CITY OF HAMMOND, INDIANA

SAFE STREETS AND ROADS FOR ALL COMPREHENSIVE SAFETY ACTION PLAN

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ACKNOWLEDGEMENTS

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1. EXECUTIVE SUMMARY

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The City of Hammond is dedicated to enhancing safety and reducing traffic fatalities and injuries by enacting the Safe Streets and Roads for All Comprehensive Safety Action Plan (CSAP). This multifaceted plan is meticulously crafted to engage the community, pinpoint hotspot intersections and high-injury networks, institute systemic safety improvements, and prioritize safety projects.

Aligned with Hammond's Vision Zero goal of achieving a 40% reduction in fatal and serious injury crashes by the year 2035, the CSAP represents a decisive step toward creating a safer and more inclusive transportation system for all residents.

Embracing the Safe System approach, we recognize that severe crashes are intolerable and preventable through the implementation of redundant systems that minimize risk, acknowledging that mistakes are inevitable. Furthermore, we affirm that we possess the tools and knowledge to be proactive in averting tragedies, and we share responsibility with the public, private sector, and external partners to ensure that when crashes do occur, they do not result in devastating outcomes. Our CSAP emerges as a response to the strong and clear call to action from our residents and our commitment to guaranteeing a transportation system and city that prioritizes safety for all.

Through the diligent implementation of the CSAP, Hammond will steadily advance toward its safety objectives while simultaneously nurturing a transportation network that is safe, accessible, and equitable for all residents. By placing safety and collaboration at the forefront, Hammond is poised to effect enduring positive change within its community and safeguard the well-being of all road users.

The City of Hammond CSAP encompasses a structured approach, beginning with providing the composition of a ***task force*** responsible for overseeing the action plan's development and guiding its future implementation. This is followed by reviewing and summarizing existing crash data, establishing a ***High-Injury Network (HIN)***, and identifying ***hotspot locations***, thus laying the groundwork for targeted interventions. The detailed list of HIN and hotspot locations are summarized in Table 7 and Table 8 of this report. ***Public outreach*** efforts are detailed, outlining the relevance of public input to the planning process.

Furthermore, the plan demonstrates its ***commitment to equity*** by analyzing underserved populations and their relationship to severe crashes. Evaluations of the city's current plans and policies identify opportunities for improvement in roadway safety. A framework is established for recommending and prioritizing safety projects, considering the HIN, equity analysis, and public feedback. The detailed list of projects are summarized in Table 11 and Table 12 of this report. Additionally, non-project ***strategic improvements*** are recommended, and responsible stakeholders for implementation are identified. The detailed list of strategic improvements are summarized in Table 13 of this report.

Lastly, the plan details future updates, how the city's effectiveness will be measured, and how these efforts will be communicated to the public and stakeholders, ensuring ***transparency*** and accountability in achieving safety goals. A detailed summary of different components of CSAP can be found in Section 2.3 of this report.

As we embark on this journey, we remain dedicated to engaging with our community, leveraging data-driven insights, and continually refining our strategies to ensure that Hammond remains at the forefront of innovation and progress in traffic safety. Together, we can build a future where every journey is a safe one.

2. INTRODUCTION

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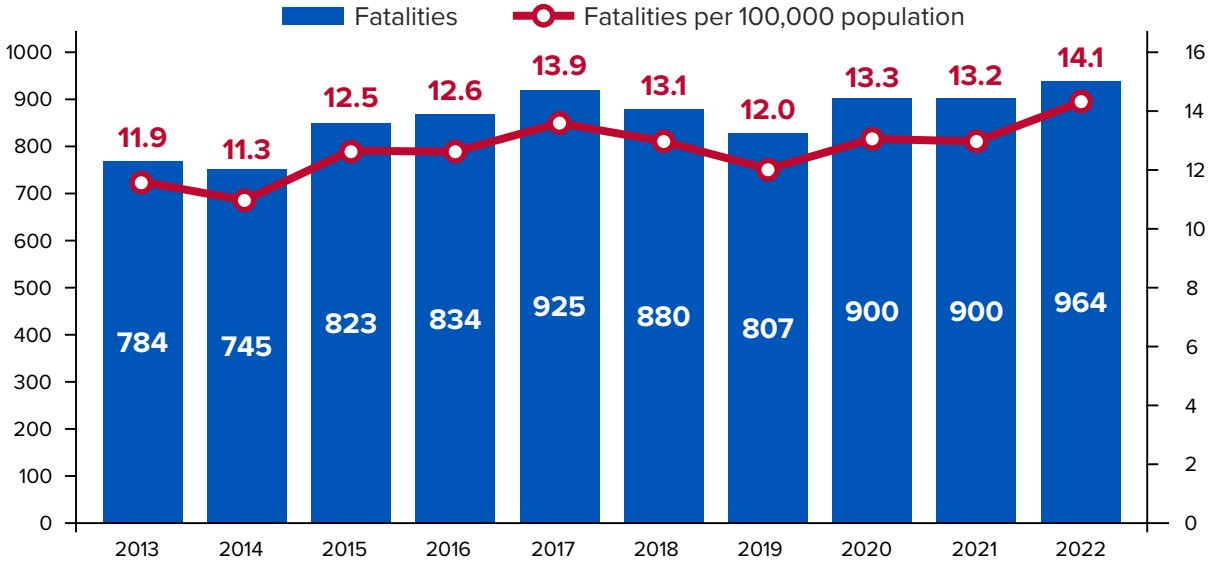
According to the Indiana University Public Policy Institute, in partnership with the Indiana Criminal Justice Institute, Indiana, recent years have witnessed an alarming rise in traffic fatality rates. In Indiana, there were 964 traffic fatalities in 2022, up from 900 in 2021. Traffic fatalities have risen in recent years to 14.1 deaths per 100,000 residents—marking a 10-year high. As shown in ***Figure 1***, over the last few years, the fatality rates have increased steadily since reaching a five-year low of 12.0 per 100,000 population in 2019.[1]

Figure 1: Total Fatalities and Fatality Rate in Indiana, 2013-2022



Sources: Analysis provided by the Indiana Univeristy Public Policy Institute using data from Indiana State Police, Automoated Reporting Information Exchange System (ARIES), downloaded January 25, 2023; and U.S. Census Bureau, 2022 county population estimates.

Some evidence-based practices and policies can help reverse course. To do so, however, we will need to comprehensively approach traffic fatalities and social factors, built environment, street designs, vehicle standards, and technologies that underlie the worsening traffic safety decline in the state and the country.

2.1 ABOUT THE CITY OF HAMMOND

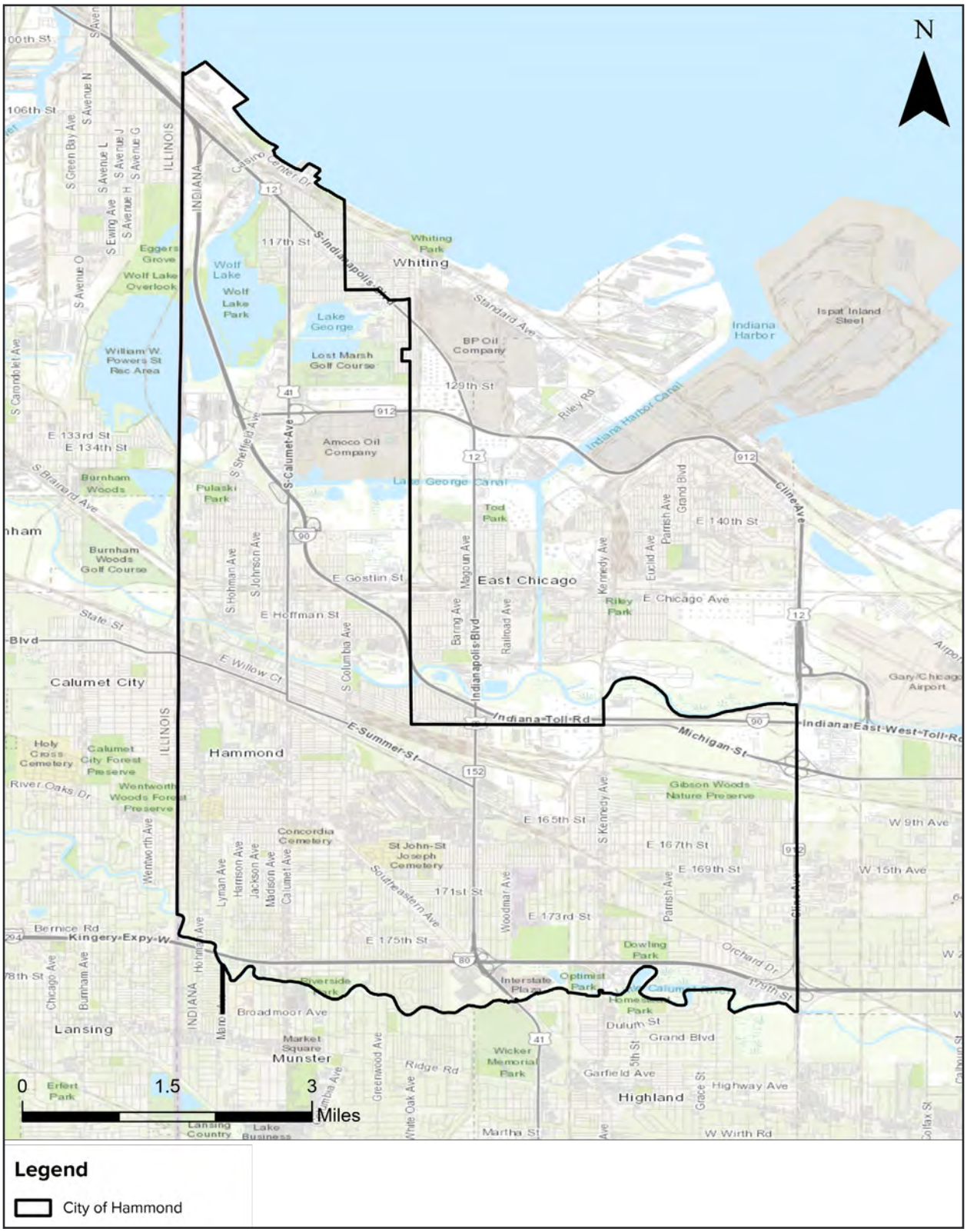
Hammond is a vibrant city situated in Lake County, Indiana, within the dynamic Chicago metropolitan area. Distinguished as the only city in Indiana sharing a border with Chicago, Hammond boasts a rich history dating back to the mid-19th century and is one of the oldest municipalities in northern Lake County. According to the latest data from the 2020 United States census, Hammond stands as the largest city by population in the region, with a population of 77,879 residents, surpassing Gary as Lake County's most populous city.

From north to south, Hammond runs from Lake Michigan down to the Little Calumet River; from east to west along its southern border, it runs from the Illinois state line to Cline Avenue. The city is traversed by numerous railroads and expressways, including the South Shore Line, Borman Expressway, and Indiana Toll Road.

Figure 2 represents the boundary limits for the city of Hammond.

[1] Source: 2022 Indiana Crash Fact Book

Figure 2: City of Hammond – Boundary



2.2 SAFE STREETS AND ROADS FOR ALL AND VISION ZERO

When the federal government passed the Bipartisan Infrastructure Law (BIL) in late 2021, one of the most notable new programs was Safe Streets and Roads for All—commonly abbreviated as "SS4A." SS4A commits large amounts of federal funding toward transforming the safety of corridors, municipalities, and regions through a series of planning and implementation grants. A fundamental component of SS4A is its alignment with a Vision Zero approach to safety. Vision Zero is based on the principle that it is not acceptable that people are killed or seriously injured when moving throughout the transportation network. Simply put, Vision Zero is a commitment to reach zero deaths. This initiative recognizes that the responsibility for a safe transportation network is shared between users and transportation system designers and that behavioral and design issues are both important to understand and address. The city of Hammond strongly supports a Vision Zero approach to safety.

Communities seeking SS4A funding must have a compliant Safety Action Plan. A significant portion of the overall SS4A program is devoted to funding Action Plans. The city of Hammond was awarded the FY 22 SS4A Planning grant to create a comprehensive safety action plan. The city engaged American Structurepoint Inc. to create an action plan in accordance with all required and suggested SS4A Action Plan components.

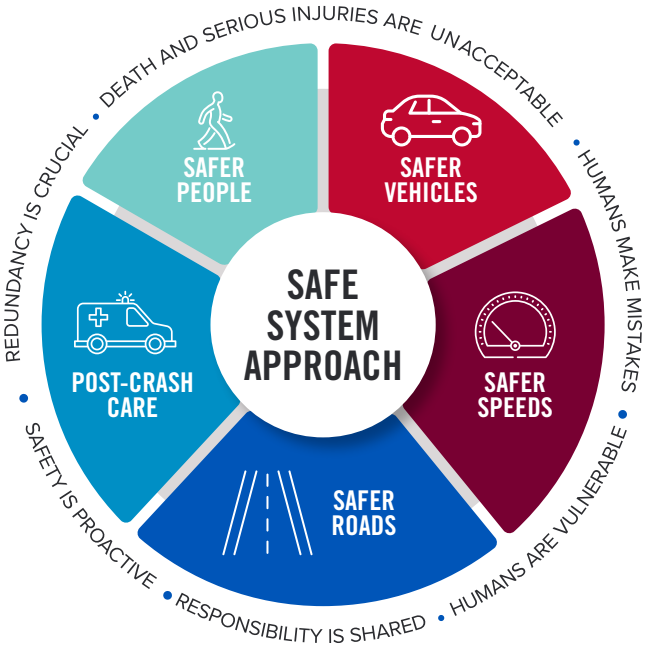
With this action plan's adoption by the City Council, Hammond can pursue SS4A Demonstration and Implementation Grants. This grant can fund a large variety of safety projects and strategies identified in this Action Plan that address roadway safety problems. This plan will also identify the tools and policy changes needed to achieve the vision zero goal.

2.2.1 THE SAFE SYSTEM APPROACH

Hammond's response to address traffic safety concerns will incorporate the Safe System approach embraced by the U.S. Department of Transportation (DOT). The Safe System Approach focuses on human mistakes and vulnerability, incorporating redundancies to prevent crashes and minimize harm. The U.S. DOT's National Roadway Safety Strategy and ongoing safety programs are aligned with the goal of achieving zero roadway fatalities and serious injuries. These programs target various aspects, including infrastructure, human behavior, responsible vehicle and transportation industry oversight, and emergency response, to create a comprehensive framework for making roadways safer.

The principles and elements of a safe system, presented in ***Figure 3***, summarizes the city's approach to creating safe streets for all moving forward.

Figure 3: Safe System Principles and Elements



2.3 A COMPREHENSIVE SAFETY PLAN

The key components of the Comprehensive Safety Action Plan as outlined in the SS4A Notice of Funding Opportunity (NOFO) are detailed in the following sections.

- **Section 3:** Provides the composition of the task force that will be overseeing the action plan development and guide future implementation.
- **Section 4:** Reviews and summarizes existing crash data, where fatality crashes occur, the population involved, and behavioral characteristics of crashes. Additionally, establishes a High-Injury Network (HIN) and Hotspot locations methodology that evaluates the city's roadway segments and intersections with a higher number of severe crashes.
- **Section 5:** Summarizes the results of public outreach efforts and the relevance of public input to the planning process.
- **Section 6:** Demonstrates the safety action plan's efforts to consider equity as part of the planning process by analyzing the underserved populations and understanding the relationship between severe crashes and underserved population communities.
- **Section 7:** Reviews the city's current plans and policies to identify opportunities for improvements concerning traffic safety.
- **Section 8:** Establishes a framework to recommend and prioritize a list of potential safety projects by considering the existing HIN/Hotspot intersections, equity analysis results, and public feedback. Additionally, this section recommends a variety of other, non-project strategic improvements that improve safety by changing and identifying the responsible stakeholders to implement these efforts.
- **Section 9:** Details how the plan will be updated in the future, how the city's effectiveness at implementing the plan will be measured, and how these efforts will be demonstrated to the public and stakeholders.
-

2.4 HAMMOND'S COMMITMENT TO SAFE STREETS FOR ALL

The CSAP serves as a detailed roadmap outlining specific strategies, actions, and projects that the city of Hammond will implement in the coming years and beyond to enhance safety across the community. In March, 2024, Hammond adopted a Vision Zero resolution, aiming to achieve a **40%** reduction in fatal and injury crashes by 2035. This resolution underscores the city's dedication to prioritizing safety as a fundamental aspect of urban planning and development. The city's goal aligns with the recommendations of the MPO, Northwestern Indiana Regional Planning Commission (NIRPC). The resolution is included in ***Appendix A*** of this report.

Through the CSAP, the city is not only taking the first step towards addressing current safety concerns but also laying the foundation for a safer and more resilient future. By implementing targeted strategies and initiatives, the city aims to create a transportation system that is safe, accessible, and equitable for all residents, visitors, and road users.

3. COMMITTEE/TASK FORCE

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A dynamic and dedicated task force was formed in response to the pressing need for effective oversight of the development, implementation, and monitoring of the Hammond Safety Action Plan. Comprised of diverse stakeholders and community leaders, this task force will serve as the guiding force behind realizing the collective vision for a safer, more vibrant, and inclusive Hammond.

3.1 PROJECT TEAM

The project team, consisting of dedicated city officials, played a pivotal role in guiding and refining the action plan at every stage of its development. Their valuable input and feedback were essential in shaping the direction and effectiveness of the plan. This collaborative effort involved multiple interactions with both the steering committee and the consultant, ensuring comprehensive engagement and alignment of goals throughout the planning process. ***Table 1*** provides a list of project team members.

Table 1: City of Hammond CSAP, Project Team Members

NAME	TITLE
Dean Button	City Engineer
Mark Gordish	Assistant City Engineer
Lily Jimenez	Engineering Sr. Accountant

3.2 STEERING COMMITTEE

A multi-disciplinary steering committee team comprising of community members was established to oversee the development of this Safety Action Plan, projects implementation, and monitoring the progress towards achieving the Vision Zero goal. The Steering Committee's input is critically important during the creation of a Comprehensive Safety Action Plan. The committee helped the project team identify unsafe intersections/roadways within Hammond during the process. Also, the committee helped identify future infrastructure projects for the city's future.

Throughout the project, multiple steering committee meetings were held to discuss the project's process and to review and present draft materials. Meeting minutes are in the ***Appendix B*** for a more detailed explanation of what each steering committee meeting captured. ***Table 2*** provides a list of steering committee members.

Table 2: City of Hammond CSAP, Steering Committee Members

NAME	TITLE
Dean Button	City Engineer, City of Hammond
William Short	Chief of Police, City of Hammond
Jeffery Long	Assistant Chief of Police, City of Hammond
Brian Poland	Director of City Planning, City of Hammond
Juan Moreno	Director of Economic Development, City of Hammond
Anne Taylor	Executive Director of Planning and Development, City of Hammond
Owana Miller	Community Development Director, City of Hammond
John Suarez	Director of Safety, Security, and Energy, City of Hammond Schools
Alan Holderread	District Traffic Engineer, Indiana Department of Transportation (LaPorte District)
Scott Weber	Transportation Planner/Analyst, Northwestern Indiana Regional Planning Commission (NIRPC)

4. SAFETY ANALYSIS

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To identify the factors contributing to an increased likelihood of fatal and incapacitating crashes in the area, we conducted an analysis of crashes reported in the Indiana State Police Automated Reporting Information Exchange System (ARIES) spanning from year 2018 to 2022. These factors included aspects such as road geometry, traffic flow, driver behavior, and environmental conditions.

Following the Safe System Approach, our methodology integrated safety analysis findings with an initial proactive analysis to identify the roadway features that are associated with elevated severe crash risk. By combining these analytical approaches, we identified areas where the city can strategically prioritize its efforts in the forthcoming years to address the predominant types of severe crashes, employing evidenced-based countermeasures.

4.1 HIGH-LEVEL TRENDS: EXCLUDING BORMAN EXPRESSWAY/I-80 CRASHES

Over the course of five years, Hammond averaged 4,371 reported crashes annually, which included 19% of severe crashes. The crash trends show an overall increase in total crashes over the five years, with a decline in crashes during the first year of the COVID-19 period and a sharp increase thereafter. The crash frequency and corresponding year-on-year percentage changes for the past five years are summarized in ***Table 3***.

Table 3: City of Hammond, Crash Frequency, 2018-2022

YEAR	CITY OF HAMMOND				STATEWIDE	
	TOTAL CRASHES	CHANGE (%)	INJURY AND FATALITY CRASHES	CHANGE (%)	INJURY AND FATALITY CRASHES	CHANGE (%)
2018	4,251		871		49,191	
2019	4,316	1.53	748	-14.12	47,325	-3.79
2020	3,775	-12.53	709	-5.21	40,574	-14.27
2021	4,617	22.3	843	18.9	46,820	15.39
2022	4,894	6	882	4.63	47,490	1.43
Subtotal 2018-2022	21,853	17.3	4,053	4.19	231,400	-1.23
5-year Average	4,371		811		46,280	

The crash data was further analyzed to determine the crash frequency based on the following categories:

- Manner of Collision
- Light conditions
- Roadway surface conditions
- Roadway Class
- Roadway Junction

MANNER OF COLLISON

Analysis of the crash data indicates that the most common crash types include rear-end, right-angle, and same-direction sideswipe crashes, which collectively account for **61%** of all crashes. Right-angle and rear-end crashes are associated with an elevated risk of severity. These crashes combine for **55%** of all severe crashes in the five-year period between 2018 and 2022 as shown in ***Table 4***.

When compared to their total share of all crashes, right-angle crashes result in a severity ratio* of 1.78, with head-on crashes also overrepresented (represented excessively) with a ratio of 1.74.

**The severity ratio is the ratio of the share of severe crashes for a particular crash type to its share of overall crashes. For example, a crash type that represents 5% of severe crashes and 10% of all crashes would have a severity ratio of 0.5 indicating that it was underrepresented in citywide severe crashes.*

Table 4: City of Hammond, Crashes by Type, 2018-2022

MANNER OF COLLISION	PDO	SEVERE CRASHES		TOTAL CRASHES	PERCENT OF TOTAL CRASHES	PERCENT OF SEVERE CRASHES	SEVERITY RATIO
		INJURY	FATAL				
Backing Crash	2,045	77	0	2,122	10%	2%	0.20
Collision with Animal Other	13	3	0	16	0%	0%	1.01
Collision with Deer	35	1	0	36	0%	0%	0.15
Collision with Object in Road	118	50	2	170	1%	1%	1.65
Head On Between Two Motor Vehicles	321	144	8	473	2%	4%	1.74
Left Turn	1,333	527	2	1,862	9%	13%	1.53
Left/Right Turn	98	15	0	113	1%	0%	0.72
*Non-Collision	20	16	0	36	0%	0%	2.40
Opposite Direction Sideswipe	816	74	0	890	4%	2%	0.45
Other	817	299	11	1,127	5%	8%	1.49
Ran Off Road	797	192	15	1,004	5%	5%	1.11
Rear End	4,344	984	4	5,332	25%	25%	1.00
Right Angle	2,435	1,188	11	3,634	17%	30%	1.78
Right Turn	500	77	0	577	3%	2%	0.72
Same Direction Sideswipe	3,767	264	2	4,033	19%	7%	0.36
All	17,459	3,911	55	21,425	100%	100%	1.00

**According to the Aries instructions manual, non-collision crashes encompass occurrences such as jackknifed semis, vehicle fires, and incidents where motorcycles are deliberately laid down by the operator. Given the severity ratio of 2.40 for this infrequent crash type, it's prudent to conduct further analysis of the data to gain a thorough understanding of non-collision crashes within the Aries system.*

LIGHT CONDITIONS

The crash analysis results indicate that the largest proportion, accounting for 64% of the total crashes, occurred during daylight conditions and is comparable to statewide average of 66% (Source: Indiana University Public Policy Institute, 2022). Conversely, crashes in Dark (Lighted), Dark (Not Lighted), and Dawn/Dusk exhibit lower overall counts, comprising 35% of the total crashes.

Furthermore, 34% of the severe crashes occurred during Dark (Lighted), Dark (Not Lighted), and Dawn/Dusk conditions, while the remaining 66% of the severe crashes occurred during daylight conditions.

Figure 4 and ***Figure 5*** summarizes all crashes and severe crashes distribution, respectively, by light conditions in Hammond during the analysis period.

Figure 4: City of Hammond, *All Crashes* Distribution by Light Condition, 2018-2022

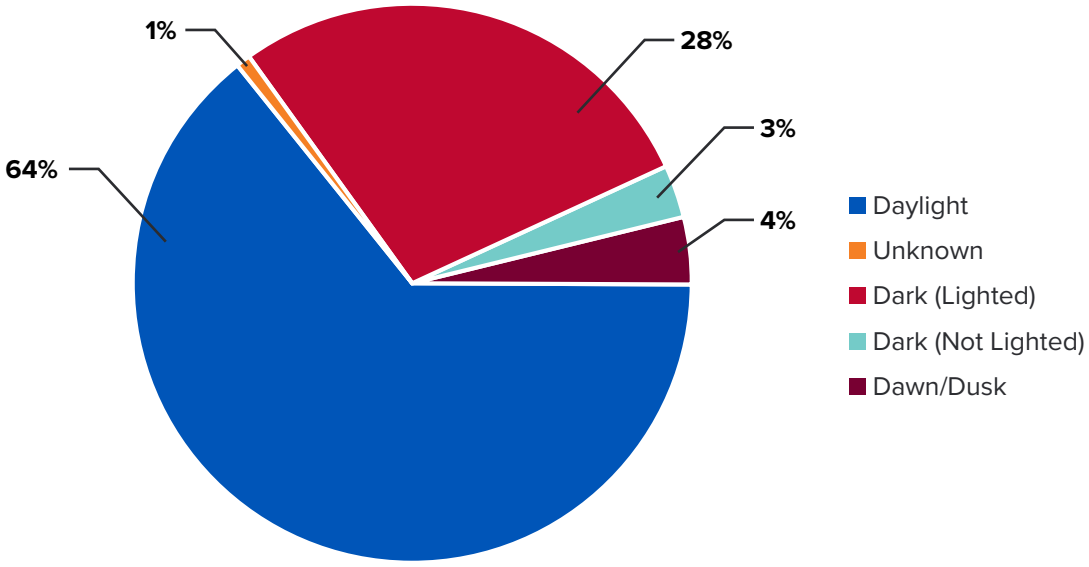
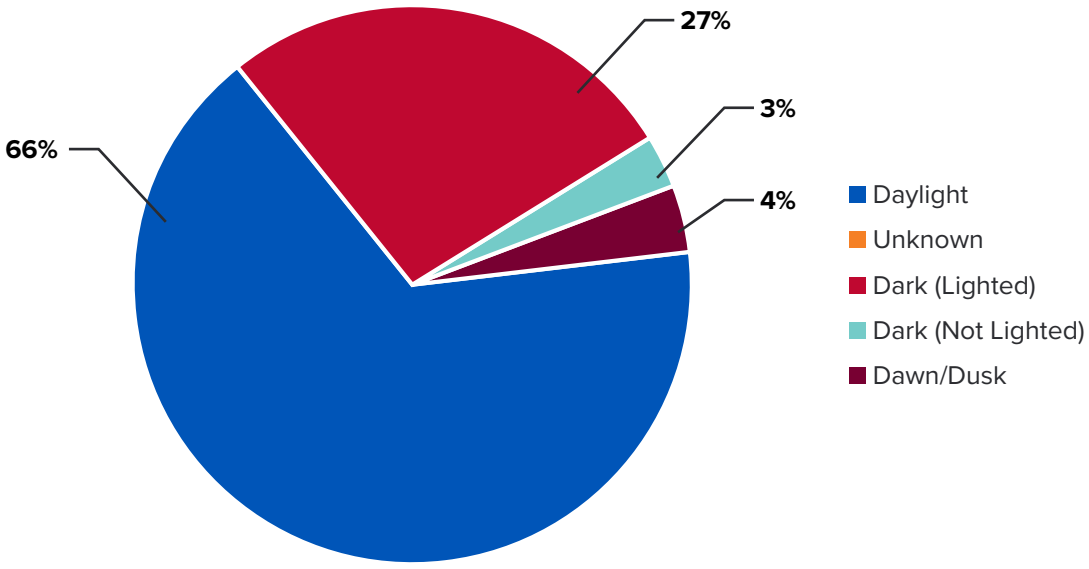


Figure 5: City of Hammond, *Severe Crashes* Distribution by Light Condition, 2018-2022



ROADWAY SURFACE CONDITIONS

The crash analysis results indicate that the majority of crashes occurred on the roadway during dry conditions, comprising 79% of all crashes and 80% of severe crashes. This is slightly higher than statewide average of 77% of all crashes occurring under dry conditions (Source: Indiana University Public Policy Institute, 2022).

Conversely, crashes on wet surface, snow/slush, and ice surface conditions collectively accounted for only 21% of all crashes and 20% of severe crashes.

Figure 6 and ***Figure 7*** summarizes all crashes and severe crashes distribution, respectively, by roadway surface conditions in Hammond during the analysis period.

Figure 6: City of Hammond, *All Crashes* Distribution by Roadway Surface Conditions, 2018-2022

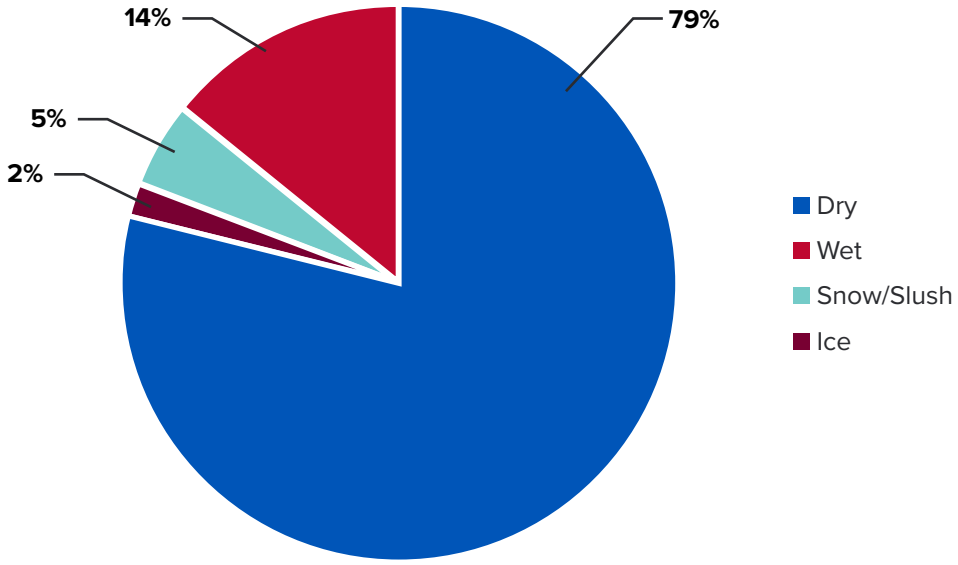
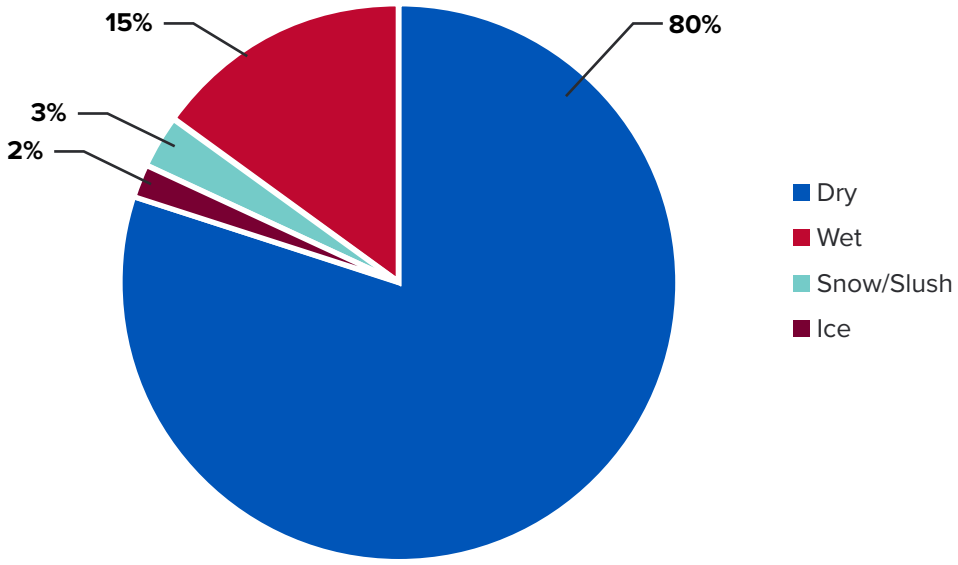


Figure 7: City of Hammond, *Severe Crashes* Distribution by Surface Conditions, 2018-2022



ROADWAY CLASS

The crash analysis results indicate that most crashes occur on Local/City Roads, comprising 63% of all crashes and 62% of severe crashes. This is approximately 10% higher than the statewide average for local/city road crashes (Source: Indiana University Public Policy Institute, 2022).

US Routes and State Routes, on the other hand, represent the second and third-highest number of crashes, collectively accounting for 25% of all crashes and 31% of severe crashes.

Other roadway classes, including private driveways, and Interstate (Indiana Toll Road/I-90), collectively make up the remaining 12% of all crashes and 7% of severe crashes.

Figure 8 and ***Figure 9*** summarizes all crashes and severe crashes distribution, respectively, by roadway class in Hammond during the analysis period.

Figure 8: City of Hammond, *All Crashes* Distribution by Roadway Class, 2018-2022

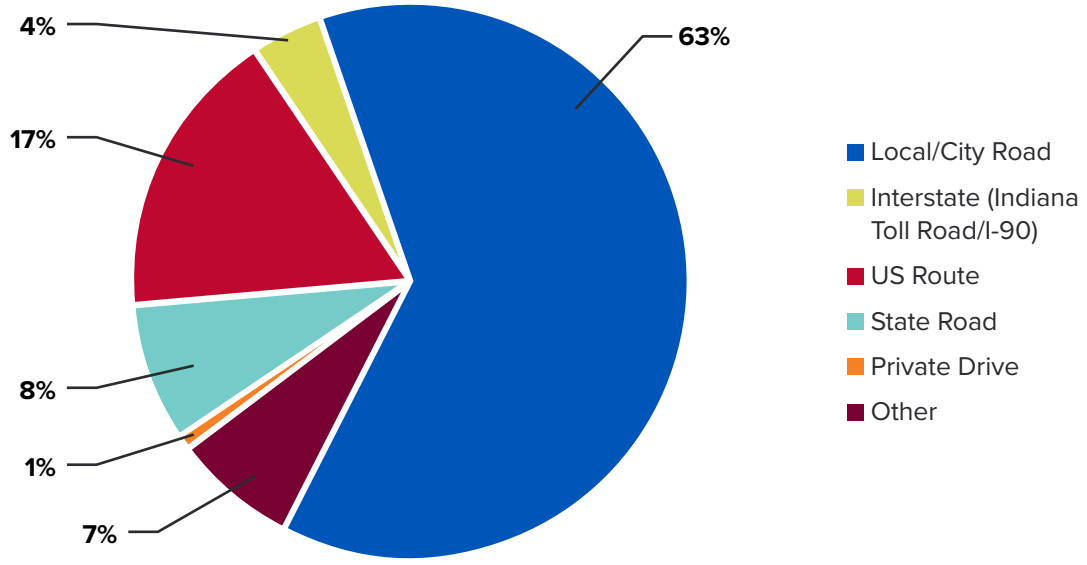
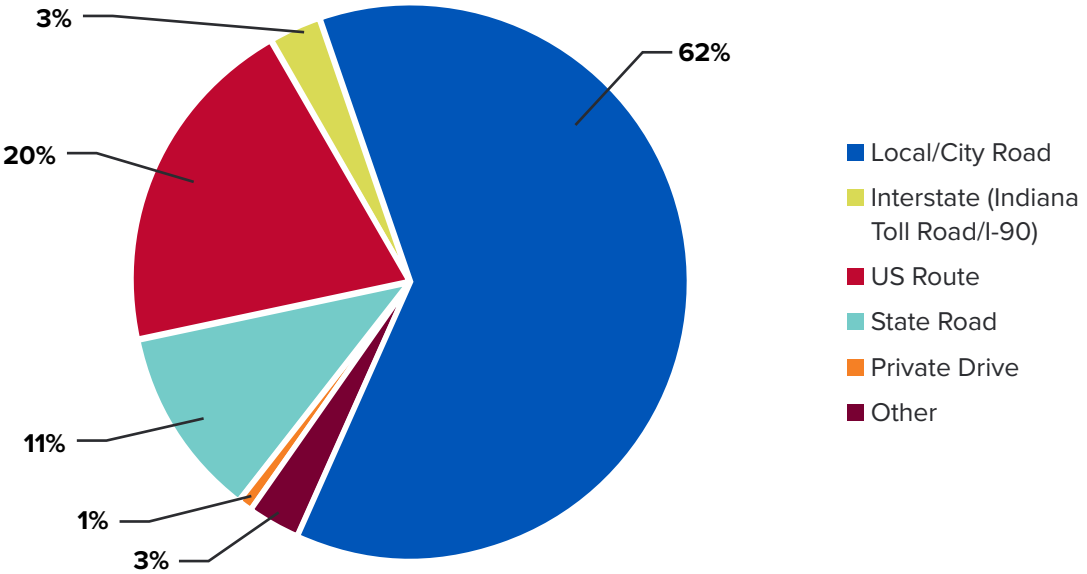


Figure 9: City of Hammond, *Severe Crashes* Distribution by Roadway Class, 2018-2022



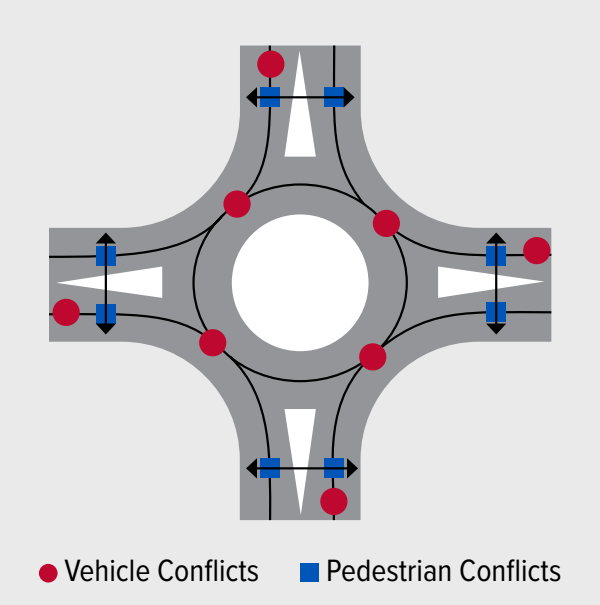
Note: The roadway classes included in the report adhere to the definitions provided by ARIES

ROADWAY JUNCTION

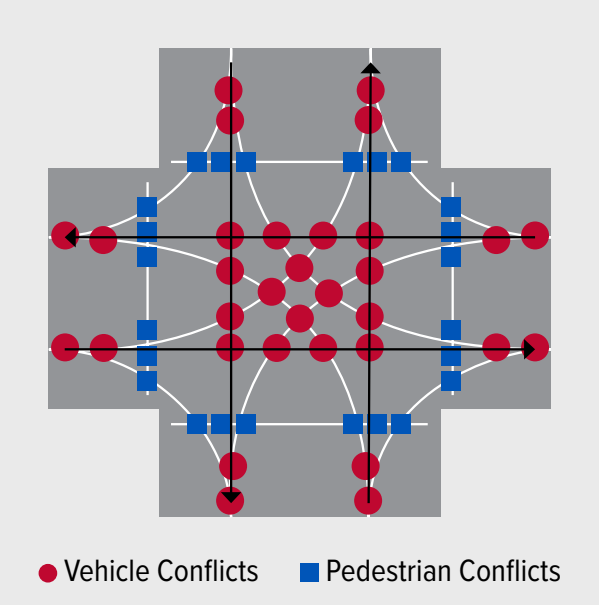
The crash analysis results indicate that the majority of crashes occur along roadway segments (no junction involved), comprising 57% of all crashes and 43% of severe crashes. This is 6% lower than the statewide average of 63% of all crashes occurring along roadway segments (Source: Indiana University Public Policy Institute, 2022).

Secondly, among the specified junction types, four-way intersections emerged as the most common location for crashes, accounting for 32% of all crashes and 45% of severe crashes. A typical four-legged intersection has 32 vehicle-to-vehicle conflict points and 24 vehicle-to-pedestrian conflict points. These conflict points can include areas where vehicles are turning left, turning right, or proceeding straight through the intersection, as well as points where lanes merge or diverge.

Roundabouts/Traffic Circles account for only 0.12% of all crashes and 0.08% of severe crashes. A four-legged roundabout has only 8 vehicle-to-vehicle conflict points and 8 vehicle-to-pedestrian conflict points. This is an approximate 70 percent reduction in conflict points compared to a traditional four-way intersection. Left-hand, right-angle, and head-on crashes are nearly eliminated by a roundabout.



8 VEHICLE CONFLICTS
8 PEDESTRIAN CONFLICTS



32 VEHICLE CONFLICTS
24 PEDESTRIAN CONFLICTS

Figure 10 and ***Figure 11*** summarizes all crashes and severe crashes, respectively, by roadway junction in Hammond during the analysis period.

Figure 10: City of Hammond, *All Crashes* Distribution by Roadway Junction, 2018-2022

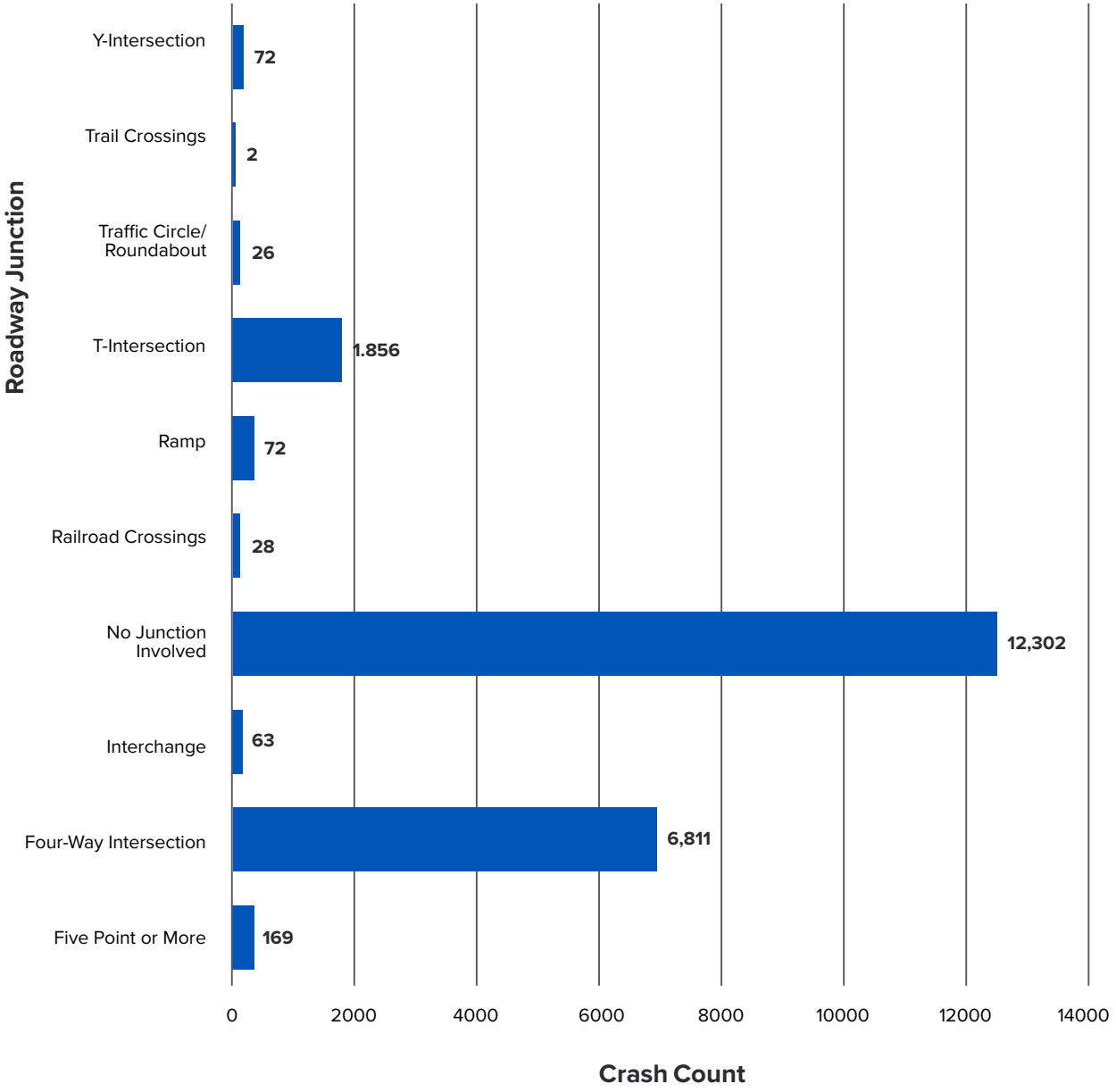
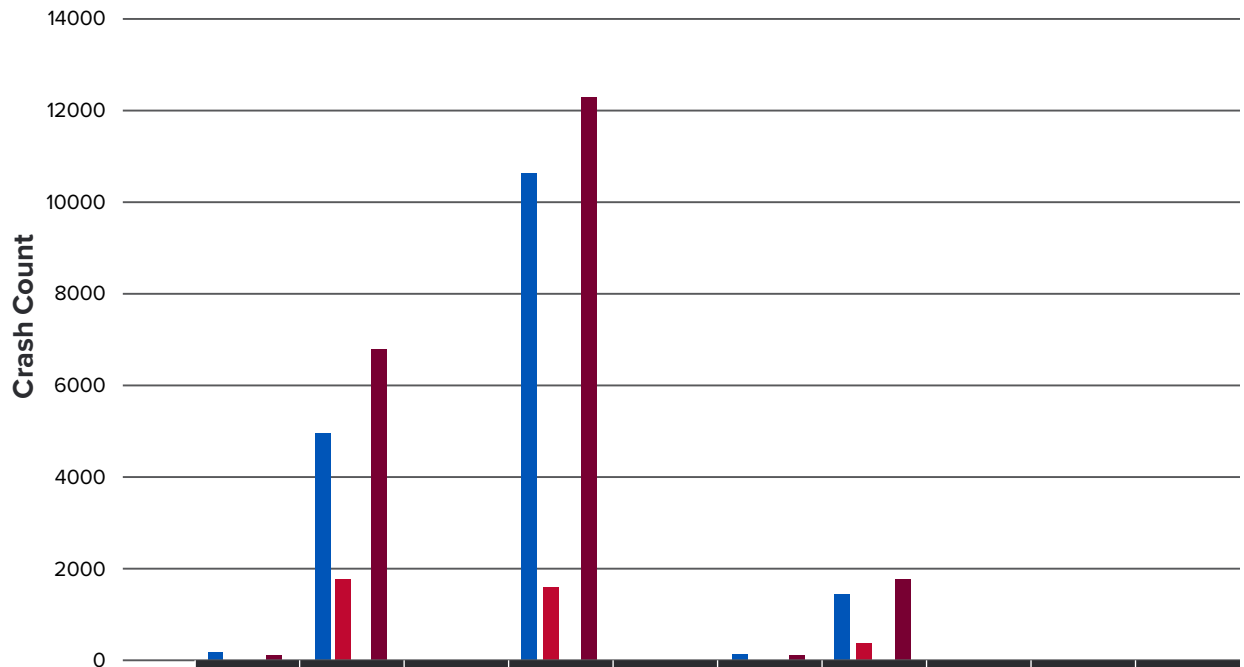


Figure 11: City of Hammond, *Severe Crashes* Distribution by Roadway Junction, 2018-2022



	FIVE POINT OR MORE	FOUR-WAY INTERSECTION	INTERCHANGE	NO JUNCTION INVOLVED	RAILRAOD CROSSINGS	RAMP	T-INTERSECTION	TRAFFIC CIRCLE/ ROUNDABOUT	TRAIL CROSSINGS	Y-INTERSECTION
PDO Crashes	135	5,011	55	10,593	20	135	1,482	23	2	63
Injury Crashes	34	1,784	8	1,676	7	36	369	3	0	9
Fatal Crashes	0	16	0	33	1	1	5	0	0	0
Total Crashes	169	6,811	63	12,302	28	172	1,856	26	2	72

Note: The roadway junctions included in the report adhere to the definitions provided by ARIES

4.2 HIGH LEVEL TRENDS: BORMAN EXPRESSWAY/I-80

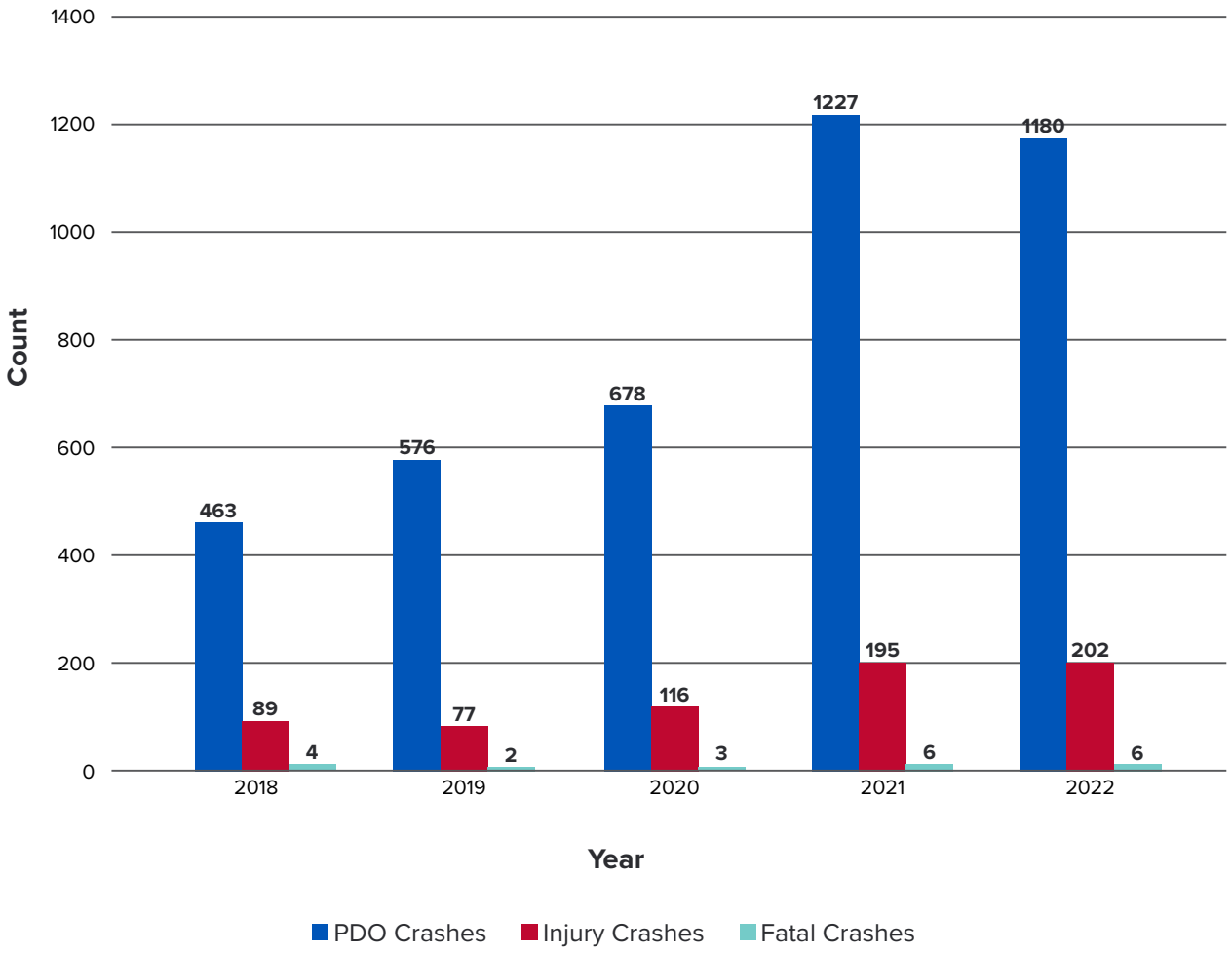
The Borman Expressway, also known as Interstate 80, runs east-west through the city of Hammond across the southern part of the city. It provides commuters with efficient access to various destinations, supporting economic activity and contributing to the overall connectivity of the area. Its strategic location and significance make it a focal point for transportation infrastructure in Hammond, serving as a pathway for regional travel and commerce.

A thorough safety analysis conducted along the stretch of the Borman Expressway within Hammond revealed a total of 4,824 reported crashes during the analysis period, with 679 resulting in injuries and 21 proving fatal. Notably, rear-end collisions (40%), sideswipe incidents (29%), and roadway departures (15%) collectively constitute 84% of severe crashes.

These findings will be shared with INDOT, with the city collaborating closely to devise strategies aimed at mitigating crashes along this vital thoroughfare.

Figure 12 represents crash frequency along Borman Expressway, within the city limits of Hammond.

Figure 12: Crash Frequency Along Borman Expressway/I-80 (Within City Limits of Hammond, Indiana), 2018-2022



4.3 HOTSPOT INTERSECTIONS AND HIGH INJURY NETWORK (HIN)

Identifying hotspot intersections and high-injury networks plays a critical role in understanding and addressing areas with a high frequency of crashes and severe injuries, ultimately leading to the implementation of effective safety measures to reduce traffic-related fatalities and injuries.

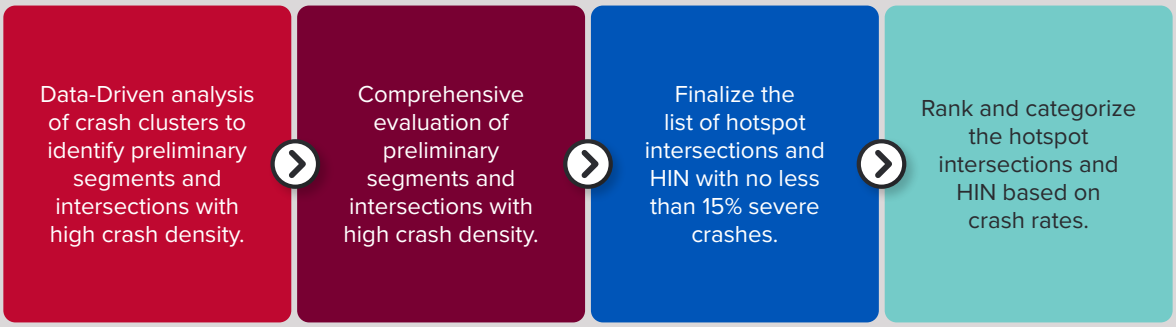
By utilizing crash data and statistical analyses, we can identify trends, patterns, and contributing factors associated with crashes and injuries at specific locations. This evidence-based approach enables the identification of underlying issues and the development of targeted solutions tailored to address the unique safety challenges of each intersection or corridor within the high-injury network.

METHODOLOGY

We developed a four-step process for identifying hotspot intersections and HIN as shown in ***Figure 13***. It involves a systematic approach that leverages data-driven analysis and comprehensive evaluation to prioritize safety improvements.

- **Data-Driven Analysis of Crash Clusters to Identify Preliminary Segments and Intersections:** This initial step involved analyzing crash data to identify clusters of crashes occurring at intersections and segments of roadways. By examining the spatial distribution of crashes, we identified areas with a high frequency of crashes, indicating potential hotspot intersections and segments within the road network.
- **Comprehensive Evaluation of Preliminary Segments and Intersections:** In this step, the comprehensive evaluation of the identified preliminary segments and intersections was performed to determine crash statistics, with a focus on the percentage of severe crashes.
- **Finalize the List of Hotspot Intersections and High-Injury Networks with No Less Than 15% Severe Crashes:** Building upon the comprehensive evaluation, the list of hotspot intersections and high-injury networks was finalized based on predefined criteria, such as a threshold of no less than 15% severe crashes. This criterion ensures that priority is given to intersections and segments with a significant concentration of severe crashes.
- **Rank the Hotspot Intersections and High-Injury Networks Based on Crash Rates:** Finally, the identified hotspot intersections and high-injury networks are ranked based on crash rates, which consider the frequency of crashes relative to the volume of traffic and/or roadway length. Ranking the locations allows the city to prioritize safety improvements based on the level of risk posed to road users. Intersections and segments with higher crash rates are assigned a higher priority for safety interventions.

Figure 13: Methodology for Hotspot Intersections & HIN Identification



4.3.1 IDENTIFICATION OF PRELIMINARY SEGMENTS AND INTERSECTIONS

ArcGIS Pro software was utilized as the primary tool for spatial analysis and visualization of crash data. This GIS platform provided the capability to create a detailed heat map which served as an effective visualization tool for identifying clusters and patterns of crashes within the city. The resulting heat map depicted areas with varying levels of crash density, with hotter colors indicating higher densities of crashes and cooler colors representing lower densities. The roadway segments and intersections with high crash densities served as the initial focus for further evaluation and assessment to determine their suitability for inclusion in the final list of hotspot intersections and high-injury networks. shows the injury and fatality crash data heat map that was utilized for identifying preliminary segments and intersections. ***Figure 14*** shows the injury and fatality crash data heat map that was utilized for identifying preliminary segments and intersections.

The analysis of the heat maps revealed notable clusters of high crash density along specific roads within the city boundaries, including 169th Street, 173rd Street, Columbia Avenue, Hohman Avenue, 165th Street, Kennedy Avenue, Indianapolis Blvd., and Calumet Avenue. Additionally, a significant concentration of intersections with high crash density was observed along these streets.

4.3.2 COMPREHENSIVE EVALUATION

Crash trends at each of the preliminary segments and intersections were assessed, with a summary provided in ***Table 5*** and ***Table 6***, respectively.

Table 5: City of Hammond, Crash Trend for Preliminary HIN Segments, 2018-2022

SEGMENT NAME	TOTAL CRASHES	INJURY CRASHES	FATALITY CRASHES	PERCENTAGE OF INJURY/FATALITY CRASHES	MAJOR CRASH TYPES
169th Street - From Columbia Avenue to Cline Avenue Service Road	808	279	0	35%	Following too close; Failure to yield right of way; Unsafe Lane Movement
173rd Street - From Calumet Avenue to Kennedy Avenue	371	82	0	22%	Following too close; Failure to yield right of way; Unsafe Lane Movement
Columbia Avenue - From Gostlin Street to 173rd Street	504	127	0	25%	Following too close; Failure to yield right of way; Unsafe Lane Movement
Hohman Avenue - From Gostline Street to 165th Street	392	74	0	19%	Following too close; Failure to yield right of way; Unsafe Lane Movement
165th Street - From State Line Road to Kennedy Avenue	517	107	2	21%	Following too close; Failure to yield right of way; Unsafe Lane Movement
Kennedy Avenue - From Michigan Street to 169th Street	143	40	2	29%	Following too close; Failure to yield right of way; Unsafe Lane Movement
Indianapolis Blvd. - From Summer Street to 173rd Street	280	61	0	22%	Following too close; Failure to yield right of way; Unsafe Lane Movement
Calumet Avenue - From 129th Street to 173rd Street	898	179	1	20%	Following too close; Failure to yield right of way; Unsafe Lane Movement

Figure 14: City of Hammond, Injury and Fatality Crash Data Heat Map, 2018-2022

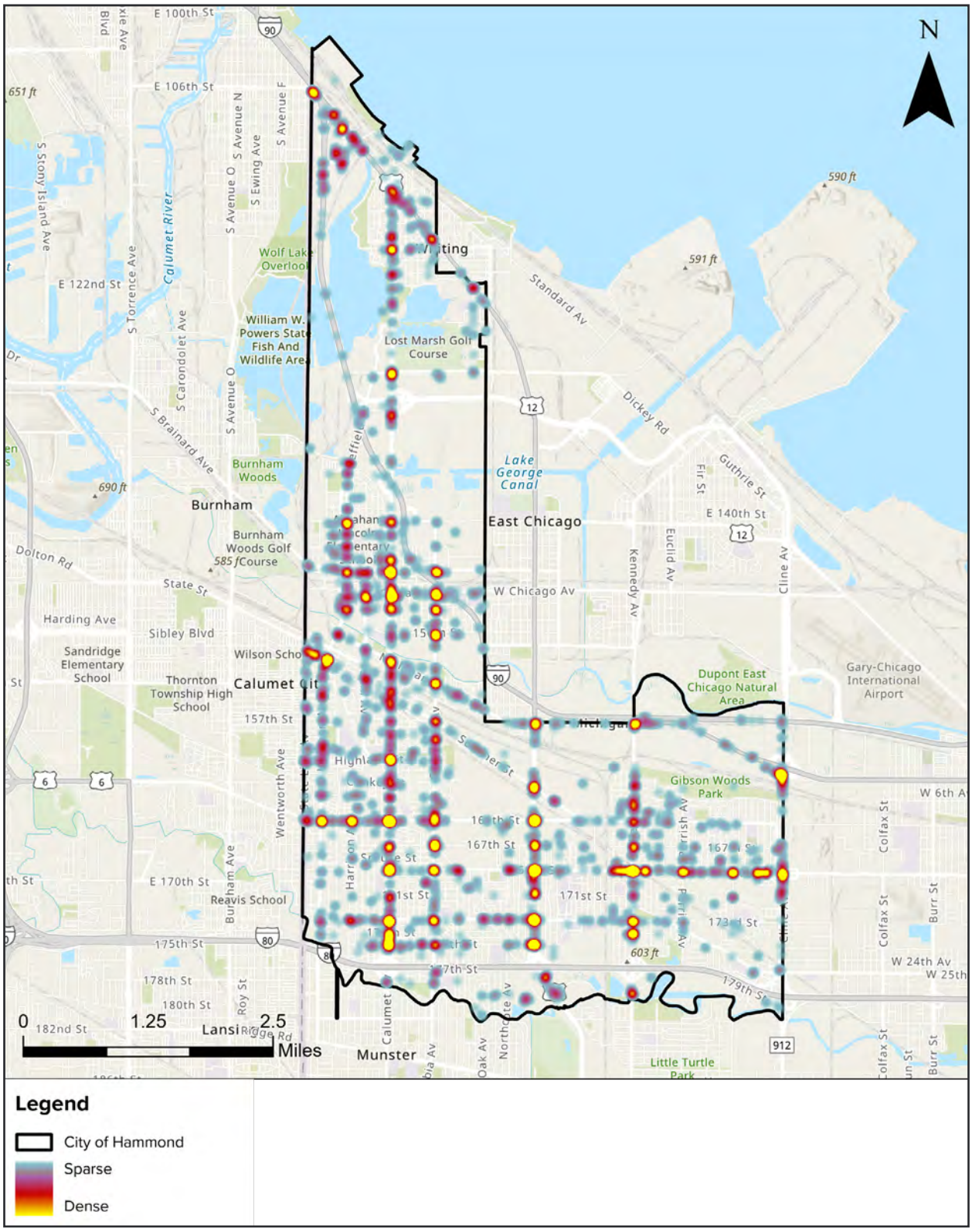


Table 6: City of Hammond, Crash Trend for Preliminary Hotspot Intersections, 2018-2022

INTERSECTION NAME	TRAFFIC CONTROL	INJURY CRASHES	FATALITY CRASHES	PERCENTAGE OF INJURY/FATALITY CRASHES	MAJOR CRASH TYPES
169th Street and Columbia Avenue	76	27	0	36%	Failure to yield right of way; Following too close; Disregard signal
169th Street and Kennedy Avenue	218	68	0	31%	Failure to yield right of way; Following too close; Disregard signal
150th Street and Columbia Avenue	87	24	0	28%	Failure to yield right of way; Following too close; Disregard signal
Gostlin Street and Columbia Avenue	82	23	2	30%	Failure to yield right of way; Following too close; Disregard signal
Michigan Street and Columbia Avenue	145	25	0	17%	Following too close; Failure to yield right of way; Unsafe lane movement
173rd Street and Columbia Avenue	68	23	0	34%	Disregard signal; Following too close; Failure to yeild right of way
Gostlin Street and Hohman Avenue	79	17	0	22%	Failure to yield right of way; Following too close; Disregard signal
169th Street and Grand Avenue	80	25	0	31%	Following too close; Failure to yield right of way; Pedestrian action
169th Street and Indianapolis Blvd.	168	48	0	29%	Following too close; Failure to yield right of way; Unsafe lane movement
169th Street and Parrish Avenue	49	22	0	45%	Failure to yield right of way; Disregard signal; Following too close
Gostlin Street and Calumet Avenue	229	44	0	19%	Following too close; failure to yield right of way; Unsafe lane movement
169th Street and New Hampshire Avenue	37	20	0	54%	Failure to yield right of way; Following too close; Unsafe lane movement
165th Street and Indianapolis Blvd.	231	54	1	24%	Following too close; Unsafe lane movement; Disregard signal
165th Street and Columbia Blvd.	220	33	0	15%	Failure to yield right of way; Following too close; Unsafe lane movement
129th Street and Calumet Avenue	106	27	0	25%	Following too close; Unsafe lane movment; Disregard signal
Summer Street and Indianapolis Blvd.	140	33	0	24%	Following too close; Failure to yield right of way; Unsafe lane movement
165th Street and Hohman Avenue	145	30	0	21%	Following too close; Failure to yield right of way; Unsafe lane movement
173rd Street and Indianapolis Blvd.	180	43	0	24%	Following too close; Failure to yield right of way; Unsafe lane movement
119th Street and Calumet Avenue	60	19	0	32%	Following too close; Failure to yield right of way; Unsafe lane movement
169th Street and Cline Avenue Service Road	36	18	0	50%	Failure to yield right of way; Following too close; Disregard signal
165th Street and State Line Road*	36	6	0	17%	Following too close; Failure to yield right of way; Unsafe lane movement

**Only crashes within Hammond city limits included per ARIES*

All intersections and segments listed in the tables above exhibited severe crashes no less than 15%, aligning with the criteria outlined in the methodology for selection as hotspot intersections and high-injury networks (HIN).

4.3.3 RANK THE HOTSPOT INTERSECTIONS AND HIN

The frequency of crash occurrence (crash frequency) is the simplest technique for identifying high-hazard locations. Intersections or roadway segments of uniform lengths are simply ranked in order of the number of crashes that occurred during a given time period. Although simple to perform, reliance on crash frequency tends to bias the identification process in favor of higher-volume roadway sections and intersections. As a result, it may ignore severe safety problems on low-volume roads or intersections. Crash rates are normally considered better indicators of risk than crash frequencies alone, because they account for differences in traffic volumes, and hence exposure. Crash rates for roadway segments are normally expressed in terms of crashes per 100 million vehicle-miles of travel whereas for intersections, it is normally expressed in terms of crashes per million entering vehicles.

Table 7 summarizes the HIN ranking by injury and fatality crash rate. Segments with a higher number of injuries and fatality crash rates, such as 169th Street—from Columbia Avenue to Cline Service Road and 173rd Street—from Calumet Avenue to Kennedy Avenue, indicate areas of significant safety concern. Notably, Calumet Avenue—from 129th Street to 173rd Street is one of the heavily traveled roadways and consequently has the highest number of total crashes. Despite this, it has the lowest crash rate of the segments listed. This further emphasizes the importance of utilizing crash rates to avoid biasedness towards heavily traveled roadways. Various factors, including traffic volume, road design, enforcement efforts, and driver behavior, can influence crash rates and severity, necessitating a comprehensive approach to road safety analysis.

Table 7: City of Hammond, HIN Ranking by Injury and Fatality Crash Rate, 2018-2022

SEGMENT NAME	TOTAL CRASHES	INJURY CRASHES	FATALITY CRASHES	VOLUME OF VEHICLES PER DAY	LENGTH OF ROADWAY SEGMENT (IN MILES)	TOTAL CRASH RATE	INJURY AND FATALITY CRASH RATE
169th St - From Columbia Ave to S Cline Ave Service Rd	808	279	0	10,624	3.32	1255.23	433.43
173rd St - From Calumet Ave to Kennedy Ave	371	82	0	4,924	2.45	1685.10	372.45
Columbia Ave - From Gostlin St to 173rd St	504	127	0	7,583	3.53	1031.70	259.97
Hohman Ave - From Gostlin St to 165 th St	392	74	0	8,607	2.59	963.54	181.89
165th St - From State Line Road to Kennedy Ave	517	107	2	15,100	3.29	570.24	120.22
Kennedy Ave - From Michigan St to 169th St	143	40	2	14,424	1.50	362.16	106.37
Indianapolis Blvd - From Summer St to 173rd St	280	61	0	27,235	1.34	420.40	91.59
Calumet Ave - From 129th St to 173rd St	898	179	1	24,617	5.52	362.11	72.58

Table 8 summarizes the hotspot intersections ranking by injury and fatality crash rate. The total crash rate and injury and fatality crash rate provide insights into the overall safety performance of each intersection. Intersections with higher crash rates and ranks, such as 169th Street and Columbia Avenue, shall require further investigation and targeted safety interventions to reduce the frequency of crashes.

Table 8: City of Hammond, Hotspot Intersections Ranking by Injury and Fatality Crash Rate, 2018-2022

INTERSECTION NAME	TOTAL CRASHES	INJURY CRASHES	FATALITY CRASHES	TOTAL ENTERING TRAFFIC	TOTAL CRASH RATE	INJURY AND FATALITY CRASH RATE
169th Street and Columbia Avenue	76	27	0	9,406	4.43	1.57
169th Street and Kennedy Avenue	218	68	0	25,048	4.77	1.49
150th Street and Columbia Avenue	87	24	0	9,583	4.97	1.37
Gostlin Street and Columbia Avenue	82	23	2	9,190	4.89	1.49
Michigan Street and Columbia Avenue	145	25	0	13,186	6.03	1.04
173rd Street and Columbia Avenue	68	23	0	12,507	2.98	1.01
Gostlin Street and Hohman Avenue	79	17	0	9,500	4.56	0.98
169th Street and Grand Avenue	80	25	0	14,934	2.94	0.92
169th Street and Indianapolis Blvd	168	48	0	29,058	3.17	0.91
169th Street and Parrish Avenue	49	22	0	13,935	1.93	0.87
Gostlin Street and Calumet Avenue	229	44	0	28,158	4.46	0.86
169th Street and New Hampshire Avenue	37	20	0	13,633	1.49	0.80
165th Street and Indianapolis Blvd.	231	54	1	37,240	3.40	0.81
165th Street and Columbia Avenue	220	33	0	23,948	5.03	0.76
129th Street and Calumet Avenue	106	27	0	20,553	2.83	0.72
Summer Street and Indianapolis Blvd.	140	33	0	26,503	2.89	0.68
165th Street and Hohman Avenue	145	30	0	26,715	2.97	0.62
173rd Street and Indianapolis Blvd	180	43	0	39,096	2.52	0.60
119th Street and Calumet Avenue	60	19	0	17,498	1.88	0.59
169th Street and Cline Avenue Service Road	36	18	0	17,553	1.12	0.56
165th Street and State Line Road	36	6	0	18,900	1.04	0.17

As per the safety analysis results, the HIN and hotspot intersections in the City of Hammond are shown in ***Figure 15*** and ***Figure 16***, respectively.

The detailed descriptive analysis results for the hotspot intersections and HIN are included in ***Appendix C*** of this report.

Figure 15: City of Hammond, HIN, 2018-2022

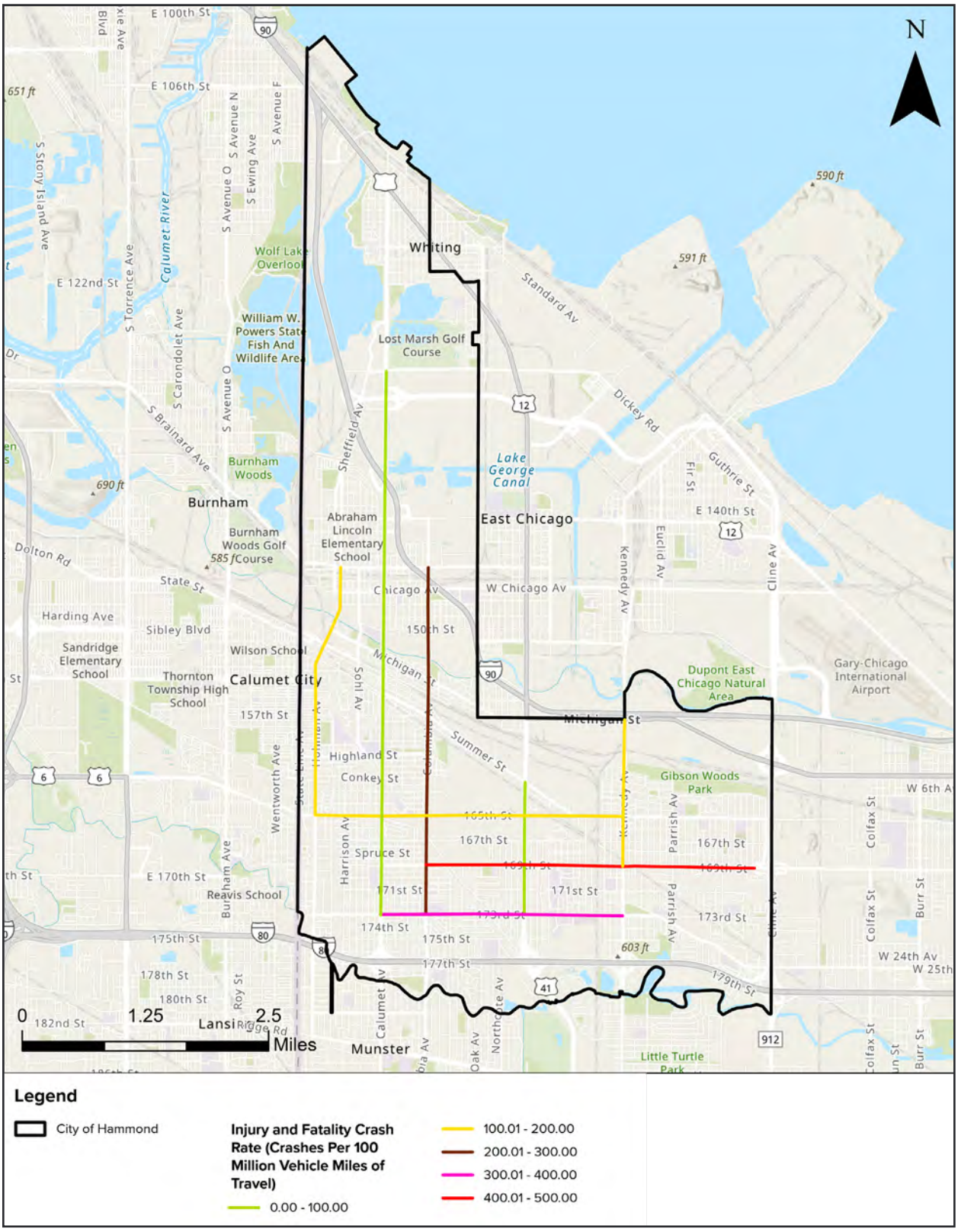
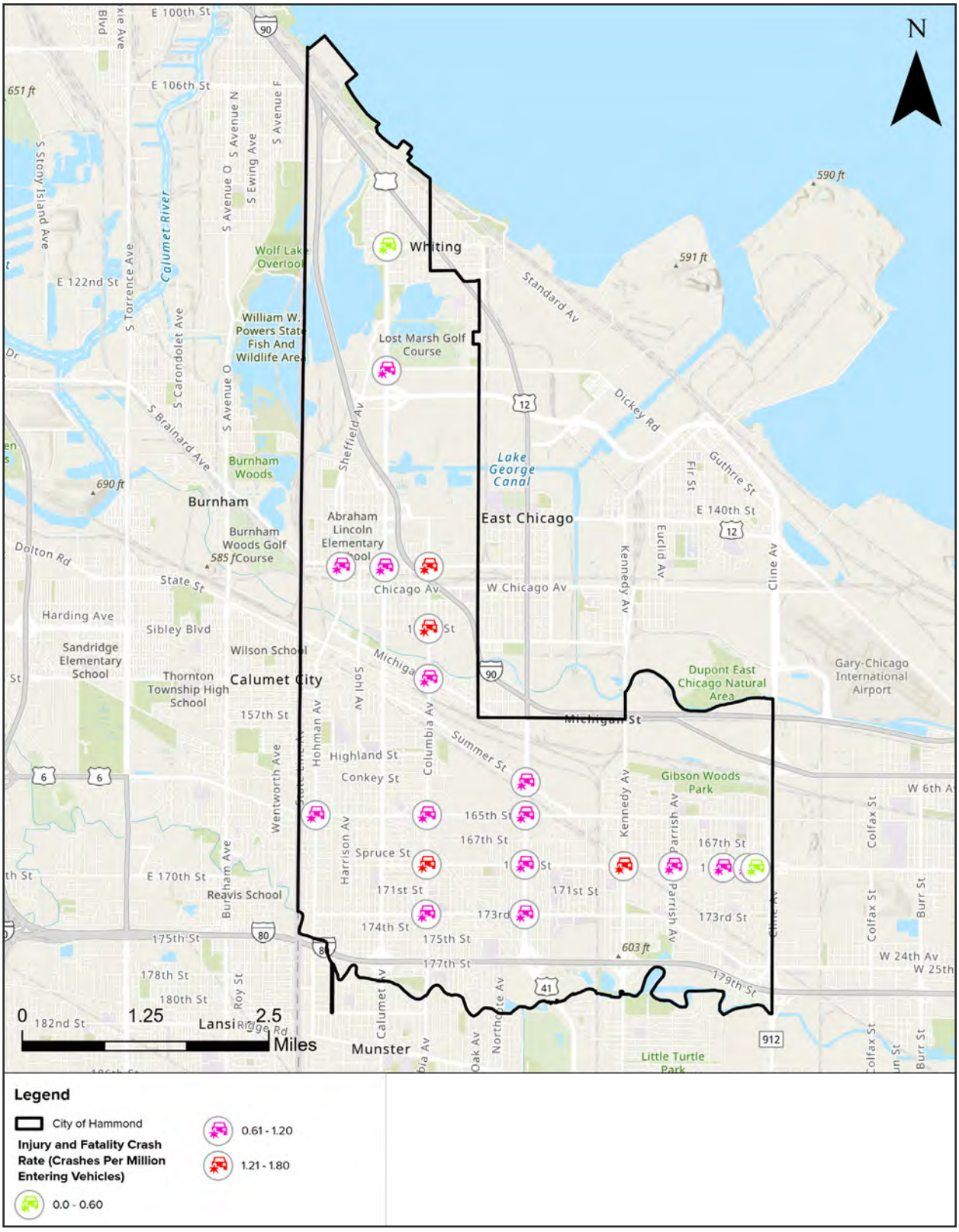


Figure 16: City of Hammond, Hotspot Intersections, 2018-2022



4.4 SYSTEMIC SAFETY IMPROVEMENTS

Systemic safety improvements represent a proactive approach to addressing safety concerns on roadways by identifying and implementing measures that target common crash patterns and contributing factors. Unlike traditional spot safety improvements (discussed in Section 8), which focus on specific locations with a history of crashes, systemic safety improvements are applied across a broader network based on systemic risk factors. This approach helps proactively address safety issues comprehensively and efficiently, reducing the overall frequency and severity of crashes.

Based on the high-level trends, we identified three major crash types that had a high proportion of injury and fatality crashes:

- Right Angle
- Head-on
- Left-turn

Based on the review of national and international best practices including, *FHWA's Proven Safety Countermeasures*, and research collected through the *Crash Modification Factors Clearing House*, we selected road design countermeasures that address these three severe crash types and pedestrian crashes, detailed in ***Table 9***.

Table 9: City of Hammond, Systemic Severe Crash Countermeasures

CRASH TYPE	INTERSECTION & ROADWAY SEGMENT RELATED RISK FACTORS	COUNTERMEAUSRE	EXISTING INTERSECTION TRAFFIC CONTROL	CRASH REDUCTION FACTOR (CRF) %	REFERENCE
Angle	Poor visibility of traffic signal heads	Replace 8-inch signal heads with 12-inch	Signalized	42	CMF Clearinghouse (CMF ID: 2333)
	Presence of visual trap at a curve or combinations of vertical grade and horizontal curvature	Install Advance Warning Signs (Signal Ahead)	Signalized	35	CMF Clearinghouse (CMF ID: 1684)
	Poor visibility of stop signs, especially in night-time conditions	Increase retroreflectivity of Stop Signs (reflective strips on sign post optional)	Un-signalized	7	CMF Clearinghouse (CMF ID: 6048)
	Poor visibility of stop signs, especially in night-time conditions	Replace Standard Stop Sign with Flashing LED Stop Sign	Un-signalized	41	HSM, CMF Clearinghouse (CMF ID: 4074)
	Presence of mulitple access points	Corridor Access Management	None - Roadway Segments	*25-31	FHWA (*Reduction in fatal and injury crashes along urban and suburban arterials
Head-On	Lane departure due to inadequate lane width and poor dilineation	Install centerline rumble strips	None - Roadway Segments	45	CMF Clearinghouse (CMF ID: 3360)
	Presence of multiple access points	Install raised median	None - Roadway Segments	22	CMF Clearinghouse (CMF ID: 22)
Left-Turn	Poor sight distnace for opposing left-turn drivers	Provide positive offset left-turn lanes	Signalized	34	CMF Clearinghouse (CMF ID: 6095)
	Heavy left-turn traffic volumes	Replace permissive or protected/ permissive left-turn signal phasing with protected only	Signalized	99	CMF Clearinghouse (CMF ID: 333)
	High traffic speed; multiple access points	Convert 4-lane roadway to 3-lane roadway with center turn lane (road diet)	None - Roadway Segments	29	CMF Clearinghouse (CMF ID: 199)
Pedestrian	Heavy mid-block crossing	Install Rectangular Rapid Flashing Beacons (RRFB)	None - Roadway Segments	47	FHWA

5. ENGAGEMENT AND COLLABORATION

5. ENGAGEMENT AND COLLABORATION

Incorporating public input from Hammond residents plays an important role in shaping the Comprehensive Safety Action Plan for the city. The engagement of the community in the planning process offers different benefits that extend beyond the confines of transportation planning. This inclusive approach enhances the overall quality and relevance of the safety plan and fosters a sense of community ownership and responsibility.

Public input catalyzes raising awareness about transportation issues within the community. It empowers residents to actively participate in discussions about safety concerns, infrastructure improvements, and overall transportation priorities. Community engagement not only promotes transparency in the planning process but also encourages a shared responsibility for the safety and efficiency of the transportation network.

Public involvement transcends the immediate scope of transportation planning, becoming a foundation for community engagement and collaboration. It empowers individuals to actively contribute to developing a safer and more responsive transportation system, fostering a shared vision for the future of Hammond's mobility infrastructure.

5.1 METHODS OF ENGAGEMENT

Public engagement opportunities for the Comprehensive Safety Action Plan included the following components:

- Public engagement events were scheduled to gather information from residents and visitors attending these events. The consultant team conducted public engagement at the following events:
  - Volleyball Tournament at Hammond Sportsplex and Community Center – February 17.
- A survey was created on the platform SuveyMonkey.com. The survey aimed to collect information from the general public on the safety of the roads/intersections in Hammond.

5.1.1 SURVEY

The consultant created an online survey (see ***Appendix D***) to involve members of the general public and stakeholder teams in the process of creating the City of Hammond Safety Action Plan. The survey was created for people within the city and asked them questions about intersections/road safety issues for motorized and non-motorized users. Before being published, the survey was sent out to officials for approval. The survey was published on February 16 and remained open until April 1, 2024. The online survey was created using SurveyMonkey.com, and the link was shared on different social media platforms, as well as via the Water Bill. The project's Steering Committee also distributed the survey link.

The consultant created a Facebook advertisement to help inform the Hammond community about the project. The Facebook advertisement briefly introduced the project and distributed the survey link. We utilized Facebook's paid-for advertising service to ensure the link was placed into Hammond residents' timelines. Facebook permits these ads to be "geo-fenced, "meaning they are only inserted into Facebook users who live in the city. This advertisement was created and distributed from American Structurepoint's Facebook page. Once created, it was shared by multiple Hammond organizations.

The advertisement reached a total of 16,661 people. Of those who viewed the advertisement, 148 clicked the link to the survey. The online survey received 500 total responses from all sources.

When the survey closed in early April, the consultant team reviewed the SurveyMonkey results and identified key trends. The survey helped identify intersections/roadways that felt unsafe for drivers and bicyclists/pedestrian/transit users and the primary reasons contributing to this perception. Demographic information was also asked in the survey to understand the backgrounds of people responding to the survey. The following is a summary of the questions asked and the answers submitted.

The comments from the Hammond community highlight various issues related to intersections and roadways within the city.

- **Speeding and Non-compliance with Traffic Signals:** Complaints about drivers exceeding speed limits, particularly near schools and residential areas, indicate a concern for public safety and the need for traffic calming measures.
- **Inadequate Signage and Infrastructure:** Residents expressed frustration with inadequate signage, such as the absence of left turn signals, yield signs, or clear lane indicators. They also mentioned issues with lane designs and a lack of turning lanes.
- **Pedestrian and Cyclist Safety:** Complaints about unsafe conditions for pedestrians and cyclists include narrow bike lanes, lack of crosswalks, speeding vehicles, and drivers not yielding to pedestrians at designated crossings.
- **Traffic Congestion and School Zones:** Traffic congestion is a significant concern, especially around school zones during peak hours. Issues include difficulty making turns, congestion around specific establishments like Dunkin' Donuts, and unsafe driving practices during school pick-up and drop-off times.
- **Enforcement and Oversight:** Residents expressed frustration with the lack of traffic enforcement and oversight, suggesting a need for increased law enforcement presence and monitoring of traffic violations.

These trends point to a pressing need for infrastructure improvements, enhanced traffic management strategies, and increased enforcement measures to address safety concerns and improve the overall quality of transportation in Hammond, Indiana. Addressing these concerns may involve a combination of improved signage, traffic management measures, infrastructure upgrades, community education on safe driving practices and increased engagement with law enforcement. The intersections that are perceived unsafe by motorists and bicyclists/pedestrians are shown on the city's map in ***Figure 17*** and ***Figure 18***, respectively. Similarly, the roadway segments that are perceived unsafe by motorists and bicyclists/pedestrians are shown on the city's map in ***Figure 19*** and ***Figure 20***, respectively.

Figure 18: Safety Issue Types Perceived by Motorists in Hammond, Indiana

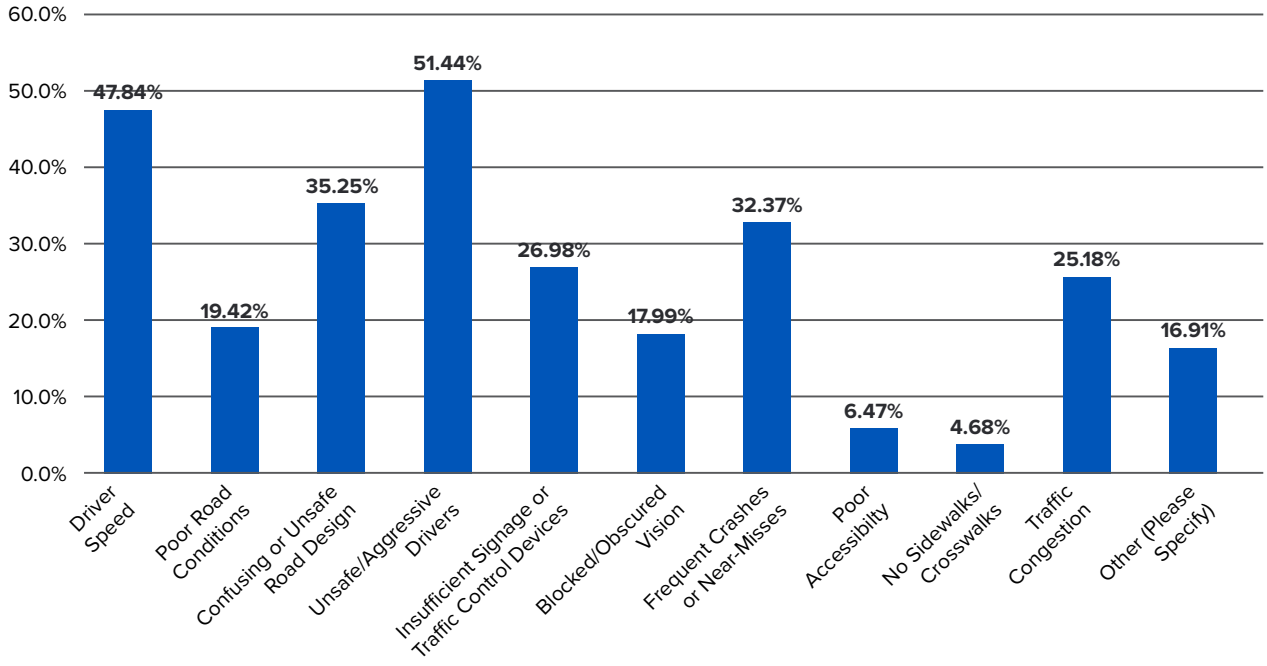


Figure 19: Safety Issue Types Perceived by Bicyclists/Pedestrians/Transit Users in Hammond, Indiana

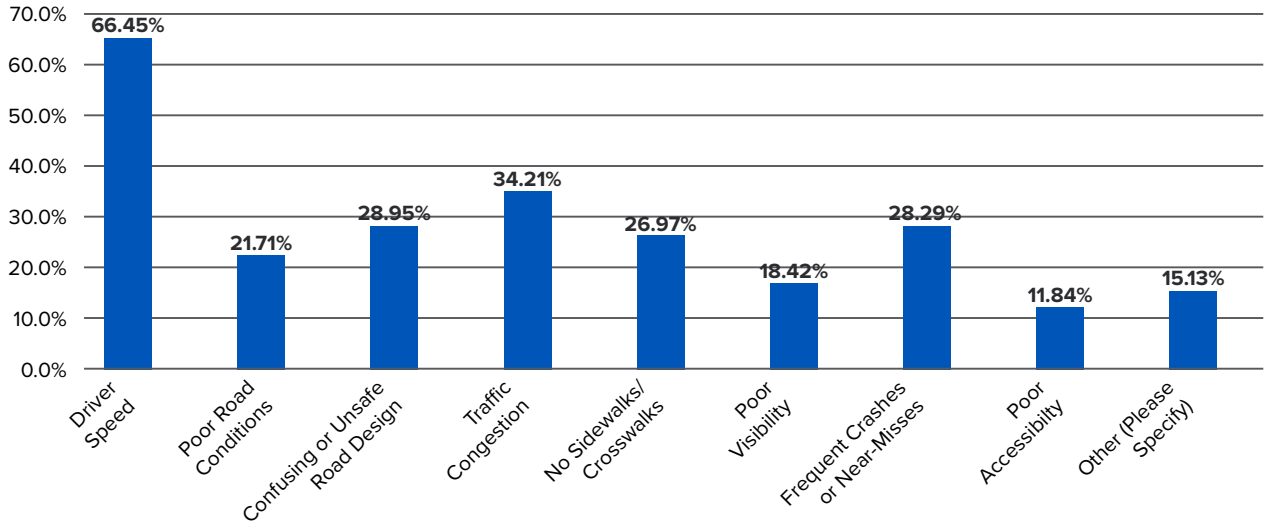


Figure 17: Unsafe Intersections Perceived By Motorists in Hammond, Indiana

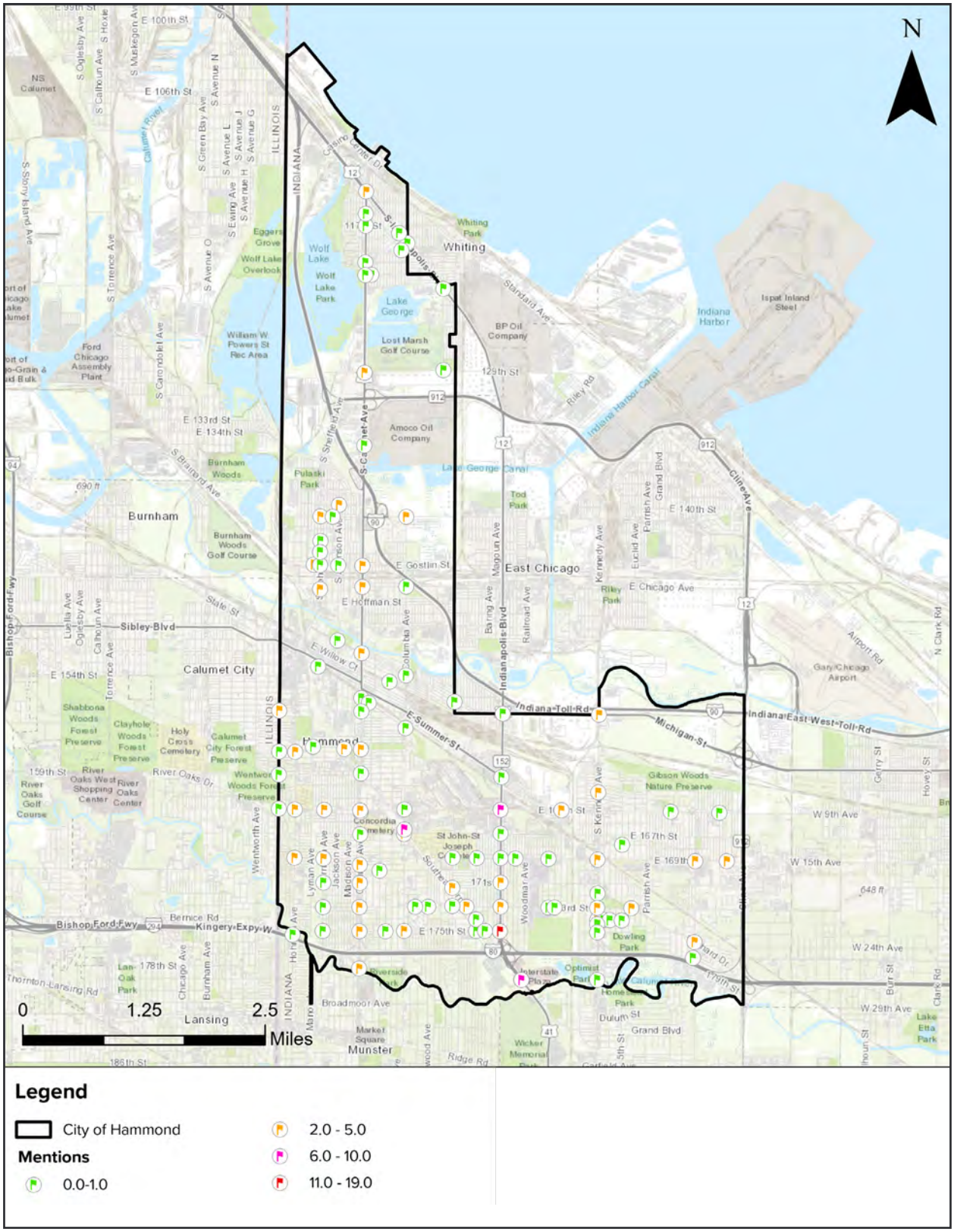


Figure 18: Unsafe Intersections Perceived by Bicyclists/Pedestrians in Hammond, Indiana

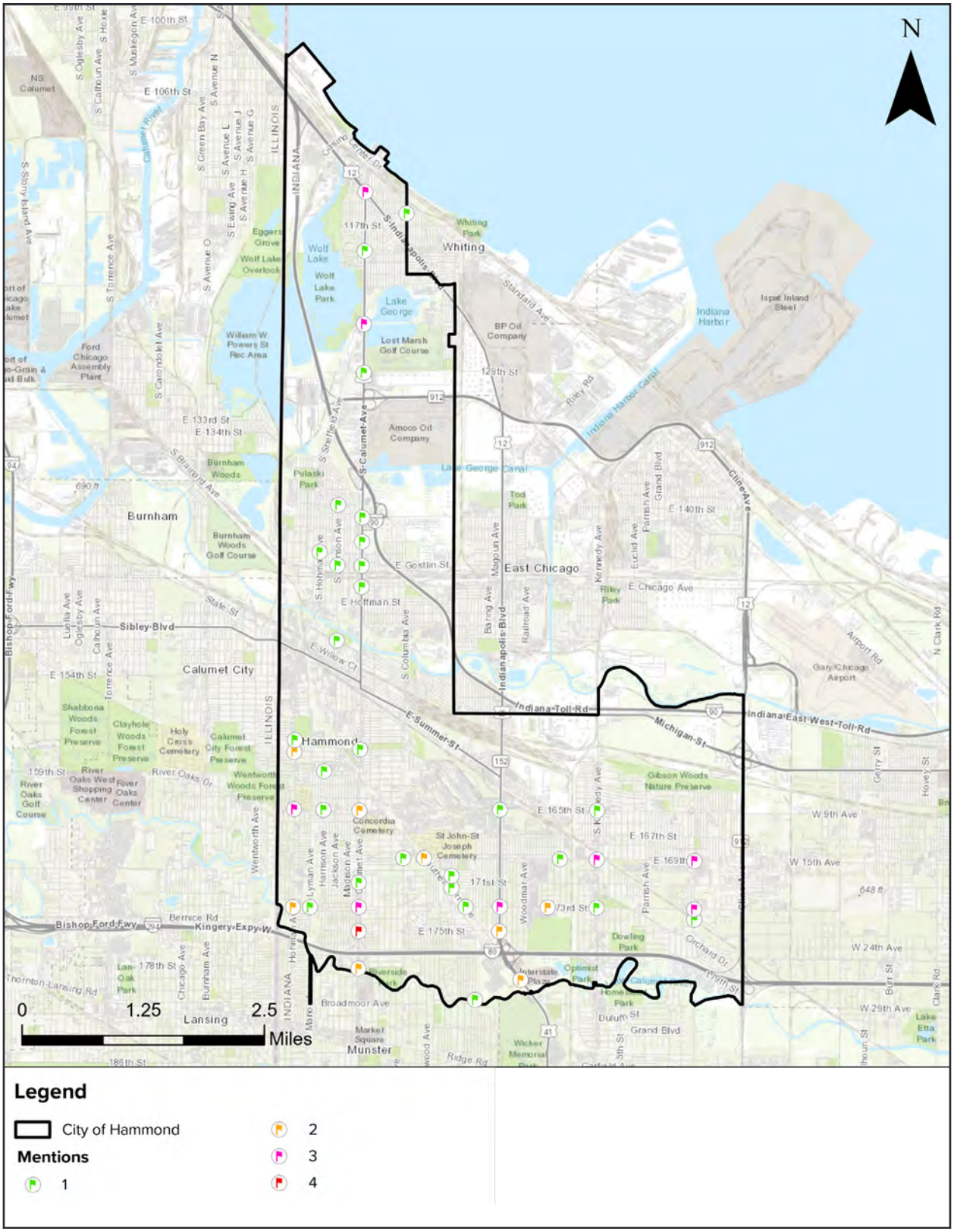


Figure 19: Unsafe Roadway Segments Perceived by Motorists in Hammond, Indiana

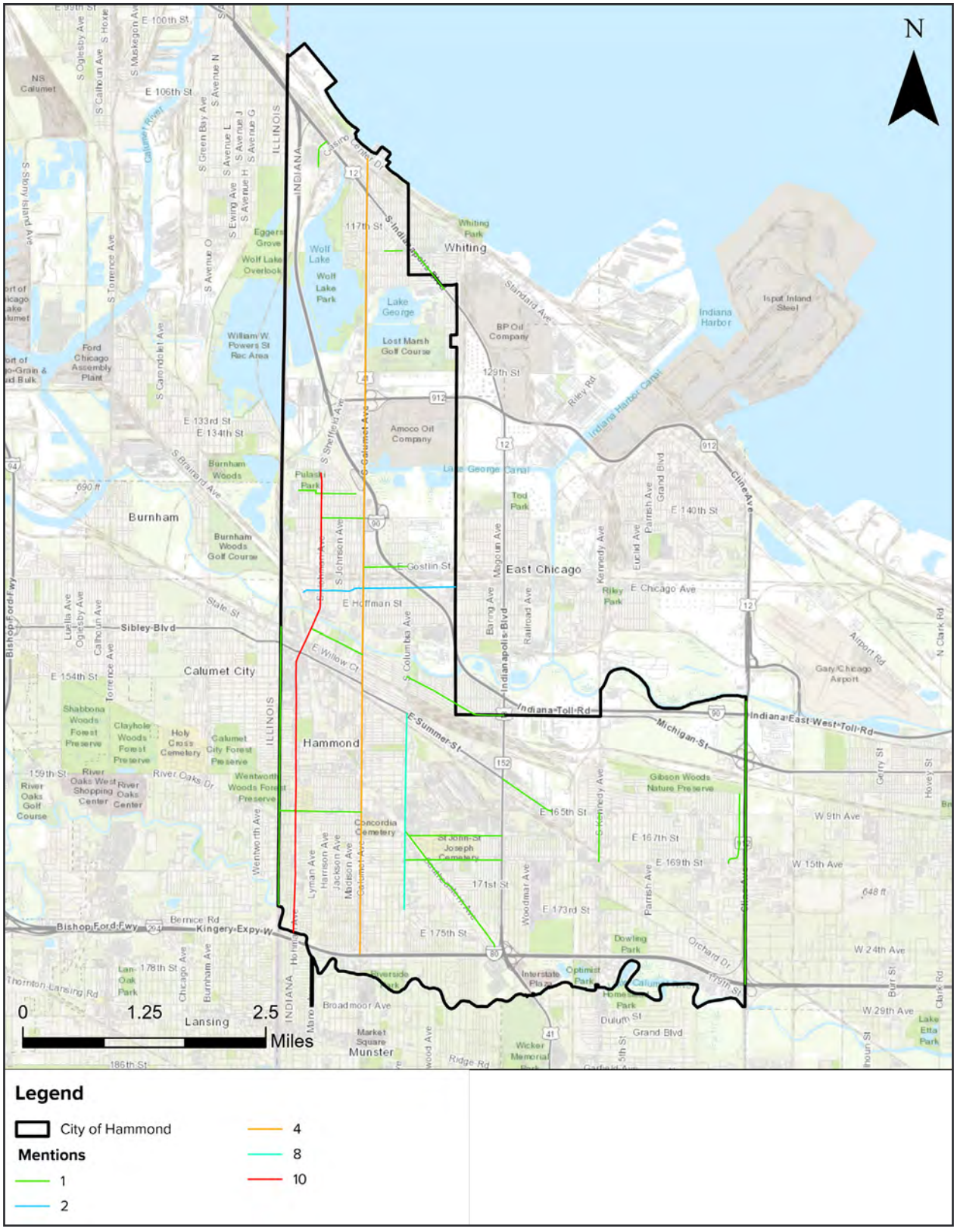
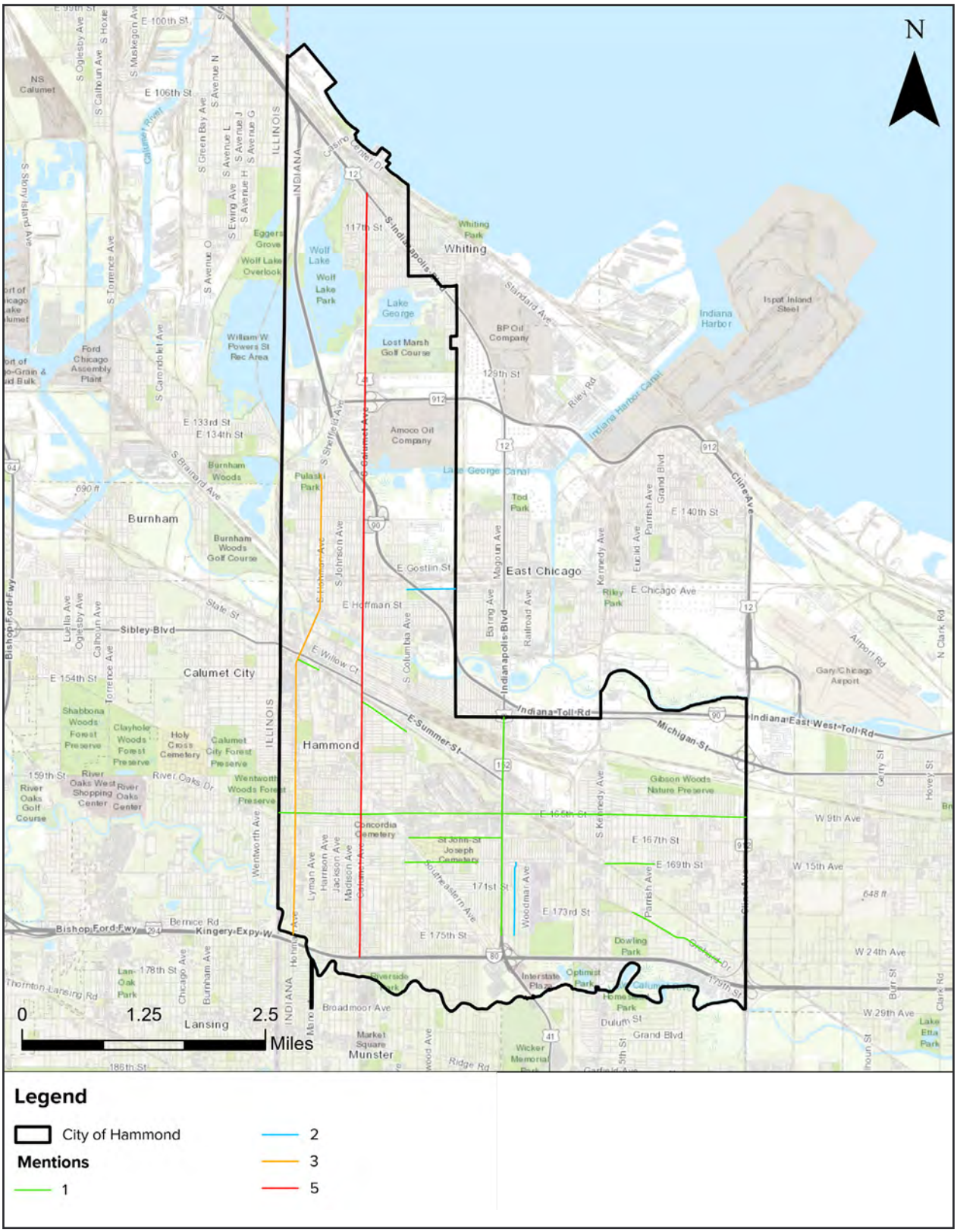


Figure 20: Unsafe Roadway Segments Perceived by Bicyclists and Pedestrians in Hammond, Indiana



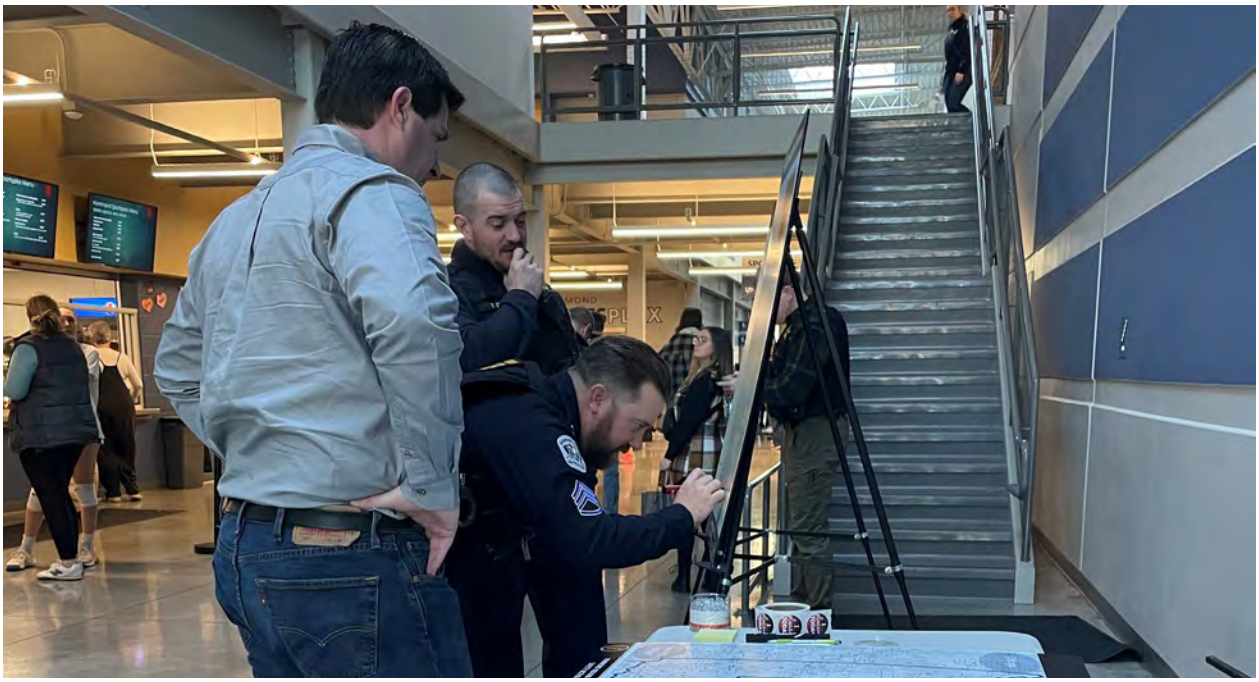
5.1.2 PUBLIC EVENTS

Volleyball Tournament – February 17, 2024.

The event occurred on February 17, 2024, from 8:00 AM to 8:00 PM. The consultant team was on site from 10:00 AM to 2:00 PM. People from Hammond and other surrounding cities attended the event. The event hosted various activities, including volleyball and soccer tournaments. The consultant team had a booth near the main entrance at the event. Three different interactive boards were designed to showcase the public at the event. The boards and results are described below. During the event, business cards with the QR code of the survey were also distributed.

- **Failure to Obey Traffic Signals and Signs:** Residents reported a consistent issue with drivers disregarding stop signs and traffic signals, leading to potential accidents and endangering pedestrians and other drivers.
- **Unsafe Speeding:** Residents reported speeding behaviors, particularly at intersections like 165th and Tennessee Ave.
- **Dangerous Railroad Crossings:** Several comments mentioned safety concerns regarding railroad crossings, such as inadequate signaling, lack of gates or lights, and poor visibility, leading to potential collisions.
- **Pedestrian Safety:** Concerns were raised about pedestrian safety, especially around areas like Morton High School, where students cross busy streets without proper infrastructure or signalization.
- **Confusing Road Layout:** Changes in road layout, such as offset lanes due to trails, are reported to confuse drivers and contribute to accidents.
- **Challenges with Expressway Access:** Residents reported difficulties accessing the road due to traffic merging from the expressway, leading to risky situations for drivers trying to turn onto the road.

Figure 21: City of Hammond – Volleyball Tournament – February 17, 2024



Source. American Structurepoint Inc.

5.1.2.1 UNSAFE INTERSECTIONS FOR MOTORISTS

The following is a list of unsafe intersections for motorists as per the feedback received during the event:

- Railroad Street – Calumet Avenue
- Calumet Avenue – Indianapolis Blvd
- Indianapolis Blvd – 117th Street
- Hohman Avenue – 141st Street
- Calumet Avenue – 141st Street
- Sohl Avenue – Highland Street
- Calumet Avenue – 173rd Street
- Indianapolis Blvd – 173rd and 175th Street
- Indianapolis Blvd – 165th Street
- Kennedy Avenue – 173rd Street

Figure 22: City of Hammond – Board: Unsafe Intersections for Drivers

Source. American Structurepoint Inc.

5.1.2.2 UNSAFE INTERSECTIONS FOR PEDESTRIAN/BICYCLIST/ TRANSIT USERS

The following is a list of unsafe intersections for pedestrians/ bicyclists/transit users as per the feedback received during the event:

- Indianapolis Blvd – 121st Street
- Sheffield Avenue – Calumet Avenue
- Calumet Avenue – 141st Street
- Calumet Avenue – Fayette Street
- Calumet Avenue – 173rd Street
- Kennedy Avenue – 169th Street
- Orchard Drive – Montana Avenue

Figure 23: City of Hammond – Board: Unsafe Intersections for Pedestrian/Bicyclist/Transit Users

Source. American Structurepoint Inc.

5.2 HOW PUBLIC INFORMATION WAS USED?

Intersections/roadways with safety issues identified by the community were analyzed and mapped in ArcGIS to illustrate the location of the safety issues. The identified location of intersections/roadways was used to understand where Hammond should focus first to resolve road safety issues. This information also helped identify potential projects that will help address safety problems for drivers, pedestrians, bicyclists, or transit users.

6. EQUITY CONSIDERATIONS

6. EQUITY CONSIDERATIONS

Environmental Justice (EJ) is a concept that emphasizes the equitable distribution of environmental benefits across different communities, mainly focusing on the equal treatment of low-income and minority populations.[2] When considering the City of Hammond and proposing new projects, there are several reasons why accounting for these communities is important, including equity consideration being an essential aspect of the SS4A action plan. The equity analysis considers social factors disproportionately impacting low-income communities and minorities. Here are some factors that can be viewed during an equity analysis:

HEALTH IMPACTS:

Low-income and minority communities are frequently exposed to higher levels of pollution, noise, and other environmental hazards. These exposures can lead to health concerns, including respiratory, cardiovascular, and other related illnesses. When planning transportation projects, it's crucial to assess potential health impacts and prioritize the well-being of vulnerable populations.

COMMUNITY ENGAGEMENT AND REPRESENTATION:

Environmental justice also ensures meaningful participation and representation of all community members in decision-making. Low-income and minority communities often face barriers to engagement, such as language barriers or lack of resources. By actively involving these communities in the planning and decision-making processes for transportation projects, the outcomes are more likely to be fair and considerate of their needs.

ECONOMIC IMPACTS:

Transportation projects can have economic implications for different communities. Low-income areas may be more heavily impacted by disruptions caused by construction or changes in traffic patterns. Additionally, the benefits of improved transportation infrastructure, such as increased property values or better access to job opportunities, should be distributed equitably to avoid further marginalization of minority populations.

CLIMATE CHANGE RESILIENCE:

Minority communities often face increased risks due to climate change impacts. When planning transportation projects, it's important to consider how these changes may disproportionately affect low-income and minority populations. Ensuring that the transportation infrastructure is resilient and adapted to climate change can contribute to the overall environmental justice goals.

EQUITABLE ACCESS TO OPPORTUNITIES:

Transportation is key to accessing education, employment, healthcare, and other essential services. Ensuring that transportation projects provide equitable access to these opportunities is vital for promoting social and economic justice. This implication includes considering the needs of those who rely on public transportation and may depend more on these services.

Accounting for low-income and minority communities in transportation projects in Hammond is essential for achieving environmental justice. It requires a comprehensive approach considering health impacts, community engagement, economic considerations, climate resilience, and equitable access to opportunities. By integrating these considerations into the planning and decision-making processes, cities can move towards a more sustainable and resilient future for all residents.

[2] Source: Learn About Environmental Justice | US EPA.

6.1 IDENTIFICATION OF UNDERSERVED COMMUNITIES – CITY OF HAMMOND

Environmental justice considerations were derived from the "Climate and Economic Justice Screening Tool." The US Council on Environmental Quality developed the Climate and Economic Justice Tool (Explore the map – Climate & Economic Justice Screening Tool). The tool illustrates disadvantaged census tracts across all 50 states and the District of Columbia. Communities are disadvantaged if they are in census tracts that meet the threshold for at least one of the following burden categories:

- **Climate change:** Communities are identified as disadvantaged if they are in census tracts at or above the 90th percentile for expected agricultural loss, building loss, flood risk, wildfire risk, or population loss and are at or above the 65th percentile for low-income.
- **Energy:** Communities are identified as disadvantaged if they are in census tracts at or above the 90th percentile for energy cost or high particulate matter (PM 2.5) concentrations in the air and are at or above the 65th percentile for low-income.
- **Health:** Communities are identified as disadvantaged if they are in census tracts at or above the 90th percentile for asthma, diabetes, or heart disease, or low overall life expectancy and are at or above the 65th percentile for low income.
- **Housing:** Communities are identified as disadvantaged if they are in census tracts at or above the 90th percentile for underinvestment, cost, lack of green space, lack of indoor plumbing or lead paint, and are at or above the 65th percentile for low income.
- **Legacy pollution:** Communities are identified as disadvantaged if they are in census tracts that have at least one abandoned mine land, formerly used defense sites, or are at or above the 90th percentile for proximity to hazardous waste facilities, proximity to Superfund sites (National Priorities List (NPL)), or proximity to Risk Management Plan (RMP) facilities and are at or above the 65th percentile for low-income.
- **Transportation:** Communities are identified as disadvantaged if they are in census tracts at or above the 90th percentile for diesel particular matter, transportation barriers, or proximity to high traffic volumes and are at or above the 65th percentile for low-income.
- **Water and wastewater:** Communities are identified as disadvantaged if they are in census tracts at or above the 90th percentile for underground storage tank releases or wastewater discharge and are at or above the 65th percentile for low-income.
- **Workforce development:** Communities are identified as disadvantaged if they are in census tracts at or above the 90th percentile for linguistic isolation, have high poverty or unemployment rates, have low levels of education, or are at or above the 65th percentile for low income.

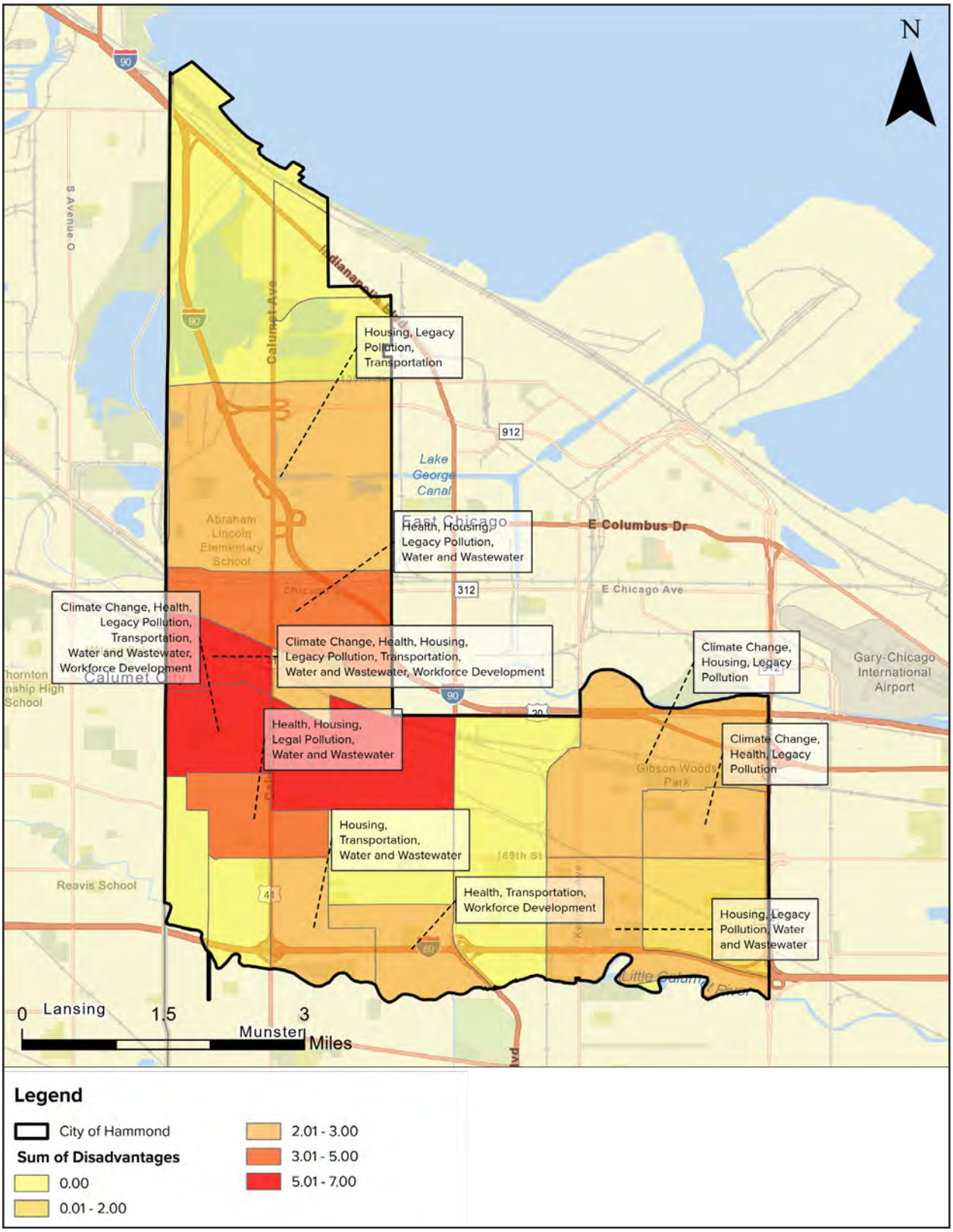
The following map illustrates that the city has several census tracts identified as disadvantaged under the Climate and Economic Justice methodology. Most disadvantages are concentrated in the city's center, primarily along the interstate highway I-90. Multiple of these census tracts score above two to three subcategories under the housing category, including scoring above lead paint, low income, and lack of green space. These disadvantaged tracts also scored above the health category under the following subcategories: asthma, diabetes, heart disease, low life expectancy, and or low income. Legacy pollution also contributes to the disadvantage of the city in the following subcategories: proximity to hazardous waste facilities, proximity to risk management plan facilities, proximity to superfund sites, and or low income. Other disadvantages include water and wastewater, workforce development, climate change, and transportation.

Several roadway segments within these disadvantaged areas register higher rates of injuries and fatalities, highlighting significant safety concerns. Notable segments include 169th Street from Columbia Avenue to Cline Service Road and 173rd Street from Calumet Avenue to Kennedy Avenue, indicating critical areas for safety improvement efforts. Calumet Avenue, spanning from 129th Street to 173rd Street, witnesses high traffic volumes and consequently experiences many crashes.

From an environmental justice perspective, census tracts along industrial railroads pose particular concerns due to transportation barriers and other challenges. These areas exhibit significant disparities, particularly in transportation accessibility. None of the census tracts in the city's northern area are disadvantaged.

Strategies that can be implemented to address environmental justice disadvantages could include fostering community involvement in decision-making processes related to infrastructure development, housing policies, and environmental initiatives. Empower residents to advocate for their needs and participate in the planning and implementing remediation strategies. Also, programs to address health disparities, including access to healthcare services, preventive care, and health education initiatives targeting vulnerable populations, should be implemented. Collaborate with local healthcare providers and community organizations to promote equitable health outcomes. It is important to consider different strategies to ensure equitable resource distribution and potential impacts on communities when developing and implementing land use, transportation, and environmental protection policies.

Figure 24: City of Hammond – Economic Justice Areas



7. POLICY AND PROCESS CHANGES

7. POLICY AND PROCESS CHANGES

A policy review for the City of Hammond identified several opportunities to improve transportation safety. The consulting team conducted a thorough examination of existing policy documents and regulations, focusing on enhancing access to public roads while promoting responsible development and redevelopment within the city's limits.

Existing policies already contain significant provisions for road safety, such as requiring drivers to follow the instructions of official traffic-control devices unless otherwise directed by law enforcement. The policies also prohibit unauthorized signs, signals, or markings that could confuse or obstruct drivers, and emphasize the role of sidewalks and curbs in promoting pedestrian safety and smooth traffic flow. By setting clear rules, supported by effective signage and enforcement, Hammond aims to reduce traffic incidents and create safer streets for all users.

The review also highlighted the need to assess and refine standards related to street management and traffic safety signage to enhance safety for pedestrians and cyclists, improve connectivity, and minimize risks. These recommendations should be integrated into future policy and regulatory documents to guide city planning. For example, the City's Comprehensive Plan can address broad goals for improving safety, while the City's Engineering standards can include technical specifications for implementation. Policy and regulatory documents are typically updated regularly, and this review's recommendations should inform these updates to maintain transparency and address safety concerns while balancing other community needs.

Incorporating these recommendations requires collaboration with relevant stakeholders, additional research where necessary, and aligning proposed safety measures with broader goals for accessibility and sustainable development. This approach ensures that safety improvements are effectively implemented and support Hammond's vision for a safer, more connected community.

Here are the general principles and associated recommendations that arise from this review:

1. ENSURE SAFE TRAFFIC FLOW

- Establish policies to ensure safe traffic flow on city streets, including adequate spacing for driveways, visibility at intersections, and appropriate sight distances for vehicle entrances.

2. PROMOTE SAFE AND EFFICIENT INFRASTRUCTURE

- Encourage developers to create access roads to collector or local streets, reducing direct access to arterial streets and minimizing curb cuts.
- Integrate bicycle and pedestrian paths into the design of parking areas to promote safety for all users.

3. ENHANCE CONNECTIVITY AND MINIMIZE RISKS

- Advocate for the alignment of new intersections with existing ones on the opposite side of the street to reduce conflicts.
- Discourage the creation of dead-end streets, and when unavoidable, require cul-de-sacs to ensure safe vehicle turning.

4. FOSTER A SAFE PEDESTRIAN ENVIRONMENT

- Mandate the inclusion of sidewalks or multi-use paths in new street developments to promote pedestrian safety.
- Require that parking and loading areas are designed to prevent unloading vehicles from maneuvering on public streets.

5. IMPROVE STREET LAYOUT AND DESIGN

- Recommend intersections be at 90-degree angles to improve visibility and safety. Policies should also discourage intersections involving more than two streets.
- Create standards to ensure that new street developments enhance connectivity, reducing the need for excessive intersections or curb cuts.

6. UPGRADE EXISTING INFRASTRUCTURE PROACTIVELY

- Develop criteria for proactive road improvements based on development intensity, traffic generation, and street classification. Encourage developers to contribute to infrastructure upgrades when new developments are planned.

8. PROJECTS AND STRATEGIES

8. PROJECTS AND STRATEGIES

The SS4A Action Plan must contain effective strategies and project recommendations to achieve Vision Zero. Investments in engagement, education, and infrastructure all play a critical role in reducing fatal and serious injury crashes in the City of Hammond. We have conducted an extensive analysis of the city's crash data (Section 4), developed an extensive engagement process (Section 5), and reviewed its existing program and policies (Section 7) which culminate into the following project recommendations and strategies.

In March 2024, the City of Hammond passed a Vision Zero resolution with the goal of reducing fatal and serious injury crashes by 40% by the year 2035. Vision Zero is not just a goal. It reframes the way the City of Hammond views transportation safety. Vision Zero promotes thinking about transportation safety holistically, considering all transportation users, and incorporating strategies and recommendations that are more than just infrastructure improvements.

The SS4A Action Plan recommendations were developed through engagement with the Steering Committee. The SS4A Action Plan is about people, and it is important that the recommendations of the plan reflect that.

In developing recommendations for the SS4A Action Plan, we reviewed strategies to reduce fatal and serious injury (FSI) crashes endorsed by state and federal officials. The plan incorporates USDOT's 28 Proven Safety Countermeasures and recommendations that are proven to reduce fatalities and serious injuries on United States roadways effectively. These proven countermeasures (PSCs) are broken into five categories: speed management, pedestrian and bike, roadway departure, intersections, and crosscutting. More information on these countermeasures can be found in ***Appendix E*** of this report.

8.1 SCORING CRITERIA FOR SS4A PROJECT PROPOSALS

A list of potential projects has been compiled in the development of the City of Hammond's safety action plan, combining safety data, analysis, equity considerations, stakeholder and community input, and proven safety countermeasures. The resulting project list serves as a roadmap for prioritizing and executing safety projects aimed at achieving Vision Zero within the city.

PROJECT IDENTIFICATION METHODOLOGY

Corridor segments and intersections identified within the High Injury Network (HIN) automatically qualified for inclusion in the project list. This strategic approach targeted areas with a history of recurring safety issues, supported by robust crash data analysis. The HIN, pinpointing locations with the highest fatal and injury crash frequencies, formed a solid foundation for identifying areas most in need of safety enhancements.

Additionally, the project list incorporates locations where safety projects have recently been completed or are nearing implementation. Some of these projects align with areas identified through safety analysis as high-crash locations, demonstrating proactive safety improvement efforts by transportation agencies. Moreover, input from the steering committee, leveraging their extensive knowledge of transportation safety needs in Hammond, has enriched the project list.

Each location on the preliminary project list underwent evaluation across four emphasis areas outlined in the plan:

- Vulnerable User Fatal and Injury Crashes
- Fatality & Injury Crash Rate
- Environmental Justice
- Public Input

While all four elements are considered vital to the development of the City of Hammond's Safety Action Plan, collaboration among the steering committee defined the weight of each element in the project scoring criteria to be used. The resulting scoring system placed greater emphasis on elements that the steering committee deemed to be of greater importance in shaping its plan.

Furthermore, a specific scale was applied to evaluate each element, considering the range of values within each category. A points system was then devised to score the projects, assigning a maximum total number of points in each category based on its relative importance in the scoring system.

The weighted scoring system used to evaluate potential projects is depicted in ***Table 10***.

Table 10: Scoring Criteria for SS4A Project Proposals

PEDESTRIAN & BICYCLE FATAL & INJURY CRASHES

The SS4A program targets improving safety and mobility for vulnerable road users (VUEs).

Criteria: Locations with documented crashes, involving a pedestrian or bicyclist or both, contribute to this category's score. Property damage crashes (no injury) are excluded.

Projects were scored on the individual site's total pedestrian/bicycle crashes.

30% weightage

FATALITY & INJURY CRASH RATE

Taking action toward Vision Zero involves addressing locations that have a recurring crash history. The plan intends to implement safety countermeasure projects at those locations that have the highest potential for safety improvement.

Criteria: Locations in the high injury network (HIN) or a crash "hotspot" identified through the SS4A safety analysis.

Projects were scored on the individual site's fatal and injury (F&I) crash frequency rate.

30% weightage

ENVIRONMENTAL JUSTICE

The SS4A program prioritizes equitable transportation access and outcomes for all community members.

Criteria: Projects located within or immediately adjacent to Environmental Justice (EJ) areas, as identified by the equity analysis, receive points for promoting inclusive transportation access and addressing disparities in underserved communities.

Projects were scored on the individual site location relative to an EJ area.

20% weightage

PUBLIC FEEDBACK

The CSAP is greatly dependent on the community's input due to their unique knowledge and experience with transportation issues within the City. Most importantly, the community is the end user of the City's transportation facilities.

Criteria: Location was identified as a safety concern through the public engagement survey or previously noted by the public through the steering committee's input.

Projects were scored on the number of mentions of individual sites in the public engagement survey.

20% weightage

8.2 PROJECT OVERVIEW

The compiled projects list was scored in accordance with the criteria presented in Section 7.1. The weighted total score of the project defined implementation priority. A 3-tier system was assigned for projects based on the range of scores to give the highest priority to projects that obtained the greater total weighted scores. Therefore, projects that were determined to have the highest need for improvement will be expected to have the highest priority for funding and implementation.

The tier system to correspond with a tentative implementation timeframe is defined as follows:

- **Tier 1:** 21-30 points, Implementation 2024-2026 (Short-term/Highest priority)
- **Tier 2:** 11-20 points, Implementation 2027-2030 (Interim/Medium priority)
- **Tier 3:** Less than or equal to 10 points, Implementation 2030+ (Long-term/Lower priority)

The resulting projects with their total weighted scores, implementation timeframe, and proposed countermeasures for segments are summarized in ***Table 11*** and for intersections in ***Table 12***. The complete project list with scoring for individual criteria and the scoring key is provided in the ***Appendix F*** of this report.

Table 11. Comprehensive Safety Action Plan Projects Scoring Summary – Roadway Segments

PROJECT LOCATION	WTD. TOTAL SCORE	RANK	TIER	PROPOSED COUNTERMEASURES
Columbia Avenue - From Gostlin Street to 173rd Street	27	1	Tier 1	Install median with directional openings, add turn lanes, install mid-block crosswalks with PHB/RRFBs
Hohman Avenue - From Gostlin Street to 165th Street	24	2	Tier 1	Implement road diets/complete streets, install median with directional openings and turn lanes, Access Management, Install mid-block crosswalks with PHB/RRFBs
*Calumet Avenue - From 129th Street to 173rd Street	24	3	Tier 1	Implement road diets/complete streets, install median with directional openings and turn lanes, Access Management, install mid-block crosswalks with PHB/RRFBs, Install sidewalk/SUP on both sides of the road
169th Street - From Columbia Avenue to Cline Avenue Service Road	21	4	Tier 1	Install median with directional openings, add turn lanes, install mid-block crosswalks with PHB/RRFBs
165th Street - From State Line Road to Kennedy Avenue	17	5	Tier 2	Implement road diets/complete streets, install median with directional openings and turn lanes, Access Management, install mid-block crosswalks with PHB/RRFBs, Install sidewalk/SUP on both sides of the road
173rd Street - From Calumet Avenue to Kennedy Avenue	14	6	Tier 2	Implement road diets/complete streets, install median with directional openings, add turn lanes, install mid-block crosswalks (with PHBs/RRFBs)
*Indianapolis Blvd. - From Summer Street to 173rd Street	14	7	Tier 2	Implement road diets/complete streets, install median with directional openings and turn lanes, Access Management, Install mid-block crosswalks with PHB/RRFBs, Install sidewalk/SUP on both sides of the road
Kennedy Avenue - From Michigan Street to 169th Street	4	8	Tier 3	Implement road diets/complete streets (underway), Install turn lanes, Install mid-block crosswalks with PHB/RRFBs

*Denotes projects within the joint jurisdiction (City and INDOT)

See Glossary for the acronyms

Table 12. Comprehensive Safety Action Plan Projects Scoring Summary – Intersections

PROJECT LOCATION	WTD. TOTAL SCORE	RANK	TIER	PROPOSED COUNTERMEASURES
*165th Street & Calumet Ave	24	1	Tier 1	Crosswalk visibility enhancements, Implement LPI, evaluate yellow change interval and signal re-timing, access management within functional area of intersection, Install reduced left-turn conflict intersection
*Hammond Central High School - Calumet Ave & Highland St	23	2	Tier 1	Install retroreflective backplates, Implement LPI, crosswalk visibility enhancements, Install Protected Left Turn Phasing (with FYA), Install green PMs and lane delineation for bike lanes through the intersection, Install speed feedback signs to reinforce SL through school zone, Restripe school zone pavement markings
169th Street and Kennedy Avenue	23	3	Tier 1	Install retroreflective backplates, Implement LPI, crosswalk visibility enhancements, Install Protected Left Turn Phasing (with FYA), Consider installing dilemma zone detection
*Gostlin Street and Calumet Avenue	23	4	Tier 1	Implement LPI, crosswalk visibility enhancements, evaluate yellow change interval and signal re-timing
Michigan Street and Columbia Avenue	22	5	Tier 1	Install retroreflective backplates, Implement LPI, crosswalk visibility enhancements, Install Protected Left Turn Phasing (with FYA)
165th Street and Hohman Avenue	22	6	Tier 1	Install retroreflective backplates, Implement LPI, crosswalk visibility enhancements, Install Protected Left Turn Phasing (with FYA), Install speed feedback sign
Sibley St & Hohman Ave (under construction)	21	7	Tier 1	Implement LPI, crosswalk visibility enhancements, Evaluate sight distance on the north leg due to the upstream bridge, install advance flashing yellow warning signs when traffic is queued
*165th Street and Indianapolis Blvd.	21	8	Tier 1	Install RR crossing gates, Install retroreflective backplates, Install Protected Left Turn Phasing (with FYA), Install speed feedback sign
169th Street and Grand Avenue	21	9	Tier 1	Install retroreflective backplates, Implement LPI, crosswalk visibility enhancements, Install Protected Left Turn Phasing (with FYA), Install green PMs and lane delineation for bike lanes through the intersection, Install speed feedback signs to reinforce SL through school zone, Restripe school zone pavement markings
Gostlin Street and Columbia Avenue	19	10	Tier 2	Install retroreflective backplates, Implement LPI, crosswalk visibility enhancements, Install Protected Left Turn Phasing (with FYA), Consider installing dilemma zone detection
169th Street and Columbia Avenue	18	11	Tier 2	Install retroreflective backplates, Implement LPI, crosswalk visibility enhancements, Install Protected Left Turn Phasing (with FYA), Consider installing dilemma zone detection

*Denotes projects within the joint jurisdiction (City and INDOT)

See Glossary for the acronyms

Table 12 (cont.) Comprehensive Safety Action Plan Projects Scoring Summary – Intersections

PROJECT LOCATION	WTD. TOTAL SCORE	RANK	TIER	PROPOSED COUNTERMEASURES
Gostlin Street and Hohman Avenue	18	12	Tier 2	Consider conversion to roundabout, install retroreflective backplates, Implement LPI, crosswalk visibility enhancements, Install Protected Left Turn Phasing (with FYA), Consider installing dilemma zone detection
165th Street and Columbia Avenue	17	13	Tier 2	Install retroreflective backplates, Implement LPI, crosswalk visibility enhancements, Install Protected Left Turn Phasing (with FYA), Install curb bump-outs, Install speed feedback sign
173rd Street and Columbia Avenue	17	14	Tier 2	Install retroreflective backplates, Implement LPI, crosswalk visibility enhancements, Install Protected Left Turn Phasing (with FYA), Install curb bump-outs, install exclusive left-turn lanes/ improve lane delineation
*173rd Street and Indianapolis Blvd	17	15	Tier 2	Install retroreflective backplates, Implement LPI, crosswalk visibility enhancements, Install Protected Left Turn Phasing (with FYA), Consolidate adjacent driveways within functional area of intersection (access management), Improve lane delineation, Install speed feedback sign
169th Street and New Hampshire Avenue	14	16	Tier 2	Install directional median and crosswalk visibility enhancements
*Summer Street and Indianapolis Blvd	14	17	Tier 2	Install retroreflective backplates, Implement LPI, crosswalk visibility enhancements, Install Protected Left Turn Phasing (with FYA), Consolidate adjacent driveways within functional area of intersection (access management), Improve lane delineation, Install speed feedback sign
150th Street and Columbia Avenue	13	18	Tier 2	Install retroreflective backplates, Implement LPI, crosswalk visibility enhancements, Install curb bump-outs, Install Protected Left Turn Phasing (with FYA), Install exclusive left-turn lanes on Columbia Ave, Consider installing dilemma zone detection
*129th Street and Calumet Avenue	12	19	Tier 2	Install retroreflective backplates, Install Protected Left Turn Phasing (with FYA), Install speed feedback sign
*169th Street and Indianapolis Blvd.	11	20	Tier 2	Install retroreflective backplates, Implement LPI, crosswalk visibility enhancements, Install Protected Left Turn Phasing (with FYA), Consolidate adjacent driveways within functional area of intersection (access management), Improve lane delineation, Install speed feedback sign
169th Street and Parrish Avenue	11	21	Tier 2	Install retroreflective backplates, Implement LPI, crosswalk visibility enhancements, Install Protected Left Turn Phasing (with FYA)
*119th Street and Calumet Avenue	11	22	Tier 2	Install retroreflective backplates, Implement LPI, crosswalk visibility enhancements, Install Protected Left Turn Phasing (with FYA), Consolidate adjacent driveways within functional area of intersection (access management), Improve lane delineation, Install speed feedback sign

*Denotes projects within the joint jurisdiction (City and INDOT)

8.3 STRATEGY RECOMMENDATIONS

While infrastructure plays an important role in achieving Hammond's Vision Zero goal, strategies that focus on enforcement, education, and engagement are just as critical to adopting a holistic multi-disciplinary approach to safety. To develop strategies for the SS4A Action Plan, we reviewed the historical crash data records, public feedback, and state and federal resources.

The initial twelve strategies, categorized by the Safe System Element they address, are summarized in ***Table 13***. Each strategy comprises various components aimed at furthering its objectives. For a more comprehensive understanding of the proposed actions, anticipated implementation timelines, and the departments accountable for execution—as well as supporting departments where applicable—please refer to the subsequent sections. It's worth noting that the Steering and Implementation Committee reserves the right to amend or refine these strategies based on evolving information, community input, considerations of equity impacts, and insights gleaned from ongoing evaluations.

Table 13: City of Hammond CSAP Comprehensive Safety Strategies

NO.	STRATEGY	SAFE SYSTEM ELEMENT ADDRESSED
1	Launch a Comprehensive Safety Campaign	Safe Users, Safe Vehicles, Safe Speeds
2	Implement Measures to Reduce Speeding and Aggressive Driving Citywide	Safe Users, Safe Vehicles, Safe Speeds
3	Foster a Culture of Shared Responsibility within the City	Safe Users, Safe Vehicles, Safe Speeds
4	Target High Injury Areas to Reduce Severe Crashes and Speeds	Safe Users, Safe Vehicles
5	Transform Residential Streets into Safe, Low-Speed, Low-Stress Environments	Safe Users, Safe Streets
6	Develop Commercial Streetscapes Promoting Safe Speeds and Crossings	Safe Users, Safe Streets
7	Implement Systemic Improvements at High-Risk Locations	Safe Users, Safe Vehicles, Safe Speeds
8	Establish Safe, Accessible Networks for Pedestrians, Cyclists, and Assistive Device Users	Safe Users, Safe Streets
9	Ensure Equity in Access to Safe Vehicles	Safe Users, Safe Vehicles
10	Rapid Response to Fatal Crashes	Safe Users, Safe Vehicles, Safe Speeds, Post-Crash Care
11	Utilize Data and Technology to Understand High-Risk Behaviors and Streets	Safe Users, Safe Vehicles, Safe Speeds, Safe Streets
12	Monitor Progress towards Safety Goals	Safe Users, Safe Vehicles, Safe Speeds, Safe Streets, Post-Crash Care

STRATEGY 1: LAUNCH A COMPREHENSIVE SAFETY CAMPAIGN

Establishing a comprehensive safety culture throughout Hammond, embraced by all sectors including the public, initiates raising awareness about the city's significant crash challenges, their impact, causative factors, and preventive measures. Campaign messages, disseminated across diverse platforms, must center on severe crashes, and emphasize the detrimental impact of speed on crash severity. Our messaging strategy should be tailored to inspire the behavioral shifts essential for mitigating and eradicating severe crashes.

Table 14: Strategy 1 Action Items, Implementation Timeframe, and Responsible Department(s)

ACTION ITEM	TIMEFRAME	RESPONSIBLE DEPARTMENT(S)
Create a culturally relevant traffic safety campaign aimed at reducing severe injuries and fatalities by addressing speeding and dangerous driving behaviors such as running red lights and failing to yield to pedestrians.	Within the next 1-2 years	City of Hamond (Engineering Department), Media Services
Prioritize driver education and awareness through civilian staff warnings and diversion programs before enforcing fines at high-crash locations and areas with heightened dangerous driving behaviors.	Within the next 1-2 years	State or Local Law Enforcement Agencies, Hammond School Board, Local Chambers of Commerce
Communicate information about the City's speed limits and any future changes to speed limits through social media and other channels available to the City.	Within the next 1-2 years	City of Hammond (Engineering Department), Media Services
Expand the Safe Routes to School in-class education program to high schools, focusing on safe driving behaviors and alternatives to driving.	Within the next 1-2 years	Hammond Central Schools, Local Hospitals

STRATEGY 2: IMPLEMENT MEASURES TO REDUCE SPEEDING AND AGGRESSIVE DRIVING CITYWIDE

The city recognizes that solely relying on messaging won't ensure all drivers slow down. Therefore, the city is committed to designing our streets to encourage safe speeds for pedestrians, cyclists, and those using assistive devices. This includes adjusting posted speed limits to align with our desired target speeds for safer streets. Additionally, we'll explore alternative enforcement approaches, carefully considering their equity implications.

Table 15: Strategy 2 Action Items Implementation Timeframe, and Responsible Department(s)

ACTION ITEM	TIMEFRAME	RESPONSIBLE DEPARTMENT(S)
Ensure that adequate signage is placed on major streets to alert drivers of the designated speed limit.	Within the next 1-2 years	City of Hammond (Engineering Department)
Establish zones with reduced speed limits by implementing changes to speed regulations and implementing road designs that naturally encourage compliance, particularly in areas with a high concentration of vulnerable road users such as schools, parks, community centers, and housing facilities for seniors and transitional residents.	Within the next 3+ years	City of Hammond (Engineering Department)
Evaluate the fairness, uniformity, effectiveness, and equity considerations of existing traffic enforcement methods, fines, and legal procedures.	Within the next 3+ years	City of Hammond (Department of Law)
Explore the potential implementation of automated systems or unarmed civilian enforcement to address dangerous driver behaviors like speeding, drawing inspiration from initiatives in other US cities.	Within the next 3+ years	City of Hammond (Engineering Department), State or Local Law Enforcement Agencies

STRATEGY 3: FOSTER A CULTURE OF SHARED RESPONSIBILITY WITHIN THE CITY

The Safe System Approach underscores the shared responsibility in reducing severe crashes, emphasizing that everyone has a role to play. Hammond has a unique opportunity to take the lead by fully embracing the goal of eliminating severe crashes and integrating the Safe System approach into all city services and operations. Equally crucial is the role of City employees in setting an example through their behaviors. If the city is committed to achieving the citywide goal of eliminating traffic crashes, it's imperative that the city holds itself accountable and refuses to tolerate unsafe driving practices among city employees.

Table 16: Strategy 3 Action Items Implementation Timeframe, and Responsible Department(s)

ACTION ITEM	TIMEFRAME	RESPONSIBLE DEPARTMENT(S)
Train and educate City staff, contractors, and government partners on Safe System concepts and practices to raise awareness.	Within the next 1-2 years	City of Hammond (Engineering Department)
Create and execute a driver training program for employees who operate vehicles during work duties, focusing on safe driving practices, particularly regarding speed and interactions with pedestrians, cyclists, scooter riders, and individuals using assistive devices.	Within the next 3+ years	City of Hammond (Engineering Department), State or Local Law Enforcement Agencies

STRATEGY 4: TARGET HIGH INJURY AREAS TO REDUCE SEVERE CRASHES AND SPEEDS

For a long time, severe crashes have been seen as an unavoidable part of operating, making the city's goal difficult to achieve. However, by investing in the HIN, we not only have the chance to significantly reduce severe crashes but also to prove that eliminating roadway fatalities and serious injuries is achievable. As we enhance the HIN, we must assess the extent of our progress and adjust our priorities as needed to ensure we continue to focus on the most valuable safety investments.

Table 17: Strategy 4 Action Items Implementation Timeframe, and Responsible Department(s)

ACTION ITEM	TIMEFRAME	RESPONSIBLE DEPARTMENT(S)
Integrate the High Injury Network (HIN) into the yearly major street resurfacing plan and maintain safety enhancements during resurfacing projects.	Within the next 1-2 years	City of Hammond (Engineering Department)
Review all High Injury Network (HIN) corridors managed by the City for safety enhancements and execute a minimum of one corridor safety project annually. These projects will utilize a blend of quick-delivery enhancements like striping and signal adjustments alongside capital investments such as RRFBs, curb extensions, and refuge islands.	Within the next 1-2 years	City of Hammond (Engineering Department)
Regularly update the High Injury Network (HIN) every 3 to 5 years using current crash data to pinpoint new areas for enhancement and showcase successful declines in severe and fatal crashes.	Within the next 3+ years	City of Hammond (Engineering Department)

STRATEGY 5: TRANSFORM RESIDENTIAL STREETS INTO SAFE, LOW-SPEED, LOW-STRESS ENVIRONMENTS

Although most severe crashes happen on busy arterial and collector streets, the city must prioritize safety on low-traffic residential streets, which serve as essential pathways for pedestrians and cyclists accessing neighborhood amenities like parks and schools in Hammond.

Table 18: Strategy 5 Action Items, Implementation Timeframe, and Responsible Department(s)

ACTION ITEM	TIMEFRAME	RESPONSIBLE DEPARTMENT(S)
Continue seeking federal and state Safe Routes to School (SRTS) grants for safety enhancements around local schools, and explore collaborations with other city departments to implement broader safety measures in upcoming years.	Ongoing	City of Hammond (Engineering Department & Department of Planning and Development)
Assess the influence of freight and heavy trucks on traffic safety, especially in residential areas, and create measures and standards to address unsafe conditions.	Within the next 1-2 years	City of Hammond (Engineering Department), Local Chambers of Commerce
Implement a trial Slow Street Network initiative and assess its effectiveness using safety data and feedback from residents.	Within the next 3+ years	City of Hammond (Engineering Department)

STRATEGY 6: DEVELOP COMMERCIAL STREETSCAPES PROMOTING SAFE SPEEDS AND CROSSINGS

To maximize the benefits of the commercial streetscapes in Hammond, it's crucial to create inviting environments that cater to all individuals, where economic vitality, social interaction, and community development thrive without being compromised by hazardous street conditions.

Table 19: Strategy 6 Action Items, Implementation Timeframe, and Responsible Department(s)

ACTION ITEM	TIMEFRAME	RESPONSIBLE DEPARTMENT(S)
Include speed reduction measures in all streetscape initiatives and adjust speed limits to align with target speeds whenever possible.	Within the next 1-2 years	City of Hammond (Engineering Department)
Broaden the criteria for selecting streetscape projects to encompass areas with elevated severe crash rates and risky roadway characteristics.	Within the next 1-2 years	City of Hammond (Engineering Department), Mayor's Office

STRATEGY 7: IMPLEMENT SYSTEMIC IMPROVEMENTS AT HIGH-RISK LOCATIONS

The review of severe crashes, vulnerable road users, and high-risk road attributes reveals opportunities for significant investments in preemptive measures to prevent severe crashes. Acting swiftly, the city can implement and evaluate new countermeasures while refining internal procedures to enhance safety.

Table 20: Strategy 7 Action Items, Implementation Timeframe, and Responsible Department(s)

ACTION ITEM	TIMEFRAME	RESPONSIBLE DEPARTMENT(S)
Deploy and evaluate rapid implementation of countermeasures matched for crash types identified in Section 3 of the report.	Within the next 3+ years	City of Hammond (Engineering Department)
Expedite systemic safety improvements through the Right of Way permitting process.	Within the next 3+ years	City of Hammond (Engineering Department)

STRATEGY 8: ESTABLISH SAFE, ACCESSIBLE NETWORKS FOR PEDESTRIANS, CYCLISTS, AND ASSISTIVE DEVICE USERS

Through the adopted resolution, the city has pledged to guarantee safe and convenient mobility for all residents of Hammond, regardless of their mode of transportation. Recognizing the increased vulnerability of pedestrians, cyclists, and individuals using assistive devices, we are dedicated to intentionally designing our streets to facilitate their safe movement to desired destinations.

Table 21: Strategy 8 Action Items, Implementation Timeframe, and Responsible Department(s)

ACTION ITEM	TIMEFRAME	RESPONSIBLE DEPARTMENT(S)
Improve lighting at pedestrian crossings.	Within the next 3+ years	City of Hammond (Engineering Department)
Enhance safety at intersection pedestrian crossings with proven measures like curb extensions, refuge islands, high-visibility crosswalk markings, signage, signals, and beacons.	Within the next 3+ years	City of Hammond (Engineering Department)
Install mid-block crossings between major pedestrian areas where crossing distances between existing signals or enhanced crossings are impractical.	Within the next 3+ years	City of Hammond (Engineering Department)

STRATEGY 9: ENSURE EQUITY IN ACCESS TO SAFE VEHICLES

Explore avenues to enhance the safety of our existing vehicle fleet in Hammond, ensuring that all residents, including those who cannot afford new vehicles or choose not to drive, are accounted for in our safety initiatives.

Table 22: Strategy 9 Action Items, Implementation Timeframe, and Responsible Department(s)

ACTION ITEM	TIMEFRAME	RESPONSIBLE DEPARTMENT(S)
Create concise policies regarding the deployment and usage of micromobility devices.	Within the next 3+ years	City of Hammond (Engineering Department)
Promote accessible and attractive alternatives to owning personal vehicles, such as shared mobility, public transit, walking, and cycling, through investments, pilot initiatives, subsidies for low-income individuals, and incentives.	Within the next 3+ years	City of Hammond (Engineering Department), Local Transit Companies

STRATEGY 10: RAPID RESPONSE TO FATAL CRASHES

As the city enacts the safety plan and fosters collaborations and a collective safety mindset among various sectors and the community, it recognizes that unfortunate crashes may still happen. It's crucial to not only react to severe crashes but also to increase the understanding of their causes and effects.

Table 23: Strategy 10 Action Items, Implementation Timeframe, and Responsible Department(s)

ACTION ITEM	TIMEFRAME	RESPONSIBLE DEPARTMENT(S)
Regularly provide the public and decision-makers with access to statistics regarding fatal crashes.	Within the next 1-2 years	City of Hammond (Engineering Department), Media Services
Implement safety enhancements at locations where fatal crashes have occurred.	Within the next 3+ years	City of Hammond (Engineering Department)
Work with medical experts to merge hospital and crash data, enhancing the understanding of severe crash demographics, enhancing behavioral intervention effectiveness, and accessing additional funding streams.	Within the next 1-2 years	City of Hammond (Engineering Department), Local Health Partners Foundation
Explore traffic signal priority measures for emergency vehicles to expedite and ensure safer response times to crashes and medical emergencies.	Within the next 3+ years	City of Hammond (Engineering Department), Local Health Partners Foundation

STRATEGY 11: UTILIZE DATA AND TECHNOLOGY TO UNDERSTAND HIGH-RISK BEHAVIORS AND STREETS

Hammond relies on police reports to gauge the severity, location, and nature of severe and fatal crashes. However, this data source offers only a partial view of high-risk behaviors and may overlook crucial opportunities for intervention. To comprehensively evaluate and address these areas, Hammond must access additional relevant data from various existing and emerging sources to enhance safety planning, evaluation, and monitoring efforts.

Table 24: Strategy 11 Action Items, Implementation Timeframe, and Responsible Department(s)

ACTION ITEM	TIMEFRAME	RESPONSIBLE DEPARTMENT(S)
Gather and centralize data on severe crashes, speeds, and risky driving behaviors to gain deeper insights into current and potential locations of severe crashes and their impact on road users.	Within the next 1-2 years	City of Hammond (Engineering Department)
Enhance data collection and analysis techniques to assess the impact of countermeasures efficiently through customized, streamlined, and automated tools and dashboards.	Within the next 1-2 years	City of Hammond (Engineering Department)
Obtain subscription to big data analytics company such Streetlight/INRIX to determine where and when speeding occurs throughout the city.	Within the next 3+ years	City of Hammond (Engineering Department)

STRATEGY 12: MONITOR PROGRESS TOWARDS SAFETY GOALS

Enhancing road safety in Hammond relies on its capacity to learn from its initiatives and enhance the procedures continually. Evaluation serves as a means of accountability. Further details on the evaluation methods, progress tracking, and coordination of implementation are outlined in the progress and transparency section that follows.

Table 25: Strategy 12 Action Items, Implementation Timeframe, and Responsible Department(s)

ACTION ITEM	TIMEFRAME	RESPONSIBLE DEPARTMENT(S)
Annually review the progress of the Comprehensive Safety Action Plan (CSAP) strategies, presenting the findings to the Steering & Implementation Committee, Mayor, and City Council. Assess the need for updates to the CSAP based on the evaluation results.	Within the next 1-2 years	City of Hammond (Engineering Department)
Annually assess the effectiveness of two corridor safety projects by analyzing crash data, gathering resident feedback, and utilizing other relevant data sources. Identify any necessary further improvements based on the evaluation results.	Within the next 1-2 years	City of Hammond (Engineering Department)

9. PROGRESS AND TRANSPARENCY

9. PROGRESS AND TRANSPARENCY

This CSAP serves as a detailed plan to achieve the regional goal of reducing fatal and serious injury crashes by 40% in the City of Hammond by the year 2035. While this goal is within reach, it acknowledges the considerable effort needed to change behaviors and implement systemic changes.

Many strategies outlined in the CSAP can be executed within a short timeframe, while others may require longer-term or ongoing efforts. It's important to understand that completing all strategies within specific timeframes may not be realistic, and our focus should instead be on continuous adaptation for effectiveness and equity.

The CSAP aims to establish a comprehensive safety program with a strong framework for monitoring and evaluation to demonstrate incremental progress each year. It also emphasizes the importance of adjusting strategies as needed based on feedback from Hammond residents and the impact on their lives and communities.

SS4A ACTION PLAN PROGRESS MEASURES

The SS4A Action Plan in Hammond is designed to evolve over time, reflecting ongoing efforts and progress toward achieving Vision Zero for the City. As milestones are reached, the impact of these achievements on the overall safety goals will be regularly assessed.

An annual report on the SS4A Action Plan's progress will be published by the city each December. This report will feature the following:

- Updated crash statistics, focusing on fatal and serious injury incidents as well as bicycle and pedestrian-related crashes.
- Graphical representations of crash trends over the past five years
- Updated status of projects recommended by the SS4A Action Plan.
- Update the City's CSAP dashboard, its HIN, and hotspot intersections every two years to ensure that the roadway network accurately reflects the current citywide safety landscape.

TRANSPARENCY

The City of Hammond has developed the SS4A Action Plan with the goal of full transparency. As part of the engagement process, the city created a diverse steering committee, conducted a citywide survey, and engaged consultants to allow as many voices as possible into the development of the plan. The SS4A Action Plan will be posted in final form on the city's SS4A Action Plan/Vision Zero webpage. Interim documents like the annual report and updated HIN will also be posted on the webpage.

10. GLOSSARY

10. GLOSSARY

TERM	DEFINITION
Safe Streets and Road for All (SS4A)	A federal grant program that provides funds to local, regional, and Tribal communities for implementation, planning, and demonstration activities as part of a systematic approach to prevent deaths and serious injuries on the nation's roadways.
Comprehensive Safety Action Plan (CSAP)	A comprehensive safety action plan is a strategic framework developed to address various aspects of traffic safety within a specific area or jurisdiction. It typically involves a multi-faceted approach that aims to reduce crashes, mainly injuries and fatalities through a combination of strategies, policies, and initiatives.
Indiana Department of Transportation (INDOT)	It is the state government agency responsible for planning, building, maintaining, and operating the transportation infrastructure in the state of Indiana, United States.
High Injury Network (HIN)	It represents roadway segments/crashes where the high number of traffic fatalities and serious injuries are occurring.
Raised Pavement Markers (RPMs)	RPMs are typically equipped with reflective materials that make them highly visible to drivers, especially during low-light conditions or inclement weather. This enhanced visibility helps drivers maintain proper lane alignment and navigate safely, reducing the risk of crashes.
Rectangular Rapid Flashing Beacons (RRFBs)	They are a type of traffic control device used to enhance pedestrian safety at crosswalks and other pedestrian crossing locations. RRFBs consist of rectangular-shaped LED lights mounted on a horizontal bar or sign structure. When activated by a pedestrian or crossing signal, the lights rapidly flash in a distinctive pattern, alerting drivers to the presence of pedestrians in the crosswalk. RRFBs are particularly effective at increasing driver awareness and yielding compliance, thereby reducing the risk of pedestrian-vehicle collisions.
Pedestrian Hybrid Beacons (PHB) aka High-Intensity Activated Crosswalk (HAWK)	PHBs are a type of pedestrian crossing signal that provides a controlled crossing opportunity for pedestrians at locations where traffic signals are not warranted or feasible. They are typically used at mid-block crossings, crosswalks on multi-lane roads, or locations with high pedestrian activity. PHBs operate similarly to traffic signals but are activated by pedestrians using a push-button. When a pedestrian presses the button to request a crossing, the PHB system activates warning beacons to alert drivers of the pedestrian's intent to cross. These warning beacons typically consist of flashing lights or other visual cues to grab drivers' attention. After a brief warning period, the PHB system transitions to a steady or flashing indication for pedestrians to cross, typically accompanied by a "WALK" signal or pedestrian symbol. This indicates to pedestrians that it's safe to cross the roadway.

TERM	DEFINITION
Leading Pedestrian Interval (LPI)	It is a traffic signal timing strategy designed to enhance pedestrian safety at signalized intersections. During an LPI phase, pedestrians receive a head start to begin crossing the street before conflicting vehicle movements are allowed to proceed. When the traffic signal changes, the pedestrian signal turns to "WALK" or displays a pedestrian symbol, indicating to pedestrians that they have the right of way to begin crossing the street. Simultaneously, the vehicle signal remains red, temporarily halting vehicle movements in the same direction as the pedestrians' intended crossing path. The purpose of the Leading Pedestrian Interval is to increase the visibility and predictability of pedestrians in the intersection, thereby reducing the likelihood of conflicts between pedestrians and turning vehicles.
Flashing Yellow Arrow (FYA)	A flashing yellow arrow (FYA) is a traffic signal indication used at signalized intersections to control left turns. It is part of a signal phasing system that typically includes solid green, solid yellow, and solid red arrow indications as well. When a flashing yellow arrow is displayed, it indicates to drivers that they are permitted to make a left turn after yielding to oncoming traffic and pedestrians. In other words, drivers are allowed to turn left, but they must first yield to any oncoming vehicles and pedestrians in the intersection. The flashing yellow arrow indication is commonly used to provide flexibility and improve traffic flow at intersections. It allows left-turning vehicles to proceed with caution when safe to do so, rather than being required to wait for a green arrow signal, which may not always be necessary or efficient.
Stopping Sight Distance (SSD)	Stopping Sight Distance (SSD) refers to the distance needed by a driver to bring their vehicle to a complete stop after perceiving a hazard on the roadway. It is a critical concept in highway and traffic engineering used to ensure safe driving conditions and design roadways that accommodate safe stopping distances. The SSD is influenced by several factors, including the speed of the vehicle, the reaction time of the driver, the roadway grade, the condition of the road surface, and the efficiency of the vehicle's braking system. The calculation of stopping sight distance considers these factors to determine the minimum distance required for a driver to perceive a hazard, react to it, and come to a stop safely.
Two-way Stop Control (TWSC)	In a two-way stop control scenario, vehicles traveling on one road are required to come to a complete stop and yield the right-of-way to vehicles traveling on the intersecting road. Two-way stop control is commonly used at intersections with lower traffic volumes or where visibility is limited along side streets, as it helps to manage traffic flow and reduce the risk of collisions. It is a simple and effective traffic control measure that promotes safety and efficiency at intersections.

TERM	DEFINITION
High-Intensity Activated Crosswalk (HAWK)	It is a type of pedestrian-activated traffic signal used to facilitate safe pedestrian crossings at mid-block locations or intersections. The HAWK signal is typically installed at locations where there is a high volume of pedestrian traffic or where pedestrians face challenges in crossing busy roadways. The HAWK signal remains dark until activated by a pedestrian. When a pedestrian wishes to cross, they must push a button to activate the signal. Upon activation, the signal displays a series of flashing and solid red lights to stop vehicular traffic. Pedestrians are then given a "WALK" signal or pedestrian symbol, indicating that it is safe for them to cross. After a designated pedestrian crossing time, the signal changes to flashing red, allowing vehicles to proceed cautiously if the crosswalk is clear. Finally, the signal goes dark again, indicating that vehicular traffic may resume its normal operation.
State Road (SR)	A State Road refers to a roadway that is owned, maintained, and managed by the government of a specific state or province. State roads are typically designated and numbered according to a standardized system established by the state's transportation department or authority. State roads play a crucial role in the transportation network, connecting cities, towns, and regions within a state, as well as providing access to major highways, interstates, and other transportation facilities. They serve as primary routes for intra-state travel and commerce, accommodating various modes of transportation, including automobiles, trucks, buses, bicycles, and pedestrians.
Light Emitting Diode (LED)	A Light Emitting Diode (LED) is a semiconductor device that emits light when an electric current passes through it. LEDs are widely used in various applications, including lighting, displays, indicators, and signage, due to their energy efficiency, longevity, and compact size.
Shared-Use Path (SUP)	A Shared Use Path (SUP), also known as a multi-use path or mixed-use trail, is a route or pathway designated for use by both pedestrians and non-motorized vehicles, such as bicycles, scooters, rollerblades, and wheelchairs. Shared Use Paths are typically separated from motor vehicle traffic and are designed to provide safe and convenient transportation options for various types of users. They are often found in urban, suburban, and recreational areas and contribute to promoting active transportation, reducing congestion, and enhancing community connectivity and accessibility.
Speed Limit (SL)	A speed limit is the maximum legal speed at which a vehicle can travel on a particular road, street, or highway. It is enforced by governmental authorities and typically indicated by signs posted along the roadway. Speed limits are established based on various factors such as road design, traffic volume, surrounding environment, and safety considerations. Adhering to speed limits helps promote road safety by reducing the risk of crashes, injuries, and fatalities, as well as minimizing the impact of vehicle emissions on the environment. Violating speed limits can result in fines, penalties, and potentially more severe legal consequences, depending on the jurisdiction and the extent of the violation.

TERM	DEFINITION
Railroad (RR)	A railroad, often referred to as a railway, is a system of tracks, typically made of metal rails, along which trains or other vehicles with wheels can travel. Railroads are commonly used for transporting passengers, freight, and goods over long distances. They typically consist of interconnected networks of tracks, stations, signals, and other infrastructure elements designed to support the safe and efficient operation of trains. Railroads play a significant role in transportation and commerce, providing a cost-effective and environmentally friendly mode of moving large quantities of goods and people over land.
Pavement Markers (PM)	Pavement markers, also known as road studs, road reflectors, or delineators, are small devices installed on road surfaces to provide visual guidance and enhance safety for drivers and pedestrians. These markers come in various shapes, sizes, and colors and are typically made of durable materials such as plastic, ceramic, or metal. Pavement markers are usually placed along the edges of lanes, in the center of roads, or at key locations such as intersections and pedestrian crossings. They serve multiple purposes, including delineating lanes, indicating road boundaries, guiding drivers in low visibility conditions, and improving nighttime visibility by reflecting vehicle headlights. Pavement markers are an essential component of road infrastructure, contributing to safer and more efficient transportation systems.

11. APPENDICES

Appendix A: Vision Zero Resolution

Appendix B: Steering Committee Meeting Minutes

Appendix C: Safety Analysis

Appendix D: Public Engagement

Appendix E: U.S. Department of Transportation Proven Safety Countermeasures

Appendix F: Comprehensive Safety Action Plan Projects

APPENDIX A: VISION ZERO RESOLUTION

City of Hammond
ROBERT J. GOLEC
City Clerk

STATE OF INDIANA CLERK	)	IN THE OFFICE OF THE CITY
	) SS:	CITY OF HAMMOND, LAKE
COUNTY COUNTY OF LAKE	)	INDIANA

CERTIFICATION

I, ROBERT J. GOLEC, the duly elected CITY CLERK of the City of Hammond, Lake County, Indiana DO HEREBY CERTIFY that the attached is full, true, correct and complete copy of the following Resolution:

RESOLUTION NO. (24) R05

A RESOLUTION OF THE HAMMOND COMMON COUNCIL ADOPTING A VISION ZERO POLICY

I FURTHER CERTIFY that said Resolution No. (24) R05 was duly passed by the Common Council of the City of Hammond, Indiana on the 11th day of May, 2024, and signed by the Mayor on the 12th day of March, 2024, and is on file and a matter of record in the office of the City Clerk of the City of Hammond, Indiana.

Dated this 13th day of March, 2024.

Robert J. Golec

ROBERT J. GOLEC, City Clerk
City of Hammond, Lake County, Indiana

(SEAL)

24R-05

Sponsor: Dave Woerpel, 5th District Councilman

RESOLUTION NO. R05

A RESOLUTION OF THE HAMMOND COMMON COUNCIL ADOPTING A VISION ZERO POLICY

WHEREAS, the life and health of all persons living and traveling within the City of Hammond are our utmost priority, and no one should die or be seriously injured while traveling on our city streets;

WHEREAS, Vision Zero is the concept that traffic deaths and serious injuries on our roadways are unacceptable;

WHEREAS, Vision Zero is a holistic strategy aimed at eliminating all traffic fatalities and severe injuries suffered by all road users while increasing safe, healthy, equitable mobility for all;

WHEREAS, streets and transportation systems have traditionally been designed primarily to move motorists efficiently, and Vision Zero supports a paradigm shift by designing streets and transportation systems to move all people safely, including people of all ages and abilities, pedestrians, bicyclists, public transit users, and motorcyclists, as well as drivers and passengers of motor vehicles;

WHEREAS, Vision Zero recognizes that people will sometimes make mistakes, so the road system and related policies should be designed to ensure that those inevitable mistakes do not result in severe injuries or fatalities; therefore, transportation planners and engineers and policymakers are expected to improve the roadway environment, policies, and other related systems to lessen the severity of crashes;

WHEREAS, making streets safer for all people using all modes of transportation will encourage people to travel on foot, by bicycle, and by public transit, which supports a healthier, more active lifestyle and reduces environmental pollution;

WHEREAS, successful Vision Zero programs are a result of both a complete government approach (i.e., interdepartmental, coordinated initiatives) and community support of Vision Zero objectives and action plans;

WHEREAS, Vision Zero resolutions have been adopted by many jurisdictions across the United States; and

WHEREAS, the 2024 Vision Zero resolution is a required component of the Safe Streets and Roads for All Action Plan; and

WHEREAS, the Vision Zero resolution sets forth a goal of reducing serious and fatal crashes by 40% by the year 2035; and

NOW, THEREFORE, BE IT RESOLVED, by the Hammond Common Council, State of Indiana, as follows:

1. That the 2024 Vision Zero Resolution is hereby approved.

2. That any prior action taken by the Mayor or any staff necessary in connection with the items approved herein is hereby ratified and adopted as actions on behalf of the City.

3. The City of Hammond adopts the Vision Zero policy makes it part of this Resolution, effective immediately.

4. The Hammond Clerk shall certify the adoption of this Resolution, effective immediately, by the Hammond Common Council.

ADOPTED AND APPROVED BY the Common Council of the City of Hammond, Indiana, this 11th day of March, 2024.

CITY OF HAMMOND, INDIANA
COMMON COUNCIL

Scott M Rak

Scott Rakos, President

ATTEST:

Robert J. Golec

Robert J. Golec, City Clerk
City of Hammond, Indiana.

PRESENTED BY ME, the undersigned City Clerk of the City of Hammond to the Mayor of said City for his approval on the 12th day of March, 2024.

Robert J. Golec, City Clerk

The foregoing Resolution No. R05 consisting of three (3) typewritten pages, including this page was Approved by the Mayor on the 12th day of March, 2024.

Thomas M. McDermott, Jr., Mayor
City of Hammond, Indiana

PASSED by the City of Hammond Common Council on the 11th day of March, 2024 and Approved by the Mayor on the 12th day of March, 2024.

Robert J. Golec, City Clerk

APPENDIX B: STEERING COMMITTEE MEETING MINUTES

City of Hammond SS4A Action Plan

Steering Committee Meeting

February 28, 2024

AMERICAN STRUCTUREPOINT INC.

CITY OF HAMMOND, INDIANA 1884

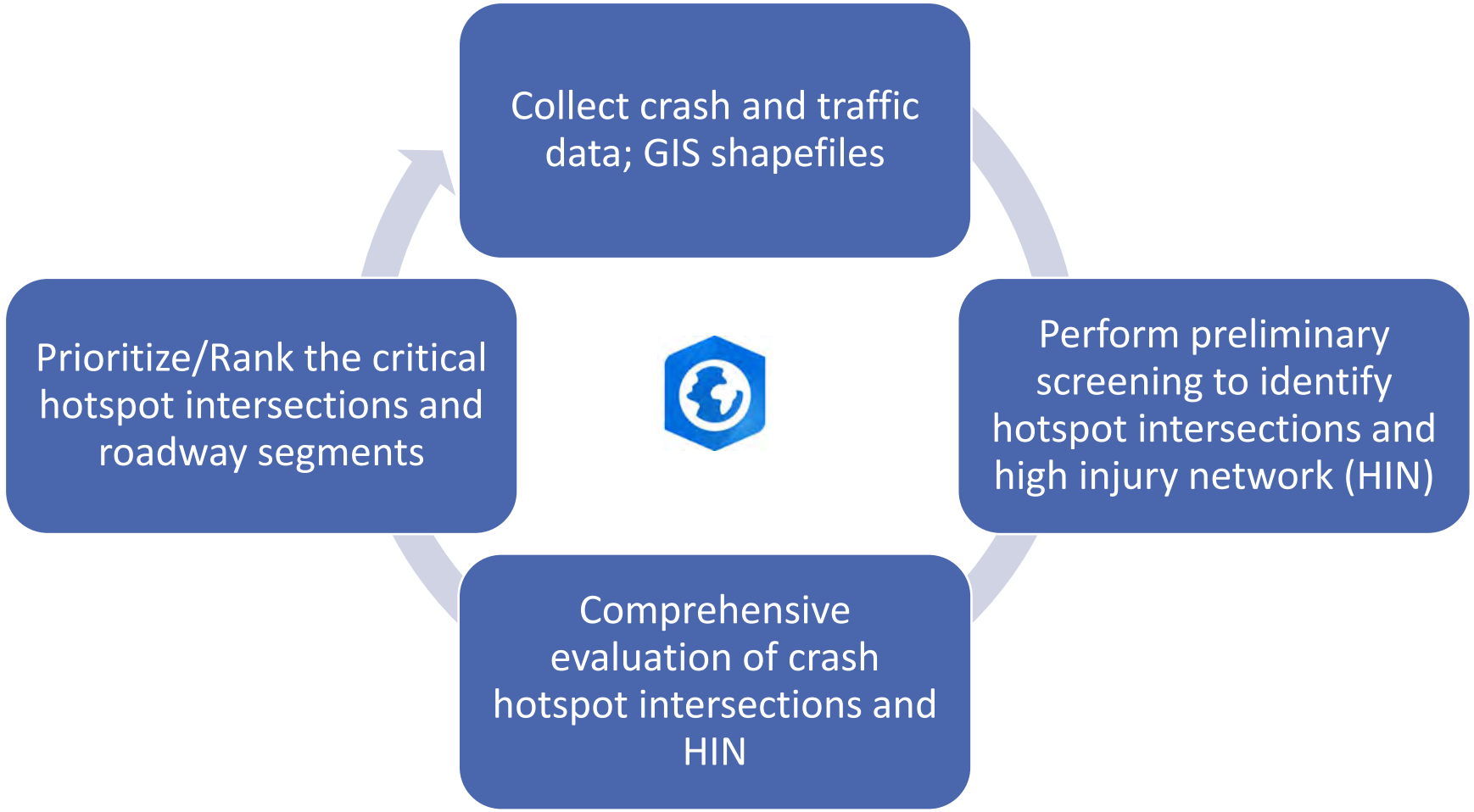
Introductions

Name	Organization	Title
Dean Button	City of Hammond	City Engineer
William Short	Hammond Police Department	Chief of Police
Jeffery Long	Hammond Police Department	Assistant Chief of Police
Brian Poland, AICP	City of Hammond	Director of City Planning
Juan Moreno	City of Hammond	Director of Economic Development
Anne Taylor	City of Hammond	Exec. Director of Planning & Development
Owana Miller	City of Hammond	Community Development Director
John Suarez	School City of Hammond	Director of Safety, Security and Energy
Alan Holderread	Indiana Department of Transportation (LaPorte District)	District Traffic Engineer
Scott Weber	Northwestern Indiana Regional Planning Commission (NIRPC)	Transportation Planner/Analyst

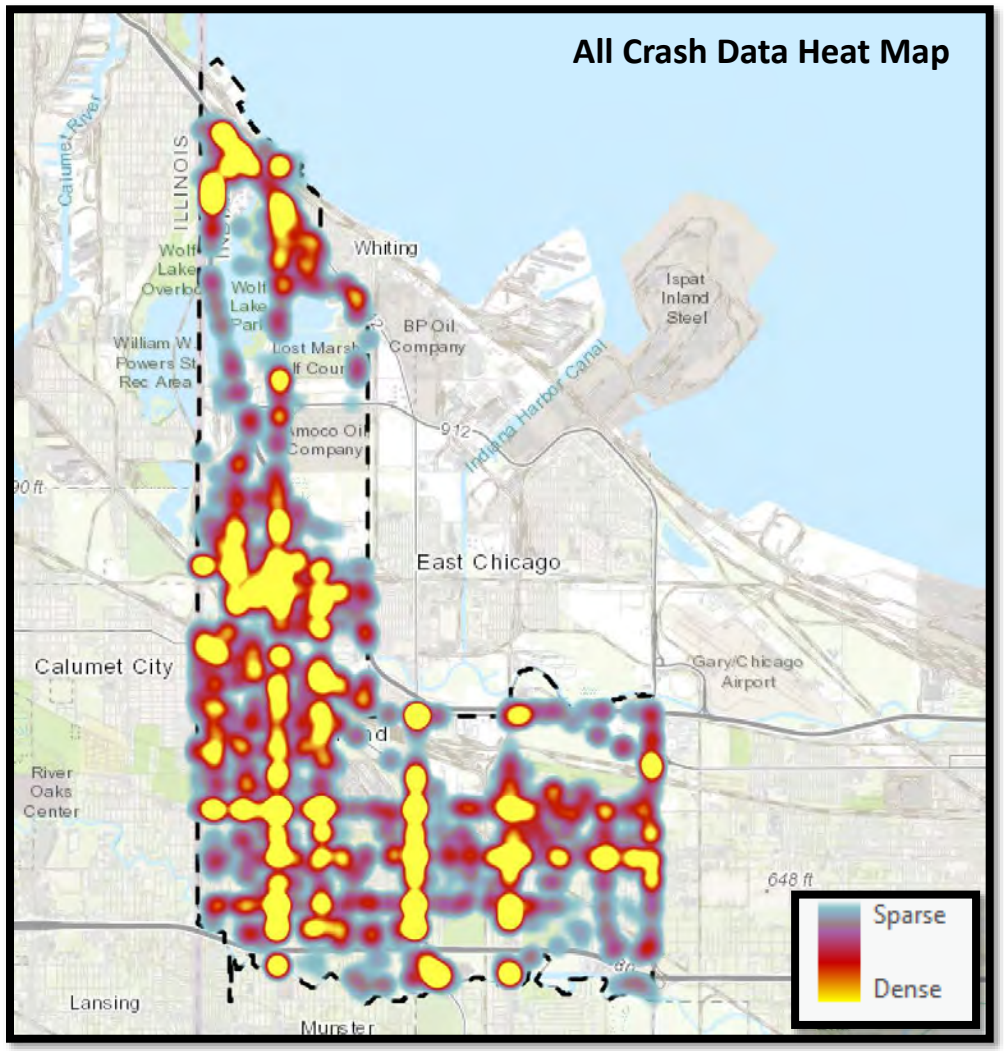
CSAP Components & Project Status

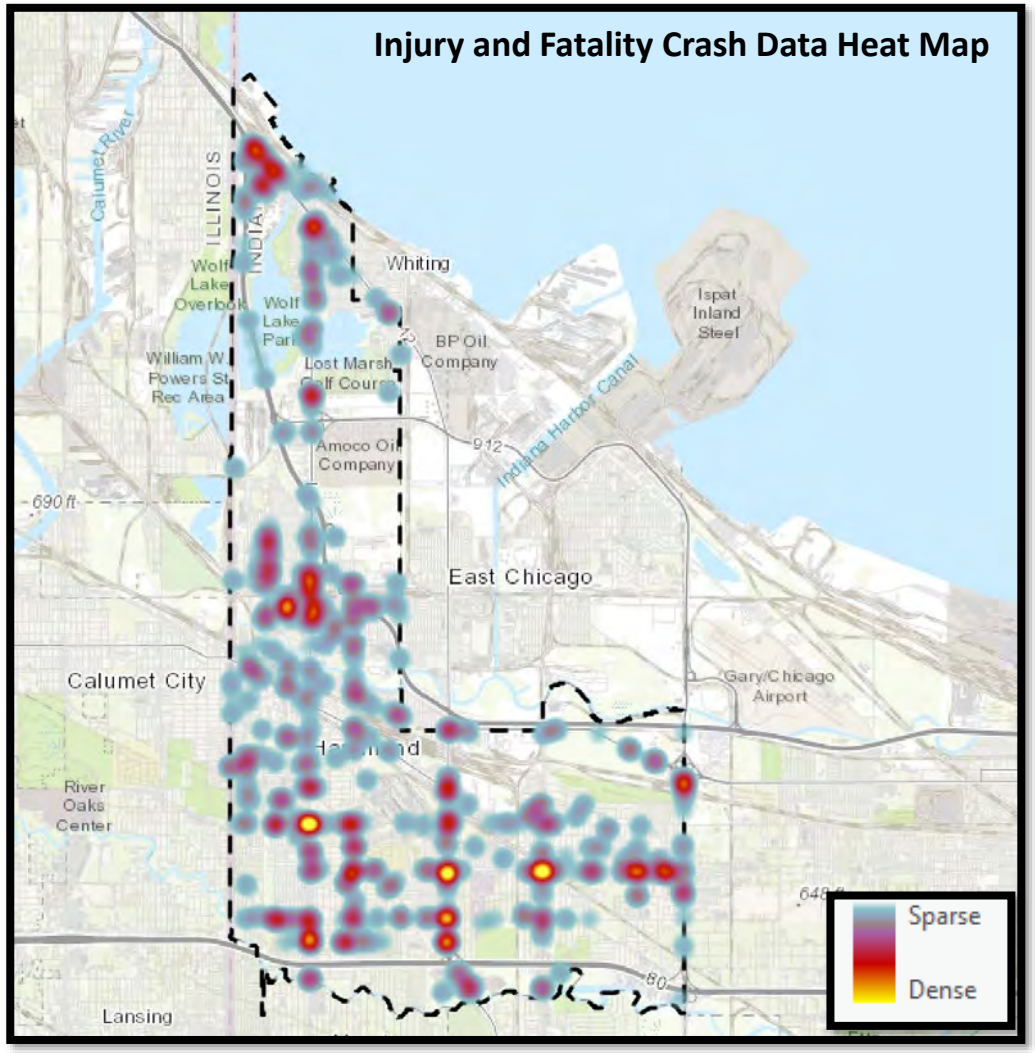
Action Plan Component	Milestone	Status
Leadership Commitment and Goal Setting	Vision Zero Resolution established by the city leadership	On-going
Planning Structure	Set-up a Steering Committee	Complete
Safety Analysis	Geo-spatial identification of high-risk locations (High Injury Network and Hotspot Locations)	Complete
Engagement and Collaboration	Robust engagement with public and relevant stakeholders	On-going (Survey posted)
Equity Considerations	Identify census tracks within the city that are underserved	Complete
Policy and Process Changes	Assess current policies, plans, guidelines and suggest some revisions , as appropriate	On-going
Strategy and Project Selections	Identification of a comprehensive set of projects and strategies	On-going

Safety Analysis – 4 Step Process

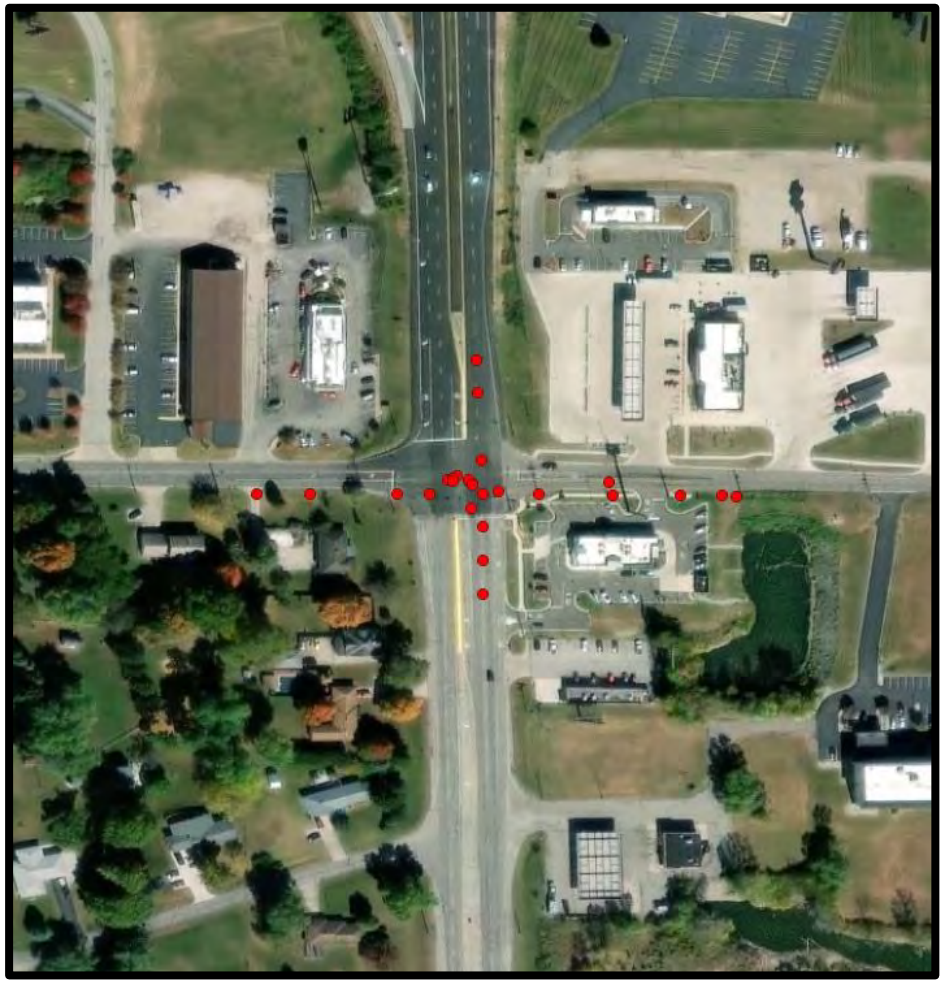


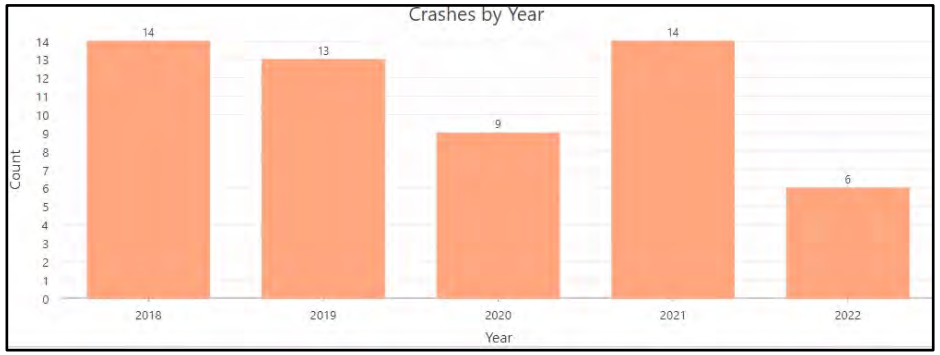
Safety Analysis – Step 2: Preliminary Screening

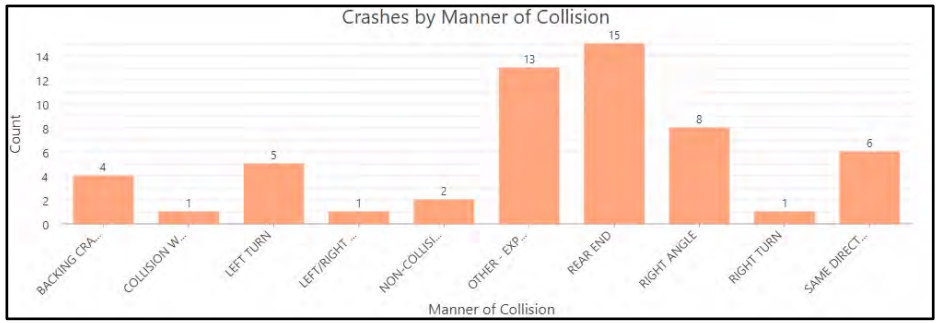


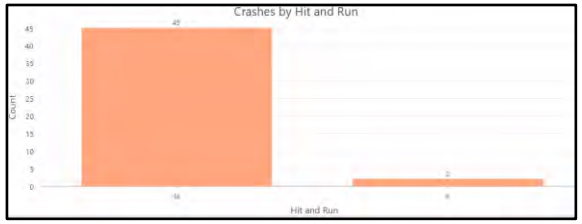


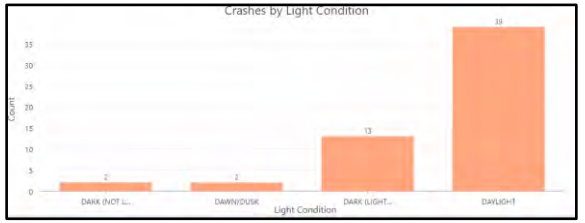
Safety Analysis – Step 3: Comprehensive Evaluation



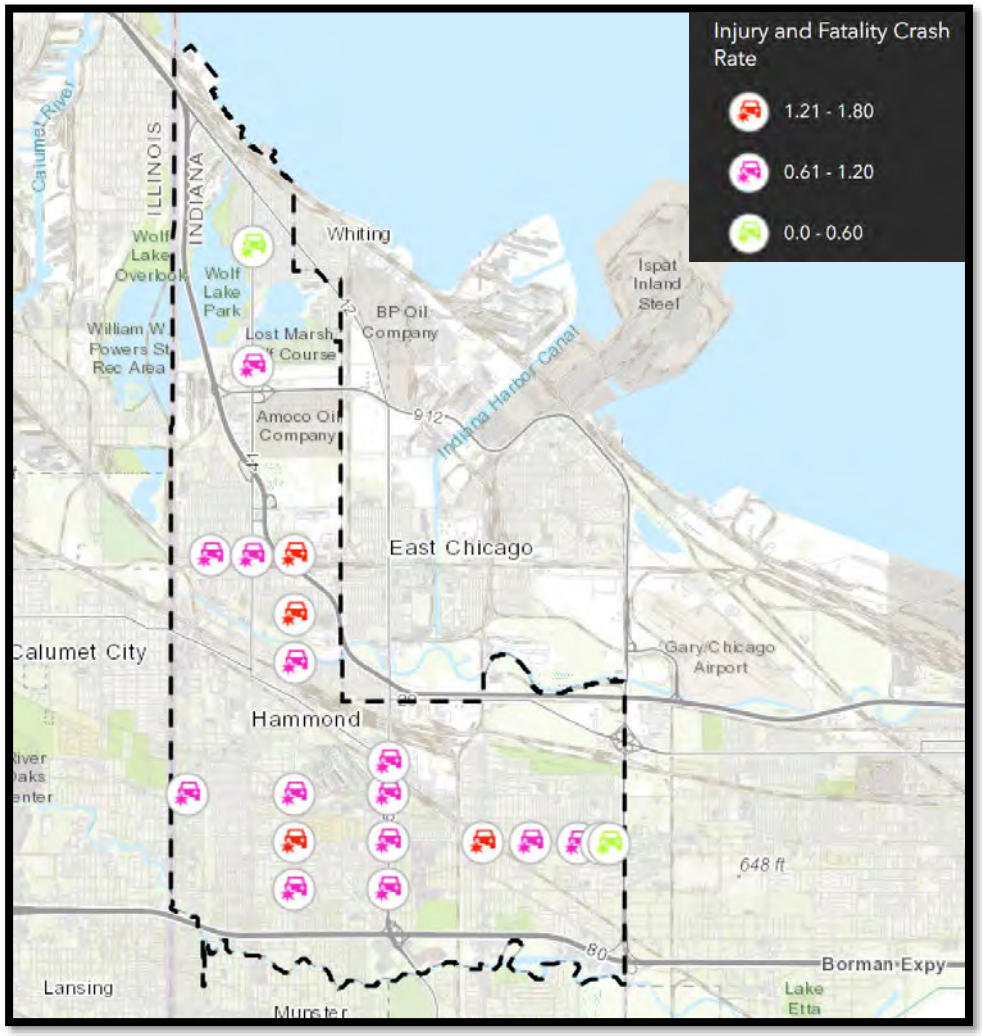


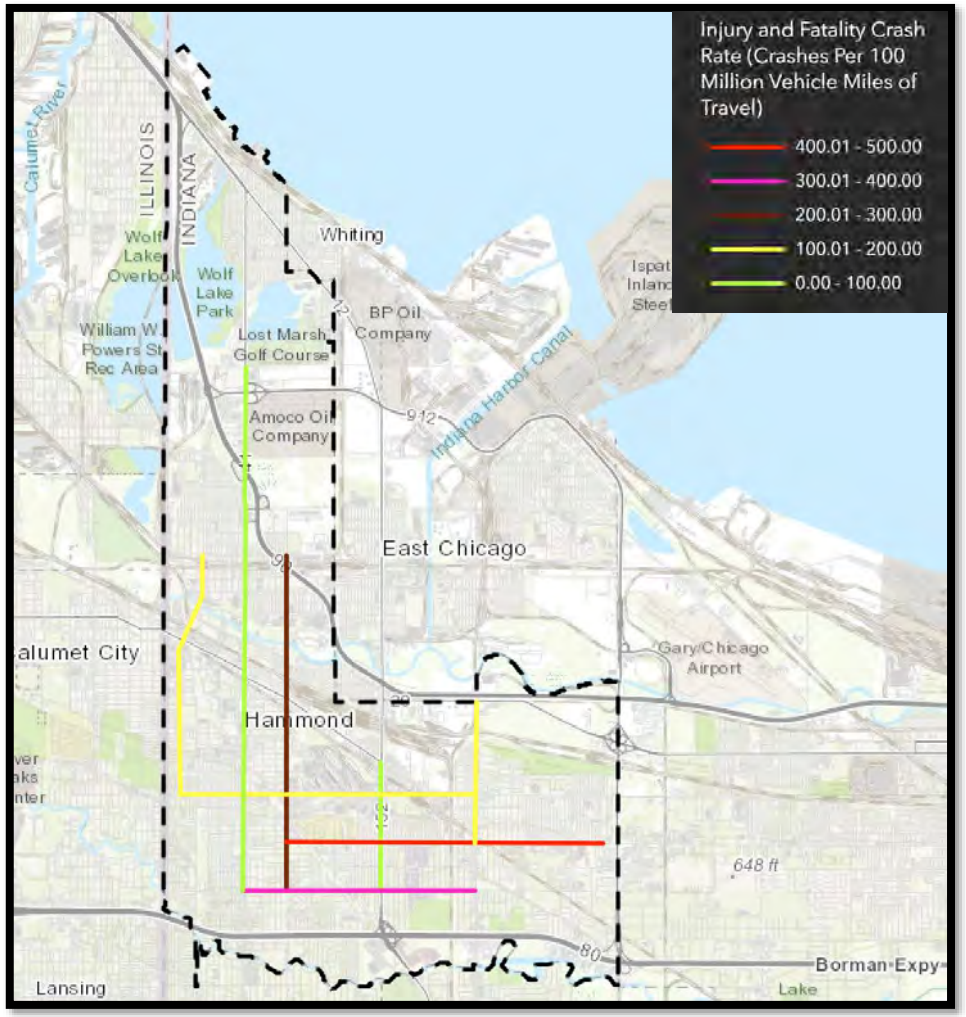






Safety Analysis – Step 4: Prioritize Hotspot Intersections and High Injury Network (HIN)





Equity Considerations

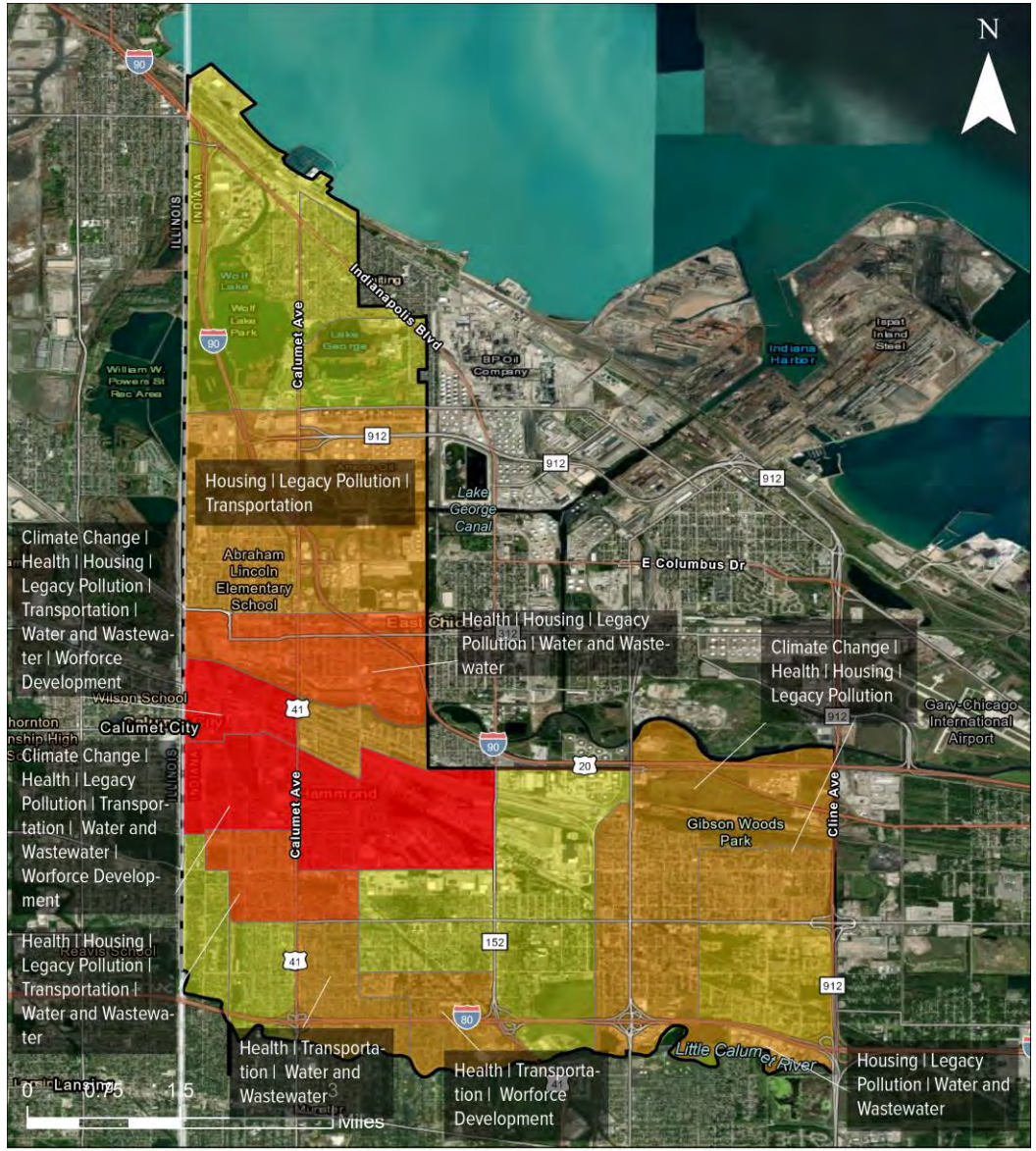
Equity Analysis Factors:

- Health Impacts
- Community Engagement and Representation
- Economic Impacts
- Climate Change Resilience
- Equitable Access to Opportunities

Environmental Justice Categories

- Climate Change
- Energy
- Health
- Housing
- Legacy Pollution
- Transportation
- Water and Wastewater
- Workforce Development

Explore the map - Climate & Economic Justice Screening Tool (geoplatform.gov)


N
Housing | Legacy Pollution | Transportation
Climate Change | Health | Housing | Legacy Pollution | Transportation | Water and Wastewa-ter | Worforce Development
Health | Housing | Legacy Pollution | Water and Waste-water
Climate Change | Health | Housing | Legacy Pollution
Climate Change | Health | Legacy Pollution | Transpor-tation | Water and Wastewater | Worforce Develop-ment
Health | Housing | Legacy Pollution | Transportation | Water and Wastewa-ter
Health | Transporta-tion | Water and Wastewater
Health | Transporta-tion | Worforce Development
Housing | Legacy Pollution | Water and Wastewater
Abraham Lincoln Elementary School
Wilson School
Calumet City
Gibson Woods Park
Gary-Chicago International Airport
Lake George Canal
E Columbus Dr
Indianapolis Blvd
Calumet Ave
Cline Ave
Little Calumet River
Indiana Harbor
Ispat Inland Steel
BP Oil Company
William W. Powers St Rec Area
Wolf Lake
Wolf Lake Park
Lake Georg
ILLINOIS
INDIANA
Hammond
Lansing
0 0.75 1.5
Miles
Legend
City of Hammond
Sum of Disadvantages
0.00
0.01 - 2.00
2.01 - 3.00
3.01 - 5.00
5.01 - 7.00

Public Engagement

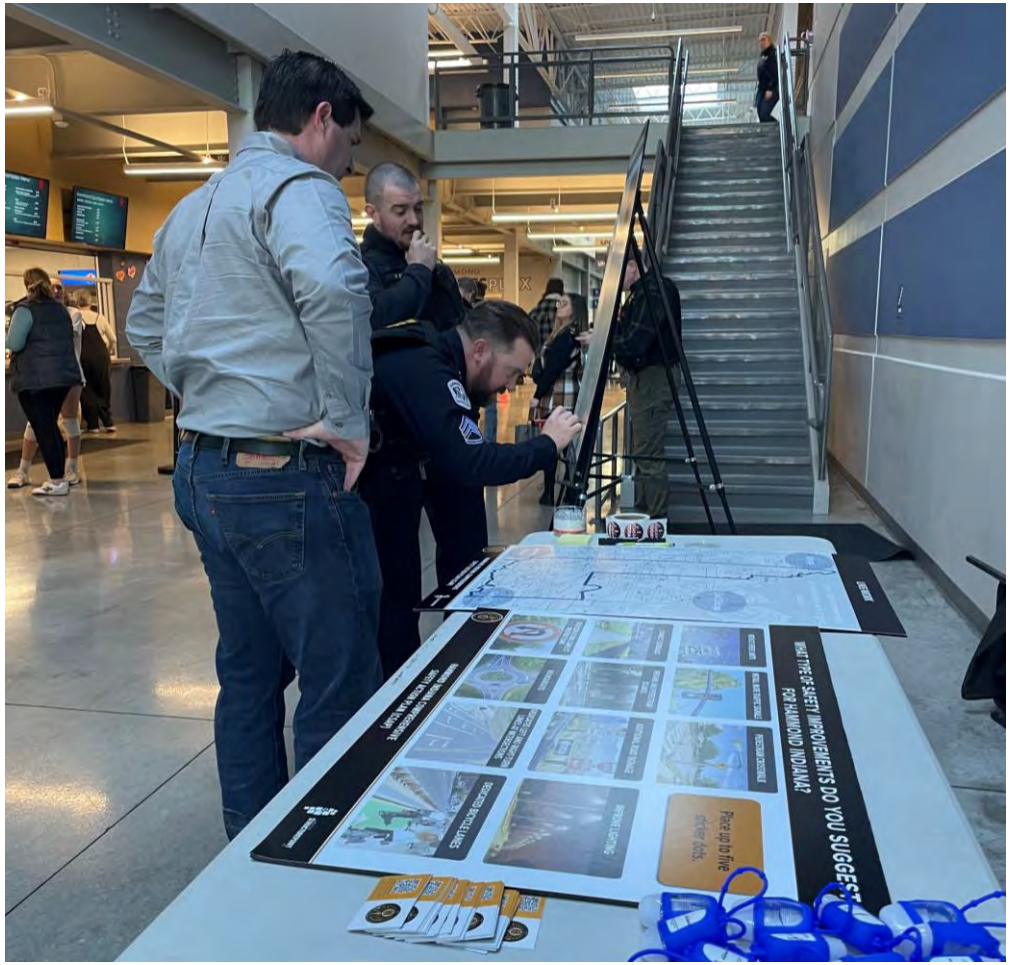
VOLLEYBALL TOURNAMENT

TWO FACEBOOK ADVERTISEMENTS

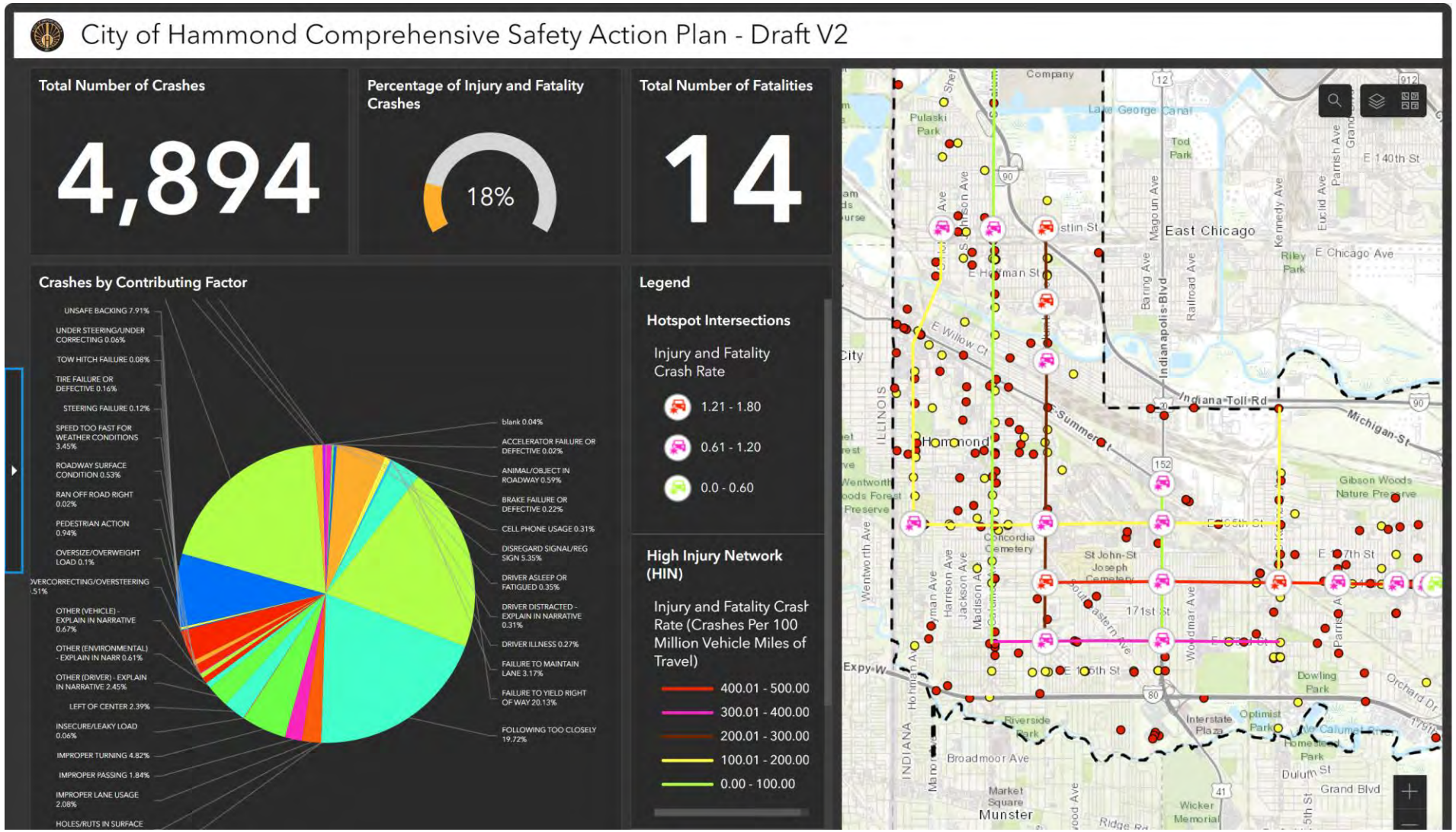
56 SURVEY RESPONSES

Key Trends

- **Failure to Obey Traffic Signals and Signs:** Residents reported a consistent issue with drivers disregarding stop signs and traffic signals, leading to potential accidents and endangering pedestrians and other drivers.
- **Unsafe Speeding:** Residents reported speeding behaviors, particularly at intersections like 165th and Tennessee Ave.
- **Dangerous Railroad Crossings:** Several comments mentioned safety concerns regarding railroad crossings, such as inadequate signaling, lack of gates or lights, and poor visibility, leading to potential collisions.
- **Pedestrian Safety:** Concerns were raised about pedestrian safety, especially around areas like Morton High School, where students cross busy streets without proper infrastructure or signalization.
- **Confusing Road Layout:** Changes in road layout, such as offset lanes due to trails, are reported to confuse drivers and contribute to accidents.
- **Challenges with Expressway Access:** Residents reported difficulties accessing the road due to traffic merging from the expressway, leading to risky situations for drivers trying to turn onto the road.



City of Hammond CSAP Dashboard



Project Selection and Prioritization

Criteria	Assigned Weightage
Vulnerable Road User (Pedestrian/Bicyclist) Fatality and Injury Crash Locations	30%
Project Location (High Injury Network or Hotspot Location)	30%
Underserved Communities	20%
Public Engagement	20%

High Injury Network

Project Location	Name
1	**169th Street** - From Columbia Avenue to Cline Avenue Service Road
2	**173rd Street** - From Calumet Avenue to Kennedy Avenue
3	**Columbia Avenue** - From Gostlin Street to 173rd Street
4	**Hohman Avenue** - From Gostlin Street to 165th Street
5	**165th Street** - From State Line Road to Kennedy Avenue
6	**Kennedy Avenue** - From Michigan Street to 169th Street
7	**Indianapolis Blvd.** - From Summer Street to 173rd Street
8	**Calumet Avenue** - From 129th Street to 173rd Street

Schedule

Milestone	Anticipated Completion
Vision Zero Resolution Adoption	March 11 or March 25
Draft Action Plan	April 1, 2024
Review by City staff and Steering Committee	April 16, 2024
Final Action Plan	May 3, 2024
Council Adoption	May 13, 2024
Implementation Grant Application	May 16, 2024

Thank You!

City of Hammond SS4A Action Plan

Steering Committee Meeting #2

March 19, 2024

AMERICAN STRUCTUREPOINT INC.

CITY OF HAMMOND, INDIANA 1884

Steering Committee Members

Name	Organization	Title
Dean Button	City of Hammond	City Engineer
William Short	Hammond Police Department	Chief of Police
Jeffery Long	Hammond Police Department	Assistant Chief of Police
Brian Poland, AICP	City of Hammond	Director of City Planning
Juan Moreno	City of Hammond	Director of Economic Development
Anne Taylor	City of Hammond	Exec. Director of Planning & Development
Owana Miller	City of Hammond	Community Development Director
John Suarez	School City of Hammond	Director of Safety, Security and Energy
Alan Holderread	Indiana Department of Transportation (LaPorte District)	District Traffic Engineer
Scott Weber	Northwestern Indiana Regional Planning Commission (NIRPC)	Transportation Planner/Analyst

CSAP Components & Project Status

Action Plan Component	Milestone	Status
Leadership Commitment and Goal Setting	Vision Zero Resolution established by the city leadership	Complete
Planning Structure	Set-up a Steering Committee	Complete
Safety Analysis	Geo-spatial identification of high-risk locations (High Injury Network and Hotspot Locations)	Complete
Engagement and Collaboration	Robust engagement with public and relevant stakeholders	On-going (Survey posted)
Equity Considerations	Identify census tracks within the city that are underserved	Complete
Policy and Process Changes	Assess current policies, plans, guidelines and suggest some revisions , as appropriate	On-going
Strategy and Project Selections	Identification of a comprehensive set of projects and strategies	Draft Ready

Public Engagement

VOLLEYBALL TOURNAMENT

TWO FACEBOOK ADVERTISEMENTS

STATS:

148 LINK CLICKS

16,661 users reached

34,854 times this ad was seen

452 SURVEY RESPONSES

Project Selection and Prioritization

Criteria	Assigned Weightage
Vulnerable Road User (Pedestrian/Bicyclist) Fatality and Injury Crash Locations	30%
Location Crash Frequency (High Injury Network or Hotspot Location)	30%
Underserved Communities	20%
Public Engagement	20%

Projects – HIN/Corridors

Project Location	Name	Potential Countermeasures
1	**169th Street** - From Columbia Avenue to Cline Avenue Service Road	**Install median with directional openings**, add turn lanes, install mid-block crosswalks with PHB/RRFBs
2	**173rd Street** - From Calumet Avenue to Kennedy Avenue	Implement **road diets/complete streets**, Install median with directional openings, add turn lanes, install mid-block crosswalks (with PHBs/RRFBs)
3	**Columbia Avenue** - From Gostlin Street to 173rd Street	Install median with directional openings, add turn lanes, **install mid-block crosswalks with PHB/RRFBs**
4	**Hohman Avenue** - From Gostlin Street to 165th Street	Implement road diets/complete streets, Install median with directional openings and turn lanes, **Access Management**, Install mid-block crosswalks with PHB/RRFBs
5	**165th Street** - From State Line Road to Kennedy Avenue	Implement road diets/complete streets, Install median with directional openings and turn lanes, Access Management, Install mid-block crosswalks with PHB/RRFBs, **Install sidewalk/SUP on both sides of the road**
6	**Kennedy Avenue** - From Michigan Street to 169th Street	Implement road diets/complete streets (underway), **Install turn lanes**, Install mid-block crosswalks with PHB/RRFBs
7	**Indianapolis Blvd.** - From Summer Street to 173rd Street	Implement road diets/complete streets, Install median with directional openings and turn lanes, Access Management, Install mid-block crosswalks with PHB/RRFBs, Install sidewalk/SUP on both sides of road
8	**Calumet Avenue** - From 129th Street to 173rd Street	Implement road diets/complete streets, Install median with directional openings and turn lanes, Access Management, Install mid-block crosswalks with PHB/RRFBs, Install sidewalk/SUP on both sides of road

Projects - Hotspot Intersections – 1 of 3

Project Location	Name	Potential Countermeasures
1	169th Street and Columbia Avenue	**Install retroreflective backplates**, Implement LPI, crosswalk visibility enhancements, Install Protected Left Turn Phasing (with FYA)
2	169th Street and Kennedy Avenue	Install retroreflective backplates, **Implement LPI**, crosswalk visibility enhancements, Install Protected Left Turn Phasing (with FYA)
3	150th Street and Columbia Avenue	Install retroreflective backplates, Implement LPI, **crosswalk visibility enhancements,** Install curb bump-outs, Install Protected Left Turn Phasing (with FYA), Install exclusive left-turn lanes on Columbia Ave
4	Gostlin Street and Columbia Avenue	Install retroreflective backplates, Implement LPI, crosswalk visibility enhancements, **Install Protected Left Turn Phasing (with FYA)**
5	Michigan Street and Columbia Avenue	Install retroreflective backplates, Implement LPI, crosswalk visibility enhancements, Install Protected Left Turn Phasing (with FYA)
6	173rd Street and Columbia Avenue	Install retroreflective backplates, Implement LPI, crosswalk visibility enhancements, Install Protected Left Turn Phasing (with FYA), **Install curb bump-outs**, Install exclusive left-turn lanes/improve lane delineation
7	Gostlin Street and Hohman Avenue	**Consider conversion to roundabout**, Install retroreflective backplates, Implement LPI, crosswalk visibility enhancements, Install Protected Left Turn Phasing (with FYA)
8	169th Street and Grand Avenue	Install retroreflective backplates, Implement LPI, crosswalk visibility enhancements, Install Protected Left Turn Phasing (with FYA), **Install green PMs and lane delineation for bike lanes through the intersection**, **Install speed feedback signs or enforcement cameras to reinforce SL through the school zone, Restripe school zone pavement markings**

Projects - Hotspot Intersections – 2 of 3

Project Location	Name	Potential Countermeasures
9	169th Street and Indianapolis Blvd.	Install retroreflective backplates, Implement LPI, crosswalk visibility enhancements, Install Protected Left Turn Phasing (with FYA), **Consolidate adjacent driveways within functional area of intersection (access management)**, Improve lane delineation, Speed monitoring and red-light enforcement cameras
10	169th Street and Parrish Avenue	Install retroreflective backplates, Implement LPI, crosswalk visibility enhancements, Install Protected Left Turn Phasing (with FYA)
11	Gostlin Street and Calumet Avenue	Implement LPI, crosswalk visibility enhancements, **evaluate yellow change interval and signal re-timing**
12	169th Street and New Hampshire Avenue	Install directional median, crosswalk visibility enhancements
13	165th Street and Indianapolis Blvd.	Install RR crossing gates, Install retroreflective backplates, Install Protected Left Turn Phasing (with FYA), Install speed and red-light enforcement camera
14	165th Street and Columbia Avenue	Install retroreflective backplates, Implement LPI, crosswalk visibility enhancements, Install Protected Left Turn Phasing (with FYA), Install curb bump-outs, **Install speed and red-light enforcement cameras**
15	129th Street and Calumet Avenue	Install retroreflective backplates, Install Protected Left Turn Phasing (with FYA), Install speed and red-light enforcement cameras
16	Summer Street and Indianapolis Blvd	Install retroreflective backplates, Implement LPI, crosswalk visibility enhancements, Install Protected Left Turn Phasing (with FYA), Consolidate adjacent driveways within functional area of intersection (access management), Improve lane delineation, Install speed monitoring and red-light enforcement cameras

Projects - Hotspot Intersections – 3 of 3

Project Location	Name	Potential Countermeasures
17	165th Street and Hohman Avenue	Install retroreflective backplates, Implement LPI, crosswalk visibility enhancements, Install Protected Left Turn Phasing (with FYA), Install speed monitoring and red-light enforcement cameras
18	173rd Street and Indianapolis Blvd	Install retroreflective backplates, Implement LPI, crosswalk visibility enhancements, Install Protected Left Turn Phasing (with FYA), Consolidate adjacent driveways within functional area of intersection (access management), Improve lane delineation, Install speed monitoring and red-light enforcement cameras
19	119th Street and Calumet Avenue	Install retroreflective backplates, Implement LPI, crosswalk visibility enhancements, Install Protected Left Turn Phasing (with FYA), Consolidate adjacent driveways within functional area of intersection (access management), Improve lane delineation, Install speed monitoring and red-light enforcement cameras
20	169th Street and Cline Avenue Service Road	Install retroreflective backplates, Install Protected Left Turn Phasing (with FYA), Improve lane delineation, Evaluate sight distance on East approach due to bridge to install advance flashing yellow warning signs when traffic is queued
21	165th Street & Stateline Road	Install retroreflective backplates, Install exclusive left-turn lanes, Install Protected Left Turn Phasing (with FYA), Improve lane delineation, Install adequate number of signal heads on West approach, crosswalk visibility enhancements

Projects – Additional Focus Areas (Hammond PD)

Project Location	Name	Potential Countermeasures
1	Indianapolis Blvd & Cabela Dr	Improve lane delineation and lane use PMs, **Improve signing and PMs for wayfinding**, Evaluate yellow change interval and signal re-timing, **Improve condition or prohibit toll to SB left-turn movement**, Install Reduced Left-Turn Conflict Intersection
2	165th Street & Calumet Ave	Crosswalk visibility enhancements, Implement LPI, Evaluate yellow change interval and signal re-timing, access management within functional area of intersection, Red-light enforcement cameras, **Install reduced left-turn conflict intersection**
3	Hammond Central High School – Calumet Ave & Highland	Install retroreflective backplates, Implement LPI, crosswalk visibility enhancements, Install Protected Left Turn Phasing (with FYA), **Install green PMs and lane delineation for bike lanes through the intersection**, Install speed feedback signs or enforcement cameras to reinforce SL through school zone, Restripe school zone pavement markings
4	Kenwood Elementary School – 165th Street & Moraine	**Develop traffic control plan with school to minimize queueing on main road during peak hours**, add turn lanes, **Improve school zone PMs and signage**, Install speed enforcement cameras
5	Maywood Elementary School (Burn-Hicks) - 165th Street & Howard	Improve lane delineation and lane use PMs, Crosswalk visibility enhancements, Install red-light enforcement cameras, **Improve internal site circulation**
6	Irving School - Chicago St & Pine Ave	Improve lane delineation and lane use PMs, Crosswalk visibility enhancements, **Install mid-block crosswalk with PHB**, Install red-light and speed enforcement camera

Strategies

No.	Strategy	Safe System Element Addressed
1	Launch a ***Comprehensive Safety Campaign***	Safe Users, Safe Vehicles
2	Implement ***Measures to Reduce Speeding Citywide***	Safe Users, Safe Vehicles, Safe Speeds
3	Foster a ***Culture of Shared Responsibility*** within the City	Safe Users, Safe Vehicles, Safe Speeds
4	Target ***High Injury Areas*** to Reduce Severe Crashes and Speeds	Safe Users, Safe Vehicles
5	Transform Residential Streets into ***Safe, Low-Speed, Low-Stress Environments***	Safe Users, Safe Streets
6	Develop ***Commercial Streetscapes*** Promoting Safe Speeds and Crossings	Safe Users, Safe Streets
7	Implement ***Systemic Improvements*** at High-Risk Locations	Safe Users, Safe Vehicles, Safe Speeds
8	Establish Safe, Accessible Networks for Pedestrians, Cyclists, and Assistive Device Users	Safe Users, Safe Streets
9	Ensure ***Equity in Access to Safe Vehicles***	Safe Users, Safe Vehicles
10	***Rapid Response*** to Fatal Crashes	Safe Users, Safe Vehicles, Safe Speeds, Post-Crash Care
11	***Utilize Data and Technology*** to Understand High-Risk Behaviors and Streets	Safe Users, Safe Vehicles, Safe Speeds, Safe Streets
12	*Monitor Progress towards Safety Goals*	Safe Users, Safe Vehicles, Safe Speeds, Safe Streets, Post-Crash Care

Schedule

Milestone	Anticipated Completion
Vision Zero Resolution Adoption	March 11 or March 25
Draft Action Plan	April 1, 2024
Review by City staff and Steering Committee	April 16, 2024
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Council Adoption	May 13, 2024
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Meeting Notes

Project List and Countermeasures

- City noted large number of Columbia Avenue intersections, asked if it should be a priority
    - Columbia Ave will be evaluated as a potential High-Injury Network corridor
- City suggested removing enforcement cameras as a countermeasure, as they are not currently used in Indiana
    - Alternatives such as speed feedback signs were discussed
- City asked about order of project list
    - The order of projects presented in this meeting is arbitrary, they will be ranked based on weightage categories

Strategies

- City requested additional information and explanation of safe system elements

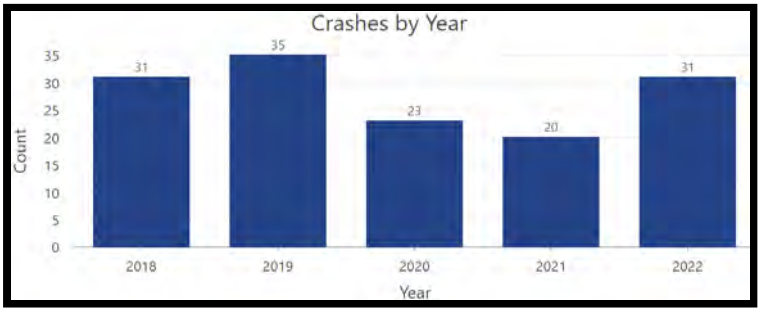
Schedule

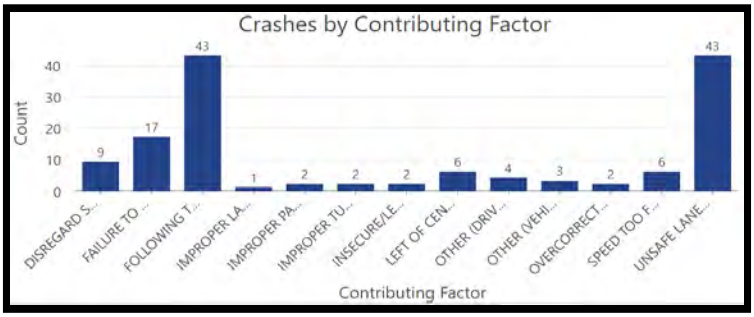
- City suggested getting plan to council earlier (before May 13th) to give them more time for review and feedback

Thank You!

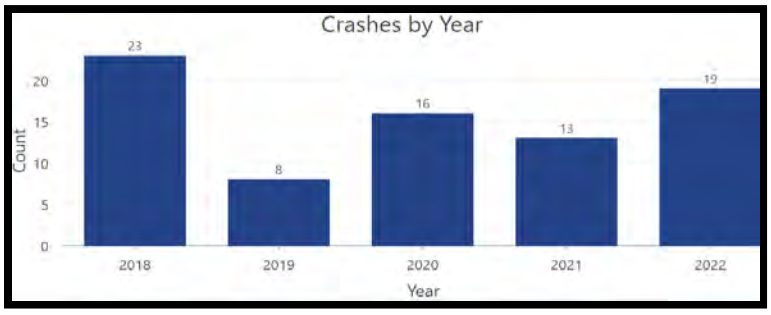
APPENDIX C: SAFETY ANALYSIS

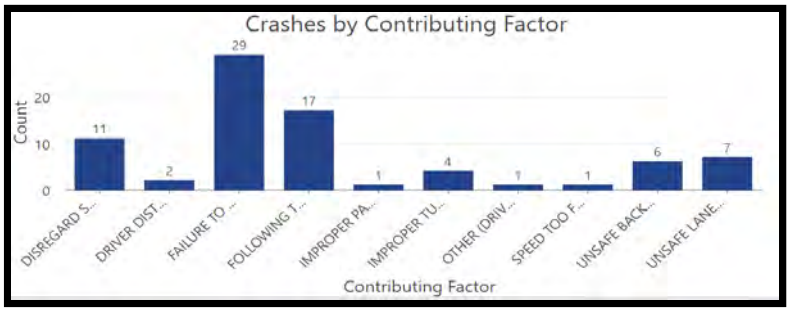
Summer Street and Indianapolis Blvd



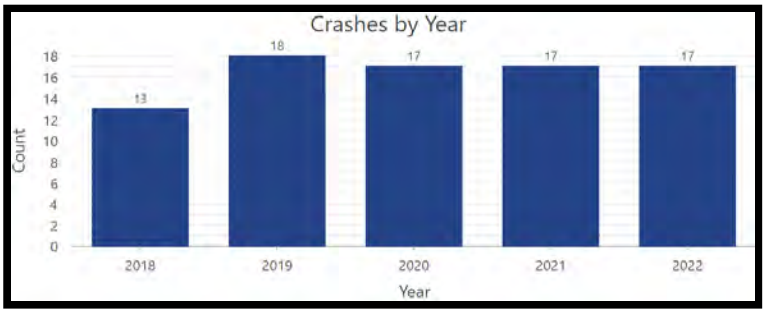


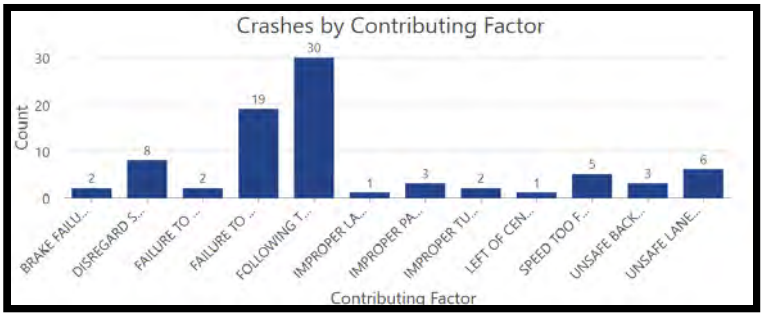
Gostlin Street and Hohman Avenue



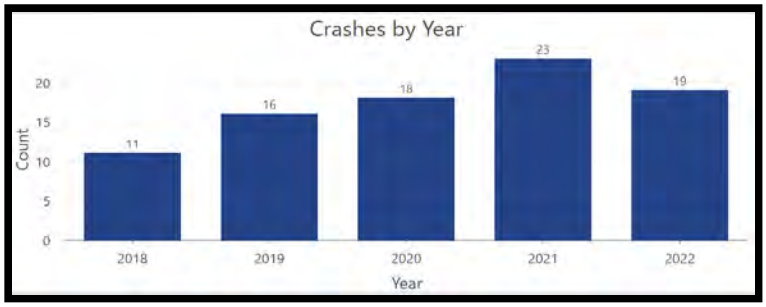


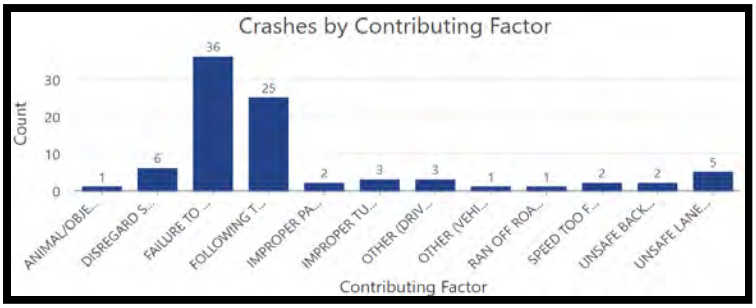
Gostlin Street and Columbia Avenue



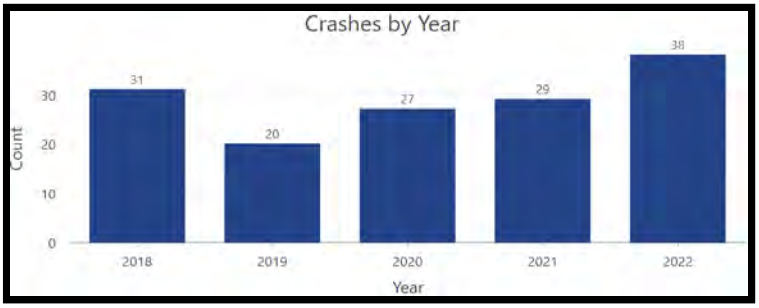


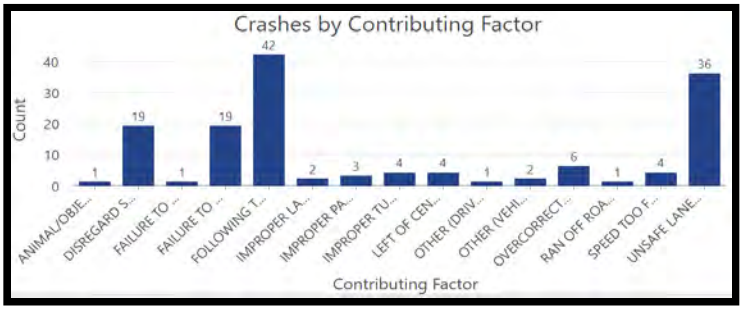
150th Street and Columbia Avenue



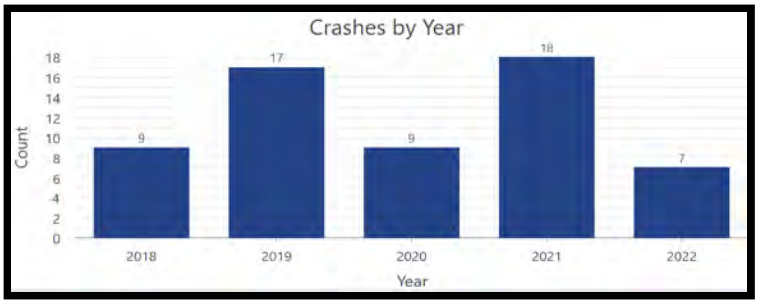


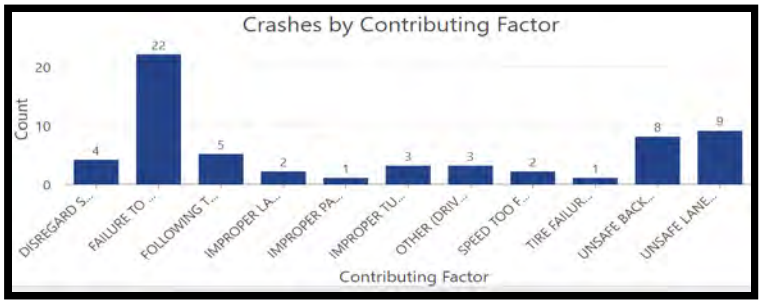
Michigan Street and Columbia Avenue



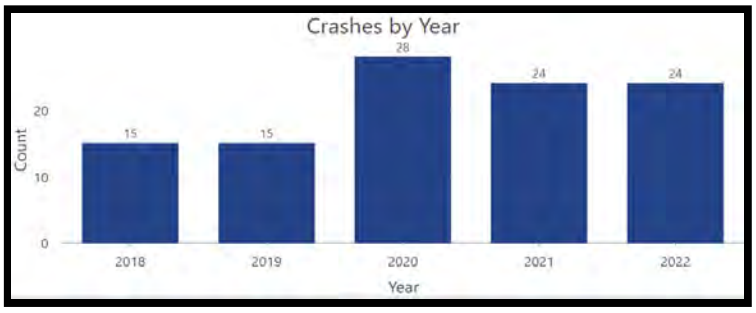


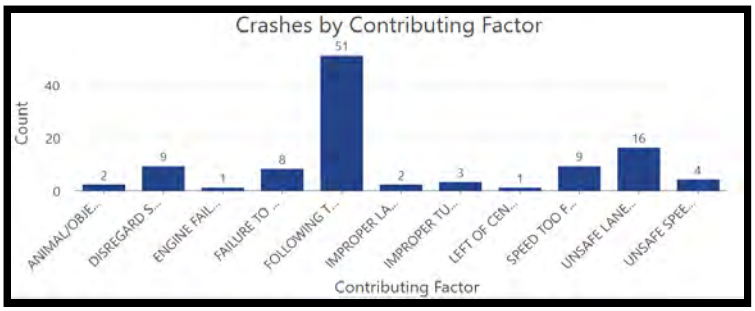
119th Street and Calumet Avenue



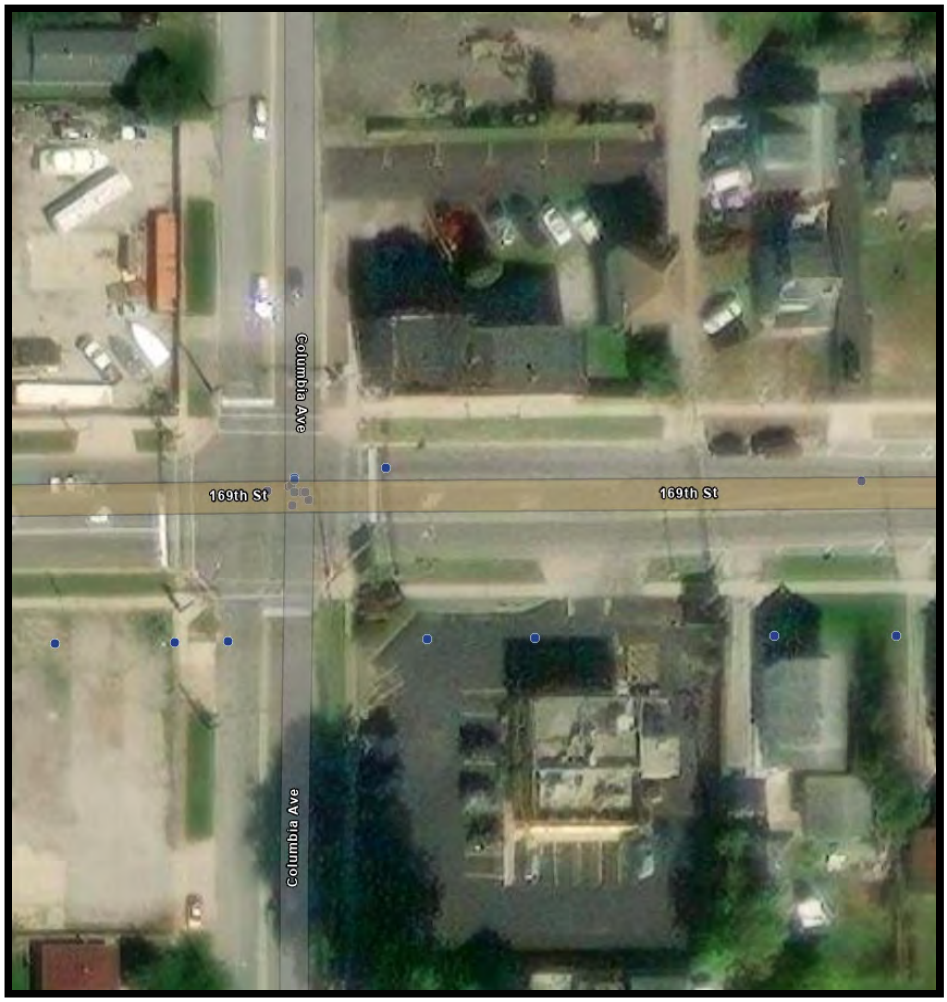


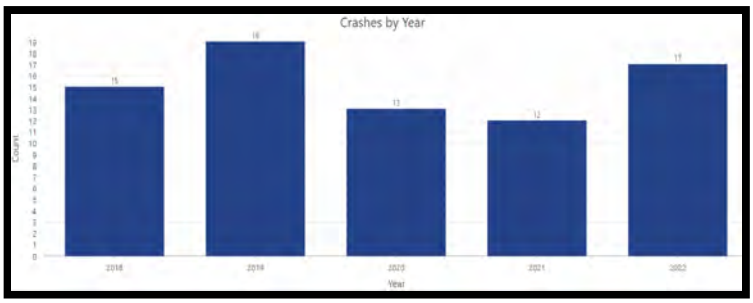
129th Street and Calumet Avenue

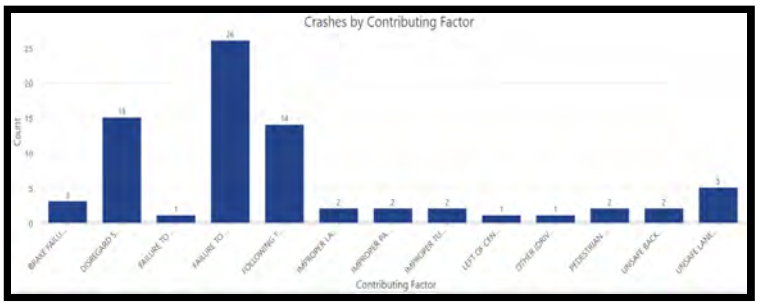




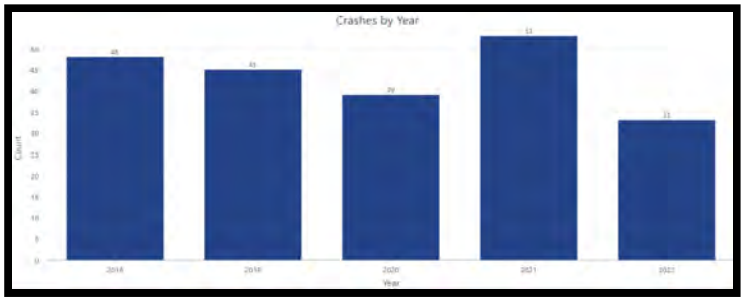
169th Street and Columbia Avenue

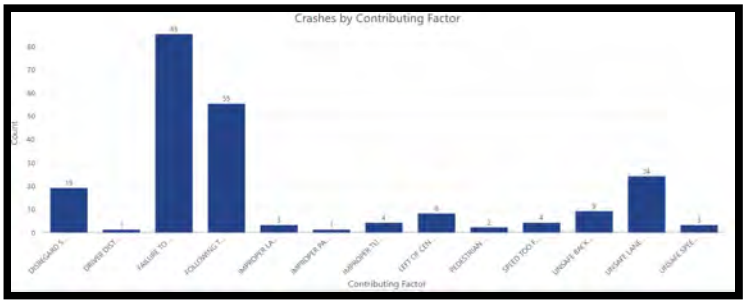




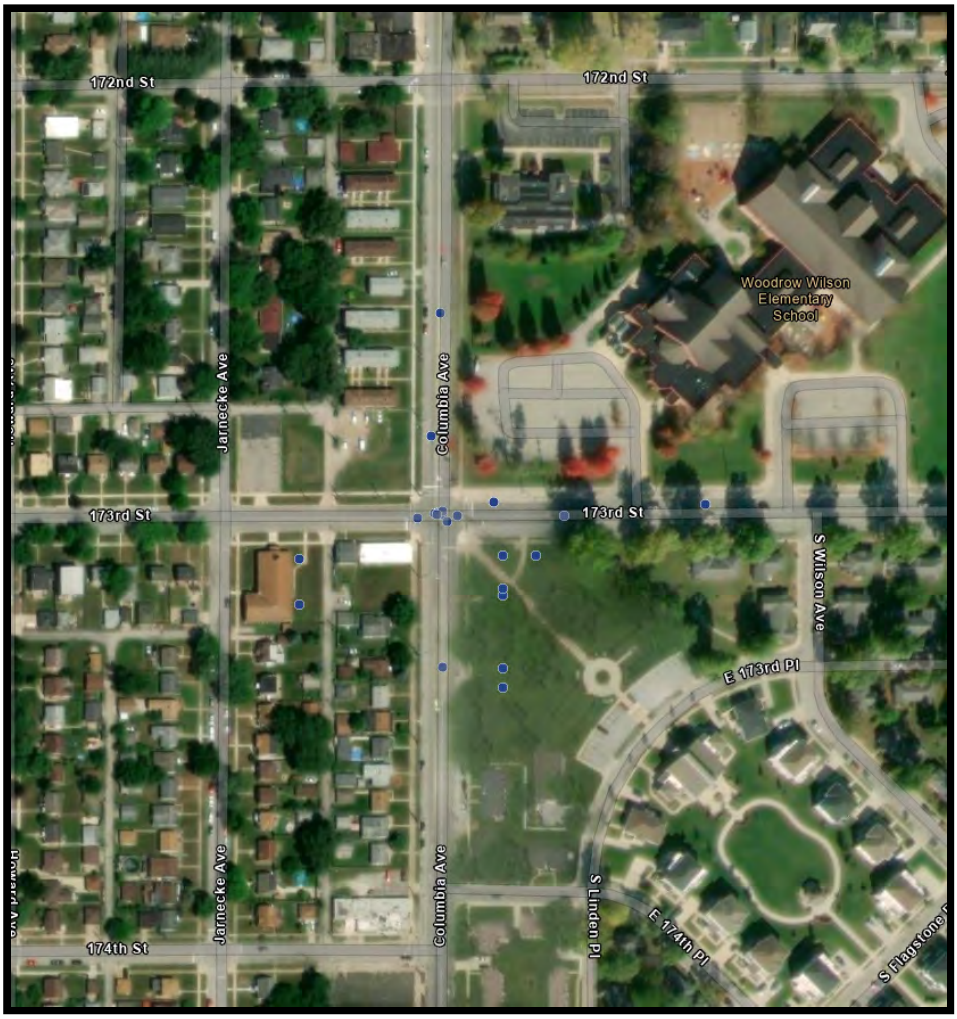


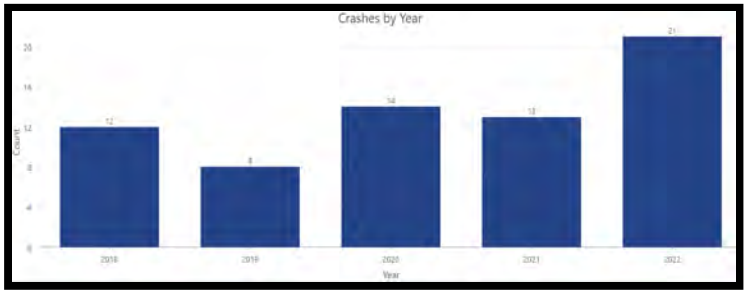
169th Street and Kennedy Avenue

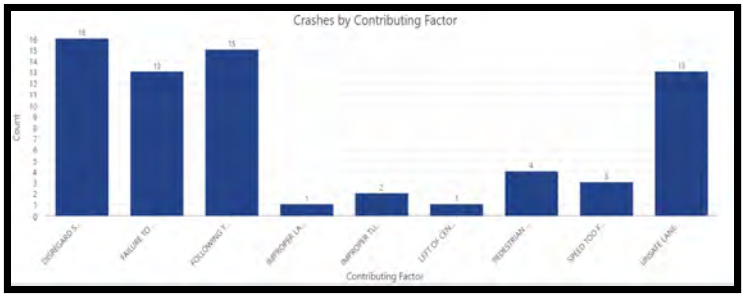




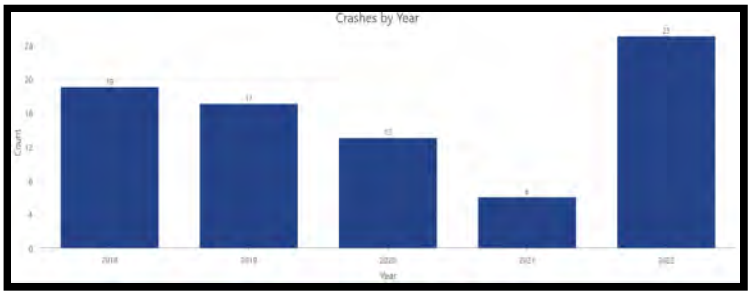
173rd Street and Columbia Avenue

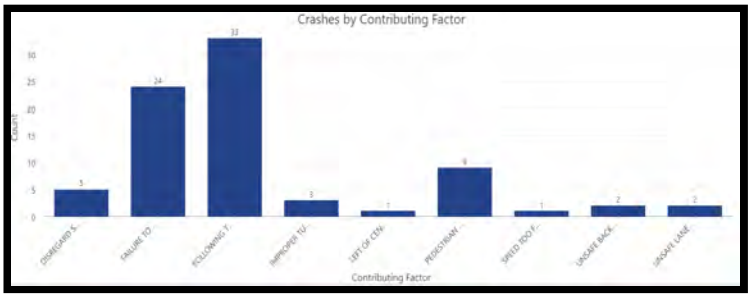




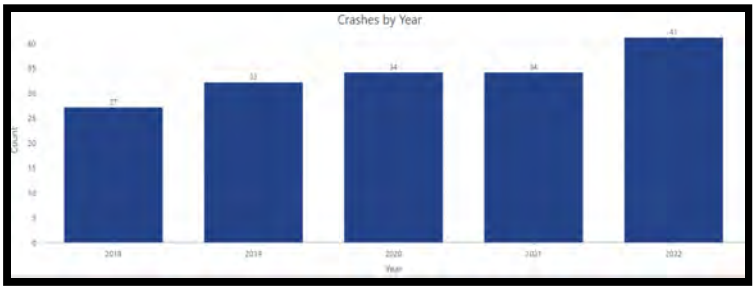


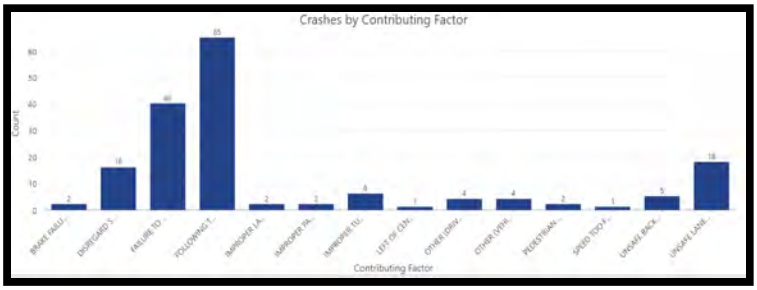
169th Street and Grand Avenue



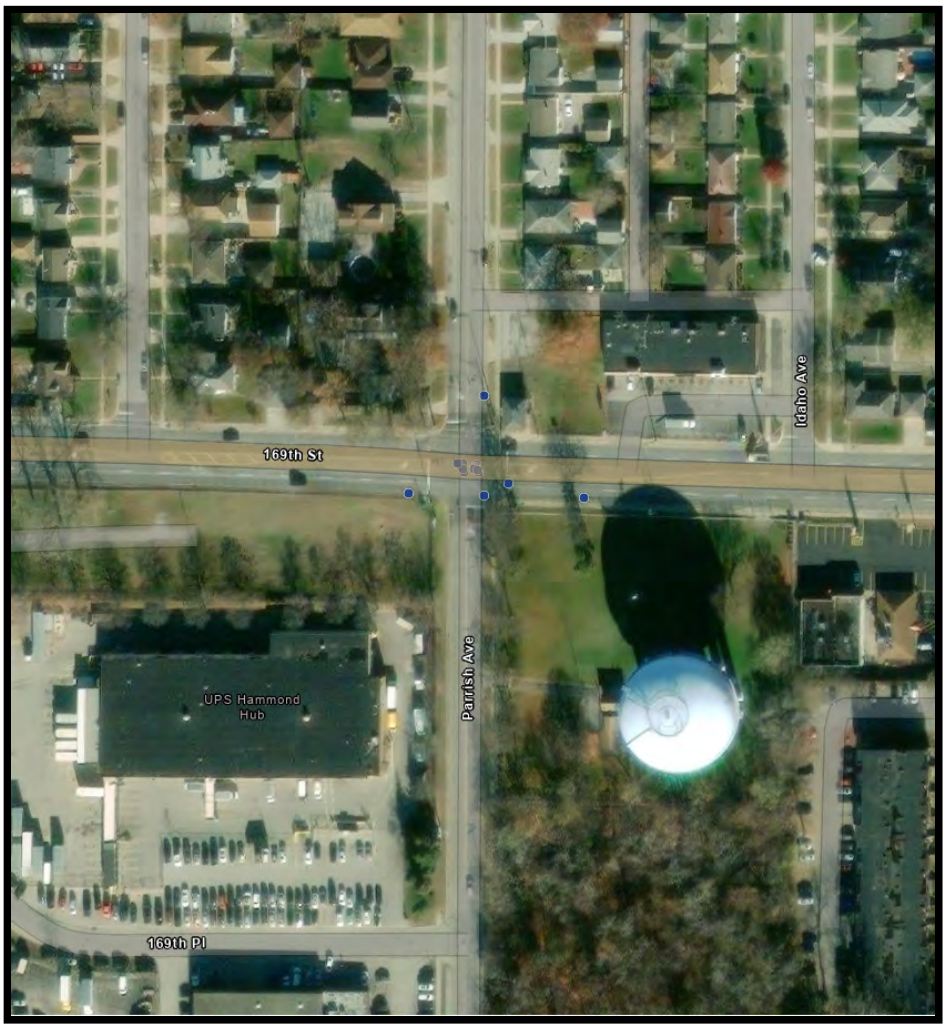


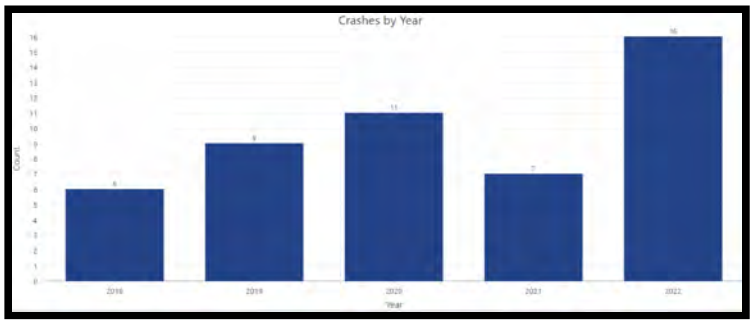
169th Street and Indianapolis Blvd

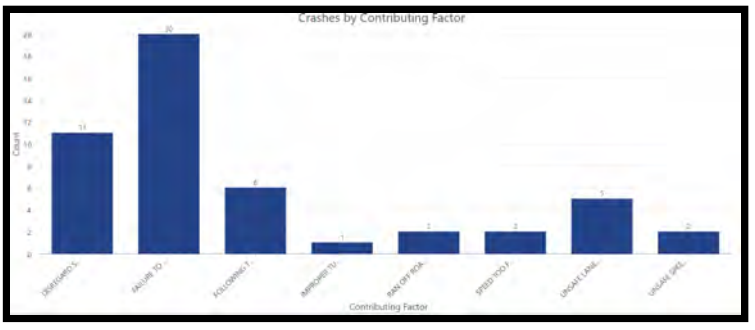




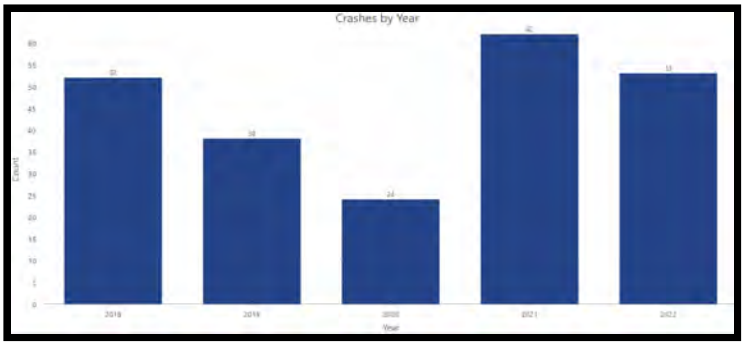
169th Street and Parrish Avenue

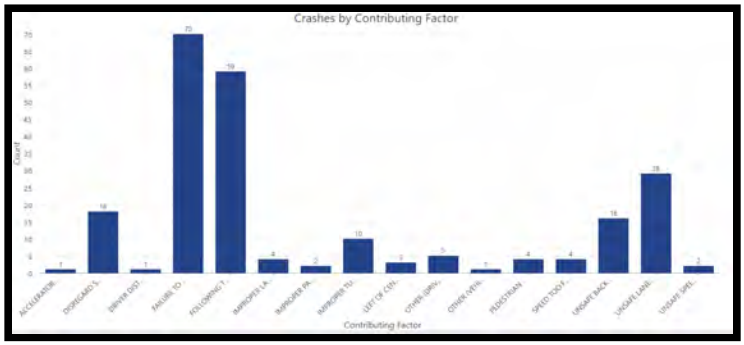




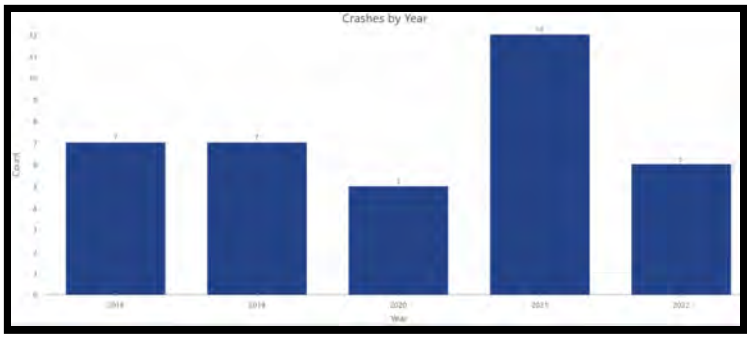


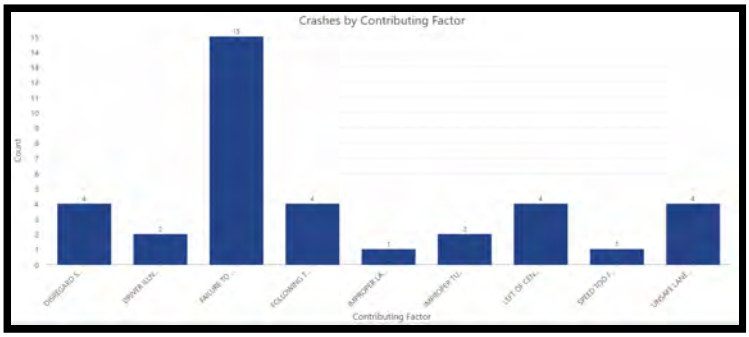
Gostlin Street and Calumet Avenue



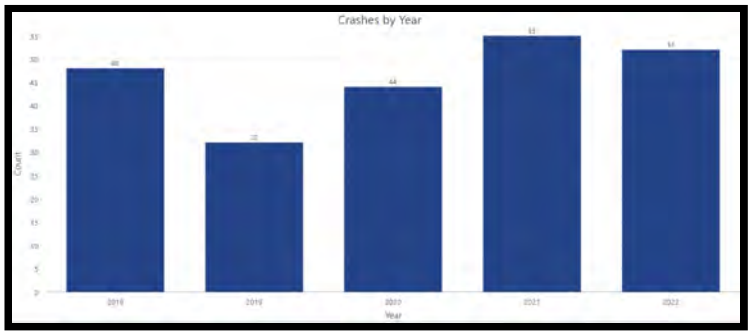


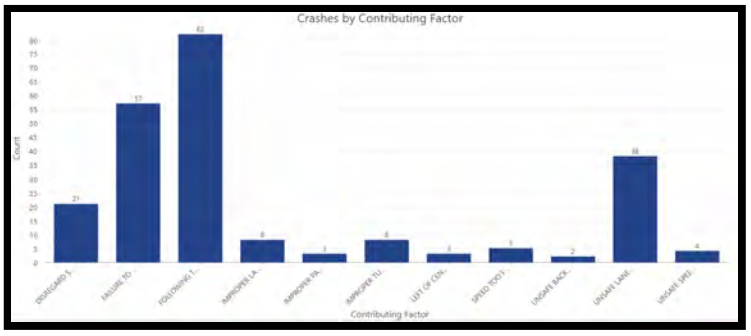
169th Street and New Hampshire Avenue



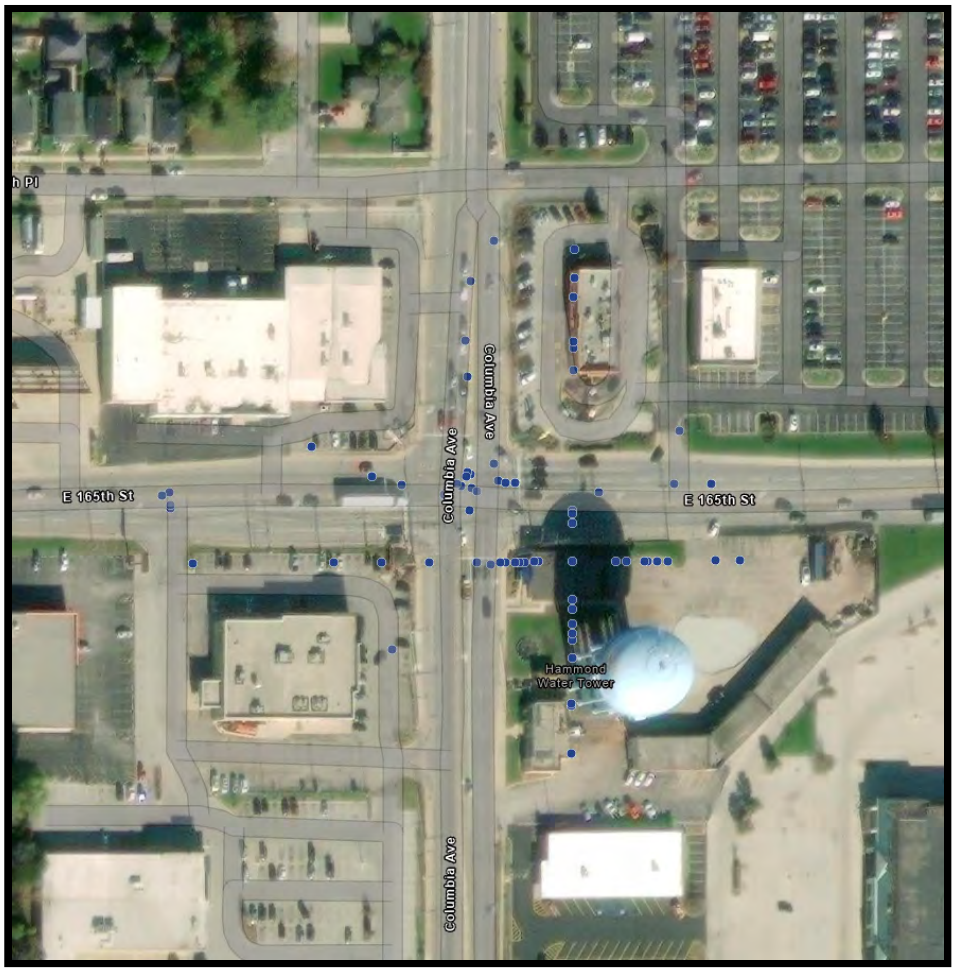


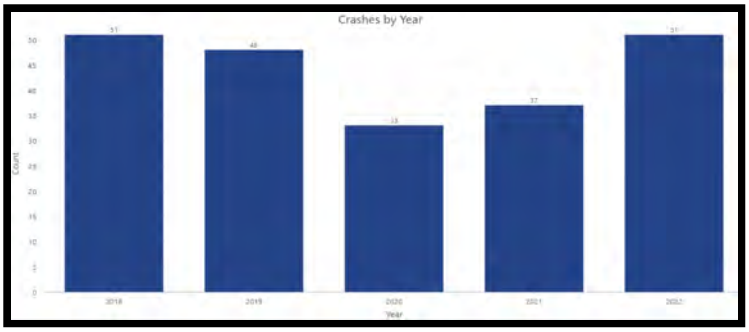
165th Street and Indianapolis Blvd

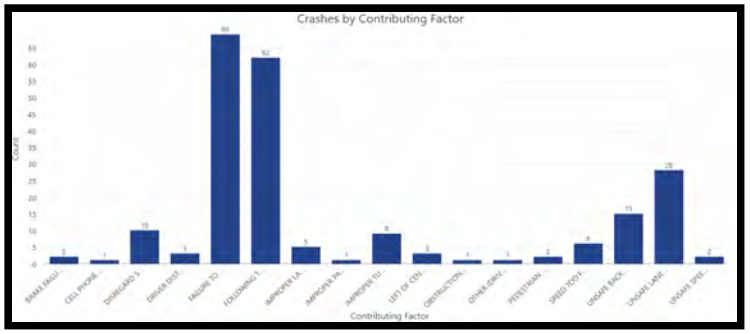




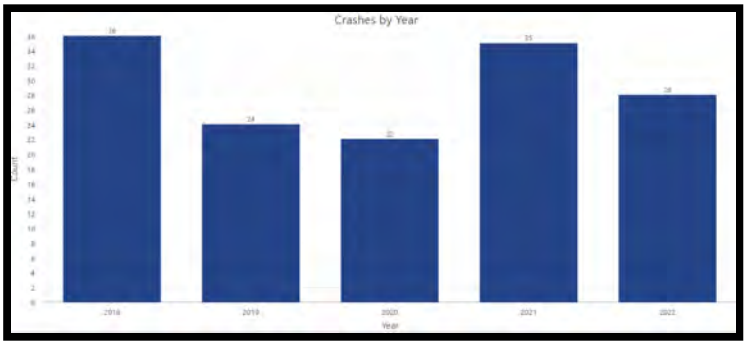
165th Street and Columbia Avenue

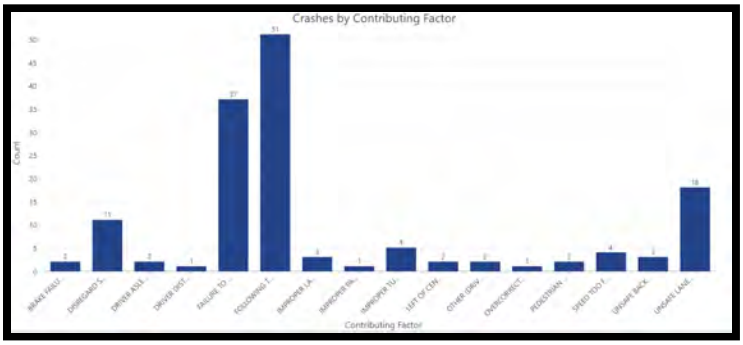




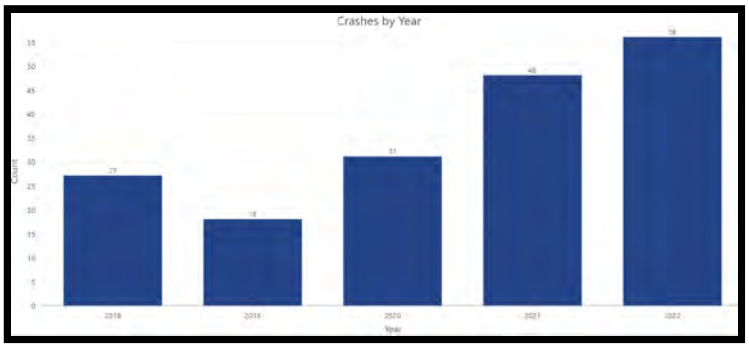


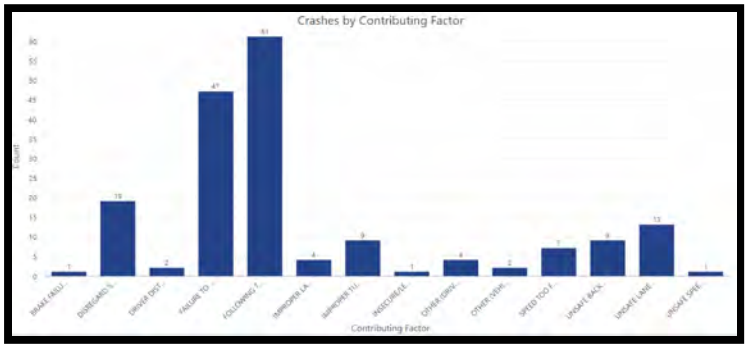
165th Street and Hohman Avenue



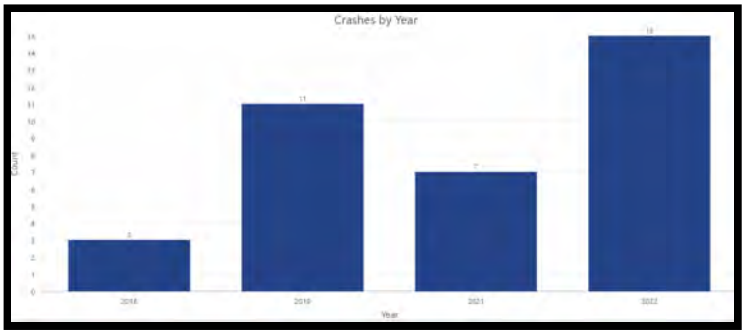


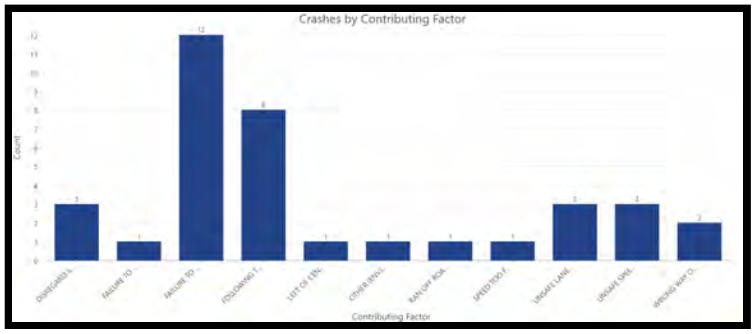
173rd Street and Indianapolis Blvd



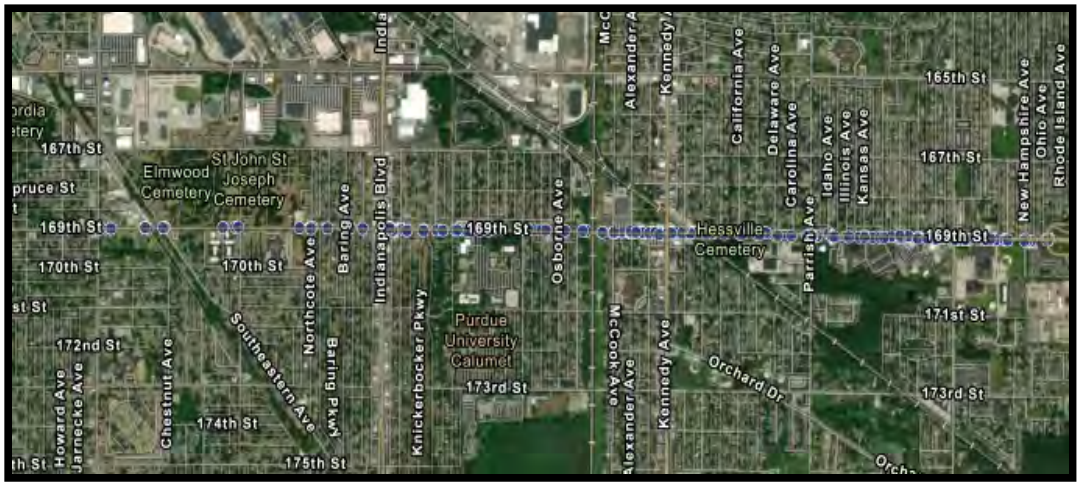


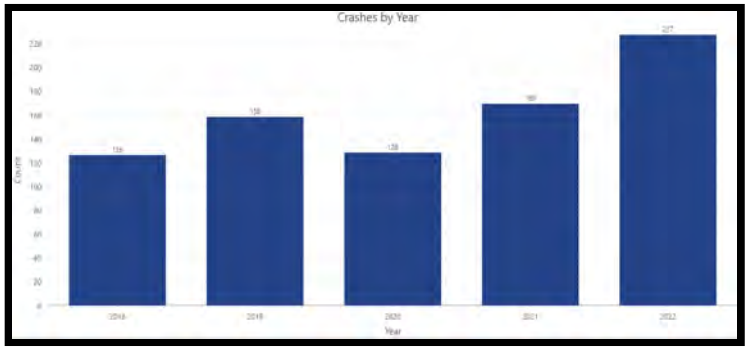
169th Street and Cline Avenue Service Road

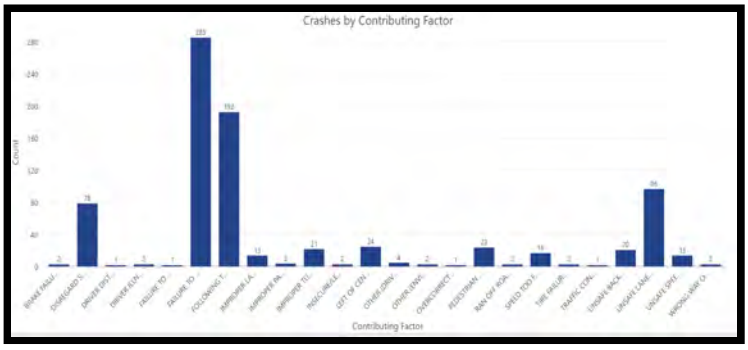




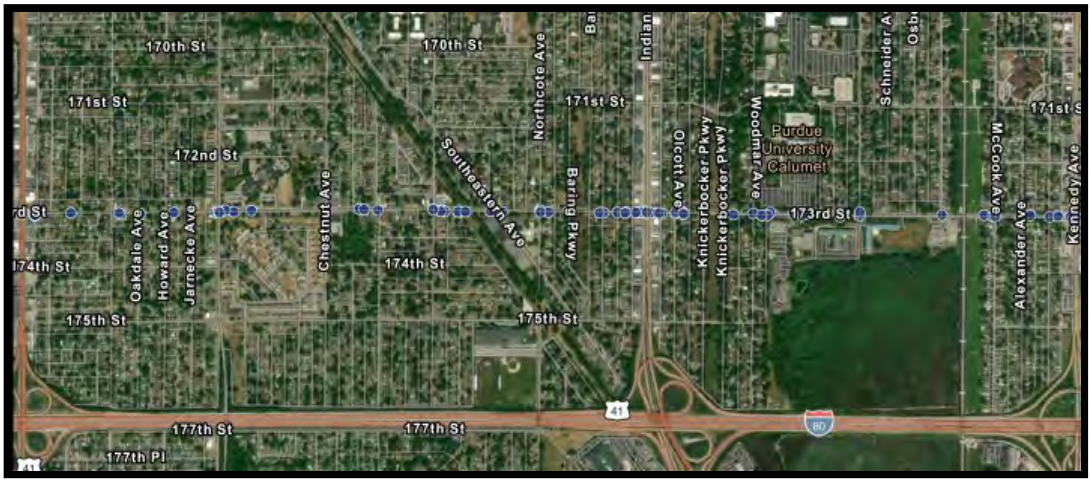
169th Street - From Columbia Avenue to Cline Avenue Service Road

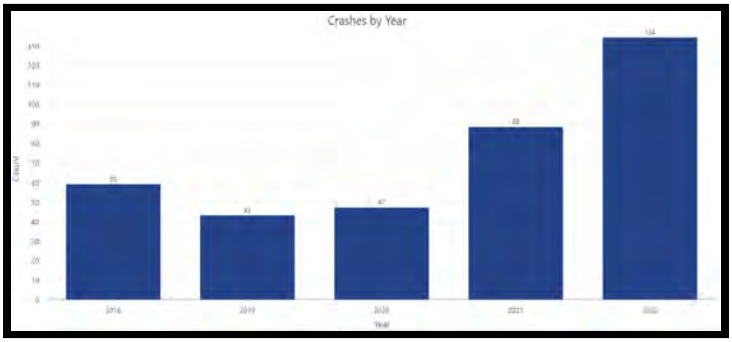


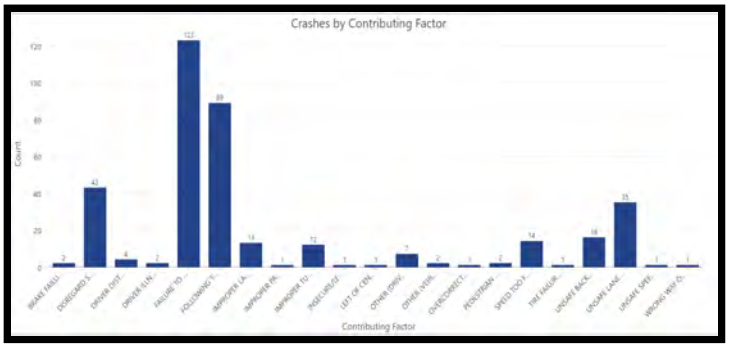




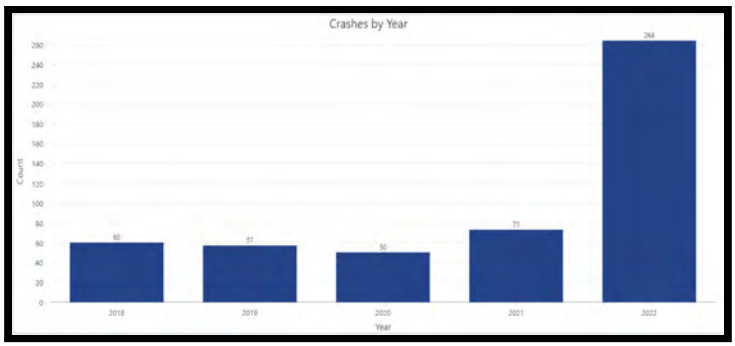
173rd Street - From Calumet Avenue to Kennedy Avenue

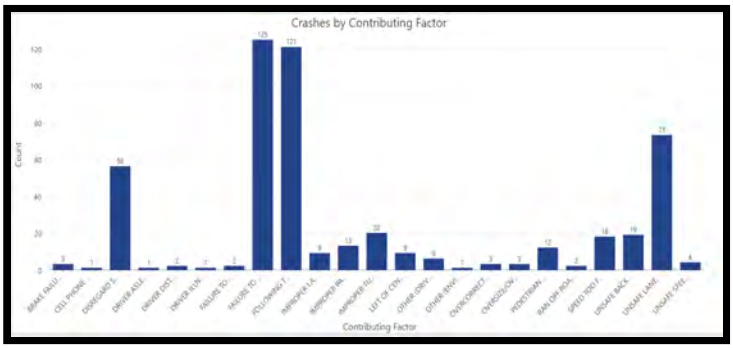




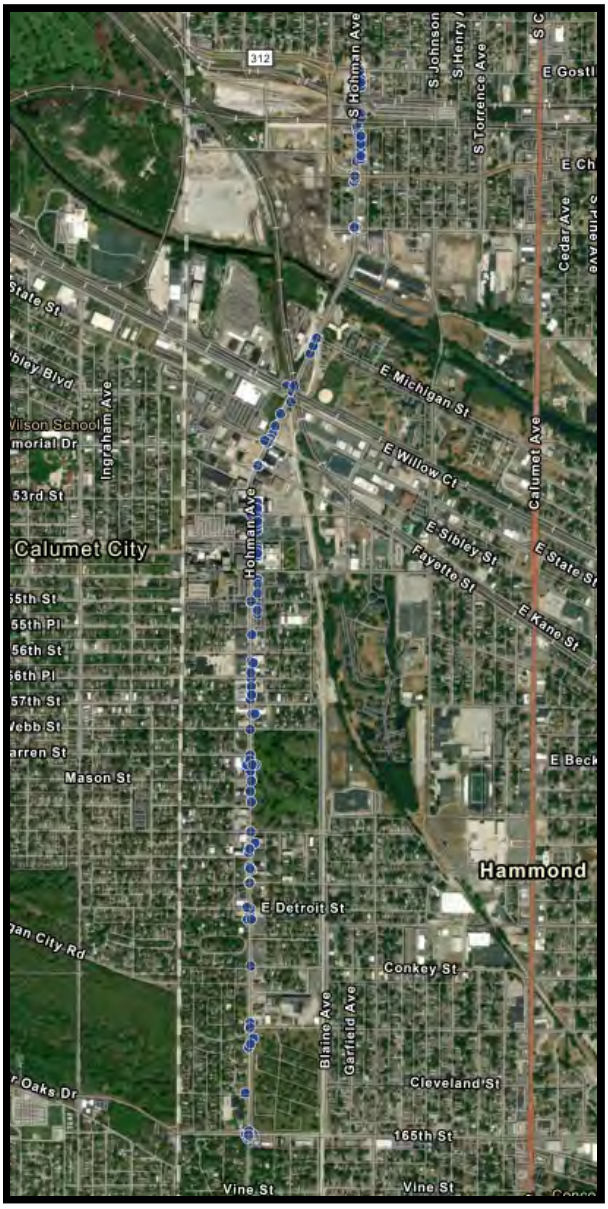


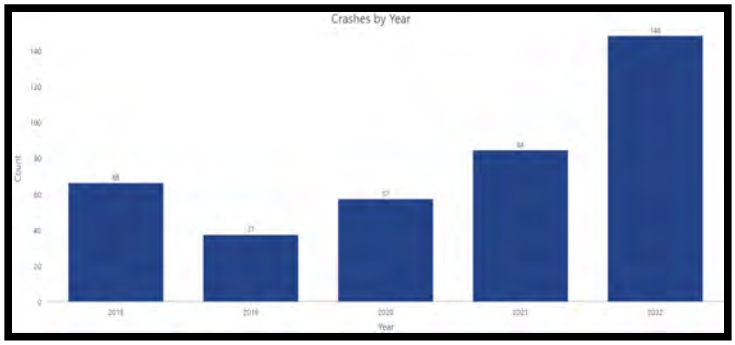
Columbia Avenue - From Gostlin Street to 173rd Street

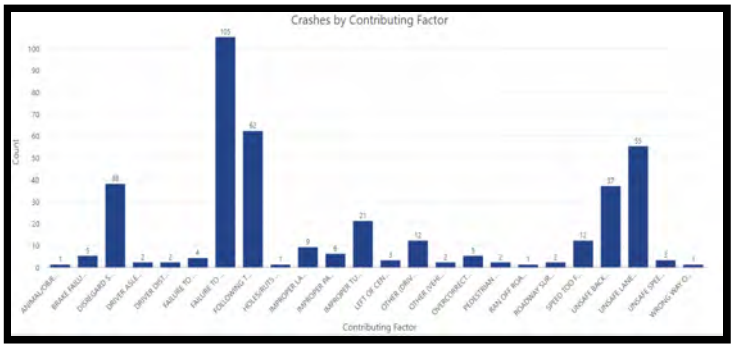




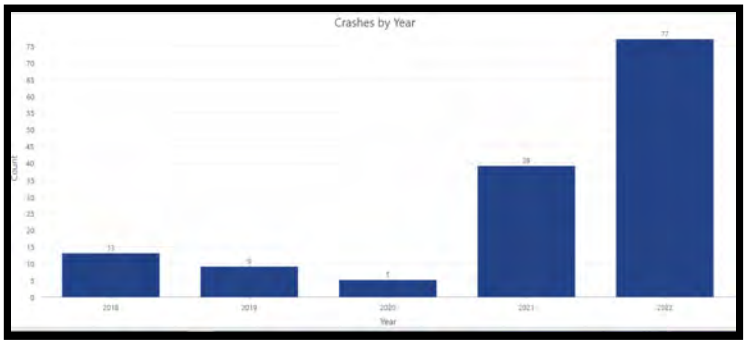
Hohman Avenue - From Gostlin Street to 165th Street

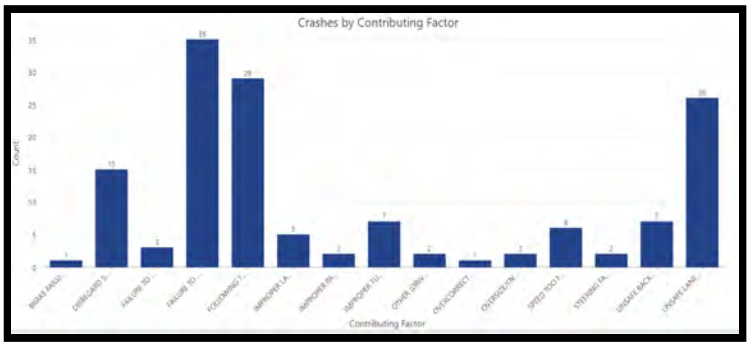




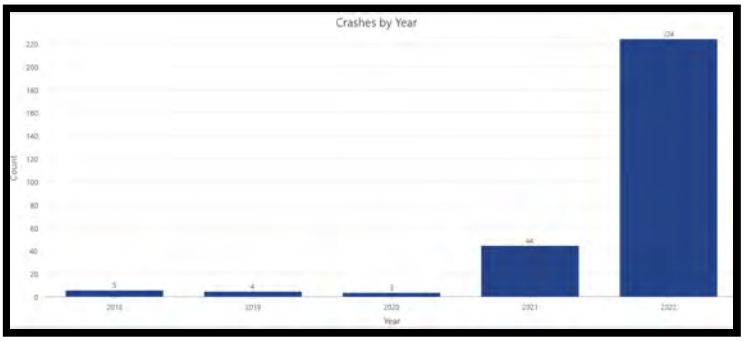


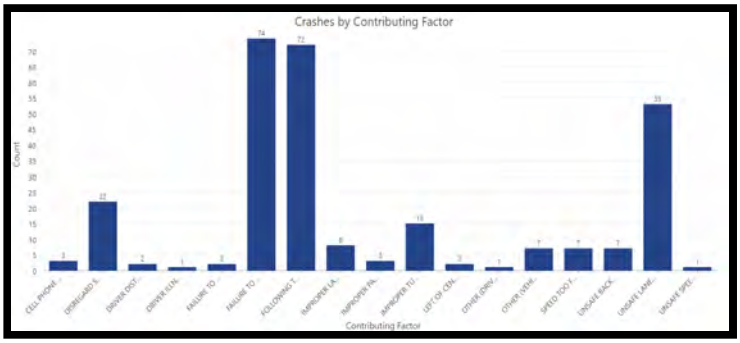
Kennedy Avenue - From Michigan Street to 169th Street



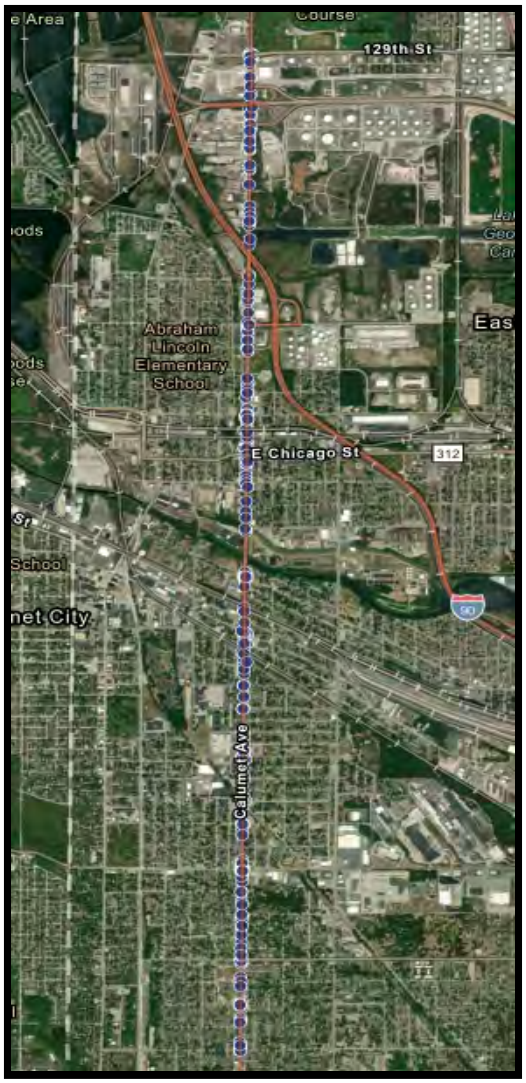


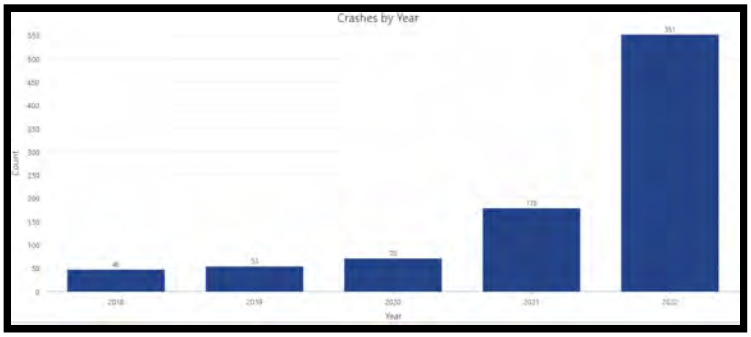
Indianapolis Blvd. - From Summer Street to 173rd Street

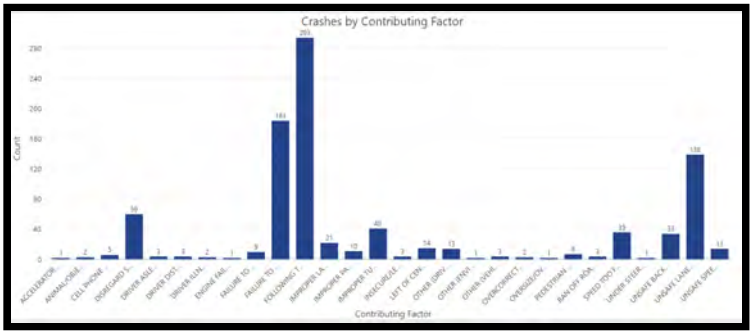




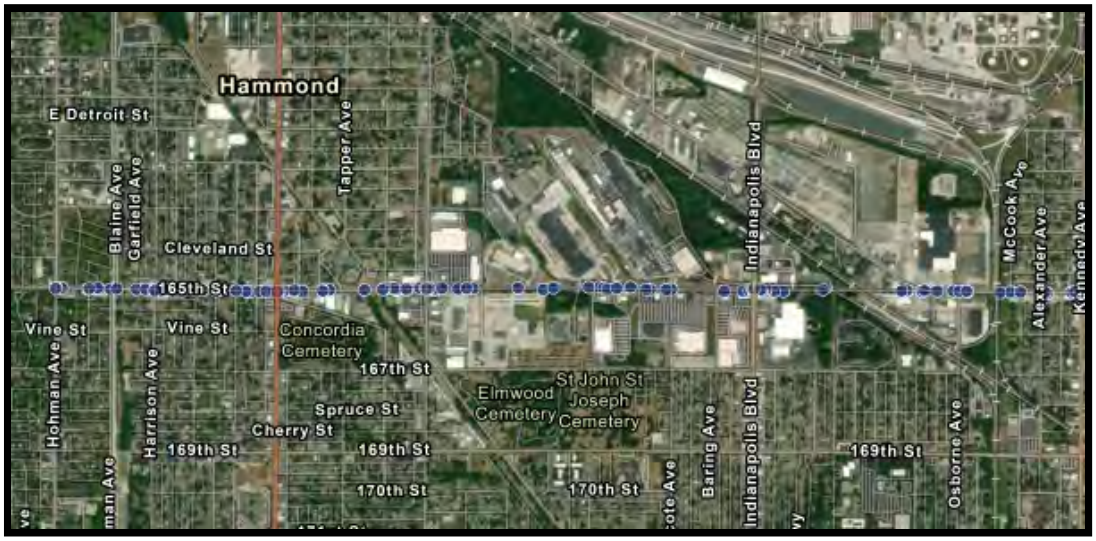
Calumet Avenue - From 129th Street to 173rd Street

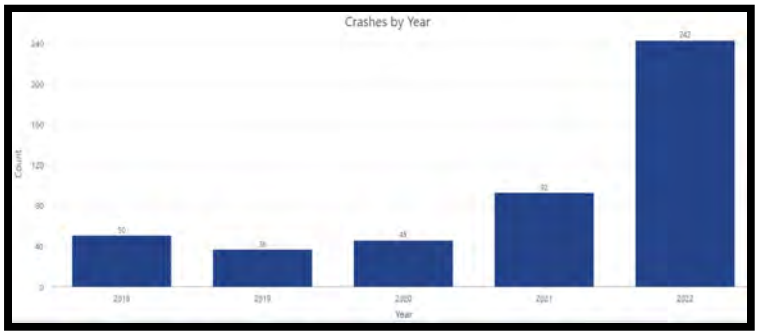


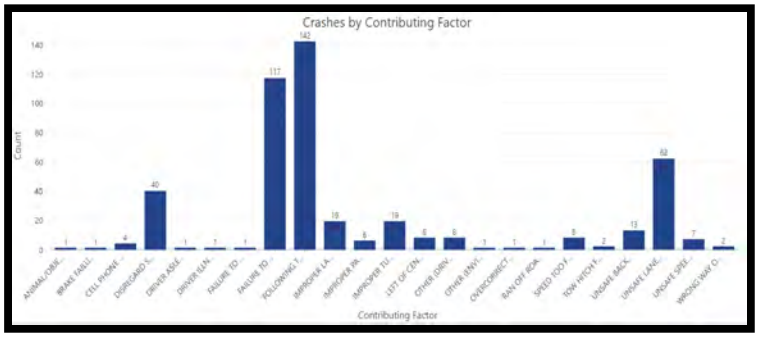




165th Street - From State Line Road to Kennedy Avenue



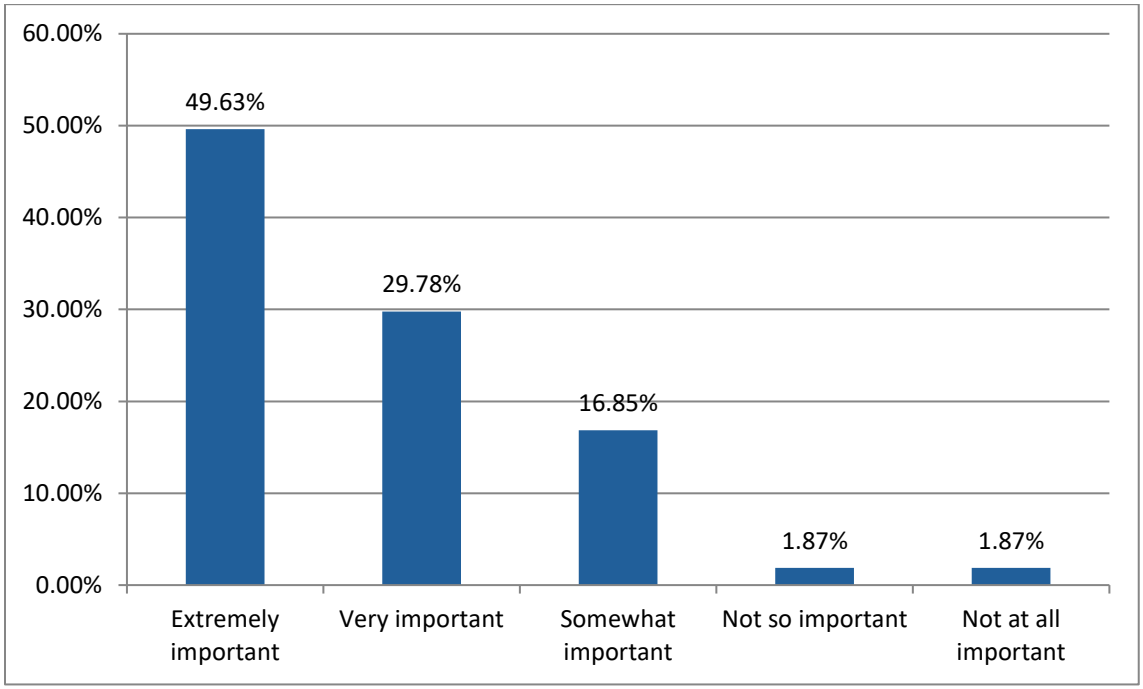




APPENDIX D: PUBLIC ENGAGEMENT

Survey Questions

1. **How important is it for the roads and trails in our community to be accessible for individuals with disabilities?**



2. **Name an intersection or roadway that feels unsafe as a driver (on the next question tell us why) (Please note this was an open-ended question; the analysis of the most mentioned intersections/roadways is below.)**

Intersection Name	Number of Mentions
Indianapolis Blvd - 175th St	19
Cabela St - Indianapolis Blvd	9
Columbia Ave - Southeastern Ave	7
Indianapolis Blvd - E 165th St	6
Calumet Ave - 173rd St	5
Kennedy Ave - 169th St	5
Calumet Ave - 175th St	5
Hohman Ave - 165th St	5
Southeastern Ave - 171st Pl	5
Calumet Ave - 165th St	5
Indianapolis Blvd - 173rd St	5
Sheffield Ave - E Gostlin St	4
S Hohman Ave - Chicago Ave	4
E Gostlin St - S Calumet Ave	3
Tennessee Ave - 169th St	3

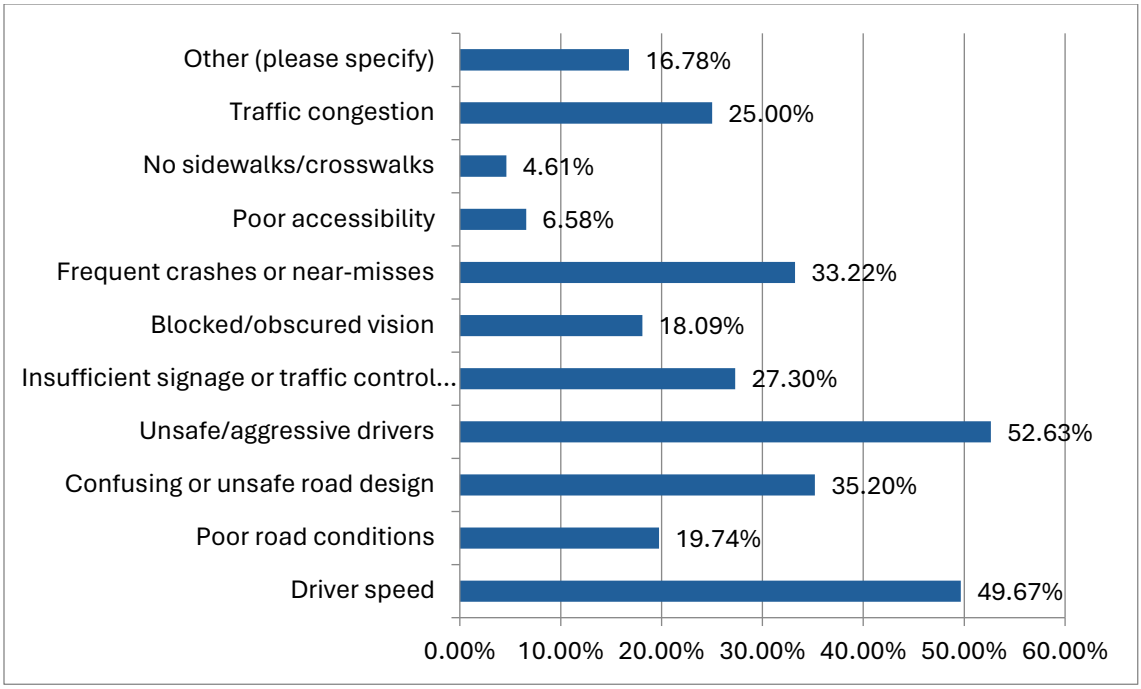
Calumet Ave - 171st St	3
Michigan St - Kennedy Ave	3
Osborne Ave - E 165th St	3
Southeastern Ave - 173rd St	3
Calumet Ave - River Dr	3
Orchard Dr - 173rd St	3
Sohl Ave - E Highland Ave	3
Columbia Ave - 141st St	3
Harrison Ave - 165th St	3
Indianapolis Blvd - 171st St	2
Calumet Ave - 129th St	2
Columbia Ave - 167th St	2
Orchard Dr - Grand Ave	2
Calumet Ave - 169th St	2
Kennedy Ave - 174th St	2
Grand Ave - 169th St	2
S Johnson Ave - 140th St	2
Kennedy Ave - 163rd Pl	2
Calumet Ave - Ridge Ave	2
S Hohman Ave - 141st St	2
Hohman Ave - E Highland St	2
Calumet Ave - E Highland St	2
Calumet Ave - E Chicago St	2
Harrison Ave - 169th St	2
Carrol St - S State Line Ave	2
S Hohman Ave - 169th St	2
Columbia Ave - 175th St	2
Calumet Ave - E Michigan St	2
Calumet Ave - Indianapolis Blvd	2
Kennedy Ave - 173rd St	2
E Michigan St - Columbia Ave	1
Calumet Ave - Amoco Oil Company Bridge	1
S Howard Ave - E Logan St	1
E Gostlin St - S Johnson Ave	1
Blaine Ave - E Lewis St	1
Harrison Ave - 171st St	1
Calumet Ave - 167th St	1
New York Ave - 129th St	1
New York Ave - Indianapolis Blvd	1
Tapper Ave - 170th St	1
White Oak Ave - 169th St	1

Alabama Ave - 174th St	1
Arizona Ave - 174th St	1
Kennedy Ave - Orchard Dr	1
Grand Ave - 177th St/Pl	1
Wicker Ave - 173rd St	1
S Schneider Ave - 173rd St	1
Chestnut Ave - 173rd St	1
Northcote Ave - E 175th St	1
Kennedy Ave - Dunkin' Donuts exit	1
Oakdale Ave - 175th St	1
Calumet Ave - E May St	1
Columbia Ave - E May St	1
S Maywood Ave - E May St	1
State Line Ave - Michigan City Rd	1
Fayette St - S Oakley Ave/Ruselle	1
Harrison Ave - 173rd St	1
Indianapolis Blvd - E Summer St	1
State Line Ave - 165th St	1
Calumet Ave - 117th St	1
Calumet Ave - 120th St	1
Kennedy Ave - 175th St	1
Davis Ave - 121st St	1
Calumet Ave - E Carroll St	1
S State Line Ave - E Highland St	1
Calumet Ave - Conkey St	1
Hohman Ave - River Dr	1
Sohl Ave - E Michigan St	1
Calumet Ave - 116th St	1
Hohman Ave - 143rd St	1
Wicker Ave - 169th St	1
Harrison Ave - 175th St	1
New Hampshire Ave - 165th St	1
Hohman Ave - Gostlin St	1
White Oak Ave - 173rd St	1
Kennedy Ave - 178th St	1
White Oak Ave - Michigan St	1
Columbia Ave - 165th St	1
Indianapolis Blvd - Carroll St	1
Huehn St - Hohman Ave	1
Atchison Ave - Indianapolis Blvd	1
Columbia Ave - Chicago St	1

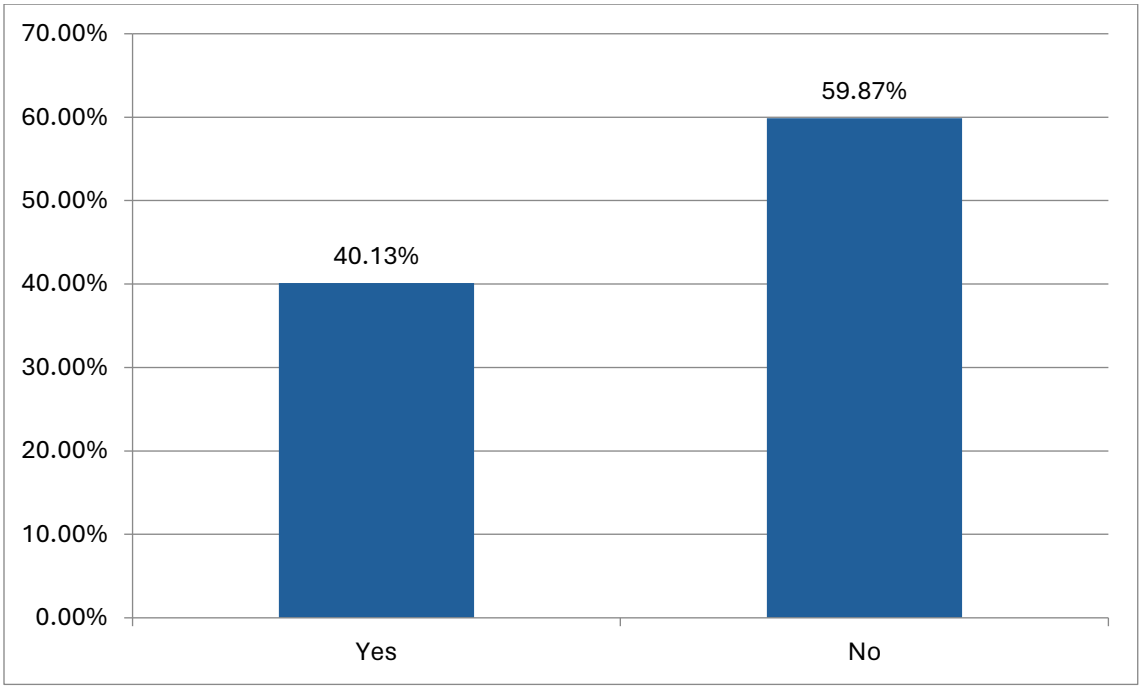
Martha St - California Ave	1
Calumet Ave - 121st St	1
California Ave - 174th St	1
Cameron Ave - 141st St	1
Indianapolis Blvd - Myrtle Ave	1
Southeastern Ave - Northcote Ave	1
Northcote Ave - 169th St	1
Southeastern Ave - 175th St	1
Knickerbocker Pkwy - 169th St	1
Indianapolis Blvd - 169th St	1
Indianapolis Blvd - E 167th St	1
Kentucky Ave - 165th St	1
Woodrow Wilson Elementary School - 173rd St	1
Lincoln Ave - 119th St	1

Road Name	**Limits**	**Number of Mentions**
Hohman Ave	All Hohman Ave	10
Columbia Ave	173rd St - Summer St	8
Calumet Ave	All Calumet Ave	4
Chicago Ave	All Chicago Ave	2
5th Ave	Indianapolis Blvd - 112th St	1
167th St	Indianapolis Blvd - Southeastern Ave	1
141st Ave	Calumet Ave - Hohman Ave	1
119th St	Lincoln Ave - Lake Ave	1
Gostlin St	Columbia Ave - Calumet Ave	1
139th St	All 139th St	1
Cline Ave	All Claine Ave	1
Indianapolis Blvd	119th St - New York st	1
169th St	Columbia Ave - Southeastern Ave	1
Southeastern Ave	All Southeastern Ave	1
Summer St	165th St - Indianapolis Blvd	1
Kennedy Ave	169th St - 165th St	1
State Line Ave	All State Line Ave	1
165th St	Calumet Ave - State Line Ave	1
Tennessee Ave	169th St - 163rd St	1
Michigan St	Calumet Ave - Hohman Ave	1
Michigan St	Columbia Ave - Indianapolis Blvd	1
169th St	Indianapolis Blvd - Southeastern Ave	1

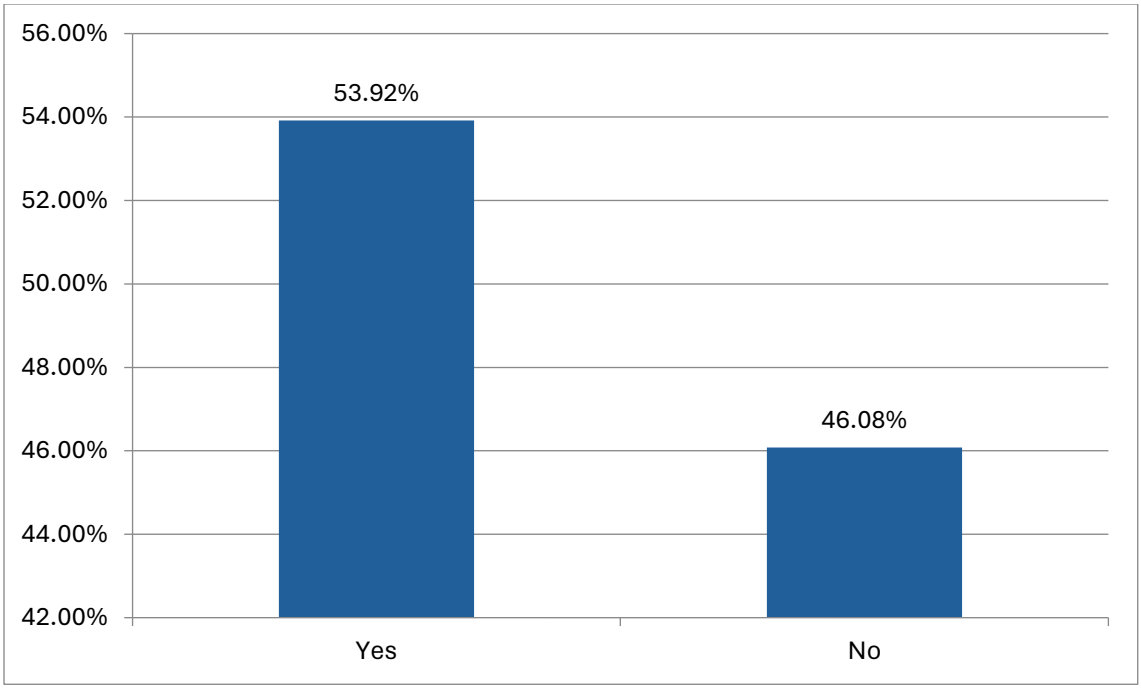
3. **What do you consider the primary cause of the unsafety of this intersection/roadway? Select all that apply:**



4. Have you been involved in or witnessed a crash at this intersection?



5. Do you avoid using this intersection/road due to safety concerns?



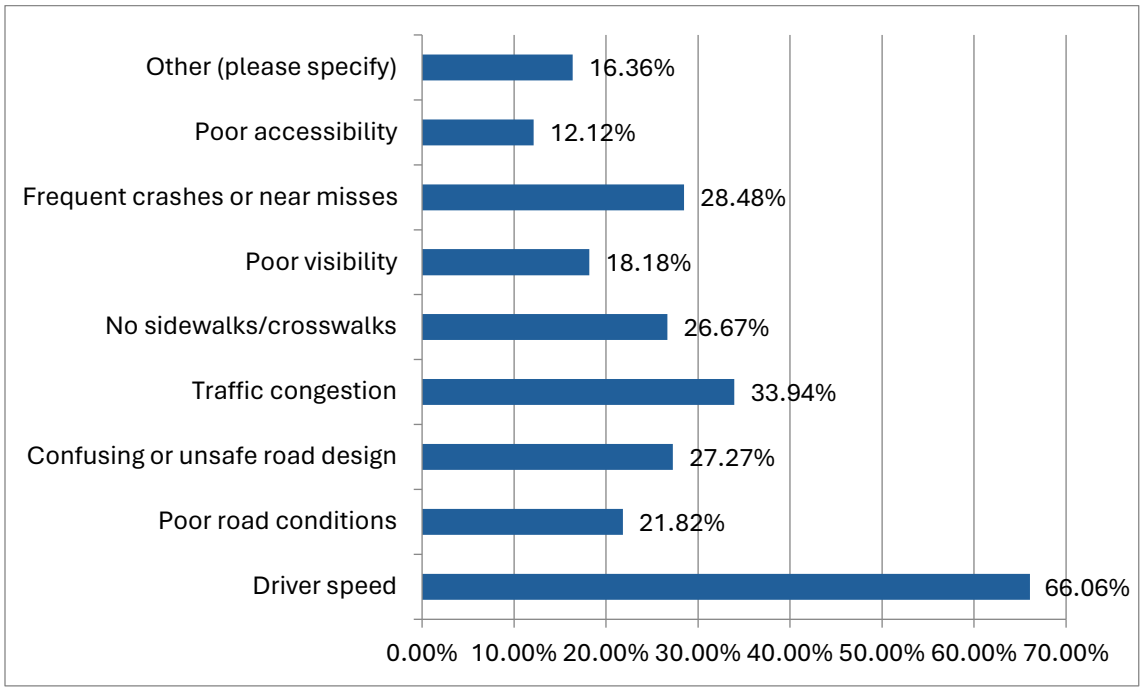
6. **Name an intersection/roadway that feels unsafe as a bicyclist/pedestrian/transit user. (Please note this was an open-ended question; the analysis of the most mentioned intersections/roadways is below.)**

Intersection Name	Number of Mentions
Calumet Ave - 175th St	4
Calumet Ave - Indianapolis Blvd	3
Calumet Ave - Sheffield Ave	3
Hohman Ave - 165th St	3
Calumet Ave - 173rd St	3
Grand Ave - 169th St	3
Indianapolis Blvd - 173rd St	3
Grand Ave - 173rd St	3
Kennedy Ave - 169th St	3
Wicker Ave - 173rd St	2
Hohman Ave - 173rd St	2
Calumet Ave - River Dr	2
Hohman Ave - Highland St	2
Calumet Ave - 165th St	2
Erie-Lakawanna Trail - 169th St	2
Indianapolis Blvd - 175th St	2
Cabela Dr - Indianapolis Blvd	2
Johnson Ave - Gostlin St	1
Hohman Ave - Huehn St	1
Grand Ave - Rail Crossing	1

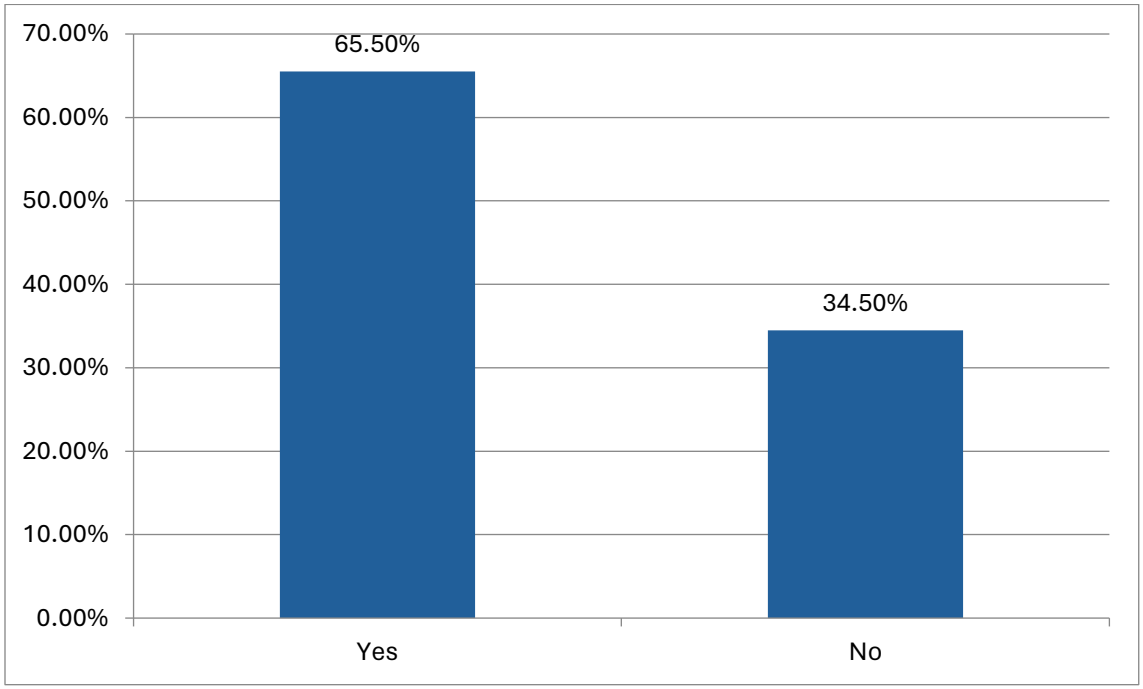
Calumet Ave - 141st St	1
Calumet Ave - 171st St	1
Calumet Ave - Chicago St	1
Atchison Ave - 116th St	1
Southeastern Ave - 171st Pl	1
Calumet Ave - 119th St	1
Johnson Ave - 140th St	1
Kennedy Ave - 173rd St	1
Indianapolis Blvd - 165th St	1
Southeastern Ave - 173rd St	1
Columbia Ave - 169th St	1
White Oak Ave - 170th St	1
Harrison Ave - 165th St	1
Sohl Ave - E Michigan St	1
Waltham St - Hohman Ave	1
Northcote Ave - River Dr	1
Harrison Ave - Conkey St	1
Lyman Ave - 173rd St	1
Kennedy Ave - 165th St	1
Osborne Ave - 169th St	1
Calumet Ave - 143rd St	1
Calumet Ave - 129th St	1
Calumet Ave - Highland St	1
Calumet Ave - Gostlin St	1

Road Name	**Limits**	**Number of Mentions**
Calumet Ave	All Calumet Ave	5
Hohman Ave	All Hohman Ave	3
Chicago St	White Oak Ave - Columbus Ave	2
Knickerbocker Parkway	169th St - 175th St	2
165th St	All 165th St	1
169th St	Southeastern Ave - Birch Ave	1
169th St	Alabama Ave - Idaho Ave	1
169th St	Columbia Ave - Southeastern Ave	1
May St	Columbia Ave - Calumet Ave	1
Fayette St	Oakley Ave - Hohman Ave	1
Indianapolis Blvd	All Indianapolis Blvd	1
167th St	Indianapolis Blvd - Southeastern Ave	1
169th St	Northcote Ave - Birch Ave	1
Orchard Dr	173rd St - 177th St	1

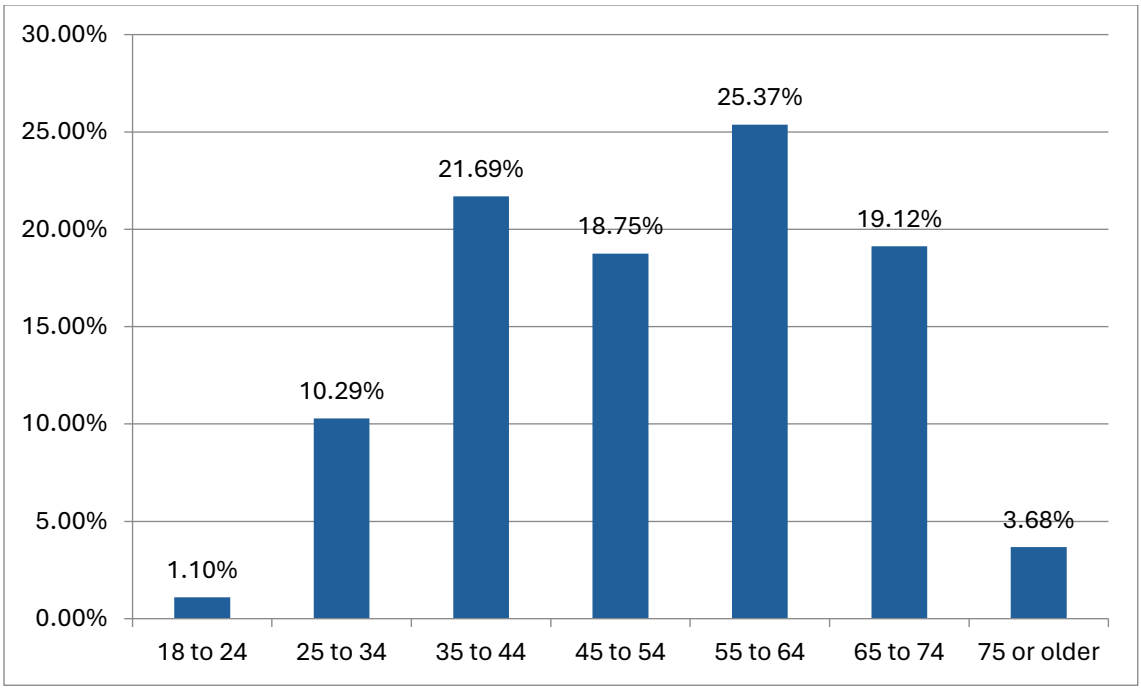
7. **What would the primary cause to deter your use of the intersection/roadway as a bicyclist/pedestrian/transit user? Select up to five.**



8. **As a pedestrian/bicyclist, do you avoid using this intersection/roadway due to safety concerns?**



9. **What is your age?**


30.00%
25.00%
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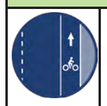
10.00%
5.00%
0.00%
1.10%
10.29%
21.69%
18.75%
25.37%
19.12%
3.68%
18 to 24
25 to 34
35 to 44
45 to 54
55 to 64
65 to 74
75 or older

APPENDIX E: U.S. DEPARTMENT OF TRANSPORTATION PROVEN SAFETY COUNTERMEASURES

PROVEN SAFETY COUNTERMEASURES

Source: U.S. Department of Transportation Federal Highway Administration Proven Safety Countermeasures

- Safety Focus Areas

Countermeasure		Description	Types of Crash Mitigation	Typical Locations for this Treatment	Additional Considerations
Speed Management					
	Appropriate Speed Limits for All Road Users	A growing body of research shows that speed limit changes alone can lead to measureable declines in speeds and crashes.	Various	Anywhere where appropriate, though particularly in urban areas where various modes of transportation are utilizing the road.	Agencies with designated authorities to set speed limits can establish non-statutory speed limits or designate reduced speed zones, and a growing number are doing so. FHWA provides further direction on how to do this.
	Speed Safety Cameras	Speed safety cameras use speed measurement devices to detect speeding and capture photographic or video evidence of vehicles that are violating a set speed threshold.	Rear end, sideswipe, and roadway departure crashes caused by aggressive driving	Expressways, freeways, and principal arterials, particularly on corridors where speeding is a concern (high-crash freeways, school zones, etc.).	Requires regular evaluation to measure effectiveness; can be unpopular and controversial so public trust and siting important to ensure underserved populations are not unfairly targeted.
	Variable Speed Limits	Variable Speed Limits are speed limits that adapt to changing conditions in a short period of time, such as congestion, weather, or crashes, and are often part of an Active Traffic Management (ATM) plan.	Rear end and sideswipe crashes	Urban or rural expressways, freeways, and other higher-speed corridors, especially where recurring congestion or variable weather conditions can affect traffic flow.	Often implemented as part of Active Traffic Management plans.
Pedestrian / Bicyclist					
	Bicycle Lanes	Dedicated facilities to be used by bicyclists to reduce conflicts with vehicles.	Bicycle/vehicle crashes	Recommended on a large variety of road locations and functional classifications, particularly where lane repurposing allows (either through a road diet or lane narrowing). Can be warranted where bicycle traffic is already high or where cycling is encouraged.	Lanes separated from roadway using a lateral offset and painted buffer provide added effectiveness and, generally, the more removed bicylces are from the travel lanes, the better. In rural areas, rumble strips can negatively affect bike lanes.
	Crosswalk Visibility Enhance-ments	Enhancements that make crosswalk users more visible to drivers, including lighting, signage, and pavement markings.	Pedestrian/vehicle crashes	Enhanced crosswalks and lighting can be implemented anywhere pedestrian traffic exists or is could exist; multi-lane arterials typically demand more robust enhance-ments. Signage within the street is most effective on lower-speed two-or-three-lane roads.	Most effective when deployed in repeated locations along a single corridor (versus a more random approach). Can effectively calm traffic if properly designed.
	Leading Pedestrian Interval	An adjustment to signal timing that gives crosswalk users 3-7 seconds to enter the crosswalk before vehicles are given a green light.	Pedestrian/ turning vehicle crashes	Intersections with high turning vehicle volumes. Tend to be in areas of higher pedestrian traffic, such as city and village centers and surrounding neighborhoods. Can be especially effective for aged and disabled populations who require more time to cross.	Low cost when only signal timing alteration is required.
	Medians and Pedestrian Refuge Islands in Urban and Suburban Areas	A defined area between opposing lanes of traffic to separate motorized and non-motorized users of the roadway. A pedestrian refuge island is intended to protect non-motorized road users.	Head-on Pedestrian/vehicle crashes	Curbed urban and suburban multilane roadways, particularly in areas with a signif-icant mix of pedestrian and vehicle traffic, traffic volumes over 9,000 vehicles per day, and travel speeds 35 mph or greater.	The width of refuge islands must be at least 4', but 8' or wider is optimal for pedestrian comfort. Refuge islands can be defined simply through pavement markings, but raised medians or islands allow for increased pedestrian buffering from vehicular traffic.
	Pedestrian Hybrid Beacons	At midblock crossings, or intersections without signals, this beacon allows a pedestrian to cross the roadway safely. With two red lights above a yellow light, it is activated by a pedestrian to stop vehicular traffic and allow the pedestrian the right-of-way.	Head-on Pedestrian/vehicle crashes	Locations where it is difficult for pedestrians to cross a roadway, such as when gaps in traffic are not sufficient or speed limits exceed 35 miles per hour. They are effective multi-lane arterials and where daily traffic volumes exceed 9,000 vehicles.	Marked crosswalks and pedestrian countdown signals must also be installed. Agencies should conduct education and outreach before installation in areas where this concept is unfamiliar.

PROVEN SAFETY COUNTERMEASURES

Source: U.S. Department of Transportation Federal Highway Administration Proven Safety Countermeasures

- Safety Focus Areas

	Countermeasure	Description	Types of Crash Mitigation	Typical Locations for this Treatment	Additional Considerations
Pedestrian / Bicyclist (continued)					
	Rectangular Rapid Flashing Beacons (RRFB)	RRFBs have two rectangular-shaped yellow lights that, when activated, flash alternatingly to warn drivers of pedestrians trying to cross	Head-on Pedestrian/vehicle crashes	Applicable at many areas with high pedestrian volumes, but particularly effective on multilane roadways with speed limits of 40 or below. Can be teamed with school or trail crossing signs and locations.	Should not be used for approaches or egress from a roundabout. Can be activated through pushbuttons or passive (e.g. video, infrared) pedestrian detection. Can be exceptionally effective at increasing motorist yield rates.
	Road Diets (Roadway Configuration)	Restriping a road to reduce the number of dedicated vehicle lanes allows for the addition of facilites for alternative purposes, such as bicycle lanes, on-street parking, transit stops, and pedestrian refuge islands.	Pedestrian and bicycle/vehicle crashes; rear-end, left-turn and right- angle crashes	Multilane roadways, typically in urban or suburban areas where pedestrian and/or bicycle traffic exists or could exist. FHWA notes a 25,000 vehicle-per-day maximum, although rarely considered regionally unless volumes are well-under this threshold.	Typically involves the conversion of a four-lane roadway to one travel lane in each direction plus a center two-lane left-turn lane and bicycle lanes. Often implemented in conjunction with a new pavement overlay.
	Walkways	Any defined path meant to be used by pedestrians, including sidewalks, shared-use paths, and roadway shoulders.	Pedestrian/vehicle crashes	Any non-freeway roadway locations except where exceptional circumstances exist. Most notable sidewalk gaps (where demand exists) can be found in suburban areas.	In rural areas where walkways/sidewalks are not feasible, a widened and walkable shoulder is acceptable but not preferable. Maintaining an accesible walkway is an important consideration.
Roadway Departure					
	Enhanced Delineation for Horizontal Curves	For the purpose of alerting drivers to upcoming curves, the direction of the curve, and the speed at which to travel, several strategies can be implemented including pavement markings, chevron signs, warning signs, etc.	Roadway departure crashes	Any horizontal curve locations with high crashes. Specific signage or pavement markings may be more applicable to particular corridor types or geographic locations, but the general countermeasure is applicable across the roadway system.	Recommended to be applied systemically (e.g. target all locations with smaller curve radii, where intersections are along or adjacent to the curve, locations within a daily traffic range).
	Longitudinal Rumble Strips and Stripes on Two-Lane Roads	Rumble strips are raised elements in the pavement to alert drivers that they have left the travel lane, through sound and vibration. Rumble stripes can be painted over the strips to make them more visible.	Roadway departure (edge and center line rumble strips) and head-on crashes (center line rumble strips)	Most commonly used on higher-speed two-lane roadways, particularly in lower-density/rural areas.	Generally not recommended in higher-density residential areas because of the noise they generate. FHWA asserts that there is no evidence to support that rumble strips deteriorate pavement more quickly or that ice/snow/rain buildup has caused issues.
	Median Barriers	Longitudinal barriers that separate opposing traffic to prevent collisions	Roadway departure incidents, particularly those that lead to angle and head-on crashes	Moderate-to-high-speed divided highways. Typically used on higher-volume highways but can be effective on any highways where cross-median crashes occur.	Decisions to choose cable, metal guiderails, or concrete barriers will vary depending upon traffic volume, land-use context, available space and cost.
	Roadside Design Improvements at Curves	Treatments that target the high risk of roadway departure along the outside of horizontal curves, including added or widened shoulders, a widened clear zone to provide the opportunity to regain control of a vehicle, or flattened sideslopes.	Roadway departure crashes	Any horizontal curve locations with high crashes, particularly in locations with higher speeds and where drivers can recover from roadway departures before hitting a fixed object or a drastic change in elevation.	Not all roadside hazards can be eliminated through design improvements and expanding recovery zones, so installing barriers should still may be the preferred solution for areas where fixed objects or steep embankments exist.
	SafetyEdge[sm]	Reducing the risk of edge drop-offs by shaping the edge of the pavement with a 30 degree angle to provide a gentle slope, preventing a vehicle from becoming unstable.	Roadway departure crashes	Roadways where curbs and guiderails are not present. Typically prioritized on rural routes and higher speed roadways but universally recommended on un-curbed roads.	SafetyEdge will wear over time due to erosion, settling, and tire wear, but still will provide a gentler slope for when roadway departures occur.
	Wider Edge Lines	Wider edge lines are increased from a normal width of 4 inches to a maximim normal width of 6 inches. The purpose of a wider edge line is to increase the visibility of the edge of the road.	Roadway departure crashes	All conditions: freeways, divided and undivided multi-lane highways, and two-lane highways. Have been proven most effective on rural two-lane highways. Can be especially useful on roads with narrow shoulders.	Wider edge lines may provide better guidance for automated and connected vehicle sensors as those technologies advance.

Countermeasure		Description	Types of Crash Mitigation	Typical Locations for this Treatment	Additional Considerations
Intersections					
	Backplates with Retroreflective Borders	A backplate with a retroreflective border makes a traffic signal head more visible to drivers, especially those drivers who are older or deficient in color vision.	Any type of intersection crashes caused by running a red signal	Any signalized intersections. FHWA recommends making this a standard treatment for all signals within a jurisdiction.	Can also be useful by improving an intersection's conspicuity during power outages and in night-time or dark driving conditions. Agencies should consider the existing signal support system to ensure its design is sufficient to support the additional wind load.
	Corridor Access Management	A set of techniques to manage entry and exit points along a roadway to improve safety for all users, reduce conflict points, reduce congestion, minimize traffic delay, and facilitate bicycle and pedestrian movements.	Various crashes caused by vehicles entering and exiting the dominant roadway	An important consideration for most locations, but particularly on suburban corridors with significant commercial development and a high number of ingress/egress points. Should especially be considered on multi-lane arterial roadways.	Succesful access management must balance the overall safety and mobility of all users with the needs of adjacent land uses.
	Dedicated Left- and Right-Turn Lanes at Intersections	Separating turning-traffic lanes from through-traffic lanes reduces crashes and improves traffic flow. These auxiliary lanes can also store vehicles that are stopped and waiting to turn.	Intersection-related crashes, most notably side-impact or angle crashes as well as rear-end crashes	Most locations where significant turning volume exists, where there is a history of turn-related crashes, or major road approaches at a stop-controlled, 3-4 leg intersection. Offset turn lanes are particuarly effective on higher-speed, high volume corridors.	The safety and convenience of pedestrians and bicylists should be considered. Additional turning lanes, especially offset turning lanes, will lenghten crossing distances for these users.
	Reduced Left-Turn Conflict Intersections	Minor road traffic is restricted to making a right turn on a high-speed or high-volume corridor, followed by a U-turn at a designated location. The designated location for the U-turn can be signalized or unsignalized.	Head-on and angle crashes, and other potentially severe, high-speed crashes	High volume arterial corridors. Most commonly used on higher-speed suburban and rural multi-lane corridors, but has been shown to be effective even on some urban applications and corridors with multimodal usage.	Studies have demonstrated that there are often measureable travel time improve- ments where this is applied. Can create more crossing opportunities for bicylclists and pedestrians. An effective and less-expensive alternative to constructing an interchange.
	Roundabouts	A type of intersection with a circular configuration with a center island meant to promote safety and efficiency. Incoming traffic must yield to traffic already in the rounadabout, thereby reducing speeds. Additionally, roundabouts reduce conflict points for all modes of transportation.	All types of intersection-related crashes	Wide range of applications. Most often constructed at moderate-volume intersec- tions replacing stop control or signalized intersections. Effective at calming traffic and in transition-zone environments (e.g. urban-rural, speed limit changes).	Single-lane roundabouts are much simpler and involve less processing. Multi-lane roundabouts are still effective, but increase chances for minor collisions. Despite traffic calming characteristics, roundabouts often help to reduce overall corridor travel time.
	Systemic Application of Multiple Low-Cost Counter- measures at Stop-Controlled Intersections	This approach involves adding multiple low-cost improvements to several intersec- tions within an area or jurisdiction, such as advanced intersection warning signs on the left and right of the roadway, enhanced pavement markings, retroreflective sheeting on sign posts, and other improvements.	All types of intersection-related crashes	Any stop-controlled intersections where intersection crashes occur. Can be particu- larly effective on higher-speed roadways and are often in suburban or rural areas.	Large variety of solutions for both through approaches and stop approaches. Best when applied systematically across a corridor or entire jurisdiction.
	Yellow Change Intervals	The speed of approaching vehicles, vehicle deceleration, intersection geometry, and driver-perceived reaction time should all be considered when analyzing the best timing for the yellow light interval.	All types of intersection-related crashes	Any signalized intersections where red-light running is common.	Imperative that yellow change interval is appropriately timed. A too-brief interval can lead to unsafe stops or unintentional red-light running. A too-long interval may lead to drivers treating the yellow as an extension of the green phase and invite red-light running.
Crosscutting					
	Lighting	With nighttime fatality rates being much greater than daytime rates, lighting can be applied to reduce the incidence of crashes. Lighting also improves safety for pedestrians, bicyclists, and other mobility device users.	Various; notably pedestrian-related night crashes	Can be applied in most locations as research indicated continuous lighting along a rural or urban corridor has an established safety benefit. Important for locations with pedestrian and bicycle traffic, both for their safety crossing roads and their personal safety.	Jurisdictions and agencies are encouraged to engage with underserved populations to determine where and how new or improved lighting can benefit their communi- ties. Modern lighting gives precise control with reduced amounts of light pollution.
	Local Road Safety Plans	A Local Road Safety Plan (LRSP) addresses safety issues and concerns on local roads with actions and improvements to reduce risks and enhance safety. FHWA developed a LRSP website to assist local communities in the process of creating and implementing a LRSP.	Planning efforts can focus on reducing all crashes that occur on local roadways	All locally-owned roadways within the plan's coverage area.	This can be an effective framework for considering the safety of local roadways, which often have less funding availability to address issues.
	Pavement Friction Manage- ment	Pavement Friction Management is the process of collecting and analyzing data to better design, construct, and maintain a roadway. Friction affects how a vehicle will interact with a roadway, and can reduce crashes. High Friction Surface Treatments (HFST) can be applied to improve safety performance.	Various; notably roadway departure crashes and intersection approach crashes	Pavement Friction Management can be applied system-wide. HFSTs are applied in locations with increased friction demands including horizontal and vertical curves, intersection approaches, and locations with history of wet weather & rear end crashes.	HFST is applied on existing pavement so no new pavement area is added. Lifespan of HFST will be reduced if underlying pavement is unstable. Application of HFST systemically in multiple locations can significantly reduce cost-per-mile installation.
	Road Safety Audit (RSA)	A Road Safety Audit (RSA) can be performed in any phase of project development, taking into account all road users, their capabilities, and other human factors in order to identify potential safety concerns. This evaluation is performed by an independent, multidisciplinary team.	Planning efforts can focus on reducing all types of crashes.	Any corridors with documented safety issues, particularly those that communities and agencies plan to improve (e.g. those listed on the regional Long-Range Trans- portation Plan).	Although RSAs can be performed in any phase of project development, agencies are strongly encouraged to perform RSAs at the earliest point possible, prior to design alternatives and project options being determined.

APPENDIX F: COMPREHENSIVE SAFETY ACTION PLAN PROJECTS

Project Score Summary - Intersections

No.	Project Location	Vulnerable User Crashes (2018-2022)	Score	Env. Justice Criteria (within EJ?)	Score	F&I Crash Rate (per MEV)	Score	Stakeholder & Public Input (# of Mentions)	Score	Weighted Total Score	Tier/ Prioritization
1	165th Street & Calumet Ave	1 ped injury	1	Bordering 2 EJ; Max. of 6 points	3	1.014	3	7	3	**24**	Tier 1
2	Calumet Ave & Highland	4 ped injuries	3	In 1 EJ with 6 points	3	0.739	2	3	1	**23**	Tier 1
3	169th Street and Kennedy Avenue	1 ped injury, 1 bike injury	2	In 1 EJ with 3 points	1	1.488	3	8	3	**23**	Tier 1
4	Gostlin Street and Calumet Avenue	1 ped injury, 3 bike injuries	3	Bordering 2 EJ; Max. of 4 points	2	0.856	2	4	2	**23**	Tier 1
5	Michigan Street and Columbia Avenue	2 ped injuries, 1 bike injury, 1 bike PDO	3	In 1 EJ with 3 points	1	1.039	3	1	1	**22**	Tier 1
6	165th Street and Hohman Avenue	1 ped injury, 1 ped PDO	2	Bordering 2 EJ; Max. of 4 points	2	0.615	2	8	3	**22**	Tier 1
7	Sibley St & Hohman Ave	1 bike injury, 1 ped PDO	2	In 1 EJ with 7 points	3	1.710	3	0	0	**21**	Tier 1
8	165th Street and Indianapolis Blvd.	1 bike injury	1	Bordering 2 EJ; Max. of 6 points	3	0.795	2	7	3	**21**	Tier 1
9	169th Street and Grand Avenue	4 ped injuries	3	Bordering 2 EJ; Max. of 3 points	1	0.917	2	5	2	**21**	Tier 1
10	Gostlin Street and Columbia Avenue	2 ped injuries	2	In 1 EJ with 4 points	2	1.371	3	0	0	**19**	Tier 2
11	169th Street and Columbia Avenue	1 ped injury	1	Bordering 3 EJ; Max. of 4 points	2	1.573	3	1	1	**18**	Tier 2
12	Gostlin Street and Hohman Avenue	2 bike injuries	2	Bordering 2 EJ; Max. of 4 points	2	0.981	2	1	1	**18**	Tier 2
13	165th Street and Columbia Avenue	1 ped injury	1	Bordering 3 EJ; Max. of 6 points	3	0.755	2	1	1	**17**	Tier 2
14	173rd Street and Columbia Avenue	2 ped injuries	2	Bordering 2 EJ; Max. of 3 points	1	1.008	3	0	0	**17**	Tier 2
15	173rd Street and Indianapolis Blvd	1 ped injury	1	Bordering 2 EJ; Max. of 3 points	1	0.603	2	8	3	**17**	Tier 2
16	169th Street and New Hampshire Avenue	1 ped injury, 1 bike injury	2	Bordering 2 EJ; Max. of 3 points	1	0.804	2	0	0	**14**	Tier 2
17	Summer Street and Indianapolis Blvd	No crashes	0	Bordering 2 EJ; Max. of 6 points	3	0.682	2	1	1	**14**	Tier 2
18	150th Street and Columbia Avenue	No crashes	0	In 1 EJ with 4 points	2	1.372	3	0	0	**13**	Tier 2
19	129th Street and Calumet Avenue	No crashes	0	Bordering 2 EJ; Max. of 3 points	1	0.720	2	3	1	**12**	Tier 2
20	169th Street and Indianapolis Blvd.	1 ped injury	1	Not in EJ area	0	0.905	2	1	1	**11**	Tier 2
21	169th Street and Parrish Avenue	1 bike injury	1	Bordering 2 EJ; Max. of 3 points	1	0.865	2	0	0	**11**	Tier 2
22	119th Street and Calumet Avenue	1 ped injury	1	Not in EJ area	0	0.595	2	1	1	**11**	Tier 2

EJ = Environmental Justice (area of disadvantaged/underserved population); 0-8 points assigned to the EJ areas based on the 8 evaluation criteria

MEV = Million Entering Vehicles

Project Score Summary - Roadway Segments

No.	Project Location	Vulnerable User Crashes (2018-2022)	Score	Env. Justice Criteria (within EJ?)	Score	F&I Crash Rate (per 100M VMT)	Score	Stakeholder & Public Input (# of Mentions)	Score	Weighted Total Score	Tier/ Prioritization
1	Columbia Avenue - From Gostlin Street to 173rd Street	12 ped injuries, 6 bike injuries	2	Bordering 4 EJ; Max. of 6 points	3	1031.7	3	8	3	27	Tier 1
2	Hohman Avenue - From Gostlin Street to 165th Street	6 ped injuries, 8 bike injuries	2	Bordering 3 EJ; Max. of 6 points	3	963.54	2	13	3	24	Tier 1
3	Calumet Avenue - From 129th Street to 173rd Street	20 ped injuries, 12 bike injuries	3	Bordering 4 EJ; Max. of 6 points	3	362.11	1	9	3	24	Tier 1
4	169th Street - From Columbia Avenue to Cline Avenue Service Road	11 ped injuries, 6 bike injuries	2	Bordering 3 EJ; Max. of 3 points	1	1255.23	3	4	2	21	Tier 1
5	165th Street - From State Line Road to Kennedy Avenue	4 ped injuries, 5 bike injuries	1	Bordering 4 EJ; Max. of 6 points	3	570.24	2	2	1	17	Tier 2
6	173rd Street - From Calumet Avenue to Kennedy Avenue	7 ped injuries, 1 bike injury	1	Bordering 2 EJ; Max. of 3 points	1	1685.1	3	0	0	14	Tier 2
7	Indianapolis Blvd. - From Summer Street to 173rd Street	3 ped injuries, 1 bike injury	1	Bordering 2 EJ; Max. of 6 points	3	420.40	1	2	1	14	Tier 2
8	Kennedy Avenue - From Michigan Street to 169th Street	5 ped injuries, 1 bike injury	1	In 1 EJ with 3 points	1	362.16	1	1	1	4	Tier 3

EJ = Environmental Justice (area of disadvantaged/underserved population); 0-8 points assigned to the EJ areas based on the 8 evaluation criteria

100M VMT = 100 Million Vehicle Miles Traveled

Project Scoring Key

Scoring Criteria, Points and Weightage - *INTERSECTIONS*							
Vulnerable Road User Crashes (30% Weight)	**Points**	**Env. Justice Criteria (20% Weight)**	**Points**	**F&I Crash Rate (30% Weight)**	**Points**	**Stakeholder and Public Input Criteria (20% Weight)**	**Points**
0 crashes	0	Not in EJ	0	No crashes	0	No mention	0
Atleast 1 injury crash	1	In 1 or more EJ areas (max. 3 points)	1	0.01-0.5	1	1-3 mentions	1
>1 to < 4 injury crashes	2	In 1 or more EJ areas (max. 4 points)	2	>0.5 and <1	2	> 3 to < 6 mentions	2
≥ 4 injury crashes or fatality*	3	In 1 or more EJ areas (6-8 points)	3	>1.0	3	≥ 6 mentions	3

*Independent of mode

Scoring Criteria, Points and Weightage - *CORRIDORS*							
Vulnerable Road User Crashes (30% Weight)	**Points**	**Env. Justice Criteria (20% Weight)**	**Points**	**F&I Crash Rate (30% Weight)**	**Points**	**Stakeholder and Public Input Criteria (20% Weight)**	**Points**
0 crashes	0	Not in EJ	0	No crashes	0	No mention	0
Less than 10 injury crashes	1	In 1 or more EJ areas (max. 3 points)	1	<500	1	1-3 mentions	1
>10 to <20 injury crashes	2	In 1 or more EJ areas (max. 4 points)	2	>500 and <1,000	2	> 3 to < 6 mentions	2
>20 injury crashes*	3	In 1 or more EJ areas (6-8 points)	3	>1,000	3	≥ 6 mentions	3

*Independent of mode

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