

Profile of Rail-Related Injuries for Greater Houston

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 Greater Houston area. Data are for years 2011 to 2020 and are combined for the Texas counties of Harris, Fort Bend, Montgomery, Brazoria, Liberty, Galveston, Austin, Chambers, and Waller. 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 suicides and attempted suicide.

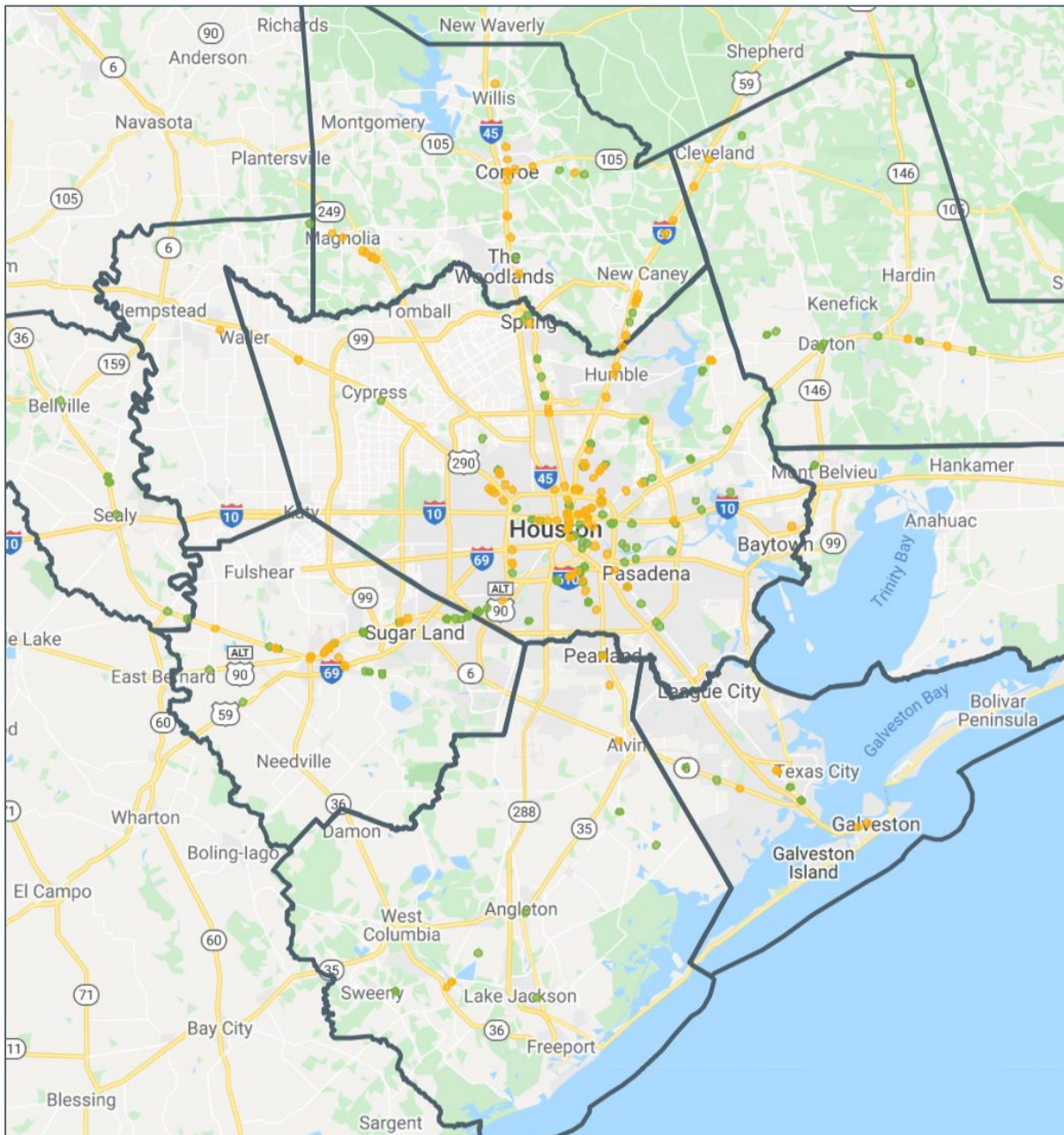
This report and other rail safety resources for families, educators and community partners can be downloaded from the **Safe Kids Rail Safety Station** online hub at safekids.org/RailSafetyStation.

Summary

- There were 337 rail-related injuries in the Greater Houston area from 2011 to 2020, most of which occurred in Harris County.
- Of those who were injured, about 1 in 10 were children ages 19 and under.
- Rail-related injuries were more often the results of railroad crossing incidents, but trespassing injuries were more often fatal.
- Nearly all injuries involved on-track equipment, the majority of which were freight trains.
- Railroad crossing injuries were most frequent on Friday, while trespassing injuries were most frequent on Saturday.
- Trespassing injuries were most frequent between 9 PM and 2:59 AM, while railroad crossing injuries were most frequent between 3 PM and 5:59 PM.
- Nine in 10 of those injured at railroad crossings were motor vehicle occupants.
- Half of railroad crossing injuries occurred during dark or low-light hours; of those, about 4 in 10 occurred at railroad crossings that weren't illuminated.
- The majority of incidents at railroad crossings involved a highway user going through or around crossing gates meant to block traffic.
- Nearly 8 in 10 trespassers who were injured had been struck by on-track equipment, most of whom were on the tracks when they were struck.



**Map 1. Rail-Related Injuries by Incident Type;
Harris, Fort Bend, Montgomery, Brazoria, Liberty, Galveston, Austin, Chambers and Waller
Counties, TX**



● Railroad crossing injury ● Trespassing injury

See pages 9–28 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; font-size: 24pt; color: #0070C0;">2,419,369</p> <p>Number of Railroad Crossings⁴</p> <p style="text-align: right; font-size: 24pt; color: #FFC000;">3,562</p> <p>Total Rail-Related Injuries 2011 to 2020</p> <p style="text-align: right; font-size: 24pt; color: #70AD47;">337</p> <p>Injuries per 100,000 People, 2011–2020</p> <p style="text-align: right; font-size: 24pt; color: #0070C0;">0.51</p> <p>Percent Injured that were Ages 0–19 yr.</p> <p style="text-align: right; font-size: 24pt; color: #D9534F;">13%</p>	<p>Figure 1. Nearly 6 in 10 injuries occurred in Harris 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>Harris</td><td>57%</td></tr> <tr><td>Fort Bend</td><td>16%</td></tr> <tr><td>Montgomery</td><td>9%</td></tr> <tr><td>Brazoria</td><td>6%</td></tr> <tr><td>Liberty</td><td>5%</td></tr> <tr><td>Galveston</td><td>4%</td></tr> <tr><td>Austin</td><td>2%</td></tr> <tr><td>Chambers</td><td>1%</td></tr> <tr><td>Waller</td><td>1%</td></tr> </tbody> </table> <p><i>Red indicates the highest percent category.</i></p> <p>* Total percent does not equal 100 due to rounding.</p>	County	Percentage	Harris	57%	Fort Bend	16%	Montgomery	9%	Brazoria	6%	Liberty	5%	Galveston	4%	Austin	2%	Chambers	1%	Waller	1%
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Overall Injuries																																																				
<p>Figure 2. On average, there were 34 injuries per year in the decade from 2011 to 2020. During that period, injuries were most frequent in 2014 and 2016.</p> <p style="text-align: center;">Number of Rail-Related Injuries by Year (N=337)</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>25</td></tr> <tr><td>2012</td><td>22</td></tr> <tr><td>2013</td><td>32</td></tr> <tr><td>2014</td><td>47</td></tr> <tr><td>2015</td><td>41</td></tr> <tr><td>2016</td><td>49</td></tr> <tr><td>2017</td><td>30</td></tr> <tr><td>2018</td><td>38</td></tr> <tr><td>2019</td><td>31</td></tr> <tr><td>2020</td><td>22</td></tr> </tbody> </table> <p>Figure 3. Three in 10 of those injured were between the ages of 30 and 44 years old.*</p> <p style="text-align: center;">Rail-Related Injuries by 5-Year Age Groups (N=337)</p> <table border="1"> <caption>Data for Figure 3: Rail-Related Injuries by 5-Year Age Groups</caption> <thead> <tr> <th>Age Group</th> <th>Percentage</th> </tr> </thead> <tbody> <tr><td>0-4</td><td>2%</td></tr> <tr><td>5-9</td><td>2%</td></tr> <tr><td>10-14</td><td>1%</td></tr> <tr><td>15-19</td><td>7%</td></tr> <tr><td>20-24</td><td>9%</td></tr> <tr><td>25-29</td><td>10%</td></tr> <tr><td>30-34</td><td>11%</td></tr> <tr><td>35-39</td><td>10%</td></tr> <tr><td>40-44</td><td>12%</td></tr> <tr><td>45-49</td><td>8%</td></tr> <tr><td>50-54</td><td>6%</td></tr> <tr><td>55-59</td><td>5%</td></tr> <tr><td>60-64</td><td>4%</td></tr> <tr><td>65+</td><td>6%</td></tr> </tbody> </table> <p>* Total percent does not equal 100 due to rounding.</p>	Year	Number of Injuries	2011	25	2012	22	2013	32	2014	47	2015	41	2016	49	2017	30	2018	38	2019	31	2020	22	Age Group	Percentage	0-4	2%	5-9	2%	10-14	1%	15-19	7%	20-24	9%	25-29	10%	30-34	11%	35-39	10%	40-44	12%	45-49	8%	50-54	6%	55-59	5%	60-64	4%	65+	6%
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Figure 4. Rail-related injuries were more often the result of railroad crossing incidents. However, trespassing injuries were more often fatal than railroad crossing injuries.

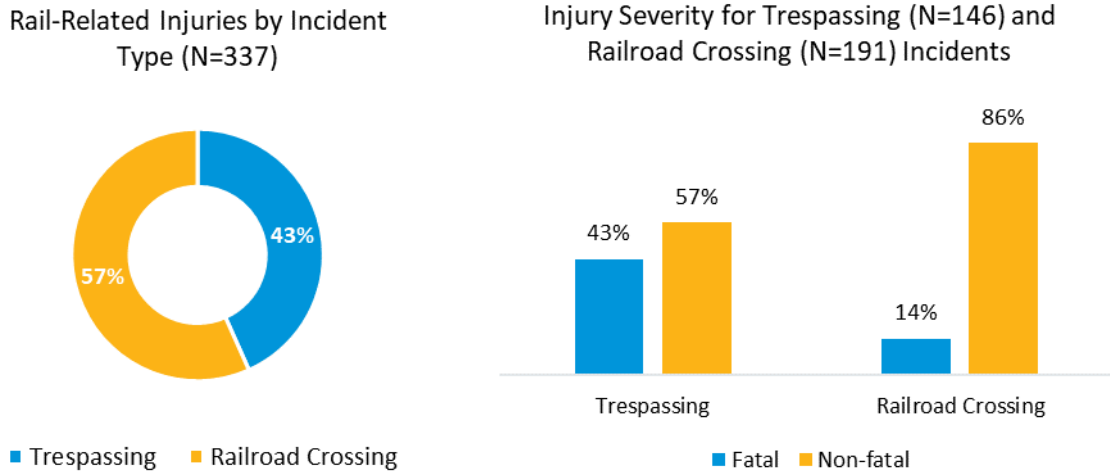
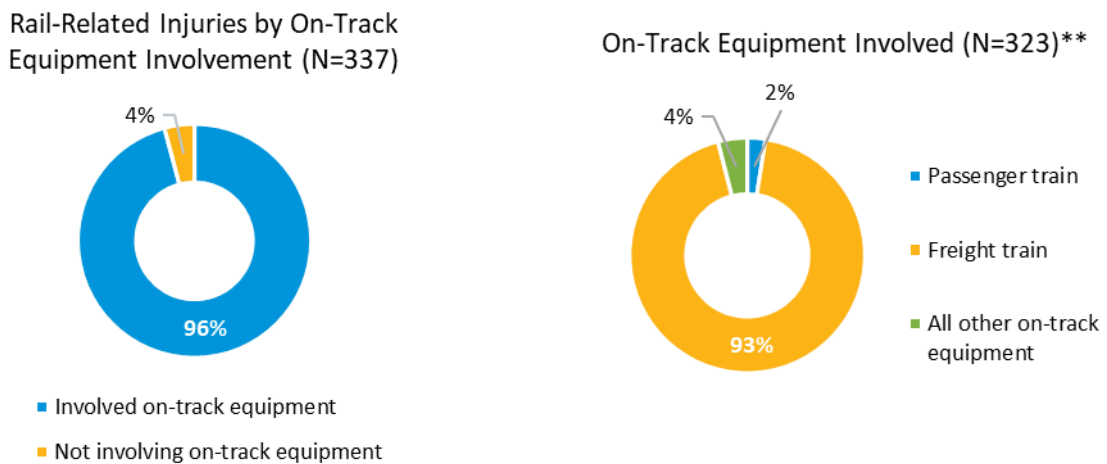


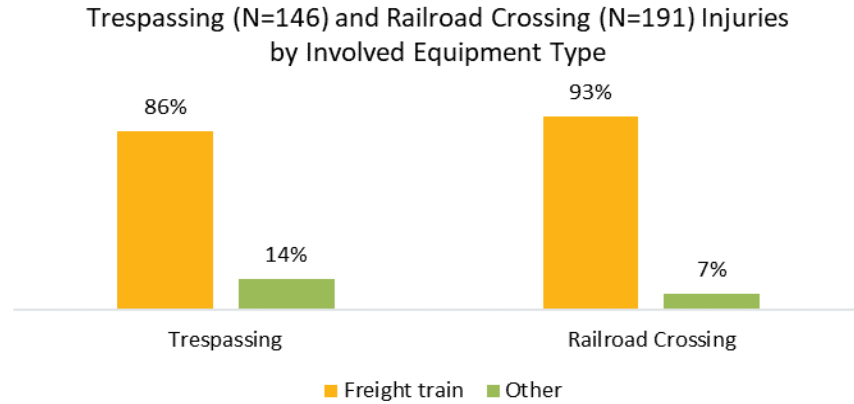
Figure 5. Nearly all injuries involved on-track equipment,* the majority of which were freight trains.



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

** Total percent does not equal 100 due to rounding.

Figure 6. Freight trains were involved in the vast majority of both railroad crossing and trespassing injuries. *



* Other includes on-track and not 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 7. Both trespassing and railroad crossing injuries were slightly more frequent during summer months.

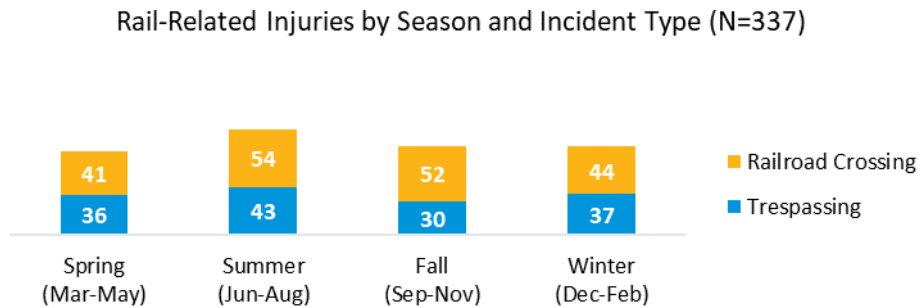


Figure 8. Railroad crossing injuries were most frequent on Friday, while trespassing injuries were most frequent on Saturday.

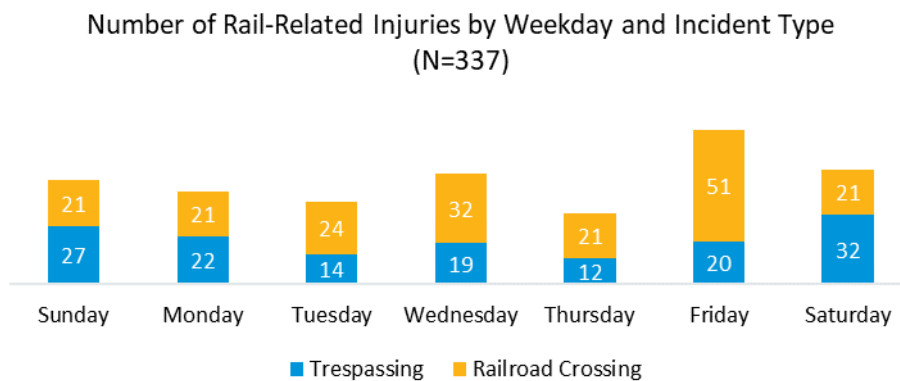
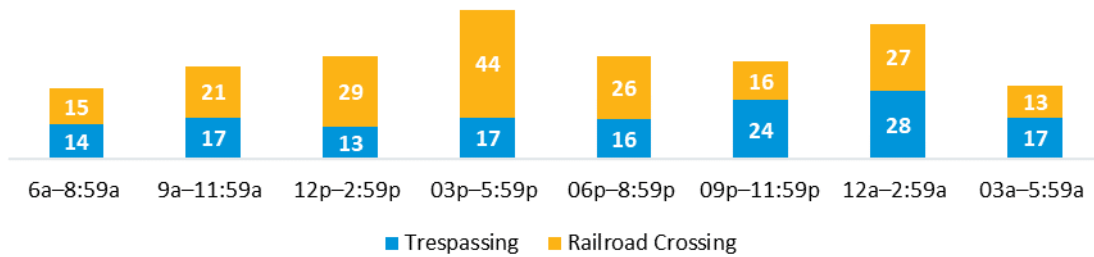


Figure 9. Trespassing injuries were most frequent between 9 PM and 2:59 AM, while railroad crossing injuries were most frequent between 3 PM and 5:59 PM.

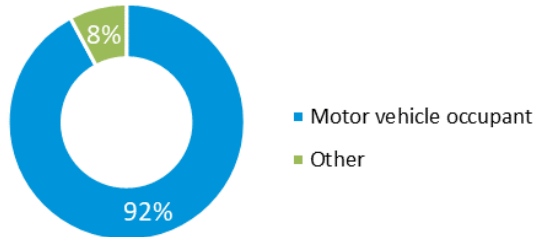
Number of Rail-Related Injuries by Time of Day and Incident Type (N=337)



Railroad Crossing Circumstances

Figure 10. Nine in 10 of those injured at railroad crossings were motor vehicle occupants.*

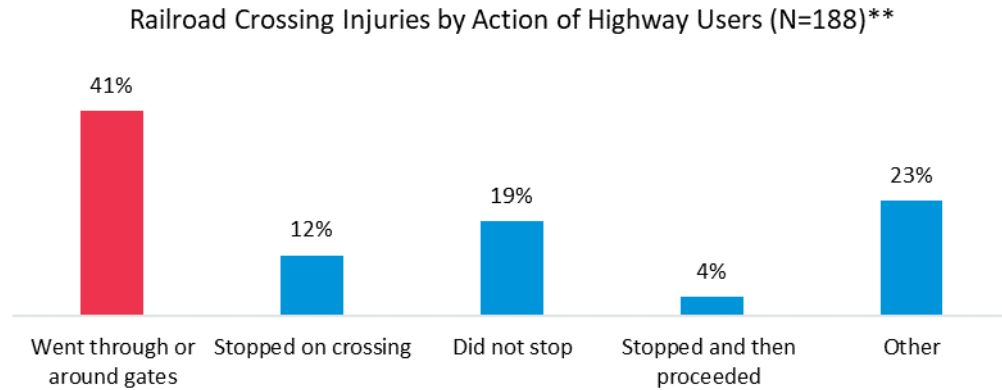
Railroad Crossing Injuries by Highway User Type (N=191)



* Other includes pedestrian and other unspecified highway users.



Figure 11. Going through or around the gates was the activity most often associated with injury among those injured at railroad crossings.*

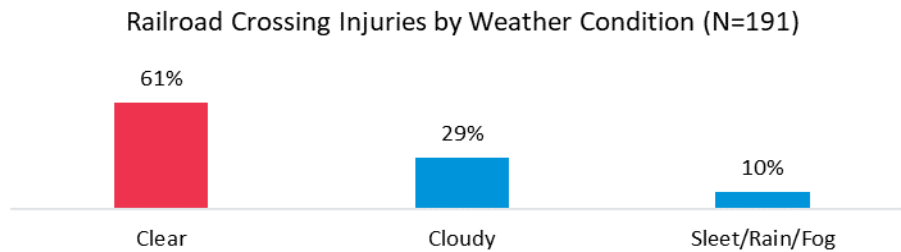


Red indicates the category with the highest percent.

* Total percent does not equal 100 due to rounding.

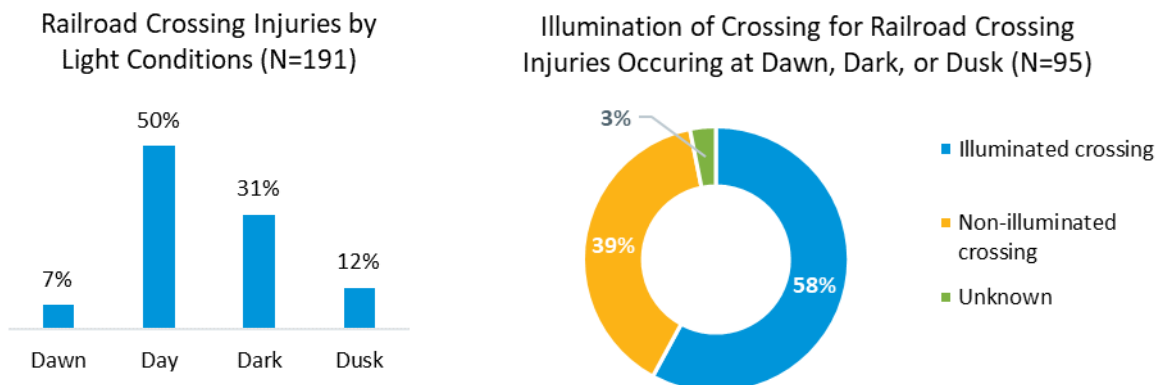
** Highway user action data missing for 3 railroad crossing cases.

Figure 12. Most railroad crossing injuries occurred when the weather was clear.



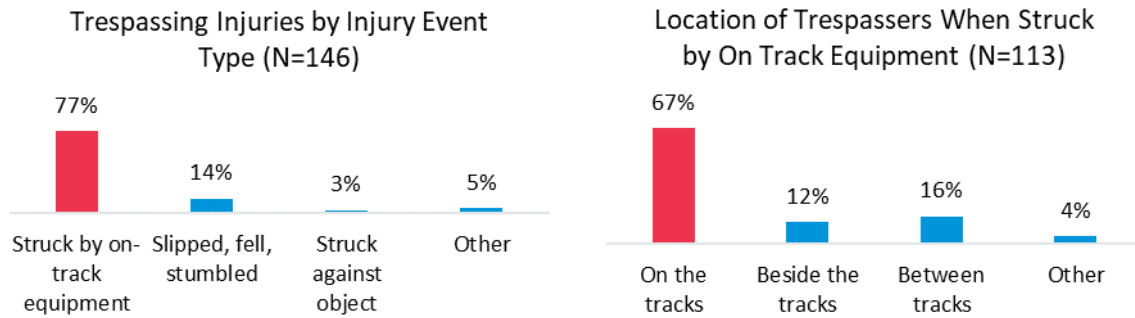
Red indicates the category with the highest percent.

Figure 13. Half of railroad crossing injuries occurred during dark or low-light hours. Of those, about 4 in 10 occurred at railroad crossings that were not illuminated by streetlights or special lights.



Trespassing Circumstances

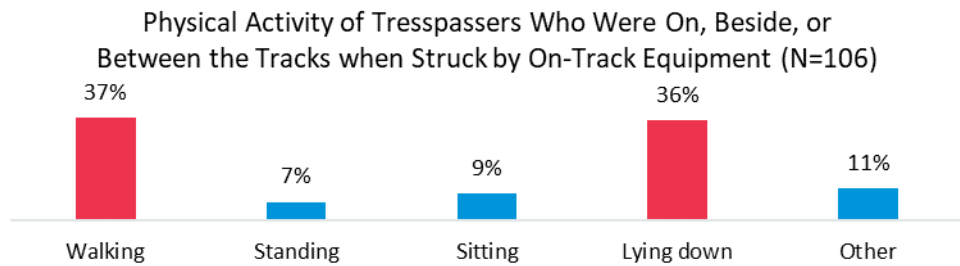
Figure 14. Nearly 8 in 10 trespassers who were injured had been struck by on-track equipment. Of those, most were on the tracks at the time of impact.*



Red indicates the categories with the highest percents.

* Total percent does not equal 100 due to rounding.

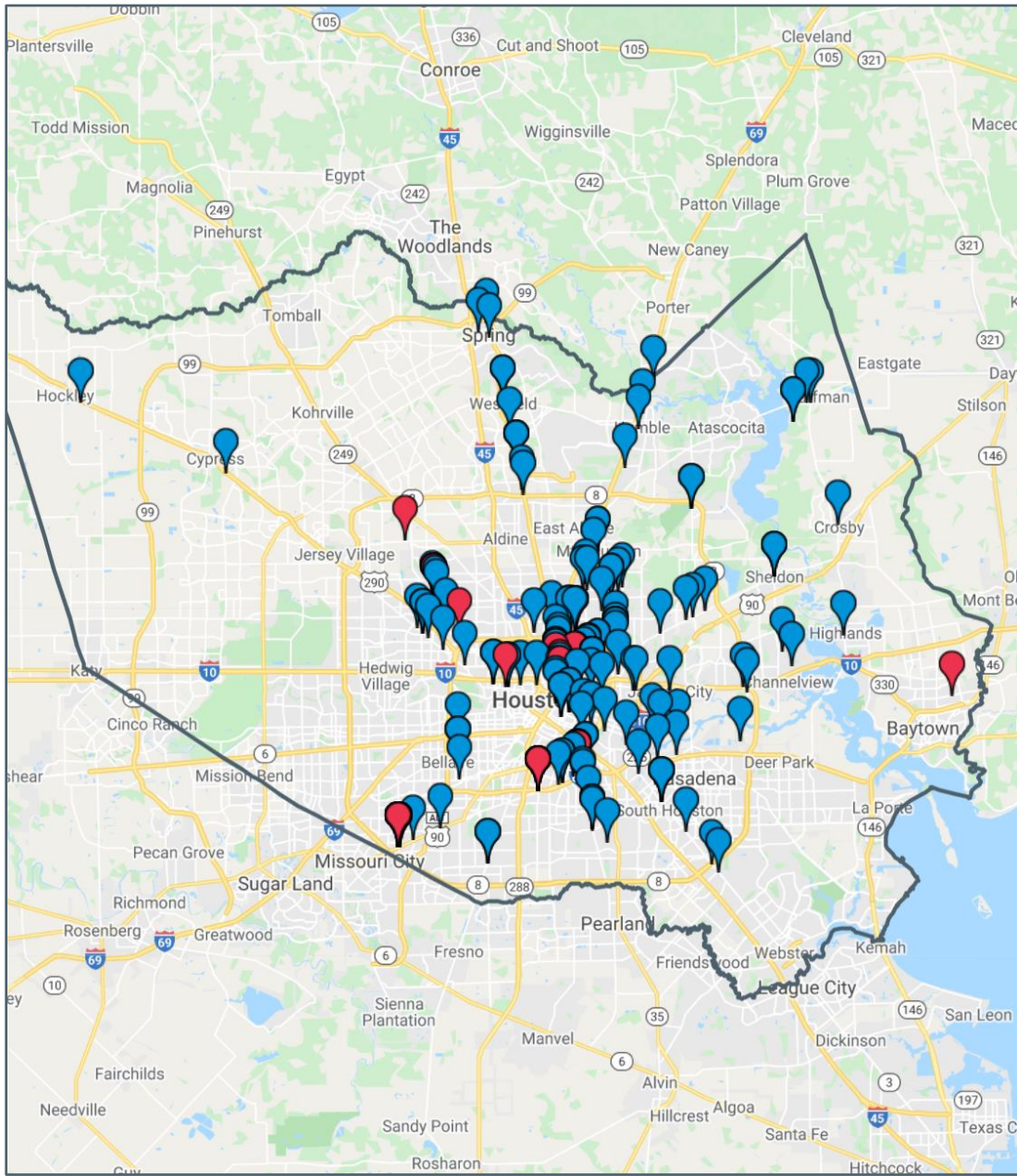
Figure 15. Of trespassers who were struck by on-track equipment while either on, beside, or between the tracks, 1 in 3 were walking and 1 in 3 were lying down at the time of impact.



Red indicates the categories with highest percents.



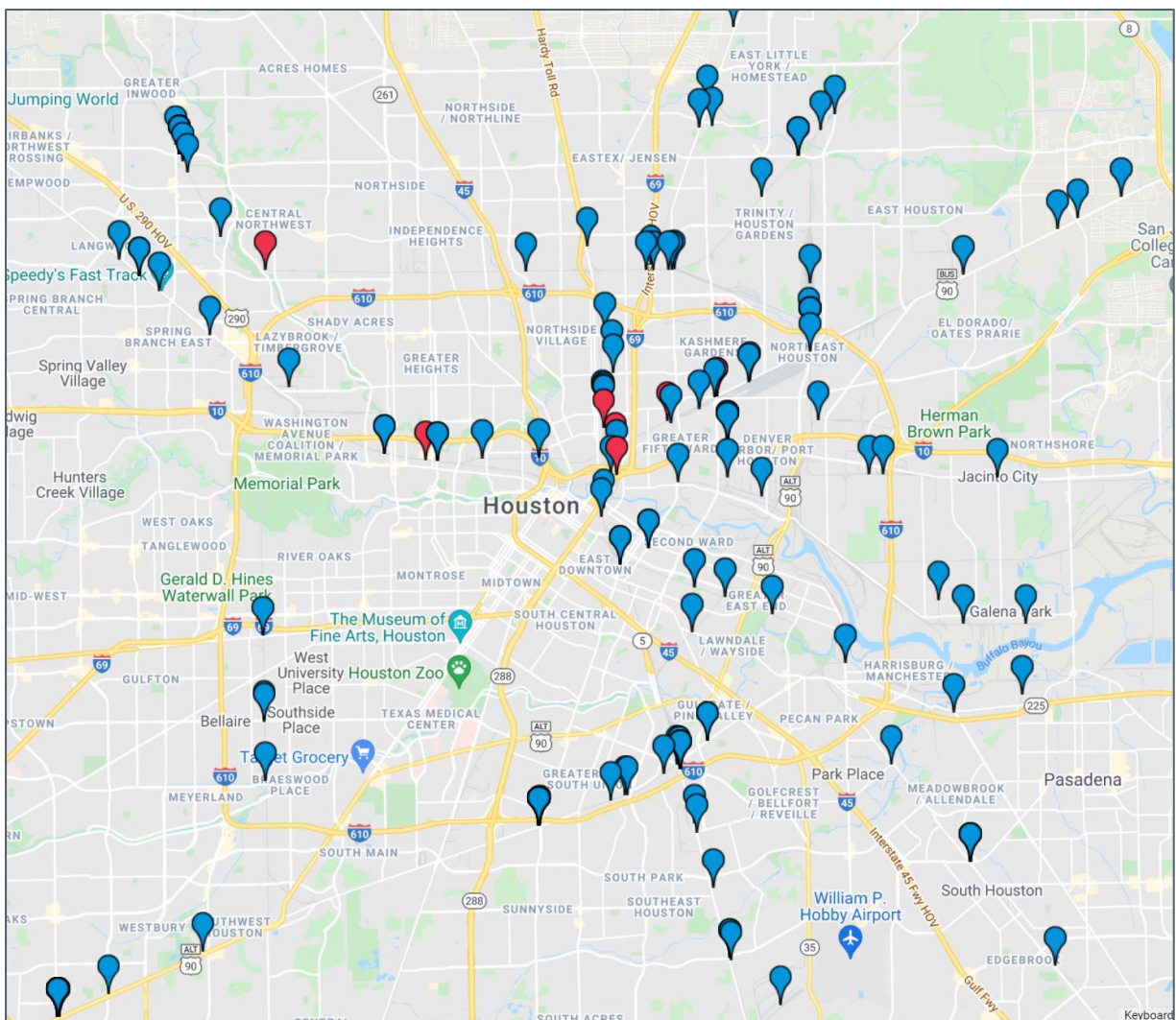
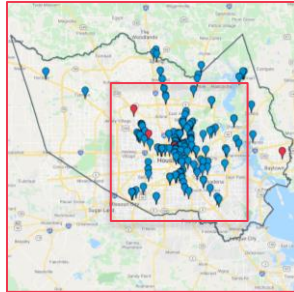
Map 2. Harris County – Injuries by Age Group



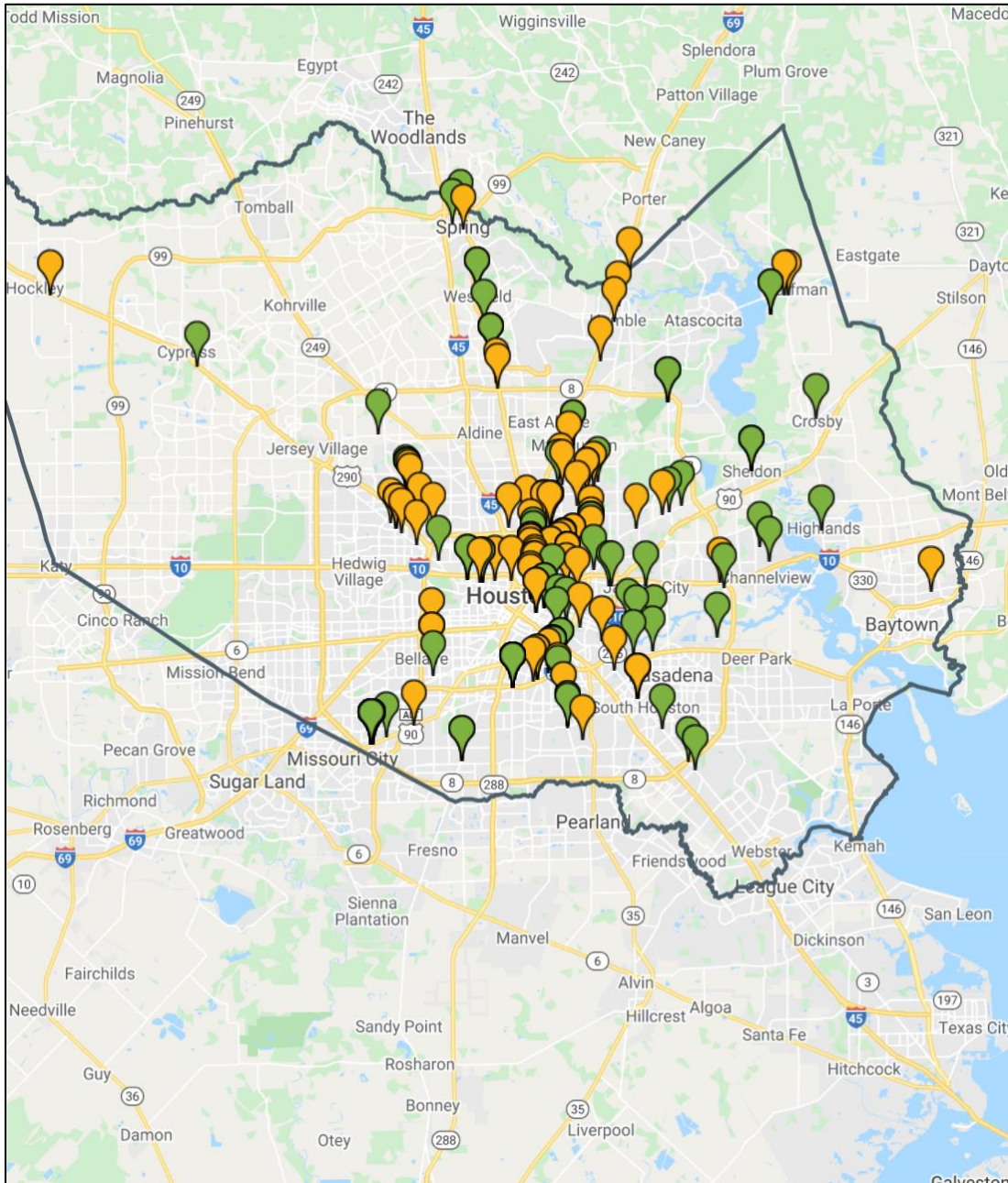
● Adult injury ● Child injury (ages 0-19 years)



Map 3. Harris County – Injuries by Age Group – Central



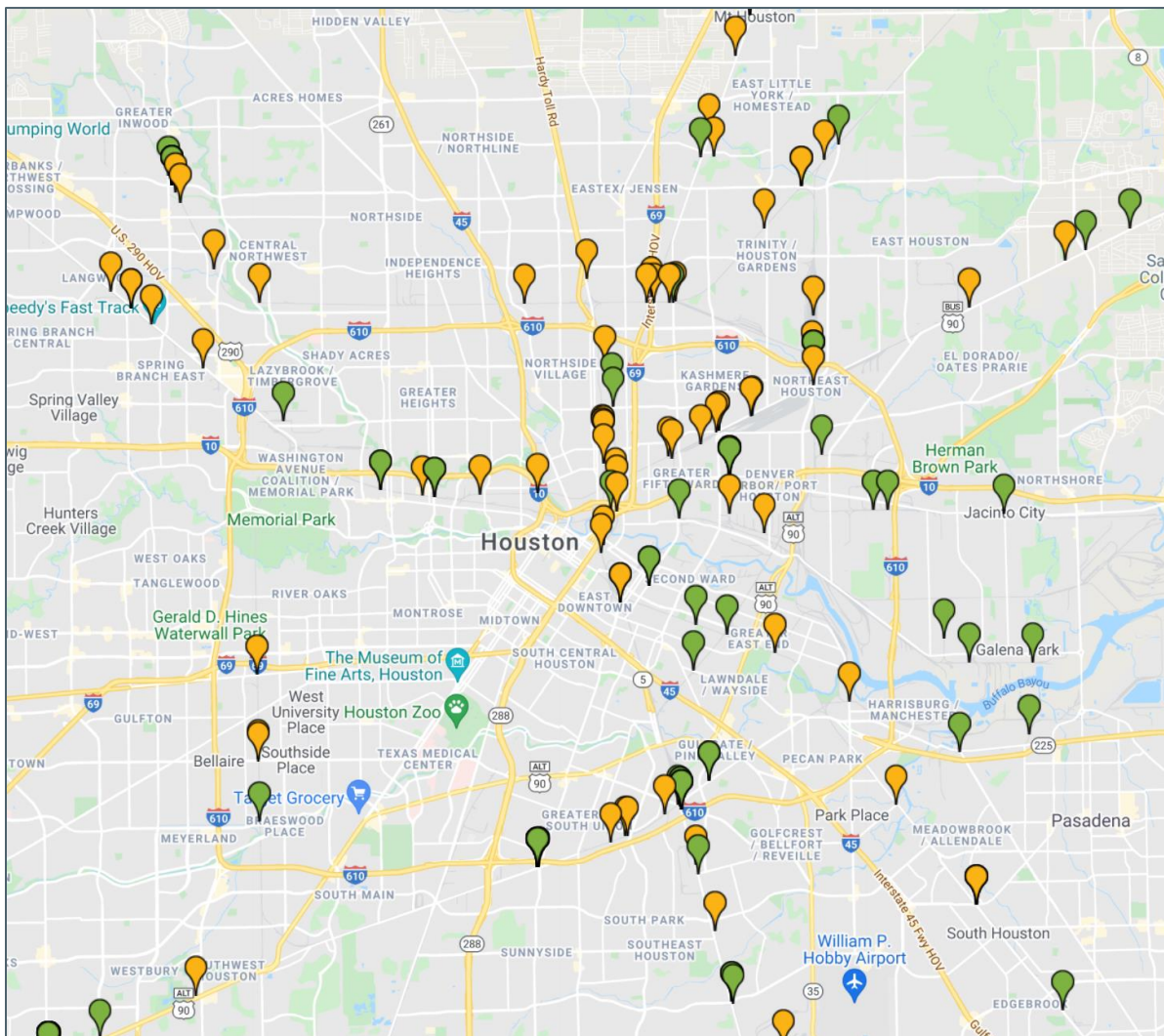
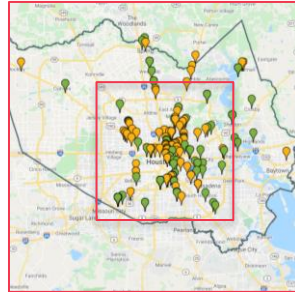
Map 4. Harris County – Injuries by Incident Type



● Railroad crossing injury ● Trespassing injury



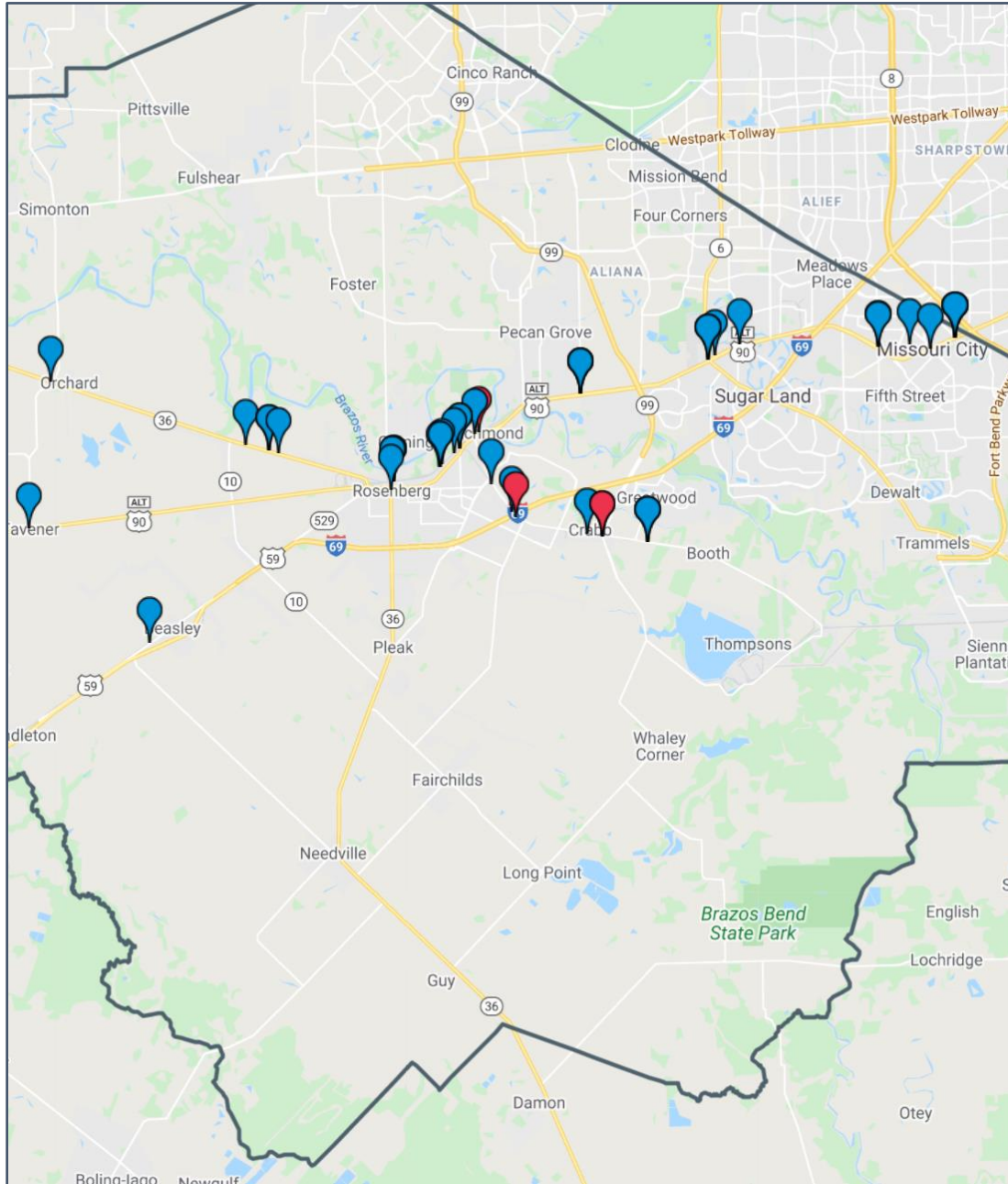
Map 5. Harris County – Injuries by Incident Type – Central



● Railroad crossing injury ● Trespassing injury



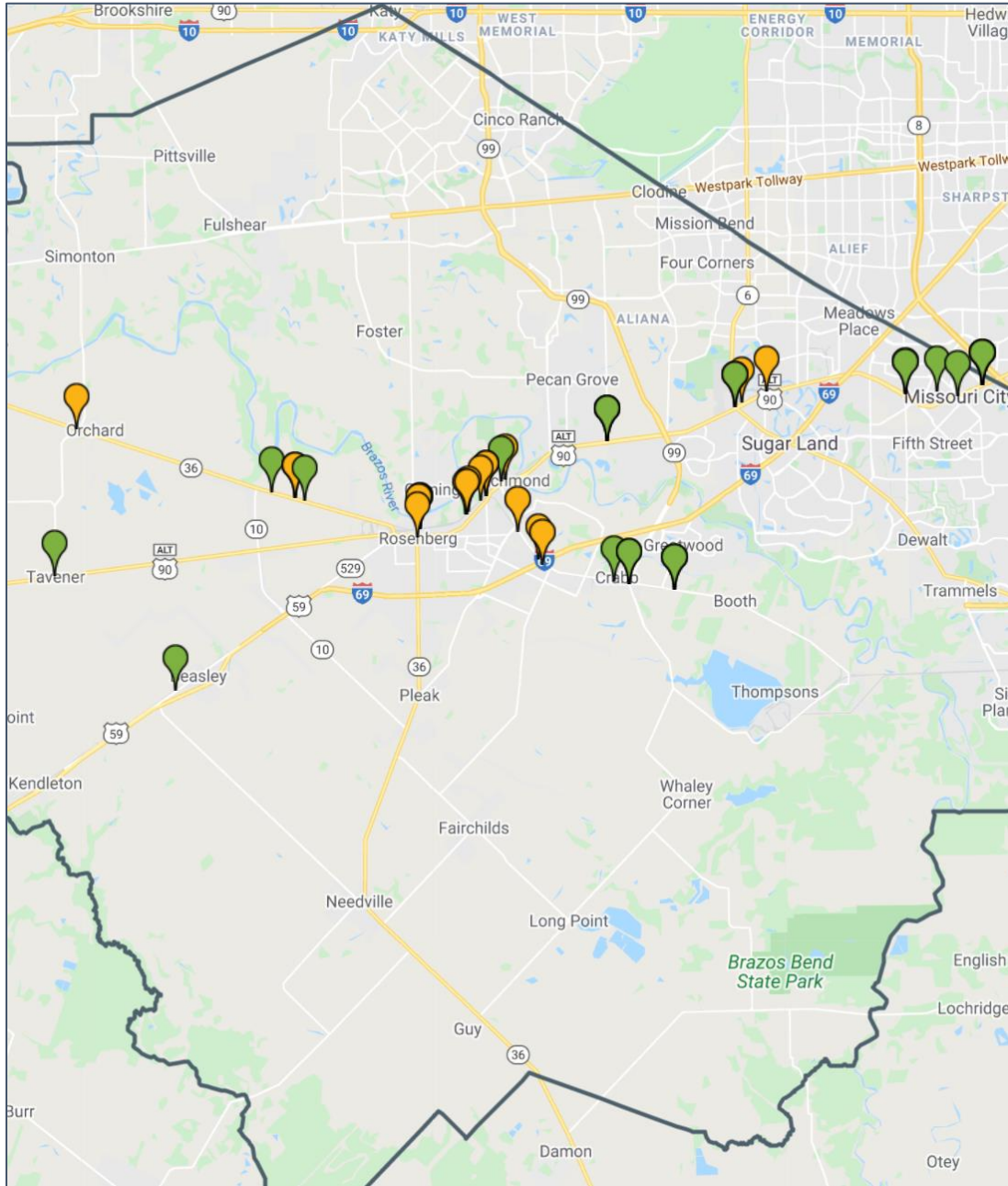
Map 6. Fort Bend County – Injuries by Age Group



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



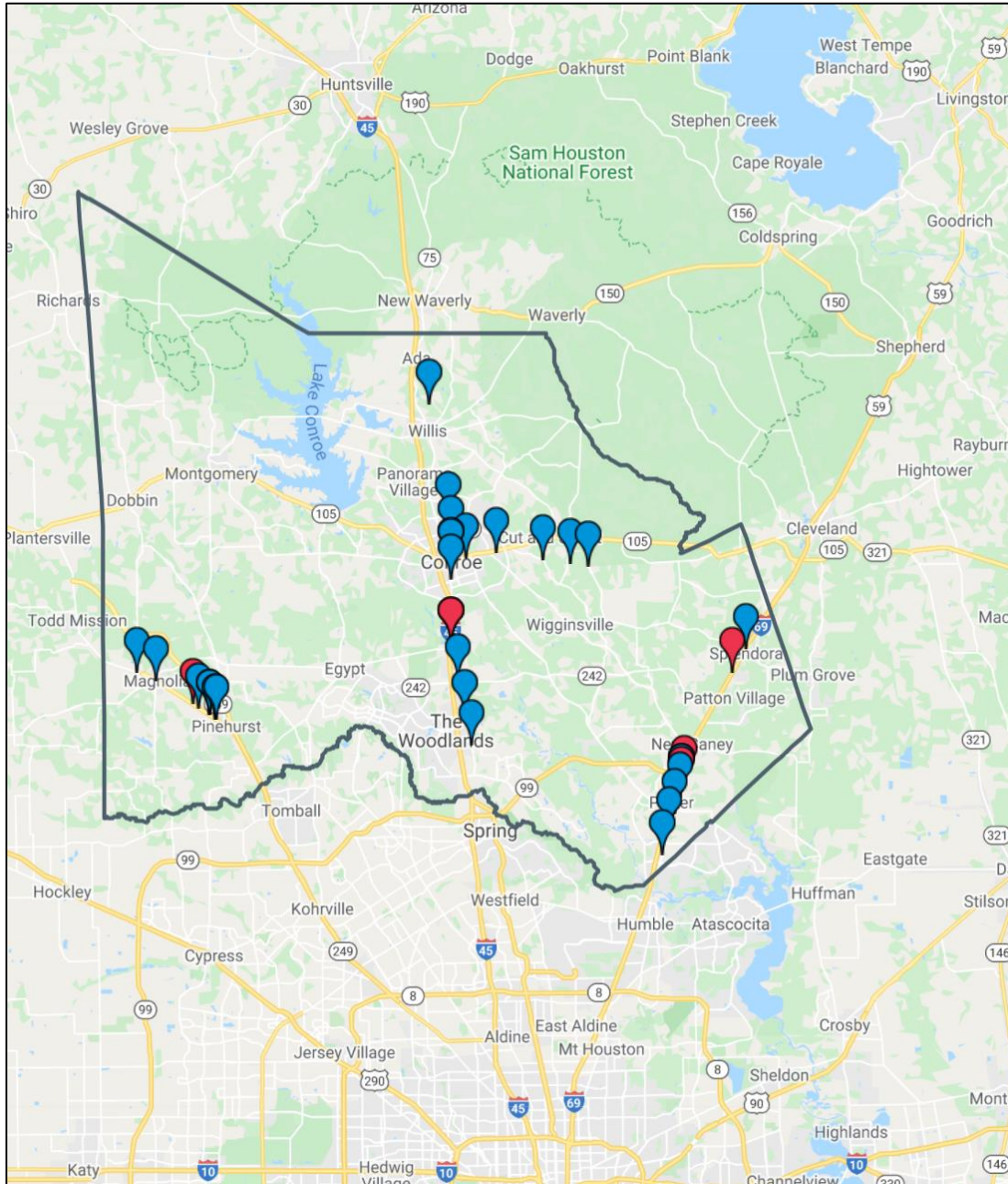
Map 7. Fort Bend County – Injuries by Incident Type



● Railroad crossing injury ● Trespassing injury



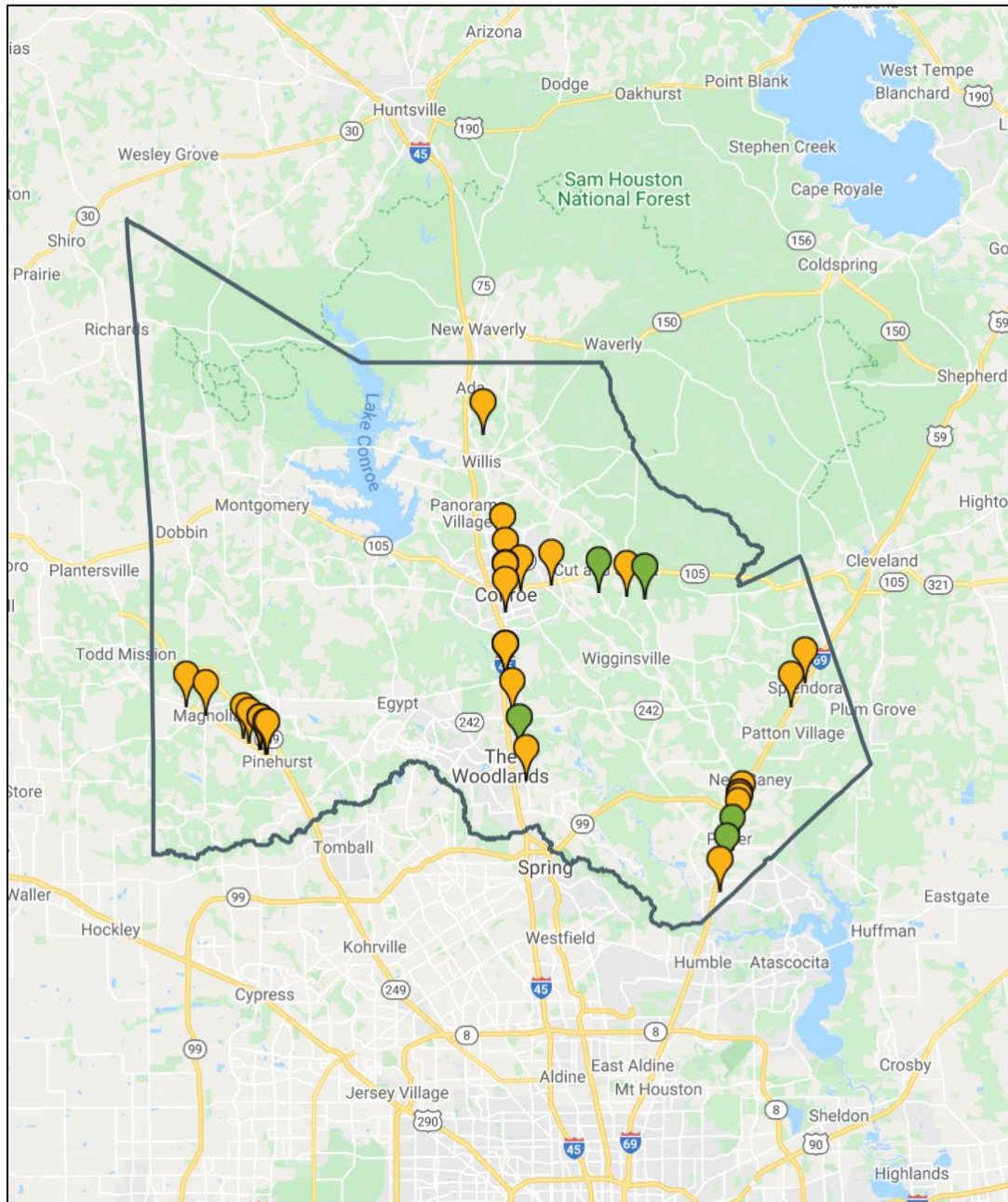
Map 8. Montgomery County – Injuries by Age Group



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



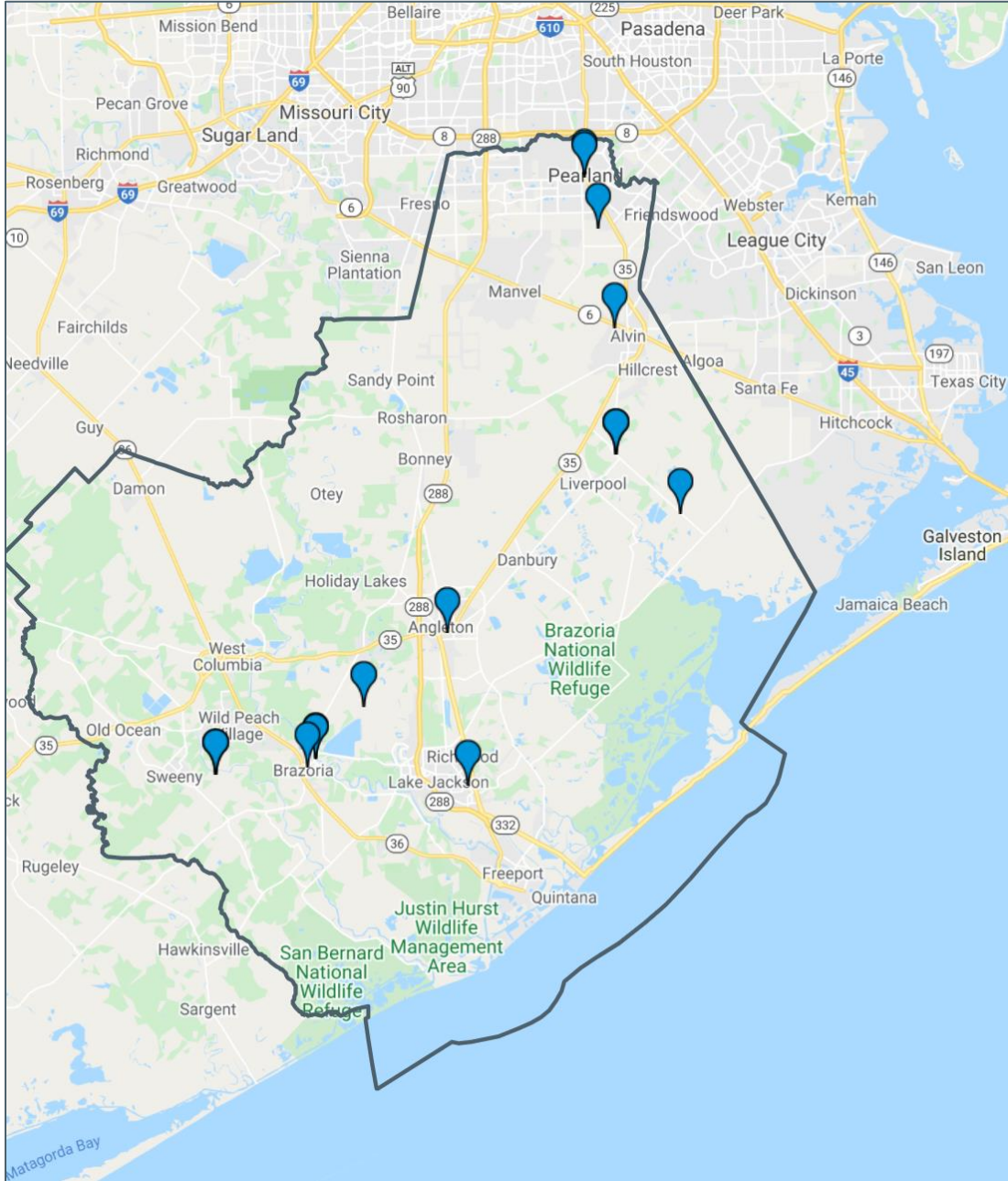
Map 9. Montgomery County – Injuries by Incident Type



● Railroad crossing injury ● Trespassing injury



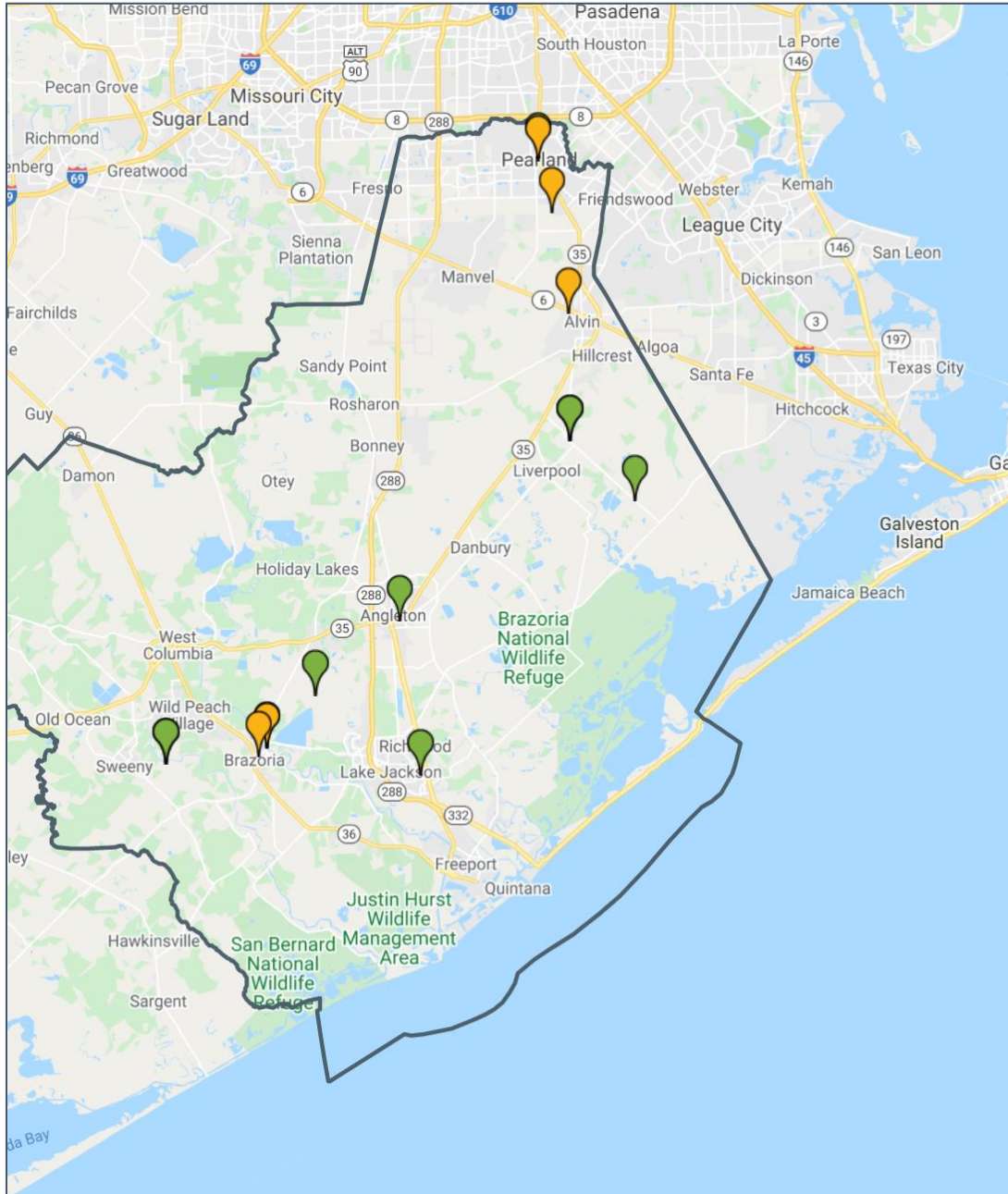
Map 10. Brazoria County – Injuries by Age Group



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



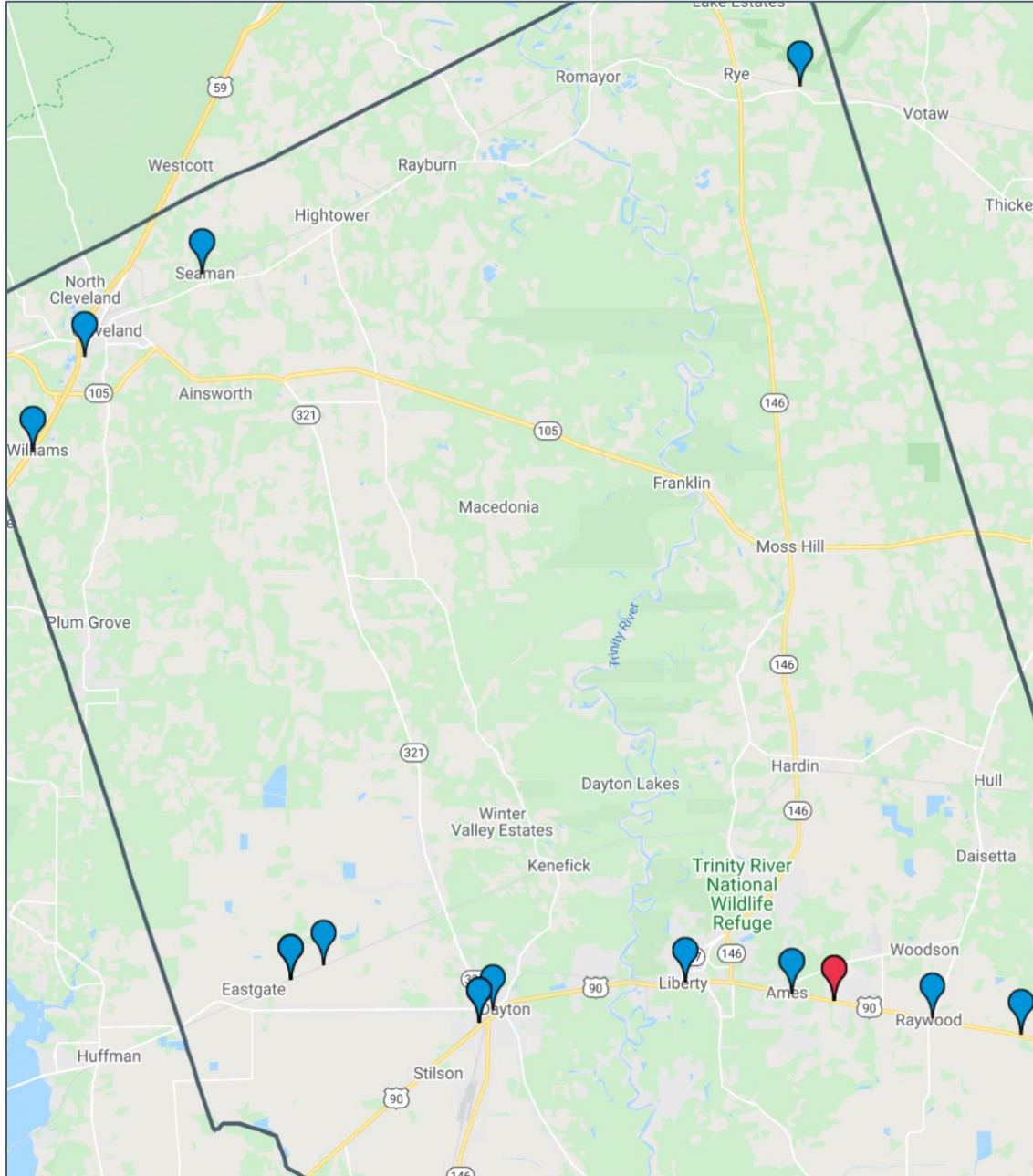
Map 11. Brazoria County – Injuries by Incident Type



● Railroad crossing injury ● Trespassing injury



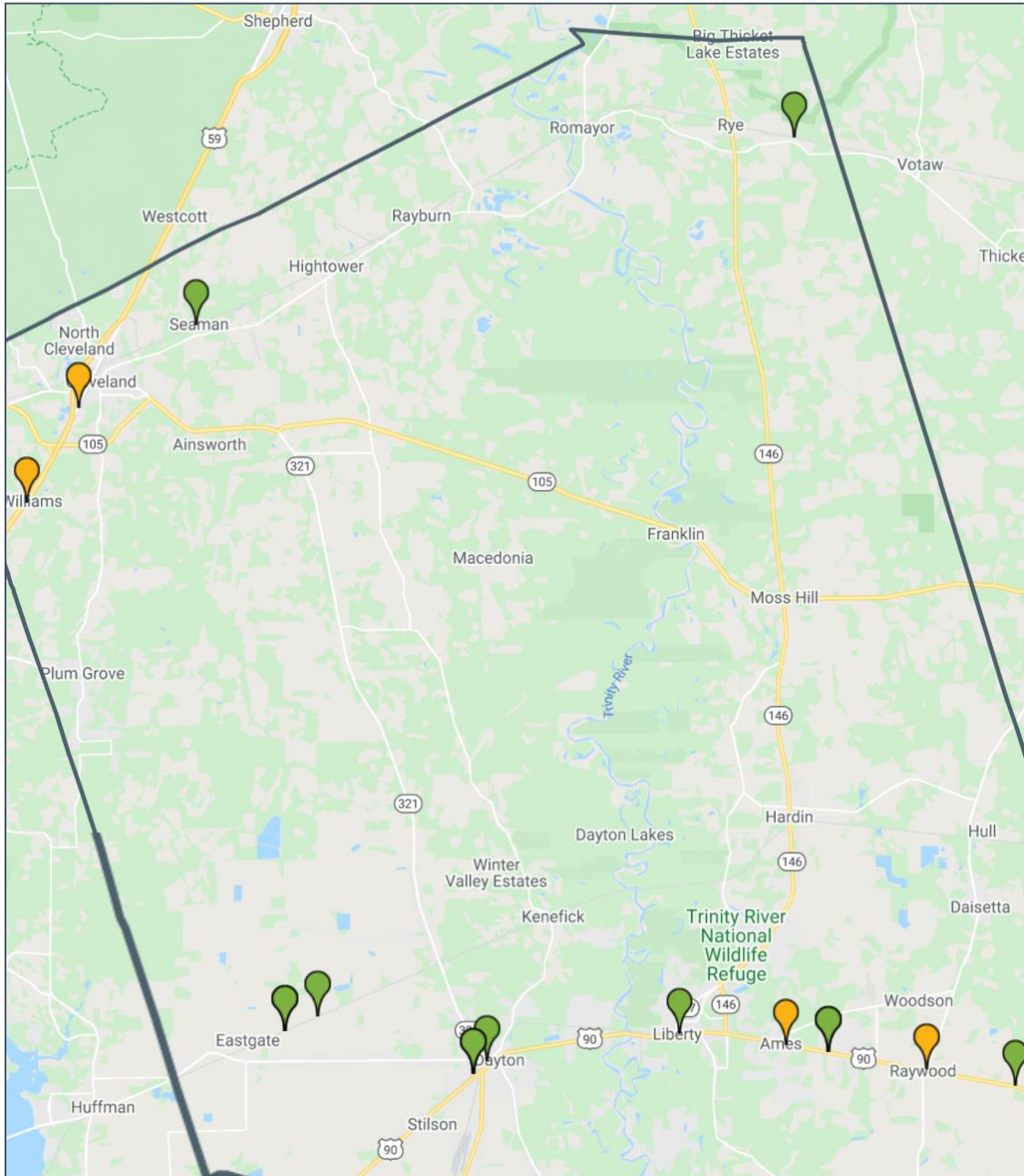
Map 12. Liberty County – Injuries by Age Group



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



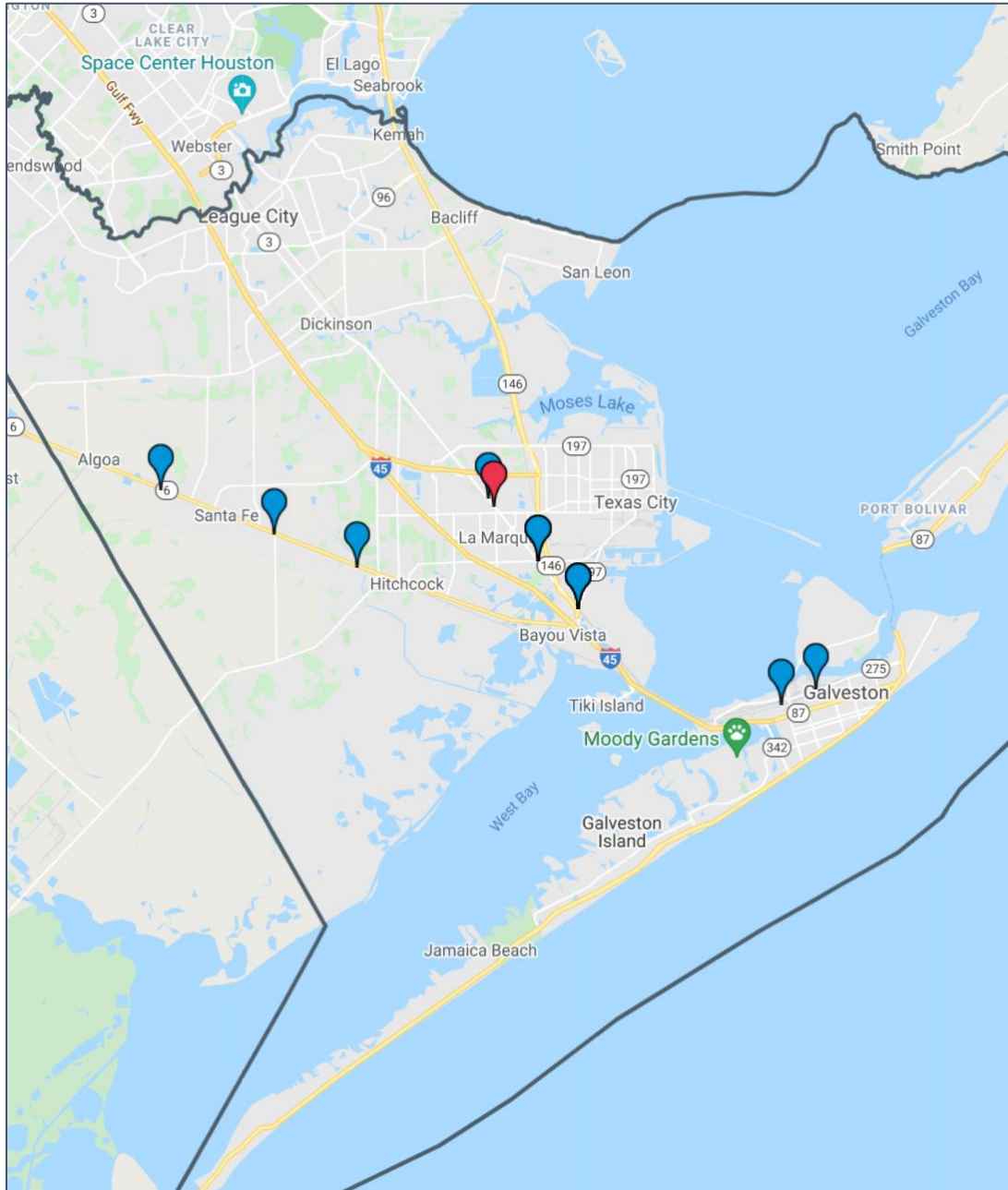
Map 13. Liberty County – Injuries by Incident Type



● Railroad crossing injury ● Trespassing injury



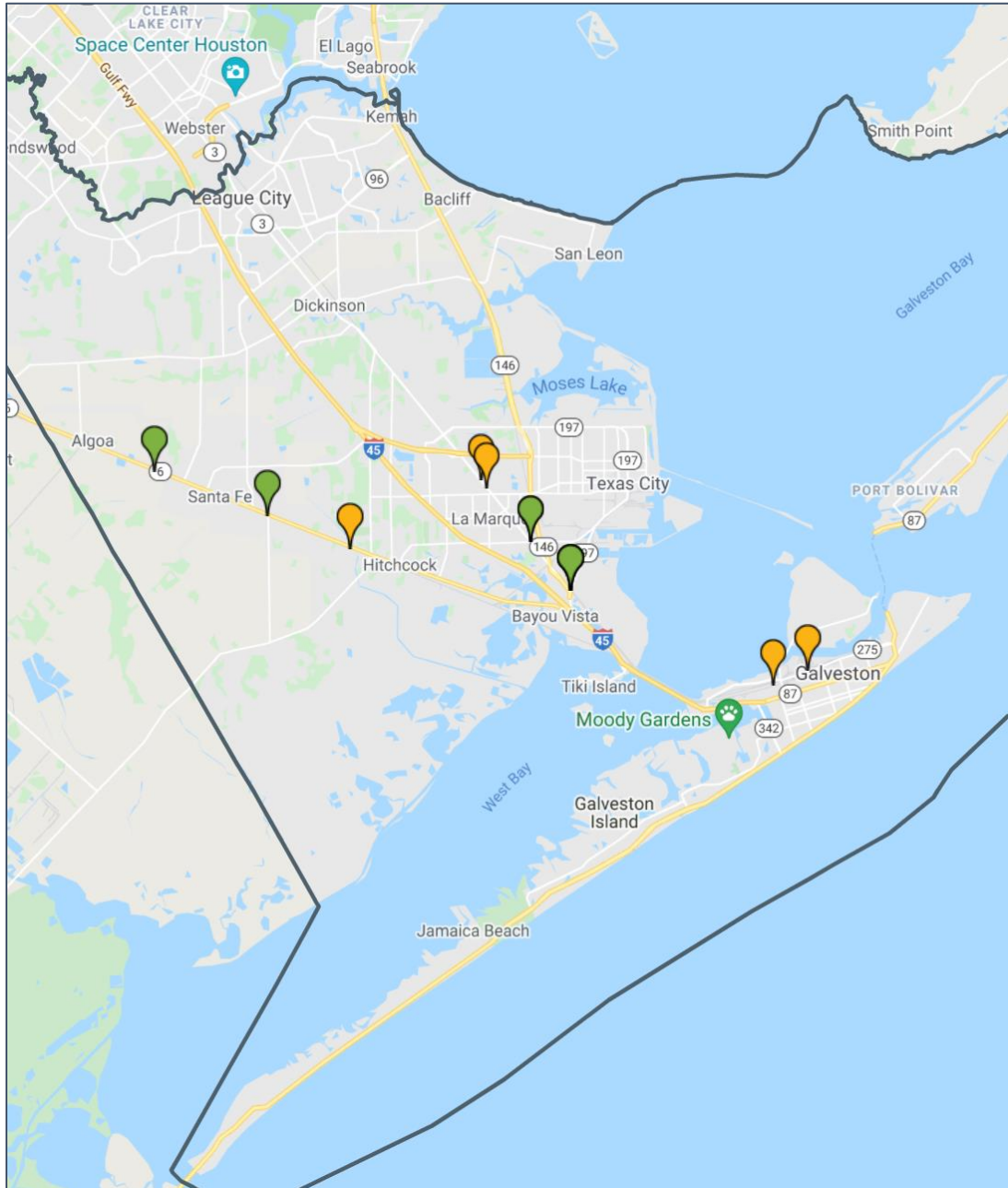
Map 14. Galveston County – Injuries by Age Group



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



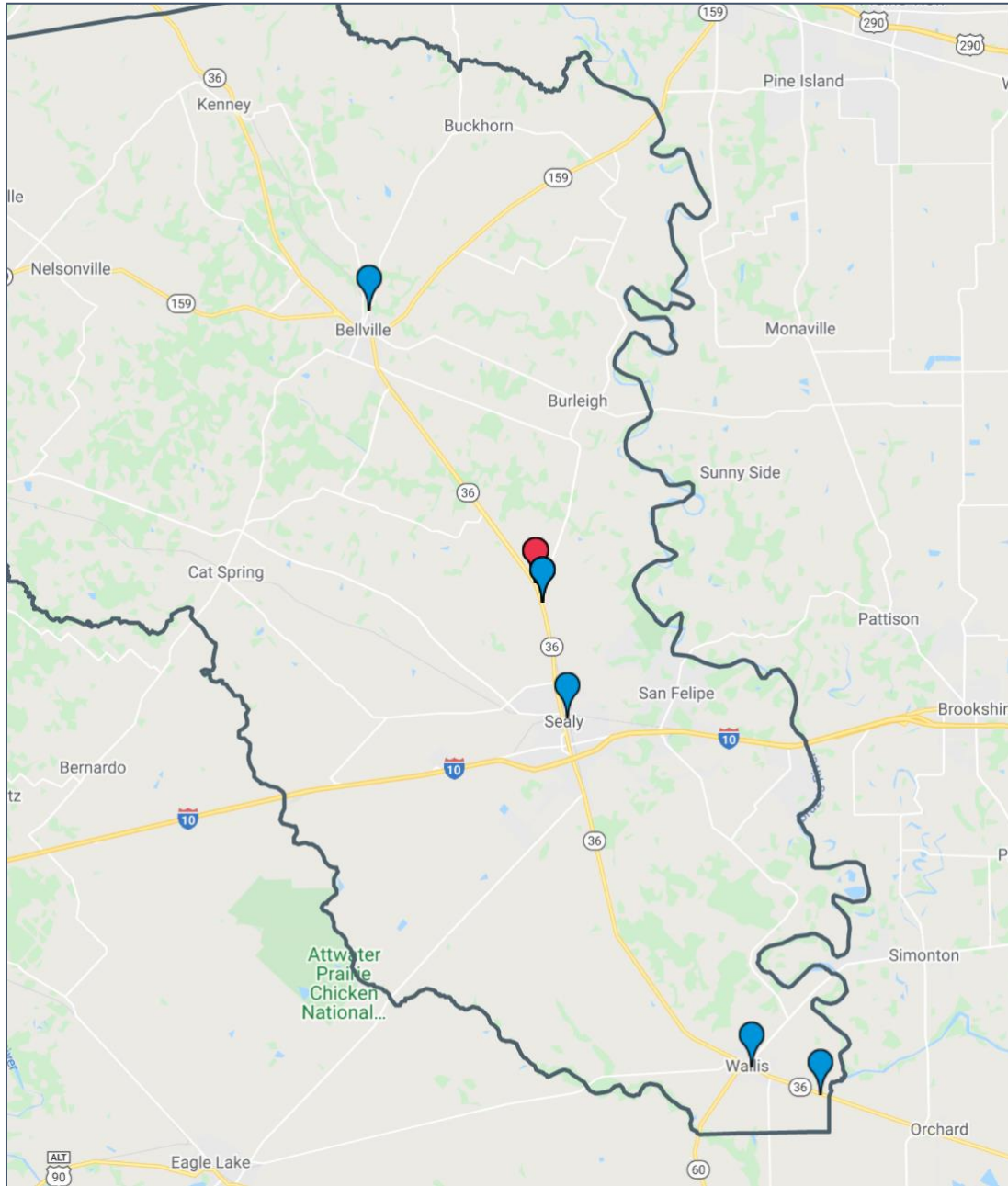
Map 15. Galveston County – Injuries by Incident Type



● Railroad crossing injury ● Trespassing injury



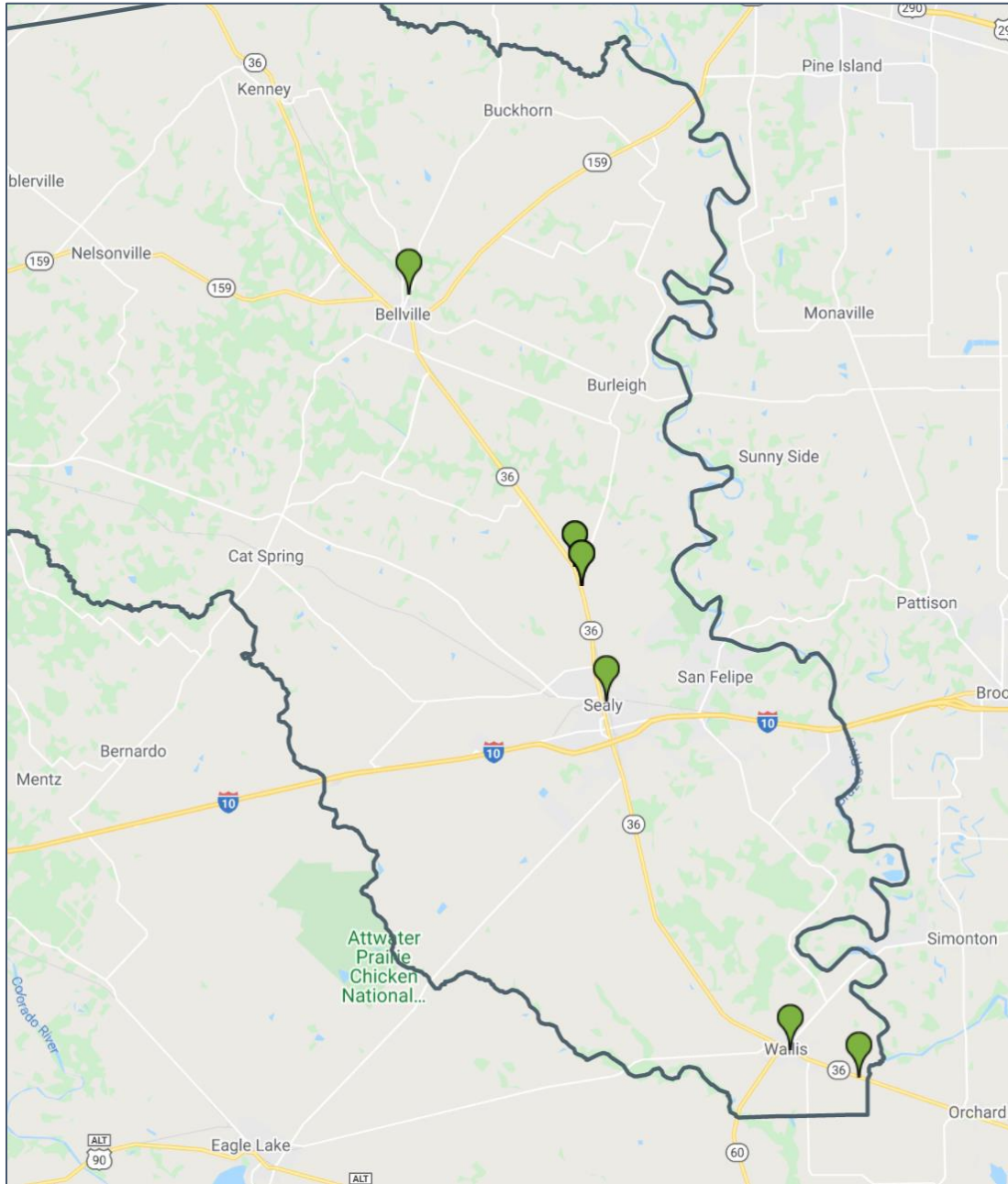
Map 16. Austin County – Injuries by Age Group



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



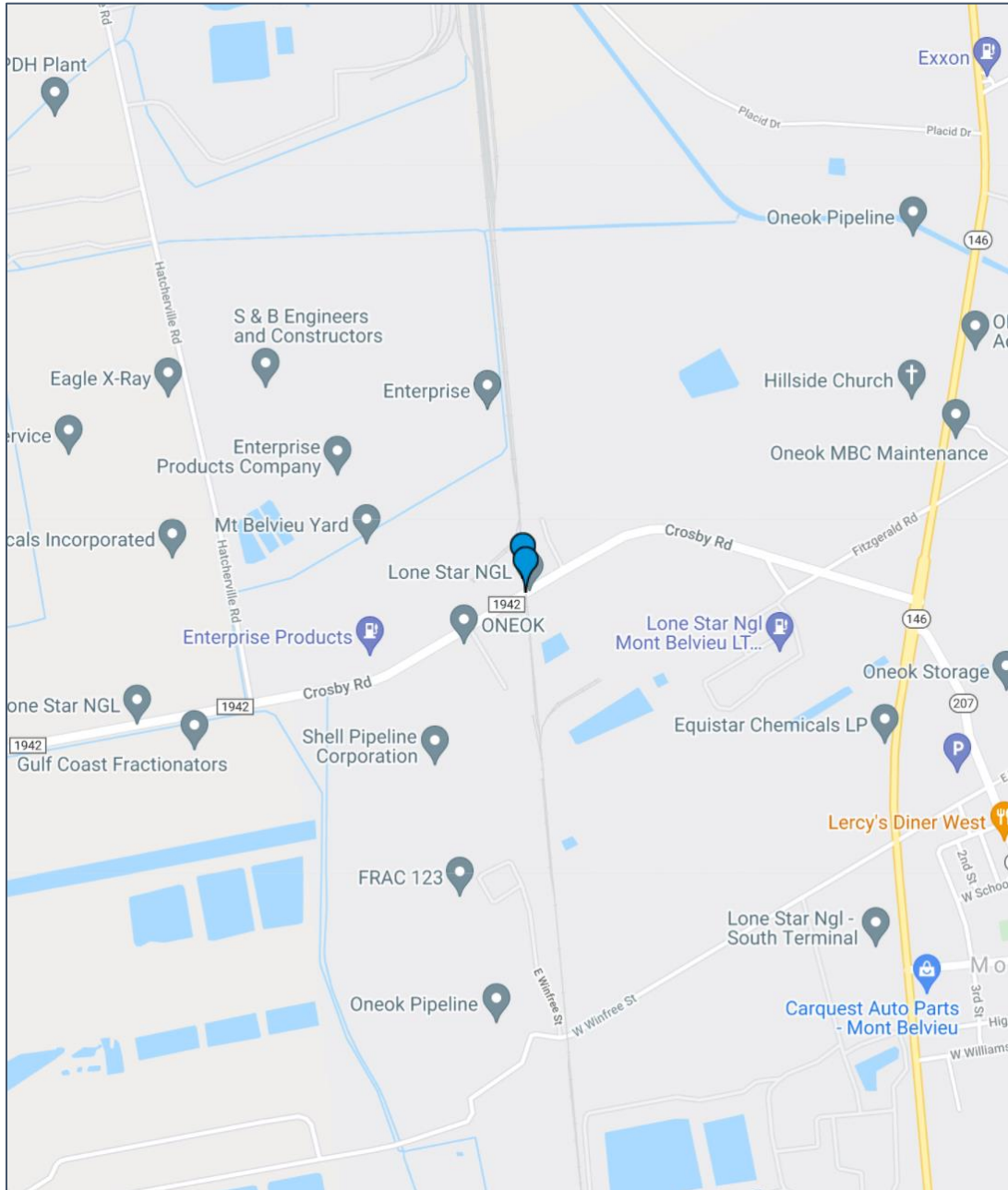
Map 17. Austin County – Injuries by Incident Type



● Railroad crossing injury ● Trespassing injury



Map 18. Chambers County – Injuries by Age Group



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



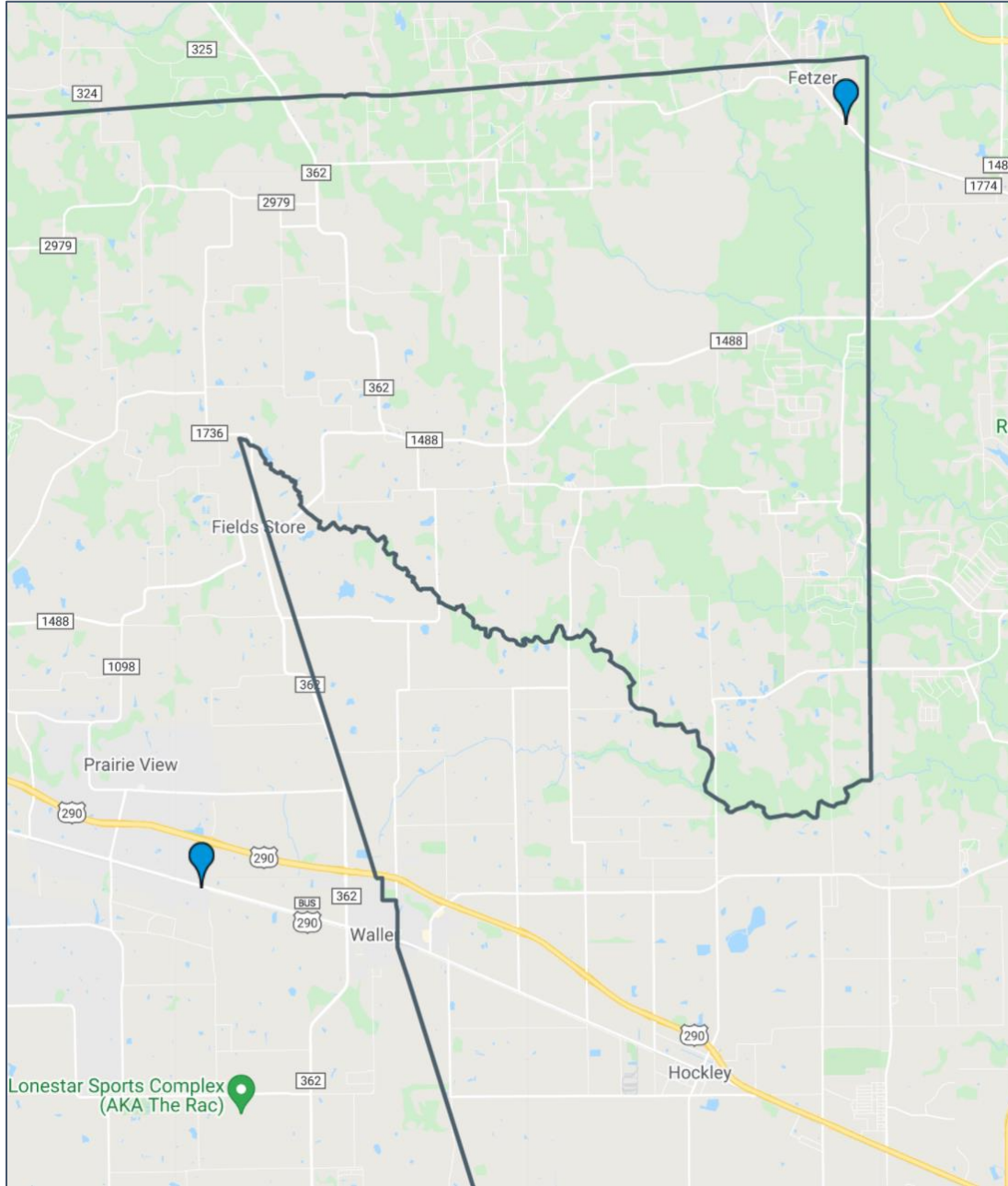
Map 19. Chambers County – Injuries by Incident Type



● Railroad crossing injury ● Trespassing injury



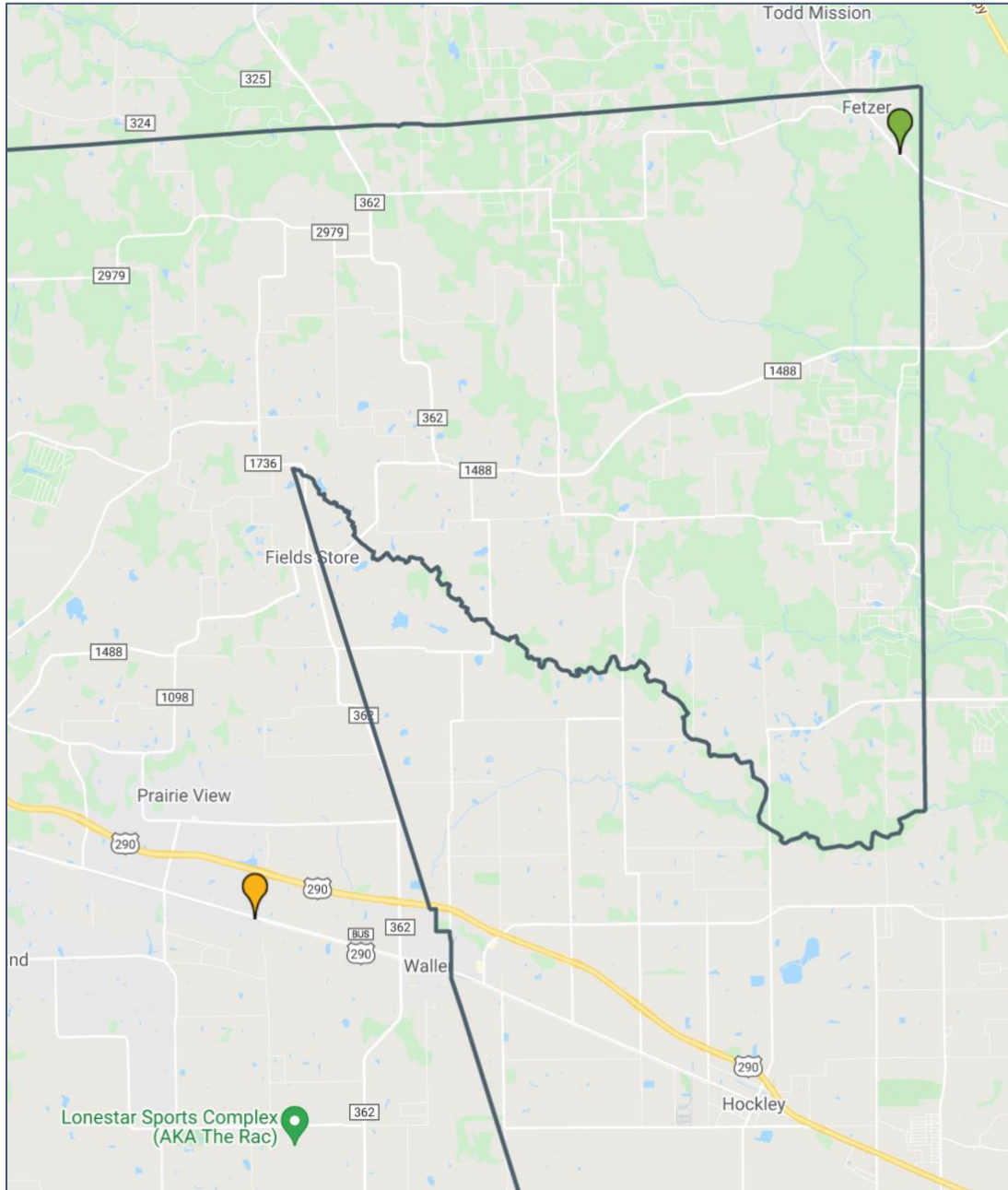
Map 20. Waller County – Injuries by Age Group



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



Map 21. Waller 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.

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 Texas. 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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