



ANN ARBOR
MOVING
TOGETHER

TOWARDS VISION ZERO



Road Safety Audit (RSA) Review
January 2026

Agenda



Introduction

1

Purpose of Road Safety Audits

2

RSA Process

3

Catherine/Zina Pitcher/Glenn/Ann

4

Plymouth Rd.

5

Jackson Rd.

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Conclusion

7

Purpose of RSA - Implement Strategies in Transportation Plan

1. Tiered Corridors and Intersections
2. Address Dangerous Behaviors
3. Serious Injury and Fatal crashes
4. Focus on people who walk and/or bike

Road Safety Audit Process



What is a Road Safety Audit (RSA)?

RSA definition:

- **A formal safety performance examination of an existing or future road or intersection by an independent, multi-disciplinary RSA team**

Objectives:

- Review road safety for all users
- Identify issues affecting road safety
- Develop countermeasures to reduce crash frequency and severity

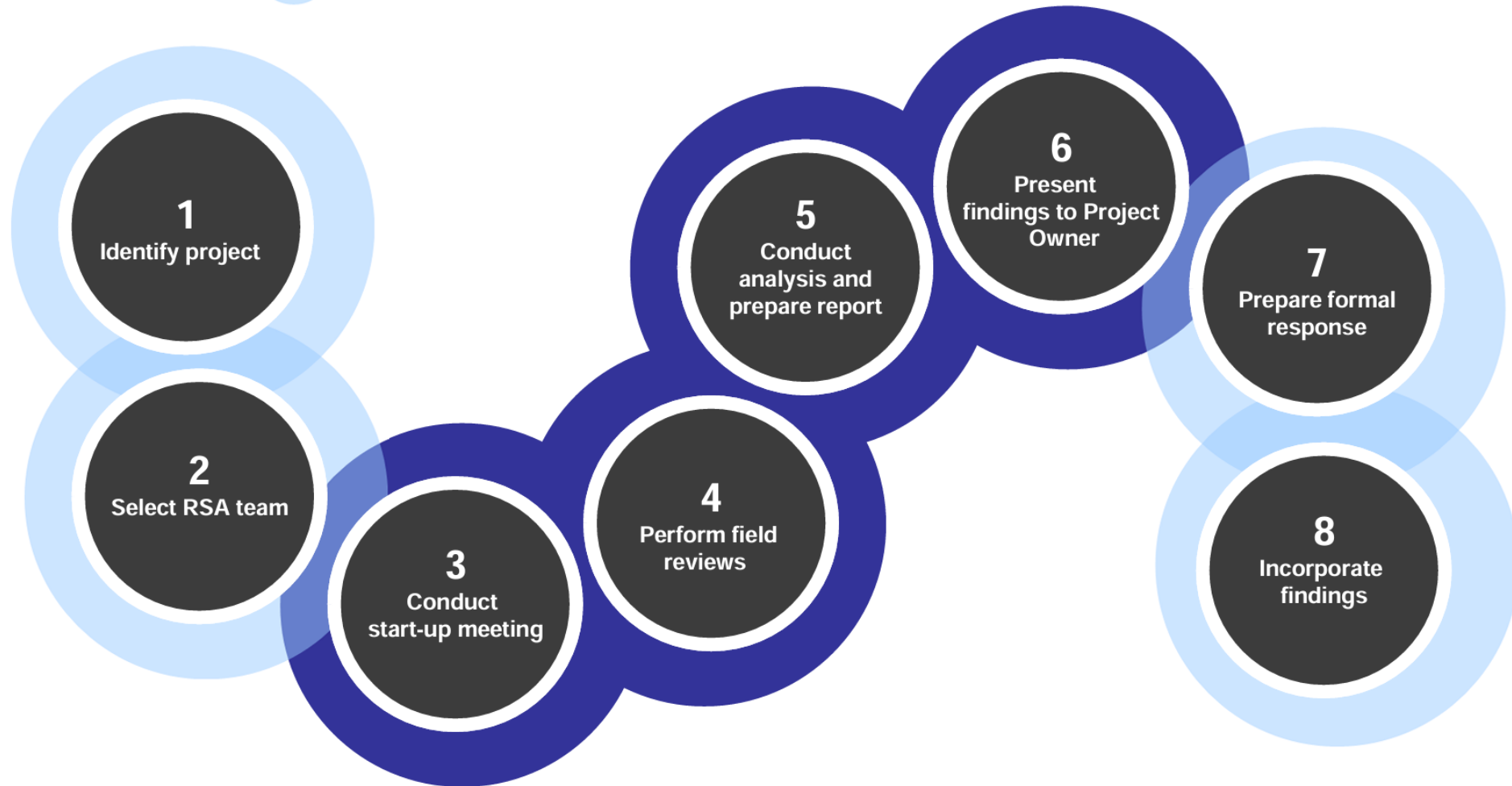
Eight-Step Process

RSA Steps



RSA Team

Design Team / Project Owner



Methodology-Review

The expected frequency of crashes caused by each safety issue were identified and rated

Table 2 - Crash Frequency

Estimated Exposure	Estimated Probability	Frequency Rating
Medium - High	High	<i>Frequent</i>
Low - High	Medium - High	<i>Occasional</i>
Low - Medium	Low	<i>Rare</i>

Methodology-Review

The expected severity of crashes caused by each safety issue were identified and rated

Table 3 - Crash Severity

Typical Collisions Expected (per audit item)	Expected Collision Severity	Severity Rating
Collisions involving high speeds or heavy vehicles, pedestrians, or bicycles	Probable fatality or incapacitating injury	<i>High</i>
Collisions involving medium to high speed; head-on, crossing, or off-road collisions	Moderate to severe injury	<i>Moderate</i>
Collisions involving medium to low speeds; left-turn and right-turn collisions	Minor to moderate injury	<i>Low</i>
Collisions involving low to medium speeds; rear-end or sideswipe collisions	Property damage only	<i>Negligible</i>

Methodology-Review

- Cross-referencing crash frequency with crash severity to develop crash concern assessment
- Each safety issue assessed based on a ranking between F (highest concern and priority) and A (lowest concern and priority)

Estimating Risk

RANKING
A = Lowest priority
F = Highest priority

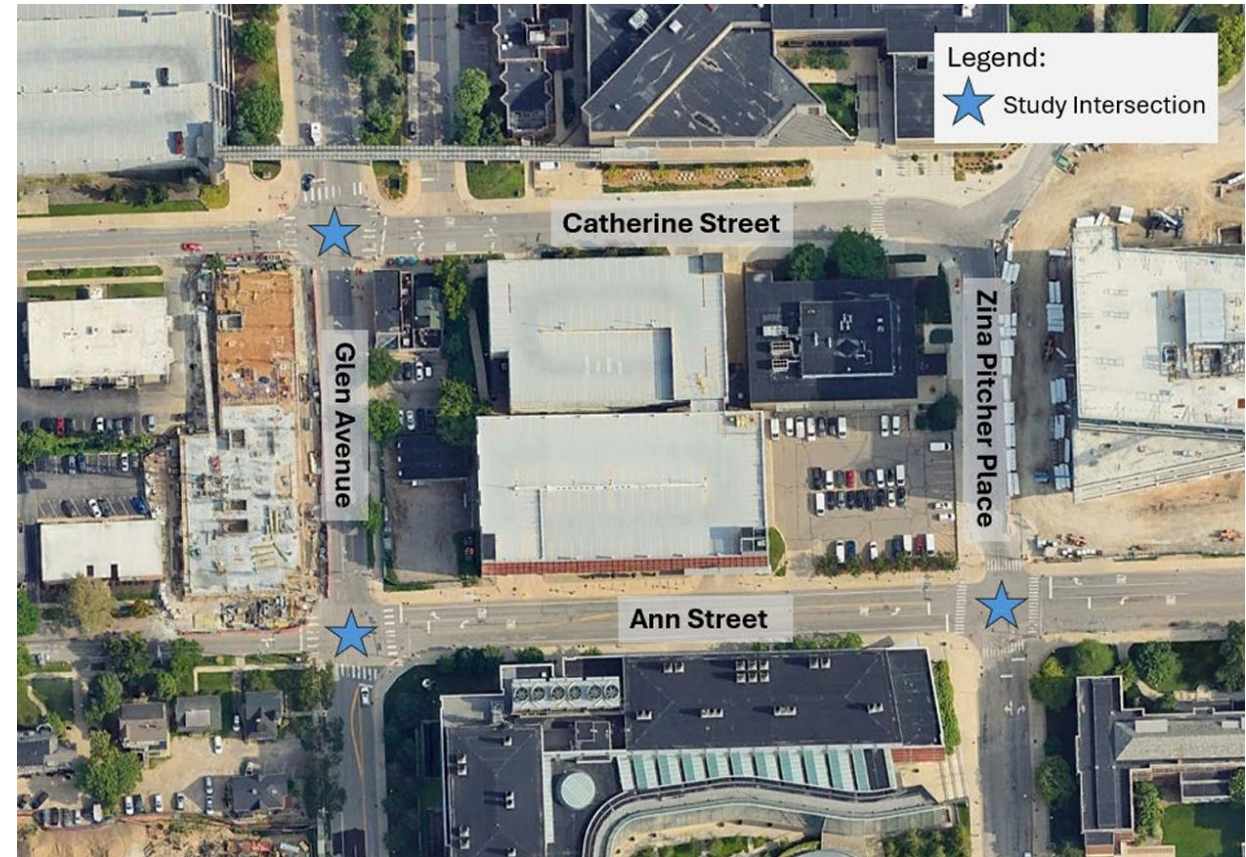
Crash Frequency	Crash Severity			
	<i>Negligible</i>	<i>Low</i>	<i>Moderate</i>	<i>High</i>
<i>Frequent</i>	C	D	E	F
<i>Occasional</i>	B	C	D	E
<i>Rare</i>	A	B	C	D

3 RSAs Conducted in 2025

- Intersections of Glen and Catherine, Glen and Ann, Ann and Zina Pitcher Pl.
- Plymouth Rd. (Green Rd. to NB US 23 ramp)
- Jackson Rd. (Maple Rd. to Wagner Rd.)
- Conducted by WSP

Intersections:

Glen and Catherine
Glenn and Ann
Ann and Zina Pitcher



Grant Funded from SEMCOG

Crash Analysis and Summary

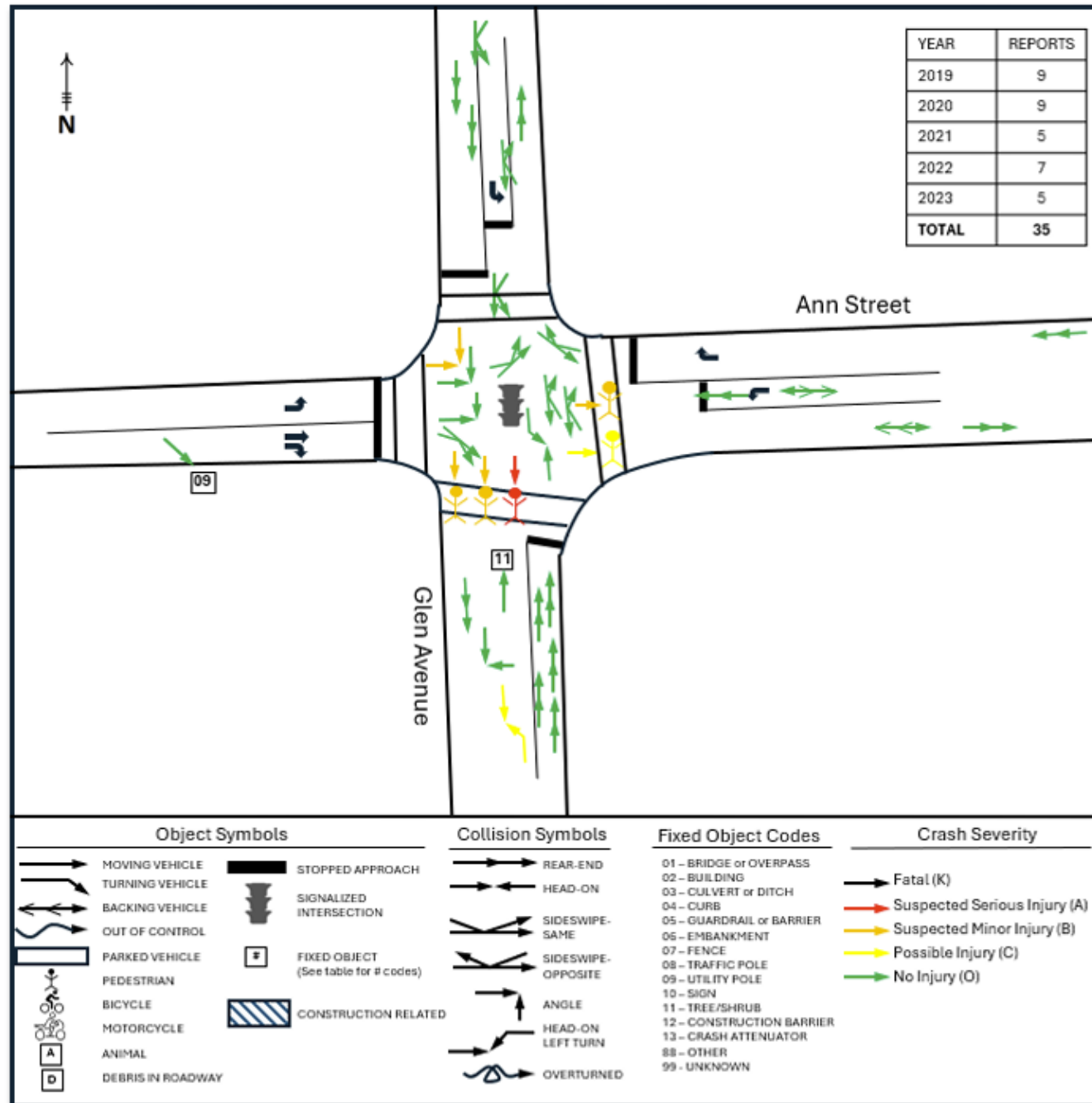


Figure 7 - Spatial Distribution of Crashes at Glen Avenue and Ann Street from 2019-2023 (Source: MTCF)

Crash Analysis and Summary

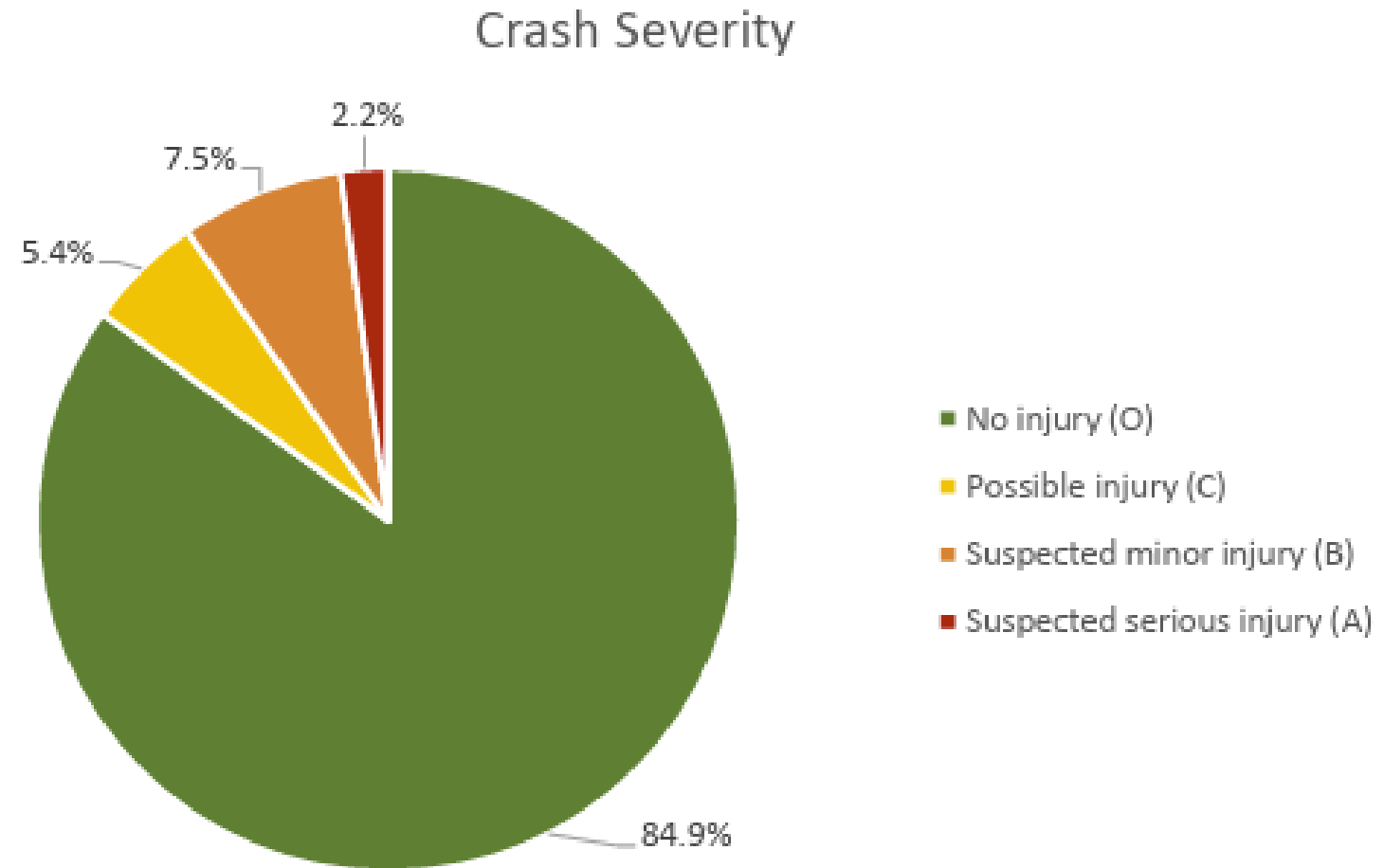


Figure 9 - Overall Crash Severity (2019-2023)

Crash Analysis and Summary

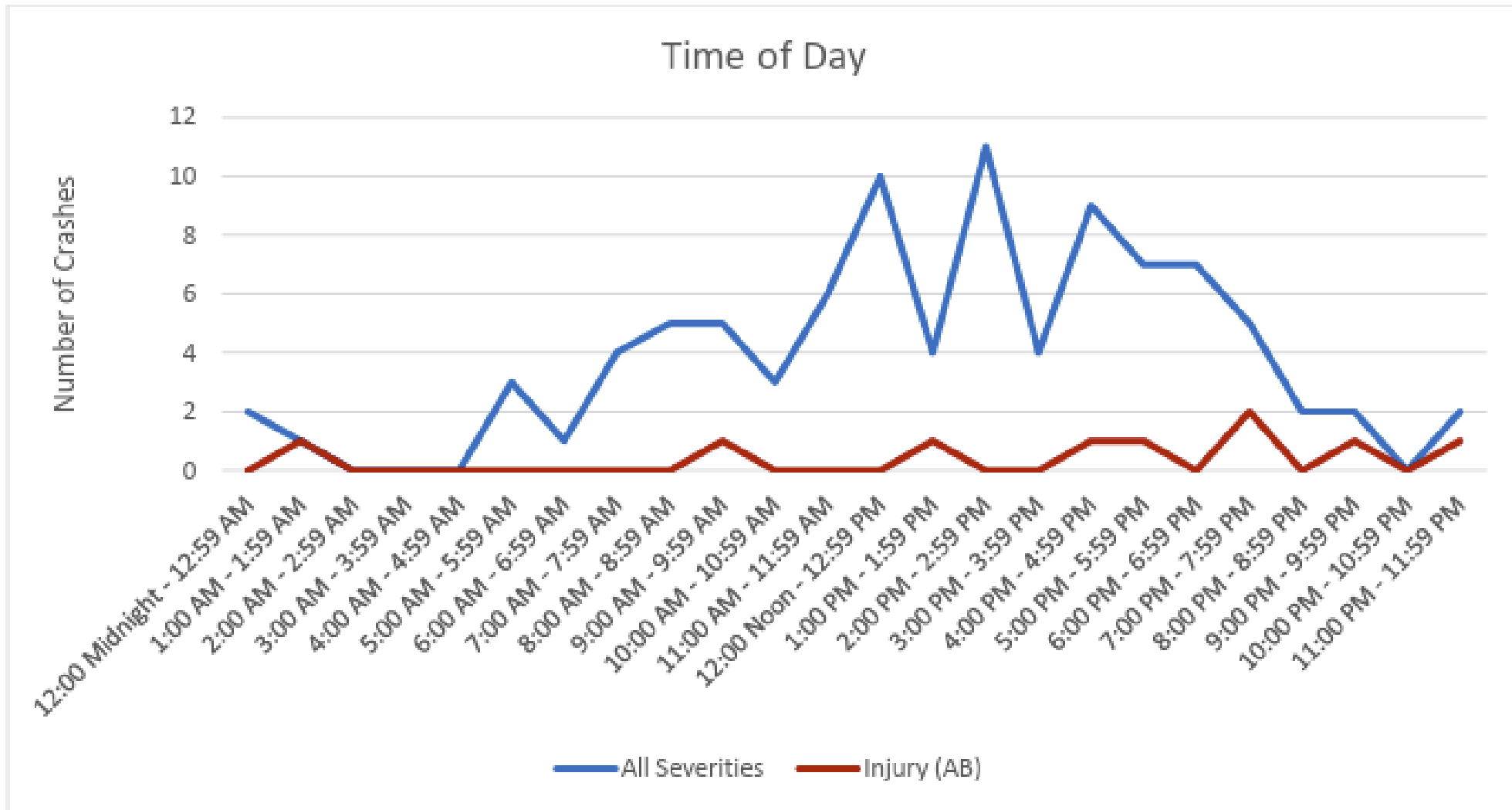


Figure 11 - Crash Distribution by Hour of Day

Existing Safety Measures

1. Modern Features at the Intersections
2. Intersection and Pedestrian-scale lighting
3. Sidewalk Connectivity
4. No Turn on Red Restrictions
5. Pedestrian Skywalk
6. Existing Bike Facilities



Field Review

- Site Review
- Observations
- Road User Characteristics



Pedestrians Walking in the Road Along the Closed Sidewalk on Ann Street



Signage Overload at Glen Avenue and Catherine Street



Cracked Pavement Throughout the Study Area



Non-working Light Fixture at Ann Street and Zina Pitcher Place

Figure 5 - Study Area Characteristics & Road Users

Safety Concerns and Suggestions

Categories

1. Non-motorized Facilities – **E**

Rating

2. Transit – **D/E Rating**

3. Unfamiliar Drivers – **D Rating**

4. Low Light Conditions – **D**

Rating

5. W Medical Center Drive

Access – **C Rating**

6. Lane Use – **C Rating**

7. Vertical Grades – **B Rating**

#	Safety Concern	Rating	Suggestions
1	<p>Non-motorized Facilities</p> <p>Pedestrians</p> <ul style="list-style-type: none"> Injury crash trend involving permissive left-turn motorist movements Pedestrian obstacles <ul style="list-style-type: none"> Broken pavement in crosswalks Faded pavement markings ADA compliance issues associated with intersection corners Lack of countdown timers - Ann Street and Zina Pitcher Place <p>Bicyclists</p> <ul style="list-style-type: none"> Bicycle facilities at Catherine Street and Ann Street drop at the intersection Parallel alignment of drainage grates create a bicycle tire hazard 	E	<p>Short-term</p> <ul style="list-style-type: none"> Refresh pavement markings Install hardened centerlines on the south leg and east leg of Ann Street and Glen Avenue Improve bicycle facility continuity through intersections by providing bike boxes and intersection conflict markings at Ann Street and Glen Avenue and Catherine Street and Glen Avenue Consider exclusive pedestrian phases at Glen Avenue and Catherine Street and Ann Street and Zina Pitcher Place <p>Mid-term</p> <ul style="list-style-type: none"> Pavement resurfacing Align drainage grates perpendicular to bike path of travel Modernize pedestrian facilities to ADA standards, where appropriate

Safety Concerns and Suggestions

Categories

1. Non-motorized Facilities – **E**

Rating

2. Transit – **D/E Rating**

3. Unfamiliar Drivers – **D Rating**

4. Low Light Conditions – **D**

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Estimating Risk

RANKING

A = Lowest priority
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Crash Frequency	Crash Severity			
	<i>Negligible</i>	<i>Low</i>	<i>Moderate</i>	<i>High</i>
<i>Frequent</i>	C	D	E	F
<i>Occasional</i>	B	C	D	E
<i>Rare</i>	A	B	C	D

Incorporate Findings

2026 Construction Project on Catherine/Ann/Zina Pitcher/Observatory Safety and Resurfacing project

- Capital projects
 - TR-AT-24-12 Extension of Cycle Track on Catherine
 - TR-SB-12-01 Resurfacing with new pavement markings
 - OI-26-03 Upgrade traffic signal at Zina Pitcher and Catherine
 - Update pedestrian countdown signals at Ann and Zina Pitcher
 - Expanding the use of No turn on red
 - Reduce crossing distances for pedestrians at Ann and Zina Pitcher
 - Improve sidewalk ramps to meet ADA

Carbon Reduction Program Grant for signal modernization in FY 2029

*Project presentation was provided at the December 2025 Transportation Commission meeting

Plymouth Rd.

Green Rd. to NB. US 23 ramp



Crash Analysis and Summaries

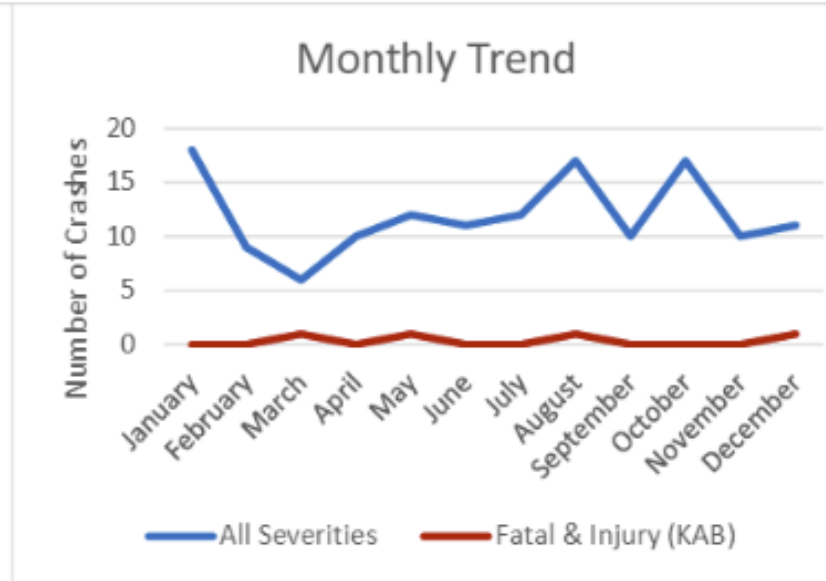
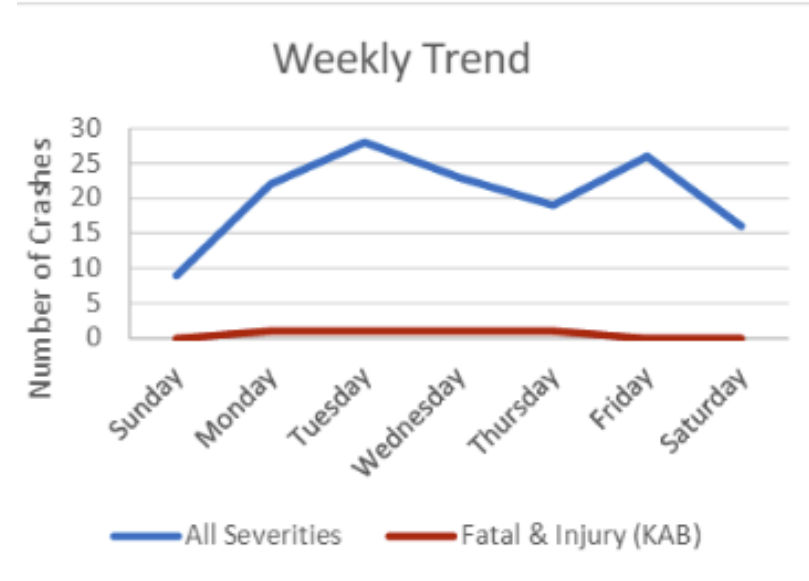
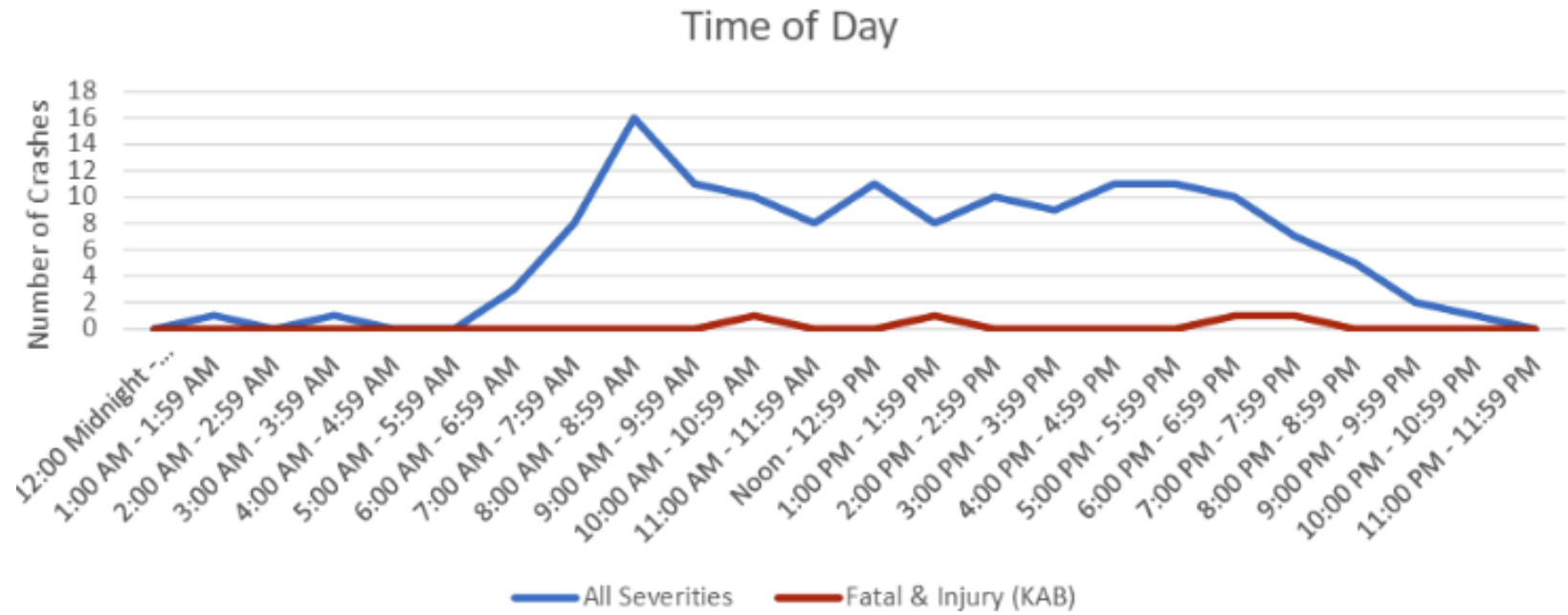


Figure 14 - Crash Distribution by Month, Day of the Week, and Hour of Day

Crash Analysis and Summaries

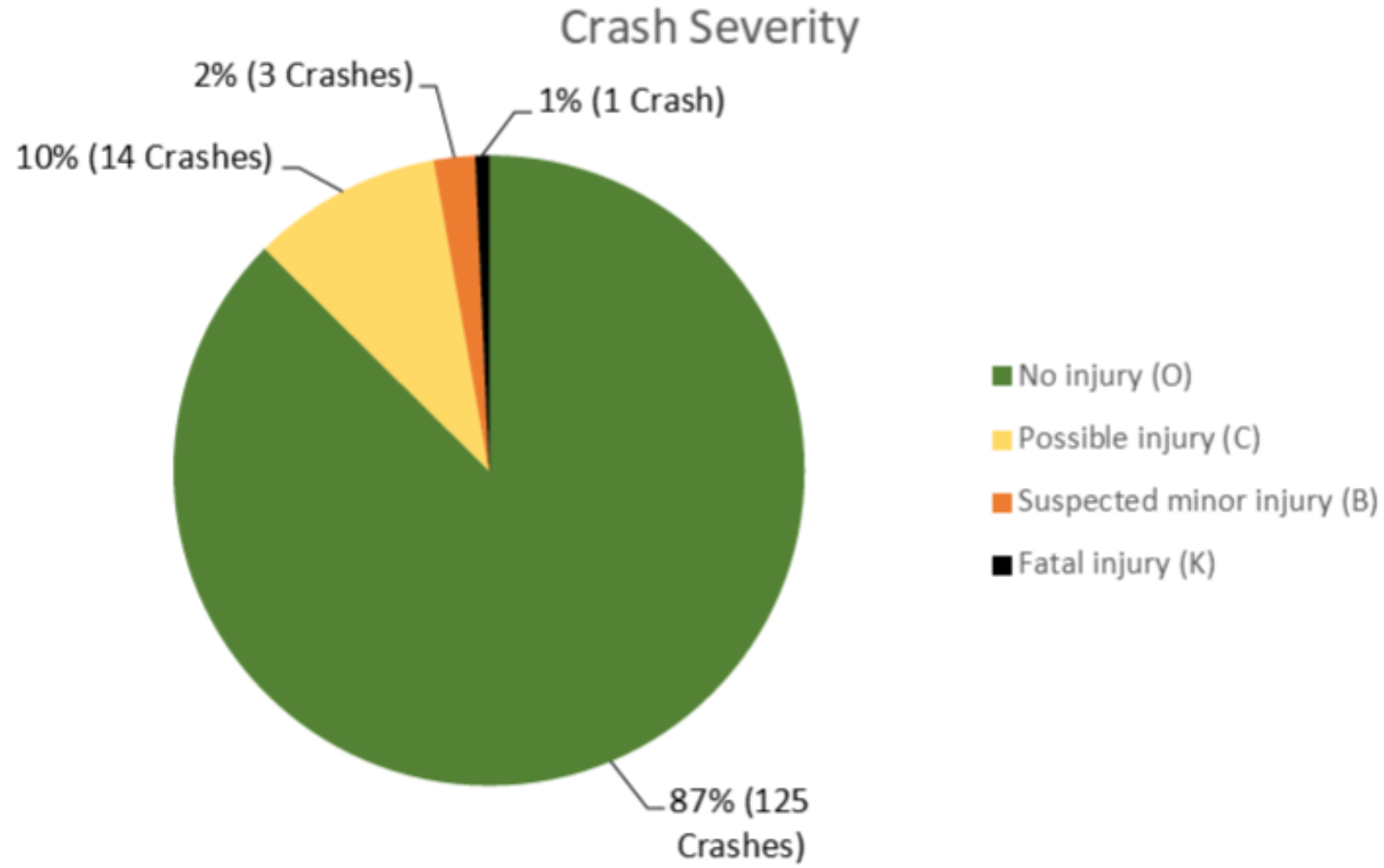


Figure 12 - Overall Crash Severity (2020-2025)

Existing Safety Measures

1. Modern Features at Intersection
 - Box span signal configuration, backplates
 - High visibility crosswalks
 - Leading pedestrian intervals
 - High visibility markings
2. Good Sidewalk Conditions
3. Adequate Signage
 - Land use signs
4. Adequate Corridor Lighting – Western Limit



Field Review

- Site Review
- Observations
- Road User Characteristics



Vulnerable Road Users – Plymouth Road at Green Road



Cyclists along Plymouth Road

Figure 4 - Vulnerable Road User Observations



Pedestrian Activity

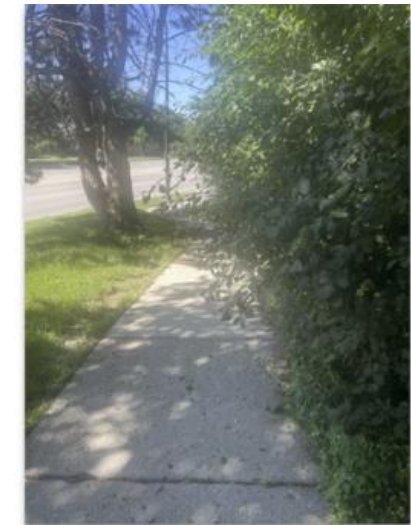


Bicyclist Activity

Figure 9 - Strava Pedestrian and Bicyclist Activity Heat Maps



Vegetation Obstructing Signage



Vegetation Obstructing Sidewalk

Figure 8 – Vegetation Conditions

Safety Concerns and Suggestions

Categories

1. Vulnerable Road Users – **F Rating**
2. Visibility Concerns – **D Rating**
3. Intersections – **C Rating**
4. Pavement Markings – **C Rating**
5. Signage – **B Rating**

#	Safety Concern	Rating	Suggestions
1	<p>Vulnerable Road Users</p> <ul style="list-style-type: none"> ▪ Vegetation obstructing the view of pedestrians crossing at the Southbound US-23 On Ramp ▪ Faded pavement markings ▪ Broken concrete in crosswalks ▪ Broken or missing detectable warning surfaces ▪ Debris and gravel on the US-23 overpass shoulders/'sidewalk' ▪ Dimly lit pedestrian facilities ▪ Lack of mid-block crossing ▪ Non-continuous sidewalk ▪ No bicycle facilities 	F	<ul style="list-style-type: none"> ▪ Trim vegetation to improve pedestrian visibility <ul style="list-style-type: none"> ▪ Southbound US-23 On Ramp ▪ Sidewalks ▪ Refresh pedestrian crossing pavement markings ▪ Resurface pavement ▪ Replace/install detectable warning surfaces and ADA ramps and landings as needed ▪ Clear US-23 overpass debris ▪ Install pedestrian level lighting ▪ Long-term opportunities (pending supporting traffic studies) <ul style="list-style-type: none"> ▪ Explore mid-block crossing opportunities ▪ Build out sidewalk network to address desire lines ▪ Introducing bicycle facilities along Plymouth Road

Safety Concerns and Suggestions

Categories

1. Vulnerable Road Users – **F**

Rating

2. Visibility Concerns – **E**

Rating

3. Intersections – **C Rating**

4. Pavement Markings – **C**

Rating

5. Signage – **B Rating**

Estimating Risk

RANKING

A = Lowest priority
F = Highest priority

Crash Frequency	Crash Severity			
	<i>Negligible</i>	<i>Low</i>	<i>Moderate</i>	<i>High</i>
<i>Frequent</i>	C	D	E	F
<i>Occasional</i>	B	C	D	E
<i>Rare</i>	A	B	C	D

Incorporate Findings

Near Term

2027 Project: Plymouth (Green to US-23) Resurfacing - TR-SB-26-04

- Design for project is in development
- Implementing RSA elements with project
- Partner/Coordinate with MDOT as part of project design

Long Term

This corridor is part of the A2R2 study-recommendations will be coordinated with this study

Jackson Rd.

Wagner Rd. to Maple Rd.



Crash Analysis and Summaries

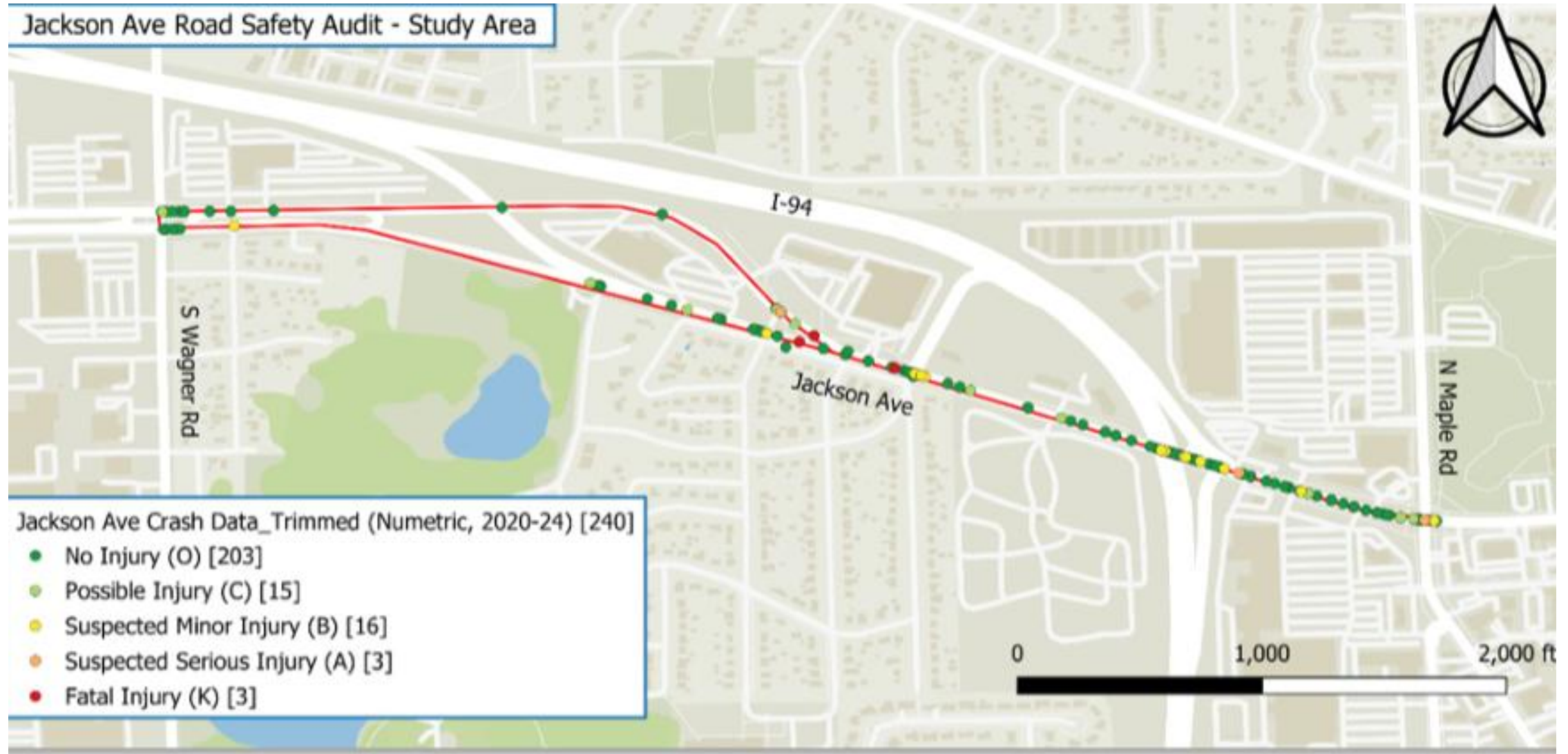


Figure 9 - Spatial Distribution of Crashes (2020-2024)

Crash Analysis and Summaries

Crash Hour

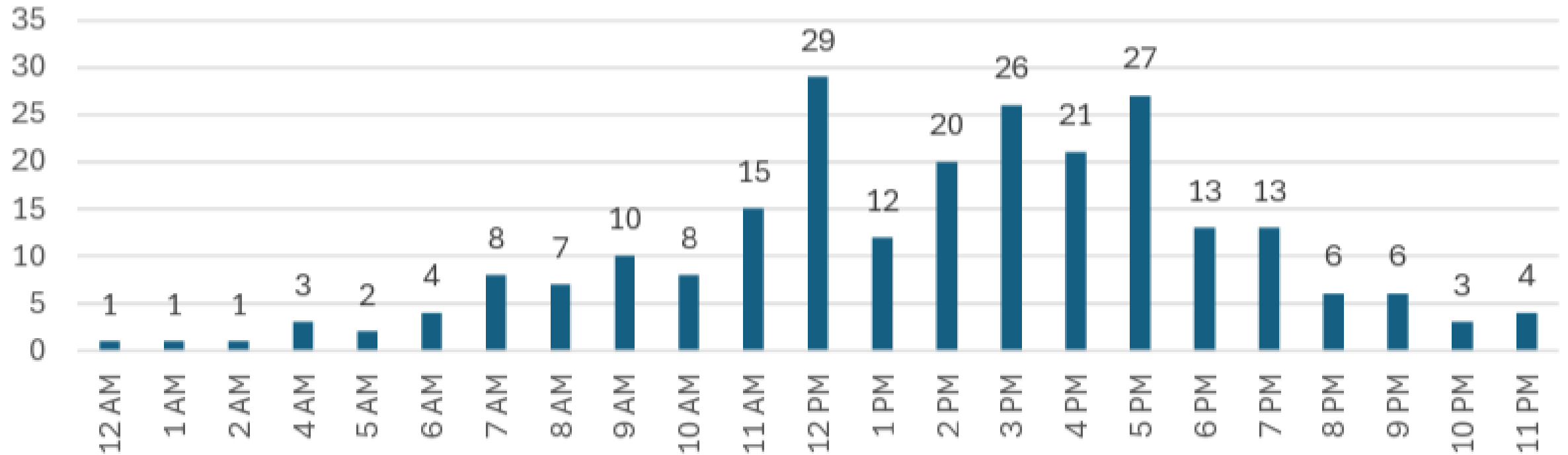


Figure 13 - Temporal Crash Distributions

Existing Safety Measures

1. Accessible Pedestrian Signals
2. ADA Ramps
3. Lighting
4. Shared Use Path south of Jackson Ave.
5. Presence of Guardrails
6. Advanced Flashing Sign
7. Bus Shelter/Transit Facilities



Field Review

- Site Review
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- Road User Characteristics



Bicyclist along Hilltop Dr



Maple Road Intersection Traffic and Pedestrian Signals and Crosswalk



Vehicle Turning Left from Westgate Plaza



Nighttime Lighting along Westbound Jackson Ave Curve

Safety Concerns and Suggestions

Categories

1. Vulnerable Road Users – **E Rating**
2. Access Management near Westgate Plaza – **E Rating**
3. Westbound Jackson Avenue curve – **E Rating**
4. Queueing at eastbound bus stop at Maple – **D Rating**

#	Safety Concern	Rating	Recommendations
1	<p>Vulnerable Road Users</p> <ul style="list-style-type: none"> ▪ Discontinuous Sidewalks ▪ Pedestrian and bicyclist obstacles from overgrown branches along sidewalks ▪ Bus riders crossing mid-block after getting off the bus. ▪ ADA compliance concerns along sidewalks ▪ Vehicles not yielding to pedestrians in crosswalk ▪ Lack of Pedestrian Signal at westbound I-94 Off-Ramp ▪ Lack of consistent bike signage 	E	<ul style="list-style-type: none"> ▪ Complete Gaps in Sidewalk Network and / or Provide Advance Route Guidance ▪ Enhance existing pedestrian facilities <ul style="list-style-type: none"> ○ Positive Guidance Signage ○ High Visibility Mid-Block Crossings ○ Construct a shared path east of interchange ○ Consider pedestrian level lighting ▪ Stripe a cycle track on the north side of Hilltop drive to provide continuity with shared use path. ▪ Refresh Special and Crosswalk Pavement Markings ▪ Review Pedestrian Crossings / Ramps for ADA Compliance ▪ Prohibiting right turn on red movements ▪ Addition of Pedestrian signals at the crossing ▪ Formalizing the entryway for the bike lane on the north side of westbound Jackson ▪ Relocate the bike lane sign which is currently obstructed ▪ Replace the road signage to increase visibility

Safety Concerns and Suggestions

Categories

1. Vulnerable Road Users –
E Rating

2. Access Management
near Westgate Plaza – **E
Rating**

3. Westbound Jackson
Avenue curve – **E Rating**

4. Queueing at eastbound
bus stop at Maple – **D
Rating**

Estimating Risk

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Crash Frequency	Crash Severity			
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<i>Frequent</i>	C	D	E	F
<i>Occasional</i>	B	C	D	E
<i>Rare</i>	A	B	C	D

Incorporate Findings

1. Opportunity to coordination with MDOT University Region in applying for regional safety funds
2. Coordinate with MDOT in Quarterly Safety Meetings
3. Incorporate recommendations into CIP project in fall 2026 for prioritization