



Vision Zero Annual Data Report

CY2020-2024

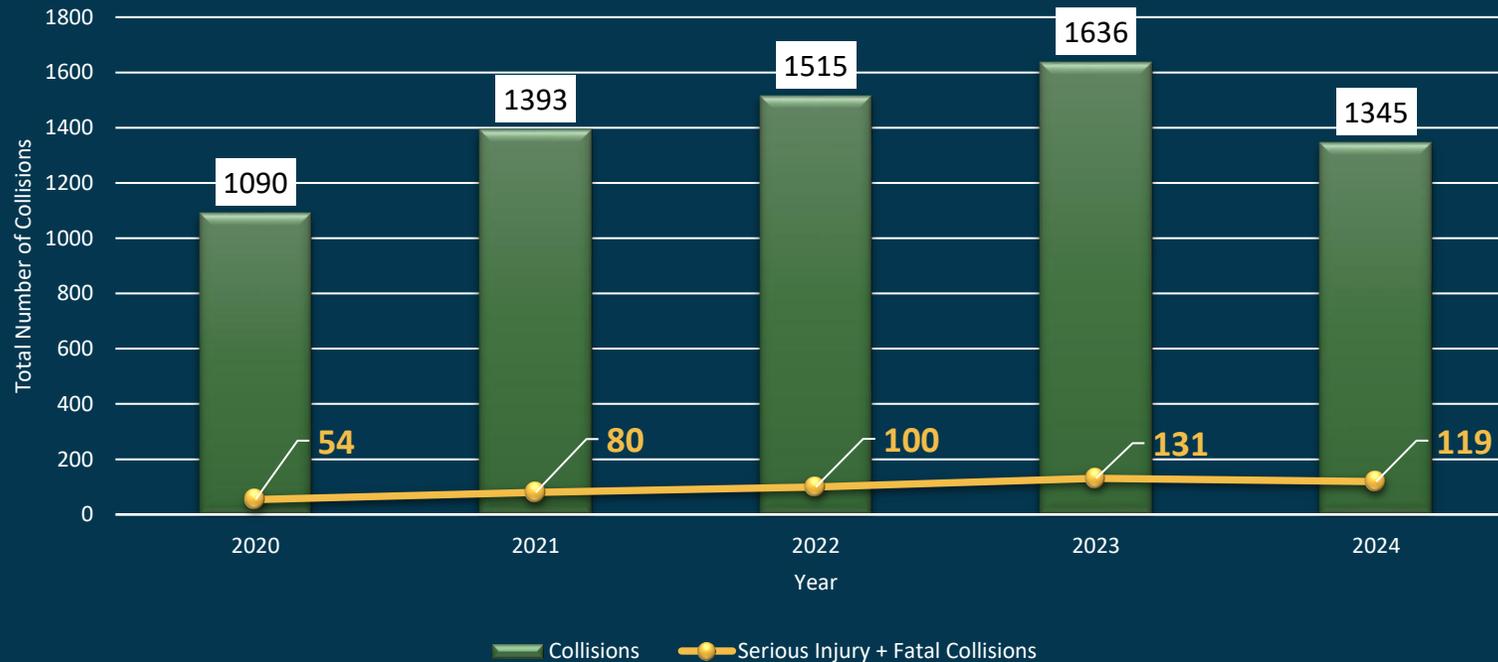
Outline

- This report covers:
 - Overall Crash Trends for CY 2020-2024
 - Economic Value of Crash Prevention in Apex CY 2020-2024
 - Comprehensive Crash Statistics for CY 2020-2024
 - Demographic Data for Crash Victims CY 2020-2024
 - Strategies for Reducing Crashes per the Five "E" Approach



Apex Collision Statistics

Between CY (Calendar Year) 2020-2024 there were 6,979 reported collisions in Apex. There were 484 severe and/or fatal collisions reported.



Collisions by Mode Type

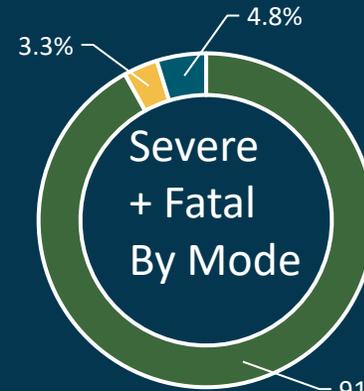
Vehicle-to-Vehicle collisions contribute to the majority (91.9%) of roadway fatalities and severe injuries in Apex



- Vehicular Collisions
- Pedacyclist Collisions
- Pedestrian Collisions



6,888

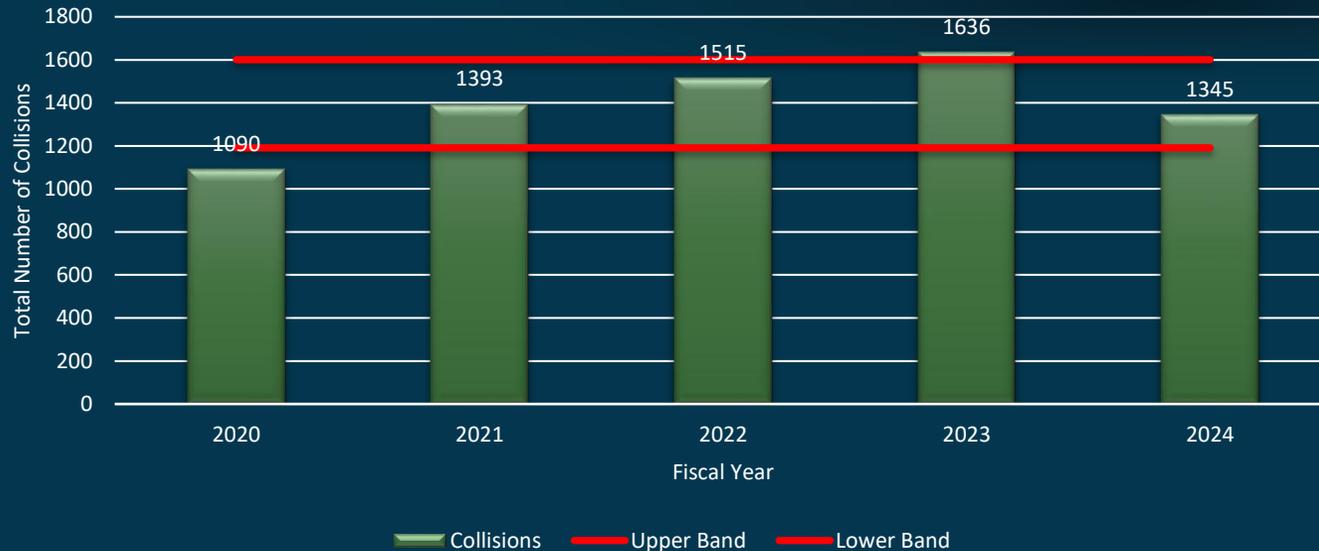


- Vehicular Collisions
- Pedacyclist Collisions
- Pedestrian Collisions

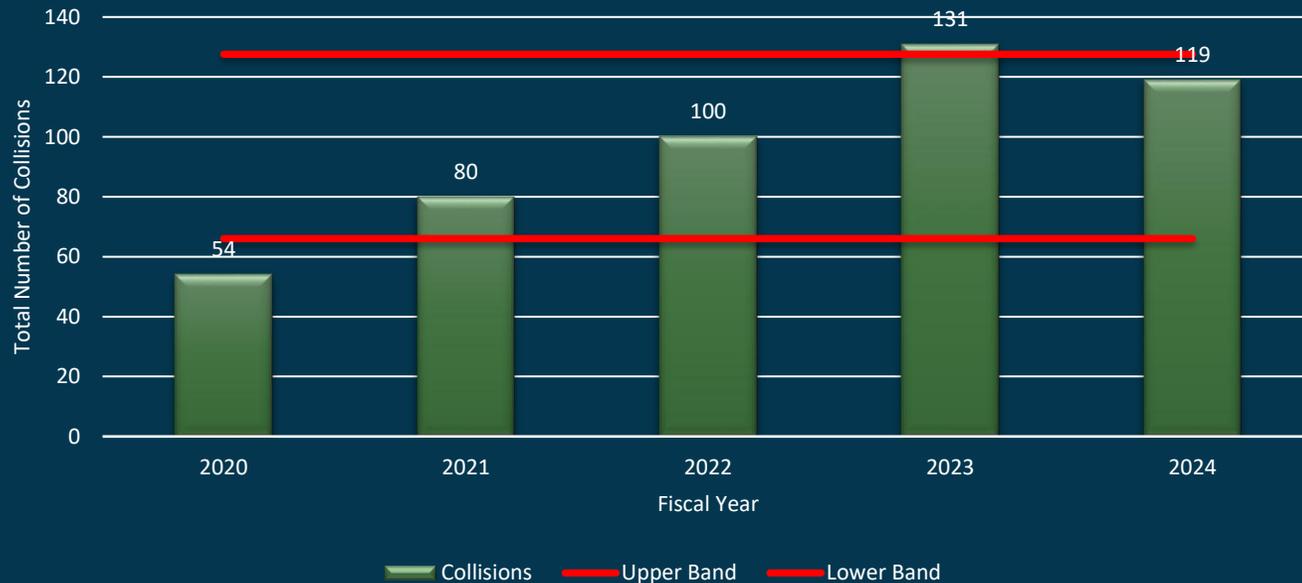


445

General Trend in Crash Volumes



Annual crash volumes have increased since 2020, peaking in 2023. Total crashes decreased by approximately 17% in 2024 when compared to 2023.



Severe + fatal crashes have increased from 2020 to 2023. The number of severe + fatal crashes decreased by approximately 9% in 2024 when compared to 2023.

Economic Value of Crash Prevention

- Value of Statistical Life (VSL) – the benefit, or the additional cost that a society would be willing to bear for traffic safety improvements to prevent an injury or a fatality
 - *US DOT Office of Transportation Policy*
 - Measure used for evaluating the benefits of transportation infrastructure investments.
 - Comprehensive. Puts a monetary value on loss of income, loss of productivity, medical expenses, loss of value to friends, family and society, due to a traffic injury or death.

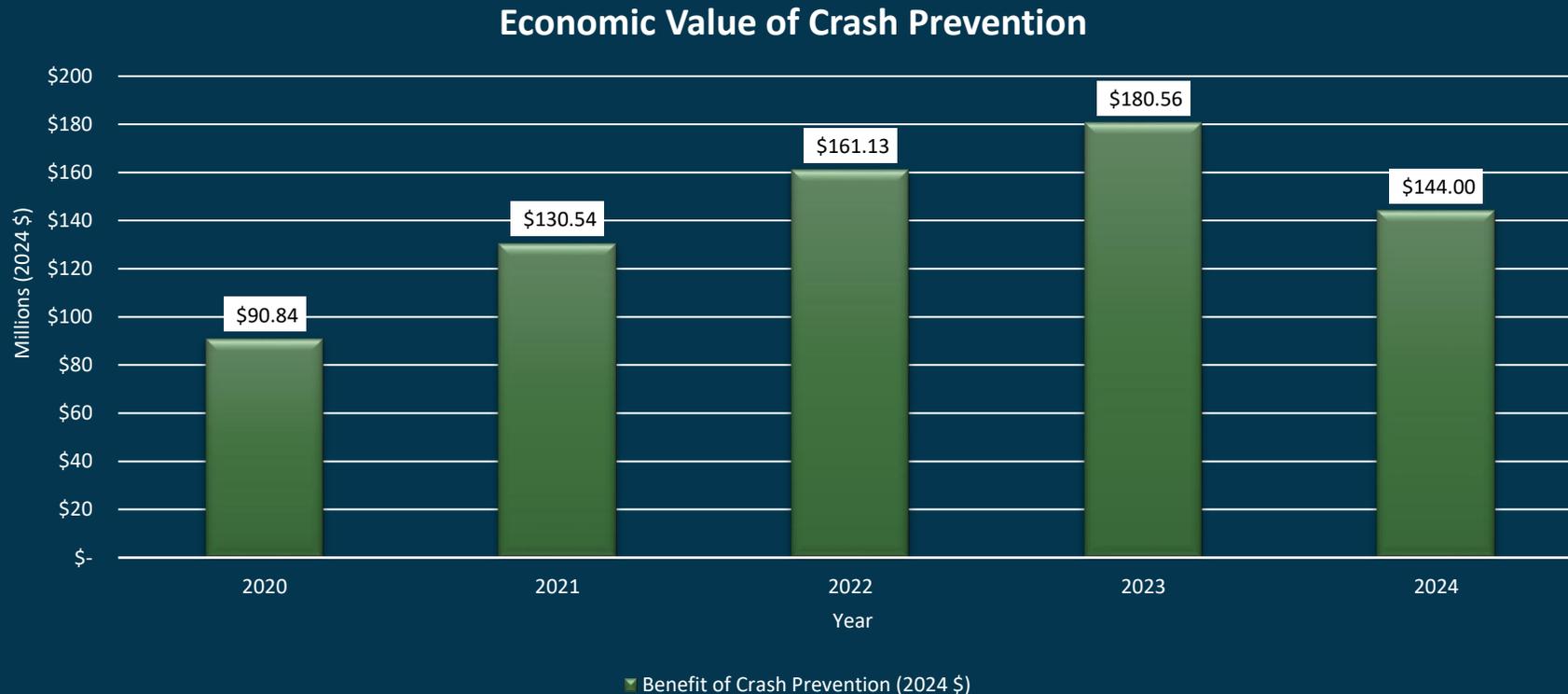
KABCO Scale

Collision Severity	Cost Per Collision
Fatal (K)	\$13,700,000
Disabling Injury (A)	\$738,158
Evident Injury (B)	\$269,974
Possible Injury (C)	\$153,441
Property Damage Only (O)	\$25,289

2024 \$ - US DOT

Economic Value of Crash Prevention

The Economic Value of crash prevention in Apex between CY 2020-2024 is \$707.07 Million (in 2024 \$)



Where Do Crashes Occur in Apex?

Traffic Signals

- Within 250 feet of a traffic signal



Roadway Segments

- Includes all other roadway crashes not associated with a traffic signal on the Public Right of Way *within Apex's Police Response Area*



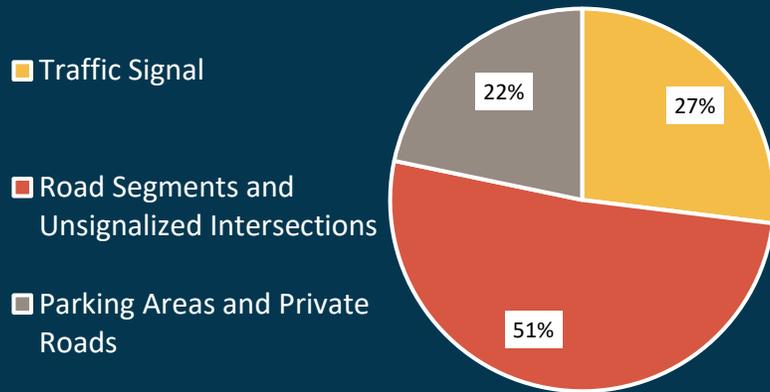
Parking Lots and Private Roads

- Crashes at any shopping location and private streets that typically serve apartments and have street side parking.

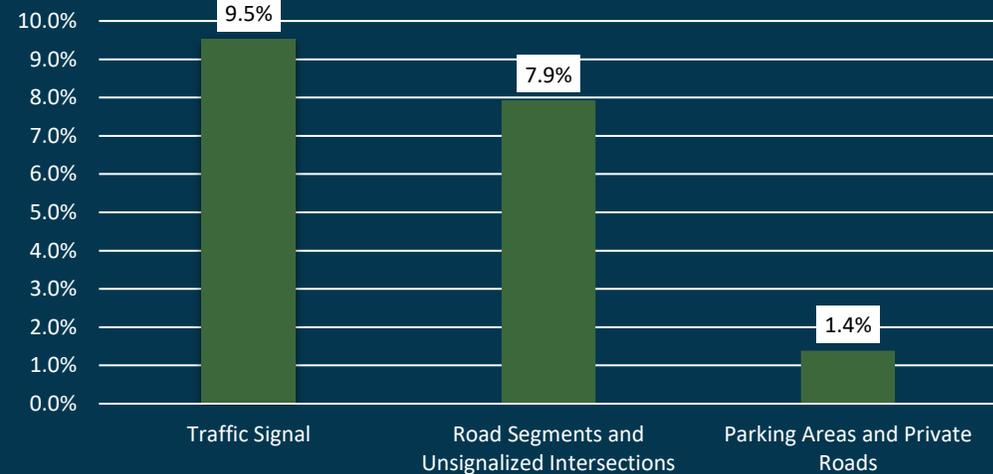


Where Do Crashes Occur in Apex?

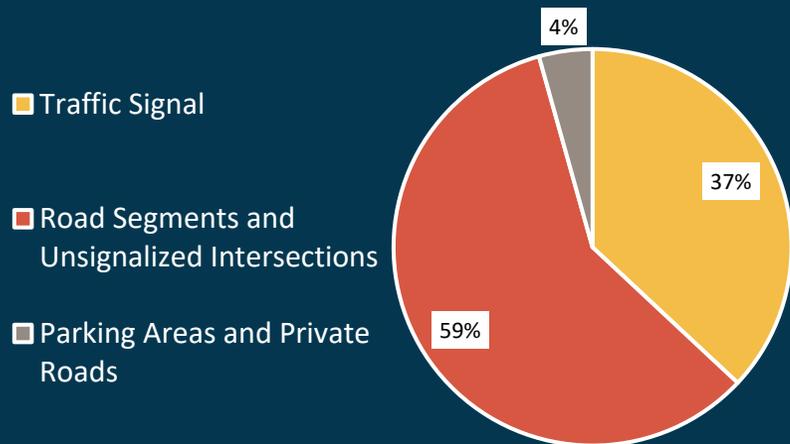
All Crashes by Location



Likelihood of Severe Injury or Fatality



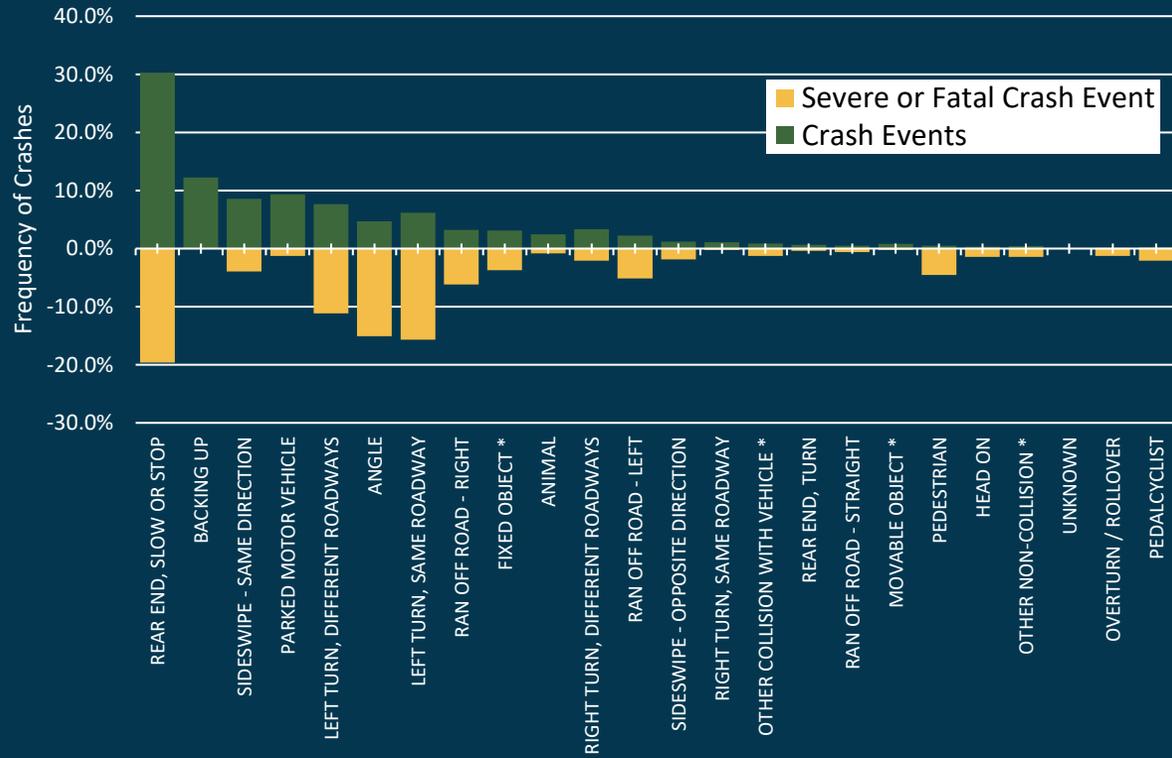
Severe and Fatal Crashes by Location



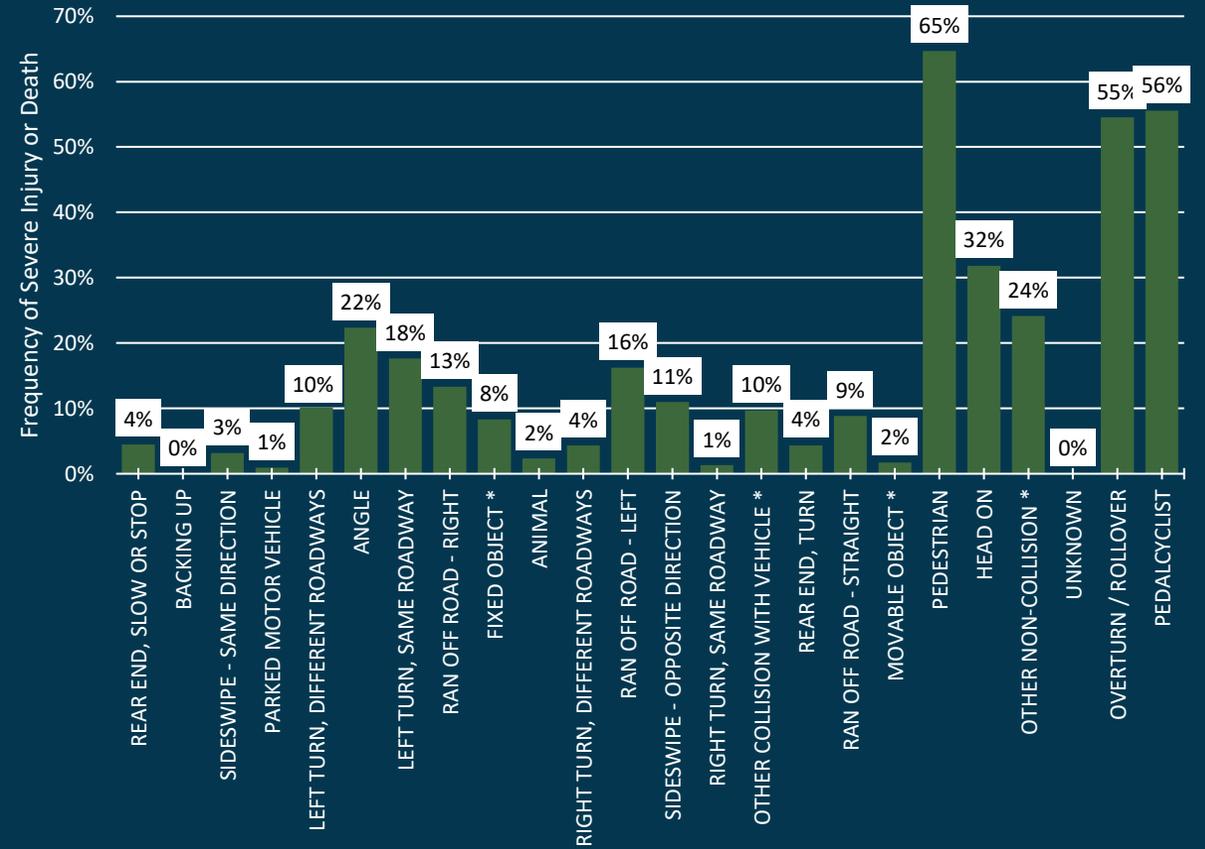
- Collisions within Public Right of Way accounts for 78% of all collisions in Apex, and 96% of all severe and fatal collisions in Apex.
- There's a higher likelihood of a severe or fatal collision occurring within the Public Right of Way than in Parking Areas and on Private Roads.
- Between 2020-2024 the most likely place to sustain a severe injury or fatality during crash was at a traffic signal.

What Events Cause a Crash?

Crash Events (2020 – 2024)



Crash Events (2020 – 2024)



What Events Cause a Crash?

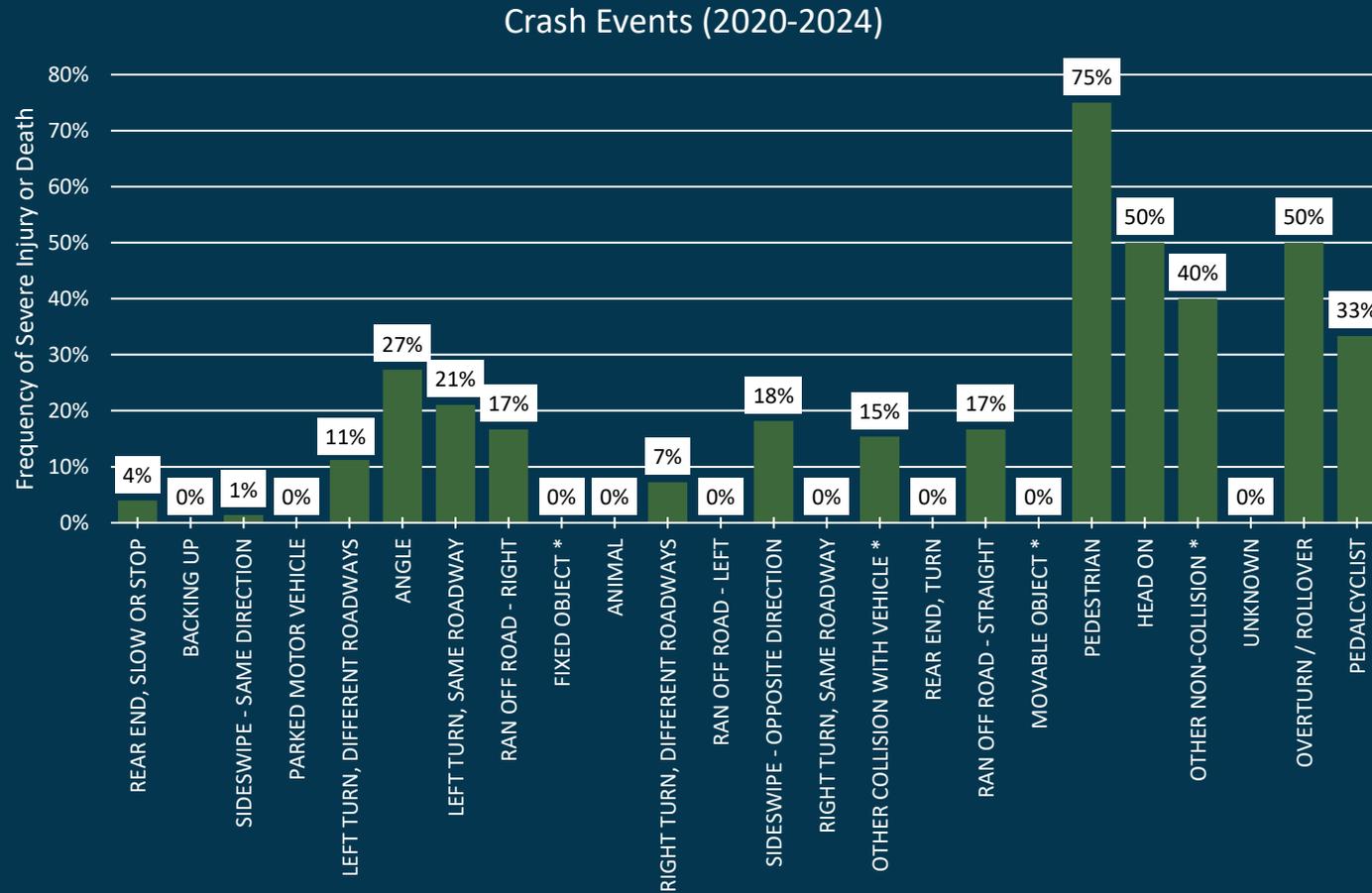
SUMMARY

- The likelihood of a severe injury or a fatality is high (above 10%) for the following types of crashes:
 - LEFT TURN DIFFERENT ROADWAYS, ANGLE, LEFT TURN SAME ROADWAY, RAN OFF ROAD - RIGHT, RAN OFF ROAD - LEFT, SIDESWIPE OPPOSITE DIRECTION, OTHER COLLISION WITH VEHICLE*, PEDESTRIAN, HEAD ON, OTHER NON-COLLISION *, OVERTURN / ROLLOVER, PEDALCYCLIST
 - These crashes account for 27.7% of all crashes but 67% of severe and fatal crashes.
 - PEDESTRIAN and CYCLIST crashes make up less than 1% of all crashes but account for 7% of severe and fatal crashes.

TOP 3 CRASH EVENTS

- REAR END, BACKING UP, and PARKED MOTOR VEHICLE crashes make up 51.9% of all crashes and 21% of severe and fatal crashes.

Most Likely Crash Events to Cause Severe Injury or Fatality at Traffic Signals



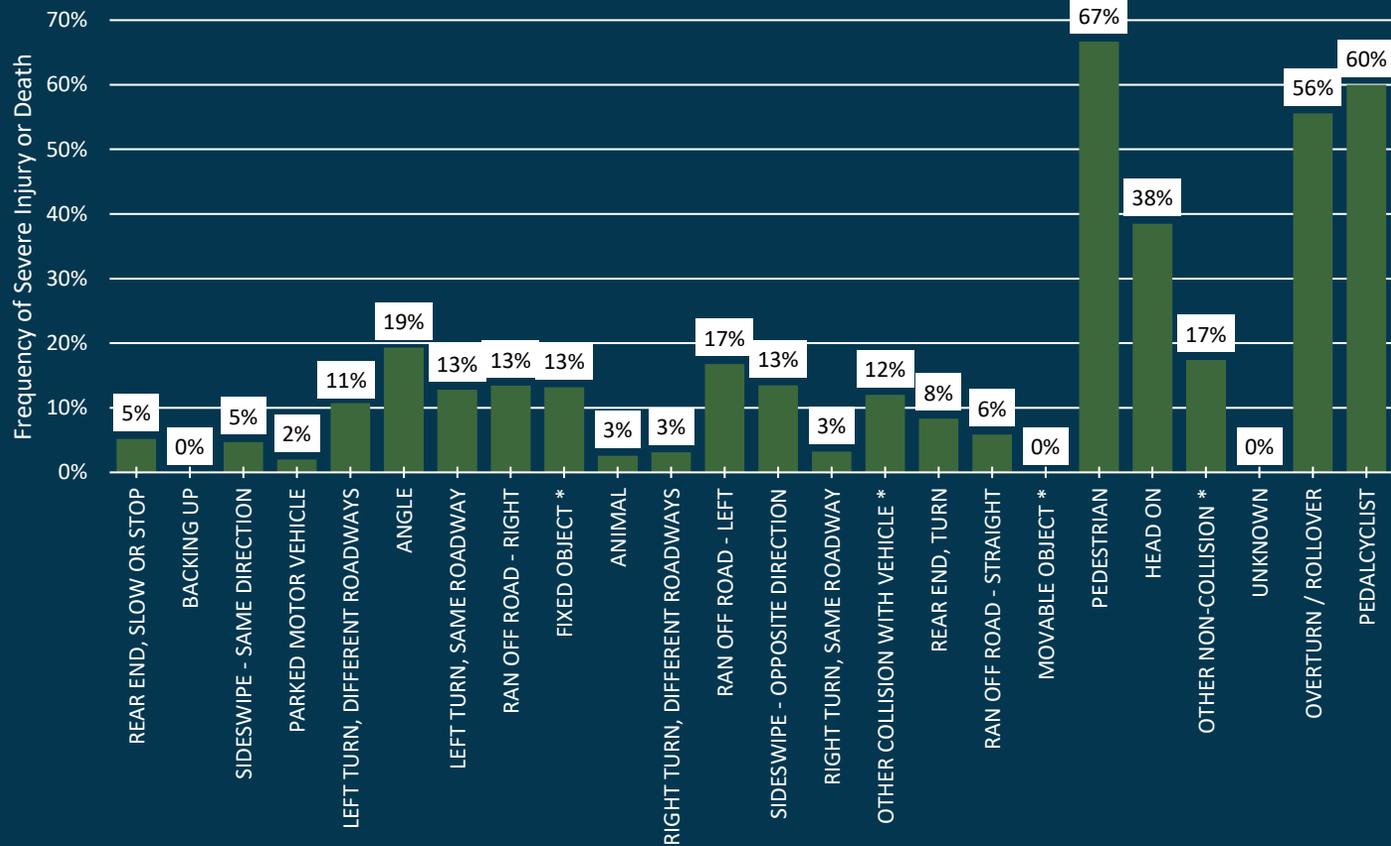
- PEDESTRIAN
- HEAD ON
- OVERTURN/ROLLOVER
- OTHER NON-COLLISION*
- PEDALCYCLIST
- ANGLE

THESE CRASH EVENTS HAVE A **25% LIKELIHOOD** OR MORE OF CAUSING A SEVERE AND/OR FATAL INJURY.

**Other Non-Collision - would include events such as: vehicle went airborne (driving off a cliff), injured in vehicle (load passes through rear window), gas inhalation (carbon monoxide), fell from vehicle, or thrown or falling object (falling tree/rock).*

Most Likely Crash Events to Cause Severe Injury or Fatality on Roadway Segments

Crash Events (2020-2024)

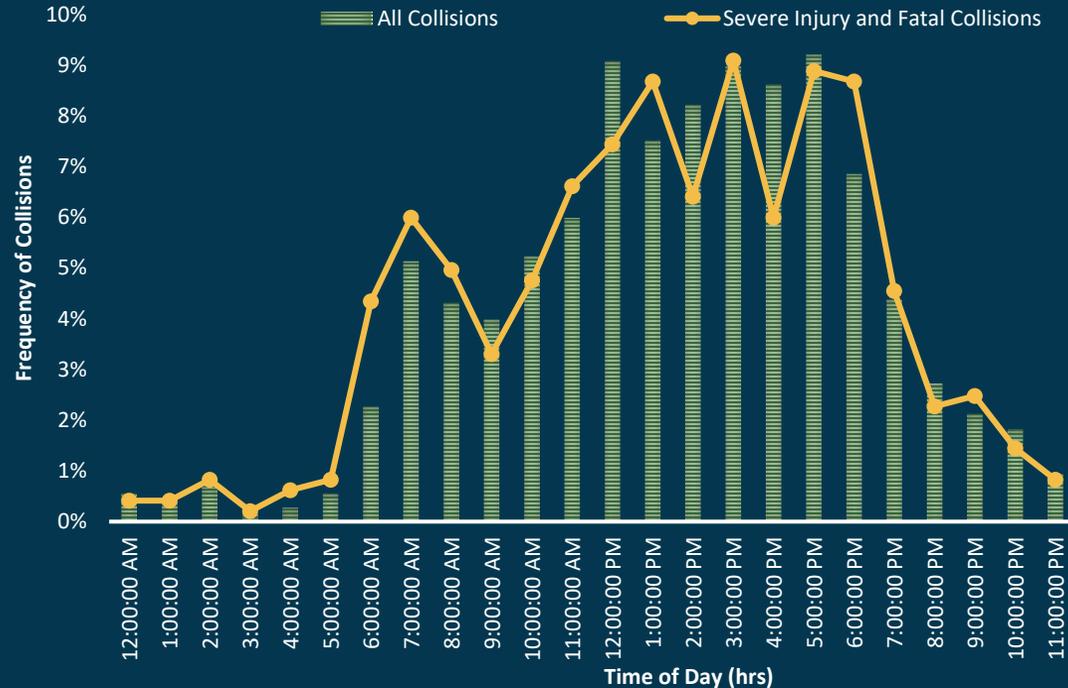


- PEDESTRIAN
- HEAD ON
- OVERTURN / ROLLOVER
- PEDALCYCLIST

THESE CRASH EVENTS HAVE A 38% **LIKELIHOOD** OR MORE OF CAUSING A SEVERE AND/OR FATAL INJURY.

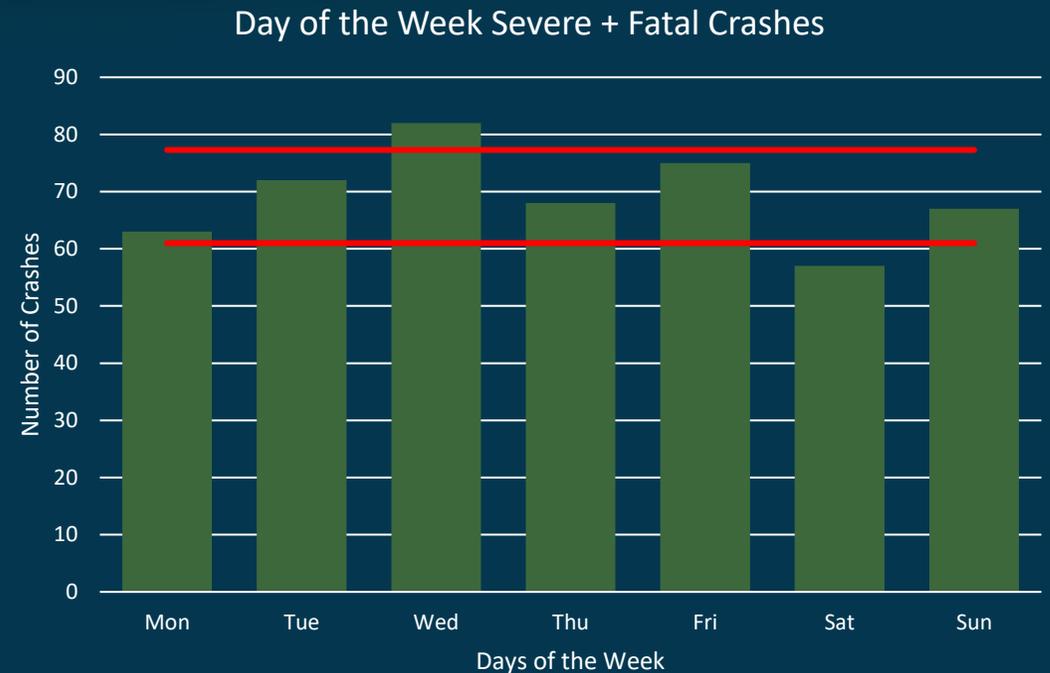
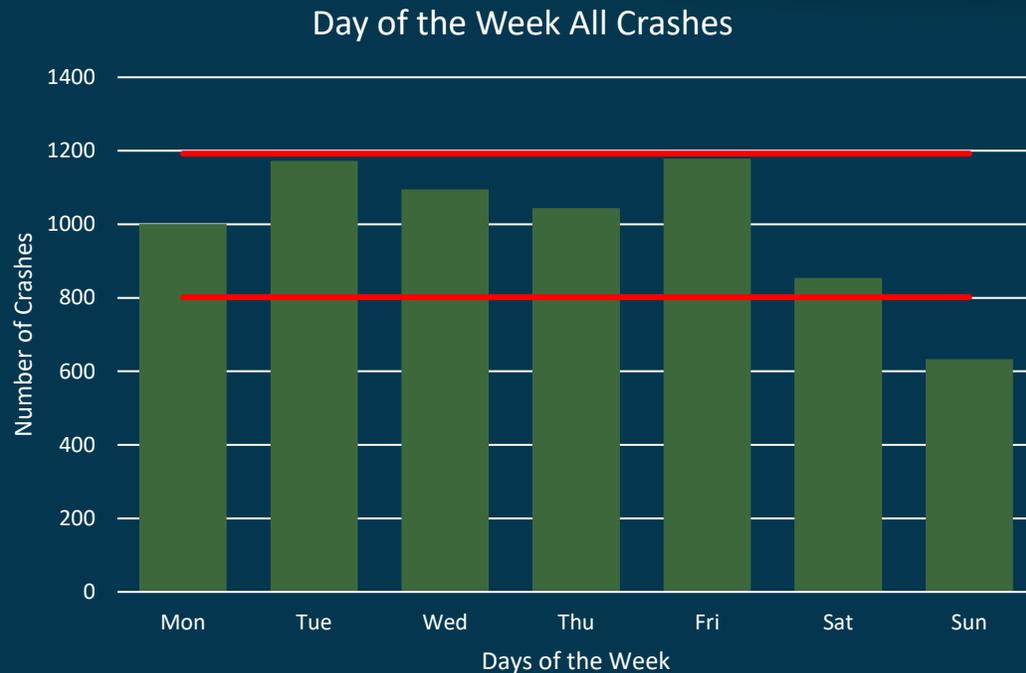
**Other Non-Collision - would include events such as: vehicle went airborne (driving off a cliff), injured in vehicle (load passes through rear window), gas inhalation (carbon monoxide), fell from vehicle, or thrown or falling object (falling tree/rock).*

What Time of Day Do Crashes Occur?



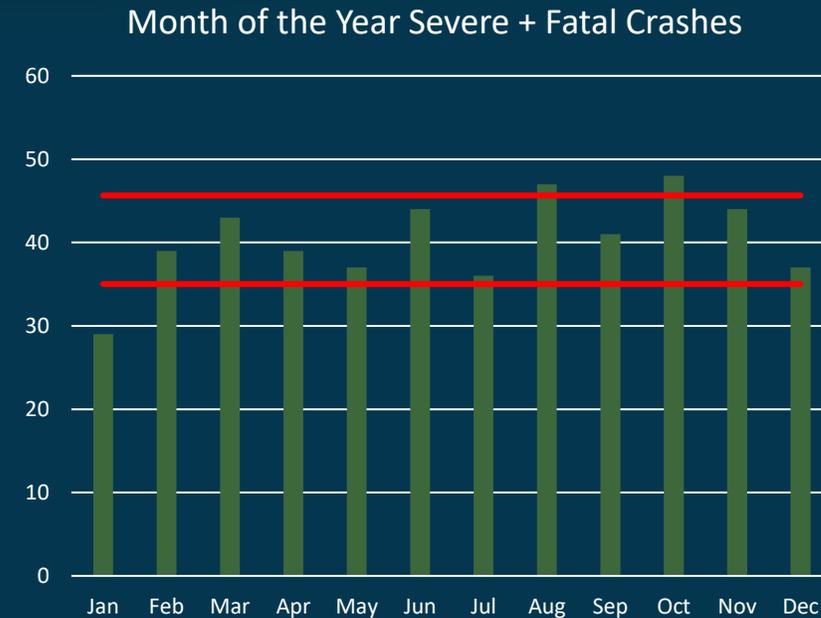
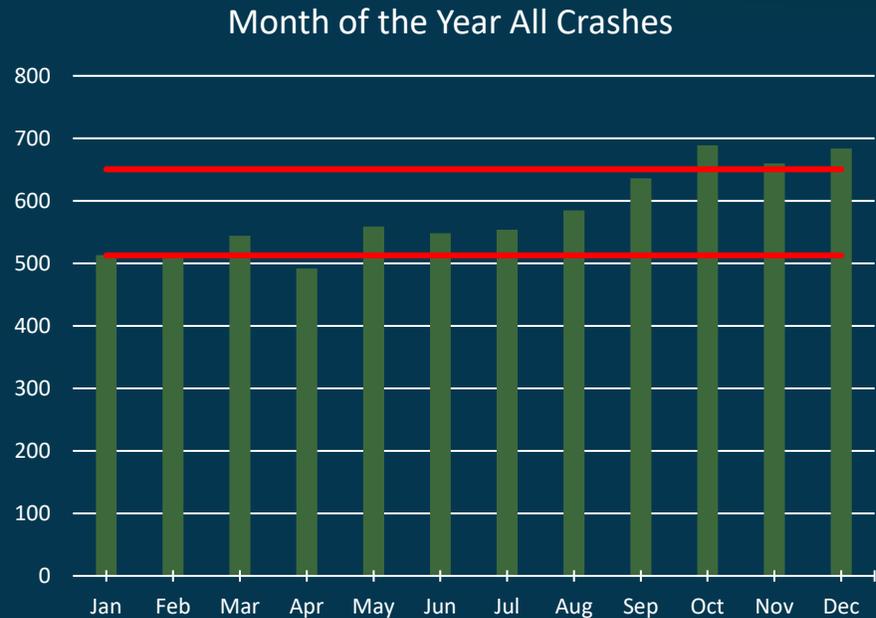
- 58% of all crashes occur between 12PM – 6PM
- Severe and Fatal crashes occur in 3 peaks:
 - 1PM – 2PM
 - 3PM – 4PM
 - 5PM – 7PM
- The peaks account for approximately 35% of all severe and fatal crashes in Apex

What day of the week do crashes occur



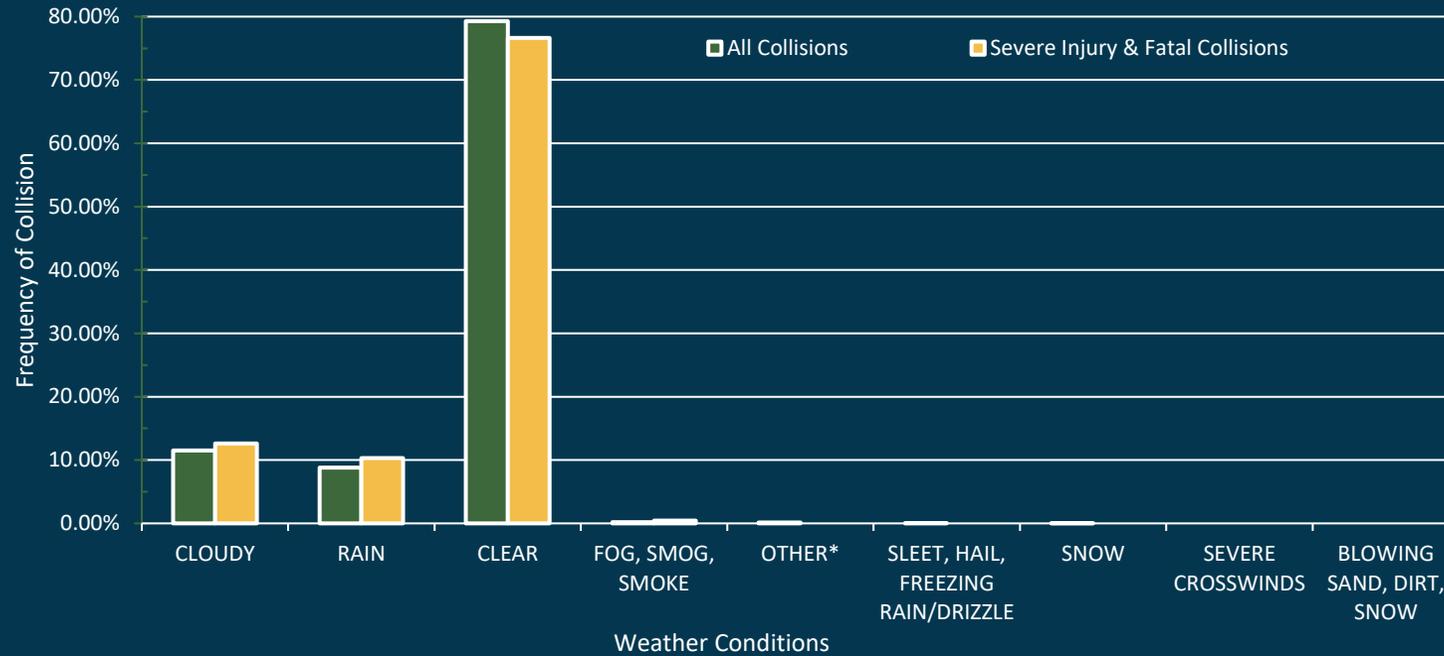
- ***Fridays*** are the highest crash day for all crashes.
- ***Wednesdays*** are the highest crash day for severe and fatal crashes.
- ***Sundays*** are the lowest crash day for all crashes.

What month of the year do crashes occur



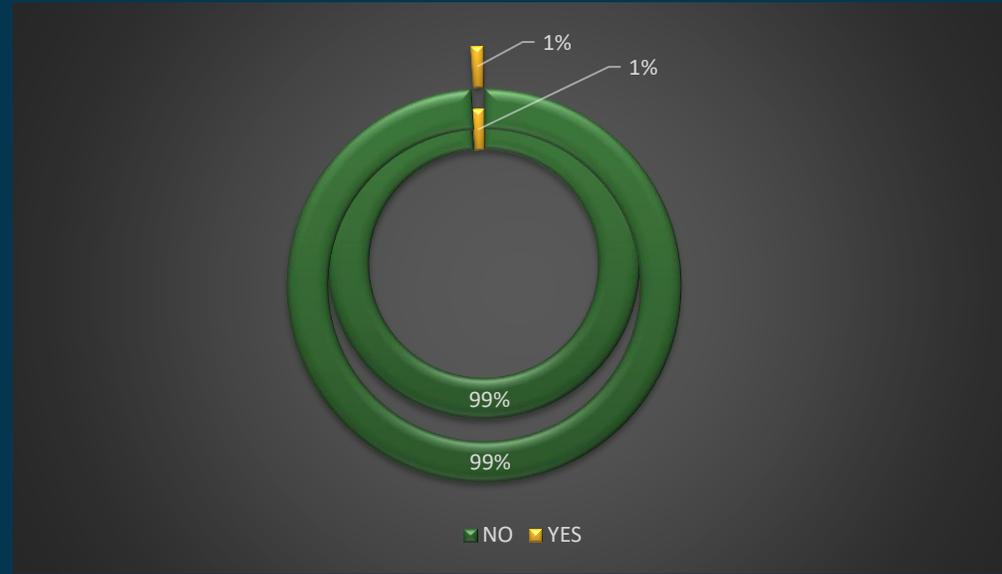
- **October, November, and December** are statistically the highest crash months of the year, while **August and October** are statistically the highest months for severe and fatal crashes.
- There's a **10% likelihood** that a crash occurring in August or October will turn out to be severe or fatal.

Does Weather Have an Impact on the Number of Crashes and Crash Severity?



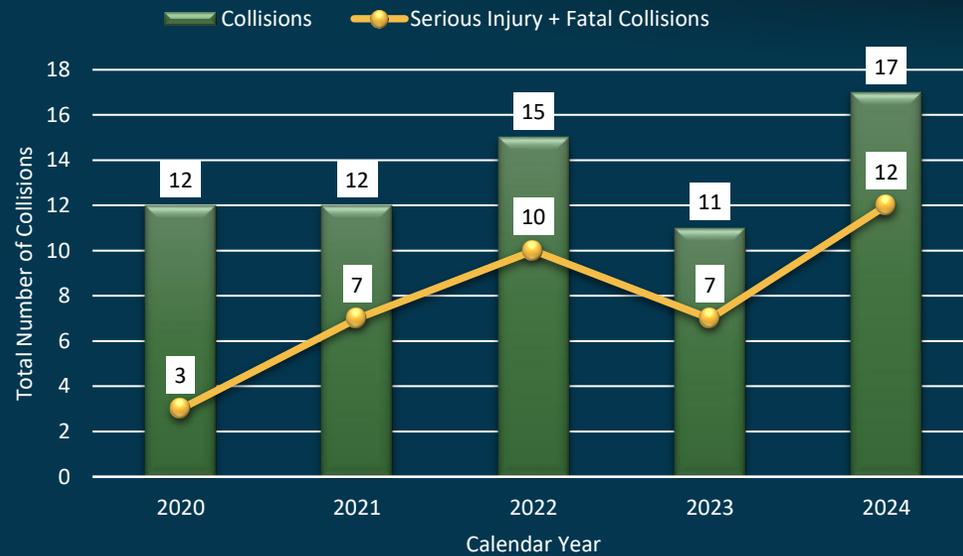
- 79% of all crashes and 77% of severe and fatal crashes occurred in dry, clear weather. Weather conditions were not seen as a significant contributing factor to crash severity.

Does Roadway Work Have an Impact on the Number of Crashes and Crash Severity?

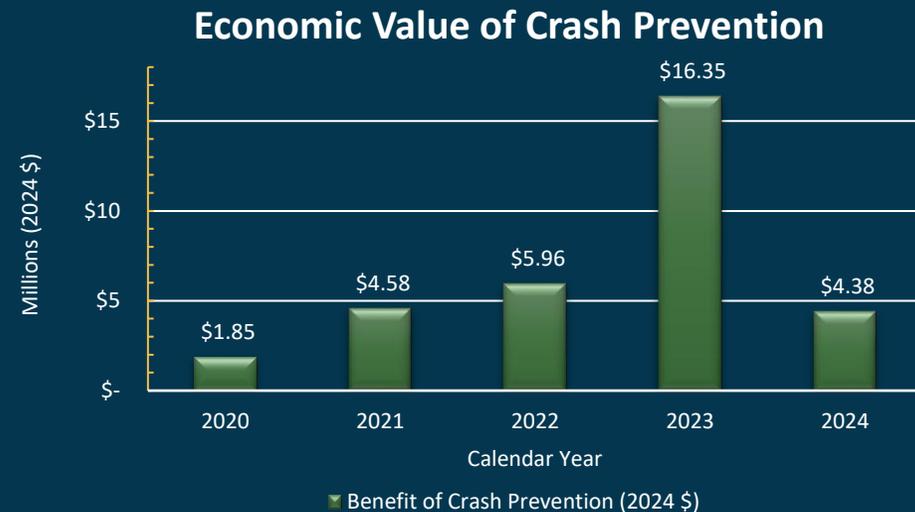


- 99% of All Crashes and 99% of Severe and Fatal crashes occurred when there was no construction activity on the road.
- Construction activity was not seen as a contributing factor to crash frequency or severity.

Pedestrian and Cyclist Crashes

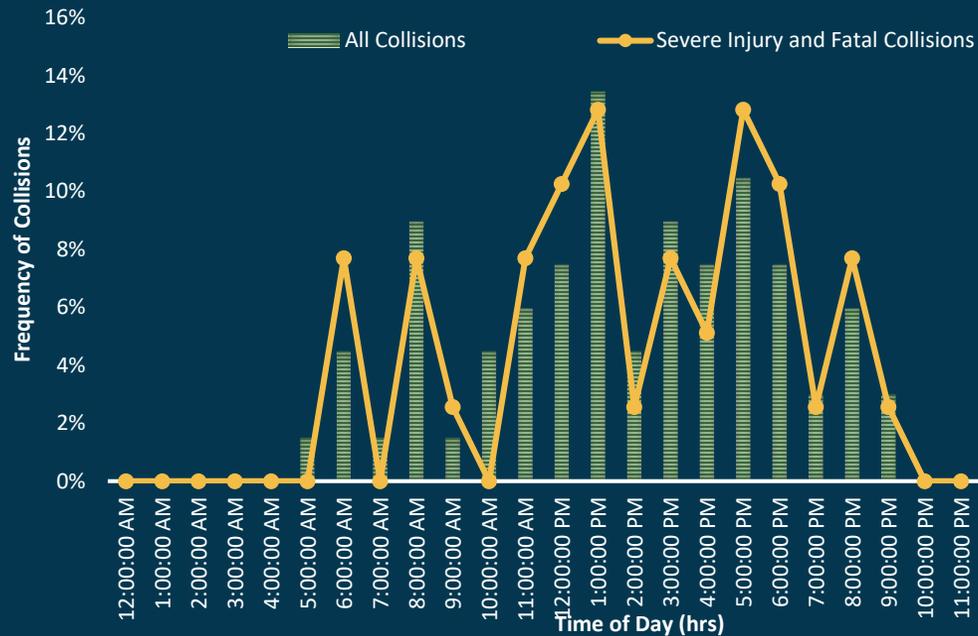


- There were 37 Pedestrian and 30 Cyclist Crashes in Apex between 2020-2024.
 - 39 (58%) were severe or fatal crashes.



- The total *economic value* of preventing pedestrian and bicycle crashes between 2020-2024 amounts to \$33.12M (2024\$)

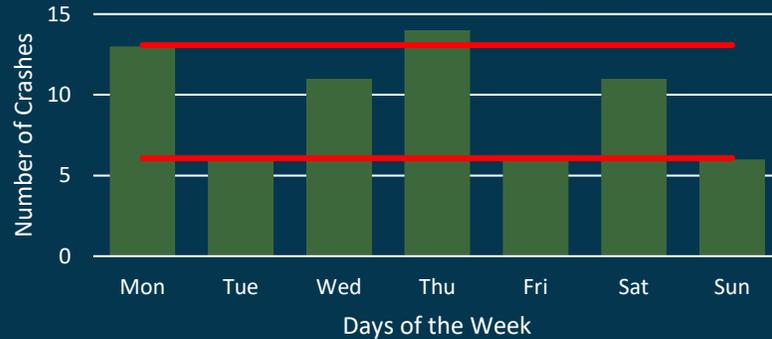
Pedestrian and Cyclist Crashes



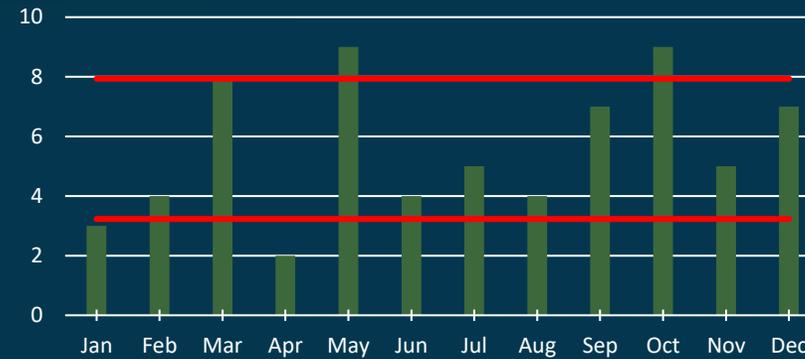
- Severe and Fatal crashes occur in 2 distinct peaks:
 - 1PM – 2PM
 - 5PM – 6PM
- The peaks account for 26% of all severe and fatal crashes for Pedestrians and Cyclists

Pedestrian and Cyclist Crashes

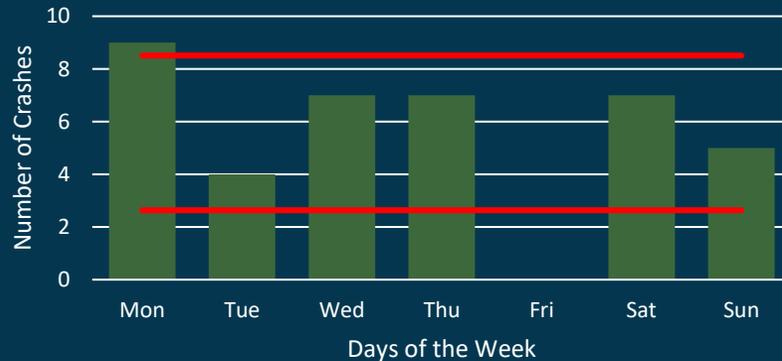
Day of the Week All Crashes



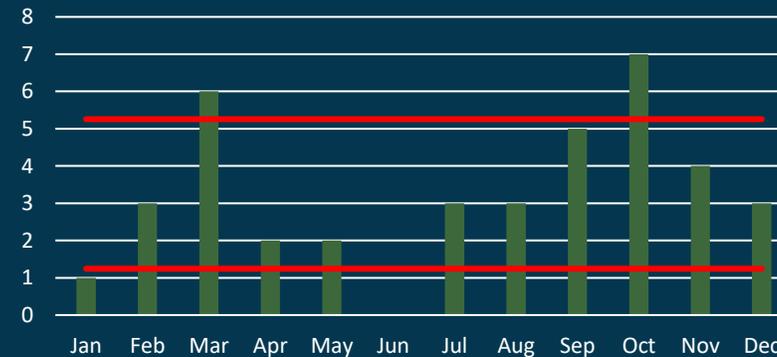
Month of the Year All Crashes



Day of the Week Severe + Fatal Crashes



Month of the Year Severe + Fatal Crashes

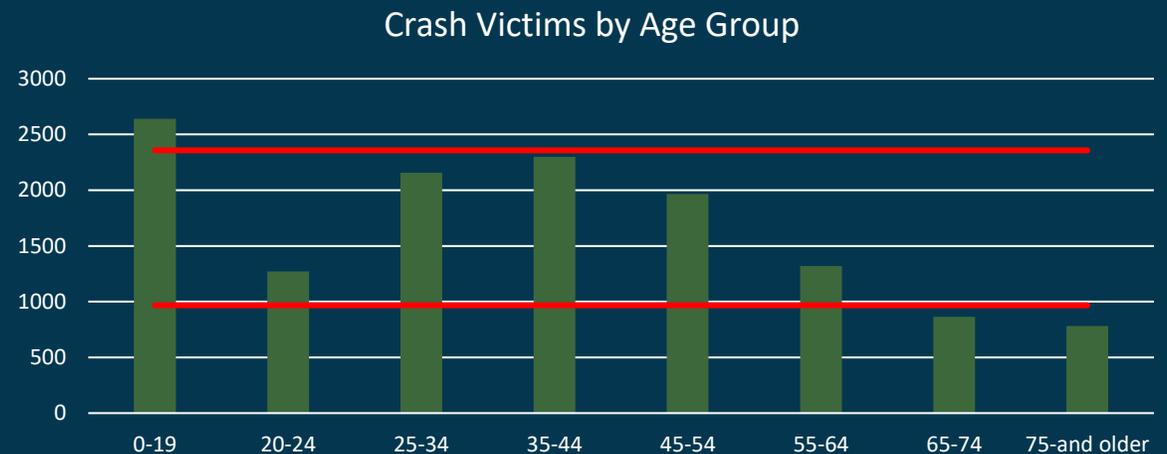
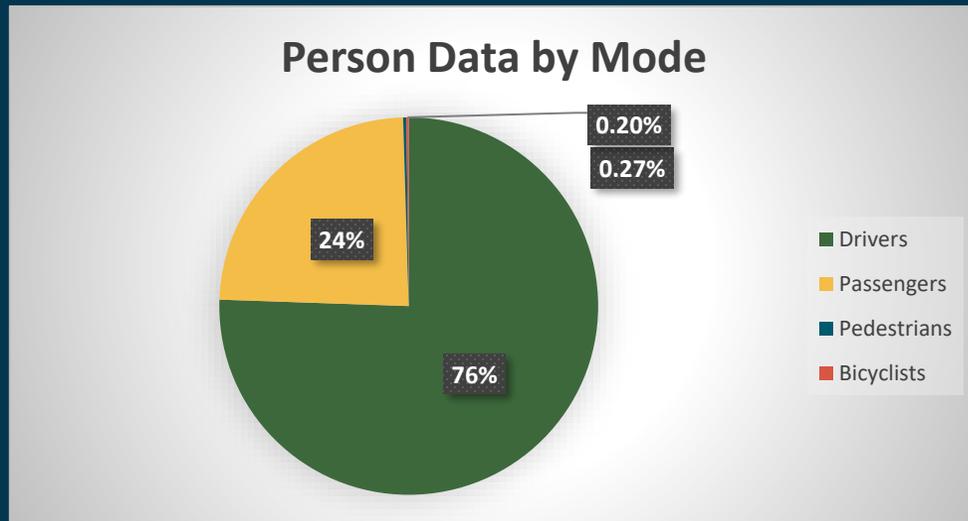


- Mondays and Thursdays experienced the greatest number of ped/bike crashes with Mondays having the greatest number of severe + fatal ped/bike crashes.

- May and October had the greatest number of ped/bike crashes, however months of March and October had the highest number of severe + fatal ped/bike crashes

Victims of Traffic Collisions

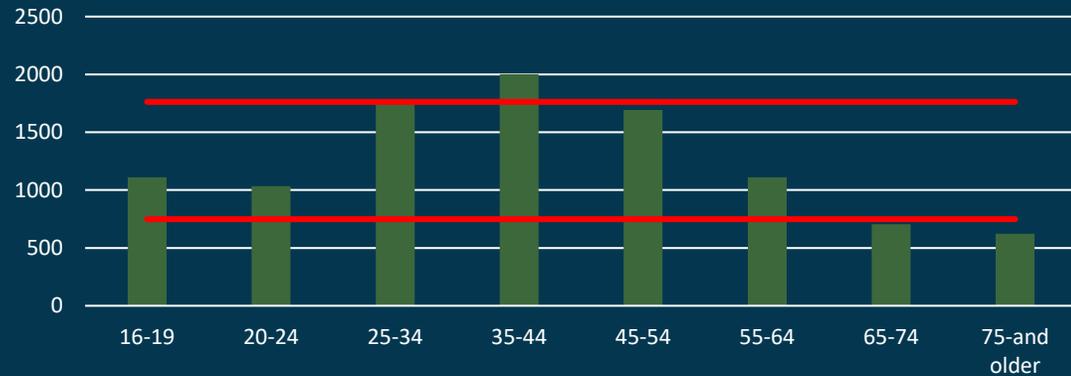
- Crash victim demographics were recorded for 6,979 crashes between 01/01/2020 – 12/31/2024
- Demographics were collected on 13,816 individuals during the collection period.



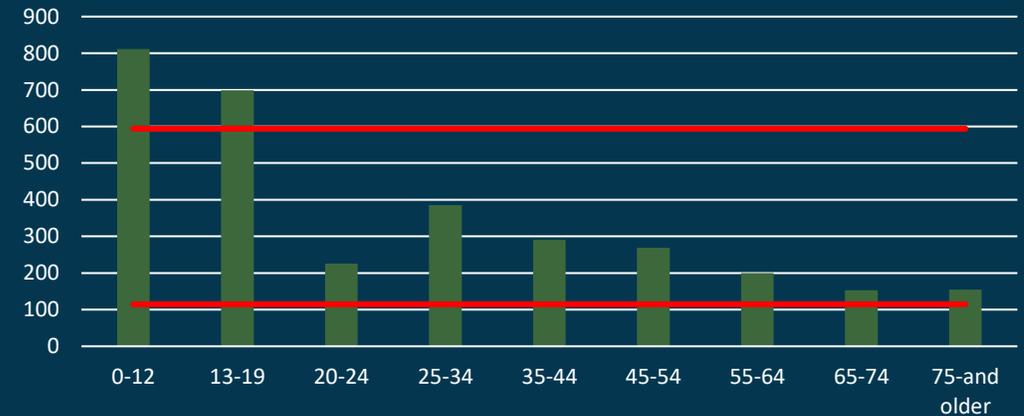
- Young people (19 years or younger) are statistically the most likely group to be involved in a crash.

Victims of Traffic Collisions

Drivers in Crashes by Age Group



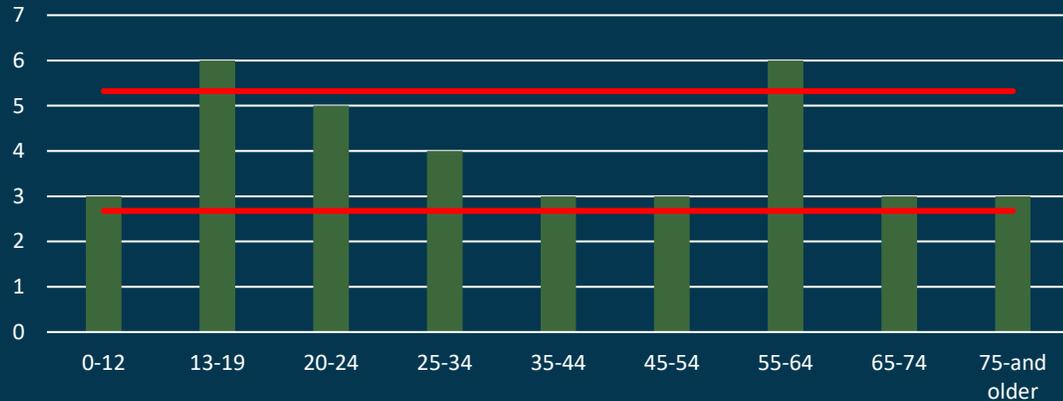
Passengers in Crashes by Age Group



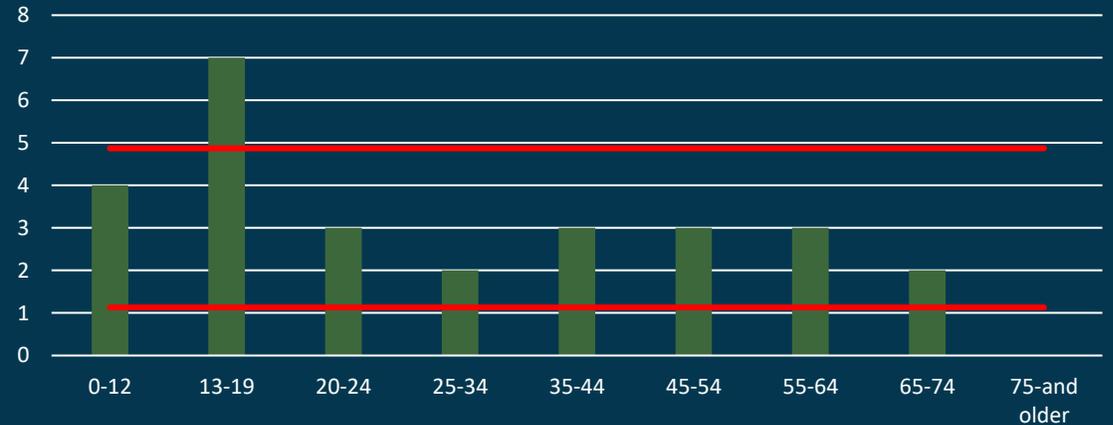
- **Drivers** Ages **35-44** are statistically the most likely group to be involved in a crash.
- **Passengers** Ages **0-12** and **13-19** are statistically the most likely group to be involved in a crash.

Victims of Traffic Collisions

Pedestrians in Crashes by Age Group



Bicyclists in Crashes by Age Group



- Demographic data was collected on 36 people involved in pedestrian crashes and 27 people involved in bicycle crashes.
- Pedestrians ages 13-19 and 55-64 are most likely to be involved in a pedestrian crash.
- Bicyclists ages of 13-19 are most likely to be involved in a bicycle crash, with bicyclists ages 0-12 being the second most likely.

Strategies for Reducing Crashes and Crash Severity



- Focus on reducing Crash Events that have a high probability of causing severe injury or death.
 - At **Traffic Signals** these are: Pedestrian, Head on, Overturn/Rollover, Other non-collision*, Pedalcyclist, Angle
 - On **Roadway Segments** these are: Pedestrian, Head on, Overturn/Rollover, Pedalcyclist

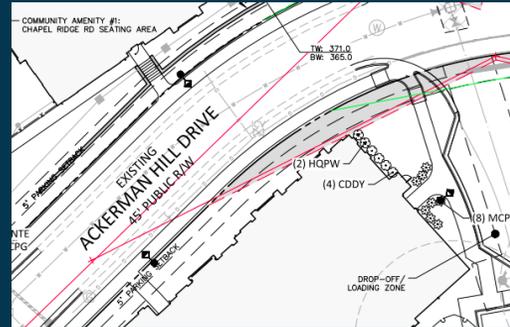
Strategies for Reducing Crashes and Crash Severity



Countermeasure Considerations - Roadway Segments

Visibility

- Ensure minimum AASHTO intersection sight distance is provided at stop-controlled intersections.
- Ensure midblock and uncontrolled crosswalks are visible, lighted, and meet the latest *STEP Guide for Improving Pedestrian Safety at Uncontrolled Crossing Locations*.



Infrastructure

- Provide rumble strips through horizontal curvature on 2-lane rural roads on the High Injury Network.
- Remove or protect strike hazards in clear zones on High Injury Network roadway segments.



Signing and Markings

- Provide buffered bicycle lanes and bicycle signage on high-speed facilities that are on Apex's bicycle plan.
- Provide bicycle markings through intersections.

Strategies for Reducing Crashes and Crash Severity



Focus on Distracted Driver Prevention campaigns.

- [Don't Drive Distracted. Eyes Forward. | Traffic Safety Marketing](#)
- [Put the Phone Away or Pay | Traffic Safety Marketing](#)

Focus on Child Safety in Vehicle campaigns.

- [Child Safety | Traffic Safety Marketing](#)

Why?

- ***Parents with kids in the car are statistically the most likely group to be involved in a crash in Apex.***
 - ***Drivers Ages 35-44*** are statistically the most likely group to be involved in a crash.
 - ***Passengers Ages 0-12 and 13-19*** are statistically the most likely group to be involved in a crash



Strategies for Reducing Crashes and Crash Severity



In May focus on Bike Safety for National Bicycle Safety Month.

- Conduct Social Media Campaigns via Talking Points.
- Provide In-Person educational campaigns and flyers at Schools and Apex's Community Center.
- Reference Link: [Bicycle Safety | Traffic Safety Marketing](#)

Why?

- Bicyclists ages of 13-19 are most likely to be involved in a bicycle crash, with bicyclists ages 0-12 being the second most likely.



Strategies for Reducing Crashes and Crash Severity



In October focus on Pedestrian Safety for National Pedestrian Safety Month.

- **Conduct Social Media Campaigns via Talking Points.**
- **Provide In-Person educational campaigns and flyers at Schools and Apex's Community and Senior Centers.**
- **Reference Link: [Pedestrian Safety | Traffic Safety Marketing](#)**

Why?

- **Pedestrians ages 13-19 and 55-64 are most likely to be involved in a pedestrian crash.**



Strategies for Reducing Crashes and Crash Severity



- **Focus on targeted police enforcement on the High Injury Network during the following “high risk times”:**
 - *Months of August and October*
 - *Days of Fridays and Wednesdays*
 - *Hours of 1PM-2PM, 3PM-4PM and 5PM-7PM (School PM peak hours and commuter afternoon peak)*
- **Maintain a first response strategy between Apex Police and Fire to respond to incidents during these high risk times.**
- **Why?**
 - **These are the times with the highest likelihood of roadway crashes resulting in a severe or fatal injury to occur on Apex Roads. Enforcement and First Response can make a difference between life and death.**

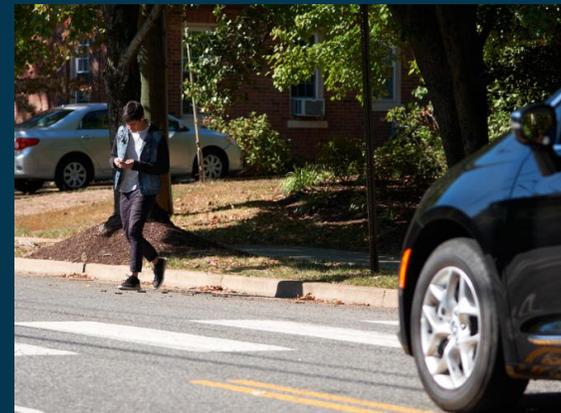


Strategies for Reducing Crashes and Crash Severity



- Focus on enforcement of pedestrian and bicyclist activities during the months of March and October. Issue warnings and citations for:

- Distracted Walking
- Distracted Biking
- Failure to use crosswalk push buttons
- Darting/Reckless Behavior



- Why?
 - These are the months with the highest likelihood of pedestrian or a cyclist crash resulting in a severe or fatal injury. Contributing factors to ped/bike crashes show that pedestrians and bicyclists need to hold accountability for traffic violations.

Strategies for Reducing Crashes and Crash Severity



- **Encourage Safe Walking and Bicycling practices through partnerships with schools, social media campaigns, and flyers during the October and May Educational Months.**
 - **Include educational campaign flyers around Town's Parks and Rec facilities.**
 - **Include a Parks and Rec staff member in Apex's Vision Zero Task Force to coordinate educational campaigns throughout the year.**
- **Why?**
 - **This makes the Town's Vision Zero marketing material more visible and helps spread the message of Vision Zero throughout Apex.**

Strategies for Reducing Crashes and Crash Severity



- **Continue efforts in data and policy evaluation:**
 - **Develop engineering safety countermeasure projects to address crashes on the high injury network.**
 - **Continue development of a proven countermeasures toolbox and documentation for reducing crashes Town-wide.**
 - **Continue evaluation of transportation policy with a focus on policy changes that reduce crash severity.**
 - **Evaluate the staffing resources needs of the Traffic Safety Unit within Apex's Police Department to make a meaningful contribution to Apex's enforcement strategies. Evaluate the benefit of crash prevention through traffic enforcement strategies versus other departmental resource needs.**