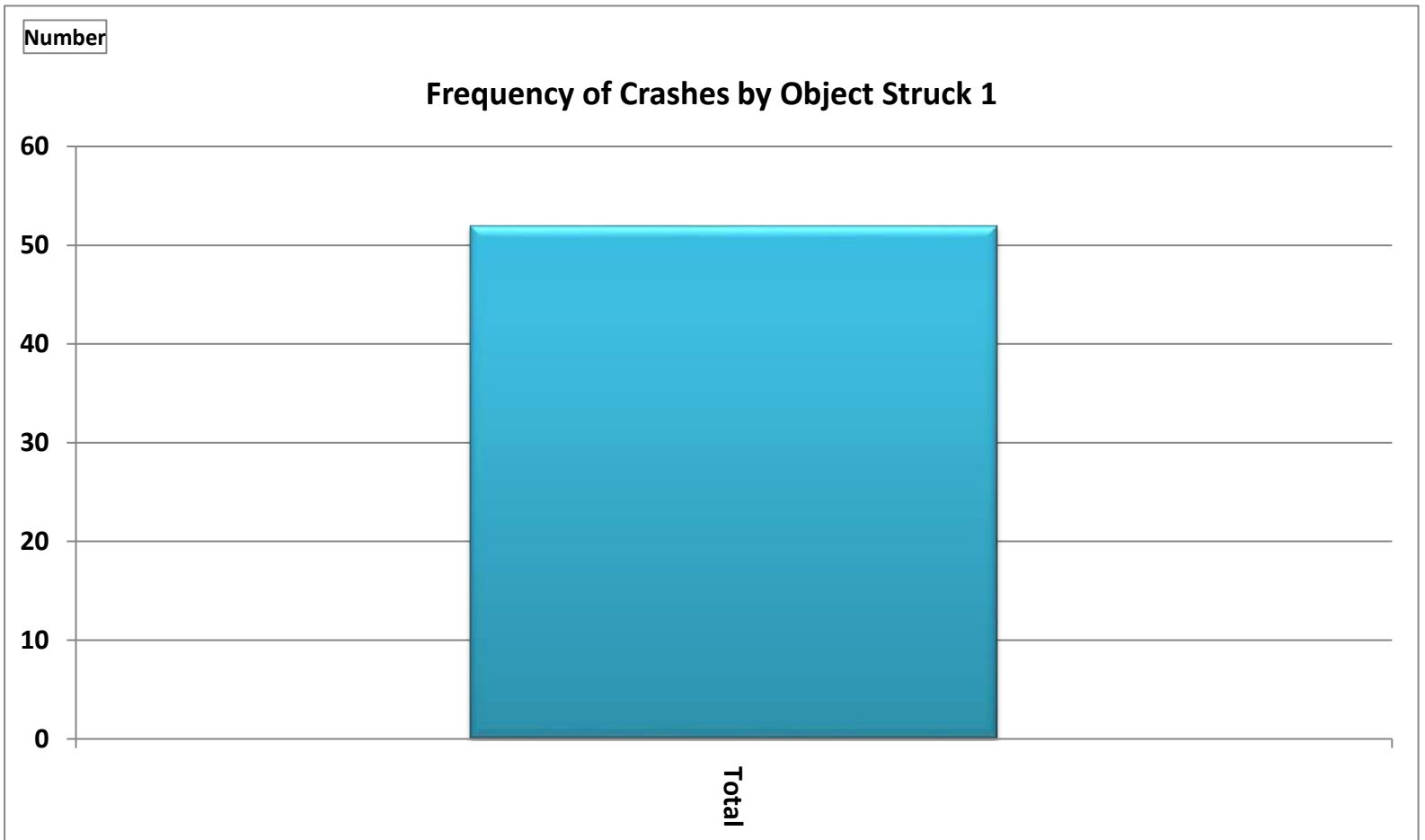


CONTRIBUTING\_FACTOR2

Third Street (Abbey Ave to James H McGee Blvd)



Third Street (Abbey Ave to James H McGee Blvd)



# THIRD STREET TARGET SPEED EVALUATION

APPENDIX G1: CAPACITY ANALYSES (NO BUILD)



Lanes, Volumes, Timings

3: Abbey Ave/Brooklyn Ave & 3rd St

09/20/2024



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	10	140	80	40	110	10	60	100	30	20	160	20
Future Volume (vph)	10	140	80	40	110	10	60	100	30	20	160	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	90		0	105		0	130		0	90		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	50			50			50			50		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.945			0.987			0.965			0.983	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1703	3218	0	1719	3393	0	1703	1730	0	1736	1796	0
Flt Permitted	0.668			0.601			0.498			0.646		
Satd. Flow (perm)	1197	3218	0	1088	3393	0	893	1730	0	1180	1796	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		88			11			22			9	
Link Speed (mph)		35			35			30			25	
Link Distance (ft)		356			4572			673			596	
Travel Time (s)		6.9			89.1			15.3			16.3	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles (%)	6%	6%	6%	5%	5%	5%	6%	6%	6%	4%	4%	4%
Adj. Flow (vph)	11	154	88	44	121	11	66	110	33	22	176	22
Shared Lane Traffic (%)												
Lane Group Flow (vph)	11	242	0	44	132	0	66	143	0	22	198	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane		Yes			Yes							
Headway 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
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	

Lanes, Volumes, Timings  
 3: Abbey Ave/Brooklyn Ave & 3rd St

09/20/2024



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	2			6			8			4		
Detector Phase	2	2		6	6		8	8		4	4	
Switch Phase												
Minimum Initial (s)	20.0	20.0		20.0	20.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	26.0	26.0		26.0	26.0		24.0	24.0		24.0	24.0	
Total Split (s)	42.0	42.0		42.0	42.0		48.0	48.0		48.0	48.0	
Total Split (%)	46.7%	46.7%		46.7%	46.7%		53.3%	53.3%		53.3%	53.3%	
Maximum Green (s)	36.0	36.0		36.0	36.0		42.0	42.0		42.0	42.0	
Yellow Time (s)	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	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	C-Min	C-Min		C-Min	C-Min		None	None		None	None	
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)	62.8	62.8		62.8	62.8		15.2	15.2		15.2	15.2	
Actuated g/C Ratio	0.70	0.70		0.70	0.70		0.17	0.17		0.17	0.17	
v/c Ratio	0.01	0.10		0.05	0.05		0.43	0.45		0.11	0.63	
Control Delay (s/veh)	5.5	3.4		2.3	1.9		41.3	32.1		30.5	41.9	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay (s/veh)	5.5	3.4		2.3	1.9		41.3	32.1		30.5	41.9	
LOS	A	A		A	A		D	C		C	D	
Approach Delay (s/veh)		3.5			2.0			35.1			40.8	
Approach LOS		A			A			D			D	
Queue Length 50th (ft)	2	12		1	0		34	62		11	101	
Queue Length 95th (ft)	8	30		m3	1		70	110		30	159	
Internal Link Dist (ft)		276			4492			593			516	
Turn Bay Length (ft)	90			105			130			90		
Base Capacity (vph)	834	2270		758	2369		416	819		550	842	
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	0.01	0.11		0.06	0.06		0.16	0.17		0.04	0.24	

**Intersection Summary**

Area Type: Other

Cycle Length: 90

Actuated Cycle Length: 90

Offset: 49 (54%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow

Natural Cycle: 50

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.64

Intersection Signal Delay (s/veh): 20.5      Intersection LOS: C

Intersection Capacity Utilization 66.2%      ICU Level of Service C

Analysis Period (min) 15

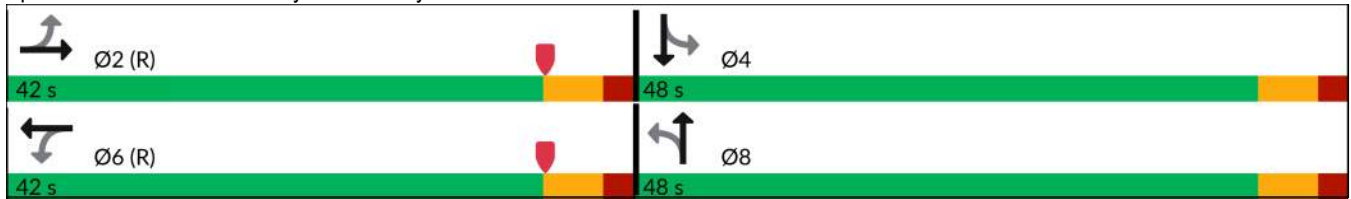
# Lanes, Volumes, Timings

## 3: Abbey Ave/Brooklyn Ave & 3rd St

09/20/2024






















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

Splits and Phases: 3: Abbey Ave/Brooklyn Ave & 3rd St



Lanes, Volumes, Timings  
6: JHM Blvd & 3rd St

09/20/2024

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	30	150	40	20	140	80	60	470	30	220	500	30
Future Volume (vph)	30	150	40	20	140	80	60	470	30	220	500	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	160		0	140		80	200		0	225		0
Storage Lanes	1		0	1		1	1		0	1		0
Taper Length (ft)	50			50			50			50		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt		0.969				0.850		0.991			0.991	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3430	0	1736	3471	1553	1736	3440	0	1752	3473	0
Flt Permitted	0.623			0.623			0.435			0.243		
Satd. Flow (perm)	1160	3430	0	1138	3471	1553	795	3440	0	448	3473	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		36				109		7			7	
Link Speed (mph)		35			35			35			40	
Link Distance (ft)		4572			816			727			907	
Travel Time (s)		89.1			15.9			14.2			15.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	2%	2%	4%	4%	4%	4%	4%	4%	3%	3%	3%
Adj. Flow (vph)	33	163	43	22	152	87	65	511	33	239	543	33
Shared Lane Traffic (%)												
Lane Group Flow (vph)	33	206	0	22	152	87	65	544	0	239	576	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane		Yes			Yes							
Headway 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
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2	1	1	2		1	2	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100	20	20	100		20	100	
Trailing Detector (ft)	0	0		0	0	0	0	0		0	0	
Detector 1 Position(ft)	0	0		0	0	0	0	0		0	0	
Detector 1 Size(ft)	20	6		20	6	20	20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA		pm+pt	NA	pm+ov	pm+pt	NA		pm+pt	NA	
Protected Phases	5	2		1	6	7	3	8		7	4	

Lanes, Volumes, Timings  
6: JHM Blvd & 3rd St

09/20/2024

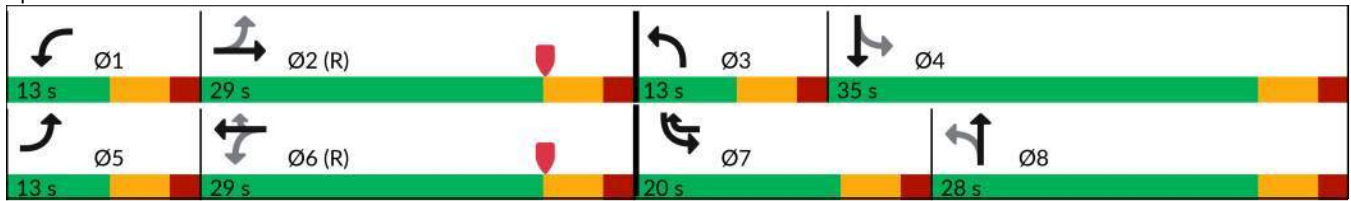


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	2			6		6	8			4		
Detector Phase	5	2		1	6	7	3	8		7	4	
Switch Phase												
Minimum Initial (s)	7.0	20.0		7.0	20.0	7.0	7.0	20.0		7.0	20.0	
Minimum Split (s)	13.0	26.0		13.0	26.0	13.0	13.0	26.0		13.0	26.0	
Total Split (s)	13.0	29.0		13.0	29.0	20.0	13.0	28.0		20.0	35.0	
Total Split (%)	14.4%	32.2%		14.4%	32.2%	22.2%	14.4%	31.1%		22.2%	38.9%	
Maximum Green (s)	7.0	23.0		7.0	23.0	14.0	7.0	22.0		14.0	29.0	
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	0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0	6.0	6.0	6.0		6.0	6.0	
Lead/Lag	Lead	Lag		Lead	Lag	Lead	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	C-Min		None	C-Min	None	None	Min		None	Min	
Walk Time (s)		7.0			7.0			7.0			7.0	
Flash Dont Walk (s)		11.0			11.0			11.0			11.0	
Pedestrian Calls (#/hr)		0			0			0			0	
Act Effct Green (s)	35.9	33.1		34.7	30.5	49.4	27.8	20.8		39.5	29.3	
Actuated g/C Ratio	0.40	0.37		0.39	0.34	0.55	0.31	0.23		0.44	0.33	
v/c Ratio	0.06	0.16		0.04	0.12	0.09	0.20	0.68		0.62	0.50	
Control Delay (s/veh)	14.4	15.9		16.6	23.7	2.0	16.5	36.0		23.5	26.5	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay (s/veh)	14.4	15.9		16.6	23.7	2.0	16.5	36.0		23.5	26.5	
LOS	B	B		B	C	A	B	D		C	C	
Approach Delay (s/veh)		15.7			15.9			33.9			25.7	
Approach LOS		B			B			C			C	
Queue Length 50th (ft)	12	32		7	34	0	21	148		85	142	
Queue Length 95th (ft)	29	56		22	60	17	42	200		132	188	
Internal Link Dist (ft)		4492			736			647			827	
Turn Bay Length (ft)	160			140		80	200			225		
Base Capacity (vph)	510	1285		485	1177	919	318	846		400	1179	
Starvation Cap Reductn	0	0		0	0	0	0	0		0	0	
Spillback Cap Reductn	0	0		0	0	0	0	0		0	0	
Storage Cap Reductn	0	0		0	0	0	0	0		0	0	
Reduced v/c Ratio	0.06	0.16		0.05	0.13	0.09	0.20	0.64		0.60	0.49	

Intersection Summary

Area Type: Other  
 Cycle Length: 90  
 Actuated Cycle Length: 90  
 Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow, Master Intersection  
 Natural Cycle: 80  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.68  
 Intersection Signal Delay (s/veh): 25.7  
 Intersection Capacity Utilization 68.8%  
 Analysis Period (min) 15  
 Intersection LOS: C  
 ICU Level of Service C

Splits and Phases: 6: JHM Blvd & 3rd St



Lanes, Volumes, Timings

3: Abbey Ave/Brooklyn Ave & 3rd St

09/20/2024



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	30	240	90	50	290	10	80	180	60	10	210	30
Future Volume (vph)	30	240	90	50	290	10	80	180	60	10	210	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	90		0	105		0	130		0	90		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	50			50			50			50		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.959			0.995			0.962			0.981	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3394	0	1736	3454	0	1770	1792	0	1770	1827	0
Flt Permitted	0.567			0.551			0.421			0.418		
Satd. Flow (perm)	1056	3394	0	1007	3454	0	784	1792	0	779	1827	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		74			5			25			10	
Link Speed (mph)		35			35			30			25	
Link Distance (ft)		356			4572			673			596	
Travel Time (s)		6.9			89.1			15.3			16.3	
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Heavy Vehicles (%)	2%	2%	2%	4%	4%	4%	2%	2%	2%	2%	2%	2%
Adj. Flow (vph)	30	242	91	51	293	10	81	182	61	10	212	30
Shared Lane Traffic (%)												
Lane Group Flow (vph)	30	333	0	51	303	0	81	243	0	10	242	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane		Yes			Yes							
Headway 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
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	

Lanes, Volumes, Timings  
 3: Abbey Ave/Brooklyn Ave & 3rd St

09/20/2024



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	2		6		8		4		4			
Detector Phase	2	2	6		6		8		8		4	4
Switch Phase												
Minimum Initial (s)	20.0	20.0	20.0		20.0		10.0		10.0		10.0	10.0
Minimum Split (s)	26.0	26.0	26.0		26.0		24.0		24.0		24.0	24.0
Total Split (s)	43.0	43.0	43.0		43.0		47.0		47.0		47.0	47.0
Total Split (%)	47.8%	47.8%	47.8%		47.8%		52.2%		52.2%		52.2%	52.2%
Maximum Green (s)	37.0	37.0	37.0		37.0		41.0		41.0		41.0	41.0
Yellow Time (s)	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
Lost Time Adjust (s)	0.0	0.0	0.0		0.0		0.0		0.0		0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0		6.0		6.0		6.0		6.0	6.0
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0		3.0		3.0		3.0		3.0	3.0
Recall Mode	C-Min	C-Min	C-Min		C-Min		None		None		None	None
Walk Time (s)	7.0	7.0	7.0		7.0		7.0		7.0		7.0	7.0
Flash Dont Walk (s)	11.0	11.0	11.0		11.0		11.0		11.0		11.0	11.0
Pedestrian Calls (#/hr)	0	0	0		0		0		0		0	0
Act Effct Green (s)	60.8	60.8	60.8		60.8		17.2		17.2		17.2	17.2
Actuated g/C Ratio	0.68	0.68	0.68		0.68		0.19		0.19		0.19	0.19
v/c Ratio	0.04	0.14	0.07		0.12		0.54		0.66		0.06	0.67
Control Delay (s/veh)	6.5	4.8	2.2		1.9		45.0		38.7		27.7	41.3
Queue Delay	0.0	0.0	0.0		0.0		0.0		0.0		0.0	0.0
Total Delay (s/veh)	6.5	4.8	2.2		1.9		45.0		38.7		27.7	41.3
LOS	A	A	A		A		D		D		C	D
Approach Delay (s/veh)	5.0		2.0		40.3		40.8					
Approach LOS	A		A		D		D					
Queue Length 50th (ft)	5	23	2		3		42		116		5	124
Queue Length 95th (ft)	18	49	m6		9		82		176		17	183
Internal Link Dist (ft)	276		4492		593		516					
Turn Bay Length (ft)	90		105		130		90					
Base Capacity (vph)	713	2316	680		2334		357		829		354	837
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	0.04	0.14	0.08		0.13		0.23		0.29		0.03	0.29

**Intersection Summary**

Area Type: Other

Cycle Length: 90

Actuated Cycle Length: 90

Offset: 47 (52%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow

Natural Cycle: 50

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.68

Intersection Signal Delay (s/veh): 20.0      Intersection LOS: B

Intersection Capacity Utilization 74.8%      ICU Level of Service D

Analysis Period (min) 15

Lanes, Volumes, Timings  
3: Abbey Ave/Brooklyn Ave & 3rd St

09/20/2024
























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

Splits and Phases: 3: Abbey Ave/Brooklyn Ave & 3rd St



Lanes, Volumes, Timings  
6: JHM Blvd & 3rd St

09/20/2024

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	60	210	70	60	300	230	60	890	40	150	600	60
Future Volume (vph)	60	210	70	60	300	230	60	890	40	150	600	60
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	160		0	140		80	200		0	225		0
Storage Lanes	1		0	1		1	1		0	1		0
Taper Length (ft)	50			50			50			50		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt		0.962				0.850		0.994			0.986	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1787	3438	0	1770	3539	1583	1752	3484	0	1770	3490	0
Flt Permitted	0.539			0.563			0.304			0.125		
Satd. Flow (perm)	1014	3438	0	1049	3539	1583	561	3484	0	233	3490	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		48				163		5			12	
Link Speed (mph)		35			35			35			40	
Link Distance (ft)		4572			816			727			907	
Travel Time (s)		89.1			15.9			14.2			15.5	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	1%	1%	1%	2%	2%	2%	3%	3%	3%	2%	2%	2%
Adj. Flow (vph)	63	221	74	63	316	242	63	937	42	158	632	63
Shared Lane Traffic (%)												
Lane Group Flow (vph)	63	295	0	63	316	242	63	979	0	158	695	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane		Yes			Yes							
Headway 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
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2	1	1	2		1	2	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100	20	20	100		20	100	
Trailing Detector (ft)	0	0		0	0	0	0	0		0	0	
Detector 1 Position(ft)	0	0		0	0	0	0	0		0	0	
Detector 1 Size(ft)	20	6		20	6	20	20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA		pm+pt	NA	pm+ov	pm+pt	NA		pm+pt	NA	
Protected Phases	5	2		1	6	7	3	8		7	4	

Lanes, Volumes, Timings  
6: JHM Blvd & 3rd St

09/20/2024



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	2			6		6	8			4		
Detector Phase	5	2		1	6	7	3	8		7	4	
Switch Phase												
Minimum Initial (s)	7.0	20.0		7.0	20.0	7.0	7.0	20.0		7.0	20.0	
Minimum Split (s)	13.0	26.0		13.0	26.0	13.0	13.0	26.0		13.0	26.0	
Total Split (s)	13.0	28.0		13.0	28.0	14.0	13.0	35.0		14.0	36.0	
Total Split (%)	14.4%	31.1%		14.4%	31.1%	15.6%	14.4%	38.9%		15.6%	40.0%	
Maximum Green (s)	7.0	22.0		7.0	22.0	8.0	7.0	29.0		8.0	30.0	
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	0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0	6.0	6.0	6.0		6.0	6.0	
Lead/Lag	Lead	Lag		Lead	Lag	Lead	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	C-Min		None	C-Min	None	None	Min		None	Min	
Walk Time (s)		7.0			7.0			7.0			7.0	
Flash Dont Walk (s)		11.0			11.0			11.0			11.0	
Pedestrian Calls (#/hr)		0			0			0			0	
Act Effct Green (s)	30.8	25.2		30.8	25.2	39.2	35.4	28.4		38.4	32.0	
Actuated g/C Ratio	0.34	0.28		0.34	0.28	0.44	0.39	0.32		0.43	0.36	
v/c Ratio	0.15	0.29		0.15	0.31	0.30	0.20	0.88		0.66	0.55	
Control Delay (s/veh)	16.1	20.3		18.7	28.1	7.6	14.7	40.3		31.2	25.6	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay (s/veh)	16.1	20.3		18.7	28.1	7.6	14.7	40.3		31.2	25.6	
LOS	B	C		B	C	A	B	D		C	C	
Approach Delay (s/veh)		19.6			19.2			38.8			26.7	
Approach LOS		B			B			D			C	
Queue Length 50th (ft)	21	65		22	78	28	19	272		49	167	
Queue Length 95th (ft)	41	71		48	117	78	40	#384		#123	226	
Internal Link Dist (ft)		4492			736			647			827	
Turn Bay Length (ft)	160			140		80	200			225		
Base Capacity (vph)	406	997		415	991	781	313	1126		236	1248	
Starvation Cap Reductn	0	0		0	0	0	0	0		0	0	
Spillback Cap Reductn	0	0		0	0	0	0	0		0	0	
Storage Cap Reductn	0	0		0	0	0	0	0		0	0	
Reduced v/c Ratio	0.16	0.30		0.15	0.32	0.31	0.20	0.87		0.67	0.56	

Intersection Summary

Area Type: Other  
 Cycle Length: 90  
 Actuated Cycle Length: 90  
 Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow, Master Intersection  
 Natural Cycle: 80  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.89  
 Intersection Signal Delay (s/veh): 28.6  
 Intersection Capacity Utilization 76.7%  
 Analysis Period (min) 15  
 Intersection LOS: C  
 ICU Level of Service D

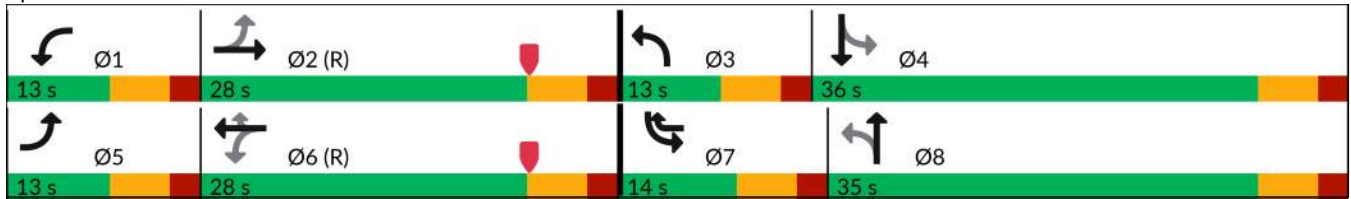
# Lanes, Volumes, Timings

## 6: JHM Blvd & 3rd St

09/20/2024

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

Splits and Phases: 6: JHM Blvd & 3rd St



# THIRD STREET TARGET SPEED EVALUATION

APPENDIX G2: CAPACITY ANALYSES (BUILD)



Lanes, Volumes, Timings

3: Abbey Ave/Brooklyn Ave & 3rd St

09/20/2024



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	10	140	80	40	110	10	60	100	30	20	160	20
Future Volume (vph)	10	140	80	40	110	10	60	100	30	20	160	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	90		0	105		0	130		0	90		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	50			50			50			50		
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
Frt		0.945			0.987			0.965			0.983	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1703	1694	0	1719	1786	0	1703	1730	0	1736	1796	0
Flt Permitted	0.673			0.608			0.633			0.666		
Satd. Flow (perm)	1206	1694	0	1100	1786	0	1135	1730	0	1217	1796	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		45			7			23			10	
Link Speed (mph)		35			35			30			25	
Link Distance (ft)		356			4572			673			596	
Travel Time (s)		6.9			89.1			15.3			16.3	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles (%)	6%	6%	6%	5%	5%	5%	6%	6%	6%	4%	4%	4%
Adj. Flow (vph)	11	154	88	44	121	11	66	110	33	22	176	22
Shared Lane Traffic (%)												
Lane Group Flow (vph)	11	242	0	44	132	0	66	143	0	22	198	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane		Yes			Yes							
Headway 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
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	

Lanes, Volumes, Timings  
 3: Abbey Ave/Brooklyn Ave & 3rd St

09/20/2024



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	2		6		8		4		4			
Detector Phase	2	2	6		6	8		8	4		4	
Switch Phase												
Minimum Initial (s)	20.0	20.0	20.0		20.0	10.0		10.0	10.0		10.0	
Minimum Split (s)	26.0	26.0	26.0		26.0	24.0		24.0	24.0		24.0	
Total Split (s)	40.0	40.0	40.0		40.0	40.0		40.0	40.0		40.0	
Total Split (%)	50.0%	50.0%	50.0%		50.0%	50.0%		50.0%	50.0%		50.0%	
Maximum Green (s)	34.0	34.0	34.0		34.0	34.0		34.0	34.0		34.0	
Yellow Time (s)	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	
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0		0.0	0.0		0.0	
Total Lost Time (s)	6.0	6.0	6.0		6.0	6.0		6.0	6.0		6.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0		3.0	3.0		3.0	
Recall Mode	Min	Min	Min		Min	None		None	None		None	
Walk Time (s)	7.0	7.0	7.0		7.0	7.0		7.0	7.0		7.0	
Flash Dont Walk (s)	11.0	11.0	11.0		11.0	11.0		11.0	11.0		11.0	
Pedestrian Calls (#/hr)	0	0	0		0	0		0	0		0	
Act Effct Green (s)	20.0	20.0	20.0		20.0	10.7		10.7	10.7		10.7	
Actuated g/C Ratio	0.47	0.47	0.47		0.47	0.25		0.25	0.25		0.25	
v/c Ratio	0.01	0.29	0.08		0.15	0.23		0.31	0.07		0.43	
Control Delay (s/veh)	6.7	7.0	7.2		7.1	15.0		13.4	12.7		16.1	
Queue Delay	0.0	0.0	0.0		0.0	0.0		0.0	0.0		0.0	
Total Delay (s/veh)	6.7	7.0	7.2		7.1	15.0		13.4	12.7		16.1	
LOS	A	A	A		A	B		B	B		B	
Approach Delay (s/veh)	7.1		7.2		13.9		15.8					
Approach LOS	A		A		B		B					
Queue Length 50th (ft)	1	25	5		15	13		23	4		38	
Queue Length 95th (ft)	7	64	19		41	35		57	16		80	
Internal Link Dist (ft)	276		4492		593		516					
Turn Bay Length (ft)	90		105		130		90					
Base Capacity (vph)	961	1358	876		1424	904		1382	969		1432	
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	0.01	0.18	0.05		0.09	0.07		0.10	0.02		0.14	

Intersection Summary	
Area Type:	Other
Cycle Length:	80
Actuated Cycle Length:	42.7
Natural Cycle:	50
Control Type:	Actuated-Uncoordinated
Maximum v/c Ratio:	0.43
Intersection Signal Delay (s/veh):	11.0
Intersection LOS:	B
Intersection Capacity Utilization:	66.2%
ICU Level of Service:	C
Analysis Period (min):	15

Lanes, Volumes, Timings  
3: Abbey Ave/Brooklyn Ave & 3rd St
























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Splits and Phases: 3: Abbey Ave/Brooklyn Ave & 3rd St



Lanes, Volumes, Timings  
6: JHM Blvd & 3rd St

09/20/2024

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	30	150	40	20	140	80	60	470	30	220	500	30
Future Volume (vph)	30	150	40	20	140	80	60	470	30	220	500	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	160		0	140		80	200		0	225		0
Storage Lanes	1		0	1		1	1		0	1		0
Taper Length (ft)	50			50			50			50		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt		0.969				0.850		0.991			0.991	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1805	0	1736	1827	1553	1736	3440	0	1752	3473	0
Flt Permitted	0.628			0.615			0.435			0.239		
Satd. Flow (perm)	1170	1805	0	1124	1827	1553	795	3440	0	441	3473	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		14				109		7			7	
Link Speed (mph)		35			35			35			40	
Link Distance (ft)		4572			816			727			907	
Travel Time (s)		89.1			15.9			14.2			15.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	2%	2%	4%	4%	4%	4%	4%	4%	3%	3%	3%
Adj. Flow (vph)	33	163	43	22	152	87	65	511	33	239	543	33
Shared Lane Traffic (%)												
Lane Group Flow (vph)	33	206	0	22	152	87	65	544	0	239	576	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane		Yes			Yes							
Headway 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
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2	1	1	2		1	2	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100	20	20	100		20	100	
Trailing Detector (ft)	0	0		0	0	0	0	0		0	0	
Detector 1 Position(ft)	0	0		0	0	0	0	0		0	0	
Detector 1 Size(ft)	20	6		20	6	20	20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA		pm+pt	NA	pm+ov	pm+pt	NA		pm+pt	NA	
Protected Phases	5	2		1	6	7	3	8		7	4	

Lanes, Volumes, Timings  
6: JHM Blvd & 3rd St

09/20/2024

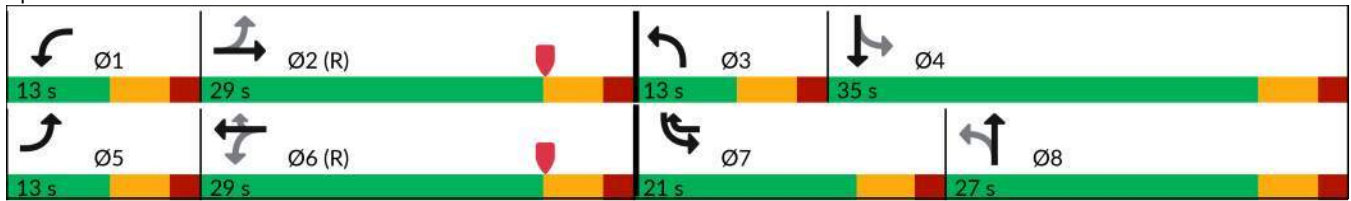


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	2			6		6	8			4		
Detector Phase	5	2		1	6	7	3	8		7	4	
Switch Phase												
Minimum Initial (s)	7.0	20.0		7.0	20.0	7.0	7.0	20.0		7.0	20.0	
Minimum Split (s)	13.0	26.0		13.0	26.0	13.0	13.0	26.0		13.0	26.0	
Total Split (s)	13.0	29.0		13.0	29.0	21.0	13.0	27.0		21.0	35.0	
Total Split (%)	14.4%	32.2%		14.4%	32.2%	23.3%	14.4%	30.0%		23.3%	38.9%	
Maximum Green (s)	7.0	23.0		7.0	23.0	15.0	7.0	21.0		15.0	29.0	
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	0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0	6.0	6.0	6.0		6.0	6.0	
Lead/Lag	Lead	Lag		Lead	Lag	Lead	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	C-Min		None	C-Min	None	None	Min		None	Min	
Walk Time (s)		7.0			7.0			7.0			7.0	
Flash Dont Walk (s)		11.0			11.0			11.0			11.0	
Pedestrian Calls (#/hr)		0			0			0			0	
Act Effct Green (s)	35.8	33.0		34.6	30.4	49.8	27.4	20.4		39.7	29.4	
Actuated g/C Ratio	0.40	0.37		0.38	0.34	0.55	0.30	0.23		0.44	0.33	
v/c Ratio	0.06	0.30		0.04	0.24	0.09	0.20	0.69		0.61	0.50	
Control Delay (s/veh)	16.8	23.2		16.7	25.9	1.9	16.6	36.7		23.0	26.4	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay (s/veh)	16.8	23.2		16.7	25.9	1.9	16.6	36.7		23.0	26.4	
LOS	B	C		B	C	A	B	D		C	C	
Approach Delay (s/veh)		22.3			17.2			34.6			25.4	
Approach LOS		C			B			C			C	
Queue Length 50th (ft)	11	69		7	69	0	20	148		84	140	
Queue Length 95th (ft)	29	157		22	124	16	42	203		132	188	
Internal Link Dist (ft)		4492			736			647			827	
Turn Bay Length (ft)	160			140		80	200			225		
Base Capacity (vph)	511	670		479	616	933	315	808		413	1179	
Starvation Cap Reductn	0	0		0	0	0	0	0		0	0	
Spillback Cap Reductn	0	0		0	0	0	0	0		0	0	
Storage Cap Reductn	0	0		0	0	0	0	0		0	0	
Reduced v/c Ratio	0.06	0.31		0.05	0.25	0.09	0.21	0.67		0.58	0.49	

Intersection Summary

Area Type:	Other
Cycle Length:	90
Actuated Cycle Length:	90
Offset:	0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow, Master Intersection
Natural Cycle:	80
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.69
Intersection Signal Delay (s/veh):	26.8
Intersection LOS:	C
Intersection Capacity Utilization:	68.8%
ICU Level of Service:	C
Analysis Period (min):	15

Splits and Phases: 6: JHM Blvd & 3rd St



Lanes, Volumes, Timings

3: Abbey Ave/Brooklyn Ave & 3rd St

09/20/2024



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	30	240	90	50	290	10	80	180	60	10	210	30
Future Volume (vph)	30	240	90	50	290	10	80	180	60	10	210	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	90		0	105		0	130		0	90		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	50			50			50			50		
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
Frt		0.959			0.995			0.962			0.981	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1786	0	1736	1818	0	1770	1792	0	1770	1827	0
Flt Permitted	0.575			0.560			0.608			0.608		
Satd. Flow (perm)	1071	1786	0	1023	1818	0	1133	1792	0	1133	1827	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		29			3			26			11	
Link Speed (mph)		35			35			30			25	
Link Distance (ft)		356			4572			673			596	
Travel Time (s)		6.9			89.1			15.3			16.3	
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Heavy Vehicles (%)	2%	2%	2%	4%	4%	4%	2%	2%	2%	2%	2%	2%
Adj. Flow (vph)	30	242	91	51	293	10	81	182	61	10	212	30
Shared Lane Traffic (%)												
Lane Group Flow (vph)	30	333	0	51	303	0	81	243	0	10	242	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane		Yes			Yes							
Headway 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
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	

Lanes, Volumes, Timings  
 3: Abbey Ave/Brooklyn Ave & 3rd St

09/20/2024



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	2				6		8				4	
Detector Phase	2	2			6	6	8	8			4	4
Switch Phase												
Minimum Initial (s)	20.0	20.0			20.0	20.0	10.0	10.0			10.0	10.0
Minimum Split (s)	26.0	26.0			26.0	26.0	24.0	24.0			24.0	24.0
Total Split (s)	40.0	40.0			40.0	40.0	40.0	40.0			40.0	40.0
Total Split (%)	50.0%	50.0%			50.0%	50.0%	50.0%	50.0%			50.0%	50.0%
Maximum Green (s)	34.0	34.0			34.0	34.0	34.0	34.0			34.0	34.0
Yellow Time (s)	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
Lost Time Adjust (s)	0.0	0.0			0.0	0.0	0.0	0.0			0.0	0.0
Total Lost Time (s)	6.0	6.0			6.0	6.0	6.0	6.0			6.0	6.0
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0	3.0			3.0	3.0
Recall Mode	Min	Min			Min	Min	None	None			None	None
Walk Time (s)	7.0	7.0			7.0	7.0	7.0	7.0			7.0	7.0
Flash Dont Walk (s)	11.0	11.0			11.0	11.0	11.0	11.0			11.0	11.0
Pedestrian Calls (#/hr)	0	0			0	0	0	0			0	0
Act Effct Green (s)	20.1	20.1			20.1	20.1	11.6	11.6			11.6	11.6
Actuated g/C Ratio	0.46	0.46			0.46	0.46	0.27	0.27			0.27	0.27
v/c Ratio	0.06	0.39			0.10	0.36	0.27	0.49			0.03	0.49
Control Delay (s/veh)	7.9	9.4			8.3	9.7	15.0	15.6			11.7	16.5
Queue Delay	0.0	0.0			0.0	0.0	0.0	0.0			0.0	0.0
Total Delay (s/veh)	7.9	9.4			8.3	9.7	15.0	15.6			11.7	16.5
LOS	A	A			A	A	B	B			B	B
Approach Delay (s/veh)	9.3				9.5		15.5				16.4	
Approach LOS	A				A		B				B	
Queue Length 50th (ft)	4	42			6	41	16	45			2	48
Queue Length 95th (ft)	16	108			24	103	41	91			9	95
Internal Link Dist (ft)	276				4492		593				516	
Turn Bay Length (ft)	90				105		130				90	
Base Capacity (vph)	836	1400			798	1420	884	1404			884	1428
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	0.04	0.24			0.06	0.21	0.09	0.17			0.01	0.17

Intersection Summary	
Area Type:	Other
Cycle Length:	80
Actuated Cycle Length:	43.7
Natural Cycle:	50
Control Type:	Actuated-Uncoordinated
Maximum v/c Ratio:	0.49
Intersection Signal Delay (s/veh):	12.3
Intersection LOS:	B
Intersection Capacity Utilization:	76.2%
ICU Level of Service:	D
Analysis Period (min):	15

Lanes, Volumes, Timings  
3: Abbey Ave/Brooklyn Ave & 3rd St
























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Splits and Phases: 3: Abbey Ave/Brooklyn Ave & 3rd St



Lanes, Volumes, Timings  
6: JHM Blvd & 3rd St

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	60	210	70	60	300	230	60	890	40	150	600	60
Future Volume (vph)	60	210	70	60	300	230	60	890	40	150	600	60
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	160		0	140		80	200		0	225		0
Storage Lanes	1		0	1		1	1		0	1		0
Taper Length (ft)	50			50			50			50		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt		0.962				0.850		0.994			0.986	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1787	1810	0	1770	1863	1583	1752	3484	0	1770	3490	0
Flt Permitted	0.412			0.439			0.319			0.090		
Satd. Flow (perm)	775	1810	0	818	1863	1583	588	3484	0	168	3490	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		15				129		4			10	
Link Speed (mph)		35			35			35			40	
Link Distance (ft)		4572			816			727			907	
Travel Time (s)		89.1			15.9			14.2			15.5	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	1%	1%	1%	2%	2%	2%	3%	3%	3%	2%	2%	2%
Adj. Flow (vph)	63	221	74	63	316	242	63	937	42	158	632	63
Shared Lane Traffic (%)												
Lane Group Flow (vph)	63	295	0	63	316	242	63	979	0	158	695	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane		Yes			Yes							
Headway 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
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2	1	1	2		1	2	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100	20	20	100		20	100	
Trailing Detector (ft)	0	0		0	0	0	0	0		0	0	
Detector 1 Position(ft)	0	0		0	0	0	0	0		0	0	
Detector 1 Size(ft)	20	6		20	6	20	20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA		pm+pt	NA	pm+ov	pm+pt	NA		pm+pt	NA	
Protected Phases	5	2		1	6	7	3	8		7	4	

Lanes, Volumes, Timings  
6: JHM Blvd & 3rd St

09/20/2024



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	2			6		6	8			4		
Detector Phase	5	2		1	6	7	3	8		7	4	
Switch Phase												
Minimum Initial (s)	7.0	20.0		7.0	20.0	7.0	7.0	20.0		7.0	20.0	
Minimum Split (s)	13.0	26.0		13.0	26.0	13.0	13.0	26.0		13.0	26.0	
Total Split (s)	13.0	44.0		13.0	44.0	19.0	13.0	44.0		19.0	50.0	
Total Split (%)	10.8%	36.7%		10.8%	36.7%	15.8%	10.8%	36.7%		15.8%	41.7%	
Maximum Green (s)	7.0	38.0		7.0	38.0	13.0	7.0	38.0		13.0	44.0	
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	0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0	6.0	6.0	6.0		6.0	6.0	
Lead/Lag	Lead	Lag		Lead	Lag	Lead	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	C-Min		None	C-Min	None	None	Min		None	Min	
Walk Time (s)		7.0			7.0			7.0			7.0	
Flash Dont Walk (s)		11.0			11.0			11.0			11.0	
Pedestrian Calls (#/hr)		0			0			0			0	
Act Effct Green (s)	48.0	42.4		48.0	42.4	60.5	44.1	37.1		54.9	44.8	
Actuated g/C Ratio	0.40	0.35		0.40	0.35	0.50	0.37	0.31		0.46	0.37	
v/c Ratio	0.17	0.45		0.16	0.48	0.28	0.22	0.90		0.66	0.53	
Control Delay (s/veh)	21.8	32.7		21.7	34.9	9.4	20.0	52.2		37.4	31.0	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay (s/veh)	21.8	32.7		21.7	34.9	9.4	20.0	52.2		37.4	31.0	
LOS	C	C		C	C	A	C	D		D	C	
Approach Delay (s/veh)		30.8			23.7			50.3			32.2	
Approach LOS		C			C			D			C	
Queue Length 50th (ft)	29	176		29	201	48	26	376		69	218	
Queue Length 95th (ft)	57	264		57	293	102	52	#493		139	279	
Internal Link Dist (ft)		4492			736			647			827	
Turn Bay Length (ft)	160			140		80	200			225		
Base Capacity (vph)	369	649		383	658	873	284	1106		250	1316	
Starvation Cap Reductn	0	0		0	0	0	0	0		0	0	
Spillback Cap Reductn	0	0		0	0	0	0	0		0	0	
Storage Cap Reductn	0	0		0	0	0	0	0		0	0	
Reduced v/c Ratio	0.17	0.45		0.16	0.48	0.28	0.22	0.89		0.63	0.53	

Intersection Summary

Area Type: Other  
 Cycle Length: 120  
 Actuated Cycle Length: 120  
 Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow, Master Intersection  
 Natural Cycle: 80  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.91  
 Intersection Signal Delay (s/veh): 36.8  
 Intersection LOS: D  
 Intersection Capacity Utilization 76.7%  
 ICU Level of Service D  
 Analysis Period (min) 15

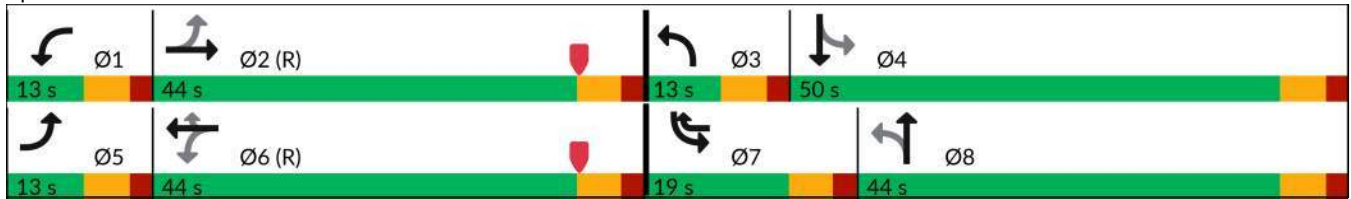
# Lanes, Volumes, Timings

## 6: JHM Blvd & 3rd St

09/20/2024

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

Splits and Phases: 6: JHM Blvd & 3rd St



# THIRD STREET TARGET SPEED EVALUATION

APPENDIX H: COST ESTIMATE



**ENGINEER'S OPINION OF PROBABLE CONSTRUCTION COST**  
**Third St Target Speed Concept Plan**

PID: 120561

Date: 10/01/24

Client name: ODOT

Ref. No.	Item No.	Description	Total Estimated Quantity	Unit	Estimated Unit Cost	Total Estimated Cost
1	202	CLEARING AND GRUBBING	1	LUMP	\$ 10,000.00	\$ 10,000
2	202	PAVEMENT REMOVED	2470	SQ YD	\$ 13.00	\$ 32,110
3	202	SIDEWALK REMOVED	2520	SQ FT	\$ 6.00	\$ 15,120
4	202	CURB REMOVED	1300	FEET	\$ 8.00	\$ 10,400
5	301	ASPHALT CONCRETE BASE	95	CU YD	\$ 170.00	\$ 16,150
6	304	AGGREGATE BASE	95	CU YD	\$ 80.00	\$ 7,600
7	441	ASPHALT CONCRETE INTERMEDIATE COURSE	30	CU YD	\$ 300.00	\$ 9,000
8	441	ASPHALT CONCRETE SURFACE COURSE	25	CU YD	\$ 300.00	\$ 7,500
9	441	ASPHALT CONCRETE SURFACE COURSE (RAISED CROSSWALK)	40	CU YD	\$ 600.00	\$ 24,000
10	608	SIDEWALK	6780	SQ FT	\$ 8.00	\$ 54,240
11	608	CURB RAMPS	1300	SQ FT	\$ 24.00	\$ 31,200
12	608	ELEVATED BUS STOP RAMP	2650	SQ FT	\$ 20.00	\$ 53,000
13	609	COMBINATION CURB & GUTTER, TYPE 2	990	FEET	\$ 35.00	\$ 34,650
14	609	CURB, TYPE 6	2020	FEET	\$ 25.00	\$ 50,500
15	609	CONCRETE MEDIAN	1190	SQ YD	\$ 125.00	\$ 148,750
16	611	CATCH BASIN	5	EACH	\$ 3,500.00	\$ 17,500
17	611	STORM SEWER CONDUIT	410	FEET	\$ 160.00	\$ 65,600
18	630	OVERHEAD SIGNAGE	2	EACH	\$ 15,000.00	\$ 30,000
19	630	GROUND MOUNTED SIGNAGE	1	LUMP	\$ 40,000.00	\$ 40,000
20	632	TRAFFIC SIGNAL REMOVAL	2	EACH	\$ 20,000.00	\$ 40,000
21	632	TRAFFIC SIGNAL (AT JAMES H. MCGEE BLVD)	1	EACH	\$ 400,000.00	\$ 400,000
22	632	SOLAR POWERED RECTANGULAR RAPID FLASHING BEACON (RRFB)	2	EACH	\$ 26,000.00	\$ 52,000
23	644	PAVEMENT MARKINGS	1	LUMP	\$ 55,000.00	\$ 55,000
24	644	REMOVAL OF PAVEMENT MARKING	24000	FT	\$ 3.50	\$ 84,000
25	644	LANE ARROWS	77	EACH	\$ 150.00	\$ 11,550
26	644	BIKE ARROWS	50	EACH	\$ 350.00	\$ 17,500
27	659	TOPSOIL	220	CU YD	\$ 60.00	\$ 13,200
28	659	SEEDING AND MULCHING	2000	SQ YD	\$ 5.00	\$ 10,000
29	832	EROSION CONTROL	30000	EACH	\$ 1.00	\$ 30,000
						\$ 1,370,570
30	614	MAINTENANCE OF TRAFFIC	1	LUMP	\$ 100,000.00	\$ 100,000
31	619	FIELD OFFICE	6	MONTH	\$ 2,100.00	\$ 12,600
32	623	CONSTRUCTION LAYOUT STAKES AND SURVEYING	1	LUMP	\$ 14,000.00	\$ 14,000
33	624	MOBILIZATION	1	LUMP	\$ 70,000.00	\$ 70,000
<b>SUBTOTAL ESTIMATED CONSTRUCTION COST</b>						\$ 1,570,000
<b>SUBTOTAL ESTIMATED RIGHT OF WAY COST</b>						\$ 15,000
						\$ 1,585,000
<b>CONSTRUCTION CONTINGENCY</b>					<b>25%</b>	\$ 396,000
<b>ENGINEERING, DESIGN &amp; CONSTRUCTION ADMINISTRATION</b>					<b>30%</b>	\$ 480,000
						\$ 2,461,000
<b>INFLATION CONTINGENCY (2025 CONSTRUCTION)</b>					<b>13.0%</b>	\$ 320,000
<b>TOTAL ESTIMATED PROJECT COST</b>						\$ 2,780,000

**Notes**

- Utility Relocation not expected to be compensable for three (3) poles in lane taper at James H McGee Blvd, no additional cost
- Dayton RTA lines expected to be maintained without relocation (except on poles relocated in Note 1) due to flexibility of connection system. Coordination to confirm needed to determine if potential cost impacts.
- No existing pavement markings consisting of words or symbols, pavement marking removal by lineal foot only.
- Right of Way - City of Dayton Fire Station No. 13 property at James H McGee Blvd - Assume \$15,000 for administrative/coordination costs.

# THIRD STREET TARGET SPEED EVALUATION

APPENDIX I: FHWA SAFE SYSTEM FRAMEWORK



## Alignment Framework – Final Scoring Matrix

Project Location:

Third St, Dayton, OH

Existing Conditions

Category	Vulnerable Road Users (VRU)	VRU Score	Motor Vehicles	Motor Vehicles Score
<b>Exposure Score:</b>	Vulnerable Road Users Subtotal	<b>18</b>	Motor Vehicles Subtotal	<b>16</b>
<b>Likelihood Score:</b>	Vulnerable Road Users Subtotal	<b>6</b>	Motor Vehicles Subtotal	<b>9</b>
<b>Severity Score:</b>	Vulnerable Road Users Subtotal	<b>20</b>	Motor Vehicles Subtotal	<b>12</b>
<b>Mode Subtotal:</b>	Vulnerable Road Users	<b>2,160</b>	Motor Vehicles	<b>1,728</b>

*Total Score:*

**3,888**

## Alignment Framework – Final Scoring Matrix

Project Location:

Third St, Dayton, OH

With Road Diet Improvements

Category	Vulnerable Road Users (VRU)	VRU Score	Motor Vehicles	Motor Vehicles Score
<b>Exposure Score:</b>	Vulnerable Road Users Subtotal	<b>14</b>	Motor Vehicles Subtotal	<b>12</b>
<b>Likelihood Score:</b>	Vulnerable Road Users Subtotal	<b>3</b>	Motor Vehicles Subtotal	<b>3</b>
<b>Severity Score:</b>	Vulnerable Road Users Subtotal	<b>15</b>	Motor Vehicles Subtotal	<b>6</b>
<b>Mode Subtotal:</b>	Vulnerable Road Users	<b>630</b>	Motor Vehicles	<b>216</b>

*Total Score:*

**846**