

# VISION ZERO Oak Park

## Crash Analysis Memo

February 2024



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**MUSE**  
COMMUNITY + DESIGN

# Vision Zero Oak Park Crash Analysis

## Memo

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## Executive Summary

### Severe Crash Trends and Users

Between 2018 and 2022, the Illinois Department of Transportation (IDOT) reported **114 fatal and serious injury crashes** in the Village of Oak Park, an average of 23 per year. Over this period, a total of **132 people were seriously injured (116) or killed (16)**, resulting in an average of 3.2 fatalities and 23.2 serious injuries annually. This represents one roadway fatality each year for every 16,600 Oak Park residents, a higher rate than the City of Chicago and Cook County. In the past five years, average annual fatalities from traffic crashes (3.2) significantly exceeded the average of the previous decade (1.2).

**People walking or biking in Oak Park made up over one-third of all serious injuries and fatalities from traffic crashes over the study period.** Between 2018 and 2022, the Village saw an average of 17.4 motorist, 6.2 pedestrian, and 2.8 cyclist fatalities and serious injuries annually. This number includes five total pedestrian fatalities, one cyclist fatality, and 10 total motorist fatalities over the five years. Fatalities across all three modes fall above the annual average from the preceding 10 years (2008-2017).

In Oak Park, pedestrian crashes are **15 times** more likely to result in serious injuries or fatalities than motor vehicle crashes, while cyclist crashes are **12 times** more likely.

| User Type     | Frequency   | Severity    |
|---------------|-------------|-------------|
| Pedestrian    | Rare        | Very Severe |
| Bicycle       | Rare        | Very Severe |
| Motor Vehicle | Very Common | Less Severe |

### Severe Crash Behaviors

**Failure to yield, failure to reduce speed, and disobeying traffic signs and signals contributed to 68% of all fatal and serious injury crashes** over the last five years.

### Crash Locations and Systemic Crash Analysis

Between 2018 and 2022, **61% of all crashes were someone was killed or seriously injured (KSI crashes) occurred at intersections**, while 39% occurred mid-block. Signalized intersections saw roughly four times the average number of KSI crashes per intersection when compared to other intersections. Intersections of two streets with four lanes saw 2.4 times the baseline number of KSI crashes.

**Arterial streets see more than 6 times the baseline number of total crashes and KSI crashes per mile**, with four lane streets being the most dangerous. Local streets see just 26% of crashes per mile and just 12% of KSI crashes per mile compared to the baseline.

Streets under IDOT's jurisdiction account for 10% of centerline miles in Oak Park, yet 38% of KSI crashes occur on IDOT streets. Since 2018, IDOT streets have averaged 4.3 KSI crashes per year, compared to just 0.7 KSI crashes per year for Village-owned streets.

## High Injury Network

High-injury network locations – the signalized arterial and collector intersections and segments with the highest KSI crash risk and KSI history – accounted for **41%** of all fatal and serious injury crashes between 2018 and 2022. Of note are Roosevelt Road and Austin Boulevard, which combined represent 34% of KSI crashes in Oak Park. These streets run adjacent to three of the four highest economic hardship level census tracts in Oak Park, as well as adjacent historically disadvantaged areas in Chicago, Cicero, and Berwyn.

## Equity Analysis

Based on fatality data from 2007-2021, non-white and Hispanic/Latino people were overrepresented in traffic fatalities in Oak Park.

|  | White (Non-Hispanic) | Hispanic or Latino | Black or African American |
|--|----------------------|--------------------|---------------------------|
| <b>Oak Park Population Share<sup>1</sup></b>   | 60%                  | 9%                 | 19%                       |
| <b>Share of Fatalities (2007-2021)</b>         | 40%                  | 33%                | 27%                       |
| <b>Annual Fatalities per 100,000 Residents</b> | <b>2.5</b>           | <b>13.6</b>        | <b>5.3</b>                |

Oak Park's highest hardship census tracts experienced **slightly more fatalities** and **more KSI crashes** than all other census tracts.

|                                       | Avg. Annual Fatalities per 100,000 Residents | Avg. Annual KSI Crashes per 100,000 Residents | High Injury Intersections |
|---------------------------------------|--|---|---------------------------|
| <b>Highest Hardship Census Tracts</b> | 6.2  | 47.2  | 4                         |
| <b>All Other Census Tracts</b>        | 5.9  | 40.7  | 2                         |

<sup>1</sup> U.S. Census Bureau. 2022. American Community Survey 5-Year Estimates.

## Descriptive Statistics

### Description of Data

Crash analysis for the Village of Oak Park was conducted using crash data from the Illinois Department of Transportation (IDOT) for the years 2018 through 2022. The subset of crashes used for the analysis included any crash geolocated within the boundaries of the Village plus a 50-foot buffer. The 50-foot buffer ensured that all crashes along boundary streets, such as Austin Blvd. and North Ave., would also be incorporated in the analysis. In addition to filtering for this subset of crashes by location, all expressway crashes were removed prior to analysis. The resulting dataset included 7,606 total crashes, an average of 1,521 per year, and 114 crashes resulting in fatalities or serious injuries (KSI crashes), an average of 23 per year. IDOT data only include reported crashes that meet the department's definition of a crash and reporting requirements. Therefore, crashes that were not reported to law enforcement and crashes that did not involve a motor vehicle (e.g., cyclist-fixed object) are not included in this analysis.

*Table 1. Crashes by Year, Oak Park*

|       | Total Crashes | Total Fatal and Serious Injury Crashes |
|-------|---------------|--|
| 2018  | 1,691         | 24                                     |
| 2019  | 1,738         | 23                                     |
| 2020  | 1,303         | 16                                     |
| 2021  | 1,482         | 27                                     |
| 2022  | 1,392         | 24                                     |
| Total | 7,606         | 114                                    |

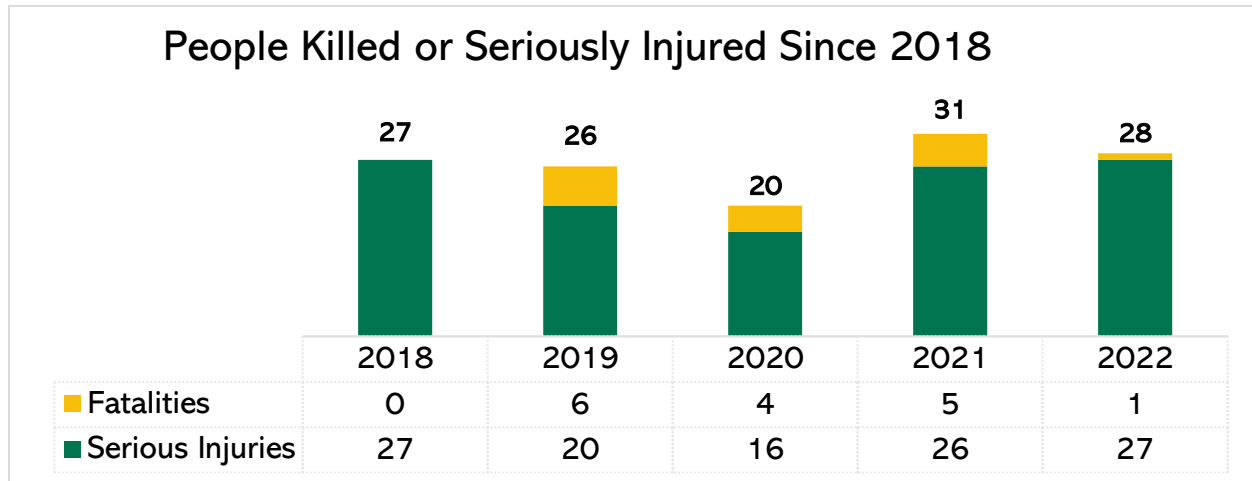
### Annual Description of Trends

#### Overall Fatalities and Serious Injuries

Between 2018 and 2022, the Village of Oak Park saw 132 serious injuries or fatalities. These occurred across 114 incidents, resulting in 16 fatalities and 116 serious injuries, or an average of 3.2 fatalities and 23.2 serious injuries annually. This represents one roadway fatality each year for every 16,600 Oak Park residents, a higher rate than the City of Chicago and Cook County, which each saw roughly one fatality for every 18,000 residents.

Oak Park achieved zero fatalities in 2018, but each year since has seen at least one fatality, for an average of 3.2 fatalities per year. In the decade preceding these five years (2008-2017), Oak Park saw an average of 1.2 total roadway fatalities annually, indicating that fatalities over the past five years are above average for the Village, led by a large increase in deaths in 2019, 2020, and 2021.

Figure 1. People Killed or Seriously Injured in Oak Park by Year

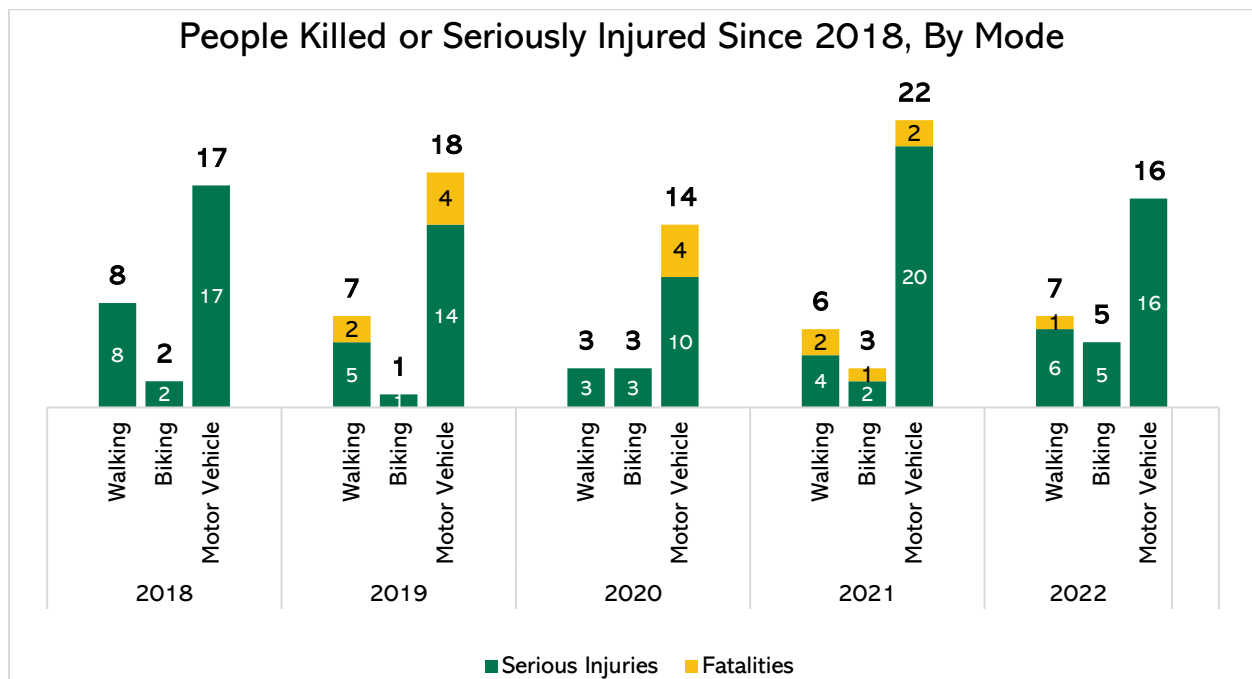


### Fatalities and Serious Injuries by Mode

Between 2018 and 2022, the Village saw an average of 17.4 motorist, 6.2 pedestrian, and 2.8 cyclist fatalities and serious injuries annually. This number includes 5 total pedestrian fatalities, 1 cyclist fatality, and 10 total motorist fatalities over the 5 years. Fatalities across all three modes fall above the annual average from the preceding 10 years (2008-2017).

Notably, the Village saw 12 cyclist and pedestrian fatalities and serious injuries in 2022, an above-average count relative to 5-year trends. However, year-on-year variation is high due to the small number of severe crashes by mode, particularly severe crashes involving people walking or biking.

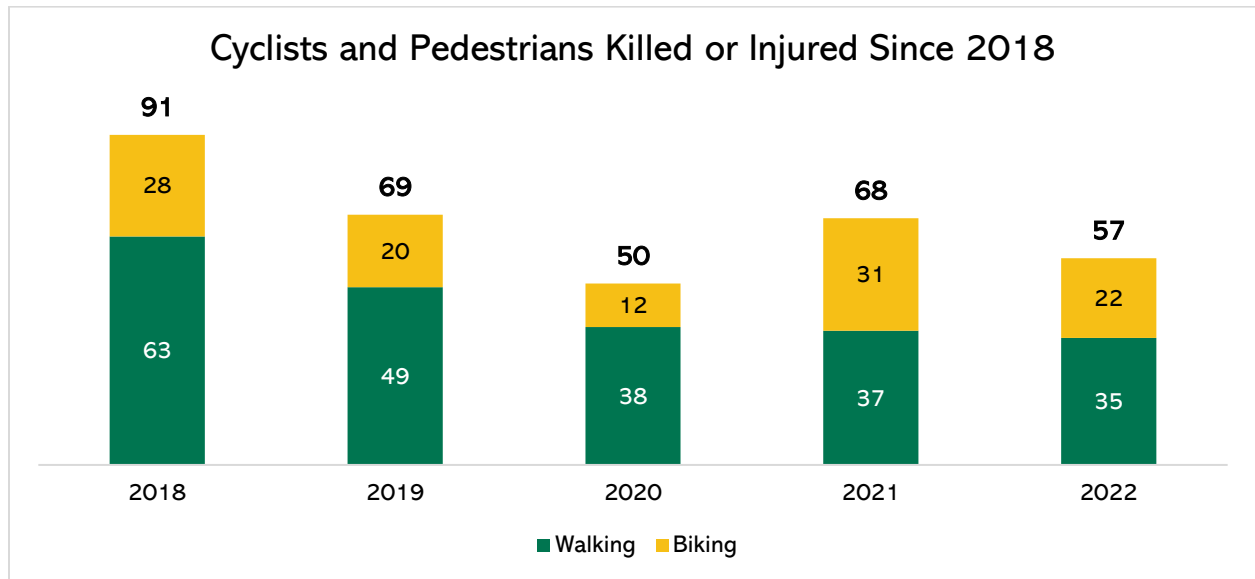
Figure 2. Count of KSI Crashes in Oak Park by Mode



## Bicycle and Pedestrian Fatalities and Total Injuries

To get a more complete sample size of bicycle and pedestrian crashes, annual trends in fatalities and total injuries were also explored for these modes.<sup>2</sup> Between 2018 and 2022, the Village saw an average of **44.4** pedestrian and **22.6** cyclist fatalities and injuries annually, for an average of **67 annual** bicycle and pedestrian fatalities and injuries. Annual breakdowns are shown in Figure 3. A heatmap of bicycle and pedestrian crash locations can also be found in Figure 4.

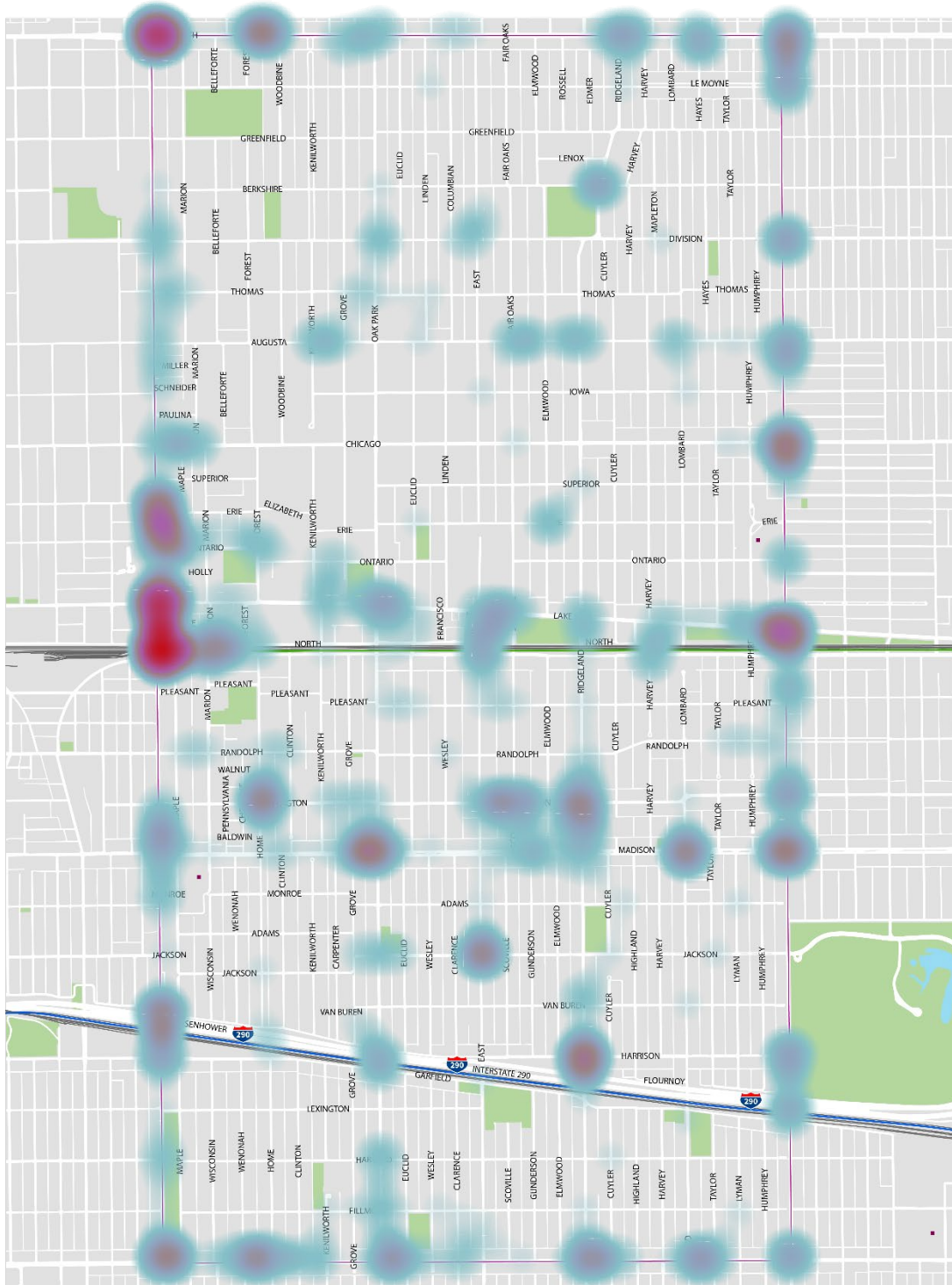
Figure 3. Cyclists and Pedestrians Killed or Injured Since 2018



<sup>2</sup> All K, A, B and C category cyclist and pedestrian crashes were included in this section.



Figure 4. Bicycle & Pedestrian Crash Location Heatmap (2018-2022)



## Description of Users

### Crashes by Mode

Since 2018, 96% of all crashes in Oak Park involved *only* motor vehicles, while pedestrians and cyclists were involved in 3% and 1% of total crashes, respectively. Despite being involved in just 4% of total crashes, cyclists and pedestrians in Oak Park collectively accounted for 34% of serious injuries and fatalities.

Figure 5. Share of Total Crashes by Mode

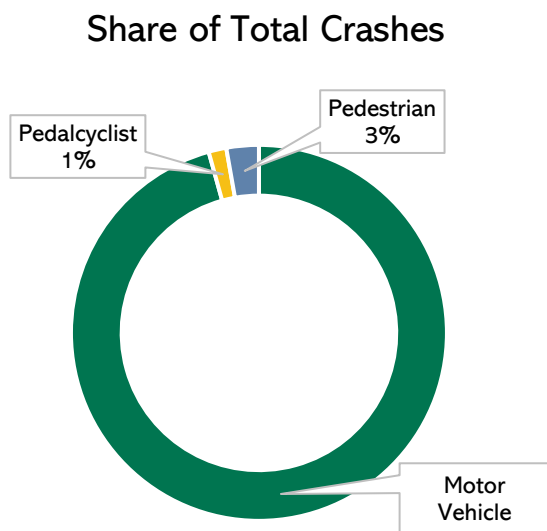
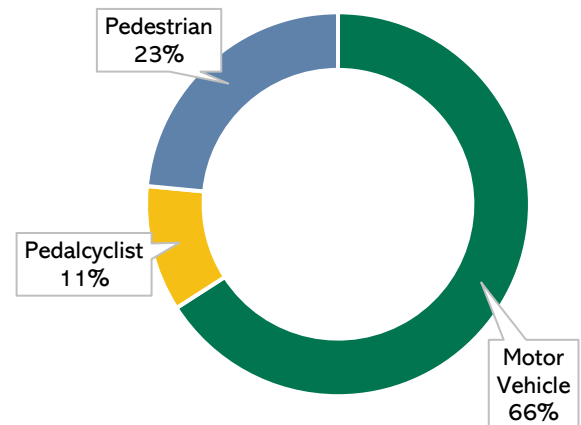


Figure 6. Share of Fatalities and Serious Injuries by Mode

### Share of Serious and Fatal Injuries by Mode (2018-2022)



By mode, this means that a serious injury or fatality occurs on average once per every:



**105**  
motor vehicle  
crashes



**8**  
cyclist  
crashes



**7**  
pedestrian  
crashes

Pedestrian crashes are **15 times** more likely to result in serious injuries or fatalities than motor vehicle crashes, while cyclist crashes are **12 times** more likely.

## Age Statistics

Understanding age demographics for those involved in crashes can deliver valuable insights for countermeasure approaches such as educational campaigns and outreach. For KSI crashes, the median age for all drivers of striking vehicles was 37, while the median age for all persons injured in KSI crashes (not including the striking driver) was 42.5. The distribution of ages for both categories can be found in Figure 6 and Figure 7.

Figure 6. Striking Vehicle Driver Age Distribution - KSI Crashes, 2018-2022

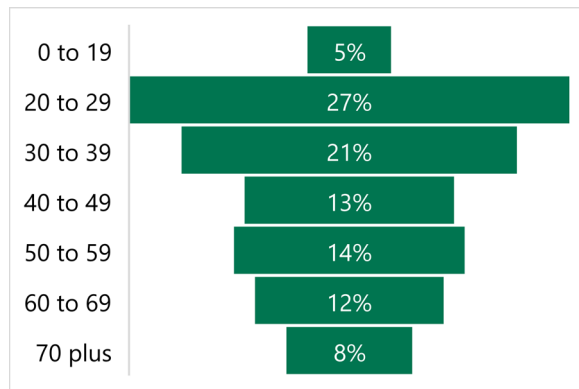
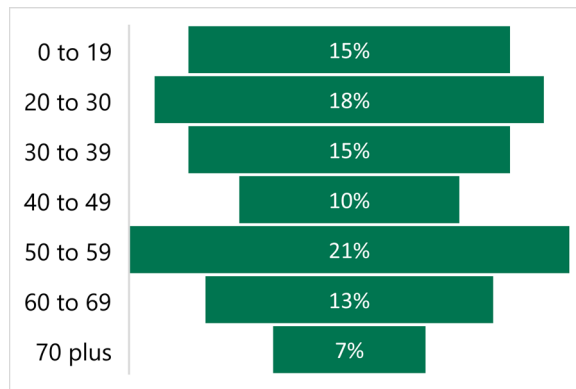


Figure 7. Victim Age (Excluding Striking Driver) - KSI Crashes, 2018-2022



In addition to ages for all road users involved in KSI crashes, cyclist and pedestrian ages were broken out separately. To ensure a large enough sample of crash victims, all killed or injured cyclist and pedestrian ages were included. From 2018-2022, the median age for a cyclist killed or injured in a crash was 28, while the median age for a pedestrian killed or injured in a crash was 41.5. These distributions can be found in Figure 8 and Figure 9. Notably, pedestrian victims fall across all age groups, while 41% of cyclist victims are under the age of 20.

Figure 8. Pedestrian Victim Age - Fatal or Injury Crash, 2018-2022

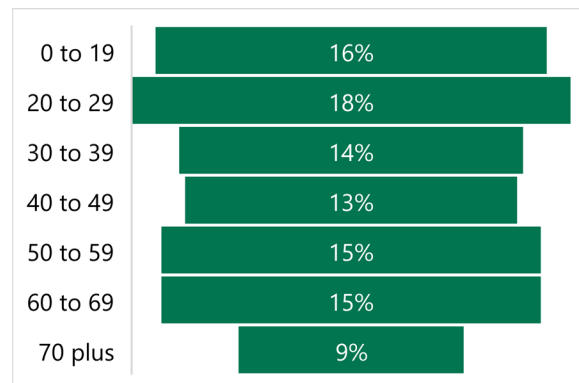
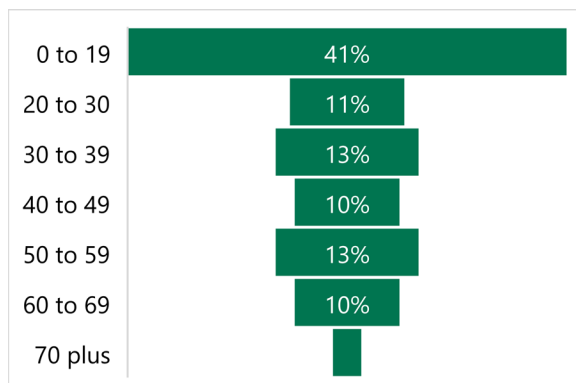


Figure 7. Cyclist Victim Age - Fatal or Injury Crash, 2018-2022



## Temporal Crash Trends

Temporal crash trends identify variations in the frequency and severity of Oak Park traffic incidents over specific time periods, including daily, weekly, monthly, and seasonal cycles. Analysis of these patterns can help to identify risk factors and inform targeted interventions for improving road safety.

The following section examines temporal trends for all crashes where a person involved was killed or severely injured (KSI) across all modes and crashes involving any injury (not just severe) involving bicyclists and pedestrians.<sup>3</sup>

### Time of Day and Day of Week

Trends in the time of day and day of the week when crashes are prevalent can be used to develop evidence-based regulations, optimize resource allocation, and inform infrastructure planning as well as heighten emergency response preparedness during peak crash times.

#### *KSI Crashes*

**Time of Day:** A disproportionate share of fatal crashes occurred during overnight hours, with 50% of all fatal crashes from 2018 – 2022 occurring between 10pm and 4am. This underscores the importance of addressing nighttime road safety concerns, possibly through enhanced visibility measures and targeted awareness campaigns. Identifying the types of crashes that occur most overnight, namely angle, pedestrian, and fixed object, is critical to addressing them effectively.

However, looking beyond fatal crashes to all KSI crashes, 83% of KSI crashes occurred in the daytime. This suggests that although overnight movement poses a higher fatality risk, the severity of crashes during the day demands equal attention.

**Day of Week:** Approximately 50% of all fatal crashes occurred on weekends. While only 31% of KSI crashes occur on the weekends, the rate of crashes per weekend day is higher than per weekday, with Saturday the most dangerous day for severe traffic crashes. From this data, it can be concluded that there is a potentially an association between the day of the week and the occurrence of fatal and severe injury crashes.

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<sup>3</sup> To ensure a sufficient sample size, all A, B and C cyclist and pedestrian crashes were included in this section.

Table 2. Average KSI Crashes by Day of Week and Hour (2018-2022)

| Hour         | Monday | Tuesday | Wednesday | Thursday | Friday | Saturday | Sunday | Total |     |
|--------------|--------|---------|-----------|----------|--------|----------|--------|-------|-----|
| 0            | 0.2    | 0.0     | 0.2       | 0.2      | 0.2    | 0.0      | 0.2    | 1.0   | 4%  |
| 1            | 0.0    | 0.0     | 0.0       | 0.0      | 0.0    | 0.2      | 0.0    | 0.2   | 1%  |
| 2            | 0.0    | 0.0     | 0.2       | 0.2      | 0.0    | 0.4      | 0.2    | 1.0   | 4%  |
| 3            | 0.0    | 0.2     | 0.0       | 0.0      | 0.0    | 0.4      | 0.0    | 0.6   | 3%  |
| 4            | 0.0    | 0.0     | 0.0       | 0.0      | 0.0    | 0.0      | 0.0    | 0.0   | 0%  |
| 5            | 0.0    | 0.2     | 0.0       | 0.0      | 0.0    | 0.0      | 0.0    | 0.2   | 1%  |
| 6            | 0.0    | 0.2     | 0.0       | 0.0      | 0.2    | 0.2      | 0.2    | 0.8   | 4%  |
| 7            | 0.2    | 0.2     | 0.2       | 0.2      | 0.0    | 0.2      | 0.0    | 1.0   | 4%  |
| 8            | 0.2    | 0.2     | 0.0       | 0.2      | 0.2    | 0.0      | 0.2    | 1.0   | 4%  |
| 9            | 0.0    | 0.6     | 0.6       | 0.0      | 0.0    | 0.4      | 0.2    | 1.8   | 8%  |
| 10           | 0.0    | 0.2     | 0.4       | 0.2      | 0.0    | 0.4      | 0.0    | 1.2   | 5%  |
| 11           | 0.0    | 0.0     | 0.0       | 0.0      | 0.4    | 0.0      | 1.0    | 1.4   | 6%  |
| 12           | 0.2    | 0.2     | 0.2       | 0.4      | 0.2    | 0.6      | 0.2    | 2.0   | 9%  |
| 13           | 0.0    | 0.0     | 0.0       | 0.0      | 0.2    | 0.0      | 0.2    | 0.4   | 2%  |
| 14           | 0.2    | 0.0     | 0.2       | 0.2      | 0.4    | 0.0      | 0.0    | 1.0   | 4%  |
| 15           | 0.2    | 0.4     | 0.0       | 0.0      | 0.0    | 0.4      | 0.0    | 1.0   | 4%  |
| 16           | 0.4    | 0.4     | 0.4       | 0.2      | 1.0    | 0.0      | 0.0    | 2.4   | 11% |
| 17           | 0.2    | 0.2     | 0.4       | 0.2      | 0.2    | 0.2      | 0.2    | 1.6   | 7%  |
| 18           | 0.0    | 0.0     | 0.0       | 0.2      | 0.2    | 0.2      | 0.0    | 0.6   | 3%  |
| 19           | 0.4    | 0.2     | 0.0       | 0.2      | 0.2    | 0.0      | 0.2    | 1.2   | 5%  |
| 20           | 0.4    | 0.2     | 0.2       | 0.0      | 0.0    | 0.0      | 0.0    | 0.8   | 4%  |
| 21           | 0.0    | 0.0     | 0.2       | 0.2      | 0.0    | 0.2      | 0.0    | 0.6   | 3%  |
| 22           | 0.0    | 0.2     | 0.0       | 0.0      | 0.0    | 0.2      | 0.2    | 0.6   | 3%  |
| 23           | 0.2    | 0.0     | 0.2       | 0.0      | 0.0    | 0.0      | 0.0    | 0.4   | 2%  |
| <b>Total</b> | 2.8    | 3.6     | 3.4       | 2.6      | 3.4    | 4.0      | 3.0    | 22.8  |     |
|              | 12%    | 16%     | 15%       | 11%      | 15%    | 18%      | 13%    |       |     |

### Bicycle & Pedestrian Injury Crashes<sup>4</sup>

**Time of Day:** Over half of all injury crashes involving cyclists and pedestrians occur during commuting hours. Nearly 40% of injury cyclist and pedestrian crashes occurred in evening hours between 3pm-7pm and an additional 14% occurred between 7am-10am. This underscores the importance of focusing safety measures on this specific time frame, such as through educational campaigns and infrastructure improvements near areas that people often visit on foot for bicycle for commuting purposes, such schools, business centers, and CTA and Metra stations.

**Day of Week:** Weekdays stand out as high-risk periods for the occurrence of injury crashes involving cyclists and pedestrians. Assessing the total number of injury crashes between 2018 and 2022, weekdays had 91% more daily injury crashes than on weekends. Taken into consideration with the time-of-day data, it can be inferred that weekdays may be more dangerous because they typically see increased commuting activity with more people traveling to and from work or school. The higher volume of cyclists and pedestrians sharing the road with other vehicles during these times may increase the risk of accidents.

<sup>4</sup> To ensure a sufficient sample size, all A, B, and C cyclist and pedestrian crashes were included in this section.

Table 3. Average Bicycle & Pedestrian Injury Crashes by Day of Week and Hour (2018-2022)

| Hour         | Monday | Tuesday | Wednesday | Thursday | Friday | Saturday | Sunday | Total |     |
|--------------|--------|---------|-----------|----------|--------|----------|--------|-------|-----|
| 0            | 0      | 0       | 0.2       | 0.2      | 0.2    | 0        | 0      | 0.6   | 1%  |
| 1            | 0      | 0       | 0.2       | 0        | 0.2    | 0        | 0      | 0.4   | 1%  |
| 2            | 0      | 0       | 0         | 0.2      | 0      | 0        | 0      | 0.2   | 0%  |
| 3            | 0      | 0.2     | 0         | 0        | 0      | 0.2      | 0      | 0.4   | 1%  |
| 4            | 0      | 0       | 0         | 0        | 0.2    | 0        | 0      | 0.2   | 0%  |
| 5            | 0      | 0       | 0         | 0.4      | 0      | 0.2      | 0      | 0.6   | 1%  |
| 6            | 0.2    | 0.4     | 0.2       | 0.2      | 0.2    | 0.2      | 0      | 1.4   | 2%  |
| 7            | 0.6    | 0.2     | 0.4       | 0.8      | 0.4    | 0.2      | 0      | 2.6   | 4%  |
| 8            | 1.6    | 0.2     | 0.6       | 1.2      | 0.2    | 0.2      | 0.2    | 4.2   | 7%  |
| 9            | 0.4    | 0.6     | 0.8       | 0        | 0.4    | 0        | 0      | 2.2   | 3%  |
| 10           | 0.4    | 0.2     | 0.2       | 0.2      | 0.4    | 0.2      | 0.2    | 1.8   | 3%  |
| 11           | 0.8    | 0.2     | 0.6       | 0.6      | 0.8    | 0.4      | 0.2    | 3.6   | 6%  |
| 12           | 0.4    | 0       | 0.8       | 0.6      | 0      | 0.4      | 0.2    | 2.4   | 4%  |
| 13           | 0.8    | 0.2     | 0.6       | 0.2      | 0.2    | 0.2      | 0.4    | 2.6   | 4%  |
| 14           | 1.2    | 0.4     | 0.4       | 0.6      | 0.6    | 0.2      | 0.4    | 3.8   | 6%  |
| 15           | 0.8    | 1.2     | 0.4       | 0.6      | 1.2    | 0.6      | 0.2    | 5     | 8%  |
| 16           | 1.2    | 1.8     | 0.8       | 1.2      | 0.8    | 0.6      | 0      | 6.4   | 10% |
| 17           | 0.4    | 0.6     | 1.8       | 1.6      | 0.8    | 1        | 0.8    | 7     | 11% |
| 18           | 0.8    | 1       | 1.2       | 2        | 0.2    | 0.6      | 0.4    | 6.2   | 10% |
| 19           | 0.4    | 0.6     | 0.6       | 0.6      | 0.4    | 0        | 0.2    | 2.8   | 5%  |
| 20           | 0.2    | 0.6     | 0.2       | 0.6      | 0.6    | 0.2      | 0.6    | 3     | 5%  |
| 21           | 0.6    | 0.2     | 0.6       | 0.6      | 0      | 0.8      | 0      | 2.8   | 4%  |
| 22           | 0      | 0.6     | 0         | 0.2      | 0.4    | 0        | 0.8    | 2     | 3%  |
| 23           | 0      | 0       | 0         | 0.2      | 0      | 0.2      | 0      | 0.4   | 1%  |
| <b>Total</b> | 10.8   | 9.2     | 10.6      | 12.8     | 8.2    | 6.4      | 4.6    | 62.6  |     |
|              | 18%    | 15%     | 17%       | 20%      | 13%    | 10%      | 7%     |       |     |

## Seasonal Variation

Knowledge of the months and seasons when crashes occur provides insight into the impact of environmental factors (such as weather, temperature, daylight conditions, and road conditions) and behavioral (likelihood of choosing a mode) on Oak Park traffic crashes.

For this analysis, data are divided into the following seasons:

**Winter:** December\*, January, February (\*includes the December of the previous calendar year)

**Spring:** March, April, May

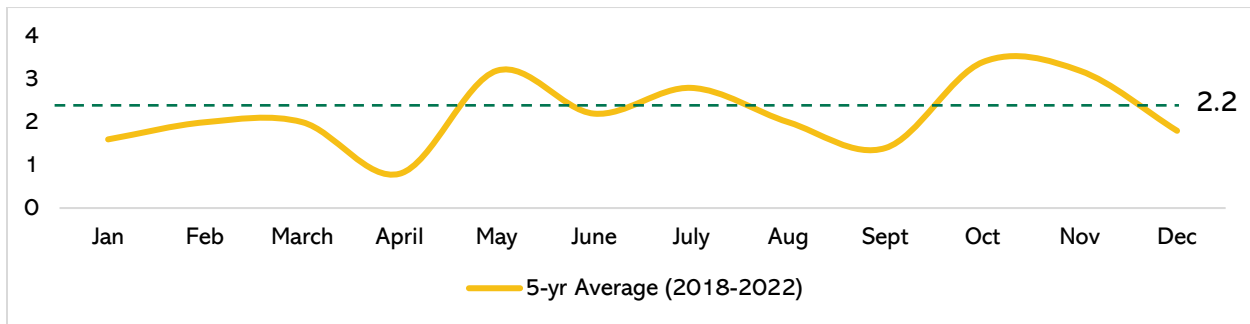
**Summer:** June, July, August

**Fall:** September, October, November

### Fatalities and Serious Injuries

The number of people killed or seriously injured is distributed roughly evenly across months, with an average of 2.2 KSI injuries/fatalities per month. KSI crashes are most notably above average in May, October, and November.

Figure 9. People Killed or Seriously Injured in Traffic Crashes by Month (2018 - 2022)

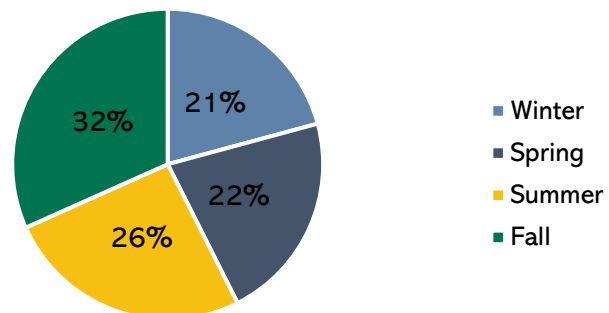


When compared against the average 6.4 persons killed or seriously injured by season, the average number of fatalities and serious injuries in Winter were less than the average (18% less) while Fall experienced greater than average amount (24% more crashes).

Table 4. People Killed or Seriously Injured by Season (2019 - 2022)

| Season | Average (2019-2022 <sup>5</sup> ) |
|--------|-----------------------------------|
| Winter | 5.3                               |
| Spring | 6                                 |
| Summer | 6.5                               |
| Fall   | 8                                 |
| Total  | 25.8                              |

Figure 10. Percent of People Killed or Seriously Injured in Traffic Crashes by Season (2019 - 2022)

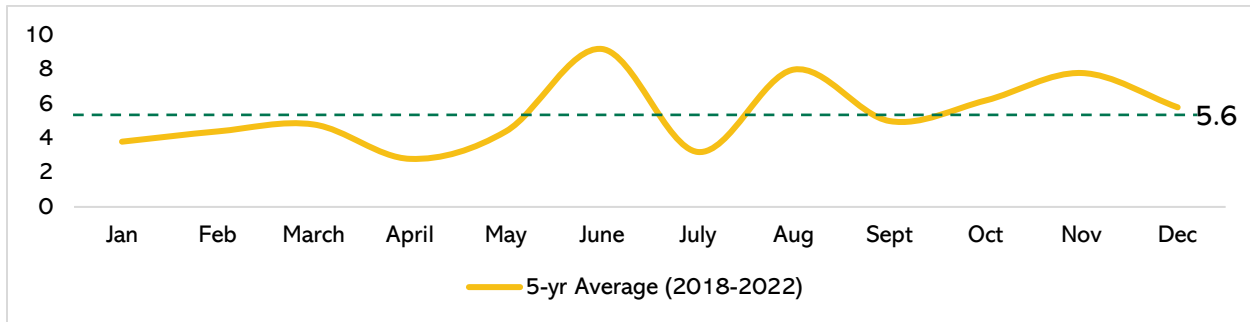


### Bicycle and Pedestrian Fatalities and Injuries

There is an average of 5.6 pedestrians and cyclists injured or killed in traffic crashes per month. On average, more cyclists and pedestrians are injured or killed in warmer months, with June, August, October, and November experiencing a greater than average number of bicycle and pedestrian injuries.

<sup>5</sup> Data for seasonal analysis includes December 2018 – November 2022. December is counted towards the season of the following year.

Figure 11. Pedestrians/Cyclists Injured or Killed in Traffic Crashes by Month (2018 – 2022)

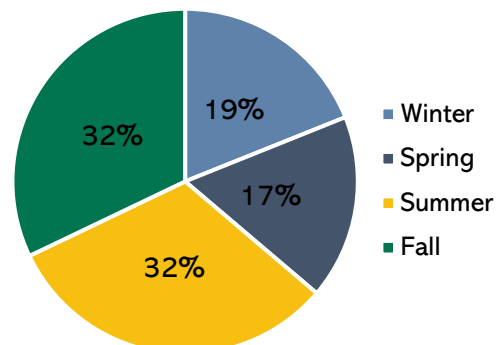


Over 60% of injuries and deaths occur during the warmer months of Summer and Fall. There are 27% and 28% more bike/ped injuries or deaths in Summer and Fall, respectively, compared to the per season average of 15.2 injuries and deaths. These differences are likely affected by lower volumes of people walking and biking in winter and early spring due to weather.

Table 5. Pedestrians/Cyclists Injured or Killed in Traffic Crashes by Season (2019 - 2022)

| Season | Average (2019-2022 <sup>6</sup> ) |
|--------|-----------------------------------|
| Winter | 11.8                              |
| Spring | 10.8                              |
| Summer | 19.8                              |
| Fall   | 19.8                              |
| Total  | 62.0                              |

Figure 12. Percent of Pedestrians/Cyclists Injured or Killed in Traffic Crashes by Season (2019 – 2022)



## Visibility

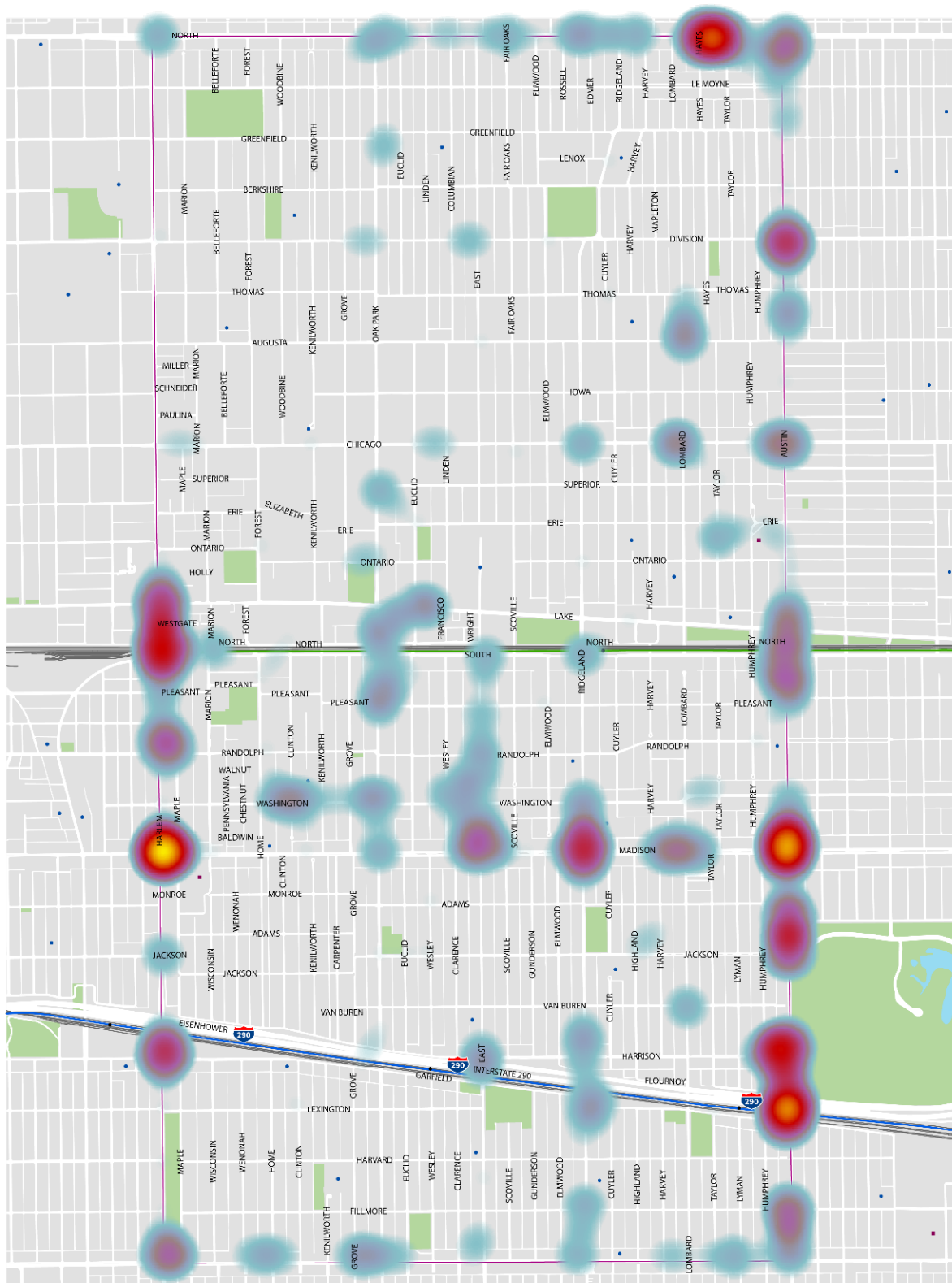
Visibility and lighting conditions relate to temporal conditions of both time of day and season. Overnight conditions tend to be in darkness (either full or lighted road), while winter/fall months have less daylight hours.

More fatal roadway crashes in Oak Park occur in darkness. From 2018 to 2022, 90% of motor vehicle fatalities occurred in darkness. Additionally, 4 of the 5 pedestrian deaths occurred in darkness. However, the incidence of crashes overall is high in daylight conditions. This suggests that although dark conditions pose a higher fatality risk, the severity of crashes during the day demands equal attention. Figure 14 shows a heatmap of crash locations where lighting conditions were marked as “Darkness” by the reporting officer. These may indicate priority locations for street lighting improvements.

<sup>6</sup> Data for seasonal analysis includes December 2018 – November 2022. December is counted towards the season of the following year.



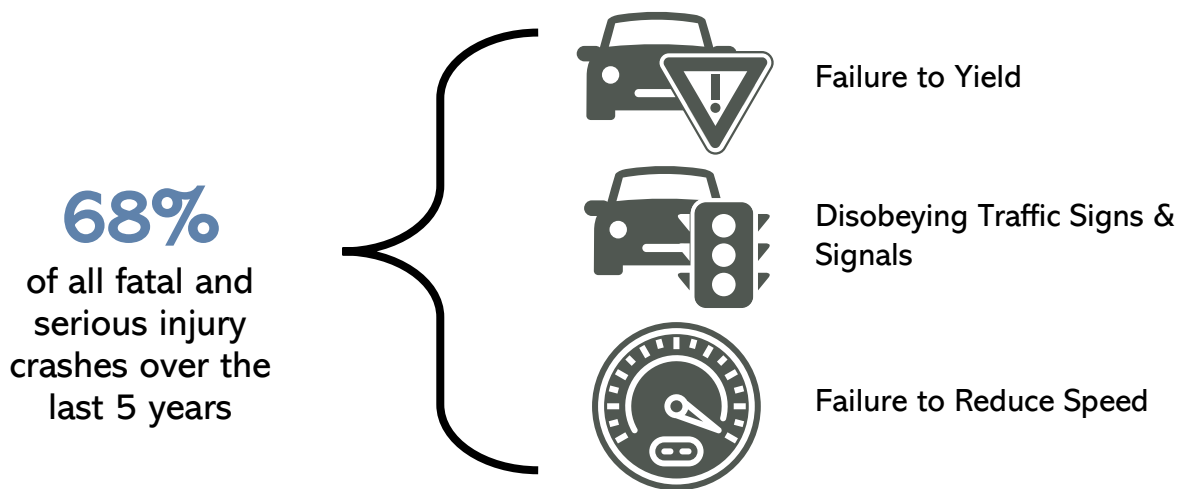
Figure 13. Locations of Crashes Marked as Occurring in "Darkness" Lighting Conditions



## Contributory Causes

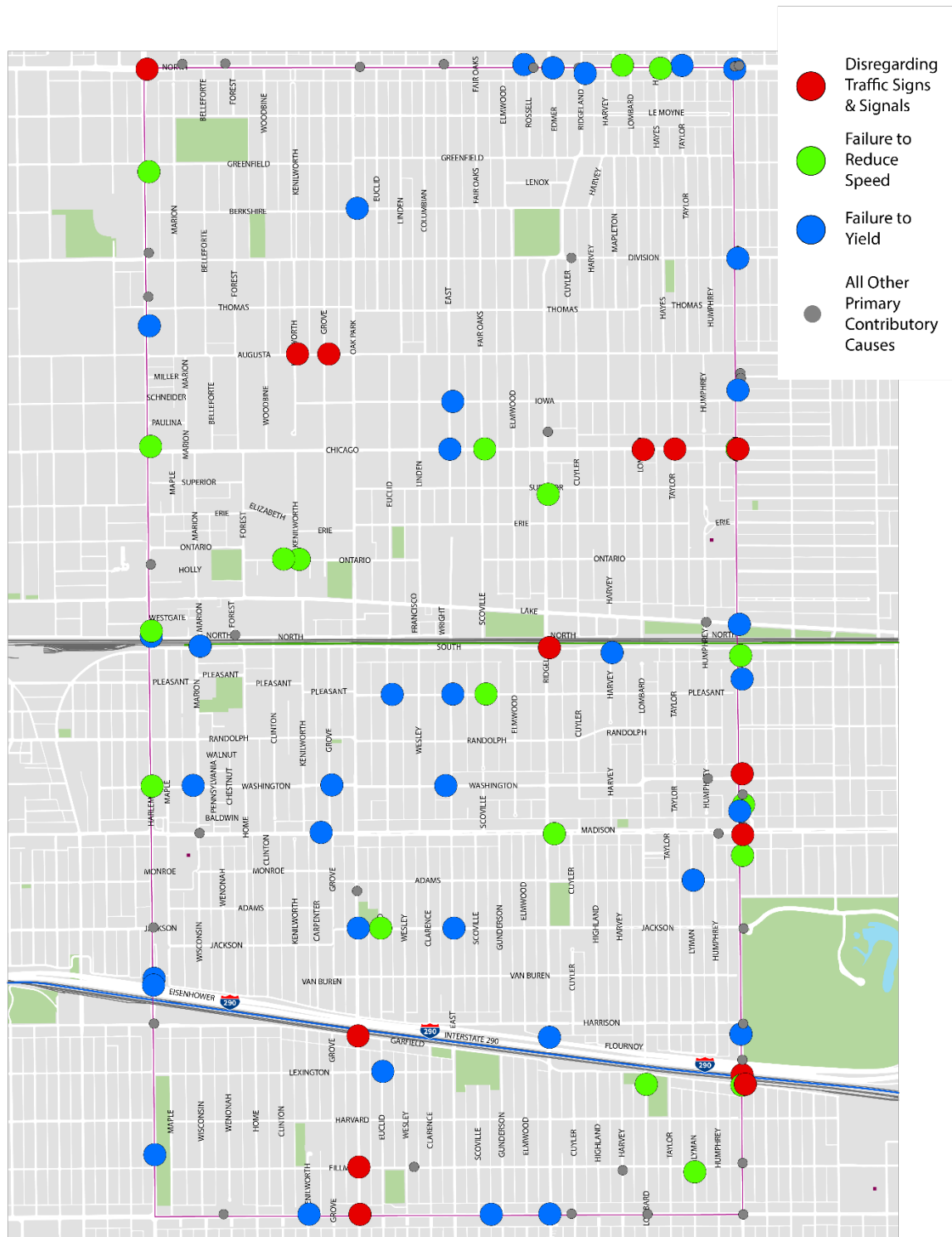
Contributory cause is a field reported by law enforcement which indicates the most significant factors in causing crash, determined by the reporting officer's judgement. Each crash can be given a primary cause and a secondary cause to indicate the most significant and second most significant factor.

Upon assessing contributory causes for all KSI crashes in Oak Park, three major types of driving behaviors were the most common causes: failure to yield, failure to reduce speed, and disobeying traffic signs and signals. These three causes alone were found as primary or secondary causes for 68% of all fatal and serious injury crashes over the last 5 years.



To further validate the trends seen in the IDOT crash data, a detailed review of all crash reports for bicycle and pedestrian KSI crashes was conducted. This review involved reading through the written narrative for each crash and determining whether key driving behaviors were exhibited. This review confirmed the trends found in the IDOT crash data, with roughly 75% of bicycle and pedestrian KSI crashes involving driver failure to yield, speeding, or disobeying traffic signs and signals. Notably, over 37% of these crashes involved speeding. Locations of KSI crashes by primary contributory cause can be found in Figure 14.

Figure 14. Crashes by Primary Contributory Cause

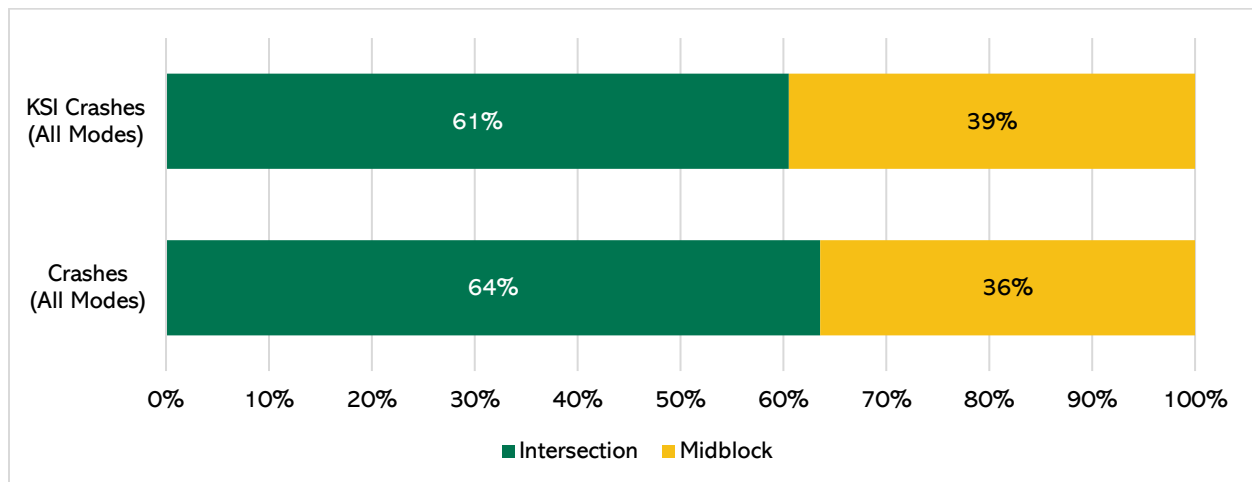


## Crash Locations

### Intersection vs. Midblock Crashes

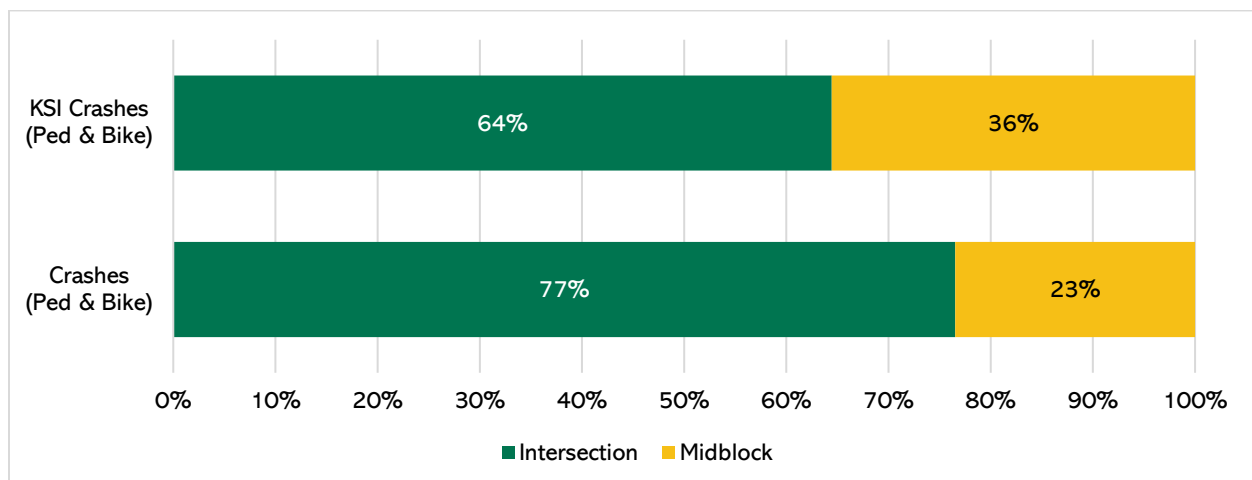
Between 2018 and 2022, 64% of all crashes in the Village of Oak Park occurred at intersections, while the remaining 36% occurred mid-block. Among total KSI crashes, 61% occurred at intersections and 39% occurred mid-block.<sup>7</sup>

Figure 15. Share of Crashes at Intersections vs. Midblock



During the same period, pedestrian & cyclist KSI crashes followed a similar pattern, with 64% occurring at intersections and 36% mid-block. However, a higher share of total pedestrian & cyclist crashes, 77%, occurred at intersections.

Figure 16. Share of Bicycle & Pedestrian Crashes at Intersections vs. Midblock



<sup>7</sup> Crashes are considered to have occurred at intersections if they fall within 75' of an intersection point. Crashes are considered to have occurred midblock if they fall outside 75' of an intersection point.

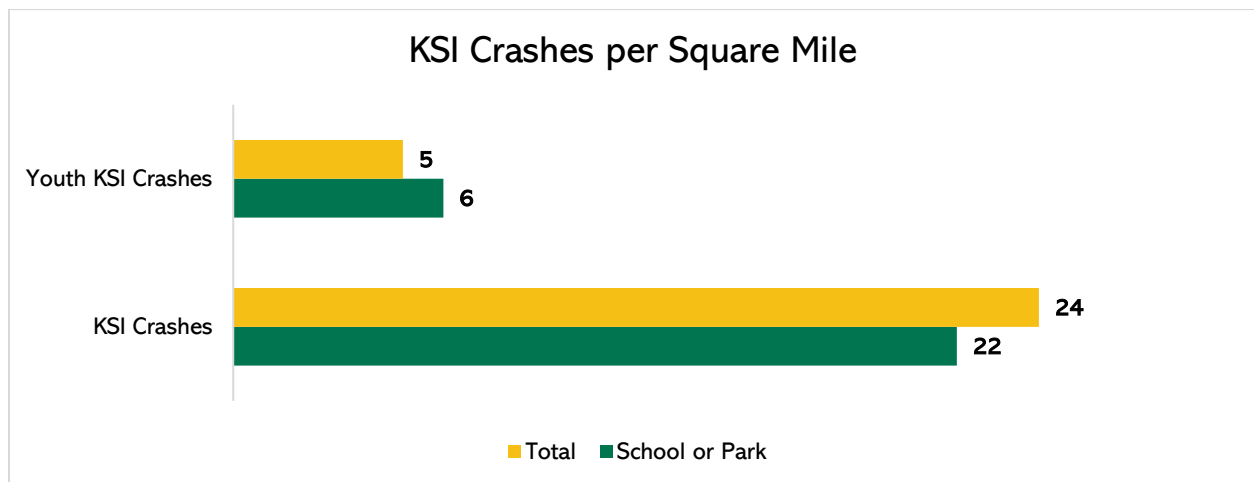
## Schools and Parks

Roughly 30% of Oak Park is located near<sup>8</sup> one of the Village’s many parks and schools. Because parks and schools are likely to generate trips by vulnerable road users, such as bicyclists, pedestrians, and children, understanding traffic safety trends in these areas is critical.

Between 2018 and 2022, 30% of total crashes and 27% of KSI crashes occurred near a school or park. Indicating areas near schools and parks in the Village do not see more crashes than the rest of the Village.

However, areas in the Village near schools or parks see slightly more youth crashes and youth KSI crashes<sup>9</sup> per square mile than the Village as a whole, including 38% of all KSI youth crashes. However, this data should be used cautiously given the small number of KSI crashes involving a youth that have occurred in Oak Park (9 KSI crashes involving a youth near schools or parks out of 24 total KSI crashes involving a youth).

Figure 17. KSI Crashes per Square Mile (Citywide vs. Parks/Schools)



<sup>8</sup> Crashes are considered to be “near” a school or park if they occurred within 1/16<sup>th</sup> mile of a school/park boundary.

<sup>9</sup> Crashes are considered a “crash involving a youth” if anyone listed in the crash report is under 18 years of age

## Systemic Analysis

### Crash Severity by User

Recognizing which types of road users experience the most crashes which types of road users most disproportionately experience severe crashes is key in identifying safety countermeasures. Table 6 outlines the share of total crashes, KSI crashes and relative severity across different user types between 2018 and 2022.

Table 6. Share of Crashes and KSI Crashes by User Type

| User Type     | % of Crashes | % of KSI Crashes | Relative Severity <sup>10</sup> |
|---------------|--------------|------------------|---------------------------------|
| Pedestrian    | 2.8%         | 27.2%            | 9.76                            |
| Bicycle       | 1.5%         | 12.3%            | 8.05                            |
| Motor Vehicle | 95.7%        | 60.5%            | 0.63                            |

These finding can be reduced to two key indicators, frequency and severity, to help identify how safety countermeasures should be prioritized across user types. The following key findings can be understood from Table 7:

- Motor vehicle only crashes are very common but tend to be less severe when they occur.
- Pedestrian and cyclist crashes are rare but tend to be very severe when they occur.

Table 7. Frequency and Severity by User Type

| User Type     | Frequency   | Severity    |
|---------------|-------------|-------------|
| Pedestrian    | Rare        | Very Severe |
| Bicycle       | Rare        | Very Severe |
| Motor Vehicle | Very Common | Less Severe |

### Crash Type Analysis (Motor Vehicle Crashes)

Understanding which crash types occur most often, as well as which crash types most often result in fatalities and serious injuries is critical for developing effective safety countermeasures. Between 2018 and 2022, the most common motor vehicle crash type was Front to Rear, representing 30% of all crashes but only 23% of KSI crashes. During that same period, Angle and Turning crashes accounted for 32% of all crashes but combined for 41% of KSI crashes.

<sup>10</sup> For each user type, relative severity represents the ratio of its share of severe crashes to its share of total crashes. A relative severity of 1 indicates that user type sees a share of severe crashes proportional to its share of total crashes. A relative severity above 1 indicates that user type has resulted in a disproportionately high number of severe crashes, and a relative severity below 1 indicates that user type has resulted in a disproportionately low number of severe crashes.

Table 8. Share of Crashes and KSI Crashes by Crash Type

| Crash Type                   | % of Motor Vehicle Crashes | % of Motor Vehicle KSI Crashes | Relative Severity <sup>11</sup> |
|------------------------------|----------------------------|--------------------------------|---------------------------------|
| Front to Rear                | 30%                        | 23%                            | 0.76                            |
| Turning                      | 16%                        | 22%                            | 1.35                            |
| Angle                        | 16%                        | 19%                            | 1.21                            |
| Parked Motor Vehicle         | 16%                        | 9%                             | 0.54                            |
| Fixed Object                 | 5%                         | 7%                             | 1.58                            |
| Sideswipe Opposite Direction | 1%                         | 4%                             | 3.30                            |
| Front to Front               | 1%                         | 4%                             | 5.36                            |

Distilling these findings into two key indicators found in, frequency and severity, helps identify crash types which should be given highest priority for safety countermeasures. Several key findings can be understood from the table:

- Front to Rear crashes are very common, but tend to be less severe when they occur.
- Sideswipe Opposite Direction and Front to Front crashes are rare but tend to be very severe when they occur.
- Turning and Angle crashes are both common and tend to be severe when they occur.

Table 9. Frequency and Severity by Crash Type

| Crash Type                   | Frequency   | Severity    |
|------------------------------|-------------|-------------|
| Front to Rear                | Very Common | Less Severe |
| Turning                      | Common      | Severe      |
| Angle                        | Common      | Severe      |
| Parked Motor Vehicle         | Common      | Less Severe |
| Fixed Object                 | Less Common | Severe      |
| Sideswipe Opposite Direction | Rare        | Very Severe |
| Front to Front               | Rare        | Very Severe |

<sup>11</sup> For each crash type, relative severity represents the ratio of its share of severe crashes to its share of total crashes. A relative severity of 1 indicates that crash type sees a share of severe crashes proportional to its share of total crashes. A relative severity above 1 indicates that crash type has resulted in a disproportionately high number of severe crashes, and a relative severity below 1 indicates that crash type has resulted in a disproportionately low number of severe crashes.

## Vehicle Maneuver Analysis (Bicycle & Pedestrian Crashes)

Since IDOT crash data specifies bicycle and pedestrian crashes as a type of crash, looking at the maneuver of striking vehicles involved in bicycle and pedestrian crashes can reveal patterns and help develop effective safety countermeasures. Table 10 outlines the share of bicycle and pedestrian injury crashes by striking vehicle maneuver. This data shows that:

- Straight Ahead is the most common striking maneuver in bicycle injury crashes and second most common in pedestrian injury crashes.
- Turning maneuvers (both right and left turns) account for **56%** of pedestrian injury crashes and **45%** of bicycle injury crashes.
  - Left turns account for more crashes than right turns for both modes.

*Table 10. Share of Bicycle and Pedestrian Crashes by Striking Vehicle Maneuver*

| Striking Vehicle Maneuver | Share of Bicycle Injury Crashes | Share of Pedestrian Injury Crashes |
|---------------------------|---------------------------------|------------------------------------|
| <b>Straight Ahead</b>     | <b>34%</b>                      | <b>28%</b>                         |
| <b>Turning Left</b>       | <b>27%</b>                      | <b>33%</b>                         |
| <b>Turning Right</b>      | <b>18%</b>                      | <b>23%</b>                         |
| <b>Other</b>              | <b>17%</b>                      | <b>10%</b>                         |
| <b>Unknown</b>            | <b>4%</b>                       | <b>6%</b>                          |
| <b>Total</b>              | <b>100%</b>                     | <b>100%</b>                        |



## High-Risk Feature Analysis (Intersections)

The risk of crashes and KSI crashes are not distributed evenly across intersections or types of intersections in Oak Park. To identify intersection characteristics that may create a higher safety risk for road users, crash history across various intersection types were isolated and compared. This process revealed a set of key characteristics to focus on when identifying intersections for the high injury network.<sup>12</sup> All intersections in the Village of Oak Park were included in the Control Type analysis, and all signalized intersections were included in the Number of Lanes analysis; locations are shown in Figure 18.

### Control Type

The frequency of crashes and KSI crashes varies between intersection control types. The analysis outlined in Table 11 compares three categories of intersections: signalized intersections, unsignalized intersections where local streets meet local streets, and unsignalized intersections where local streets meet an arterial or collector.

- Signalized intersections saw roughly four times the average number of total crashes and KSI crashes per intersection.
- Unsignalized local-local intersections saw far fewer crashes and KSI crashes than the baseline.

Table 11. Intersection Analysis by Control Type (All Crash Types)

| Intersection Type                       | Intersection Count | Crash Count | Crashes per Intersection | Crashes Baseline | KSI Crash Count | KSI Crash per Intersection | KSI Baseline |
|---|--------------------|-------------|--------------------------|------------------|-----------------|----------------------------|--------------|
| Total                                   | 657                | 4816        | 7.33                     | 1                | 69              | 0.11                       | 1            |
| Signalized Intersection                 | 83                 | 2526        | 30.43                    | 4.15             | 34              | 0.41                       | 3.90         |
| Unsignalized (Local-Local)              | 377                | 581         | 1.54                     | 0.21             | 11              | 0.03                       | 0.28         |
| Unsignalized (Local-Arterial/Collector) | 197                | 1709        | 8.68                     | 1.18             | 24              | 0.12                       | 1.16         |

Repeating the analysis above with only bicycle and pedestrian crashes reveals similar patterns, with signalized intersections accounting for a disproportionate number of crashes and KSI crashes.

<sup>12</sup> For this analysis, crashes within 75 feet of an intersection center point were assigned to that intersection.

Table 12. Intersection Analysis by Control Type (Bicycle & Pedestrian)

| Intersection Type                       | Intersection Count | Crash Count | Crashes per Intersection | Crashes Baseline | KSI Crash Count | KSI Crash per Intersection | KSI Baseline |
|---|--------------------|-------------|--------------------------|------------------|-----------------|----------------------------|--------------|
| Total                                   | 657                | 251         | 0.38                     | 1                | 29              | 0.04                       | 1            |
| Signalized Intersection                 | 83                 | 130         | 1.57                     | 4.10             | 12              | 0.14                       | 3.28         |
| Unsignalized (Local-Local)              | 377                | 51          | 0.14                     | 0.35             | 9               | 0.02                       | 0.54         |
| Unsignalized (Local-Arterial/Collector) | 197                | 70          | 0.36                     | 0.93             | 8               | 0.04                       | 0.92         |

### Number of Lanes (Signalized Intersections)

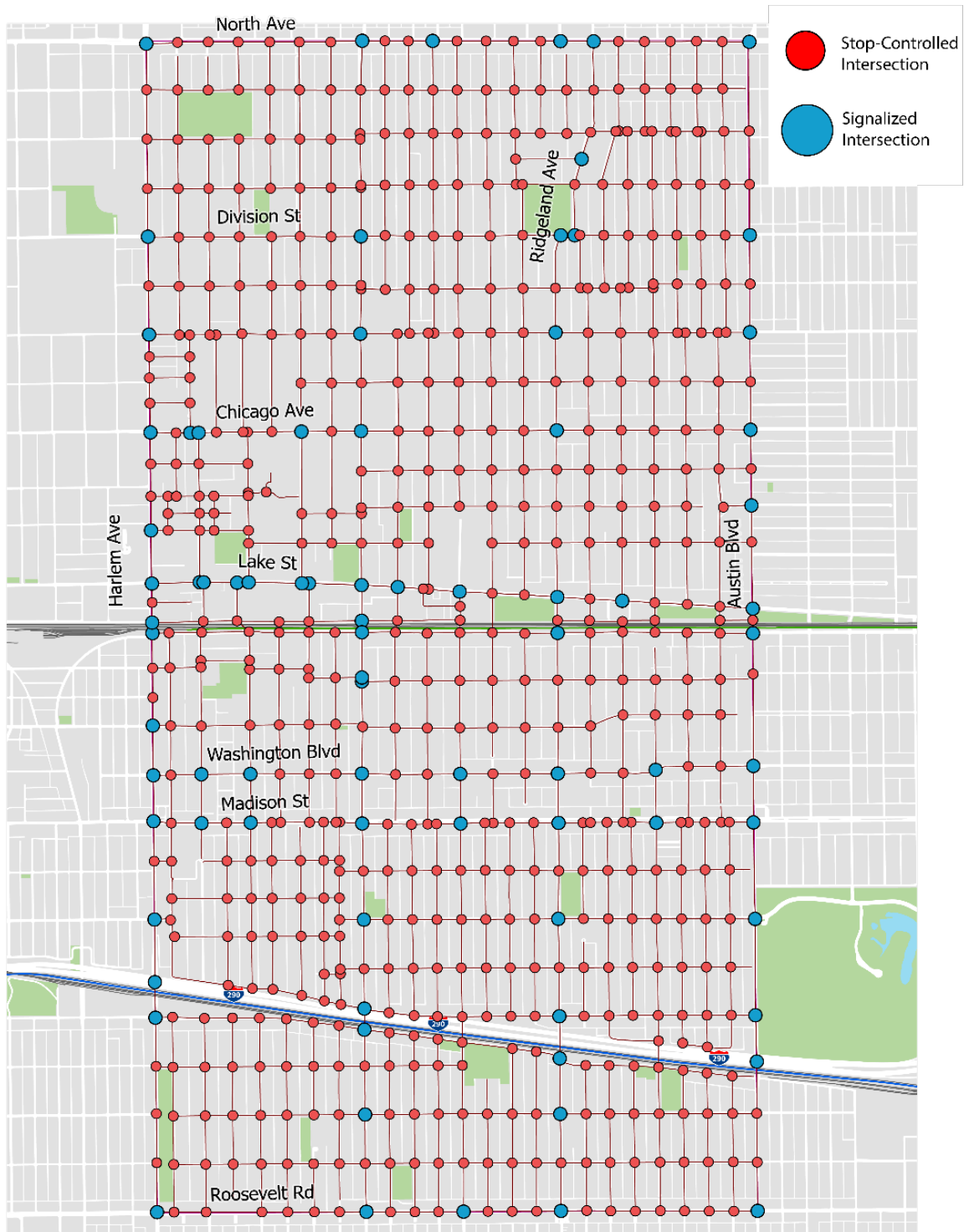
The control type analysis demonstrates that signalized intersections see far more crashes and KSI crashes than non-signalized intersections; however, variations in signalized intersection configuration can also impact safety. Three different groups of lane configurations were compared across signalized intersections: 2 Lanes vs. 2 Lanes, 2 Lanes vs. 4 Lanes, and 4 Lanes vs. 4 Lanes.

- 4 Lane vs. 4 Lane intersections saw 2.4 times the baseline number of KSI crashes and 1.5 times the baseline number of total crashes.
- 2 Lane vs. 4 Lane intersections saw total crashes and KSI crashes roughly equivalent to baseline.
- 2 Lane vs. 2 Lane intersections saw total crashes and KSI crashes significantly lower than baseline.

Table 13. Intersection Analysis by Number of Lanes (All Crash Types)

| Signalized Intersection Type | Intersection Count | Crash Count | Crashes per Intersection | Crashes Baseline | KSI Crash Count | KSI Crash per Intersection | KSI Baseline |
|------------------------------|--------------------|-------------|--------------------------|------------------|-----------------|----------------------------|--------------|
| Total                        | 39                 | 1621        | 41.6                     | 1                | 26              | 0.7                        | 1            |
| 2 Lanes vs. 2 Lanes          | 13                 | 281         | 21.6                     | 0.52             | 2               | 0.2                        | 0.23         |
| 2 Lanes vs. 4 Lanes          | 18                 | 856         | 47.6                     | 1.14             | 11              | 0.6                        | 0.92         |
| 4 Lanes vs. 4 Lanes          | 8                  | 484         | 60.5                     | 1.46             | 13              | 1.6                        | 2.44         |

Figure 18. Systemic Analysis Intersection Locations



## High-Risk Feature Analysis (Streets)

In addition to intersections, an analysis was conducted to identify street characteristics that may create a higher safety risk for road users. This process compared crash history across several isolated street characteristics to identify which street typologies should be the focus of a high injury network.<sup>13</sup> All street segments falling between intersections used in the High-Risk Feature Analysis (Intersections) were used in this analysis, shown in Figure 19. Only crashes not assigned to intersections (midblock crashes), were assigned to street segments for the analysis.

### Jurisdiction

Streets under IDOT's jurisdiction account for 10% of centerline miles in Oak Park, yet 38% of KSI crashes occur on IDOT streets. Since 2018, IDOT streets have averaged 4.3 KSI crashes per year, compared to just 0.7 KSI crashes per year for Village-owned streets.

### Functional Classification

The frequency of crashes and KSI crashes varies across street functional classifications. The analysis outlined in Table 14 compares the three primary functional classifications in the Village: local, collector, and arterial.

- Arterial streets see more than **6 times** the baseline number of total crashes and KSI crashes per mile.
- Collector streets see total crashes and KSI crashes per mile above the baseline.
- Local streets see just **26%** of crashes per mile and just **12%** of KSI crashes per mile compared to the baseline.

Table 14. Street Segment Analysis by Functional Class

| Street Segment Functional Class | Centerline Miles | Crash Count | Crashes per Mile | Crashes per Mile Baseline | KSI Crash Count | KSI Crash per Mile | KSI per Mile baseline |
|---------------------------------|------------------|-------------|------------------|---------------------------|-----------------|--------------------|-----------------------|
| Total                           | 73.2             | 2759        | 38               | 1.00                      | 45              | 0.6                | 1.00                  |
| Local                           | 55.6             | 536         | 10               | 0.26                      | 4               | 0.1                | 0.12                  |
| Collector                       | 9.6              | 397         | 41               | 1.10                      | 8               | 0.8                | 1.36                  |
| Arterial                        | 8.0              | 1826        | 227              | 6.03                      | 33              | 4.1                | 6.68                  |

<sup>13</sup> For this analysis, non-intersection crashes within 75 feet of a street segment centerline were assigned to that street segment.

### Number of Lanes (Arterials & Collectors)

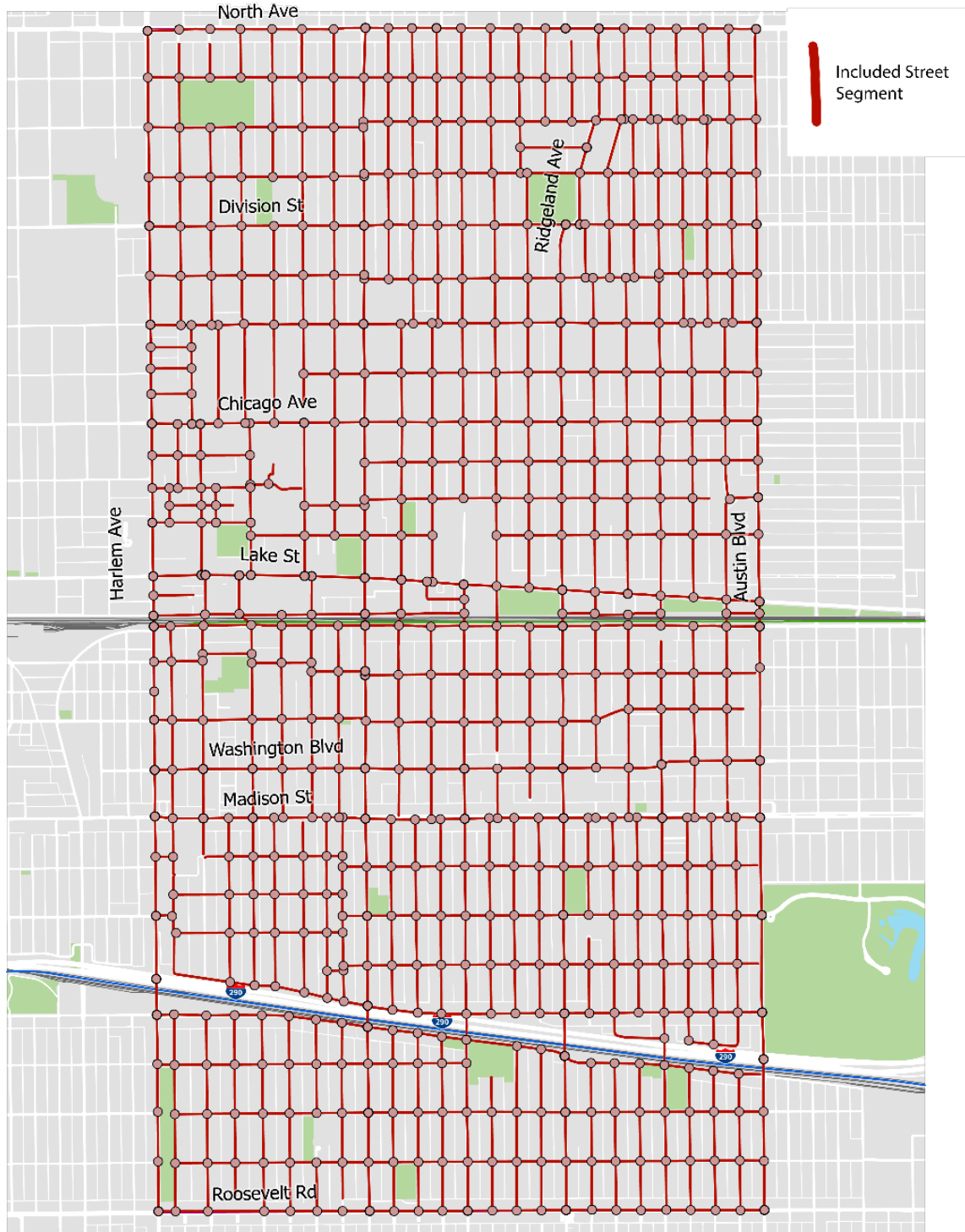
The functional class analysis indicated that arterials and collectors see far more crashes and KSI crashes than local streets, but various features on arterial and collector streets can also impact safety. To further identify these features, arterial and collector streets with 2 lanes and 4 lanes were compared in Table 15.

- Arterials and collectors with 4 lanes see at least **1.8 times** the baseline number of total crashes and KSI crashes per mile.

*Table 15. Street Segment Analysis by Number of Lanes (Arterials & Collectors)*

| Number of Lanes | Centerline Miles | Crash Count | Crashes per Mile | Crashes per Mile Baseline | KSI Crash Count | KSI Crash per Mile | KSI per Mile baseline |
|-----------------|------------------|-------------|------------------|---------------------------|-----------------|--------------------|-----------------------|
| Total           | 17.6             | 2223        | 126.3            | <b>1.00</b>               | 41              | 2.3                | <b>1.00</b>           |
| 2 Lane          | 10.5             | 591         | 56.5             | <b>0.45</b>               | 10              | 1.0                | <b>0.41</b>           |
| 4 Lane          | 7.1              | 1632        | 228.6            | <b>1.81</b>               | 31              | 4.3                | <b>1.86</b>           |

Figure 19. Systemic Analysis Street Segment Locations



## High Injury Network

### High Injury Network Purpose

A high-injury network (HIN) provides decision-makers with quantitative information about which streets and intersections see the highest concentrations of severe traffic crashes and can, therefore, benefit most from the implementation of safety countermeasures. HINs, in part, fulfill Question 3 on USDOT's SS4A Self-Certification Eligibility Worksheet: geospatial identification of higher risk locations, which is a requirement for eligibility for SS4A Implementation Grants or to conduct Supplemental Planning/Demonstration activities.

While other tools may complement high injury networks in developing a data-driven Vision Zero program and action plan, high injury networks are useful for:

- **Prioritizing Projects.** A high-injury network indicates the major corridors and intersections with both the greatest demonstrated safety need and the greatest opportunities to make progress towards Vision Zero goal.
- **Identifying High Impact Grant Application.** A high-injury network indicates the corridors and intersections that are most likely to demonstrate safety need and impact on competitive regional, state, and federal grant applications,
- **Developing Critical Partnerships.** A high-injury network demonstrates where partnerships are most needed, either as part of continuing inter-agency coordination, or as a starting point for collaboration.

### Methodology

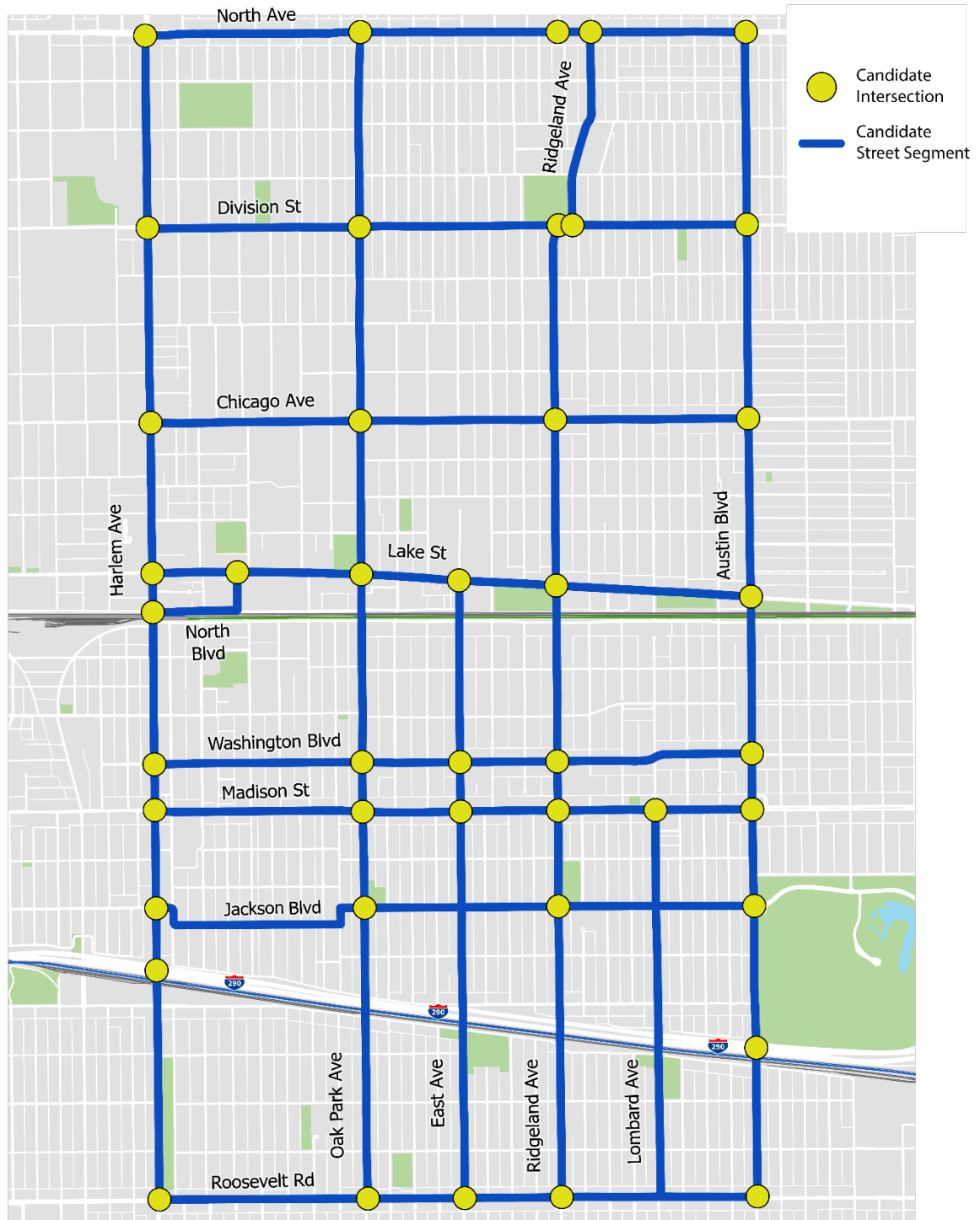
#### Candidate Intersections and Street Segments

Because of the distinct types of crashes and related safety countermeasures at intersections and street segments, the methodology to determine the high-injury network evaluated both intersections and street segments separately. The list of candidate intersections and street segments was informed by results from the systemic analysis, which indicated an elevated safety risk at arterial and collector streets, as well as signalized intersections. Table 16 outlines the specific criteria for both intersections and street segments, and Figure 20 shows the resulting map of candidates based on those criteria.

*Table 16. High-Injury Network Candidate Criteria*

| HIN Candidate  | Criteria  |
|----------------|---|
| Intersection   | Arterial and collector streets                                  |
| Street Segment | Signalized intersections between arterial and collector streets |

Figure 20. Candidate Intersections and Street Segments





For both intersections and street segments, three primary typologies (outlined in Table 17) were identified through the systemic analysis. These typologies represent feature variations shown to have an impact on expected KSI crashes and are a key piece of the High-Injury Network evaluation.

Table 17. High-Injury Network Typologies

| HIN Candidate  | Typologies          |
|----------------|---------------------|
| Intersection   | 2 Lanes vs. 2 Lanes |
|                | 2 Lanes vs. 4 Lanes |
|                | 4 Lanes vs. 4 Lanes |
| Street Segment | 4 Lane Arterials    |
|                | 2 Lane Arterials    |
|                | 2 Lane Collectors   |

## High Injury Network Evaluation Criteria

To determine the high-injury network, all candidate intersections and street segments were evaluated on three equally weighted criteria: KSI Crash History, Typology Risk Assessment, and Relative KSI Crash History. Each criteria provides different, but equally important, information on the risk of severe crashes and potential impact of safety improvements for each candidate intersection and street segment.

- **KSI Crash History** assesses KSI crashes at each intersection and street segment relative to all other intersections and street segments.
- **Typology Risk Assessment** assesses the risk of each intersection and street segment's typology relative to all other typologies.
- **Relative KSI Crash History** assesses KSI crashes at each intersection and street segment relative to all other intersections and street segments within the same typology.

Scores for each assessment criteria are normalized to vary from 0 to 1, with 0 representing the lowest safety risk and 1 representing the highest. Descriptions of minimum and maximum scores for each criterion are broken down in Table 18.

Table 18. Description of Criteria Scoring

|   | Minimum   | Maximum  |
|---|---|--|
| <b>KSI Crash History (0-1)</b>          | Fewest number of KSI crashes among all intersections/streets                          | Highest number of KSI crashes among all intersections/streets                          |
| <b>Typology Risk Assessment (0-1)</b>   | Typology with fewest number of KSI crashes among all intersection/street typologies   | Typology with highest number of KSI crashes among all intersection/street typologies   |
| <b>Relative KSI Crash History (0-1)</b> | Fewest number of KSI crashes among all intersections/streets within the same typology | Highest number of KSI crashes among all intersections/streets within the same typology |

## Evaluation Criteria Calculations

### Intersections

Methodologies for calculating each intersection evaluation criterion can be found below and equations can be found in Table 19. Note that all crashes falling within a 75-foot radius of each intersection are considered intersection crashes and assigned to that specific intersection.

- **Intersection KSI Crash History** is calculated for each intersection by taking the KSI crash count at each intersection and dividing by the maximum KSI crash count among all intersections. A score is assigned for each intersection, yielding a maximum score of 1 and minimum score of 0.
- **Intersection Typology Risk Assessment** is calculated for each intersection typology and assigned to each intersection that falls under that typology. For each intersection typology, the total KSI crash count per intersection is calculated. This number is then divided by the maximum typology KSI crash count per intersection. A score is assigned for each intersection, yielding a maximum score of 1 and minimum score of 0.
- **Intersection Relative KSI Crash History** is calculated for each intersection by taking the KSI crash count at each intersection and dividing this value by the KSI crash count per intersection of the intersection's typology, this shows the KSI crashes at each intersection relative to the expected KSI crashes for the intersection's typology. This value is calculated for all intersections then divided by the maximum intersection value to get the Relative KSI Crash History for each intersection, yielding a maximum score of 1 and minimum score of 0.

Table 19. Intersection Evaluation Criteria Equations

| Evaluation Criteria        | Intersection Calculation  |
|----------------------------|---|
| KSI Crash History          | $\frac{KSI\ Crash\ Count_{Intersection}}{MAX(KSI\ Crash\ Count)_{All\ Intersections}}$  |
| Typology Risk Assessment   | $\frac{KSI\ Crash\ Count\ per\ Intersection_{Intersection\ Typology}}{MAX(KSI\ Crash\ Count\ per\ Intersection)_{All\ Intersection\ Typologies}}$   |
| Relative KSI Crash History | $\frac{\left( \frac{KSI\ Crash\ Count_{Intersection}}{KSI\ Crash\ Count\ per\ Intersection_{Intersection\ Typology}} \right)}{MAX \left( \frac{KSI\ Crash\ Count_{Intersection}}{KSI\ Crash\ Count\ per\ Intersection_{Intersection\ Typology}} \right)}$ |

### Street Segments

Methodologies for calculating each street segment evaluation criterion can be found below and equations can be found in Table 20. Note that this analysis excludes all intersections crashes assigned in

the Intersections portion of the high-injury network analysis, and only includes crashes falling midblock between signalized, arterial & collector intersections. All midblock crashes falling within 75-feet of each street segment centerline are assigned to that specific street segment.

- **Street Segment KSI Crash History** is calculated for each street segment by taking the KSI crash count per mile for each street segment and dividing by the maximum KSI crash count per mile among all street segments. A score is assigned for each street segment, yielding a maximum score of 1 and minimum score of 0.
- **Street Segment Typology Risk Assessment** is calculated for each street segment typology and assigned to each street segment that falls under that typology. For each typology, the total KSI crash count per mile is calculated. This number is then divided by the maximum street segment typology KSI crash count per mile. A score is assigned for each street segment, yielding a maximum score of 1 and minimum score of 0.
- **Street Segment Relative KSI Crash History** is calculated for each street segment by taking the KSI crash count per mile for each street segment and dividing this value by the KSI crash count per mile of the street segment's typology, this shows the KSI crash count per mile at each street segment relative to the expected KSI crash count per mile for the street segment's typology. This value is calculated for all street segments then divided by the maximum street segment value to get the Relative KSI Crash History for each street segment, yielding a maximum score of 1 and minimum score of 0.

Table 20. Street Segment Evaluation Criteria Equations

| Evaluation Criteria        | Street Segment Calculation  |
|----------------------------|---|
| KSI Crash History          | $\frac{KSI \text{ Crash Count per Mile}_{Street \text{ Segment}}}{MAX(KSI \text{ Crash Count per Mile})_{All \text{ Street Segments}}}$   |
| Typology Risk Assessment   | $\frac{KSI \text{ Crash Count per Mile}_{Street \text{ Segment Typology}}}{MAX(KSI \text{ Crash Count per Mile})_{All \text{ Street Segment Typologies}}}$  |
| Relative KSI Crash History | $\frac{\left( \frac{KSI \text{ Crash Count per Mile}_{Street \text{ Segment}}}{KSI \text{ Crash Count per Mile}_{Street \text{ Segment Typology}}} \right)}{MAX \left( \frac{KSI \text{ Crash Count per Mile}_{Street \text{ Segment}}}{KSI \text{ Crash Count per Mile}_{Street \text{ Segment Typology}}} \right)}$ |

## Results

Scores for all criteria are then summed for each intersection and street segment to yield a net score between 0 and 3. The top 20% of net scores for intersections and the top 20% of net scores for street segments make up the high-injury network, shown in Figure 21 and listed out in Table 21 and Table 22. In addition to the high-injury network, intersections and street segments falling into the second highest 20% of net scores (the 60<sup>th</sup>-80<sup>th</sup> percentile) are marked as Tier II and those falling into the third highest 20% of net scores (the 40<sup>th</sup>-60<sup>th</sup> percentile) are marked as Tier III. While not a part of the high-injury network, these locations represent the next-highest priority for safety countermeasures.

- High-injury intersections represent just **14%** of signalized arterial & collector intersections.
- High-injury street segments represent just **14%** of the arterial and collector centerline miles.
- High-injury network locations accounted for **41%** of all fatal and serious injury crashes between 2018 and 2022.

Table 21. High-Injury Intersections

| Count | Intersection                 |
|-------|------------------------------|
| 1     | Madison St & Austin Blvd     |
| 2     | North Ave & Austin Blvd      |
| 3     | Chicago Ave & Austin Blvd    |
| 4     | Harlem Ave & I-290           |
| 5     | Harlem Ave & Washington Blvd |
| 6     | Harlem Ave & North Blvd      |

Table 22. High-Injury Street Segments

| Count | Segment                                     | Length (miles) |
|-------|---|----------------|
| 1     | Roosevelt Rd (Ridgeland Ave to Lombard Ave) | 0.26           |
| 2     | Austin Blvd (Roosevelt Rd to Jackson Blvd)  | 0.75           |
| 3     | Harlem Ave (I-290 to Jackson Blvd)          | 0.16           |
| 4     | Madison St (Ridgeland Ave to Lombard Ave)   | 0.25           |
| 5     | Austin Blvd (Madison St to Lake St)         | 0.55           |
| 5     | Chicago Ave (Oak Park Ave to Ridgeland Ave) | 0.51           |
| 6     | Austin Blvd (Chicago Ave to Division St)    | 0.50           |
| 7     | North Ave (Oak Park Ave to Austin Blvd)     | 1.00           |
| Total | High-Injury Segments                        | 3.99           |

Figure 21. High-Injury Network Analysis Results



## Equity Analysis

### The Role of Equity in Vision Zero

Historically, underserved communities – communities of color, low-income communities, and communities with the highest poverty rates – have experienced a disproportionate share of fatal crashes. In 2018, Indigenous and Black people in the United States faced higher traffic fatality rates than the overall population, with the disparity even more pronounced for people outside of a vehicle. The fatality rate for Black and African American pedestrians stood at 3 fatalities per 100,000 people while that for American Indian or Alaskan Native stood at almost 6, in comparison to a fatality rate of 2 for the total population.<sup>14</sup> Evidence suggests that this disparity is widening: between 2019 and 2020, overall fatal traffic crashes rose 7.2% while fatalities among Black people increased 23%.<sup>15</sup> People living in the 40% of counties with the highest poverty rate had 35% more fatalities than the national average per capita.<sup>16</sup> Not only are these facts shocking on their face: they compound with economic insecurity, reduced access to opportunity, health disparities, and other inequities to deepen the impact of each fatality on families, neighborhoods, and communities.

These same communities have seen less infrastructure and overall investment than more privileged ones or have been negatively impacted by the construction of arterials and highways that divide neighborhoods, create barriers to mobility, and increase high-speed vehicle traffic. This has led to a significant disparity in the quality and design of streets in underserved communities.

Getting to zero requires an intentional commitment to understanding these disparities and addressing them at their root. One of the guiding principles of Vision Zero is the equitable implementation of infrastructure investments: dedicating more resources to areas that face disproportionate burdens to address the consequences of past decisions. By equitably investing in safer streets, we can meaningfully improve safety, break vicious cycles compounded by traffic violence, and create places that are healthier, more just, and more prosperous.

### Traffic Fatalities and Race

The National Highway Traffic Safety Administration (NHTSA) documents racial data for traffic fatalities through the Fatality Analysis Reporting System (FARS). Traffic fatalities in Oak Park from 2007 through 2021 were captured and analyzed to identify any racial disparities among traffic fatality victims in the Village.<sup>17</sup> Results from this analysis are outlined in Table 23.

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<sup>14</sup> United States Department of Transportation. 2022. National Roadway Safety Strategy. Washington, DC: USDOT. Pg. 8.

<sup>15</sup> Ibid. Pg. 7

<sup>16</sup> Ibid. Pg. 7

<sup>17</sup> Traffic fatalities include all fatal crashes in FARS database that fall within the Village boundary plus a 50' buffer. This ensures all fatalities on border streets are captured and matches the methodology for all other crash analyses in the memo.

Table 23. Race and Fatalities Analysis

|  | White (Non-Hispanic) | Hispanic or Latino | Black or African American |
|--|----------------------|--------------------|---------------------------|
| <b>Oak Park Population Share<sup>18</sup></b>  | 60%                  | 9%                 | 19%                       |
| <b>Share of Fatalities (2007-2021)</b>         | 40%                  | 33%                | 27%                       |
| <b>Annual Fatalities per 100,000 Residents</b> | <b>2.5</b>           | <b>13.6</b>        | <b>5.3</b>                |

## Oak Park Census Tracts

### Economic Hardship Index

To identify underserved communities in Oak Park, an economic hardship index was developed. This index was made up of five variables: percent population that was a dependent, percent population without a high school diploma, median income for individuals aged 15 or older, percent population below 100% Federal Poverty Level (FPL), and percent population unemployed. These metrics closely follow the economic hardship index developed by the Great Cities Institute at the University of Illinois at Chicago for use in the city of Chicago.<sup>19</sup> All data was collected from the US Census Bureau using 2022 American Community Survey 1-year estimates. Analysis was conducted for each census tract in Oak Park and normalized to compare tracts to other tracts in Oak Park.

Each statistic was normalized using the following formula (except median individual income):

$$\% \text{ Below } 100\% \text{ FPL Index} = \frac{\% \text{ below FPL}}{\text{Max}(\% \text{ below FPL})} * 100$$

Median individual income was normalized using the following formula:

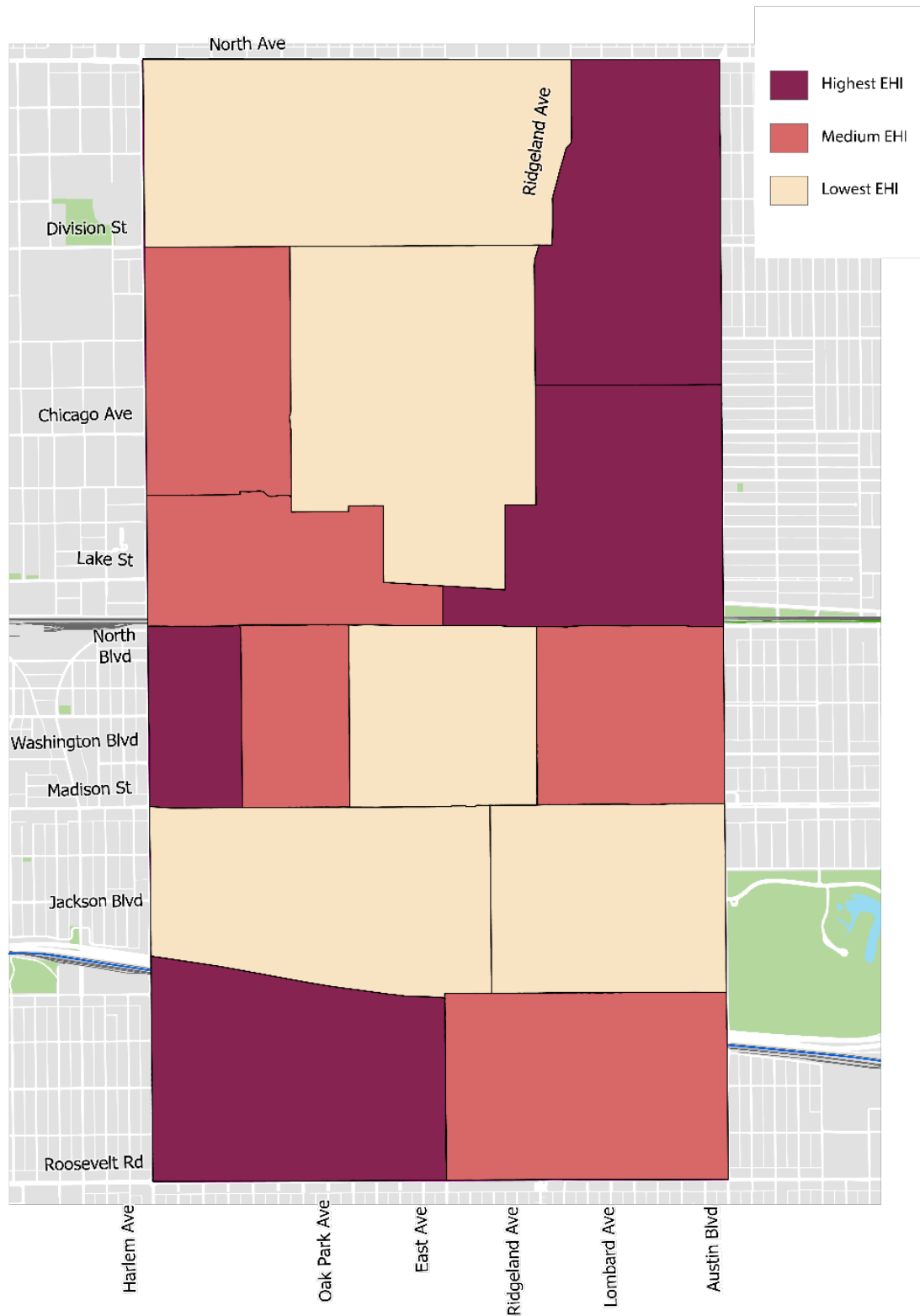
$$\text{Median Individual Income Index} = \frac{\text{Min}(\text{Median Individual Income})}{\text{Median Individual Income}} * 100$$

Each tracts indexes for each variable were averaged to create a general Economic Hardship Index (EHI). This index was then mapped (shown in Figure 22).

<sup>18</sup> U.S. Census Bureau. 2022. American Community Survey 5-Year Estimates.

<sup>19</sup> Great Cities Institute, University of Illinois Chicago. 2017. [Chicago Community Area Economic Hardship Index](#).

Figure 22. Oak Park Economic Hardship Index





Oak Park has 14 census tracts, which were categorized as Highest, Medium, and Lowest based on their EHI: 4 in the Highest category, 5 in the Medium category, and 5 in the Lowest category.

## KSI Crashes

For the highest hardship census tracts:

- **6.2** annual fatalities per 100,000 residents
- **47.2** annual KSI Crashes per 100,000 residents
- **4** high-injury intersections

For the remaining census tracts:

- **5.9** annual fatalities per 100,000 residents
- **40.7** annual KSI Crashes per 100,000 residents
- **2** high-injury intersections

Table 24. Oak Park Census Tract Equity Analysis

| Tract        | Economic Hardship Level | Share of Area | Share of Population | Share of KSI Crashes | Share of HIN Centerline Miles |
|--------------|-------------------------|---------------|---------------------|----------------------|-------------------------------|
| 17031812100  | Highest                 | 8%            | 6%                  | 8%                   | 4%                            |
| 17031812500  | Highest                 | 9%            | 9%                  | 11%                  | 0%                            |
| 17031812801  | Highest                 | 3%            | 6%                  | 3%                   | 0%                            |
| 17031813200  | Highest                 | 9%            | 9%                  | 12%                  | 17%                           |
| <b>Total</b> |                         | <b>28%</b>    | <b>30%</b>          | <b>33%</b>           | <b>22%</b>                    |
|              |                         |               |                     |                      |                               |
| 17031812600  | Medium                  | 5%            | 7%                  | 9%                   | 14%                           |
| 17031812301  | Medium                  | 3%            | 5%                  | 1%                   | 0%                            |
| 17031812302  | Medium                  | 6%            | 5%                  | 4%                   | 0%                            |
| 17031813100  | Medium                  | 8%            | 9%                  | 14%                  | 17%                           |
| 17031812802  | Medium                  | 5%            | 10%                 | 6%                   | 0%                            |
| 17031812400  | Lowest                  | 9%            | 9%                  | 7%                   | 11%                           |
| 17031812200  | Lowest                  | 5%            | 6%                  | 4%                   | 0%                            |
| 17031812700  | Lowest                  | 11%           | 6%                  | 5%                   | 11%                           |
| 17031812900  | Lowest                  | 7%            | 7%                  | 7%                   | 11%                           |
| 17031813000  | Lowest                  | 12%           | 7%                  | 11%                  | 13%                           |
| <b>Total</b> |                         | <b>72%</b>    | <b>70%</b>          | <b>67%</b>           | <b>78%</b>                    |

## Adjacent Communities of Economic Hardship

In addition to identifying inequities in the Village of Oak Park, it's critical to recognize the impacts of traffic safety in communities immediately adjacent to the Village. Investing in historically disadvantaged communities is a central aim of the US Department of Transportation RAISE grant program, through which the USDOT has classified census tracts as "historically disadvantaged areas" or "area of persistent poverty."<sup>20</sup> While Oak Park does not have any census tracts classified as such, adjacent tracts in Chicago, Cicero and Berwyn are classified as either historically disadvantaged, areas of persistent poverty, or both. Figure 23 shows these adjacent census tracts, alongside Oak Park census tracts by economic hardship level, and the high-injury network. Of note are Roosevelt Road and Austin Boulevard, which combined represent 34% of KSI crashes in Oak Park. These streets run adjacent to three of the four Highest economic hardship level census tracts in Oak Park, as well as adjacent historically disadvantaged areas in Chicago, Cicero, and Berwyn.

By coordinating with Chicago, Cicero and Berwyn, Oak Pak can work to improve the safety along streets shared with its neighbors, especially in areas of Oak Park that are adjacent to historically disadvantaged areas. While Roosevelt Road is under the jurisdiction of the Illinois Department of Transportation and any street geometry changes would need to be done in coordination with them, Austin Boulevard is under joint jurisdiction between the City of Chicago and the Village of Oak Park. This presents significant opportunity for safety improvements along Austin Boulevard, as this eliminates many barriers to implementation.

Because of their status as historically disadvantaged areas and areas of persistent poverty, these adjacent census tracts are given preference in RAISE grant applications from USDOT, potentially unlocking a funding source for safety improvements along streets bordering historically disadvantaged areas and areas of persistent poverty.

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<sup>20</sup> United States Department of Transportation. 2023. [RAISE Grant Project Location Verification Tool](#).

Figure 23. Adjacent Communities Equity Map

