

Profile of Rail-Related Injuries for the Chicago Metropolitan Area

A pedestrian or other road user is involved in a collision with a train every three hours in the U.S., and 1 in 10 of these involves children ages 19 and under.^{1,2} These incidents are often deadly, and, most importantly, are preventable. They are primarily the result of two types of incidents:

- **Trespassing injuries** occur when a person is injured while on private railroad property without permission. They are most often pedestrians taking a shortcut across or along tracks, but also include loiterers and those engaging in recreational activities such as hunting or jogging.¹
- **Railroad crossing injuries** are when a person or highway user is struck by a train while attempting to cross at a designated crossing where tracks intersect a roadway or walkway at the same level.

This profile describes data reported to the Federal Railroad Administration (FRA) on rail-related injuries occurring in the Chicago, IL metropolitan area. Data are for years 2011 to 2020 and are combined for Cook County and the Chicago collar counties of DuPage, Kane, Lake, McHenry and Will. Injuries are divided into trespassing injuries and railroad crossing injuries. Data include both fatal and nonfatal rail-related injuries. Excluded from this profile are injuries to rail passengers and rail workers, as well as cases of suicide and attempted suicide.

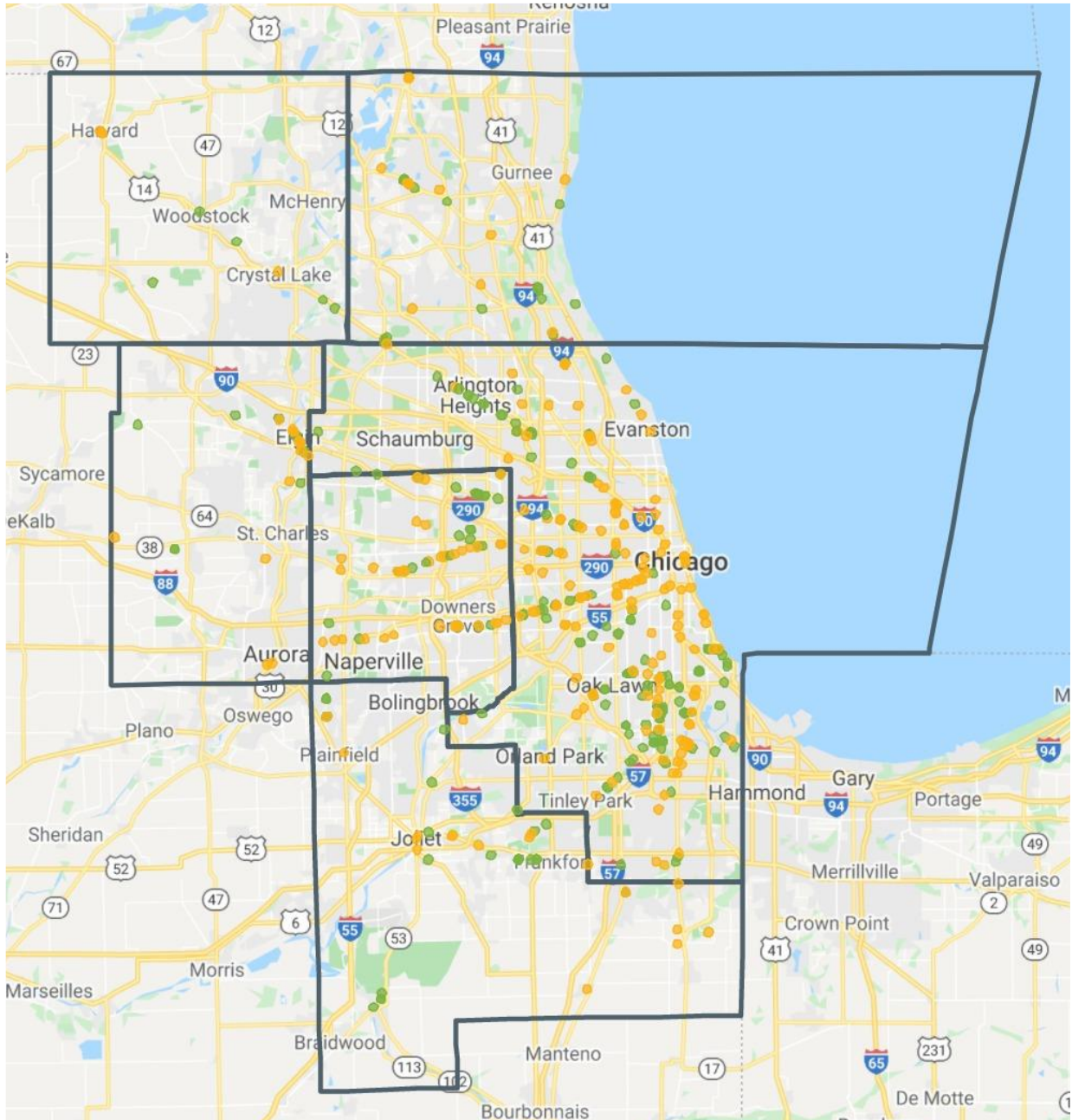
This report and other rail safety resources for families, educators and community partners can be downloaded from the **Safe Kids Rail Safety Station** online hub at safekids.org/RailSafetyStation.

Summary

- There were 508 rail-related injuries in the Chicago metropolitan area from 2011 to 2020, most of which occurred in Cook County.
- Of those who were injured, 14 percent were children ages 19 and under and 1 in 10 were between the ages of 20 and 24 years old.
- While trespassing and railroad crossing injuries occurred in roughly equal proportions, trespassing injuries were more often fatal.
- More than 9 in 10 injuries involved on-track equipment; of those, half involved freight trains, and 4 in 10 involved passenger trains.
- Trespassing injuries predominated during warmer months (Mar–Nov), while railroad crossing injuries predominated winter months (Dec–Feb).
- Injuries were more frequent from 3:00 PM to 8:59 PM.
- About half of railroad crossing injuries occurred during dark or low-light hours, a quarter of which occurred at railroad crossings that weren't illuminated.
- Most motor vehicle occupants and nearly half of pedestrians struck by on-track equipment at railroad crossings went through or around crossing gates meant to block traffic.
- Of the 7 in 10 trespassers who were struck by on-track equipment, half were on the tracks when they were struck and 1 in 4 were beside the tracks.



Map 1. Rail-Related Injuries by Incident Type;
Cook, DuPage, Kane, Lake, McHenry and Will Counties, IL



● Railroad crossing injury ● Trespassing injury

See pages 9–26 for county-level maps by incident type and for children versus adults.



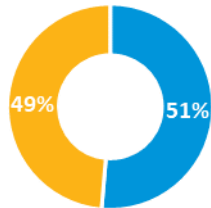
Overview	Distribution of Rail-Related Injuries by County														
<p>2019 Population³</p> <p style="text-align: right;">8,300,609</p> <p>Number of Railroad Crossings⁴</p> <p style="text-align: right;">1,387</p> <p>Total Rail-Related Injuries, 2011–2020</p> <p style="text-align: right;">508</p> <p>Injuries per 100,000 People, 2011–2020</p> <p style="text-align: right;">0.61</p> <p>Percent Injured that were Ages 0–19 yr.</p> <p style="text-align: right;">14%</p>	<p>Figure 1. Six in 10 injuries occurred in Cook county.</p> <table border="1"> <caption>Data for Figure 1: Distribution of Rail-Related Injuries by County</caption> <thead> <tr> <th>County</th> <th>Percentage</th> </tr> </thead> <tbody> <tr> <td>Cook</td> <td>64%</td> </tr> <tr> <td>DuPage</td> <td>14%</td> </tr> <tr> <td>Will</td> <td>8%</td> </tr> <tr> <td>Lake</td> <td>7%</td> </tr> <tr> <td>Kane</td> <td>6%</td> </tr> <tr> <td>McHenry</td> <td>2%</td> </tr> </tbody> </table> <p><i>Red indicates the category with the highest percent.</i></p> <p><small>*Total percent does not equal 100 due to rounding.</small></p>	County	Percentage	Cook	64%	DuPage	14%	Will	8%	Lake	7%	Kane	6%	McHenry	2%
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Overall Injuries																																																						
<p>Figure 2. On average, there were 51 injuries per year in the decade from 2011 to 2020. The number of injuries in 2020 was about the same as in 2011.</p> <p style="text-align: center;">Number of Rail-Related Injuries by Year (N=508)</p> <table border="1"> <caption>Data for Figure 2: Number of Rail-Related Injuries by Year</caption> <thead> <tr> <th>Year</th> <th>Number of Injuries</th> </tr> </thead> <tbody> <tr> <td>2011</td> <td>58</td> </tr> <tr> <td>2012</td> <td>39</td> </tr> <tr> <td>2013</td> <td>54</td> </tr> <tr> <td>2014</td> <td>51</td> </tr> <tr> <td>2015</td> <td>51</td> </tr> <tr> <td>2016</td> <td>52</td> </tr> <tr> <td>2017</td> <td>48</td> </tr> <tr> <td>2018</td> <td>38</td> </tr> <tr> <td>2019</td> <td>60</td> </tr> <tr> <td>2020</td> <td>57</td> </tr> </tbody> </table> <p>Figure 3. Of those who were injured, 14 percent were children ages 19 and under and 1 in 10 were between the ages of 20 and 24 years old.*</p> <p style="text-align: center;">Rail-Related Injuries by 5-Year Age Group (N=473)</p> <table border="1"> <caption>Data for Figure 3: Rail-Related Injuries by 5-Year Age Group</caption> <thead> <tr> <th>Age Group</th> <th>Percentage</th> </tr> </thead> <tbody> <tr> <td><1</td> <td><1%</td> </tr> <tr> <td>1-4</td> <td>1%</td> </tr> <tr> <td>5-9</td> <td>2%</td> </tr> <tr> <td>10-14</td> <td>11%</td> </tr> <tr> <td>15-19</td> <td>13%</td> </tr> <tr> <td>20-24</td> <td>9%</td> </tr> <tr> <td>25-29</td> <td>6%</td> </tr> <tr> <td>30-34</td> <td>8%</td> </tr> <tr> <td>35-39</td> <td>9%</td> </tr> <tr> <td>40-44</td> <td>9%</td> </tr> <tr> <td>45-49</td> <td>7%</td> </tr> <tr> <td>50-54</td> <td>7%</td> </tr> <tr> <td>55-59</td> <td>6%</td> </tr> <tr> <td>60-64</td> <td>11%</td> </tr> <tr> <td>65+</td> <td>11%</td> </tr> </tbody> </table> <p><i>Red indicates the categories with the highest percents.</i></p> <p><small>*Age data missing for 35 cases.</small></p>	Year	Number of Injuries	2011	58	2012	39	2013	54	2014	51	2015	51	2016	52	2017	48	2018	38	2019	60	2020	57	Age Group	Percentage	<1	<1%	1-4	1%	5-9	2%	10-14	11%	15-19	13%	20-24	9%	25-29	6%	30-34	8%	35-39	9%	40-44	9%	45-49	7%	50-54	7%	55-59	6%	60-64	11%	65+	11%
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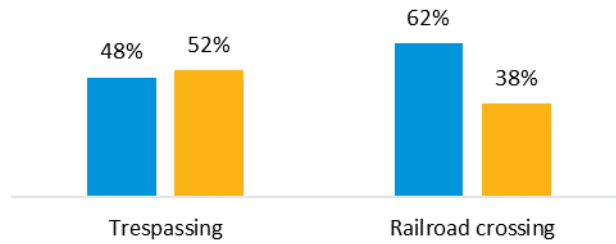
Figure 4. Trespassing and railroad crossing incidents accounted for roughly equal proportions of injuries. However, trespassing injuries were more often fatal.

Rail-Related Injuries by Incident Type (N=508)



■ Trespassing ■ Railroad crossing

Injury Severity for Trespassing (N=258) and Railroad Crossing (N=247) Incidents*

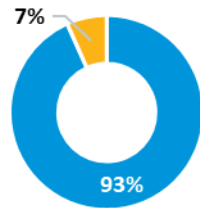


■ Non-fatal ■ Fatal

*Injury severity data missing for 3 trespassing cases.

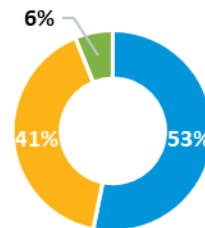
Figure 5. More than 9 in 10 injuries involved on-track equipment.* Of those injuries, more than half involved passenger trains, and 4 in 10 involved freight trains.

Rail-Related Injuries by On-Track Equipment Involvement (N=508)



■ Involved on-track equipment
■ Did not involve on-track equipment

On-Track Equipment Involved (N=474)



■ Passenger train
■ Freight train
■ All other on-track equipment

* On-track equipment includes freight cars and trains, passenger trains and cars, locomotives, inspection vehicles, maintenance of way equipment and other on-track equipment.



Figure 6. Passenger trains and freight trains were involved in trespassing injuries in roughly equal proportions, while railroad crossing injuries more often involved passenger trains.

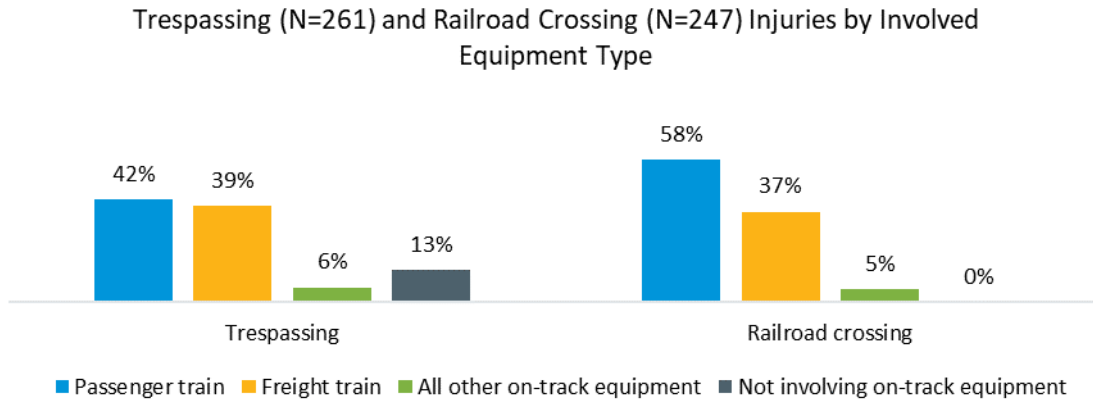


Figure 7. Trespassing injuries most frequently occurred in the warmer months from summer through fall, while injuries at railroad crossings most frequently occurred during winter months.

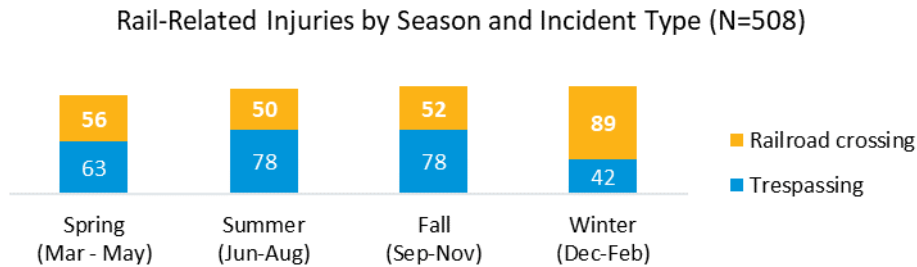


Figure 8. Injuries were relatively evenly distributed by day of week and incident type.

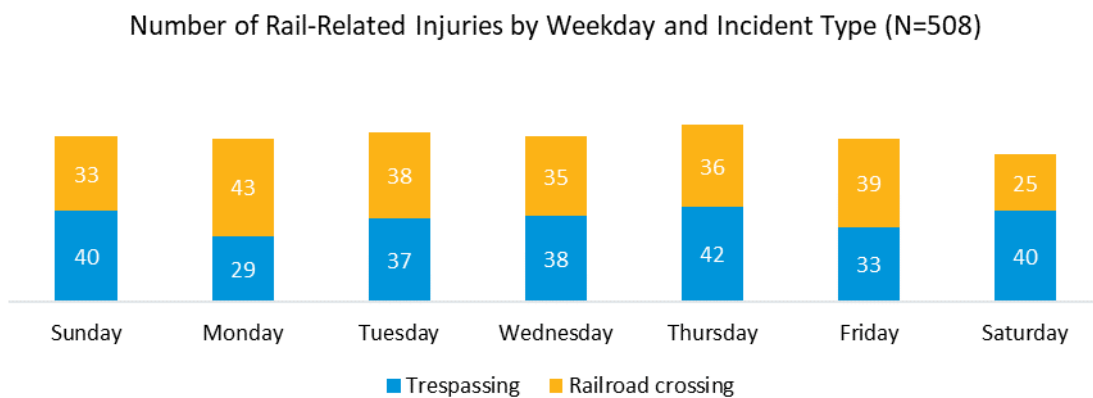
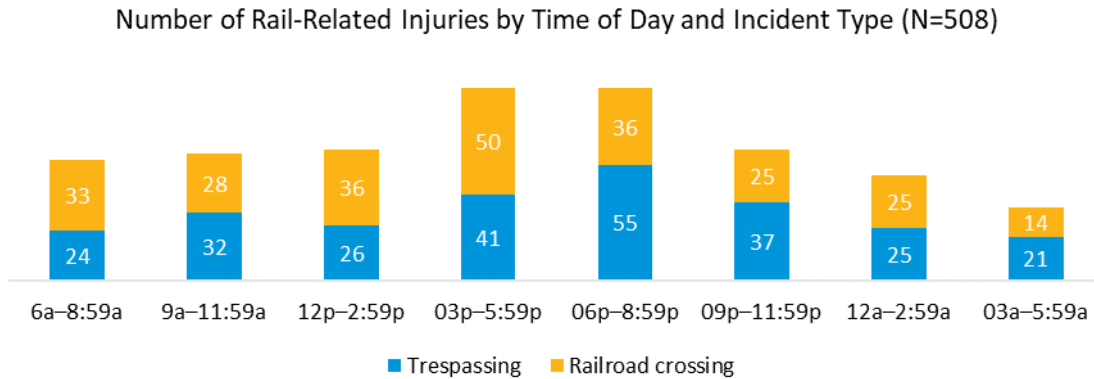


Figure 9. Overall, injuries most often occurred between 3 PM and 8:59 PM. Railroad crossing injuries were most frequent between 3 PM and 5:59 PM, while trespassing injuries were most frequent between 6 PM and 8:59 PM.



Railroad Crossing Circumstances

Figure 10. About 2 in 3 of those injured at railroad crossings were motor vehicle occupants, and 1 in 3 were pedestrians.

Railroad Crossing Injuries by Highway User Type (N=247)

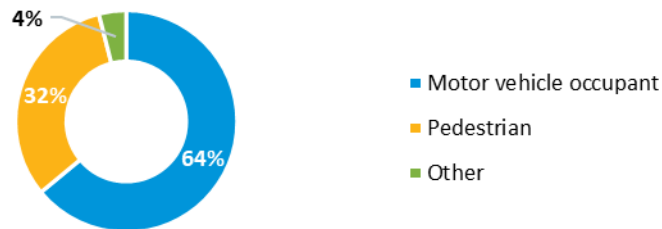


Figure 11. Going through or around the gates was the reported activity most associated with injury at railroad crossings among both motor vehicle occupants and pedestrians.

Railroad Crossing Injuries by Action of Motor Vehicle Occupant (N=157) and Pedestrian (N=79) Highway Users

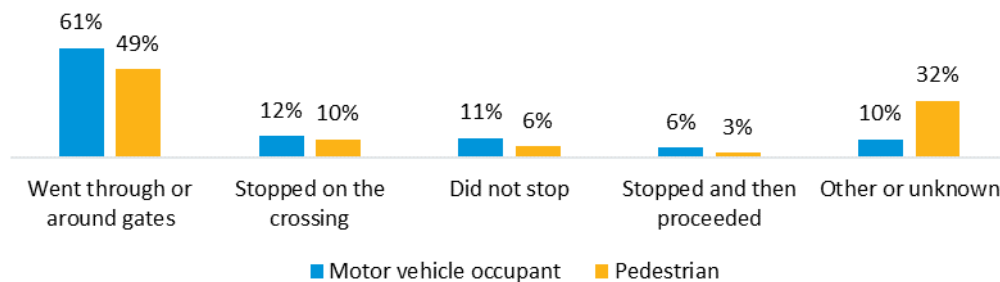
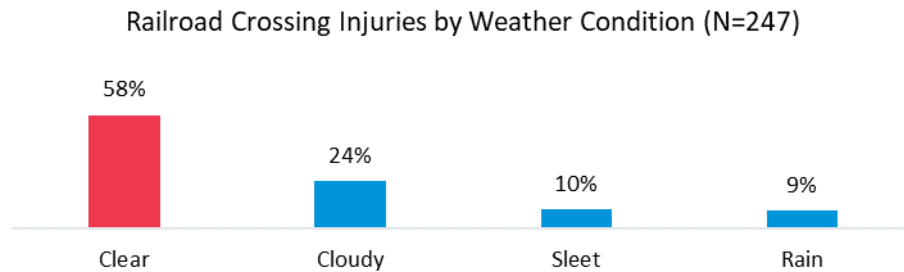


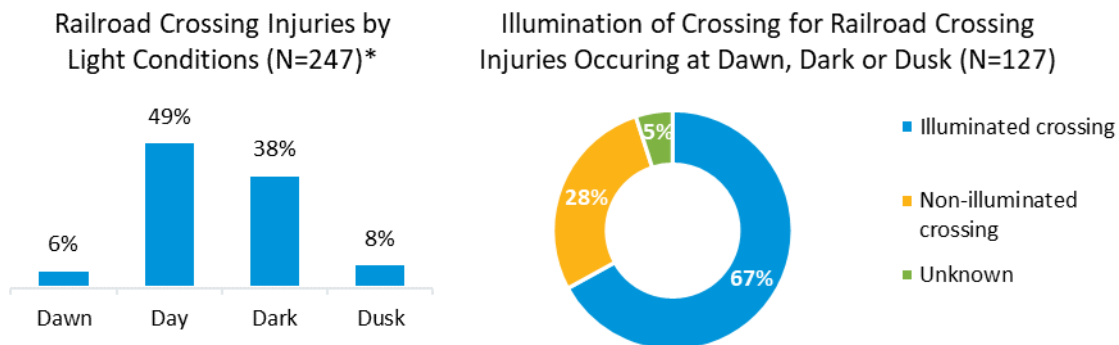
Figure 12. About 6 in 10 railroad crossing injuries occurred when the weather was clear.



Red indicates the category with the highest percent.

*Total percent does not equal 100 due to rounding.

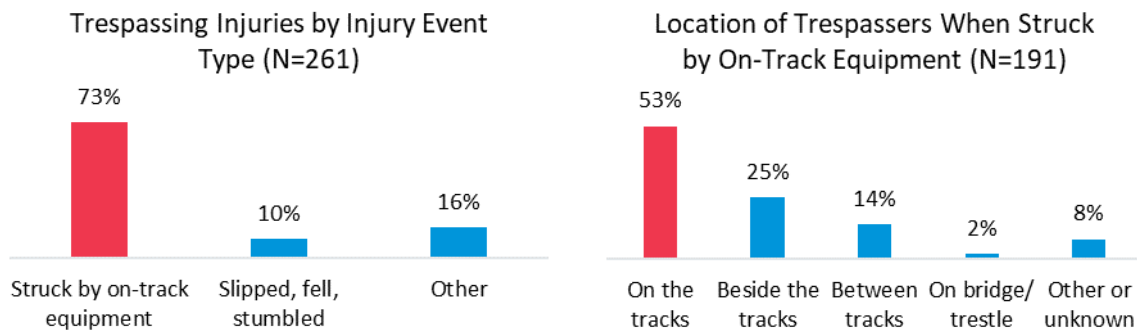
Figure 13. Half of railroad crossing injuries occurred during dark or low-light hours. Of those, 1 in 4 occurred at crossings that were not illuminated by streetlights or special lights.



* Total percent does not equal 100 due to rounding.

Trespassing Circumstances

Figure 14. Seven in 10 trespassers who were injured had been struck by on-track equipment. Of those, half were on the tracks at the time of impact.

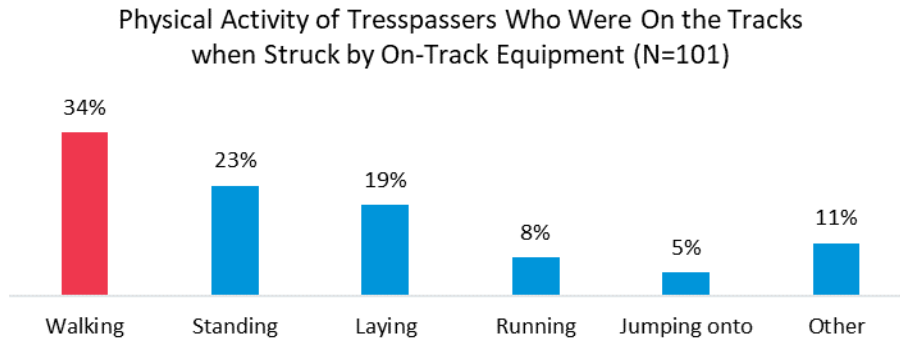


Red indicates the categories with the highest percents.

*Total percent does not equal 100 due to rounding.

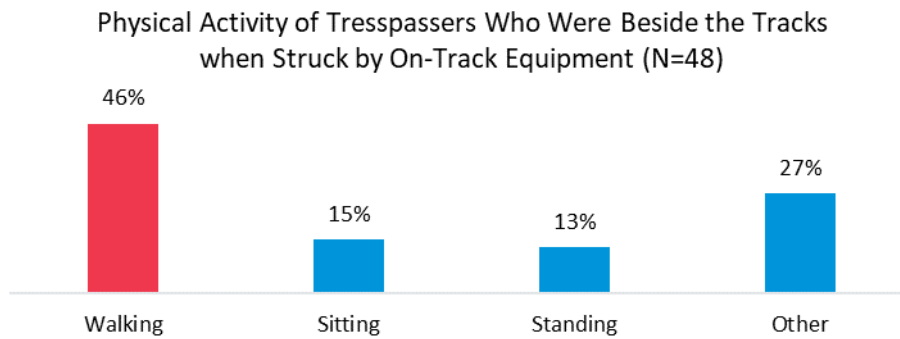


Figure 15. Of trespassers who were struck by on-track equipment while on the tracks, about 1 in 3 were walking, 1 in 4 were standing, and 1 in 5 were laying at the time of impact.



Red indicates the category with the highest percent.

Figure 16. Nearly half of trespassers who were struck by on-track equipment while beside the tracks were walking at the time of impact.*

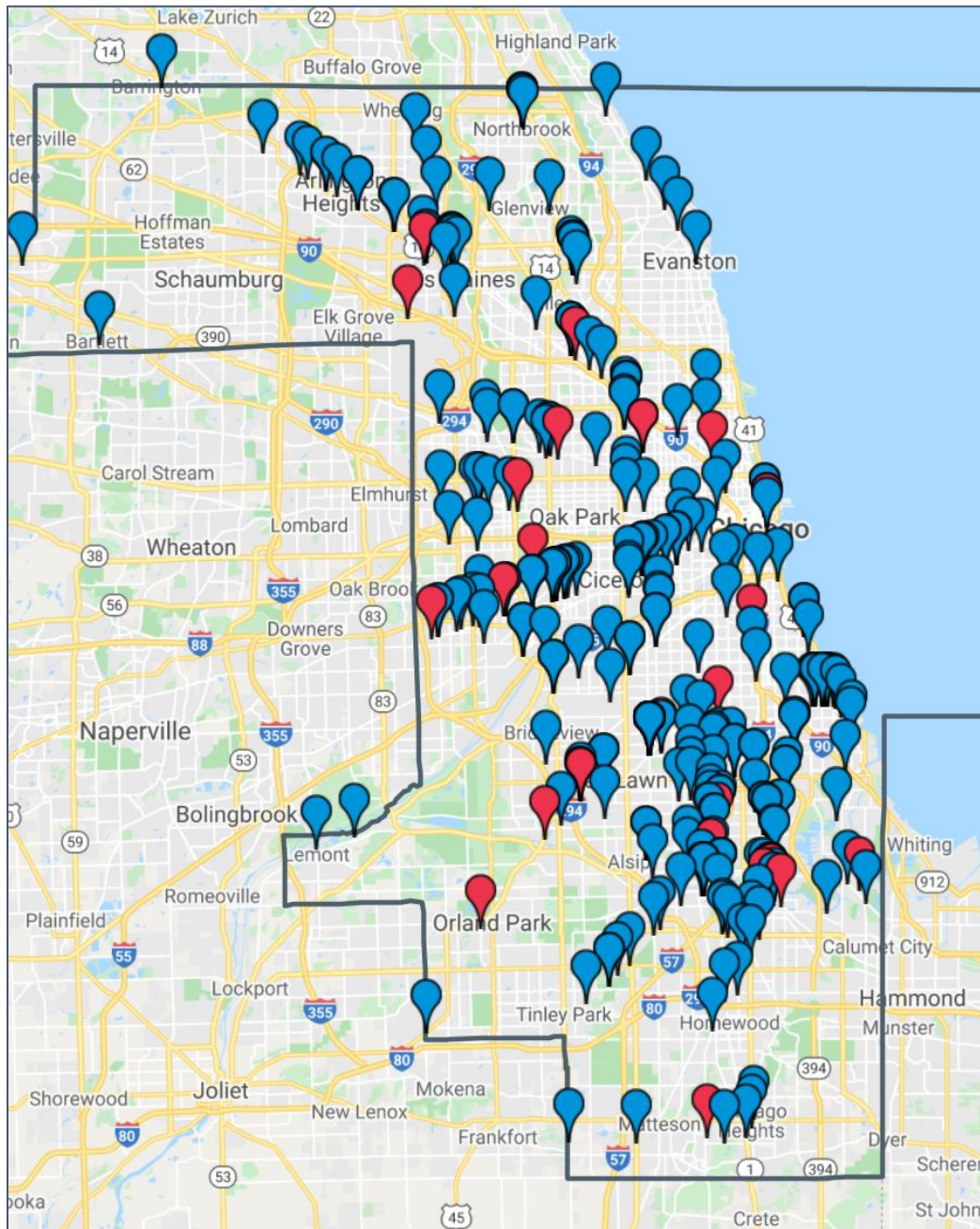


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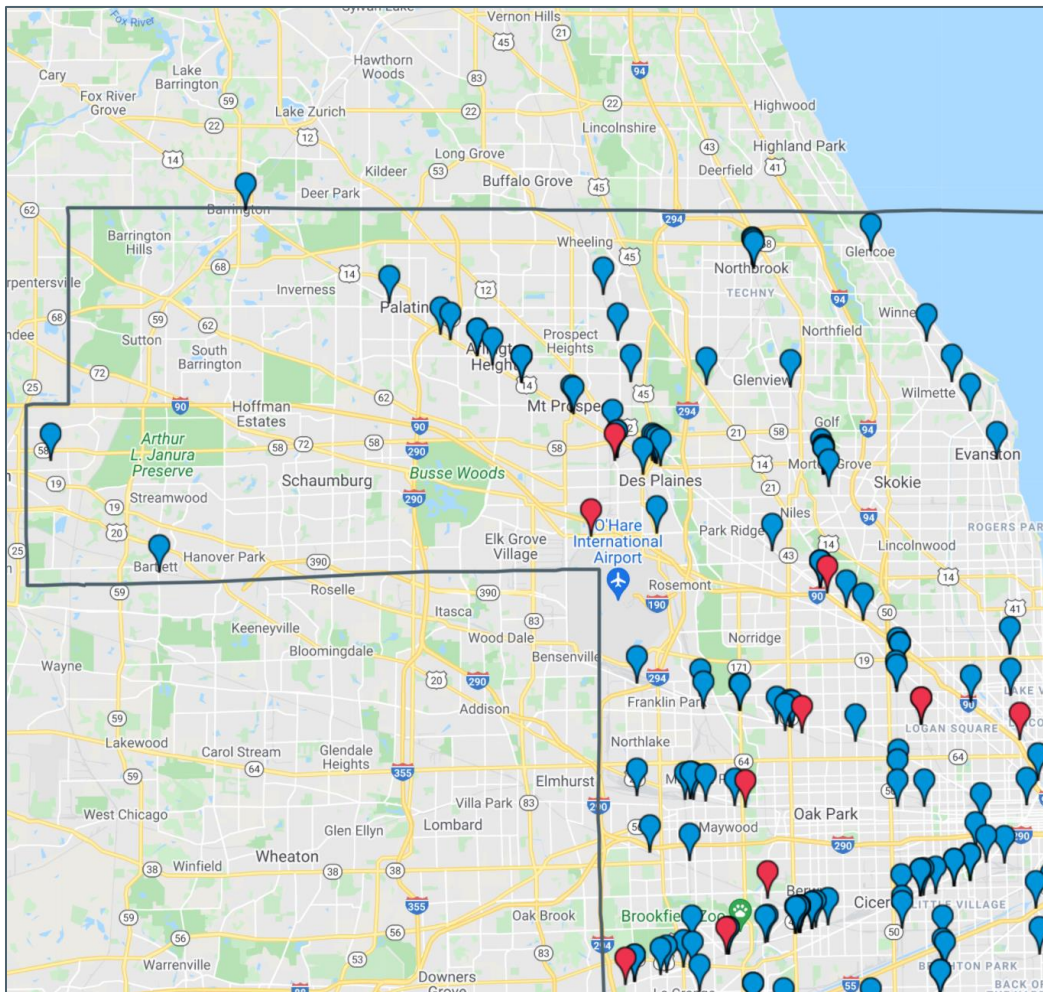
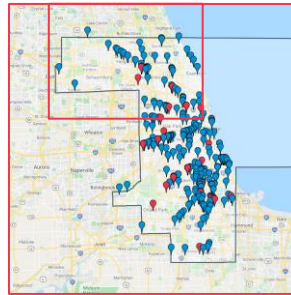
Map 2. Cook County – Injuries by Age Group - Overall



● Adult injury ● Child injury (ages 0–19 years)



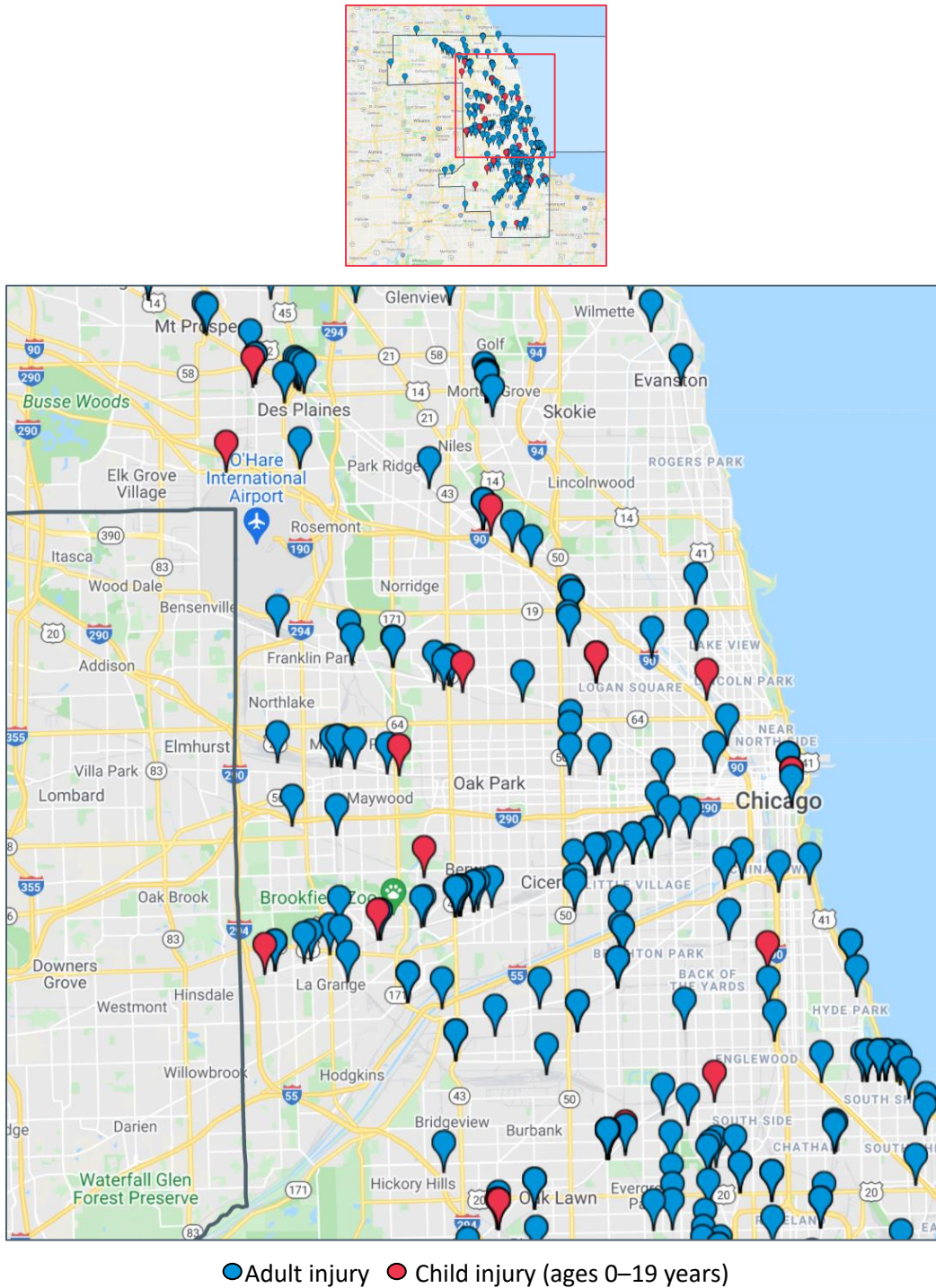
Map 3. Cook County – Injuries by Age Group – North Side



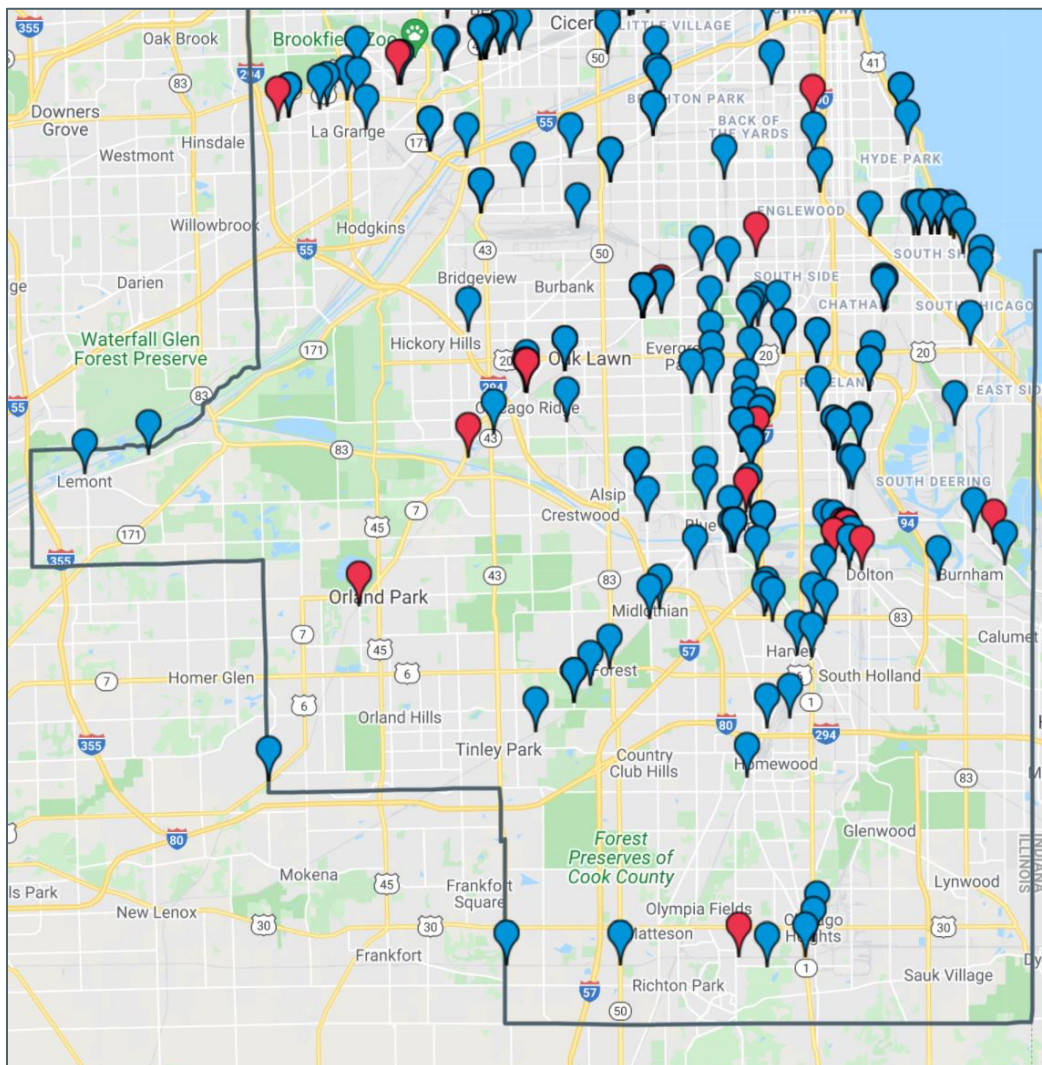
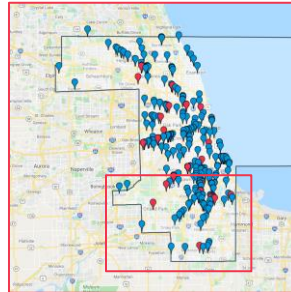
● Adult injury ● Child injury (ages 0–19 years)



Map 4. Cook County – Injuries by Age Group – Central



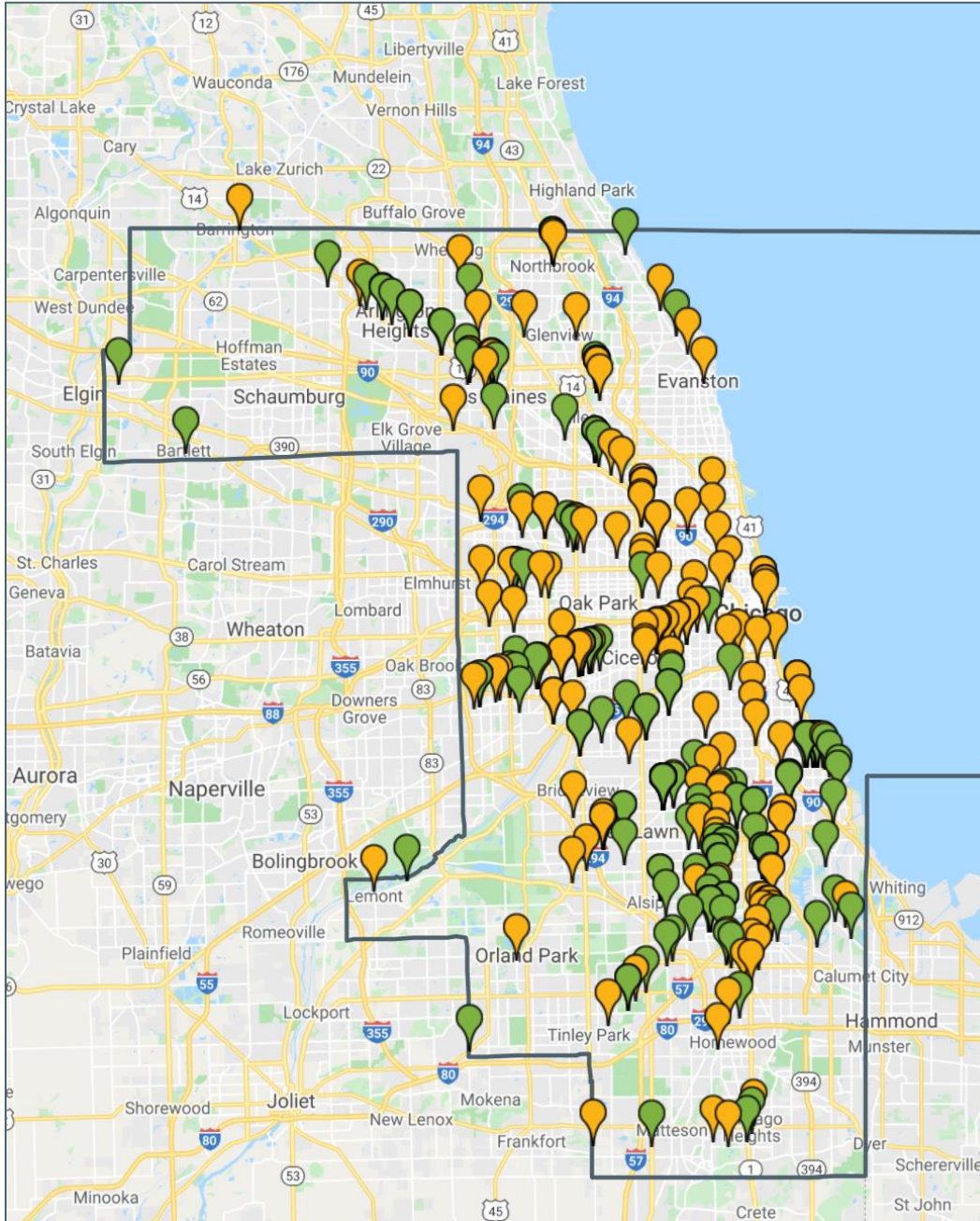
Map 5. Cook County – Injuries by Age Group – South Side



● Adult injury ● Child injury (ages 0–19 years)



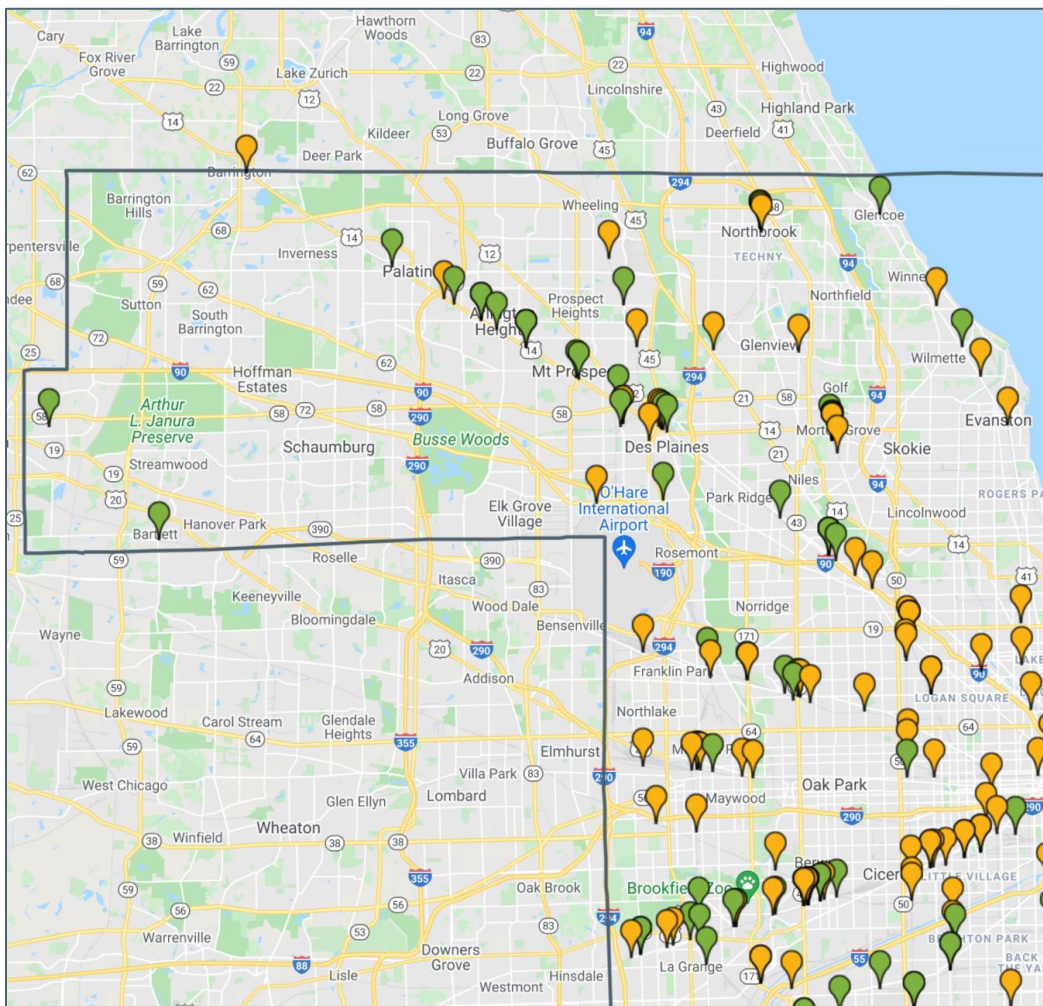
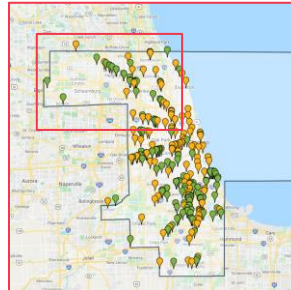
Map 6. Cook County – Injuries by Incident Type – Overall



● Railroad crossing injury ● Trespassing injury



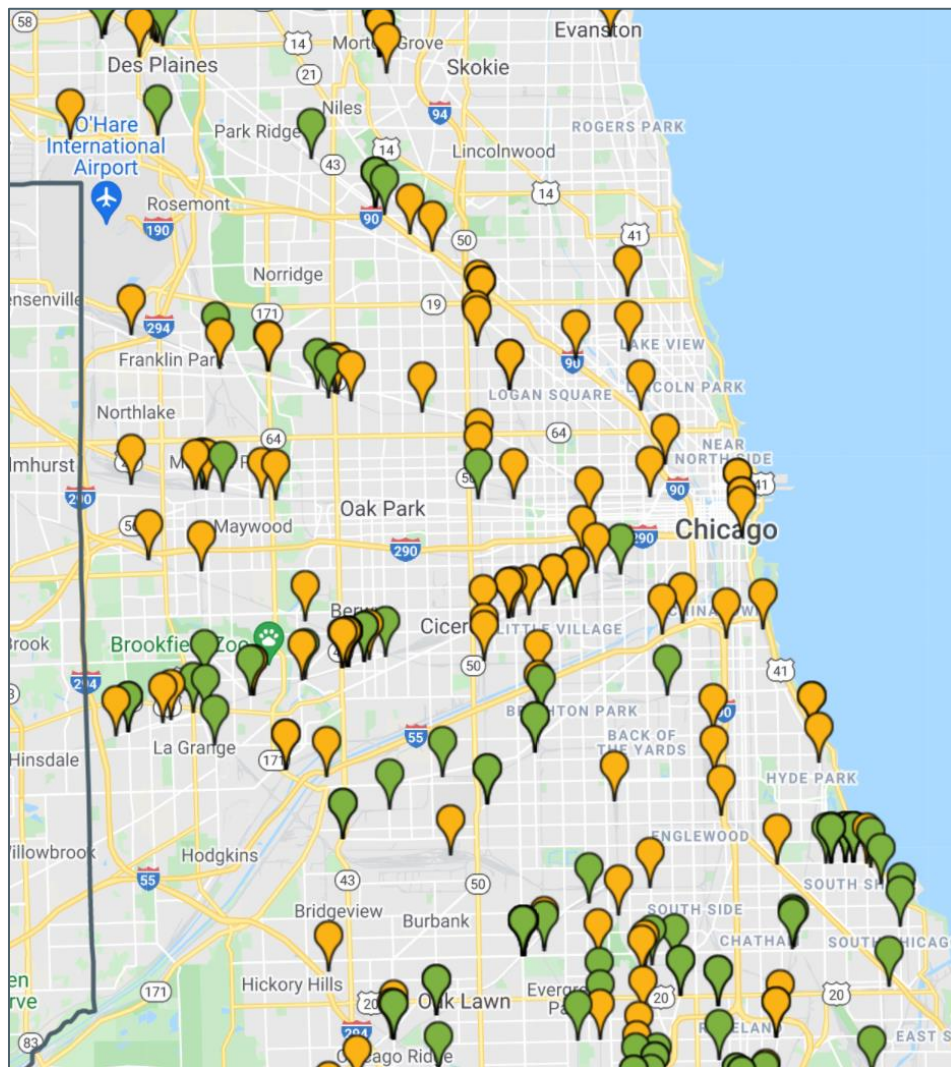
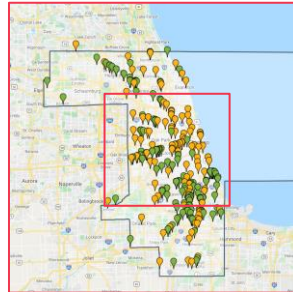
Map 7. Cook County – Injuries by Incident Type – North Side



● Railroad crossing injury ● Trespassing injury



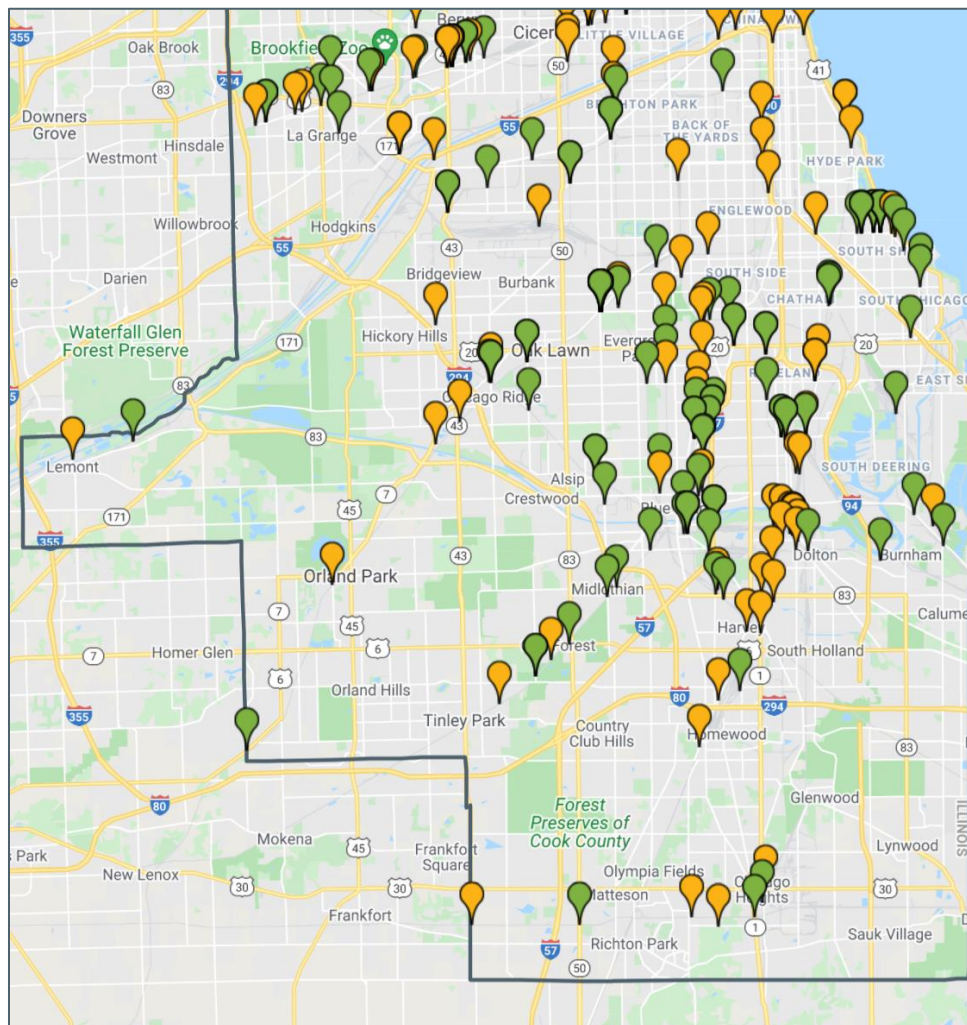
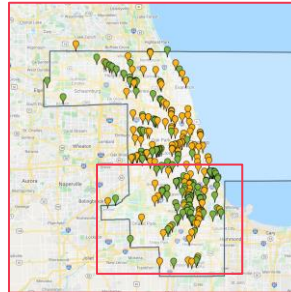
Map 8. Cook County – Injuries by Incident Type – Central



● Railroad crossing injury ● Trespassing injury



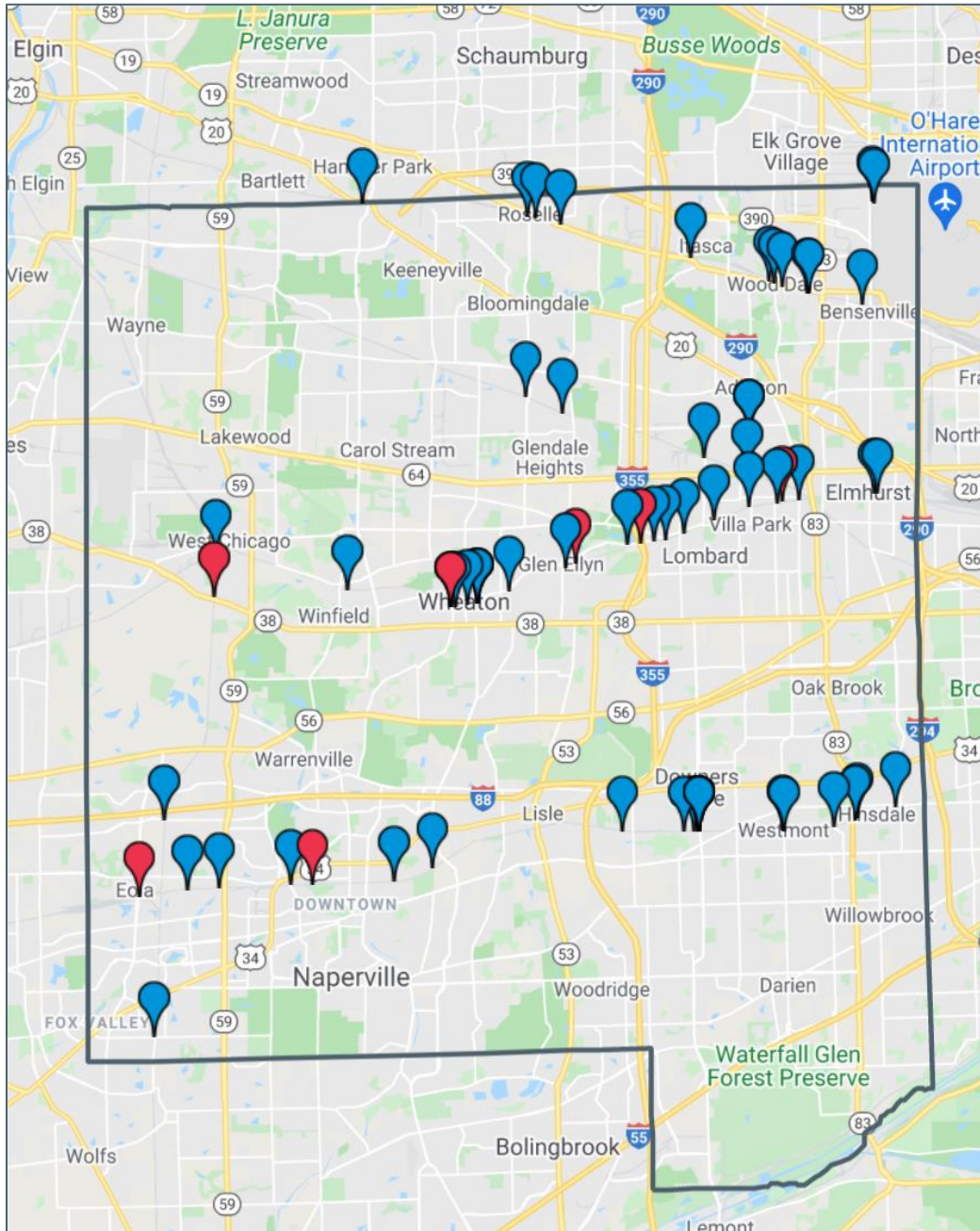
Map 9. Cook County – Injuries by Incident Type – South Side



● Railroad crossing injury ● Trespassing injury



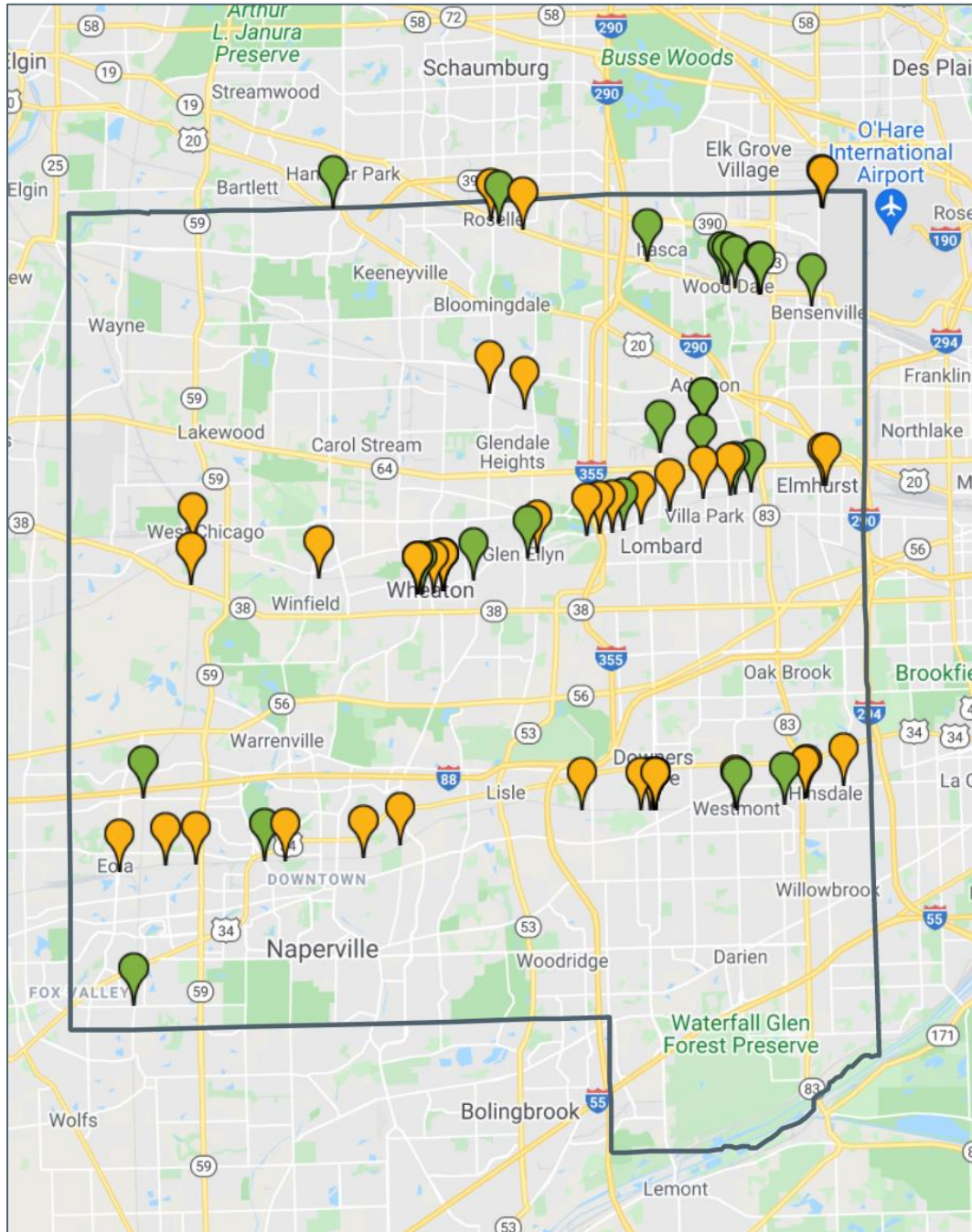
Map 11. DuPage County – Injuries by Age Group



● Adult injury ● Child injury (ages 0-19 years)



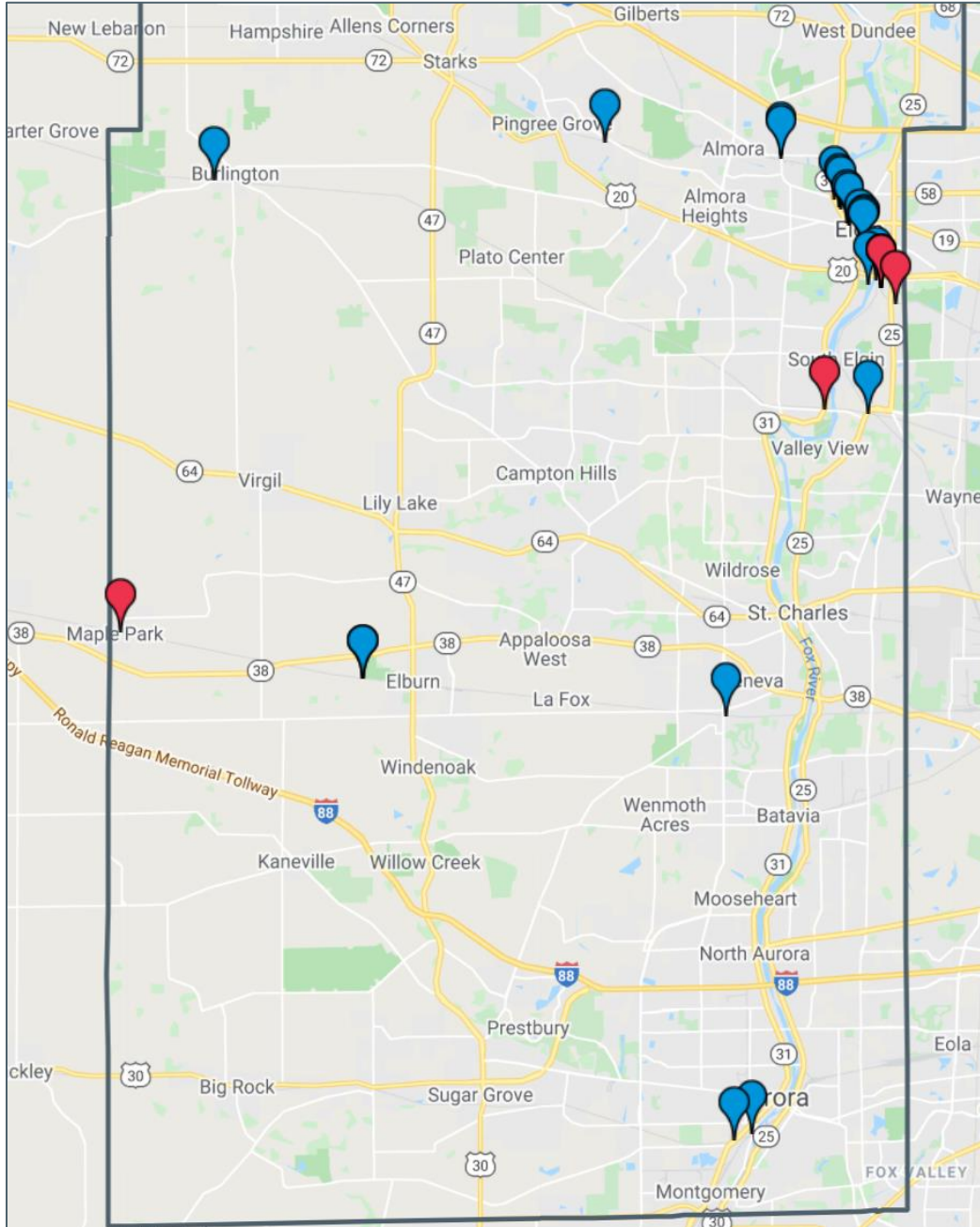
Map 12. DuPage County – Injuries by Incident Type



● Railroad crossing injury ● Trespassing injury



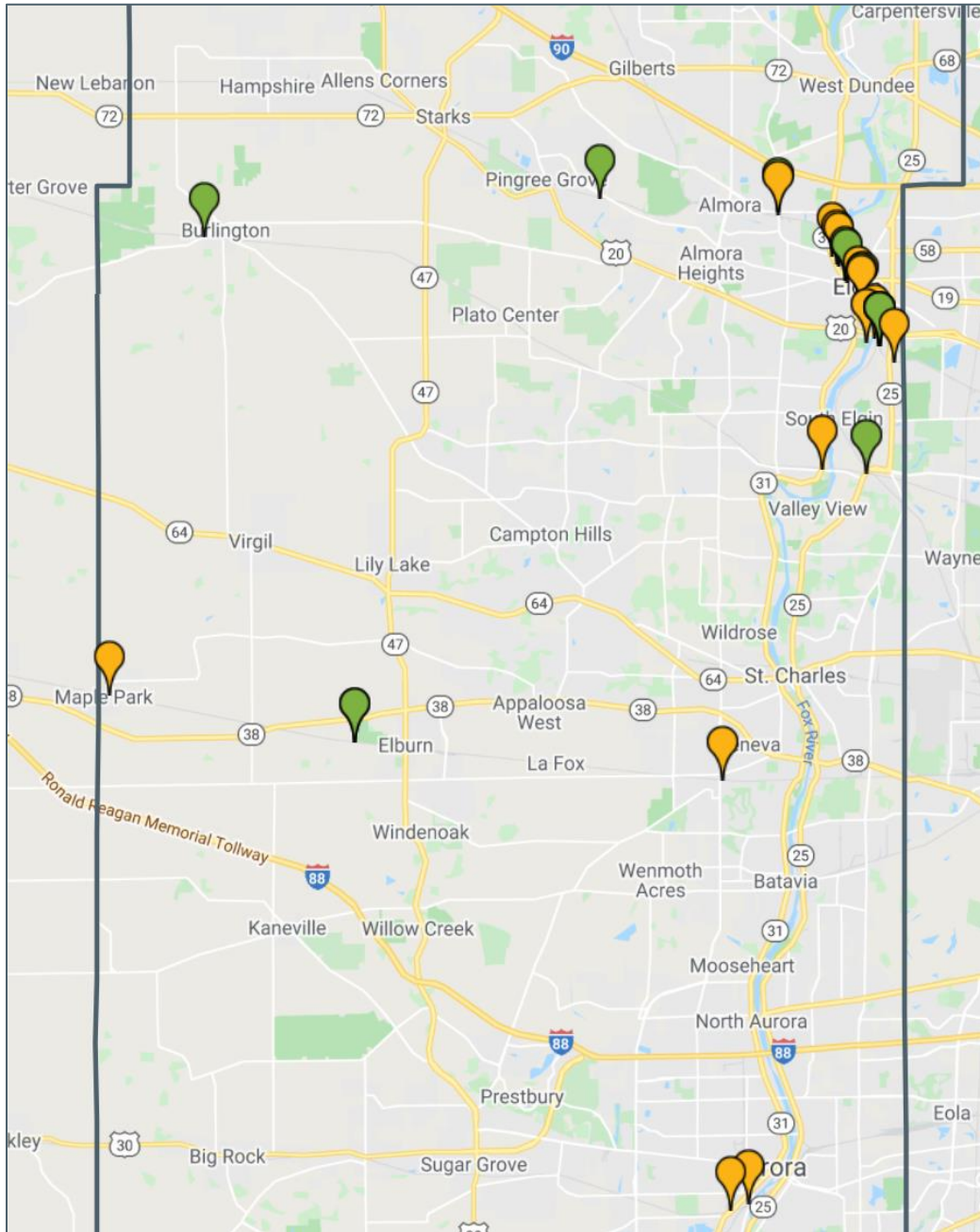
Map 13. Kane County – Injuries by Age Group



● Adult injury ● Child injury (ages 0–19 years)



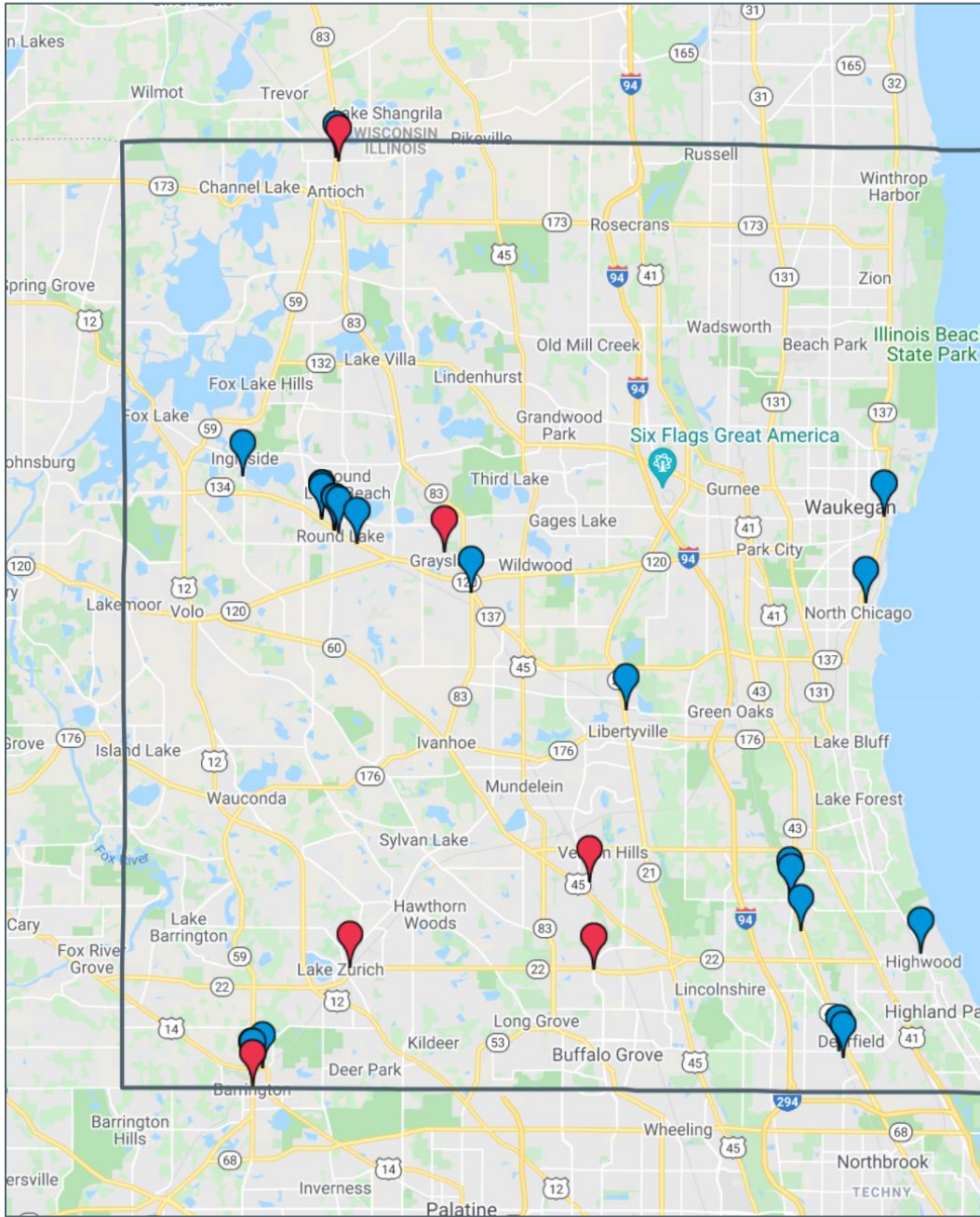
Map 14. Kane County – Injuries by Incident Type



● Railroad crossing injury ● Trespassing injury



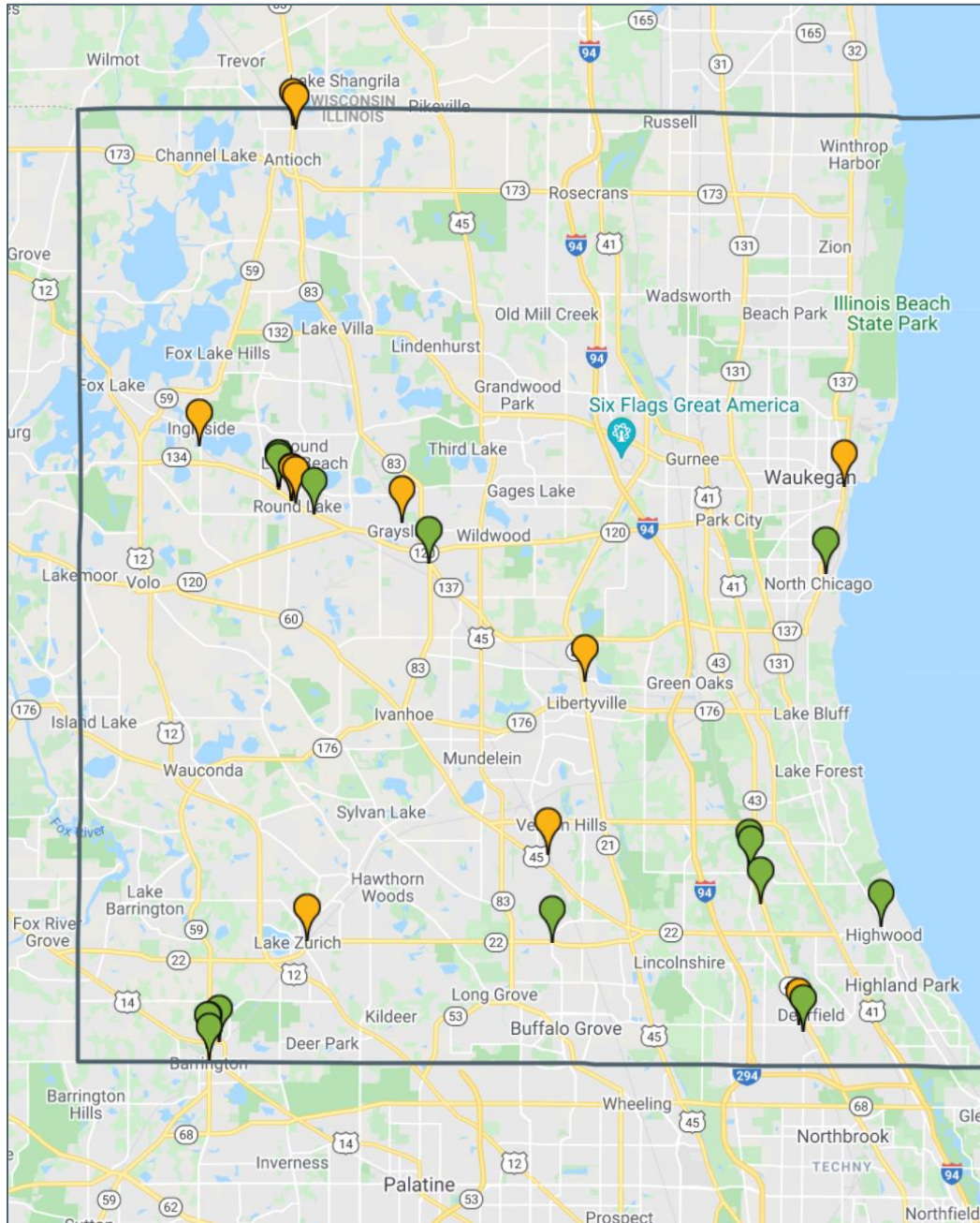
Map 15. Lake County – Injuries by Age Group



● Adult injury ● Child injury (ages 0–19 years)



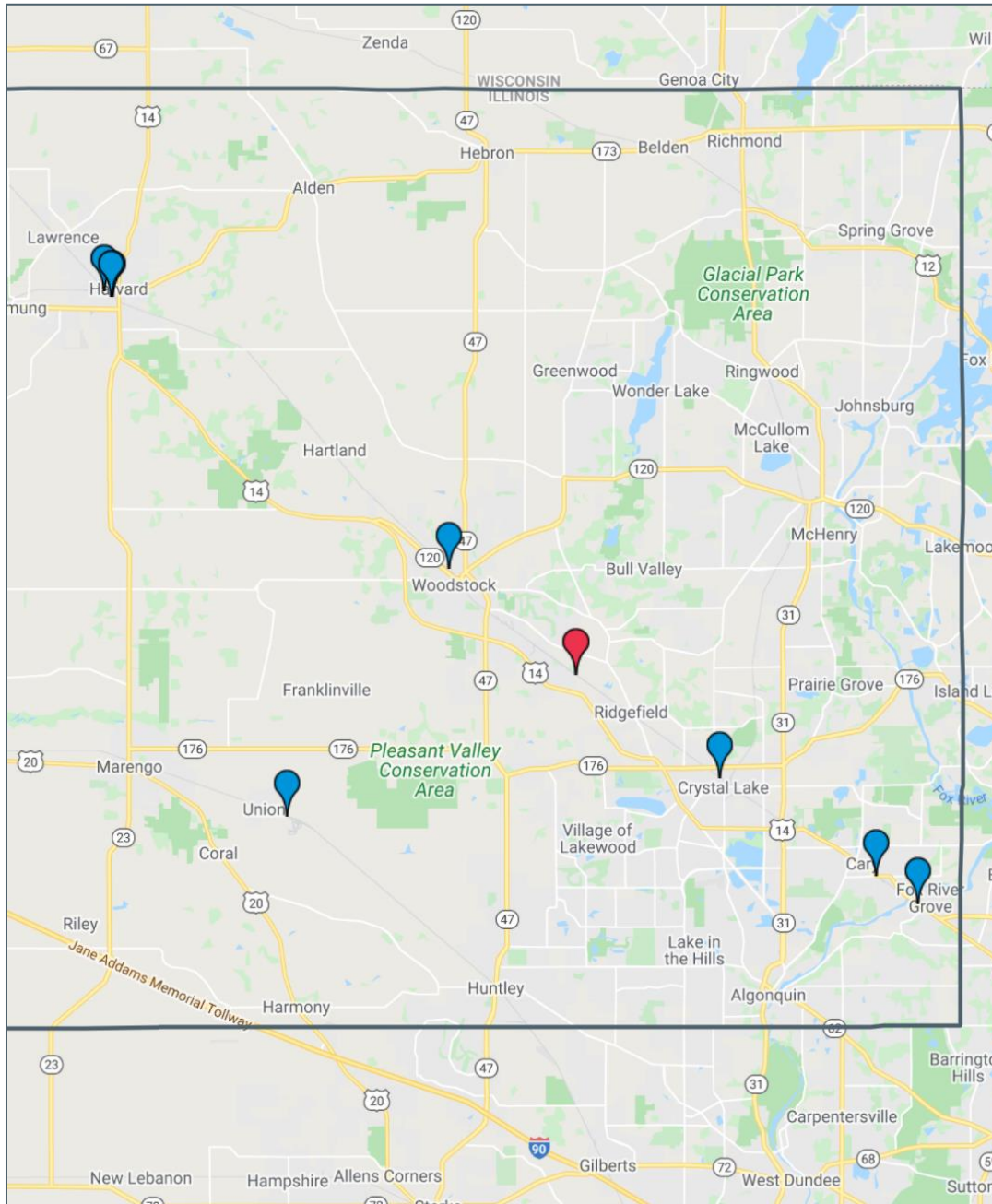
Map 16. Lake County – Injuries by Incident Type



● Railroad crossing injury ● Trespassing injury



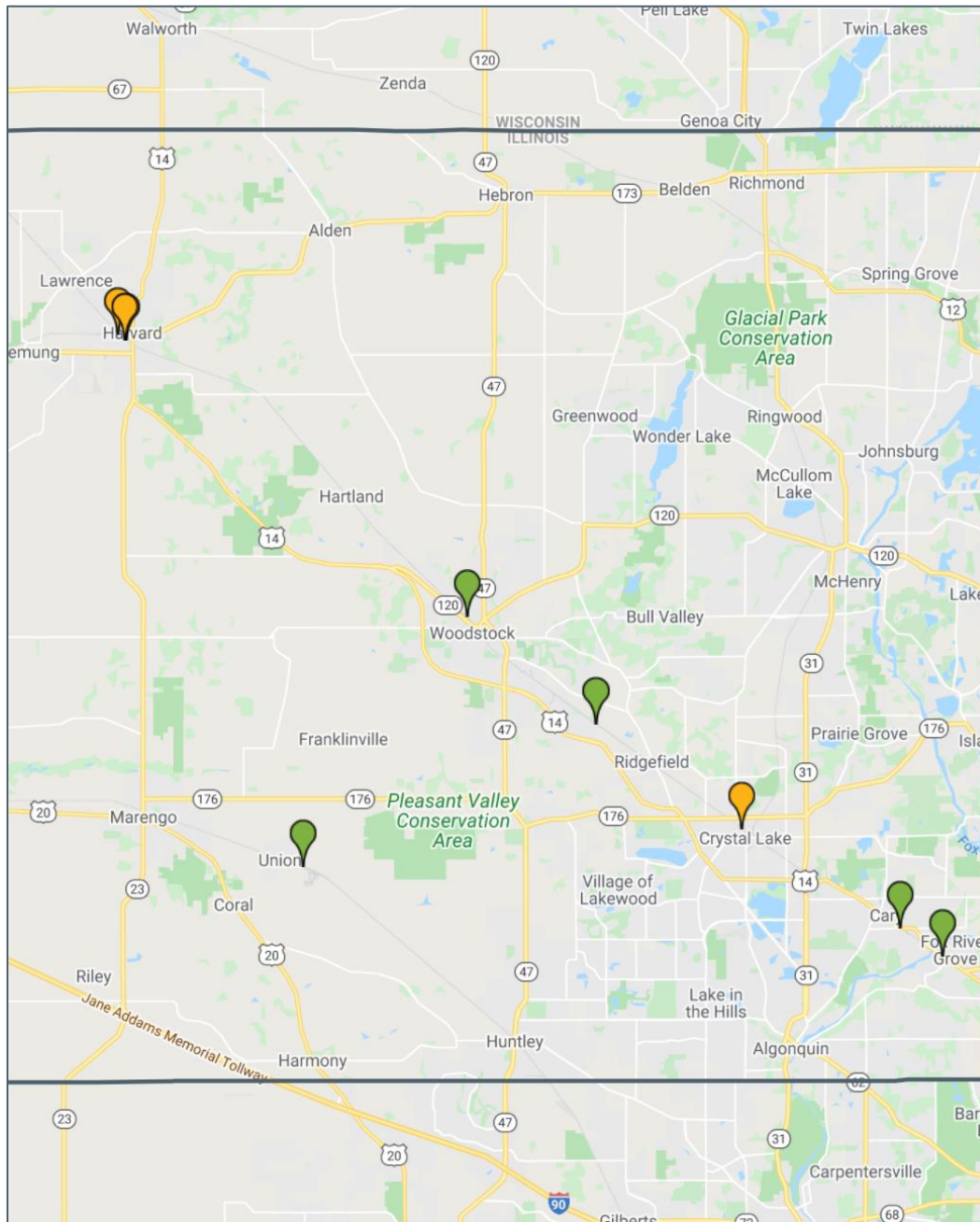
Map 17. McHenry County – Injuries by Age Group



● Adult injury ● Child injury (ages 0-19 years)



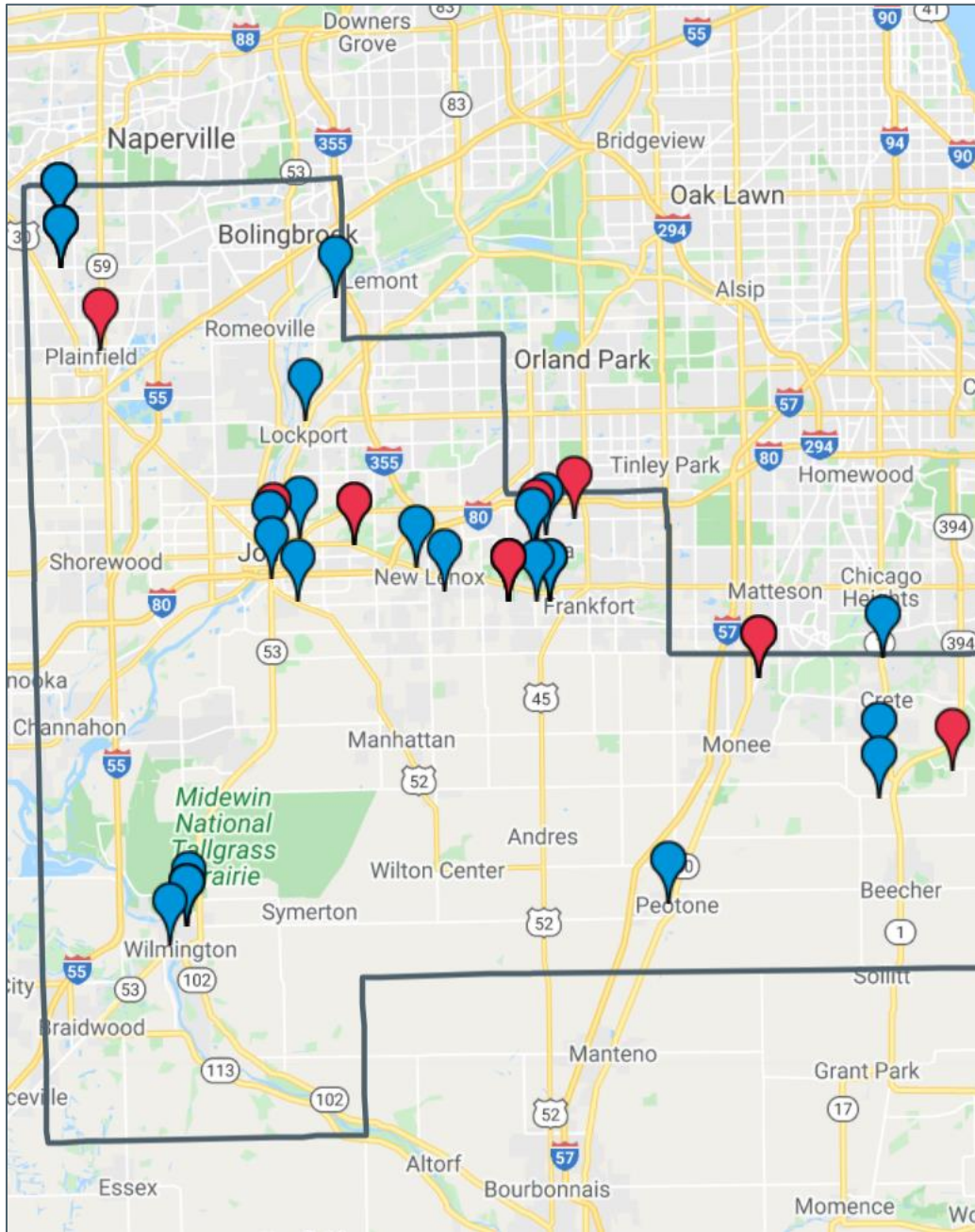
Map 18. McHenry County – Injuries by Incident Type



● Railroad crossing injury ● Trespassing injury



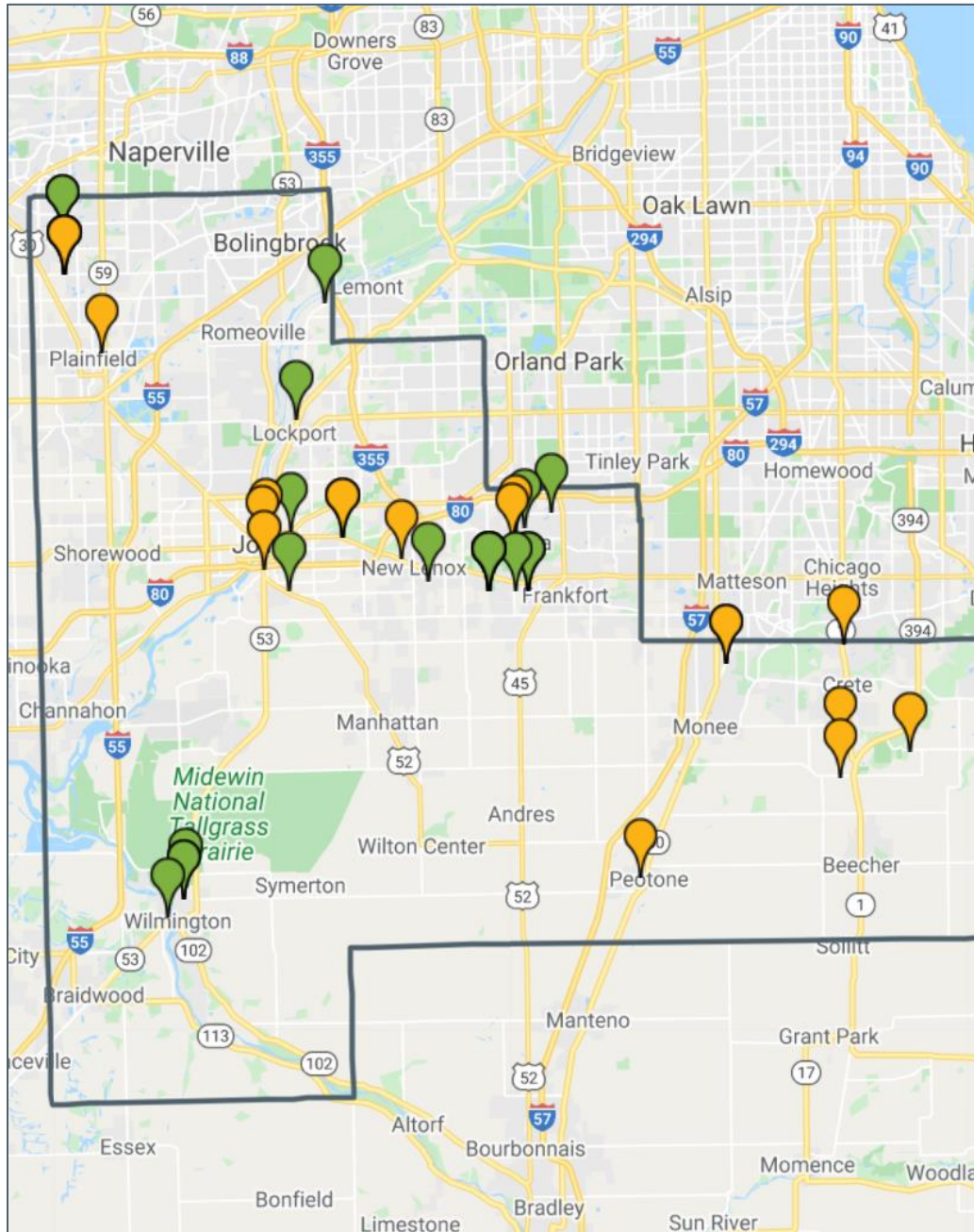
Map 19. Will County – Injuries by Age Group



● Adult injury ● Child injury (ages 0–19 years)



Map 20. Will County – Injuries by Incident Type



● Railroad crossing injury ● Trespassing injury



Notes

Data source

Data on rail-related injuries presented in this profile were obtained from the Federal Railroad Administration's (FRA) Safety Railroad Casualties (form 6180.55A) and Highway Rail Accidents (form 6180.57) databases for years 2011–2020. Excluded were rail workers and rail passengers as well as cases of suicide or attempted suicide. Maps reflect locations of injuries where longitude and latitude data are provided in each case file.

References

1. Federal Railroad Association. Fact Sheet - Highway Rail Crossing & Trespassing. 2016. Available from: <https://railroads.dot.gov/sites/fra.dot.gov/files/2019-10/rrx-fact-sheet-final12716.pdf>. Accessed August 26, 2021.
2. Federal Railroad Association. Accident Data as Reported by Railroads 2009-2018. Available from: https://safetydata.fra.dot.gov/OfficeofSafety/publicsite/on_the_fly_download.aspx. Accessed August 26, 2021.
3. U.S. Census Bureau. Quick Facts. Available from: <https://www.census.gov/quickfacts>. Accessed August 26, 2021.
4. Current Crossing Data for State of Illinois. 2021. Available from: <https://safetydata.fra.dot.gov/OfficeofSafety/publicsite/DownloadCrossingInventoryData.aspx>. Accessed August 31, 2021.

This profile and other rail safety resources can be downloaded via the **Safe Kids Rail Safety Station** at <https://www.safekids.org/RailSafetyStation>.

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