MORPC Technical Assistance Program

TRAVEL SAFE DELAWARE:
An Action Plan for Safe Streets

JUNE 2024

EST 1808
CITY OF
DELAWARE
OHIO

MID-OHIO REGIONAL
MORPC
PLANNING COMMISSION

The Mid-Ohio Regional Planning Commission (MORPC) worked closely with the City of Delaware in the development of this report.

CITY STAFF RESPONSIBLE FOR THIS REPORT:

William ("Bill") L. Ferrigno, P.E., Public Works Director and City Engineer

Jonathan R. Owen, P.E., Deputy City Engineer

MORPC STAFF RESPONSIBLE FOR THIS REPORT:

Nick Gill, Transportation Director

Maria Schaper, Associate Director of Transportation Planning

Lauren Cardoni, Active Transportation and Safety Program Manager

Tunazzina Binte Alam, Senior Planner

Jordan Petrov, Senior Planner

This document was prepared by the Mid-Ohio Regional Planning Commission (MORPC), 111 Liberty St., Columbus, OH 43215, 614-228-2663. The contents of this report reflect the views of MORPC, which is solely responsible for the information presented herein.

Glossary of Acronyms and Abbreviations

- **BIL**: Bipartisan Infrastructure Law
- **City** (capitalized)**:** City of Delaware, Ohio, as a governmental agency
- **ETC:** Equitable Transportation Community
- **FHWA**: Federal Highway Administration
- **FSI**: Fatal and Serious Injury (Crashes)
- **GIS**: Geographic Information Systems
- **HIN**: High Injury Network
- **HSIP**: Highway Safety Improvement Program
- **MORPC**: Mid-Ohio Regional Planning Commission
- **NRSS**: National Roadway Safety Strategy
- **ODOT**: Ohio Department of Transportation
- **ODPS**: Ohio Department of Public Safety
- **OTSO:** Ohio Traffic Safety Office
- **SS4A**: Safe Streets and Roads for All
- **SR #**: State Route (#)
- **US #**: United States Route (#)
- **USDOT**: United States Department of Transportation

Contents

RESOLUTION NO. 24-47

A RESOLUTION ADOPTING "TRAVEL SAFE DELAWARE: AN ACTION PLAN FOR SAFE STREETS"

WHEREAS, the City of Delaware is committed to roadway safety for all road users including vehicles and pedestrians; and

WHEREAS, the City of Delaware authorized an agreement with the Mid-Ohio Regional Planning Commission (MORPC) via Resolution 23-08 to develop a Safety Action Plan that aligns with the United States Department of Transportation National Roadway Safety Strategy; and

WHEREAS, the City of Delaware, with input from the community and public and private stakeholders, developed a Safety Action Plan known as "Travel Safe Delaware: An Action Plan for Safe Streets," which identifies projects, policies, and programs to be implemented over the next twenty years with the goal to eliminate severe injury and fatal crashes on city streets; and

WHEREAS, based on collection of safety data and input from the community, the Travel Safe Delaware plan will assist the City in identifying improvements to transportation infrastructure that improve safety for pedestrians and motorists; and

WHEREAS, the City of Delaware commits to a proactive Safe System Approach using proven safety countermeasures in planning, design, construction, and maintenance of infrastructure to encourage slower vehicle speeds, foster a comfortable streetside environment for all users, and improve safety on city streets for all users.

NOW, THEREFORE, BE IT RESOLVED by the Council of the City of Delaware, State of Ohio that:

SECTION 1. This Council hereby adopts Travel Safe Delaware: An Action Plan for Safe Streets.

SECTION 2. This Council hereby commits to a goal of reducing traffic related fatalities and serious injuries by five percent (5%) annually, with a long term vision to reach zero fatalities and serious injuries.

SECTION 3. City Staff is hereby authorized to administratively modify the report to make technical corrections, update statistics, and to update safety projects. Any modifications to any goals or action items within the Travel Safe Delaware Plan will require City Council approval.

SECTION 4. This Council finds and determines that all formal actions of this Council and any of its committees concerning and relating to the passage of this Resolution were taken in an open meeting of this Council, and that all deliberations of this Council and any of its committees that resulted in those formal actions were in meetings open to the public, all in compliance with the law including Section 121.22 of the Revised Code.

SECTION 4. This resolution shall be in force and effect immediately upon its passage.

PASSED: June 24, 2024 YEAS 7 NAYS 0
ABSTAIN 0

ATTEST: Sarah Davis
CITY CLERK

MAYOR

Acknowledgements

This Action Plan was developed with input from local partners and stakeholders in the transportation safety realm, as well as the larger Delaware community.

Thank you to those who shared their time and feedback with us to develop this plan.

Stakeholder Committee

Staff from the following departments, agencies, and organizations participated in stakeholder meetings to help identify key safety challenges and priorities for the City of Delaware as part of the process to develop this safety action plan.

- City of Delaware City Manager's Office
- City of Delaware Fire Department
- City of Delaware Police Department
- City of Delaware Planning & Community Development Department
- City of Delaware Public Works Department & Engineering Division
- City of Delaware Parks & Recreation Department
- Delaware City Schools – Facilities and Transportation
- Delaware County Economic Development
- Delaware County Engineer's Office
- Delaware County Transit
- Delaware Public Health District
- Federal Highway Administration (FHWA) – Ohio Division
- Ohio Department of Transportation (ODOT) – District 6
- Ohio Department of Public Safety (ODPS) – Ohio Traffic Safety Office (OTSO)
- SourcePoint
- United Way of Delaware County

What is Travel Safe Delaware?

Travel Safe Delaware is a comprehensive transportation safety plan for the City of Delaware that identifies priorities for mitigating fatal and serious injury crashes on roadways within the City of Delaware jurisdiction. The plan was developed in alignment with current national, state, and regional guidance and priorities to help the City in addressing local safety needs and provide the information necessary to obtain funding and resources to address those needs.

Related City Initiatives

The City of Delaware has numerous existing plans and policies that establish and support a vision for creating a Delaware that is attractive, safe, and livable for every member of the community. These plans, programs, and policies include, but are not limited to, the Delaware Together Comprehensive Plan (adopted in 2021), the 2020 – 2040 Thoroughfare Plan, a Bicycle and Pedestrian Master Plan 2027 (adopted in 2017), a Complete Streets Policy (adopted in 2019) and Neighborhood Traffic Calming Guidelines (2019). However, there is more work to do to transform the roads and sidewalks into a network that accommodates all modes of transportation and promotes a better, safer Delaware for people to live, work, and play.

As such, the City of Delaware applied to the MORPC Technical Assistance Program to develop a safety action plan with the assistance of MORPC staff. The City intends to use this plan to achieve a number of strategic objectives:

- Establish an official goal for reducing fatal and serious injury crashes in Delaware and serve as a guide for prioritizing City investments in safety improvements.
- Identify specific locations throughout the community that are in need of safety improvements and aid the City in determining the most appropriate solutions for those locations based on extensive data analysis.
- Help to prioritize local funding available for safety improvements based on highest need.
- Guide the City in applying for additional funding opportunities through the state and federal government to make critical improvements.

Safety Goals and Targets

Through the development of this plan, stakeholders discussed the data regarding fatal and serious injury crashes in detail in order to determine the most appropriate goals and targets for the City of Delaware. Existing statewide and regional safety targets, adopted by ODOT and MORPC respectively, are each currently set at a 2% annual reduction for the federally required safety performance measures. These include the total number of fatalities, total number of serious injuries, and other related factors. Stakeholders for Travel Safe Delaware felt that the City could and should aim higher, and reach for a 5% annual reduction in traffic crash related fatalities and serious injuries. This would enable reaching the goal of zero fatalities and serious injuries around the year 2044, based on the current benchmark data.

Travel Safe Delaware provides a framework and specific actions to reach that long-term goal. The plan and associated materials are intended to be a resource and guide for City staff, partners, and other local stakeholders to work together to achieve this vision.

Federal Safety Priorities and Practices

In late 2021, the Bipartisan Infrastructure Law (BIL) was passed, and it established the Safe Streets and Roads for All (SS4A) federal discretionary funding program. The program included $5 billion in appropriated funds over 5 years, beginning in 2022, which would be made available to regional, local, and Tribal governments to fund efforts to prevent roadway deaths and serious injuries. The SS4A program is intended to support the U.S. Department of Transportation (DOT) National Roadway Safety Strategy and goal of zero roadway deaths through the implementation of the Safe System Approach. Travel Safe Delaware was developed to align with these federal safety priorities and related best practices.

National Roadway Safety Strategy

The United States Department of Transportation (USDOT) announced the National Roadway Safety Strategy (NRSS) in January of 2022 in response to the ongoing national traffic safety crisis – more than 40,000 people died on the nation's roadways in 2021, which is the largest number of traffic fatalities the U.S. has seen since 2005. The NRSS represents the USDOT's approach to comprehensively address fatalities and serious injuries on our roadways. It set a formal vision and goals related to traffic safety and officially adopted the Safe System Approach to guide traffic safety initiatives. This represents a significant change to current practices related to traffic safety in the U.S.

Figure 1. Safe System Approach Infographic

Source: FHWA.

Safe System Approach

The Safe System Approach is intended to be an effective way to address and mitigate the risks inherent in the nation's huge and complex transportation system. It is a departure from the conventional safety approach because it focuses on both human error and human vulnerability and designs a system with redundancies in place to protect everyone. The approach works by building and reinforcing multiple layers of protection to both prevent crashes from happening and then to minimize the harm caused to those involved when crashes do occur. It is a holistic and comprehensive approach and guiding framework for making places safer for people[1].

The Safe System Approach establishes the following six principles:

1. **Death and Serious Injuries are Unacceptable**: A Safe System Approach prioritizes the elimination of crashes that result in death and serious injuries.
2. **Humans Make Mistakes**: Despite our best efforts, people will inevitably make mistakes and decisions that can lead to accidents. However, by designing and operating transportation systems to accommodate various types and levels of human errors, we can prevent deaths and serious injuries when crashes occur.
3. **Humans Are Vulnerable**: The human body has physical limits when it comes to withstanding crash forces. Therefore, it is crucial to create a transportation system that prioritizes human well-being and considers our vulnerabilities.
4. **Responsibility is Shared**: Preventing fatalities and serious injuries on our roadways requires collaboration from all stakeholders: government entities, industry players, non-profit organizations, researchers, and the general public.
5. **Safety is Proactive**: Rather than reacting after accidents happen, we should proactively identify and address safety issues within the transportation system.
6. **Redundancy is Crucial**: Strengthening all components of the transportation system ensures that if one part fails, others can still protect people effectively.

In addition to the six principles of the Safe System Approach that guide cultural change, there are five elements that further share the responsibility to promote a holistic approach to transportation safety across the system. The five elements include:

1. **Safe Road Users:** Encourage safe, responsible driving behavior by people who use roads and create conditions that prioritize people's ability to reach their destination unharmed.
2. **Safe Vehicles:** Expand the availability of vehicle systems and features that help to prevent crashes and minimize the impact of crashes on both occupants and non-occupants.
3. **Safe Speeds:** Promote safer speeds in all roadway environments through a combination of thoughtful, equitable, context-appropriate roadway design, appropriate speed-limit setting, targeted education, outreach campaigns, and enforcement.
4. **Safe Roads:** Design roadway environments to mitigate human mistakes and account for injury tolerances, to encourage safe behaviors, and to facilitate safe travel by the most vulnerable users.
5. **Post-Crash Care:** Enhance the survivability of crashes through expedient access to emergency medical care, while creating a safe working environment for vital first responders and preventing secondary crashes through robust traffic incident management practices.

[1] *Safe System Approach,* U.S. Department of Transportation (US DOT)

Current Conditions

The City of Delaware is located within Delaware County, on the northern end of the Central Ohio region. Over the past decades, the city and county have experienced significant changes with respect to people (population), place (physical environment), and prosperity (economics). Population growth and shifts in demographics have contributed to a dynamic environment for planning in the City of Delaware and the larger region.

The City of Delaware

The City of Delaware is approximately 21 square miles in size and serves as the county seat for Delaware County. Located about 30 miles north of Columbus, it is an integral part of the Columbus metropolitan area, conveniently accessible via US 23. The city is located along US 23 and the Olentangy River and lies between the cities of Marion and Powell. Delaware is mostly residential in character, with a mix of commercial and light industrial properties. During 2000 and 2009, the city expanded its boundaries to the southeast via annexation for residential development. The city's economic base features high-tech, manufacturing, government, health care, financial, higher education, and commercial institutions. The City of Delaware, as a municipal agency, currently maintains just under 200 centerline miles of roadway, 24 parks, 20 miles of trails, and more, all within its current jurisdictional boundaries. The Olentangy River also runs directly through the city, adjacent and parallel to SR-315, creating a wonderful community amenity, but also a major barrier in terms of access from one side of the city to the other.

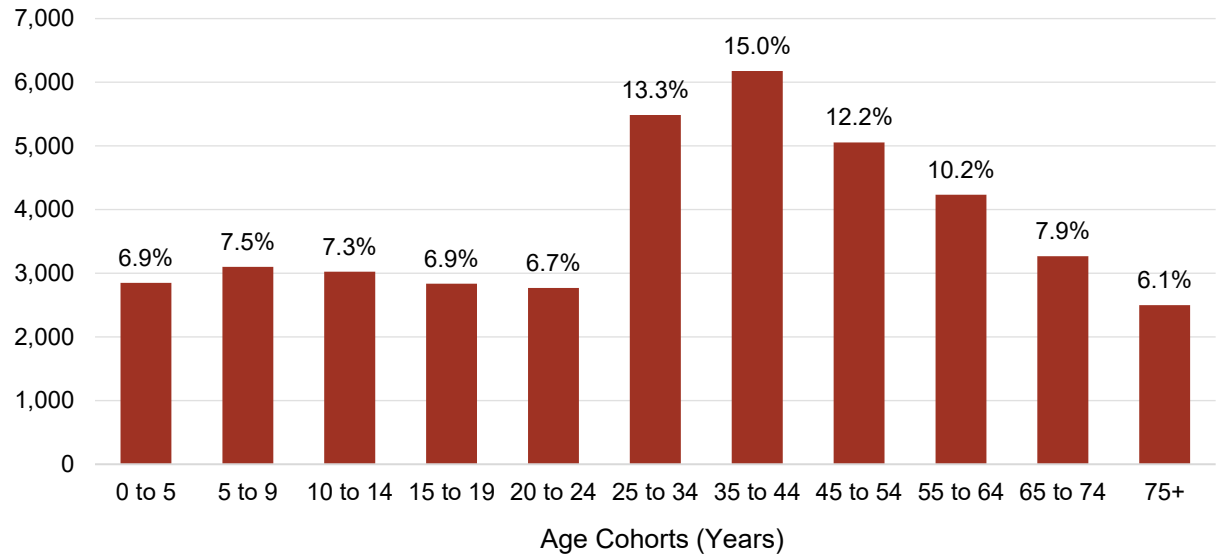
Community Description and Demographics

According to the 2020 Census, the City of Delaware had a population of 41,302 residents. Between 2000 and 2010, Delaware experienced a significant population increase, growing by nearly 10,000 residents, demonstrating a remarkable 38% increase. While recent years have seen a slight deceleration in this growth rate, the city's expansion remains robust. Projections suggest that Delaware will continue to attract new residents in the coming decades. However, when considering ongoing development activity, the population estimate edges even higher, nearing 44,000 (Source: 2021 Delaware Together). Such rapid growth places substantial demands on housing, infrastructure, and services, necessitating careful and strategic planning to accommodate development sustainably.

Age Cohorts

Delaware's demographic makeup reflects a vibrant and youthful population, with a median age of 34.5 years, notably below both county and state averages. The age distribution, illustrated by the chart in Figure 2, showcases a diverse demographic composition within the population, with individuals aged 25 to 54 years constituting the largest group, making up 41.5% of the population. Individuals between the ages of 35-44 and 45-54 are the prime working-age cohorts that serve as the foundation of the workforce, playing a pivotal role in driving economic productivity and community growth. Older adults aged 55 and above represent a significant portion, ranging from 6.1% to 10.2% across the different age brackets. While the percentage of individuals over 65 years old is low compared to county and state averages, this demographic is steadily increasing. To prioritize inclusivity and cater to residents of all ages, the City of Delaware is planning meticulously for housing, infrastructure, and services that support individuals at various life stages. This holistic approach ensures that the city remains vibrant and accommodating for its diverse population, fostering a thriving community for years to come.

Figure 2. Population by Age Range (and Percent of Total Population)



The age diversity of a population can have different implications regarding road user behavior and contribute to various challenges related to traffic crashes. As the City of Delaware assesses the population dynamics and the activity on its roads, understanding these nuances will play a significant role in addressing identified safety challenges.

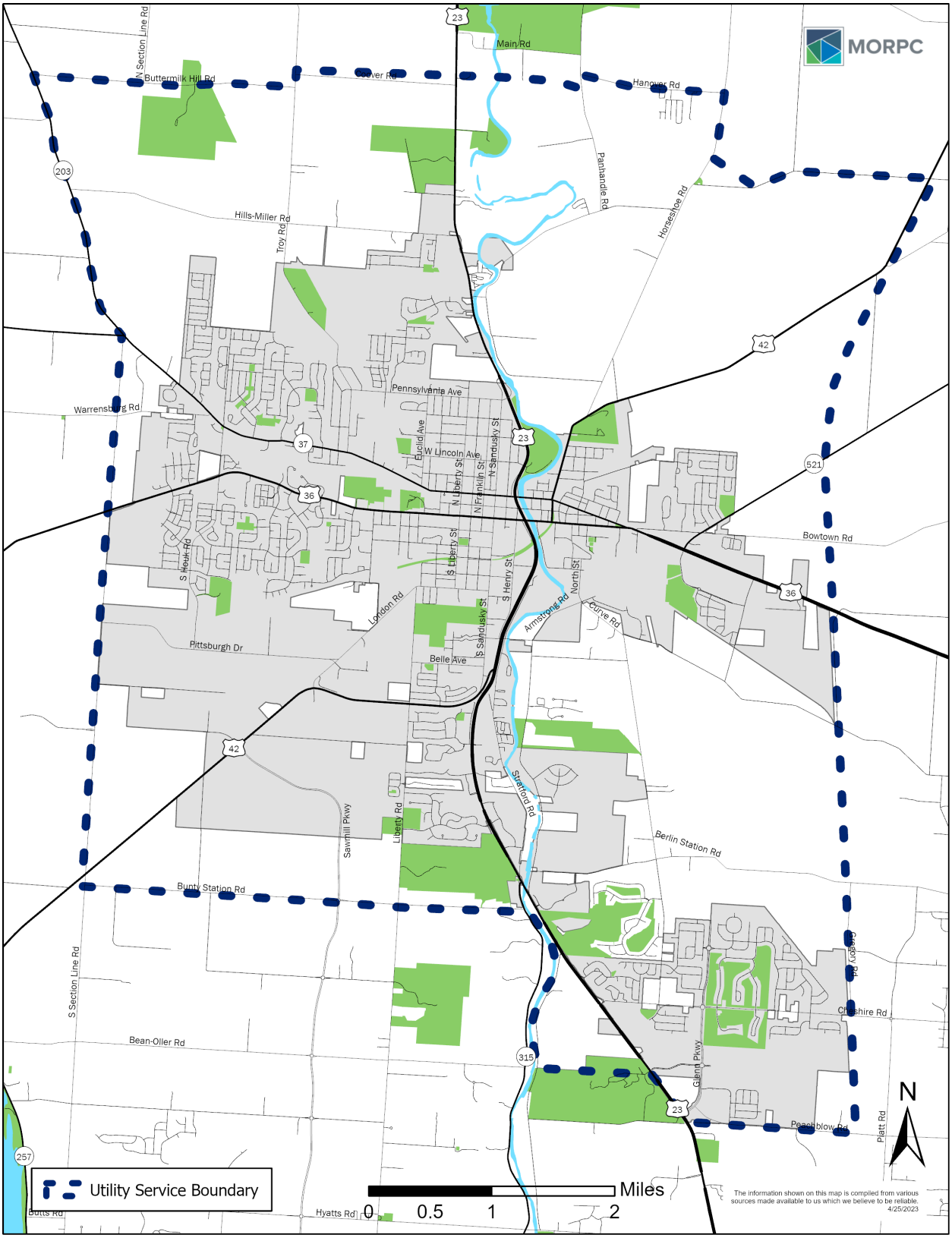
City Growth and Expansion

The City of Delaware's jurisdictional boundary is established through legal processes that determine the area over which the City has governance and control and is outlined in the City Charter and Code of Ordinances. Within this boundary, Delaware has the authority to enact and enforce laws, regulations, and policies. As the corporate boundaries of Delaware expand through annexation the City's jurisdictional reach extends to new areas that require essential services such as water and sanitation.

With Delaware experiencing significant growth and demographic shifts, and increasing need for access to available city services, expansion of the existing jurisdictional boundary is a possibility in the coming years. As a result, and in an effort to think proactively regarding roadway safety, the City chose to incorporate all roadways within the Utility Service Area as the study area for this Safety Action Plan. This study area is referred to throughout the plan as the "Delaware Service Area." Some of the roadways in this area are not currently within the City's existing jurisdictional boundary but may be in the future. A map of this area is shown in Figure 3 on the following page. As the city continues to grow, the volume of traffic on these roads is likely to increase, along with associated traffic crashes. This underscores the need to plan ahead and prioritize implementation of robust safety countermeasures on these roadways.

Focusing on this larger roadway network will allow the City of Delaware to implement a targeted approach to safety planning for the broader community, concentrating resources and efforts on areas where it is needed the most. By prioritizing these prominent growth corridors, Delaware plans to effectively address safety concerns, implement traffic calming measures, and enhance emergency response capabilities to protect its residents, minimize disruptions, and ensure safer streets for all road users.

Figure 3. Map of Study Area – Delaware Utility Service Area Boundary



Local Safety Trends

Crash data for the City's service area was obtained from the Ohio Department of Transportation (ODOT). ODOT receives crash data from the Ohio Department of Public Safety (ODPS), which collects crash reports from local police departments around the state. The information available through this crash data is based on information that is documented by local law enforcement when they report to the scene of a crash. This includes many key factors, such as the type of crash, the location of the crash, the severity of the crash, the number of people involved in the crash, as well as other potential factors that may have contributed to the crash.

Crashes reported within the City's service area during the five years between 2017-2021 were assessed for this safety action plan. More than 4,000 crashes were reported throughout the study area during this period. Those crashes resulted in nine fatalities and 82 serious injuries. The chart in Figure 4 provides an overview of the reported crash data for 2017-2021. This chart includes two different types of information from the crash data:

- **Crash Statistics**: Crash statistics include a summary of the number of *crashes* that occurred. Each individual crash could have involved one or more vehicles, and each of those vehicles could have had one or more occupants within them.
- **Occupant Statistics**: Occupant statistics summarize the number of occupants who were within the vehicle(s) involved in those individual crashes. Because a single crash could have involved multiple vehicles and multiple occupants, the occupant statistics are often higher numbers than the crash statistics. For example, a single crash could have resulted in multiple occupants experiencing serious injuries, so one serious injury crash could equate to one or more serious injuries in the occupant statistics fields.

Figure 4. Raw Crash Data by Year for Delaware Service Area (2017-2021)

YEAR	CRASH STATISTICS			OCCUPANT STATISTICS		
	Fatal Crashes	Serious Injury Crashes	Total FSI Crashes	Fatalities	Serious Injuries	Total FSI
2017	1	6	7	1	8	9
2018	**3**	13	16	**3**	16	19
2019	2	15	17	2	16	18
2020	2	**16**	**18**	2	20	22
2021	1	14	15	1	**22**	**23**
5-Year Total	**9**	**64**	**73**	**9**	**82**	**91**
Annual Average	**1.8**	**12.8**	**14.6**	**1.8**	**16.4**	**18.2**
Annual Average Rates per 100,000 Population				**4.2**	**38.3**	**42.5**

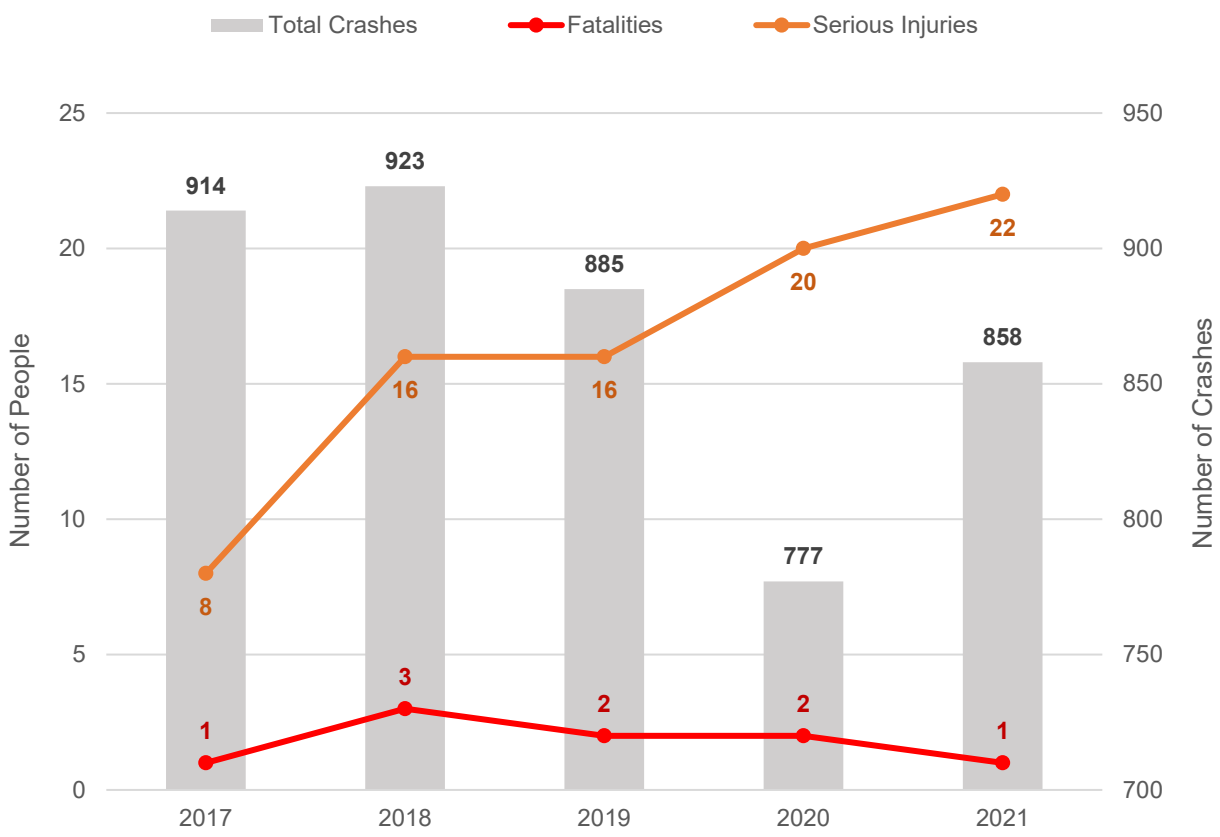
Note: numbers in bold red font indicate the highest number for that category over the five-year period.

FSI = Fatal and Serious Injury Crash OR Fatalities and Serious Injuries

A comparison of the total number of crashes per year, as well as the total number of fatalities and serious injuries that resulted from those crashes each year is shown in the graph in Figure 5 below. The trends illustrated by this graph are notable for a few reasons:

- Across the country, throughout the state of Ohio, and within the Central Ohio region, traffic volumes and the resulting number of crashes decreased significantly in 2020 due to the shutdowns that occurred as a result of the COVID-19 pandemic. It appears that this trend also occurred within the City of Delaware.
- However, while crashes have continued to remain significantly lower than pre-pandemic levels throughout Central Ohio, it appears that crashes increased back to near pre-pandemic levels in Delaware in 2021.
- Additionally, the trends within the Delaware Service Area for fatalities and serious injuries differ from those seen throughout the Central Ohio region during this period. Where the region saw significant increases in fatalities, Delaware saw fatalities remain relatively consistent; Delaware experienced a significant increase in serious injuries throughout these five years, while serious injuries throughout the region remained relatively consistent.

Figure 5. Total Crashes, Fatalities, and Serious Injuries by Year within Delaware Service Area (2017-2021)



Roadway Maintenance Authority

Within the Delaware Service Area, or study area boundary, there are a few different entities responsible for maintenance of the roadways. This means that the agency responsible for implementing safety improvements on a specific roadway may not always be the City of Delaware. The table in Figure 6 below summarizes the total number of fatal and serious injury (FSI) crashes that occurred within the study area over the 2017-2021 period, categorized by the type of crash and the maintenance authority for the roadway on which the crashes occurred. As shown in the table, the vast majority (around 70%) of all FSI crashes did occur on roadways maintained by the City of Delaware (the Municipal Highway Agency). However, a few FSI crashes also occurred on roads maintained by ODOT, Delaware County (the County Highway Agency), and other agencies.

- **ODOT-Maintained Roadways**: ODOT-maintained facilities or roadways typically include freeways and interstates as well as state and U.S. routes. However, when state and U.S. routes enter a municipality, they typically become the responsibility of that local agency.
- **County Highway Agency Roadways**: County Highway Agencies, or County Engineer's Offices, are typically responsible for roadways outside of municipal boundaries that are not classified as freeways, interstates, state or U.S. routes. In some cases, County Highway Agencies will help to maintain local roads within a Township as well.
- **Municipal Highway Agency Roadways**: Local Governments or Municipal Agencies are typically responsible for maintaining roadways that are within their jurisdictional boundaries, generally also including state and U.S. routes.

As the City of Delaware looks to make safety improvements on roadways throughout the study area, it will be critical for staff to collaborate with these other agencies for roadways that are not within the City's responsibility or authority to maintain.

Figure 6. Total Number of FSI Crashes by Crash Type and Roadway Maintenance Authority (2017-2021)

	County Highway Agency	Municipal Highway Agency	ODOT Maintained	Other	Township Highway Agency	TOTAL
Angle		10				**10**
Animal	2	2				**4**
Fixed Object	1	8	2	1	1	**13**
Head On		2	2			**4**
Left Turn		7	7			**14**
Parked Vehicle		1				**1**
Pedalcycles		2				**2**
Pedestrian		9	1	1		**11**
Rear End		9	2			**11**
Right Turn			1			**1**
Sideswipe - Passing		1	1			**2**
TOTAL	**3**	**51**	**16**	**2**	**1**	**73**

Stakeholder and Community Engagement

The development of this Safety Action Plan was guided and influenced by City of Delaware staff, as well as a stakeholder committee and a public input survey. The stakeholder and public input were key to fully understanding the local roadway safety challenges and needs, as well as identifying the most impactful recommendations. This section provides an overview of the stakeholder and public engagement process, as well as key highlights from the input that was received. Additional details on the stakeholder and public input can be found in the appendix.

Stakeholder Engagement

Key local, regional, and state partners were engaged in the development of this safety action plan through a stakeholder committee that met twice throughout the planning process. The stakeholder committee consisted of 20 members from the ODOT District 6 office, the Ohio Traffic Safety Office, the Ohio Division of FHWA, Delaware County Transit, the Delaware County Public Health District, the Delaware County Engineer's Office, Delaware City Police and Fire, Ohio Wesleyan University, various City of Delaware departments, local private organizations, and others. Input from the stakeholder committee guided the development of the Safety Action Plan as well as the strategies and action items identified for inclusion in the plan. A full list of the stakeholder committee members, along with more detail about the input gathered during the two stakeholder workshops can be found in the appendix.

Stakeholder Workshop #1

The first stakeholder workshop was held on Wednesday, April 24, 2023. Participants included representatives from various professional perspectives: public health, emergency services, traffic safety, planning and engineering, transit, and more. During the workshop, MORPC staff provided an overview of the SS4A Grant Program, the NRSS, and the Safe System Approach as context for why the City chose to develop a Safety Action Plan and what would need to be included in the plan. The remainder of the workshop focused on initial highlights from the crash data and discussion around priorities for the City to incorporate into the plan.

Overall, during the workshop there was a lot of discussion about individual behavioral mistakes being the reason for many serious crashes. This is a perception that the Safe System Approach is trying to re-direct by focusing on mitigating the *severity* resulting from those decisions and mistakes. The workshop discussion emphasized a need to continue collaborating with partners to garner more understanding and support for the Safe System Approach. A second key takeaway from the workshop discussion was that there is a keen desire for transparency. Many stakeholders noted that a public engagement process will be critical to providing transparency into this process and any related transportation safety decisions. It was also noted that this engagement will also require some level of education to mitigate any misperceptions.

Stakeholder Workshop #2

A second stakeholder workshop was held on Thursday, July 20, 2023. Participants included a similar audience as in the first workshop. During the second workshop, MORPC staff provided an overview of additional data analysis that was conducted after the first workshop and discussed stakeholder priorities and input regarding targets to set for decreasing the number of fatalities and serious injuries on Delaware roadways. Highlights were also provided on the initial results of the public survey that was conducted. The main focus of the meeting was reviewing the draft strategies and action items with the stakeholders. A primary concern reflected feedback from the first workshop, in that stakeholders felt whatever targets and action items were established in the plan needed to be achievable in order to maintain public trust.

Public Input Survey

With assistance from MORPC staff, the City of Delaware launched a public survey on July 10, 2023, to gather community input and perceptions regarding roadway safety. The survey aimed to identify areas of concern, understand behavior patterns, and solicit suggestions for potential safety improvements. By collecting this data, the team gained valuable insights that directly informed the development of Travel Safe Delaware. The survey was shared on City social media, as well as in City Utility Bills throughout July and early August. The survey was closed, and results were pulled on August 21, 2023.

Feedback from the survey played a crucial role in prioritizing safety initiatives within the plan. Thematic analysis of the responses helped target specific areas with significant community concerns. Additionally, the survey allowed community members to share their thoughts on potential safety measures, such as improving roadway design, increasing enforcement of traffic safety laws, and devoting more resources to driver education initiatives. This input helped to ensure that the Safety Action Plan addresses the community's most pressing safety needs and to foster a sense of community ownership in the plan.

By launching the survey, the City demonstrated a commitment to transparency and valuing community voices in shaping the plan. As noted previously, during the second stakeholder workshop, committee members cited concerns over needing to gain and maintain public trust, making the survey an integral tool in fostering success. Input collected through the public survey reflected much of the discussion held with stakeholders and heavily influenced development of plan priorities and content, highlighting the City’s dedication to community collaboration.

Key Takeaways and Highlights

Nearly 300 community members responded to the public input survey. Of those who responded to the survey, an overwhelming majority rely on a personal automobile for their daily travel needs – 98% of respondents stated that they use a vehicle most regularly. Approximately 75% of respondents stated that they or someone they know have been involved in a traffic crash incident. While the majority of those respondents indicated that those crashes were primarily injury-free, more than 10% indicated that the crashes resulted in severe or fatal injury. This highlights how prevalent traffic crashes, and severe traffic crashes are in the community.

Some key takeaways highlighted in the survey results include:

- Distracted driving, speeding, and non-compliance with traffic laws are considered the primary factors contributing to traffic crashes in Delaware.
- Respondents felt most strongly about prioritizing the addition and connection of sidewalks and shared used paths as a strategy to improve roadway safety.
- Community members generally feel unsafe traveling by bicycle and believe that adding more and connecting existing bicycle infrastructure should be prioritized.
- The locations most frequently noted as areas where people feel unsafe traveling included a significant emphasis on US 23, generally, but also sections of Downtown Delaware, as well as other major arterials and state routes through the city.

This feedback helped inform priorities, strategies, and potential safety improvement projects included in the plan. For a more detailed overview of the public survey and responses, please refer to the appendix.

Local Safety Priorities

The crash analysis along with stakeholder and public engagement conducted for this plan provided critical insights into the most severe types of crashes occurring in the Delaware Service Area, including details regarding where those crashes have been occurring and what factors are most commonly contributing to those crashes. The analyses and findings presented hereafter help to establish the safety priorities and focus areas for the City of Delaware.

While every crash that occurs is unique, they can be categorized based on similar circumstances or patterns that are present across different crashes. Identifying key patterns across the fatal and serious injury (FSI) crashes that are occurring can help the City to prioritize safety investments and engage relevant partners to best address the causes and contributing factors to these serious crashes. The key themes identified through this analysis include:

- **Severe Crash Types**: the crash types contributing to the largest percentages of FSI crashes. Five crash types contributed to more than 80% of all FSI crashes in the Delaware Service Area: Left turn, fixed object, pedestrian, rear end, and angle crashes.
- **Safe Roads and Safe Speeds**: the roadway characteristics present at high percentages of FSI crashes. Minor arterial and principal arterial roads accounted for nearly 80% of all FSI crashes that occurred, and roadways with a statutory speed limit of 55 MPH accounted for more than a third of all FSI crashes.
- **Safe Road Users**: the human characteristics identified as factors in high percentages of FSI crashes. Common factors identified included impairment, driver age, speeding, and distracted driving, as well as vulnerable roadway users – pedestrians and bicyclists.
- **Equity Considerations**: the demographic data highlighted by the USDOT as priority considerations related to transportation access and safety. This data prioritizes specific communities throughout the City of Delaware with high percentages of poverty, transportation and housing-related expenses, and/or low or no vehicle ownership.

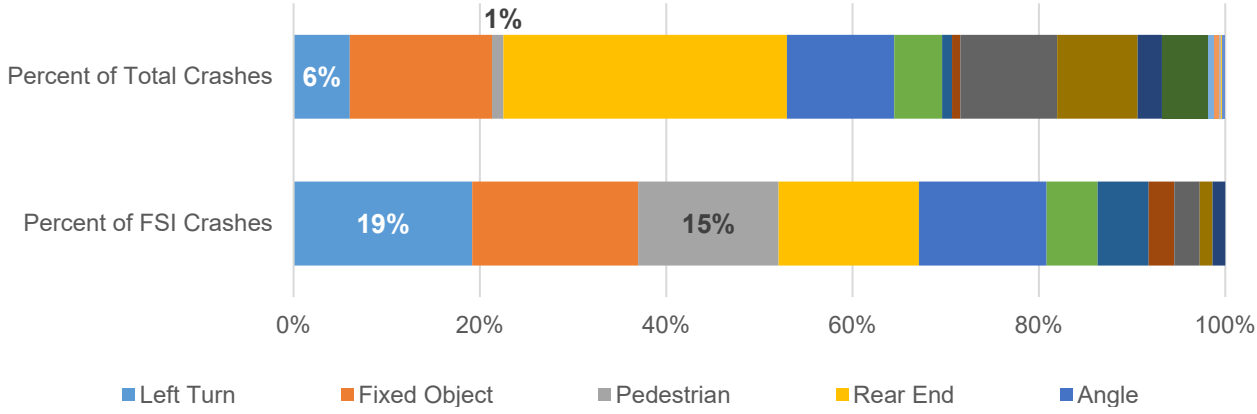
All of these elements should factor into the decision-making process as it relates to prioritizing safety investments throughout the City of Delaware. The following pages provide additional data and information regarding each of these local safety priority categories.

Severe Crash Types

Five different crash types resulted in more than 80% of all FSI crashes during the five-year period between 2017-2021 in the Delaware Service Area. The graph in Figure 7 illustrates the percentage of crashes as well as FSI crashes that each crash type comprised. The legend in this chart identifies the top five crash types that resulted in the most FSI crashes. The individual locations of all FSI crashes are illustrated in the map in Figure 8, labeled by the type of crash.
The top five FSI crash types in Delaware included:

- **Left turn crashes**: any collision of motor vehicles in which one or more of the vehicles involved were turning left.
- **Fixed object (or roadway departure) crashes**: any collision in which a single vehicle leaves the roadway and strikes a fixed object, such as a utility pole.
- **Pedestrian crashes**: collision involving a motor vehicle in transport and a pedestrian.
- **Rear end crashes**: collision involving one vehicle striking the rear of another vehicle.
- **Angle crashes**: collision resulting in the involved vehicles hitting at or near right angles, with the front of one vehicle striking the side of the other. Most often occurs at intersections when two vehicles are going straight on intersecting roads and neither vehicle is turning.

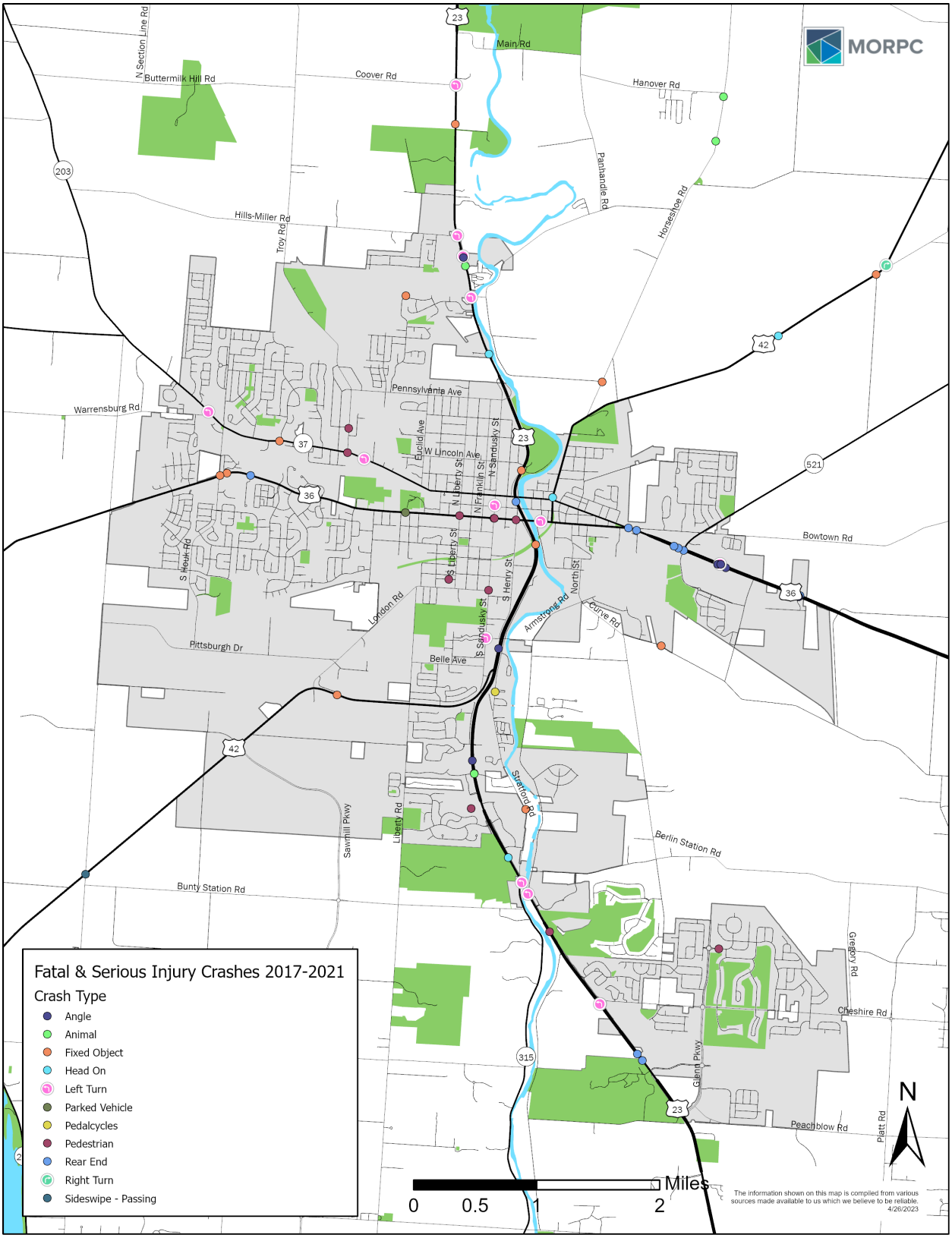
Figure 7. Percentage of Crashes and FSI Crashes by Type of Crash within Delaware Service Area (2017-2021)



The information illustrated by the graph in Figure 8 is notable for a few reasons:

- **Left turn crashes** comprised only about six percent of all crashes reported during this period but **accounted for approximately 19% of all FSI crashes**. Left turn crashes in the study area resulted in a much higher percentage of FSI crashes than in the Central Ohio region.
- **Pedestrian-involved** crashes comprised only about one percent of all crashes reported during this period but **accounted for approximately 15% of all FSI crashes**. This is similar for Central Ohio.
- These five crash types also comprise the top five FSI crash types for Central Ohio, just not in the same order of severity. Fixed object crashes represent the largest percentage of FSI crashes in Central Ohio.

Figure 8. Locations of Fatal and Serious Injury Crashes by Type of Crash within Delaware Service Area (2017-2021)



Safe Roads and Safe Speeds

One of the primary factors a local agency has control over that can impact the severity of crashes is roadway design. The following section highlights key findings in the crash data related to the type of roadway on which fatal and serious injury crashes occurred most frequently, as well as the posted speed limits. This information provides a baseline understanding of two critical risk factors in the fatal and serious injury crashes occurring around Delaware and how the City might start to address safety in a more proactive and systemic, or citywide, manner.

Roadway Functional Classifications

Roadway Functional Classifications are used for a few different purposes: they can be used to determine what roadways are eligible for federal transportation funding, to define a role for a specific roadway within a larger roadway network, or to establish design standards and criteria for different types of roadways. In Ohio, roadways are assigned one of seven functional classifications: (1) Interstate, (2) Other Freeways or Expressways, (3) Other Principal Arterial Roads, (4) Minor Arterial Roads, (5) Major Collector Roads, (6) Minor Collector Roads, and (7) Local Roads[2]. These are generally determined based on the level of access and/or mobility that they provide – roadways that primarily function to provide greater mobility and emphasize uninterrupted traffic flow are on one end, with roadways that primarily provide access to and from adjacent land uses on the other.

While local roads tend to make up the majority of the roadway network (more than 60%), they tend to have lower traffic volumes and lower traffic speeds, which results in comparatively fewer and less severe crashes than other roadway types. In comparison, as illustrated by the graph in Figure 9 on the following page, **minor arterial and principal arterial roads comprise a small portion of total roadway miles (around 20% collectively), but account for nearly 80% of all fatal and serious injury crashes** that occurred during the 2017-2021 period within the Delaware Service Area. These types of roadways typically have higher traffic volumes, higher speeds, and more conflict points between roadway users. Particularly in rapidly growing communities like Delaware, where land use and development decisions do not always align directly with the character and function of the roadway.

Posted Speed Limits

Speed plays an exponential role in the severity of crashes, particularly when it comes to our most vulnerable road users – people walking and bicycling, or otherwise traveling outside of a vehicle. For this reason, as assessment was conducted of the posted speed limits for the roadways on which crashes occurred. Data is generally not available regarding the actual speeds that motorists were travelling at the time of a crash, so the posted speed limits are the most useful data point for this assessment. The graph in Figure 10 on the following page illustrates the percentage of FSI crashes by functional classification as well as the posted speed limit of the roadway on which the crashes occurred. This provides additional insight as to what role vehicle speeds, and related statutory speed limits, play in FSI crashes.

[2] Ohio Roadway Functional Class, ODOT
www.transportation.ohio.gov/working/funding/resources/ohio-roadway-functional-class

Figure 9. Percentage of Crashes, FSI Crashes, and Roadway Miles by Roadway Functional Classification within Delaware Service Area (2017-2021)

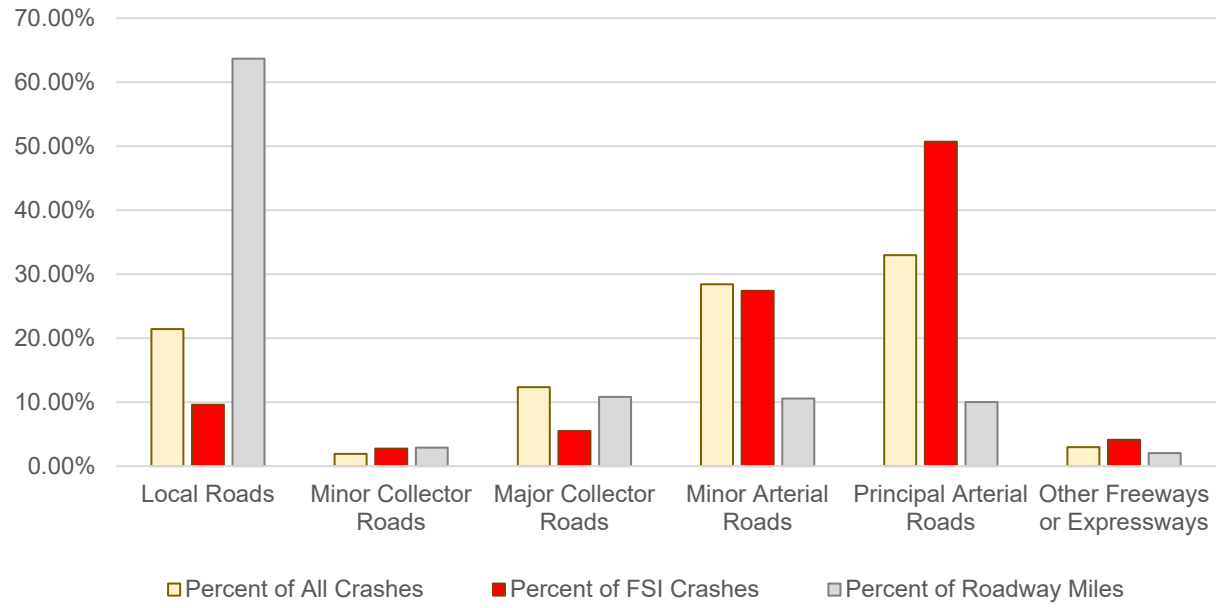
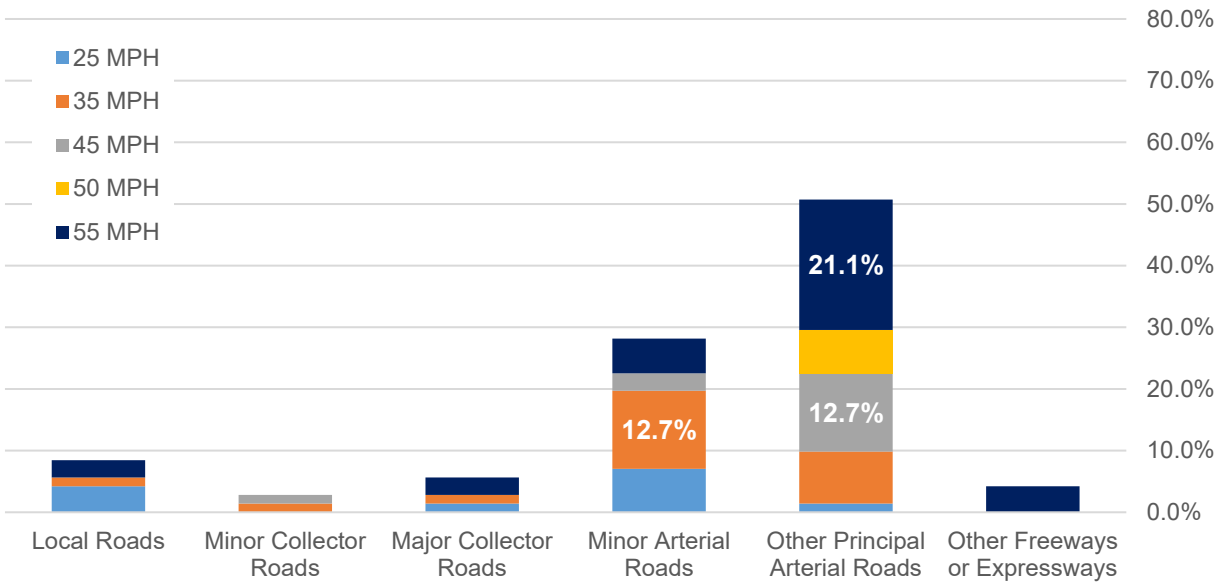


Figure 10. Percentage of FSI Crashes by Functional Classification and Posted Speed Limit within Delaware Service Area (2017-2021)

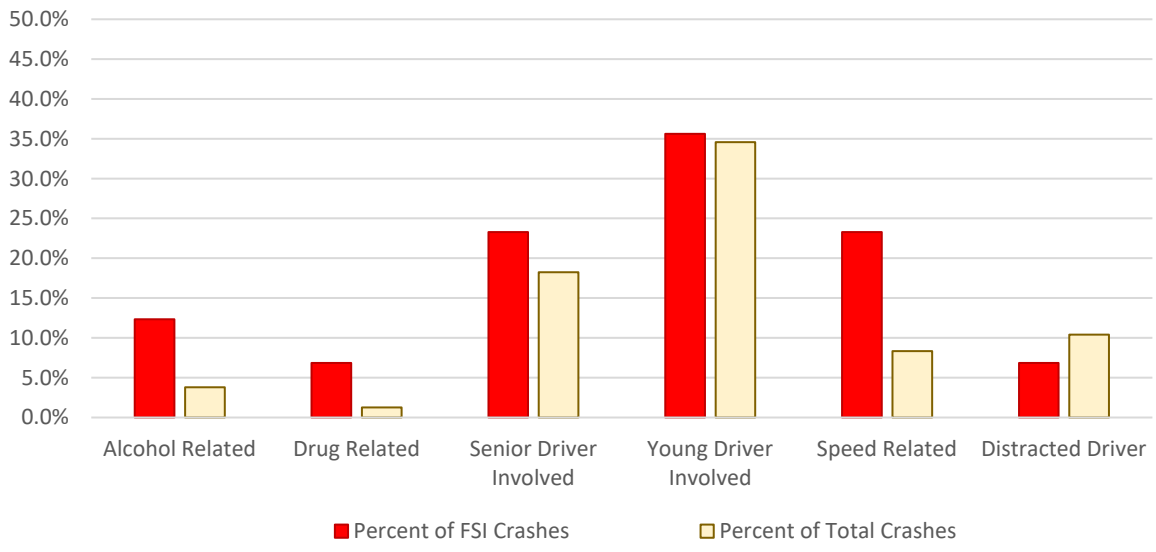


Roadways with a statutory speed limit of 55 MPH accounted for more than a third of all FSI crashes that occurred within the Delaware Service Area over the 2017-2021 period. As a point of comparison, less than a quarter of overall crashes occurred on roadways with a posted speed limit of 55 MPH. Principal Arterials with a 55 MPH speed limit accounted for the largest percentage (more than 20%) of FSI crashes. In the state of Ohio, 55 MPH is a statutory speed limit for most county roadways, regardless of context or functional classification. This has a significant impact on the safety of these roadways. Speed limits of 45 MPH are *not* a statutory speed limit and only exist along roadways where a speed zone study has been conducted and 45 MPH was the selected speed limit as a result of the study.

Safe Road Users

A key principle of the Safe System Approach is that responsibility for a safe system is shared. This includes responsibility for people using the system to behave in a safe manner. Not only should system designers create a safe system, but people using that system should operate within its limits. Law enforcement can contribute to this by ensuring certain behaviors are discouraged and mitigated across the system. The following section assesses the crash data for the 2017-2021 period based on specific system user factors that may have contributed to the crashes that occurred. The graph in Figure 11 below illustrates how each of these factors were reported in the crash during this period. This information can be used to further target specific safety interventions and activities to mitigate FSI crashes throughout the study area.

Figure 11. Percentages of Total Crashes and FSI Crashes by System User Factors (2017-2022)



It is important to note that these percentages are *not* mutually exclusive – for example, a young driver could have also been impaired and speeding leading up to a crash, or a young driver and an older driver could have been involved in the same crash, so all of those factors would have been marked on the crash report, and ultimately included in the chart above. It is also important to note that all of the road user behavior factors are data that is based on a reporting officer marking on a crash report that a specific factor was identified as contributory to the crash. In many cases, the reporting officer is unable to make a determination on some of these factors, such as whether or not speeding or distracted driving contributed to the crash.

As a result, it is understood that this data, particularly for those two factors, is grossly underestimated. However, as illustrated by the graph in Figure 11 above, it is still well documented that speeding is a primary contributing factor; **nearly a quarter of all FSI crashes were reported with speeding documented as a contributing factor to the crash**. This is speeding above and beyond the posted speed limits, which as discussed previously, may already be a contributing factor in the severity of crashes when they occur.

Vulnerable Road Users

Many Delaware community members either choose to walk and bike or rely on walking and bicycling as a primary mode of transportation. Some areas of the City have the infrastructure to accommodate them, but other areas do not, or are in need of improvement. As indicated in the public survey results, many community members would like to see the City prioritize more investment in this type of infrastructure.

During the 2017-2021 period, a total of nearly 100 crashes reported in the Delaware Service Area involved someone walking or bicycling. Nearly 1 in every 8 of these crashes resulted in serious injury or a fatality. This is a rate of fatality and serious injury significantly higher than what a person in a motor vehicle experienced during the same period. The graph in Figure 12 below illustrates this disparity across the three user types by displaying the percentage of total crashes that resulted in fatality or serious injury for each user type (or the rate of fatality and serious injury). Pedestrians experienced the highest rate by far, with a fifth of all crashes (or 1 in 5) resulting in fatality or serious injury. This increased risk, or vulnerability, for people walking and bicycling on our roadways is why they are referred to as vulnerable road users. They do not have the protection of a large vehicle to mitigate the impacts of a crash, when one occurs. The charts in Figure 13 on the following page illustrate how people walking and bicycling comprised only around 2% of all crashes that were reported, but nearly 20% of all FSI crashes.

Figure 12. Percentage of Crashes Resulting in Fatal or Serious Injury by User Type (Motorized vs. Non-Motorized) within the Delaware Service Area (2017-2021)

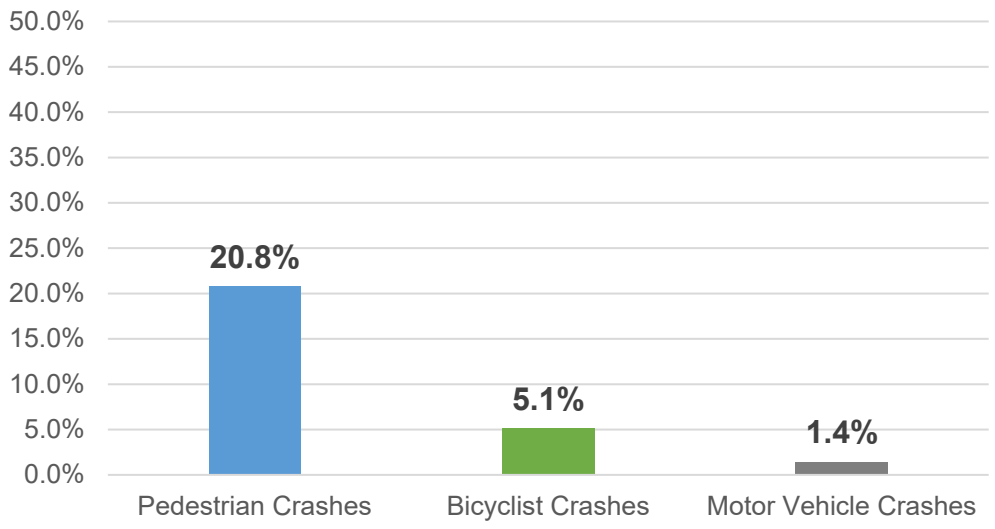
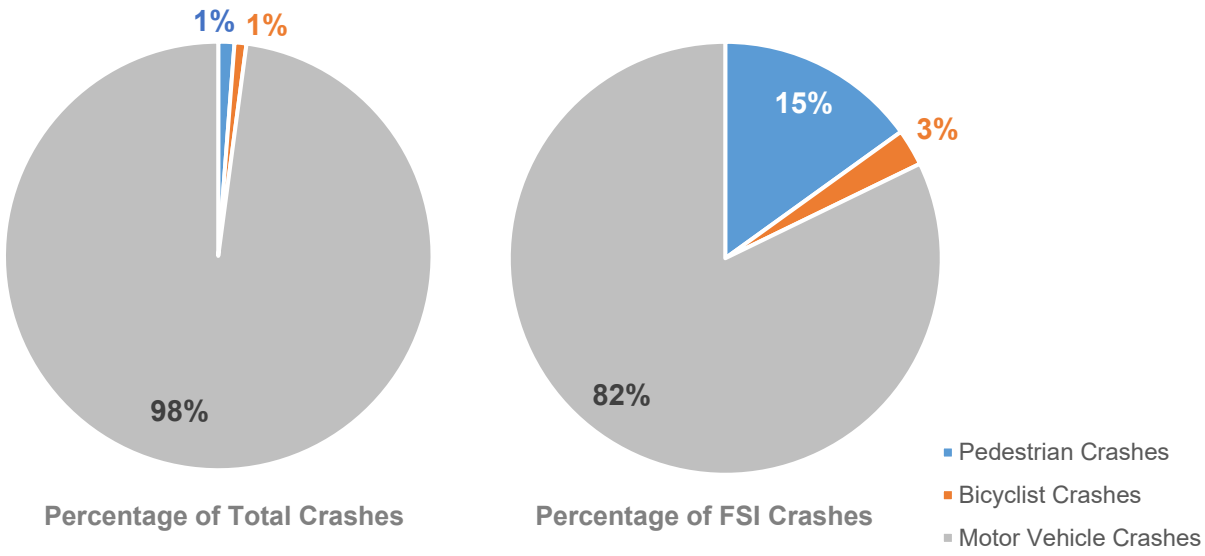


Figure 13. Percentage of Crashes and FSI Crashes by User Type (Motorized vs. Non-Motorized) within the Delaware Service Area (2017-2021)



Equity Considerations

Many of the planning decisions and infrastructure investments of the past resulted in systemic inequities that some Delaware-area residents still experience today. These inequities become apparent when looking at the disparities in traffic crashes and crash outcomes, particularly for non-motorized users in disadvantaged areas. The USDOT's Justice40 initiative identified specific census tracts throughout the country that are either transportation-disadvantaged, or areas of persistent poverty[3]. These areas are considered a high priority for addressing issues related to transportation access and safety.

There are a few census tracts with these designations that lie almost entirely within the City of Delaware jurisdictional boundary. This includes Census Tracts 105.20, 105.30, and 104.21. A map of these census tracts is included in Figure 14. A closer look at the data included in the USDOT Equitable Transportation Community (ETC) Explorer[4] for these tracts indicates that there are multiple and different factors at play in this designation for each Census Tract. Some of this data is highlighted here.

Census Tract 105.30

This tract encompasses the south end of downtown Delaware and the Ohio Wesleyan campus and continues southward toward and just across US 42. It is bounded *primarily* by Liberty Road to the west and Sandusky Street to the east. The tract is designated by USDOT as both an Area of Persistent Poverty, as well as a Transportation Disadvantaged Community.

[3] USDOT Equity and Justice40 Analysis Tools, www.transportation.gov/grants/dot-navigator/equity-and-justice40-analysis-tools

[4] USDOT ETC Explorer, www.transportation.gov/priorities/equity/justice40/etc-explorer

The ETC data highlights the following factors *for Census Tract 105.30:*

- **47.8%** of the population is at 200% or *less* of federal poverty level.
- The average household spends **20.90%** of household income on *transportation*.
- The average household spends **24.47%** of household income on *housing*.
- An estimated **13.00%** of households within this tract *do not own vehicles*.

Census Tracts 105.20 and 104.21

These two tracts are to the west of downtown Delaware, bound to the north by SR 37, to the west by Section Line Road (SR 5), to the south by London Road/US 42, and to the east by the CSX Rail Corridor. They are split by William Street (US 36). Each tract is designated by USDOT as a Transportation Disadvantaged Community. However, the data in the ETC Explorer tool indicates that these tracts demonstrate much less significant poverty levels and transportation burden as tract 105.30.

- Only **12.24%** and **19.85%** of each tract's population, respectively, is at 200% or less of federal poverty level.
- The average household spends only **11.01%** and **15.08%,** respectively, of household income on *transportation*.
- The average household spends **18.88%** and **22.71%,** respectively, of household income on *housing*.
- Only an estimated **2.5%** and **6.50%,** respectively, of households do not own vehicles.

The primary component influencing the Disadvantaged designation for Tract 104.21 is "Health Vulnerability," while the primary components influencing the designation for Tract 105.20 are "Environmental Burden" and "Health Vulnerability." The ETC explanations include:

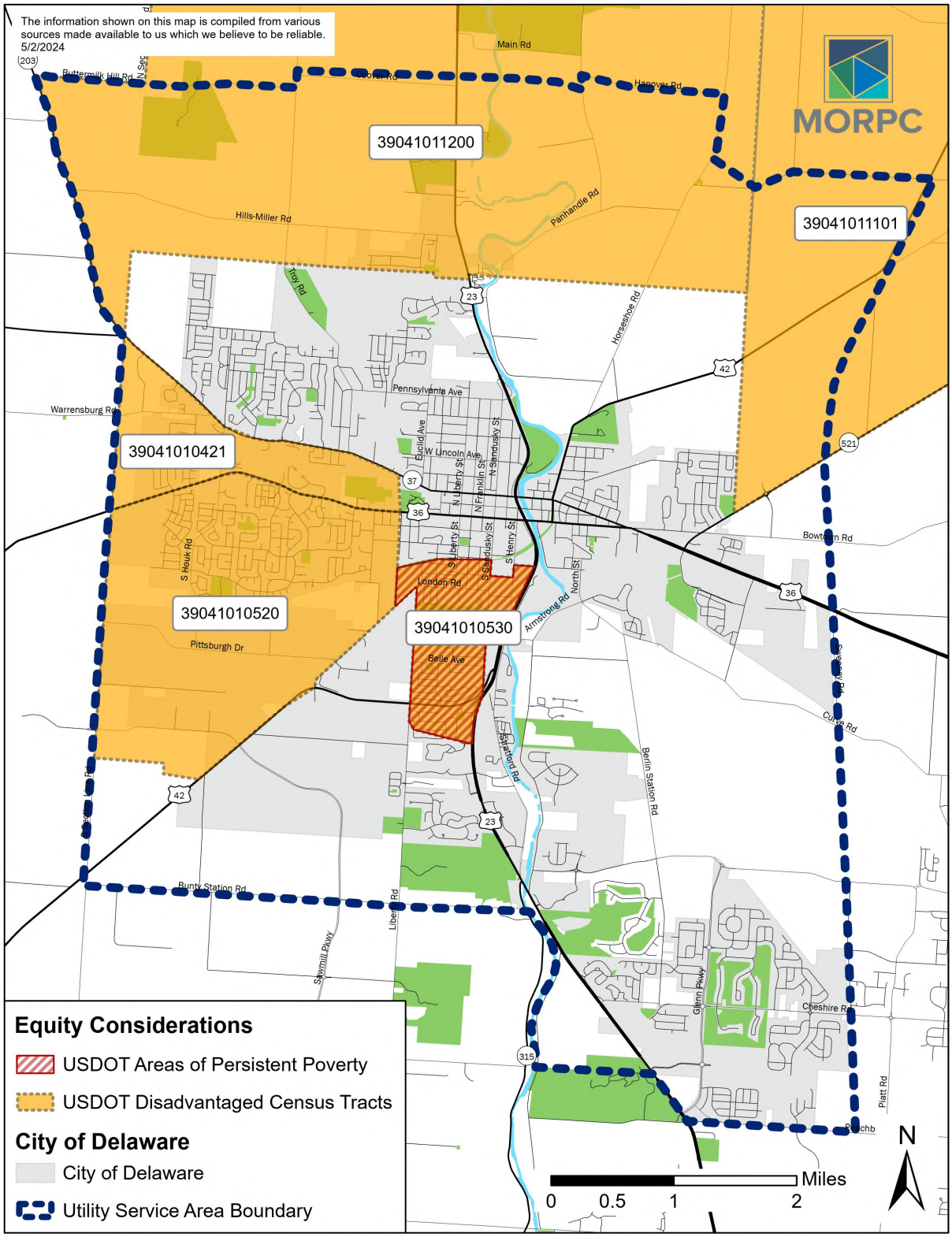
- *"The **Environmental Burden** component of the index includes variables measuring factors such as pollution, hazardous facility exposure, water pollution and the built environment."*
- *"The **Health Vulnerability** category assesses the increased frequency of health conditions that may result from exposure to air, noise, and water pollution, as well as lifestyle factors such as poor walkability, car dependency, and long commute times."*

Additional Census Tracts for Consideration

Additional review of the data provided in the ETC Explorer tool illustrates that the Census Tract that comprises the east side of the city also demonstrates some key characteristics that are very similar to those in Tract 105.30, just slightly lower in overall representation. The ETC data highlights the following *for Census Tract 102.00:*

- **38.2%** of the population is at 200% or less of the federal poverty level.
- The average household spends **17.65%** of household income on *transportation*.
- The average household spends **23.70%** of household income on *housing*.
- An estimated **12.90%** of households within this tract *do not own vehicles.*

Figure 14. Map of Census Tracts in Delaware Identified by USDOT as Disadvantaged Communities



Priority Safety Locations

All of the data and information highlighted previously can be used to inform a process of identifying and prioritizing investments in safety improvements throughout the City of Delaware. These improvements could include location-specific infrastructure investments, targeted enforcement activities, road user education, or other strategies and action items as identified in this plan. The following section highlights specific priority locations that have been identified throughout the city using Geographic Information Systems (GIS) tools to analyze crash data and roadway characteristics. These tools helped to create a series of datasets to help system designers and decision-makers prioritize location-specific safety improvements. Some of these datasets were created through this plan development process, while others were provided by the Ohio Department of Transportation (ODOT) through the Ohio Highway Safety Improvement Program (HSIP).

City of Delaware High Injury Networks

The Safer Streets Priority Finder was used to develop a series of High Injury Networks (HIN) for the Delaware study area, categorized by road user type. This included a pedestrian-specific HIN, a bicyclist-specific HIN, and a motorized vehicle-specific HIN. Crash data for the study area from 2017-2021 was input into the Safer Streets Priority Finder to conduct a "Sliding Windows Analysis," which allocates the crashes to the roadways on which they occurred based on sliding half-mile segments. The crashes are weighted based on severity, with fatal and serious injury crashes receiving a weight of three and all minor injury crashes receiving a weight of one. Possible injury and property-damage only crashes are not included in the analysis. The weights are then aggregated into "scores" for each roadway segment based on the sliding window segments. The resulting HIN displays the total weighted score for each roadway segment. In essence, the three HIN datasets are described below:

- **Pedestrian High Injury Network** – roadway segments within the study area that have a higher concentration and severity of *pedestrian* injury crashes per mile.
- **Bicyclist High Injury Network** – roadway segments within the study area that have a higher concentration and severity of *bicyclist* injury crashes per mile.
- **Motorized High Injury Network** – roadway segments within the study area that have a higher concentration and severity of *motorized* injury crashes per mile.

These three HIN datasets can be used to identify specific roadway segments or intersections where safety investments for each of the three user types should be prioritized. Maps illustrating each of these High Injury Networks can be found in the appendix.

ODOT Systemic Safety Priorities

In January 2022, ODOT's Highway Safety Program launched a new systemic safety improvement program with a focus on preventing injuries related to pedestrian and roadway departure crashes. Systemic improvements are meant to be proactive and widely implemented based on roadway features that have been associated with specific crash types.

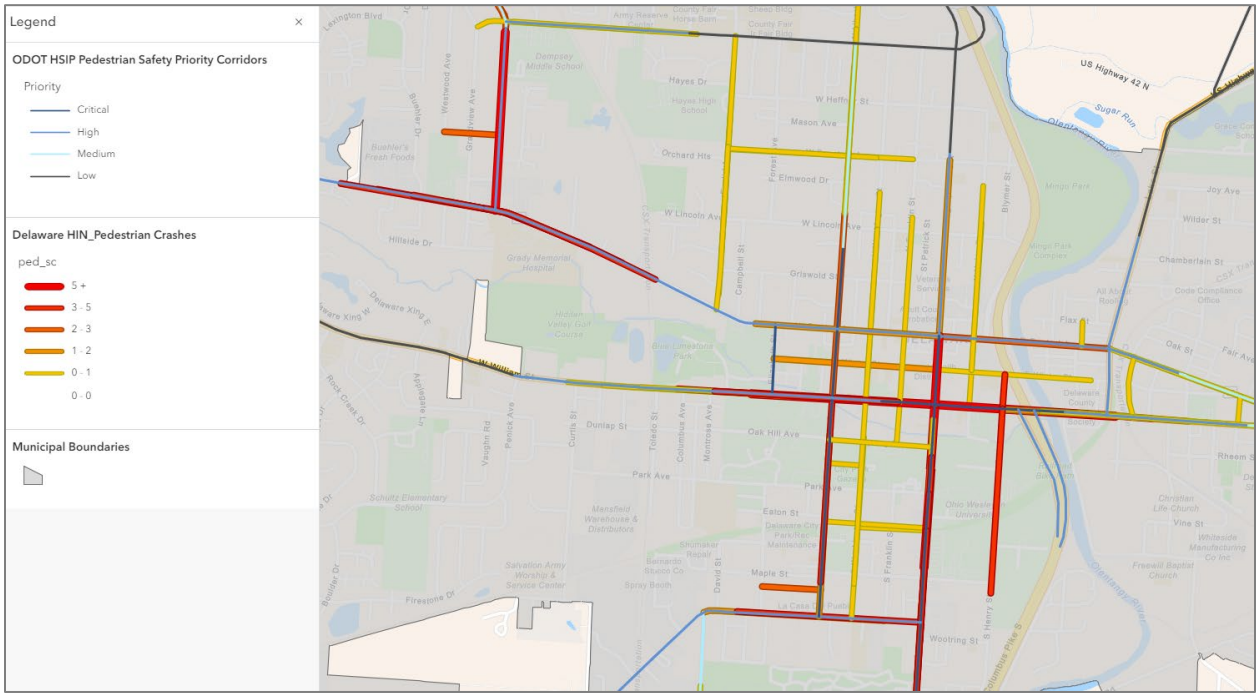
Through this systemic safety improvement program, ODOT is currently prioritizing addressing pedestrian safety and roadway departure crashes using proven safety countermeasures at priority locations. Those priority locations were established based on analysis of the statewide road network for specific criteria identified as contributing factors in pedestrian and roadway departure crashes.

These analyses resulted in the development of two GIS-based datasets that highlight specific roadway segments and the priority level assigned to those segments. This includes:

- **Pedestrian Safety Priority Corridors** – roadway segments that have been identified by ODOT as priorities for systemic safety funding for pedestrian safety improvements based on roadway characteristics and risk factors.
- **Roadway Departure Priority Corridors** – roadway segments that have been identified by ODOT as priorities for systemic safety funding for roadway departure safety improvements based on roadway characteristics and risk factors.

The systemic safety improvement program funds will be prioritized for segments assigned values of “critical,” “high,” or “medium” priority. Maps illustrating these two datasets can be found in the appendix. For any community looking to obtain this funding, or simply prioritizing corridors for these particular investment types, these datasets will be important to review in tandem with the HIN datasets. The image in Figure 15 illustrates how these layers can be overlayed to review the highest priority locations for investment.

Figure 15. Map of Priority Safety Locations for Pedestrian-Involved Crashes



Implementation and Monitoring

Travel Safe Delaware is a comprehensive Safety Action Plan for the City of Delaware. This means that it is intended to be a plan of action and implementation. The data and information included in this plan is intended to help guide decision making and the actions and next steps for the City to implement. The plan establishes official targets for reducing fatalities and serious injuries on the roadway network throughout the Delaware Service Area, as well as specific action the City and its partners can take to meet those targets. The City will be responsible for tracking progress toward these targets on an annual basis, analyzing trends, and sharing that information with the community. While the plan itself represents a snapshot of a single moment in time (2017-2021), the City will be able to continually collect and analyze the same data points to track changes over time. Additionally, progress on each of the identified action items will be documented to help determine if and when changes might need to be made. This could include consideration of the following:

- Has the City and/or its implementation partners experienced any significant barriers to implementing specific action items or projects?
- Do any of the action items need to be modified to account for additional challenges or new opportunities that have arisen since the plan was initially developed?
- Does any additional guidance need to be developed regarding specific activities?

Based on evaluation of progress and outcomes, the City will determine when it is appropriate to revisit and update the full plan document. Generally, this should be every five years at a minimum to ensure that the safety priorities and priority safety locations are still relevant.

Plan Leadership

The City of Delaware Public Works Department will be responsible for leading the implementation of Travel Safe Delaware. This will require close collaboration with other City departments as well as agency partners, including the stakeholders who participated in the development of the plan.

Internal City Coordination

Staff from the Public Works Department will regularly collaborate with staff from other City departments on the relevant action items identified in the plan. This includes, but is not limited to the following departments:

- Engineering Services
- Parks and Recreation
- Planning and Community Development
- Police
- Fire

Additionally, there will be a need to regularly engage with the Delaware Parking and Safety Committee as well as the Planning Commission and City Council. This will provide regular and consistent opportunities for progress updates, budget requests, and other critical tasks to ensure continued implementation and monitoring of the plan.

External Implementation Task Force

The Public Works Department staff will also regularly convene, likely on an annual basis, an external Implementation Task Force to coordinate with and provide updates to external partners and stakeholders. This will include key parties who were involved in plan development, as well as others who have indicated interest in championing the implementation of the plan.

Progress and Transparency

The City intends to develop a public-facing, online dashboard to share relevant data and information from Travel Safe Delaware with the public in order to maintain transparency. This dashboard would provide an opportunity to publish regular updates on key data points and progress toward implementation of the plan. Additional opportunities could be explored through this dashboard to accommodate regular public surveys to understand the public perspective on implementation and success of the plan, or to collect additional data and information identified as a need through the plan implementation process.

Potential Next Steps

In addition to the creation of this online dashboard and public surveys, the City could dive further into data analysis regarding the impacts of implemented projects and action items. This could include, but is not limited to the following:

- Collecting and analyzing additional data to identify specific communities and neighborhoods that experience disparities in roadway fatalities and serious injuries.
- Assessing and evaluating the impacts of certain roadway safety interventions on those identified neighborhoods, minority communities, and socioeconomically disadvantaged population groups. This could be through various types of data collection, including public surveys and/or focus groups with members of or leaders of specific community groups.
- Collaboration with the Delaware Public Health District and other partners to conduct health equity analyses for the identified neighborhoods or community groups to further understand the equity challenges and disparities as they relate to traffic safety.
- Development of specific policies or procedures to formalize these assessments into standard procedure as a key consideration in prioritization of infrastructure investments and other capital improvements.

Through the development and implementation of Travel Safe Delaware, the City of Delaware hopes to provide a transportation system that is safe, accessible, and convenient for all users.

Appendix

See the following Appendices for additional maps and materials relevant to Travel Safe Delaware.

Contents