Hamilton ACTS Plan

City of Hamilton
BUTLER COUNTY OHIO

Applying Critical Transportation Safety

April 2024

Prepared By:

TEC
ENGINEERING, INC.

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Commitment Statement: City of Hamilton

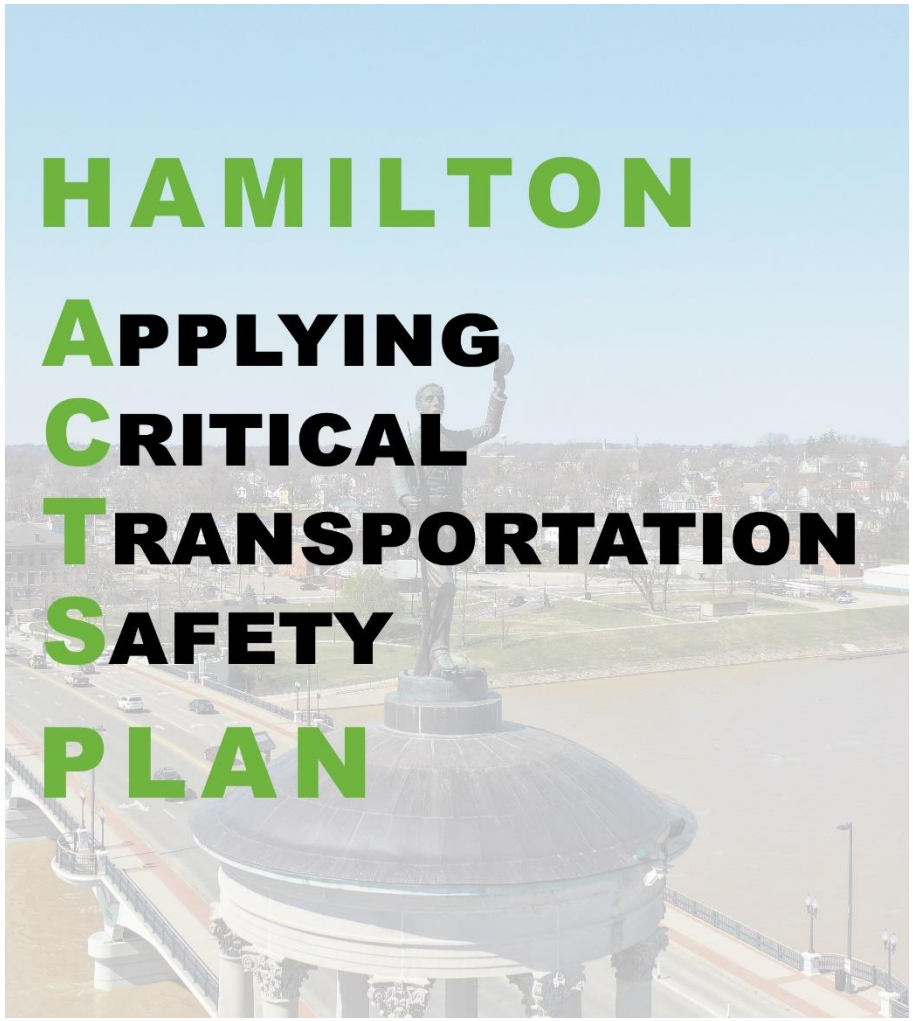
Safe and equitable travel throughout our community is critical for all residents and visitors traveling as pedestrians, cyclists, motorists, or transit users on our local transportation system.

Every person deserves to be safe as they navigate Hamilton — no matter how they get around, where they live, or their age or background. We commit to protecting lives above all else on our city transportation system. The City of Hamilton's ACTS (Applying Critical Transportation Safety) Plan aims to solidify this commitment.

Our ACTS Plan is founded on Vision Zero principals. Vision Zero is a traffic safety policy that strives to achieve safety for all modes of transportation with the understanding that transportation systems affect human life and that no traffic-related loss of life is acceptable. Our ACTS Plan will help us design strategies based on data, engineering, enforcement, and education ultimately to get to zero traffic deaths and serious injuries.

The City of Hamilton pledges to incorporate the ACTS Plan principles and goals into the work of our departments and organizations. We commit to implementing these strategies toward the pursuit of zero traffic-related fatalities and serious injuries occurring on Hamilton's streets.

This resolution was approved by Hamilton City Council on April 10, 2024.



Introduction

The City of Hamilton is committed to implementing policies and projects that align with Vision Zero, with a goal of zero traffic fatalities on roadways by all users. The Task Force responsible is composed of stakeholders such as city engineers, planners, and managers, who will be working with local politicians to reach this goal. They will implement the Vision Zero Action Plan that was developed, analyzing the data for new opportunities, and safety measures that can be updated.

This is a "living" document that will continue to be updated based on the latest data-driven approaches to addressing roadway safety.

WHY?

The Walk.Bike.Ohio Policy Plan (2021), crafted by the Ohio Department of Transportation (ODOT) and focusing on statewide safety, has singled out Hamilton as the **worst-ranked area for bicycle safety** and the **third-worst for pedestrian safety.** The ACTS Plan represents Hamilton's proactive response, employing data-driven and neighborhood-tailored approaches to markedly enhance safety for all residents.

Hamilton is the **#1 worst-ranked** area for **bicycle safety.**

Hamilton is the **#3 worst-ranked** area for **pedestrian safety.**

ODOT's Highway Safety Improvement Program (HSIP), last updated in 2022, identifies the state's top safety priority locations. Several of the state's worst urban intersections and segments are within Hamilton City limits:

- #23 - High & 7th
- #34 High & Erie
- #61 - Main St from Gardner to Stahlber
- #64 - High from 7th to Erie
- #65 - High & East
- #86 - B & Main
- #108 - High & MLK

ODOT also identified Butler County as the **6th highest county for fatalities and serious injuries.**

Each component of the Hamilton ACTS Plan is designed to advance the current infrastructure to minimize risk and incorporate human error into the design of the roadway. The current design demands drivers to be perfect in their maneuvers and allows low tolerances for improbable action, whereas the updated ACTS Plan incorporates those factors into the functionality of the roadway. This Plan serves to supplement the Hamilton Active Transportation Plan (adopted in 2020).

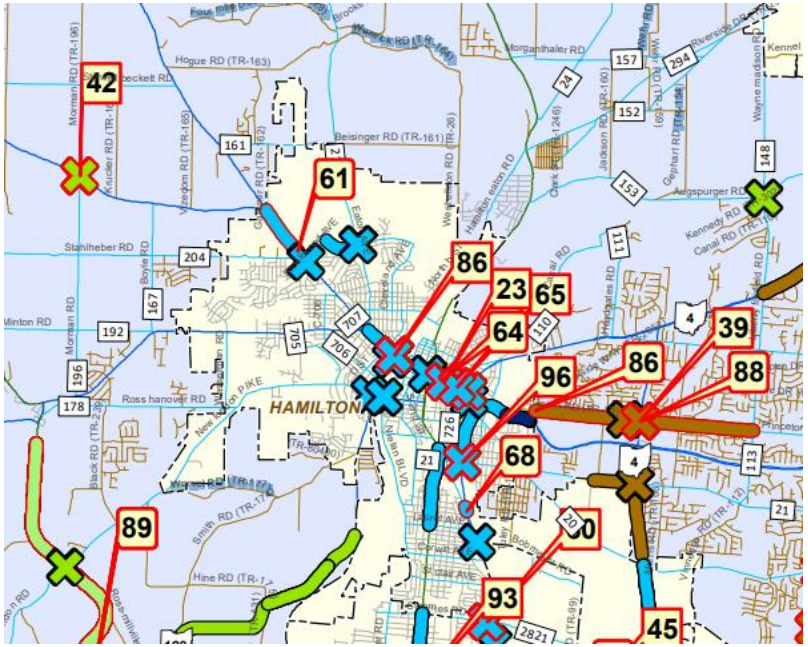


Figure 1: ODOT HSIP Most Dangerous Intersections in Hamilton

Vision for the Hamilton ACTS Plan

The purpose of the City of Hamilton ACTS Plan is to identify strategies to reduce the frequency of serious injuries and fatalities related to crashes in the City. While the City continues to take steps to reduce the total number of traffic crashes, the focus of this plan is to reduce crashes that cause serious injuries or death. Vision Zero uses a data-based approach to road safety and aims for safer streets through improved education, enforcement, engineering, evaluation, and engagement.

VISION ZERO

Vision Zero was first adopted in Sweden in 1997 and since then has spread around the world. Reaching zero deaths requires the implementation of a Safe System approach, which was founded on the principles that humans make mistakes and that human bodies have limited ability to tolerate crash impacts. In a Safe System, those mistakes should never lead to death. Applying the Safe System approach involves anticipating human mistakes by designing and managing road infrastructure to keep the risk of a mistake low; and when a mistake leads to a crash, the impact on the human body doesn't result in a fatality or serious injury. Road design and management should encourage safe speeds and manipulate appropriate crash angles to reduce injury severity.

Source: U.S. DOT Federal Highway Administration

SAFE SYSTEM APPROACH

There are six principles that form the basis of the Safe System approach: deaths and serious injuries are unacceptable, humans make mistakes, humans are vulnerable, responsibility is shared, safety is proactive, and redundancy is crucial.

Making a commitment to zero traffic deaths means addressing all aspects of safety through the following five Safe System elements that, together, create a holistic approach with layers of protection for road users: safe road users, safe vehicles, safe speeds, safe roads, and post-crash care.

The Safe System approach requires a supporting safety culture that places safety first and foremost in road system investment decisions. To achieve our zero deaths vision, everyone must accept that fatalities and serious injuries are unacceptable and preventable.

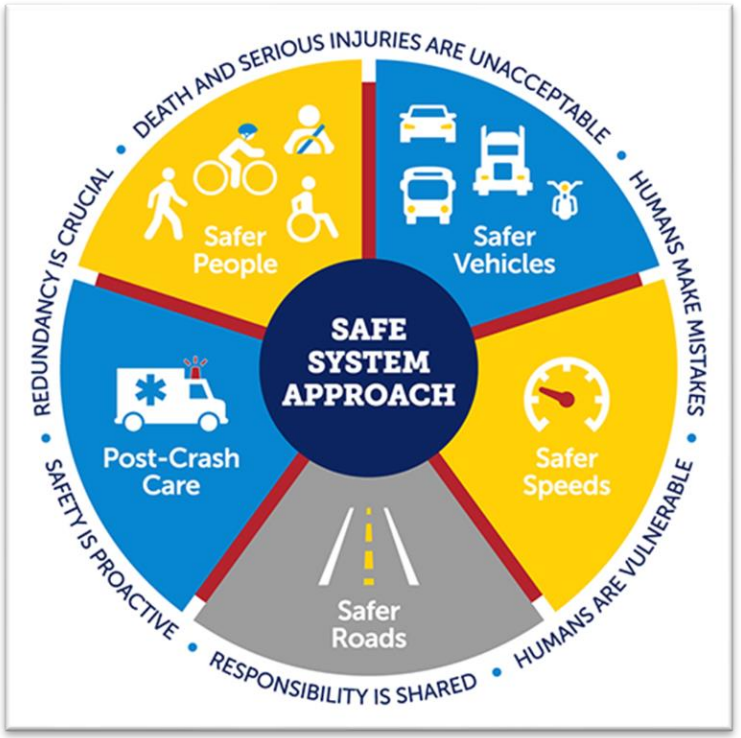


Figure 2: Safe System Approach
Source: U.S. DOT Federal Highway Administration

CITY OF HAMILTON CRASH HISTORY

On average, there are over 1,750 crashes a year in Hamilton (average over a 5-year period from 2018–2022). The majority of these crashes are vehicle-only collisions. However, during the same period, on average 40 vulnerable road user collisions occur every year and the majority of these collisions result in injury or fatality. Not only are fatalities and severe injuries on the road unacceptable from an ethical perspective, they are also unacceptable from a societal cost perspective.

PUBLIC INVOLVEMENT & STAKEHOLDER TASK FORCE

Input from stakeholders, including City staff as well as citizens of Hamilton was considered an integral part of developing the Hamilton ACTS Plan. As such, a comprehensive engagement program was developed to engage City staff and the community.

Hamilton convened a group of stakeholders to lead the SS4A Task Force and guide the development of this ACTS Plan. This group includes representatives from the following:

- Residents
- Hamilton Mayor and Vice Mayor
- Councilmembers
- Hamilton Police Department
- Hamiton Engineering Department
- Hamilton City Schools
- Fort Hamilton Hospital
- College Interns

To date, the Task Force has met on 5/1/2023, 1/16/2024, and 3/22/2024.

In addition, this plan draws from the work completed as part of the Active Transportation Plan, and the North Hamilton Crossing Study. The Active Transportation Plan included extensive public outreach, including advisory team meetings, charettes, neighborhood meetings, and online surveys. The North Hamilton Crossing Study built upon online surveys that identified safety issues and concerns throughout the City. All public comments were added to an interactive GIS map, shown on the right.

Figure 3: Task Force Meeting

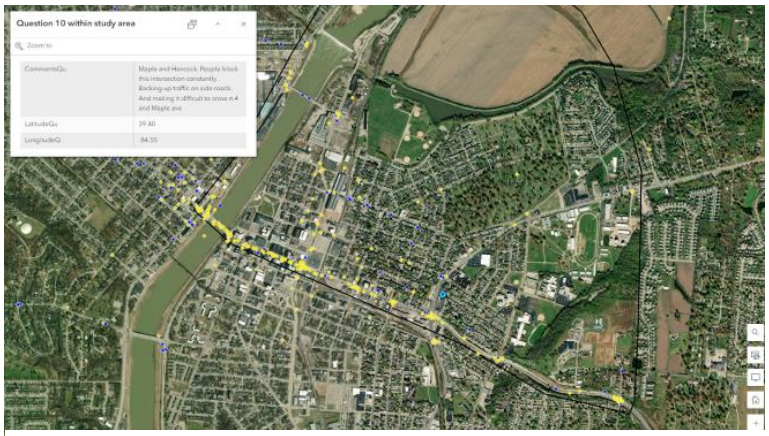


Figure 4: North Hamilton Crossing Public Input Map

Study Area: The City of Hamilton

The City of Hamilton is approximately 21.6 square miles and is the 10th largest City in Ohio with a population of 63,000. The City of Hamilton is the Bulter County seat.

The City of Hamilton maintains over 250 centerline miles of roadway, 100 traffic signals, thousands of traffic signs and hundreds of miles of pavement markings. The roads are mainly urban facilities and classified as arterials, collectors, and local roads.

The City of Hamilton ACTS Plan analysis area is shown in Figure 5.

Hamilton is home to numerous destinations that generate significant traffic. Spooky Nook Champion Mill, one of the largest convention centers and indoor sports facilities in the United States, attracts more than 20,000 visitors on weekends. In recent years, Hamilton has experienced a boom in new businesses and retail development coinciding with the investment in Champion Mill.

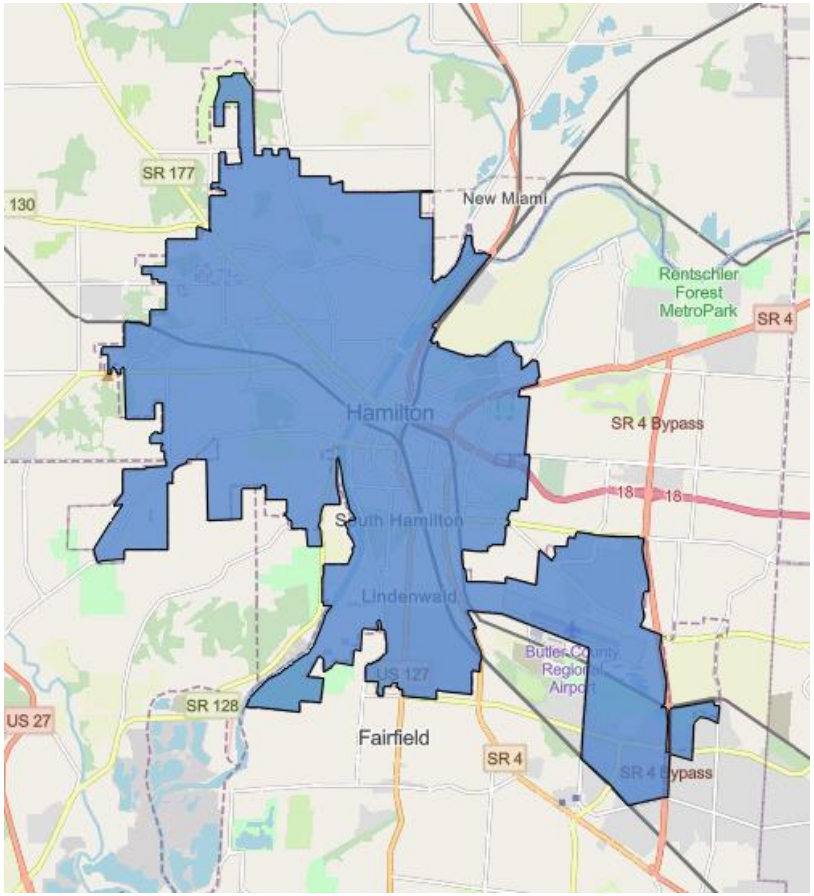


Figure 5: Study Area

Equity & Engagement

Hamilton is an underserved community, with 79% of disadvantaged census tracts in the project area. USDOT's Equitable Transportation Community Explorer Tool shows Hamilton's underserved populations in the shown below.

Plan Hamilton, Hamilton's comprehensive plan to guide the development of the city of the next 15 years, is a "living document" that continues to be updated based on the needs of the city. The development of Plan Hamilton entailed extensive public involvement to gather valuable input from stakeholders. It also encompassed thorough research into Hamilton's 17 neighborhoods, aimed at effectively addressing their distinct needs and planning enhancements to uplift underserved areas.

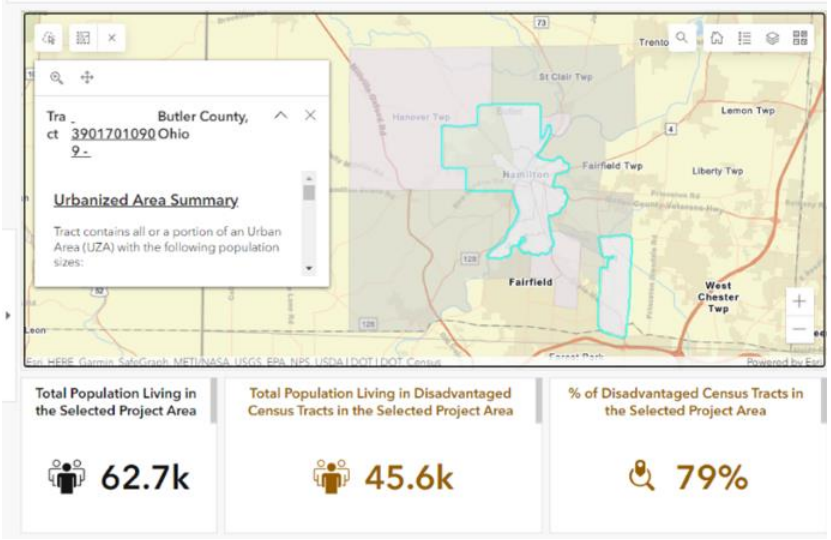


Figure 6: Hamilton Underserved Areas, USDOT ETC Explorer Tool

62%
of **all traffic deaths** in Hamilton occur in **underserved neighborhoods**

11 out of the **17**
Hamilton Neighborhoods have a **poverty rate** of
≥ 20%

COLLABORATION

The City of Hamilton emphasizes the importance of prioritizing equity in transportation projects. In line with this commitment, the City of Hamilton is actively seeking to give preference to our underserved communities and tackle the existing disparities within these areas. In alignment with the objectives of the Justice40 Initiative, Hamilton is firmly committed to engaging with local communities and environmental justice groups throughout the project development process. To guarantee that this project has no adverse effects on Environmental Justice (EJ) communities, Hamilton will persist in seeking input and promoting resident engagement both prior to, during, and following the project's completion.

The project team also included the neighborhood groups (17 Strong) in the evaluation of each high crash locations.

17 Strong is a citizen-led effort that provides structure and direction to the efforts behind a celebration of Hamilton's unique neighborhoods.

Their purpose is to provide a framework for communication and sense of identity to rally individuals, groups, and other organizations to take pride in their particular corner of our city.

In turn, 17 Strong will create stronger, more identifiable areas throughout Hamilton that will make Hamilton better as a whole because neighborhoods are the strategic building blocks of overall community development.

Source: Vision Zero Network

8.8%
of Hamilton residents are
zero-car households.

Existing Transportation Safety Conditions

Crash data for the City of Hamilton was obtained from the Ohio Department of Public Safety database for the 5-year study period from 2018 – 2022. Five years of data is typically used to normalize averages and trends which prevents abnormalities from influencing the results. The crash data was used to evaluate existing safety conditions within the city. Details were reviewed to identify city-wide trends regarding hot spot locations, contributing factors, driver demographics, injury types and other common factors.

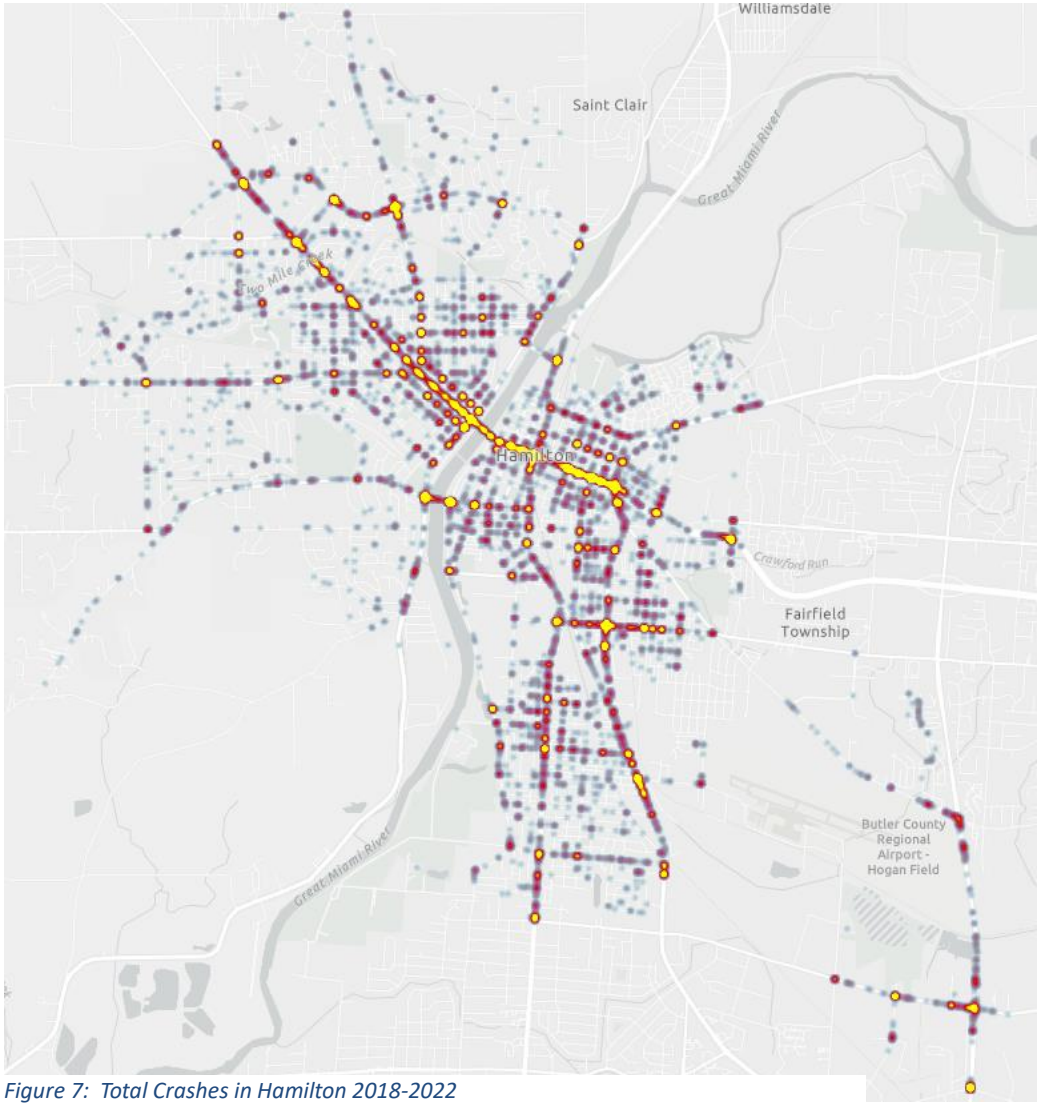


Figure 7: Total Crashes in Hamilton 2018-2022

CRITICAL CRASHES

Over the 5-year period from 2018-2022 there were a total of 114 serious injury and 16 fatal crashes in the City of Hamilton. An average of 26 serious injury and fatal crashes occur in the City every year.

As a part of this study process, the detailed crash report for each fatal and serious injury crash reported in the City of Hamilton during the study period was examined to ensure a thorough understanding of the conditions which surrounded each critical crash.

To develop strategies to meet the City's goals towards zero serious injury and fatal traffic crashes, it is important to understand the existing trends of these events. The crashes by year, associated with **serious injuries** and **fatalities** are shown in **Figure 8**.

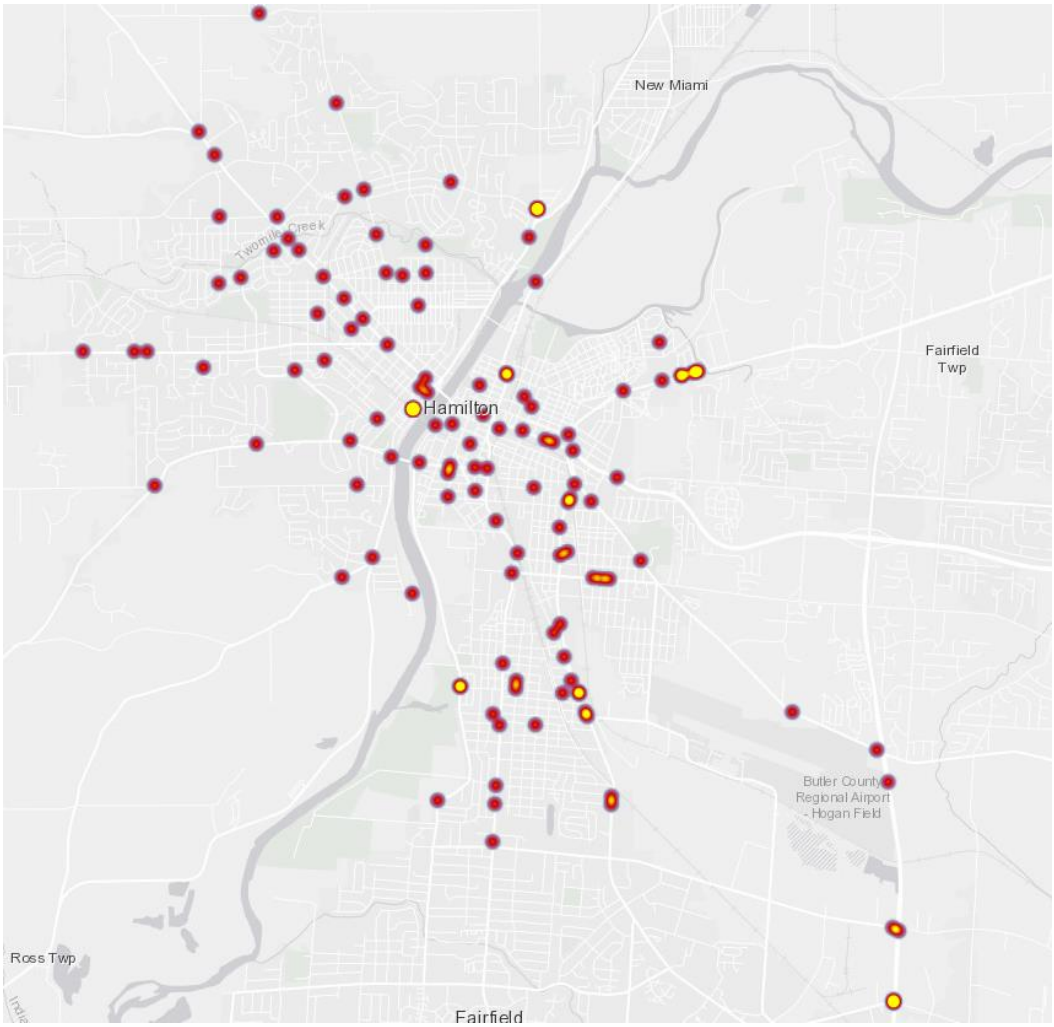


Figure 8: Fatal and Serious Injury Crashes 2018-2022

Nearly 50%
of **serious and fatal crashes** occur on
10% of our streets.

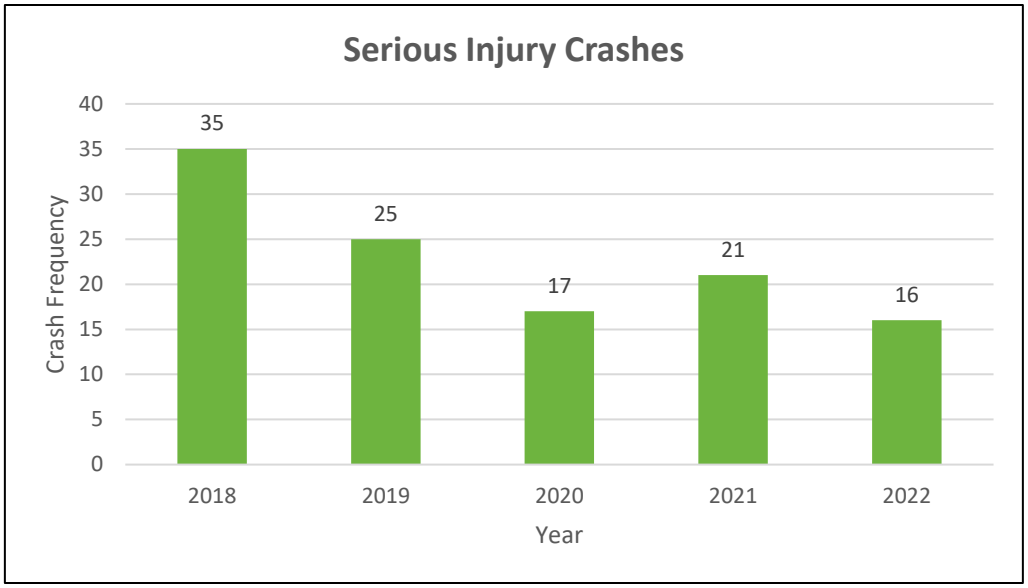


Figure 9: Fatal & Serious Injury Crashes 2018-2022

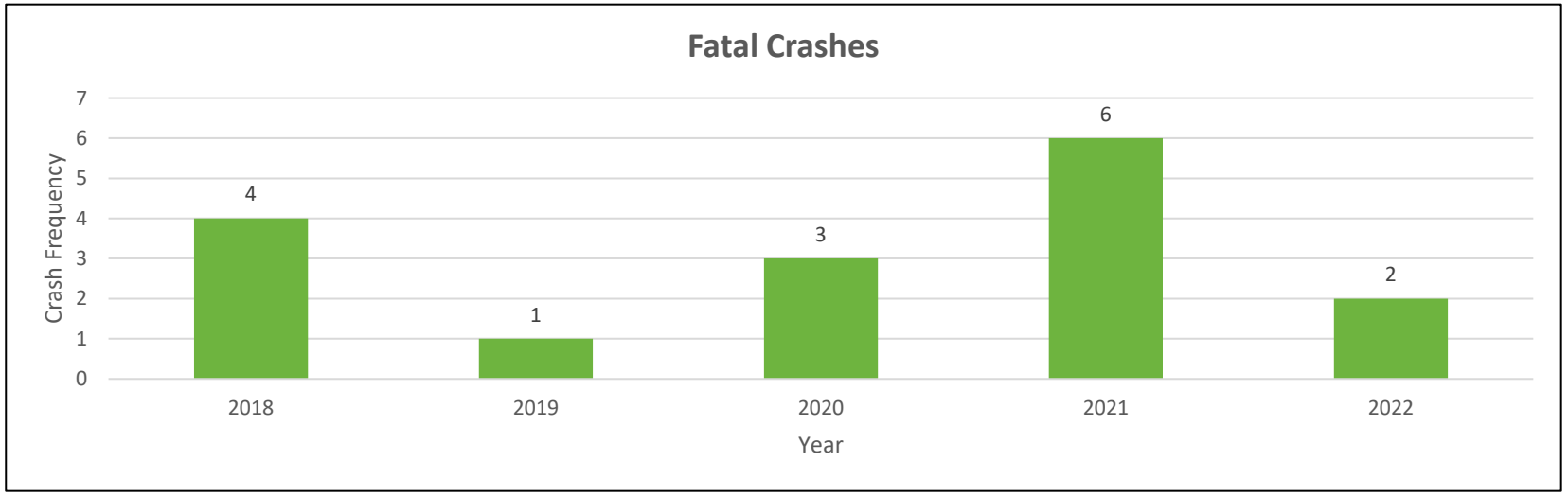


Figure 10: Fatal Crashes 2018-2022

WHO IS IMPACTED BY HIGH SEVERITY CRASHES?

Understanding who is involved in crashes can help focus safety related education and outreach. Age is an important factor to consider when evaluating crash trends. In the City of Hamilton, crashes resulting in serious injuries or fatalities occurred most frequently for drivers in the 20-24 age group followed closely by the 25-29 age group. This information is consistent with trends nationwide. It is worth noting that the 20-24 age group and the 25-29 age group make up the top two largest population age groups in the City according to the latest data. 14% of the fatal and serious injury crashes over the 5-year study period involved an older driver (65+).

Fatal and serious injury crashes were spread throughout the day with the highest hours in the 7pm and 8pm timeframes. According to the data, approximately 50% occurred during daylight, another 40% occurred during the dark on a lighted roadway and only 3% occurred during dark on an unlit roadway. The remaining 7% occurred during dawn/dusk or other conditions.

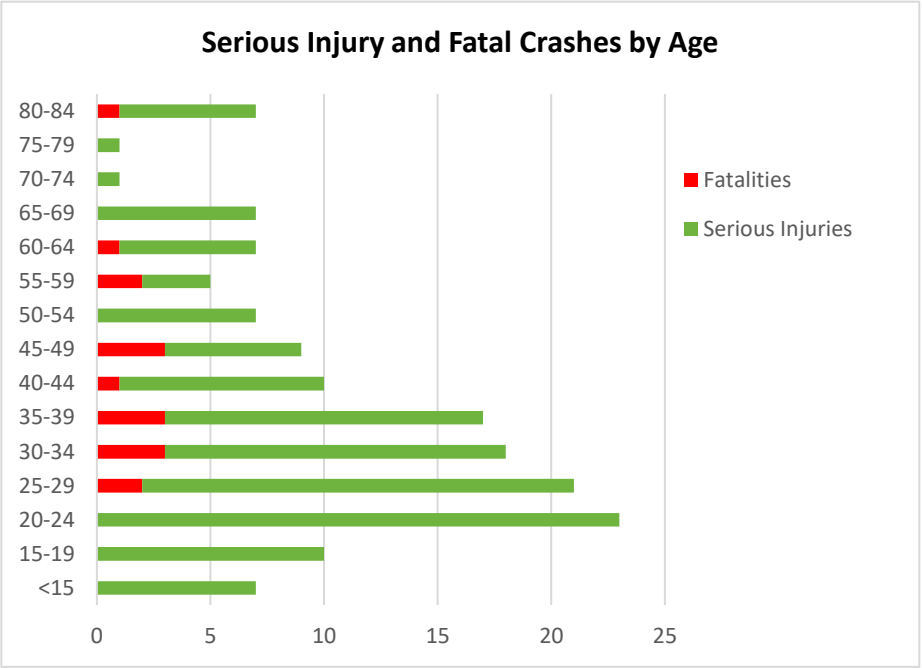


Figure 11: Serious Injury and Fatal Crashes by Age 2018-2022

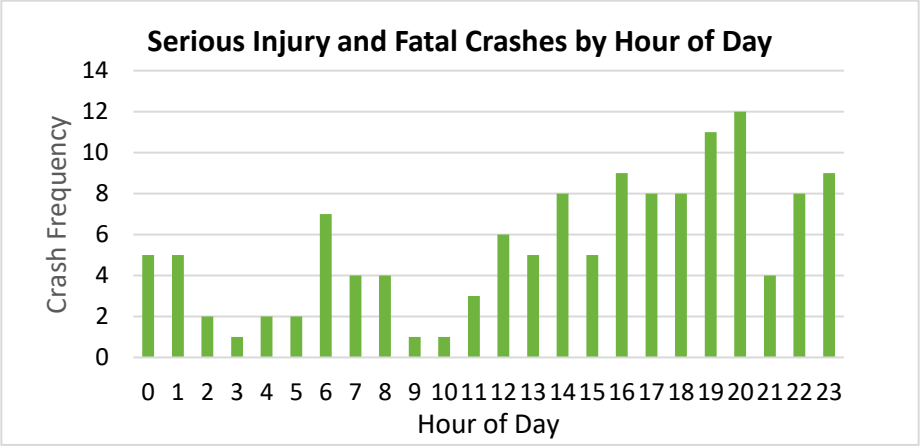


Figure 12: Serious Injury and Fatal Crashes by Hour of Day 2018-2022

The table below shows the crash types for Serious Injury and Fatal crashes in the City of Hamilton. The largest collision types contributing to serious injuries and fatalities are fixed object, angle, and pedestrian crashes.

Total Crashes	Injury Level		Grand Total
Crash Type	Fatal	Serious Injury	
Fixed Object	9	23	32
Angle	0	25	25
Pedestrian	4	15	19
Rear End	1	10	11
Left Turn	0	11	11
Parked Vehicle	0	8	8
Pedalcycles	0	7	7
Sideswipe - Passing	1	6	7
Head On	0	4	4
Right Turn	0	2	2
Backing	0	2	2
Overturning	1	1	2
Grand Total	16	114	130

Table 1: Crash Types for Serious Injury and Fatality

Looking solely at fatal crashes in the City of Hamilton, more than 50% of the crashes that resulted in a fatality were fixed object crashes. The next highest crash type for fatality involved a pedestrian.

CONTRIBUTING CRASH FACTORS

Identification of crash causes, as classified in ODOT's crash database, provides information about conditions contributing to crashes. ODOT has 24 categories to classify crash causes. Many of these causes have very few reported serious injury of fatal type crashes. Of the 24 categories, there are 7 contributing circumstances that account for 85% of the serious injury and fatal crashes in the City of Hamilton.

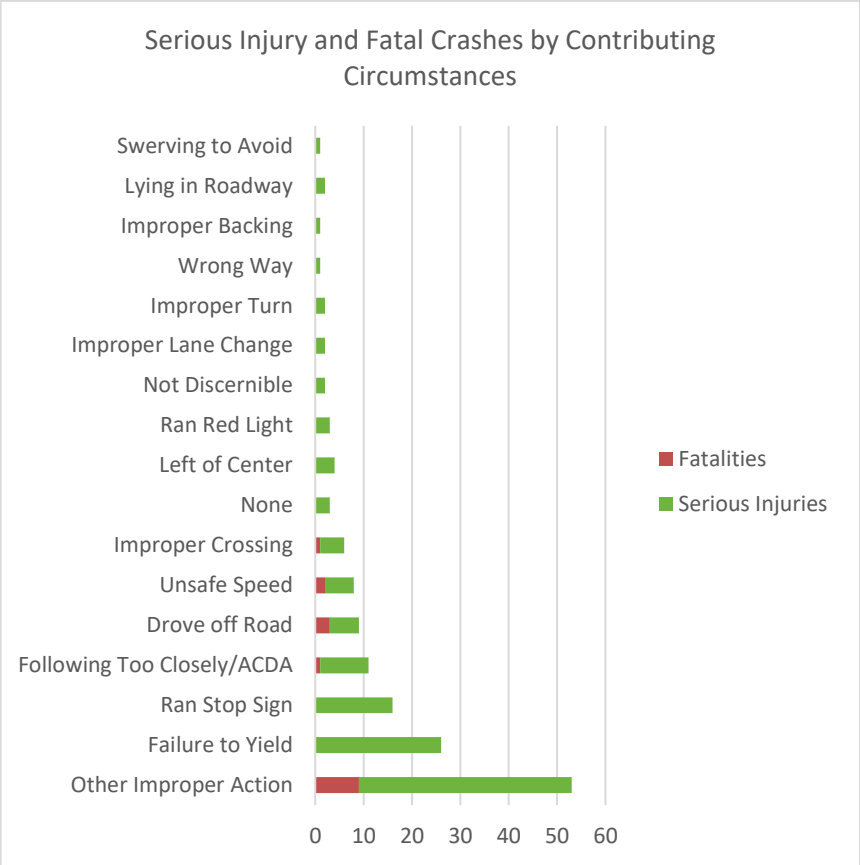


Figure 13: Serious Injury and Fatal Crashes by Contributing Circumstances

These include: Other improper action, Failure to yield, Ran stop sign, Following too closely, Drove off road, Unsafe Speed, and Improper Crossing. It is important to note that for this analysis, only the primary crash cause was analyzed due to the way crash information is coded into ODOT's system.

A breakdown of serious injury and fatal crashes by road condition is shown in **Figure 14.** Additional statistics related to roadway departure, intersection related and speed related are shown in the table below.

Roadway Departure	Fatal	Serious Injury
No	5	78
Yes	11	36
Grand Total	16	114

Intersection Related	Fatal	Serious Injury
Yes	2	66
No	14	48
Grand Total	16	114

Speed Related	Fatal	Serious Injury
No	12	81
Yes	4	33
Grand Total	16	114

Table 2: Additional Statistics Replated to Serious Injury and Fatality

Another important item to note is of the fatal and serious injury crashes, 15% involved either alcohol or drugs (or both). Looking solely at fatal crashes, 11 of the 16 crashes involved drugs or alcohol (or both).

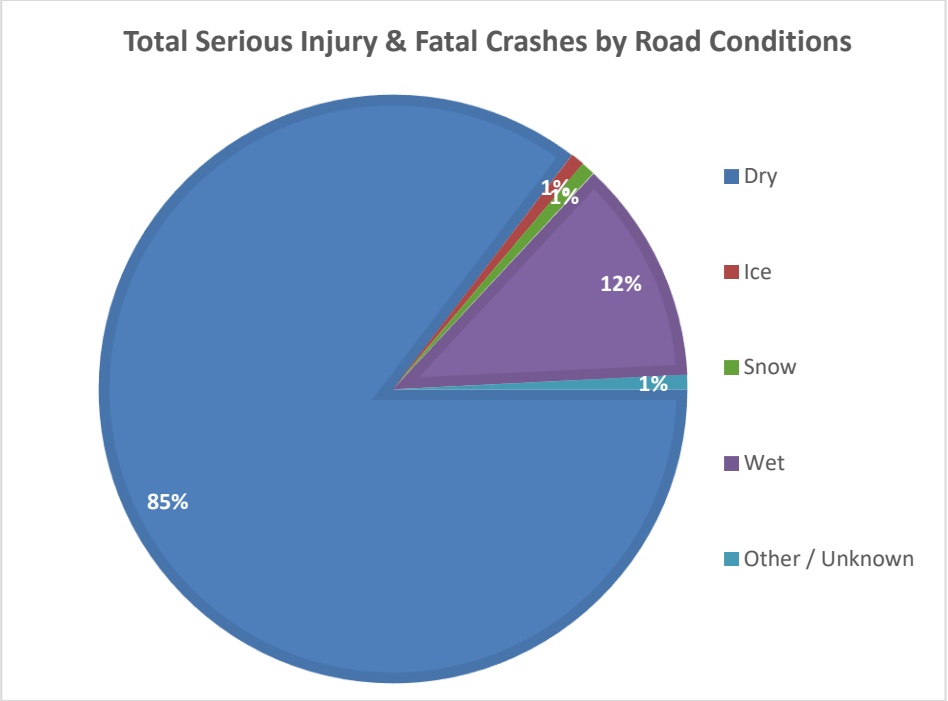


Figure 14: Serious Injury and Fatal Crashes by Road Condition

VULNERABLE ROAD USERS

Pedestrians and bicyclists are some of the most vulnerable users of public roadways. Crashes involving pedestrians or bicyclists may result in more serious injuries simply because these users do not have the protection of a vehicle. Over the study period there were **135 pedestrian-related** and **76 bicycle-related crashes** in the City of Hamilton.

Source: DRCOG's Regional Vision Zero Action Plan

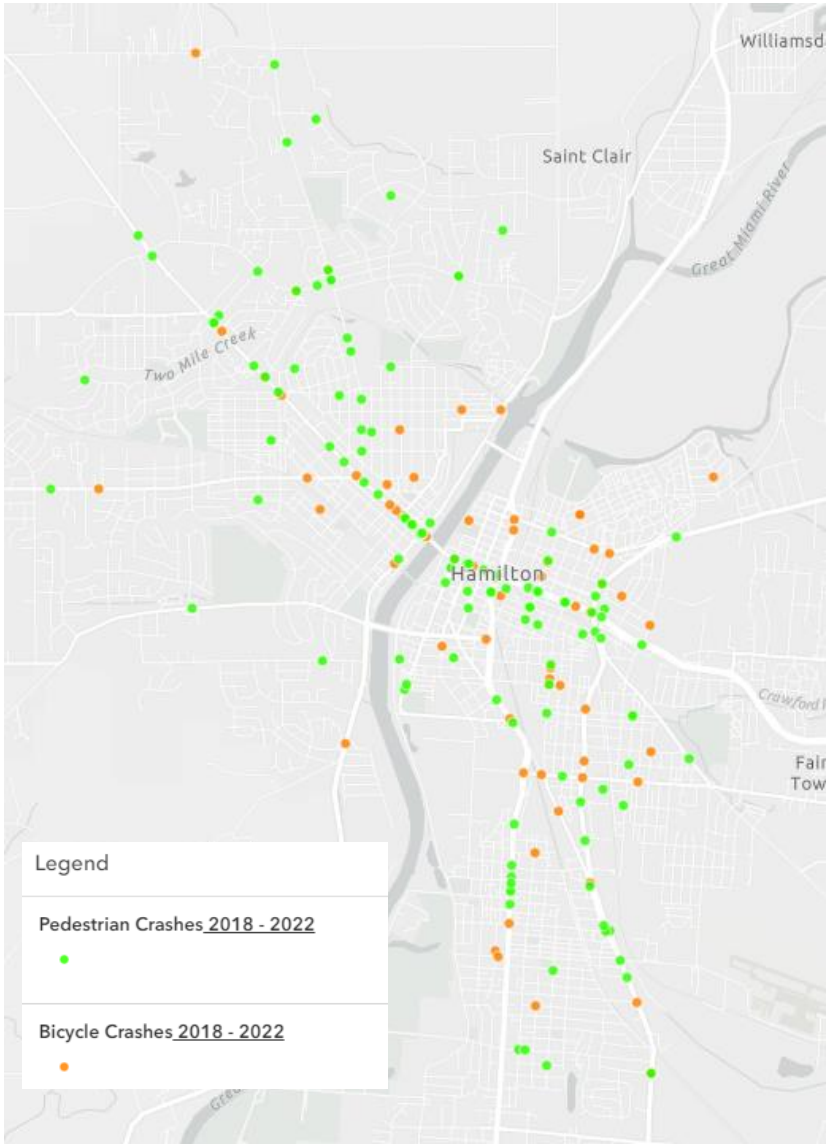


Figure 15: Pedestrian and Bicycle Crashes 2018-2022

PEDESTRIAN CRASHES

Pedestrian crashes broken down by severity, time of day, month and location as follows:

Crash Severity	Crashes	%
(1) Fatal	4	2.96%
(2) Serious Injury Suspected	15	11.11%
(3) Minor Injury Suspected	74	54.81%
(4) Injury Possible	32	23.70%
(5) PDO/No Injury	10	7.41%
Grand Total	135	100.00%

Table 3: Pedestrian Crashes by Severity

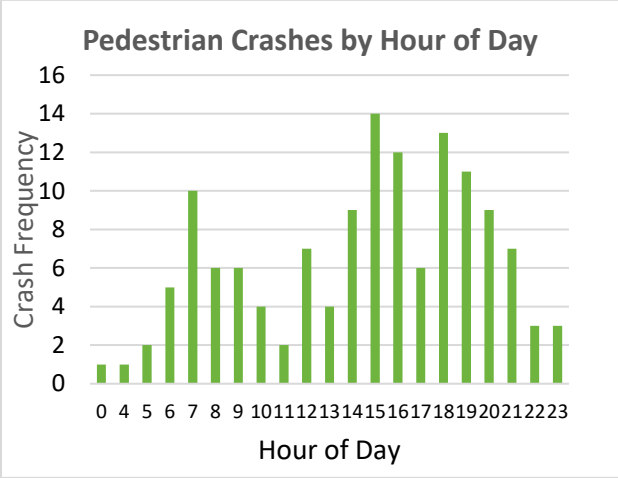


Figure 16: Pedestrian Crashes by Hour of Day

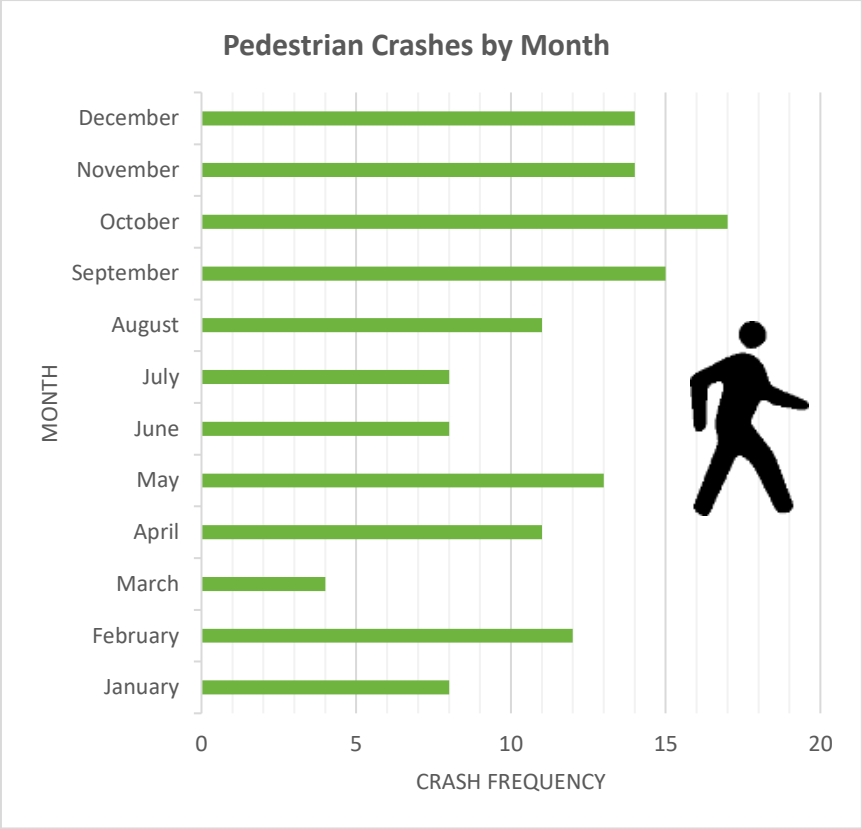


Figure 17: Pedestrian Crashes by Month

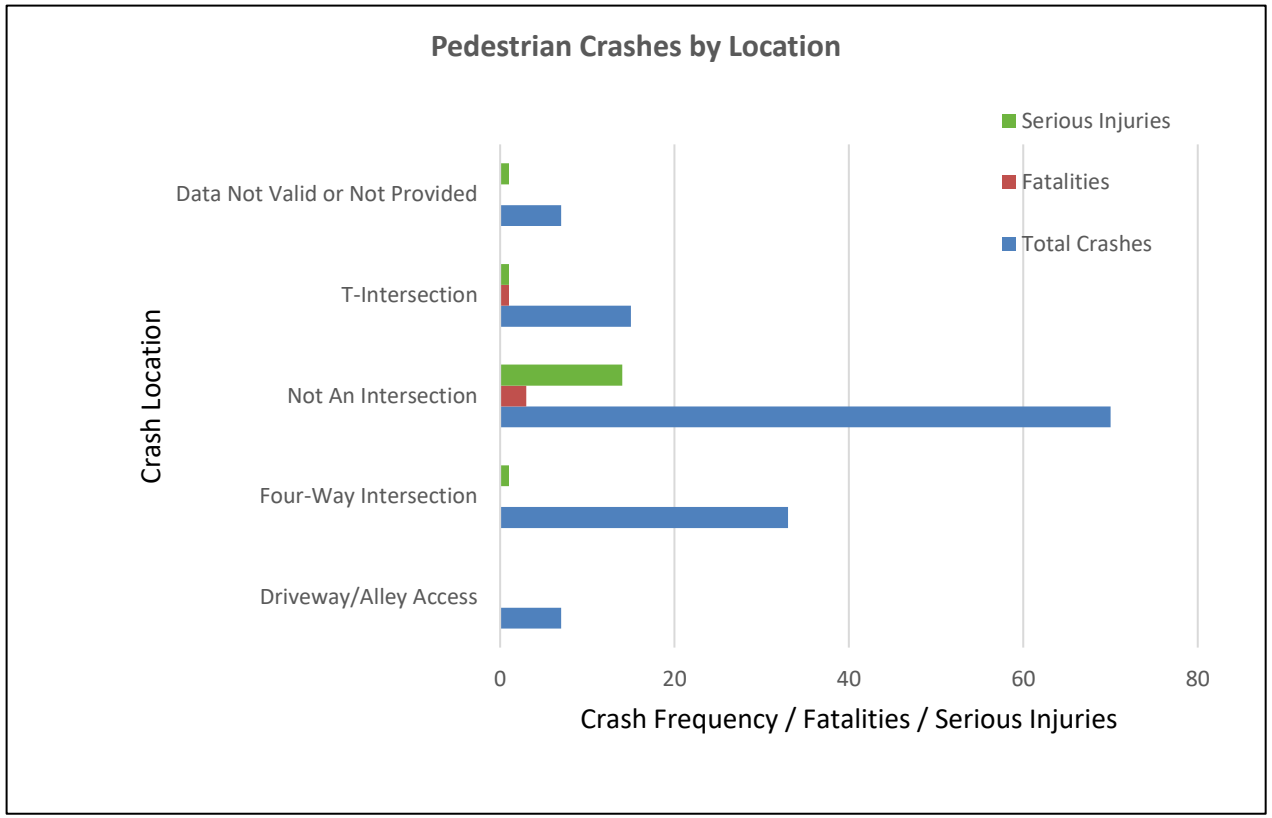


Figure 18: Pedestrian Crashes by Location

BICYCLE CRASHES

Bicycle related crashes break down by severity, time of day and month as follows:

Crash Severity	Crashes	%
(1) Fatal	0	0.00%
(2) Serious Injury Suspected	7	9.21%
(3) Minor Injury Suspected	42	55.26%
(4) Injury Possible	18	23.68%
(5) PDO/No Injury	9	11.84%
Grand Total	76	100.00%

Table 4: Bicycle Crashes by Severity

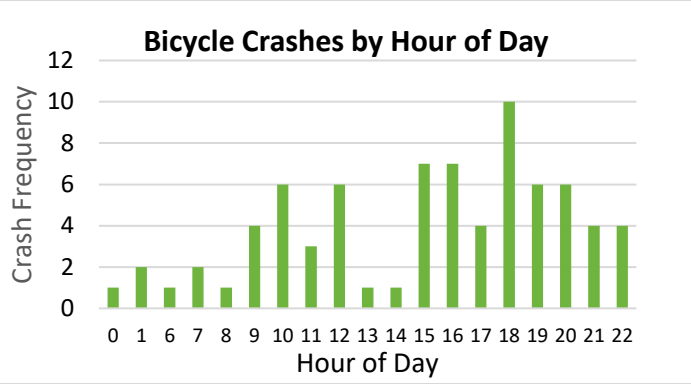


Figure 19: Bicycle Crashes by Hour of Day

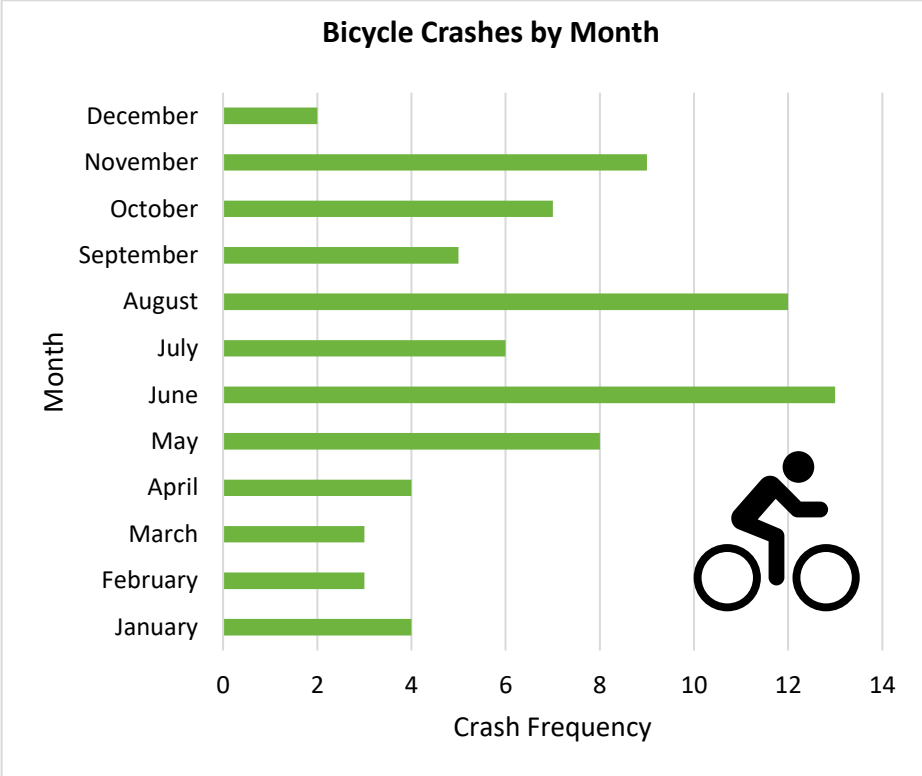


Figure 20: Bicycle Crashes by Month

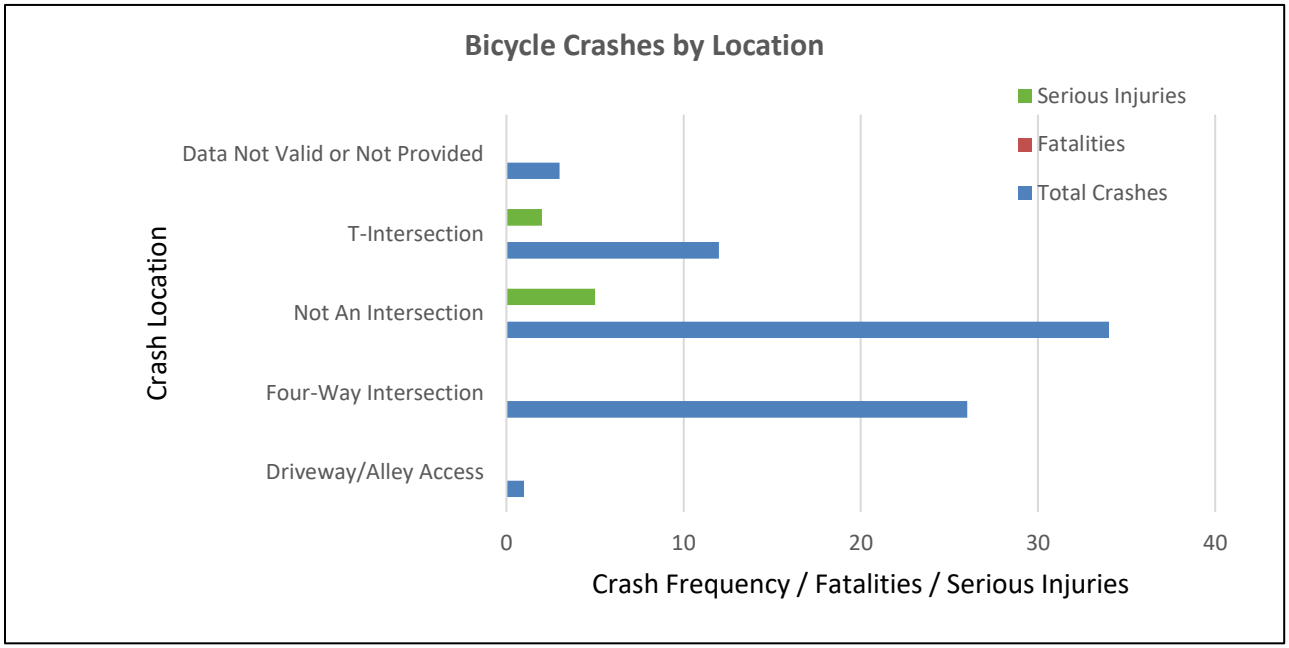


Figure 21: Bicycle Crashes by Location

Data-Driven Approach

Data collection, analysis and development are a critical part of the Vision Zero goal. The collection of the data assists to pinpoint areas of high crash density, as well as specific areas that lead to the most severe injuries. This approach will be used to determine specific changes that need to occur to guide City Planners and Engineers to design a better system for transportation.

METHODOLOGY – CRASH RATE

The following process is a list of steps outlining the methodology used to evaluate and organize a list of spots and segments.

Using ODOT's GCAT (GIS Crash Analysis Tool), a crash data search was conducted utilizing the following parameters:

- Latest 5 years of data (2018-2022)
- Crash Severity of 1-4 (All injury crashes)
- Located within the City of Hamilton

In calculating the overall list of spot and segment locations to be considered for safety improvements, 4 separate categories were used:

- All injury crash types (severity 1-4)
- Fatal and serious injury only crashes (severity 1-2)
- Pedestrian involved crashes
- Bicycle involved crashes

To develop these rankings, crashes were spatially joined utilizing the coordinates provided in the police reports. For spot locations, crashes were spatially joined at a radius of 200' from the center of the spot. All crashes that were successfully joined to spot locations were then removed from consideration of joining with segment locations. For segment locations, crashes were spatially joined at a maximum offset of 100' in all directions of the segment.

After spatially joining the crash data, frequencies were calculated and assigned to represent the total number of crashes to occur at a specific location. The formulas outlined in Section 3.2 of the Roadway Safety Information Analysis published by the Federal Highway Administration, were then utilized to calculate crash rates. Specifically, for spot locations, crash rates were expressed as crashes per million entering vehicles, while for segment locations, crash rates were expressed as crashes per 100 million vehicle-miles of travel.

For the injury crash list, spots and segments that had a frequency of less than 5 crashes were filtered out of consideration. A numerical score was computed for each location by assigning the maximum point value to the highest crash rate and a proportionate amount to the lower rated ones. The spot with the highest crash rate received a rank of 1. To aid in calculating the overall list, a score of 0 was assigned to spots and segments with no reported crashes and a baseline score was added to spots and segments with a frequency of 1-4 crashes.

The fatal and serious injury, pedestrian, and bicycle crash lists were computed similarly to the previous list except a filter of less than 2 crashes was used. This also resulted in the adjusted assignment of a baseline score to those locations with a frequency of 1 crash.

METHODOLOGY – FREQUENCY

Utilizing the tables from the crash rate methodology, new tables based on crash frequency were created for both spots and segments. These tables assigned a rank to each of the 4 crash types based on their respective frequency. For spot locations, the frequency was equal to the total number of crashes to occur within a 200' radius. For segment locations, the frequency was calculated as the total number of crashes to occur within 100' of the segment.

The location with the highest frequency received a rank of 1. After each separate table was calculated, an overall table that took the weighted average of each frequency type was calculated. The same weights that were used to calculate the overall crash rate table were applied to the overall frequency table. These averages were then converted to a ranking based system, with the highest average receiving a rank of 1.

METHODOLOGY – EQUITY & ENGAGEMENT

The plan development and data review includes inclusive and representative processes. Throughout the process, the development team has reviewed equity components, including socioeconomic conditions and disadvantaged communities.

PRIORITY RANKING

For both the frequency and crash rate analysis, weighted rankings were completed using the following weights:

- All Injury Crashes (20%)
- Serious Injury and Fatal Crashes (40%)
- Pedestrian Involved Crashes (20%)
- Bicycle Crashes (20%)

These priority lists were developed for spot locations, as well as corridors. This analysis, priority listings and separate categories, represent each type of safety concern.

The following tables are presented as examples of the data analysis completed throughout this process. They demonstrate the segment and spot locations listed by crash frequency and crash rate. The crash frequency can often over emphasize locations with high volumes. Developing supplemental ranking based upon crash rates allows a review of crashes per volume (or length) which can highlight disproportionately dangerous locations with lower volumes and/or non-congestion related crashes.

As discussed previously, the project team considered each location with regard to any proposed Active Transportation Plan projects. In addition, project locations and neighborhoods were considered to allow for consideration of underserved communities. These lists along with the other data analysis, will allow the Task Force and project team to develop targeted areas for improvement.

SEGMENT	STARTING POINT	ENDING POINT	FREQUENCY ALL INJURY	RANK ALL INJURY (20%)	FREQUENCY FATAL & SERIOUS INJURY	RANK FATAL & SERIOUS INJURY (40%)	FREQUENCY PEDESTRIAN	RANK PEDESTRIAN (20%)	FREQUENCY BICYCLE	RANK BICYCLE (20%)	OVERALL SCORE	OVERALL RANK
S Erie Boulevard	Dixie Highway	High Street (SR-129)	39	1	4	1	1	7	2	1	2.5	1
High Street (SR-129)	Erie Boulevard	Hamilton City Limits	17	2	2	3	1	7	0	19	1.1	2
University Boulevard/S 2nd Street	Grand Boulevard	Central Avenue	14	5	3	2	0	29	1	3	1.05	3
Dixie Highway (RT-4)	St Clair Avenue	Erie Boulevard	16	3	1	5	1	7	0	19	0.95	4
High Street (SR-129)	Martin Luther King Jr Boulevard	Erie Boulevard	16	3	0	48	1	7	0	19	0.85	5
Dixie Highway	S Erie Boulevard	Grand Boulevard	13	7	1	5	0	29	1	3	0.8	6
Pleasant Avenue	St Clair Avenue	Knightsbridge Drive	14	5	1	5	0	29	0	19	0.8	6
Main Street (SR-177)	B Street	Eaton Avenue/Millville Avenue	11	8	1	5	1	7	1	3	0.75	8
Millville Avenue	Washington Boulevard	Wasserman Road	11	8	1	5	1	7	1	3	0.75	8
Main Street (SR-177)	Brookwood Avenue	Old Oxford Road/Gardner Road	10	14	1	5	1	7	0	19	0.65	10
N B Street	Park Avenue	Hamilton Eaton Road	11	8	1	5	0	29	0	19	0.65	10
Gordon Avenue/Gray Avenue	N B Street	Eaton Avenue	11	8	0	48	0	29	1	3	0.6	12
N Martin Luther King Jr Boulevard/N 3rd St	High Street (SR-129)	Black Street	11	8	0	48	0	29	1	3	0.6	12
Pershing Avenue	S 2nd Street	S Martin Luther King Jr Boulevard	7	22	2	3	0	29	0	19	0.55	14
Van Hook Avenue	Linden Elementary School	Laurel Avenue	7	22	1	5	2	1	0	19	0.55	14
Hancock Avenue	Grand Boulevard/Hamilton Mason Road	Maple Avenue	7	22	1	5	2	1	0	19	0.55	14
Main Street (SR-177)	Cereal Avenue/Western Avenue	Brookwood Avenue	11	8	0	48	0	29	0	19	0.55	14
Eaton Road	Taft Place	Hamilton City Limits	7	22	1	5	2	1	0	19	0.55	14
Hensley Avenue	S Erie Boulevard	Hancock Avenue	7	22	1	5	0	29	1	3	0.5	19
NW Washington Boulevard	Hermay Drive	Cleveland Avenue	8	19	1	5	0	29	0	19	0.5	20
N 9th Street	High Street (SR-129)	Joe Nuxhall Boulevard	8	19	0	48	0	29	2	1	0.5	20
East Avenue	Grand Boulevard	High Steet (SR-129)	9	17	0	48	1	7	0	19	0.5	20
St Clair Avenue	River Road	Dixie Highway (RT-4)	10	14	0	48	0	29	0	19	0.5	20
Main Street (SR-177)	Eaton Avenue/Millville Avenue	Cereal Ave/Western Ave	10	14	0	48	0	29	0	19	0.5	20

Table 5: Priority Segments by Crash Frequency

SEGMENT	STARTING POINT	ENDING POINT	CRASHES PER 100 MILLION VEHICLE MILES TRAVEL ALL INJURY	RANK ALL INJURY (20%)	CRASHES PER 100 MILLION VEHILCE MILES TRAVEL FATAL & SERIOUS INJURY	RANK FATAL & SERIOUS INJURY (40%)	CRASHES PER 100 MILLION VEHICLE MILES TRAVEL PEDESTRIAN	RANK PEDESTRIAN (20%)	CRASHES PER 100 MILLION VEHICLE MILES TRAVEL BICYCLE	RANK BICYCLE (20%)	OVERALL SCORE	OVERALL RANK
University Boulevard/S 2nd St	Grand Boulevard	Central Avenue	483.7608522	14	103.6630398	1	0	29	34.55434659	3	41.65066684	1
N 9th Street	High Street (SR-129)	Joe Nuxhall Boulevard	1451.510478	5	0	48	0	29	362.8776195	1	24.83275938	2
Pershing Avenue	S 2nd Street	S Martin Luther King Jr Blvd	199.9323643	24	57.12353266	2	0	29	0	19	22.70767428	3
Ludlow Street	S 13th Street	S Martin Luther King Jr Blvd	761.246465	8	0	48	253.7488217	1	0	19	22.53454663	4
Buckeye Street	N 10th Street	N 7th Street	6006.963573	1	0	48	0	29	0	19	20	5
Ludlow Street	S Martin Luther King Jr Boulevard	S Monument Ave	467.5827017	16	93.51654034	5	187.0330807	2	0	19	16.37839424	6
S Front Street	Knightsbridge Drive	Pershing Avenue	339.7393452	22	0	48	113.2464484	3	0	19	10.05702157	7
Van Hook Avenue	Linden Elementary School	Laurel Avenue	380.4948553	19	54.3564079	5	108.7128158	4	0	19	9.915383476	8
S 11th Street	Ludlow Street	Grand Boulevard	1834.345499	2	0	48	0	29	262.049357	3	6.14739678	9
Bender Avenue	Mosler Avenue E	Hancock Avenue	1754.862241	3	0	48	350.9724481	7	0	19	5.882759722	10
Walnut Street	S Front Street	S Martin Luther King Jr Blvd	1547.998998	4	0	48	193.4998748	7	0	19	5.194014935	11
Chestnut Avenue	Neilan and Pershing Playground	S Martin Luther King Jr Blvd	1429.240824	6	285.8481647	5	0	29	285.8481647	3	4.878613254	12
S Erie Boulevard	Dixie Highway	High Street (SR-129)	67.05741279	38	6.877683363	3	1.719420841	7	3.438841682	2	3.106858696	13
Madison Avenue	Hooven Avenue	Woodlawn Avenue	841.2764199	7	0	48	0	29	0	19	2.801003901	14
Hanover Street	East Avenue	S Erie Boulevard	647.4712484	9	0	48	0	29	107.9118747	3	2.195735558	15
Hancock Avenue	Grand Boulevard/Hamilton Mason Road	Maple Avenue	77.48485275	36	11.06926468	5	22.13852936	5	0	19	2.082900249	16
Putnam Avenue	Bishop Avenue	Weller Avenue	619.0044391	10	0	48	0	29	0	19	2.060956194	17
High Street (SR-129)	Erie Boulevard	Hamilton City Limits	39.75778317	52	4.677386255	4	2.338693127	7	0	19	1.97721472	18
Hensley Avenue	S Erie Boulevard	Hancock Avenue	542.4570896	11	77.49386994	5	0	29	77.49386994	3	1.926094154	19
Cleveland Avenue	Haldimand Avenue	Rhea Avenue	541.6772261	12	77.38246088	5	0	29	0	19	1.883497623	20

Table 6: Priority Segments by Crash Rate

SPOT NAME	Major Street	Minor Street	CRASHES PER MILLION ENTERING VEHICLES ALL INJURY	FREQUENCY ALL INJURY	RANK ALL INJURY (20%)	FREQUENCY FATAL & SERIOUS INJURY	RANK FATAL & SERIOUS INJURY (40%)	FREQUENCY PEDESTRIAN	RANK PEDESTRIAN (20%)	FREQUENCY BICYCLE	RANK BICYCLE (20%)	OVERALL SCORE	OVERALL RANK
High St (SR-129) & 7th St	High St (SR-129)	7th St	0.564723776	45	1	1	8	8	1	3	1	2.9	1
High St (SR-129) & MLK	High St (SR-129)	MLK	0.471853251	42	3	0	55	4	2	2	3	2.4	2
High St (SR-129) & Erie Blvd	High St (SR-129)	Erie Blvd	0.416148943	44	2	0	55	1	20	1	9	2.3	3
High St (SR-129) & East Ave	High St (SR-129)	East Ave	0.403275905	34	4	1	8	3	4	0	45	1.95	4
Main St (SR-129) & B St	Main St (SR-129)	B St	0.511874079	32	6	0	55	4	2	3	1	1.95	4
NW Washington Blvd & Eaton Ave	NW Washington Blvd	Eaton Ave	0.658797588	34	4	1	8	2	9	0	45	1.9	6
S Erie Blvd & Grand Blvd	S Erie Blvd	Grand Blvd	0.464686249	29	7	0	55	0	57	1	9	1.5	7
Pershing Ave/ New London Rd & Pyramid Hill Blvd/S	Pershing Ave/ New London Rd	Pyramid Hill Blvd/S B St	0.436637559	25	8	1	8	0	57	0	45	1.35	8
High St (SR-129) & S 2nd St	High St (SR-129)	S 2nd St	0.318582542	19	12	0	55	3	4	2	3	1.2	9
Main St (SR-177) & Brookwood Ave	Main St (SR-177)	Brookwood Ave	0.407293265	21	10	0	55	3	4	0	45	1.2	9
S B St & Ross Ave	S B St	Ross Ave	0.897067608	22	9	1	8	0	57	0	45	1.2	9
Main St (SR-129) & C St	Main St (SR-129)	C St	0.263617382	16	16	1	8	3	4	1	9	1.1	12
Dixie Hwy & Bobmeyer Rd	Dixie Hwy	Bobmeyer Rd	0.406957159	18	13	1	8	1	20	0	45	1.05	13
Main St (SR-177) & NW Washington Blvd	Main St (SR-177)	NW Washington Blvd	0.457421492	20	11	0	55	1	20	0	45	1.05	13
Dixie Hwy & Laurel Ave	Dixie Hwy	Laurel Ave	0.270405332	13	21	2	4	2	9	1	9	1	15
S B St & Arch St	S B St	Arch St	0.435015247	10	38	4	1	1	20	1	9	1	15
Neilan Blvd & Pershing Ave	Neilan Blvd	Pershing Ave	0.220715299	17	14	1	8	0	57	0	45	0.95	17
S Erie Blvd & Maple Ave	S Erie Blvd	Maple Ave	0.42575385	17	14	0	55	1	20	0	45	0.9	18
Grand Blvd & Shuler Ave	Grand Blvd	Shuler Ave	0.878029373	16	16	1	8	0	57	0	45	0.9	19
Main St (SR-177) & Western Ave/Cereal Ave/ Haldima	Main St (SR-177)	Western Ave/Cereal Ave/ Haldimand ave	0.27744061	12	24	1	8	1	20	2	3	0.85	20
NW Washington Blvd & N Brookwood Ave	NW Washington Blvd	N Brookwood Ave	0.386353045	16	16	0	55	1	20	0	45	0.85	20

Table 7: Priority Spots by Crash Frequency

SPOT NAME	Major Street	Minor Street	CRASHES PER MILLION ENTERING VEHICLES ALL INJURY	RANK ALL INJURY (20%)	CRASHES PER MILLION ENTERING VEHICLES FATAL & SERIOUS INJURY	RANK FATAL & SERIOUS INJURY (40%)	CRASHES PER MILLION ENTERING VEHICLES PEDESTRIAN	RANK PEDESTRIAN (20%)	CRASHES PER MILLION ENTERING VEHICLES BICYCLE	RANK BICYCLE (20%)	OVERALL SCORE	OVERALL RANK
S B St & Arch St	S B St	Arch St	0.435015247	35	0.174006099	1	0.043501525	20	0.043501525	9	45.22362655	1
W Elkton Rd & NW Washington Blvd	W Elkton Rd	NW Washington Blvd	0.198975442	90	0.099487721	2	0	57	0	45	24.89330025	2
Hanover St & East Ave	Hanover St	East Ave	0.409729715	40	0	55	0.045525524	20	0.091051048	1	24.5665005	3
Fairgrove Ave & N Eastview Pkwy	Fairgrove Ave	N Eastview Pkwy	0.140376391	109	0.084225835	3	0	57	0	45	20.7890557	4
Shuler Ave & Howell Ave	Shuler Ave	Howell Ave	1.553352815	125	0	55	0.776676407	1	0	45	20.4	5
Rhea Ave & N D St	Rhea Ave	N D St	1.966781068	1	0	55	0	57	0	45	20	6
River Rd & Laurel Ave	River Rd	Laurel Ave	0.205376764	88	0.068458921	4	0	57	0	45	17.82558721	7
High St (SR-129) & 7th St	High St (SR-129)	7th St	0.564723776	21	0.012549417	8	0.100395338	5	0.037648252	6	17.3975789	8
Main St (SR-129) & B St	Main St (SR-129)	B St	0.511874079	24	0	55	0.06398426	10	0.047988195	2	17.39378193	9
Ross Ave & Lawn Ave S	Ross Ave	Lawn Ave S	1.704869361	2	0	55	0	57	0	45	17.33665215	10
Millikin St & S Kenworth Ave	Millikin St	S Kenworth Ave	1.584572601	4	0	55	0.31691452	20	0	45	16.51336032	11
Rhea Ave & Cleveland Ave	Rhea Ave	Cleveland Ave	1.586867088	3	0	55	0	57	0	45	16.13669273	12
MLK & Heaton St/Village St	MLK	Heaton St/Village St	0.298135097	61	0.054206381	6	0	57	0.027103191	9	15.89250631	13
Dayton St & N 7th St	Dayton St	N 7th St	1.246360062	5	0.11330546	8	0.11330546	20	0.11330546	9	14.27411084	14
Main St (SR-177) & Western Ave/Cereal Ave /Haldima	Main St (SR-177)	Western Ave/Cereal Ave /Haldimand Ave	0.27744061	64	0.023120051	8	0.023120051	20	0.046240102	3	14.17822785	15
Dixie Hwy & Laurel Ave	Dixie Hwy	Laurel Ave	0.270405332	67	0.04160082	7	0.04160082	15	0.02080041	9	13.78404889	16
Dixie Hwy & Bishop Ave	Dixie Hwy	Bishop Ave	0.226311418	82	0.022631142	8	0.022631142	20	0.045262284	4	13.44351561	17
Fairgrove Ave & Campbell Dr	Fairgrove Ave	Campbell Dr	0.083047167	125	0.055364778	5	0	57	0	45	13.12708302	18
Main St (SR-129) & D St	Main St (SR-129)	D St	0.248191691	71	0	55	0.041365282	16	0.041365282	5	12.67519722	19
Smalley Blvd & Rockford Dr	Smalley Blvd	Rockford Dr	1.170823089	6	0	55	0	57	0	45	11.90596291	20

Table 8: Priority Spots by Crash Rate

Policy

Hamilton is committed to following Vision Zero objectives to guide our future transportation planning policies. We will continue to evaluate the needs of our city, including current and future transportation trends, to successfully maintain and update this ACTS Plan.

Hamilton also pledges to evaluate current policies, plans, and guidelines on a yearly basis.

STAKEHOLDER TASK FORCE MEETINGS

The City of Hamilton will continue to hold Task Force meetings with Stakeholders into the future. These meetings will help to continue to guide the City through the Vision Zero initiative.

Hamilton pledges to maintain and facilitate routine stakeholder task force meetings.

SERIOUS INJURY AND FATAL CRASHES

The data analysis completed as part of this Plan will be updated annually to review trends. It will also be necessary to obtain information related to overall traffic counts. This information should be updated and issued as an addendum to this Plan.

Hamilton pledges to annually review the serious injury and fatal crashes to develop this plan and make informed decisions.

AFTER STUDIES

As solutions are implemented, the City will evaluate the crashes in the following years to determine if the solution addressed the crash problem.

Hamilton pledges to conduct post evaluation of projects to determine the solutions' effectiveness in reducing crashes.

STATE POLICIES

The City of Hamilton is following in the footsteps of the State of Ohio. Our prioritization and rankings are in line with the Highway Safey Improvement Program (HSIP) at the Ohio Department of Transportation. In addition, we have already developed safety programs and designs in line with this program. The City of Hamilton has been the recipient of State and Federal Funds to implement safe system solutions including sidewalks, bicycle facilities, roundabouts, bump outs, high visibility crosswalks, traffic calming, HAWK signals and RRFBs. This ACTS Plan will allow us to continue to identify, develop and design solutions to improve transportation in our City that are consistent with the State of Ohio Safety Program.

Hamilton pledges to continue the work of the ACTS Plan and the Ohio HSIP efforts.

TRANSPARENCY & PROGRESS

The Hamilton ACTS Plan will be publicly available on the City of Hamilton's website, along with all crash data.

TAKING ACTION NOW

Our ACTS Plan is our outline and strategy to implement safety in our focal areas. Construction on roadway safety in our city is already underway and the results have come back positive, giving us reason for celebration and justification to continue our work here and now. This city needs a safe and reliable roadway system where its citizens can utilize it with peace of mind.

Since already beginning our transformation of our city by introducing roundabouts, improved connectivity for pedestrians, and necessary speed reducing measures, we have observed traffic flow work as intended. With already proven results in these areas, combined with the future progress outlined in our ACTS Plan, collaboration with our stakeholders, engineers, educators, and public awareness programs, we expect realize our goal of Vision Zero in the City of Hamilton.

In 2023, Hamilton ramped up its traffic enforcement measures with a particular emphasis on combating speeding to enhance road safety. Compared to 2022, the number of traffic stops increased by 54% during this period. Thanks to the Hamilton Police Department's diligent efforts, there was a notable 12% decrease in reported crashes in 2023.

Hamilton has continued to implement safety improvement projects. **A list of our recently completed or planned projects is shown to the right.**

Planned or Completed Safety Improvements

Crosswalk Enhancements at North B St and Main St, North B St and Park Ave and at South B St and Ross Ave **completed end of 2021.**

Traffic Signal installed at Dayton St and N 7th **in 2023.**

Sidewalk additions and **crosswalk enhancements** to Van Hook Ave (Hoadly to Hayes) in **2022** and (Hayes to Laurel) in **2023.**

Hancock Avenue (Parrish to Bender) – **sidewalk additions** planned for **2025.**

Intersection Improvements planned for Hanover St and East Ave in **2024.**

Roundabout planned for NW Washington Blvd at West Elkton Rd in **2027.**

SS4A Demonstration Project (separated bike lane) planned for Knightsbridge Dr in 2024.

INTERSECTION SAFTEY IMPROVEMENTS – BEFORE & AFTER PHOTOS

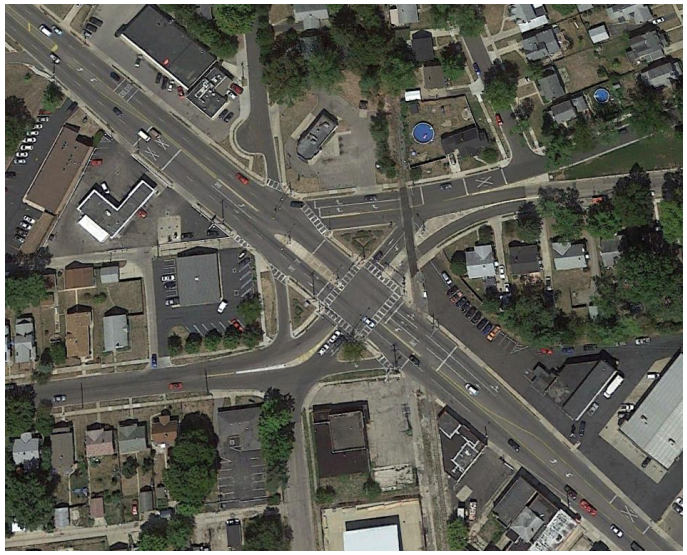


Figure 22: Main/Cereal/Haldimand Intersection BEFORE Improvements

Figure 23: Main/Cereal/Haldimand Intersection AFTER Improvements

Figure 24: Main & Eaton Intersection BEFORE Improvements

Figure 25: Main & Eaton Intersection AFTER Improvements

Focal Areas

Through the data analysis completed as part of this planning process, the City of Hamilton has identified several areas where improvement can be made. Solutions will be developed through City Policy, Planning and Engineering efforts.

FOCAL AREAS OF CRASH FACTOR DATA

Through our continual data analysis efforts, the project team will continue to refine and identify crash information related to the following list of crash factors. These factors have risen to the top of several lists within the data analysis and they will continue to be a priority for the City.

Other improper action (often related to road departure with unknown factors), Failure to yield, Ran stop sign, Following too closely, Drove off road, Unsafe Speed, and Improper Crossing.

FOCAL AREAS OF IMPROVEMENT

The City of Hamilton has strived to implement projects to improve the infrastructure listed below. The city has prioritized these projects now, and will continue to do so because of their proven safety benefits.

- Signal Improvements
- Pedestrian network improvement
    - High visibility crosswalks
    - Mid-block crossings
    - RRFBs and HAWK signals
- Bicycle network improvements
- Traffic calming
- Maintenance
- Street Lighting

IMPLEMENTATION TIMELINE

Hamilton will implement the following project types at priority locations:

Strategy	Projects	Quantity	Completion Date
Crosswalk Improvements 	Pedestrian hybrid beacons	10 intersections	2027
	Fully signalized pedestrian crossings at all signals	City-Wide	2028
	New high visibility crosswalk markings	30 intersections	2027
	New arterial mid-block crossing based on demand	1 new crossing	2028
	Identify 5 other locations for mid-block crossings		2027
Intersection Improvements 	Sight distance review	10 intersections	2025
	Curb bumpouts	5 intersections	2029
	ADA compliant curb ramps	10 intersections	2029
	Traffic signal rebuilds	5 intersections	2030
	Intersection lighting	50 intersections	2030
Corridor Improvements 	Temporary infrastructure for speed reduction	5 locations	2027
	Evaluation and implementation of lane configurations	1 corridor	2027
	Expand sidewalk network where none is present	1 corridor	2030
	Expand bicycle network (on street & off street)	5 miles	2030

Conclusion

The data-driven Hamilton ACTS Plan has helped us identify two major focus areas: 1. Safety improvements to protect bicyclists and pedestrians city-wide. 2. Safety improvements on high crash roadway segments and intersections. These focuses are critical towards achieving our goal of eliminating traffic-related fatalities and serious injuries in our community.

1. **Safety improvements to protect bicyclists and pedestrians city-wide.**

Safety improvements for bicyclists and pedestrians are critical everywhere but are especially important in the city of Hamilton. Compared to other communities in Ohio, Hamilton pedestrians and bicyclists are less safe. The Ohio Department of Transportation (ODOT) conducted an analysis of fatal and serious injury (FSI) bicyclist and pedestrian crashes from 2009 to 2018 for the Walk.Bike.Ohio statewide active transportation plan. When compared to the other cities across the state, Hamilton has the highest annual FSI bicycle crash rate per population and third highest annual FSI pedestrian crash rate per population.

The City of Hamilton was able to first recognize this problem through completing our Active Transportation Plan in 2020. Since then, Hamilton has strengthened its commitment to improving our pedestrian and cyclist infrastructure. The Hamilton ACTS Plan allows us to implement this commitment more strategically. The Plan has provided a data driven analysis of the most problematic roadway segments and intersections that will allow us to systematically improve the worst areas in our community for the safety of pedestrians and bicyclists. We are already discussing top projects to begin implementing.

2. **Safety improvements on high crash roadway segments and intersections.**

While pedestrians and cyclists are at the greatest risk for traffic-related serious injuries, Hamilton's road network needs to be improved for all travelers. Hamilton is not well served by the interstate highway system. Therefore, state routes and other arterials are the primary road network through Hamilton, connecting numerous employment and residential areas throughout Butler County. State Routes 4, 128, 129, and 177 and US Route 127 all converge in Hamilton bringing thousands of additional vehicles through the City on a daily basis. This level of traffic congestion, coupled with Hamilton's 100+ year old road network, results in significant safety challenges. ODOT has ranked five of Hamilton's intersections and three roadway segments in the top one hundred priority intersections in the state based on the number of crashes, fatalities, and serious injuries. While Hamilton is home to only 0.5% of Ohio's population, 5% of the worst intersections are in our community. The Hamilton ACTS Plan serves as a roadmap to address these problem areas.

As we implement the ACTS Plan, the City of Hamilton is committed to tracking the progress of our efforts and we will be analyzing the impacts our roadway improvements have on safety outcomes. We will continue to update data and monitor our work to understand which strategies are yielding the desired results, and where we may need to improve. This accountability in monitoring our performance will ensure that we continue to work collectively on actions that are advancing the goal of zero crash deaths and serious injuries on our city streets.

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