

2018 Traffic Crash Analysis

Prepared for: Lt. Michael May, APD Traffic Safety Section

Prepared by: Amanda Caligiuri between 3/15/2019-3/22/2019

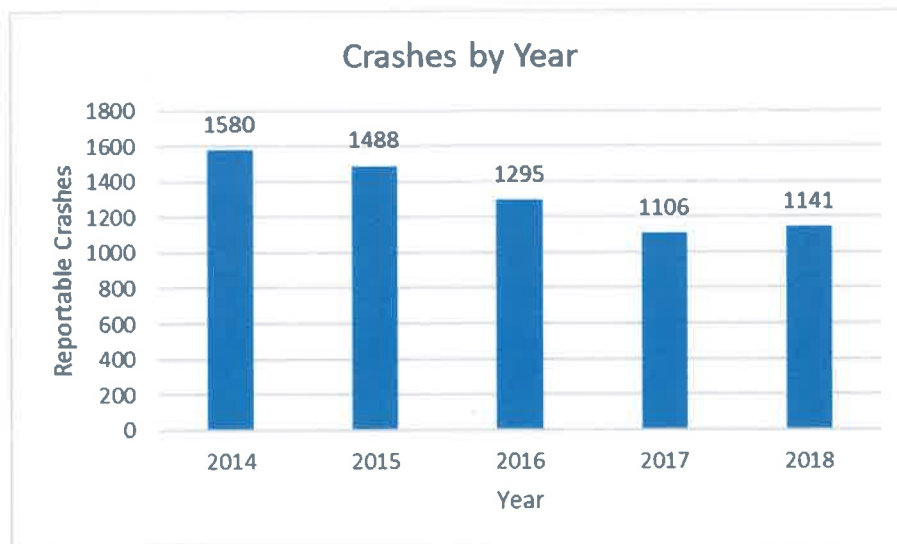
Annual Evaluation of Traffic Enforcement Program

Traffic Crash Analysis

The following summarizes traffic crash data for Calendar Year (CY) 2018 and provides an analysis of crash trends according to various factors.

There were a total of 1141 crashes in the CY 2018. This total represents an increase of 3.2% in crashes from CY 2017 and a decrease of 13.7% from the five-year average.

Crash Profile Analysis:



Note: Crashes by Year: Total crashes by year in PRISM Crash Module. The number listed is 1142 but there is a duplicated entry.

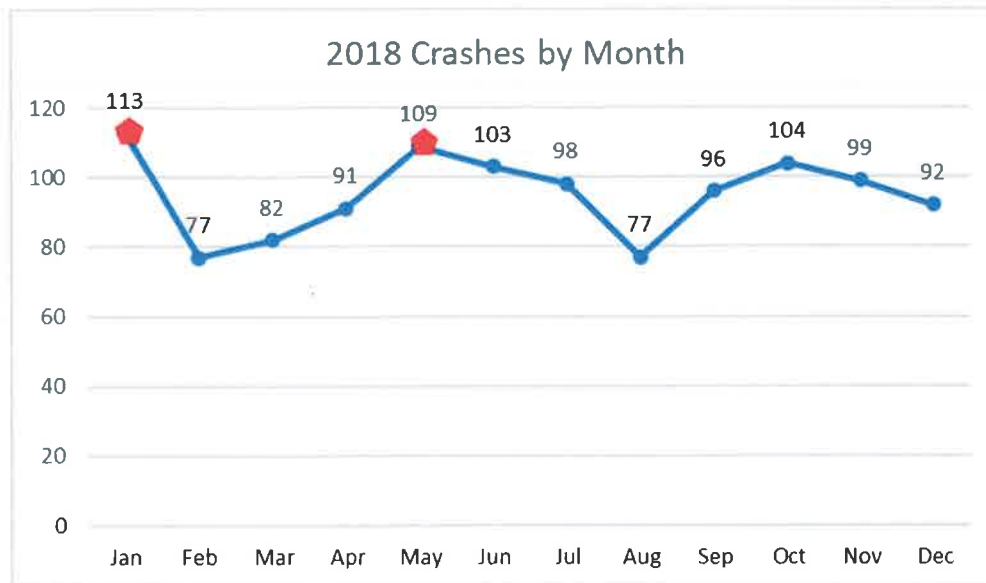
Crashes by Month

The greatest number of crashes for 2018 occurred in the months of January (113) and May (109). The number of crashes that occurred during the listed two months in 2018 accounted for 19.5% of the total crashes for 2018.

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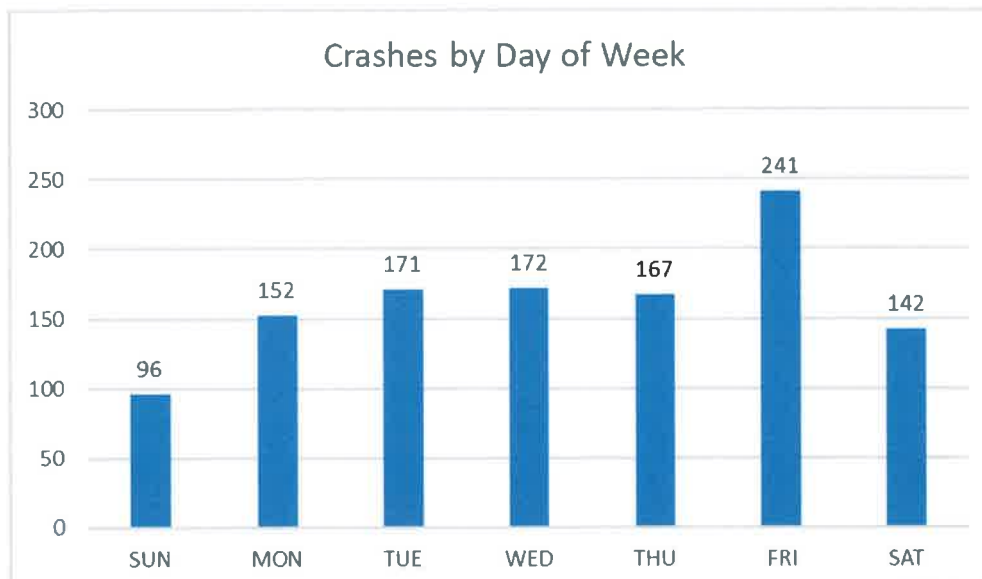
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Note: Crashes by Year: Total crashes by year in PRISM Crash Module, filtered by Month.

Crashes by Day of Week

Following 2017's trend, the day of the week with the most crashes in 2018 was again Friday (241) accounting for 21.1% of the total crashes. Wednesday was next with 172 crashes or 15.1% of the total and Tuesday had 171 of the crashes, which accounted for 15.0% of the total crashes.



Note: Crashes by Year: Total crashes by year in PRISM Crash Module, filtered by Day of the Week.

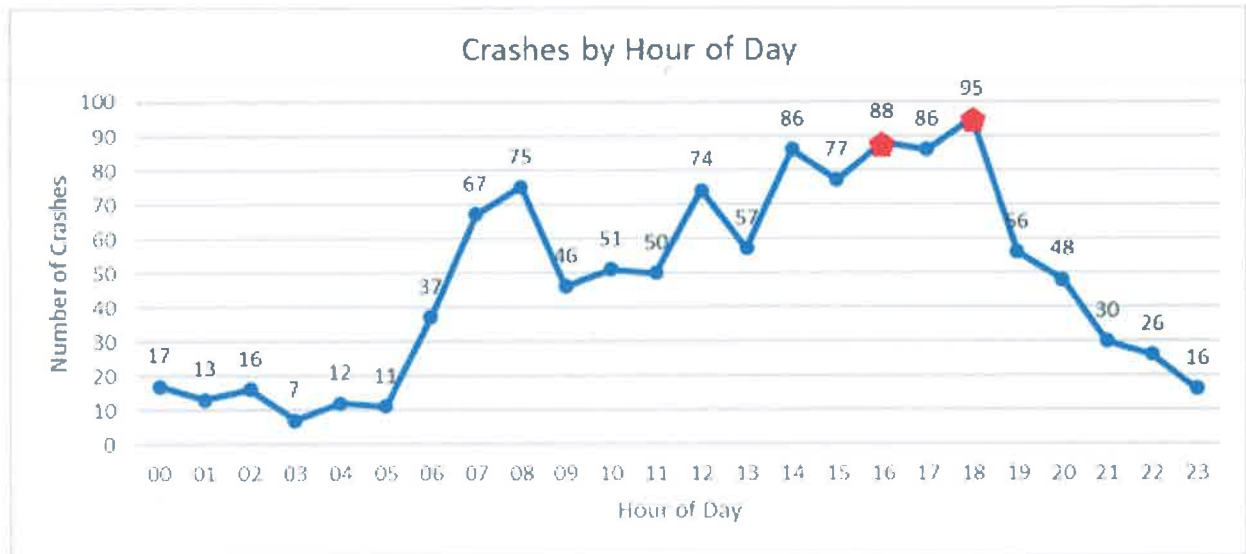
Crashes by Timeframe

The highest number of crashes (95) occurred between 6:00pm and 6:59pm, with the second highest (88) between 4:00pm and 4:59pm. These two timeframes represent 16.0% of the total crashes for CY 2018. They appear to correlate directly with the increased traffic volumes that are a part of afternoon rush hours.

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Crashes by Location, Weather and Road Conditions

A contributing factor in 21.1% (241) of all crashes was inclement weather.

Weather Condition	Count
No Adverse Conditions	900
Rain	217
Mist	11
Snow	9
Fog	1
Other	1
Sleet or Hail	1
Severe Crosswinds	1
Smoke or Dust	0
Grand Total	1141

A contributing factor in 2.8% (32) of all crashes was poor or altered road conditions.

Roadway Conditions	Count
No Defects	1109
Slick Pavement	26
Holes, Ruts, or Bumps	4
Restricted Width	1
Under Repair	1
Loose Material	0
Edge Pavement Drop Off	0
Other	0
Grand Total	1141

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A contributing factor in 31.7% (362) of all crashes was insufficient or lack of lighting on the roadway.

Lighting Conditions	Count
Daylight	777
Darkness - Road Lighted	260
Dusk	51
Dawn	37
Darkness - Road Not Lighted	11
Unknown	2
Darkness - Unknown Road Lighting	3
Grand Total	1141

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Crashes by Event Type

The two most common types of collisions were angle and rear end. These two types alone comprised 70.2% (801) of all crashes in CY 2017. Angle crashes were 39.9% (455) and rear end crashes were 30.3% (346).

Primary Crash Event	Count
Angle	455
Rear End	346
Sideswipe - Same Direction	116
Pedestrian	57
Fixed Object - Off Road	71
Head On	23
Other	36
Sideswipe - Opposite Direction	13
Backed Into	12
Fixed Object - In Road	8
Non-collision	3
Deer	1
Grand Total	1141

TOP 2018 CRASH LOCATIONS BY SECTOR

2018 Top Crash Locations - Sector 1	Count
DUKE ST & TELEGRAPH RD	19
MILL RD & TELEGRAPH RD	10
N WASHINGTON ST & ORONOCO ST	9
MADISON ST & N WASHINGTON ST	8
CAMERON ST & N PATRICK ST	6
DUKE ST & S HENRY ST	6
FIRST ST & N WASHINGTON ST	6
FRANKLIN ST & S PATRICK ST	5
CALLAHAN DR & DUKE ST	5
FRANKLIN ST & S WASHINGTON ST	5

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2018 Top Crash Locations - Sector 2	Count
E REED AVE & RICHMOND HWY	9
VALLEY DR & W GLEBE RD	9
E GLEBE RD & RICHMOND HWY	5
N QUAKER LN & SHIRLINGTON CIR	4
RICHMOND HWY & POTOMAC AVE	4
RUSSELL RD & W GLEBE RD	4
CALLAHAN DR & KING ST	3
E MONROE AVE & MOUNT VERNON AVE	3
RUSSELL RD & W WINDSOR AVE	3

2018 Top Crash Locations - Sector 3	Count
I395 HWY & SEMINARY RD	14
N BEAUREGARD ST & SEMINARY RD	12
MARK CENTER AVE & SEMINARY RD	11
DUKE ST & S WALKER ST	10
DUKE ST & N QUAKER LN	9
KENMORE AVE & SEMINARY RD	9
EDSALL RD & S PICKETT ST	7
KENMORE AVE & N VAN DORN ST	7
DUKE ST & N PAXTON ST	6
DUKE ST & WITTER DR	6
DUKE ST & YALE DR	6
EISENHOWER AVE & S VAN DORN ST	6
KING ST & PARK CENTER DR	6
LIBRARY LN & SEMINARY RD	6
N BEAUREGARD ST & W BRADDOCK RD	6
N QUAKER LN & SEMINARY RD	6

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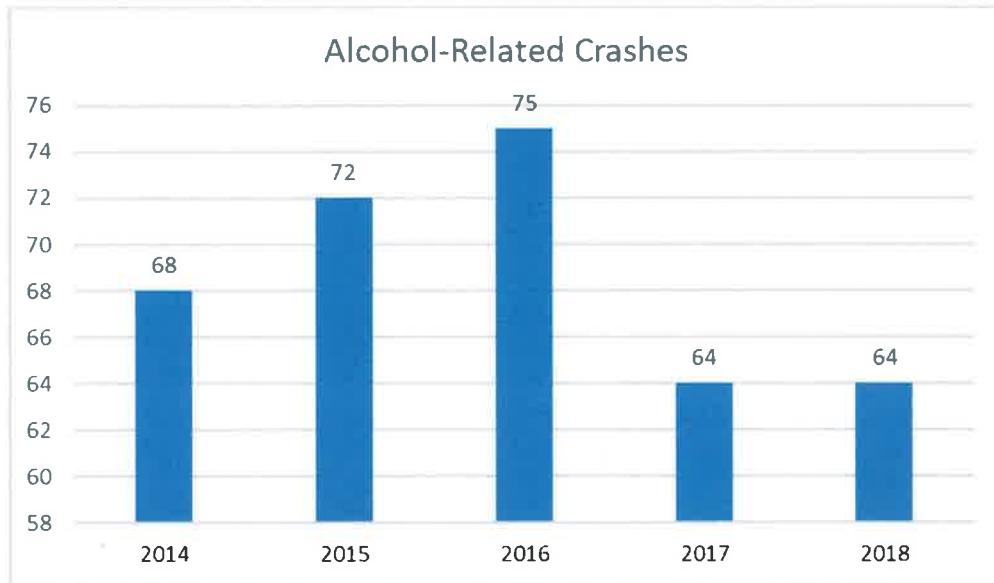
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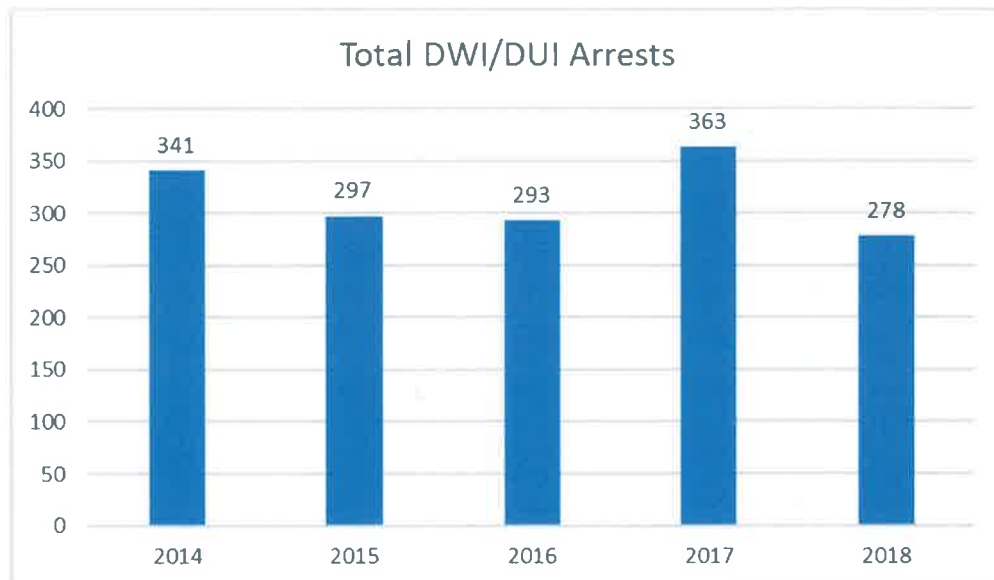
Alcohol-Related Crashes

There were 64 crashes where alcohol was a contributing factor in CY 2018.

This number was the same as CY 2017 and represents a 14.7% decrease from CY 2016.



Note: Alcohol-related crashes: Total crashes by year in PRISM Crash Module, with two filters: (1) Alcohol Use: All "Drinking" options selected & (2) Location of Vehicle: "Driver" selected.



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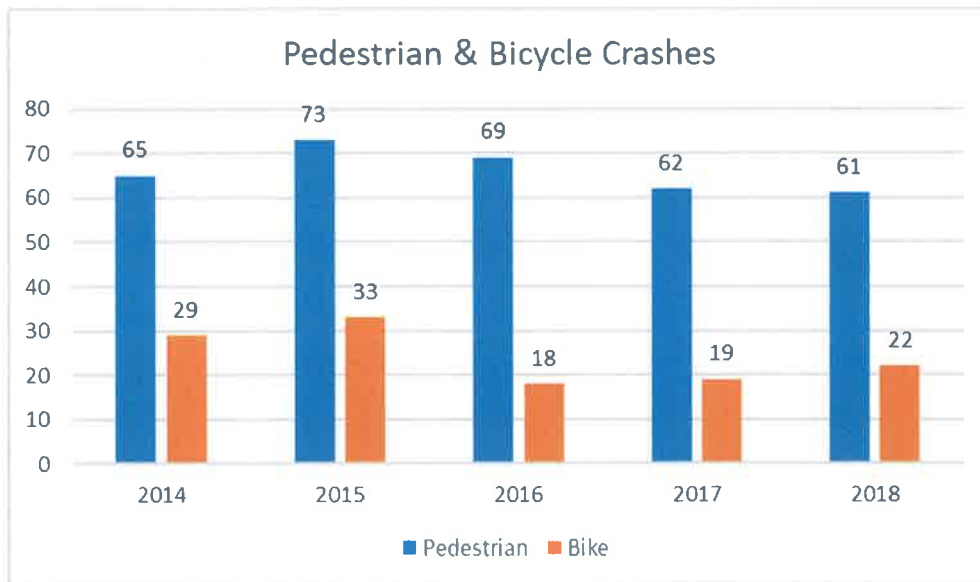
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Note: Total DWI/DUI Arrests: Crime Analysis Queries folder - ArrestQueries Access Database – 'AdultArrestbyCharge' & 'JuvenileArrestbyCharge' by year for DWI-related items only.

CY 2018 netted 278 DWI arrests compared to CY 2017 which incurred 363 DWI arrests. Also in 2018, the Police Department conducted 68 individual mobile DWI details. Eight of these details consisted of several officers working the same night to coincide with the National Highway Traffic Administration (NHTSA) traffic safety calendar. Officers made 506 vehicle stops during the mobile details, 7 DWI arrests, and 10 criminal arrest. 315 traffic citations were issued.

Pedestrian / Bicycle Crashes

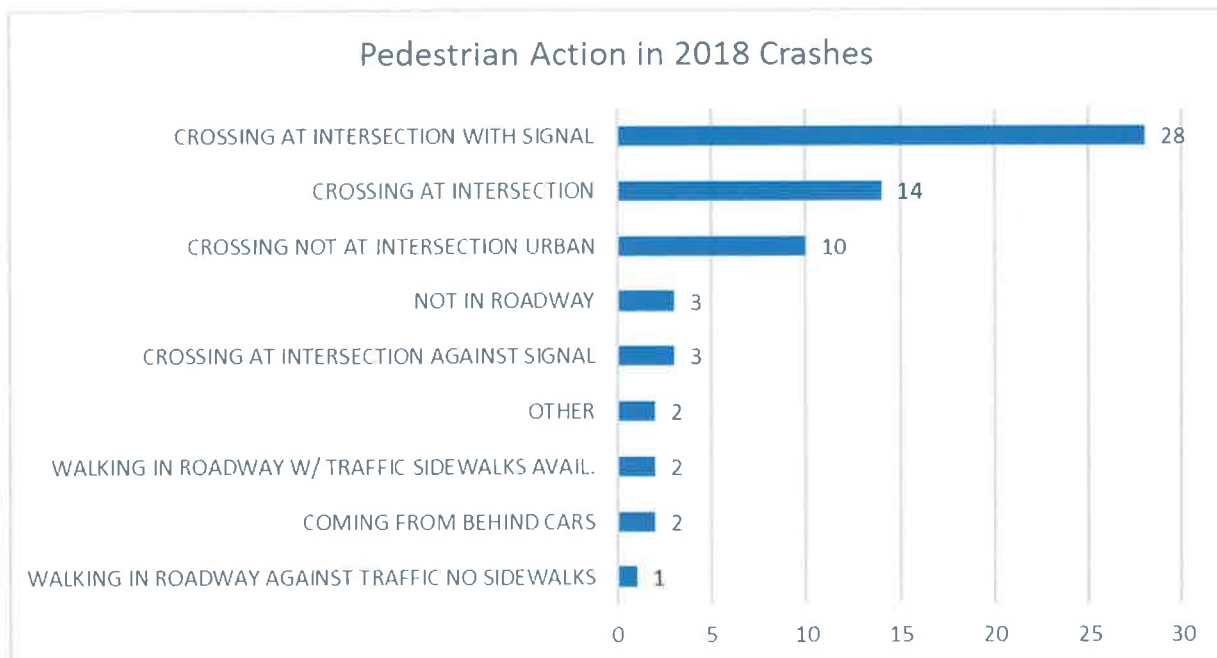
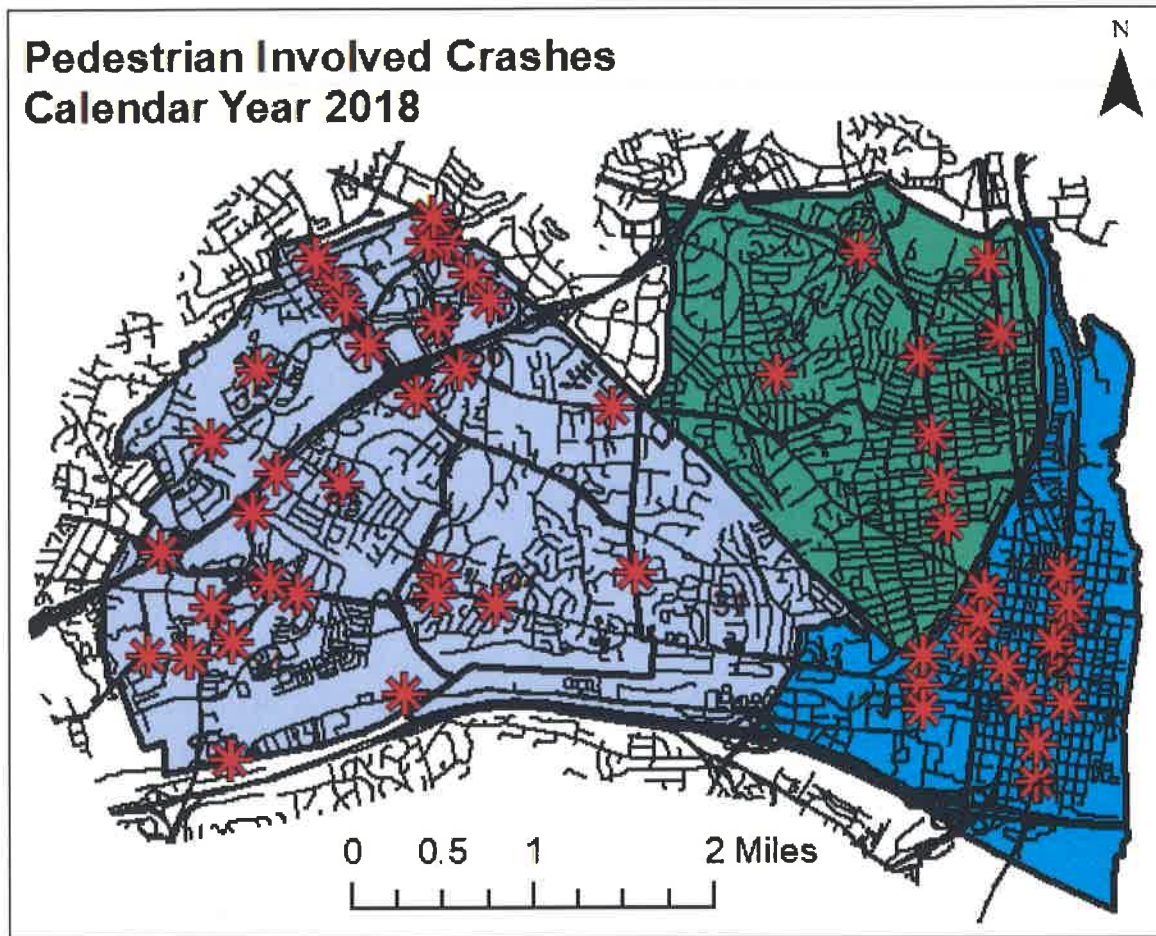


Note: Pedestrian & Bicycle Crashes: Total crashes by year in PRISM Crash Module with two separate filters applied individually: (1) Pedestrians Involved: Yes selected; and (2) Bicycles Involved: Yes selected.

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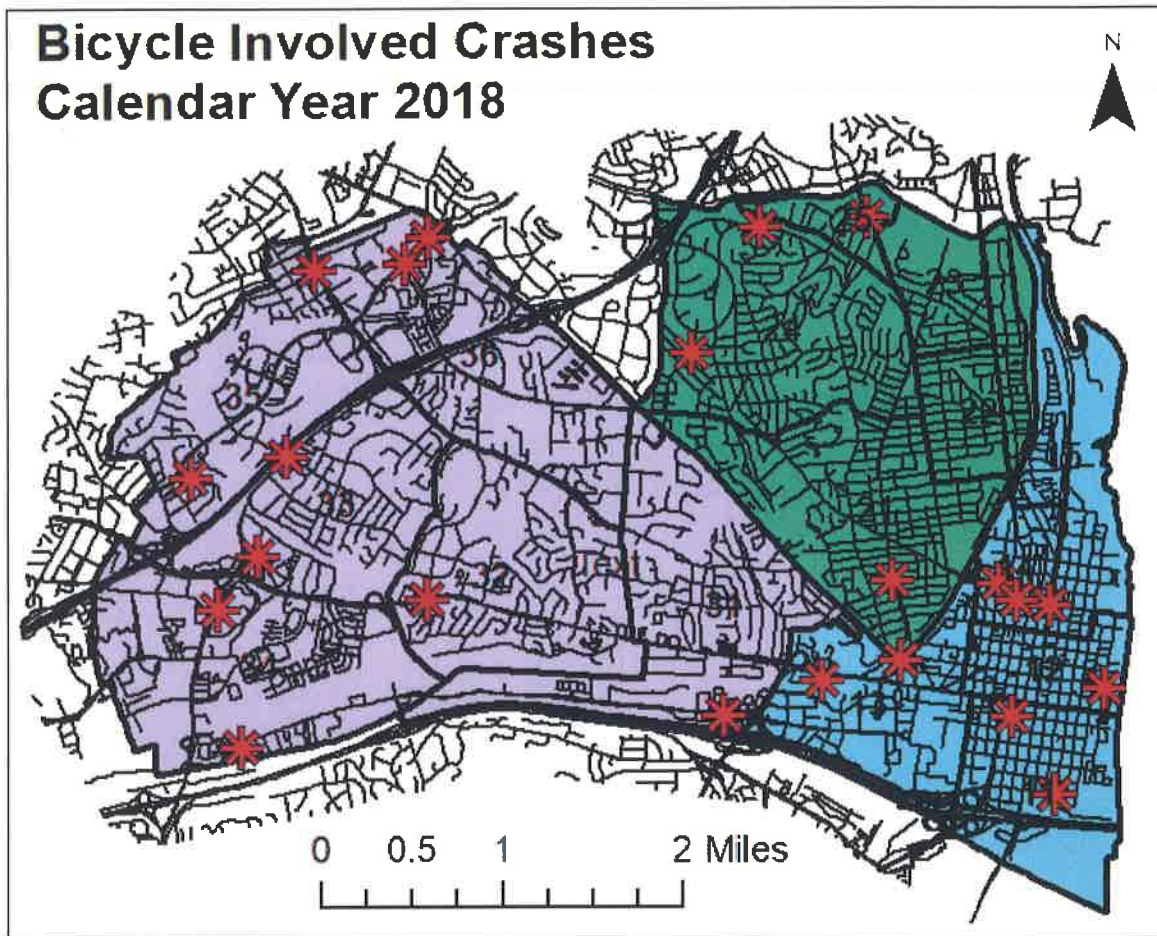


Note: Total Pedestrian Action in 2018 Crashes: Crime Analysis Queries folder - AccidentNEW Access Database - 'Pedestrian Action'.

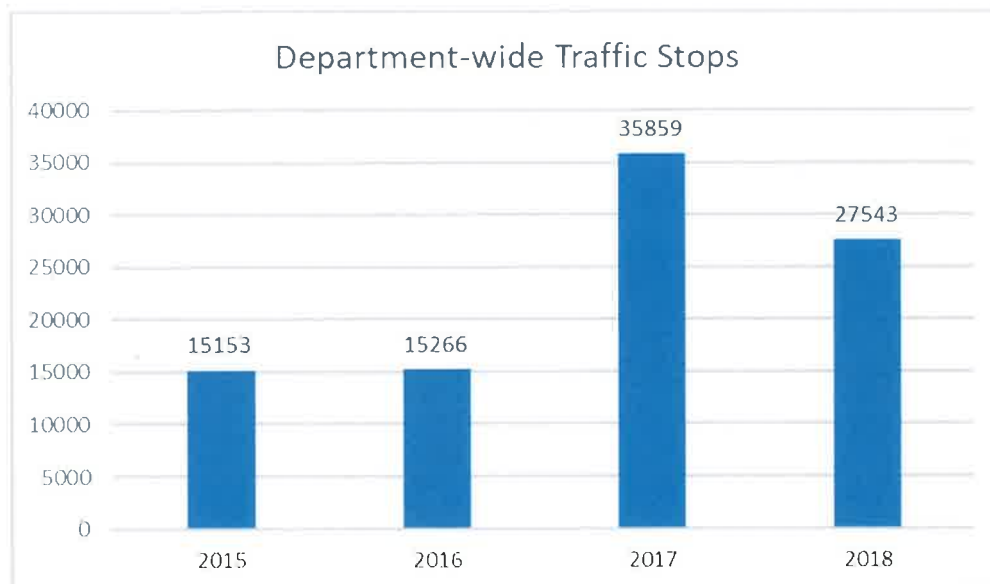
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Traffic Stop data was not captured for 2014 as different terminology appeared to be used and the extremely low number of query results (40) indicated that the data pull did not encompass all the 2014 Traffic Stops.



Note: Department-wide Traffic Stops: Traffic Stops by year in PRISM CAD Module with the filter Call Types: 'CAD: Traffic Stop' selected.

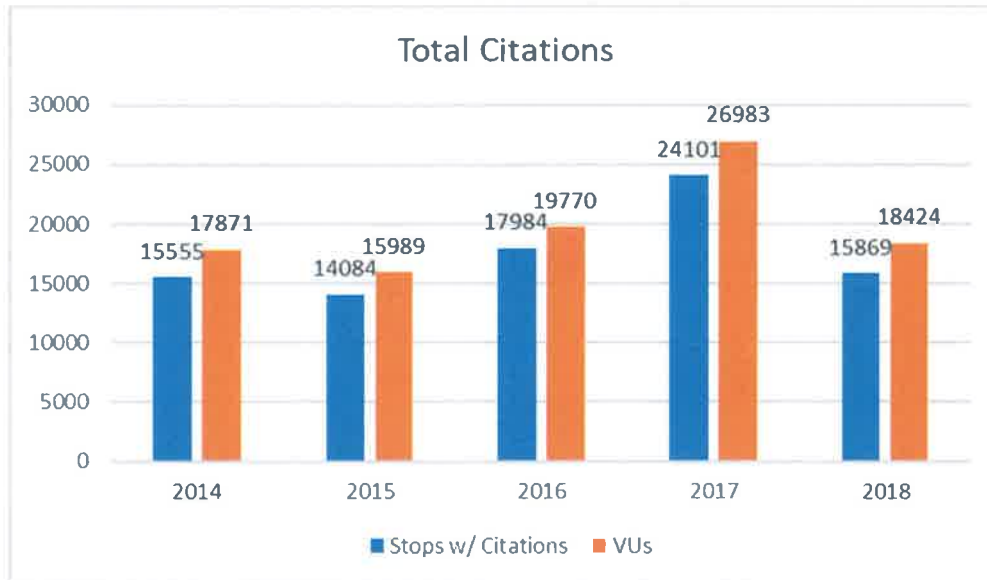
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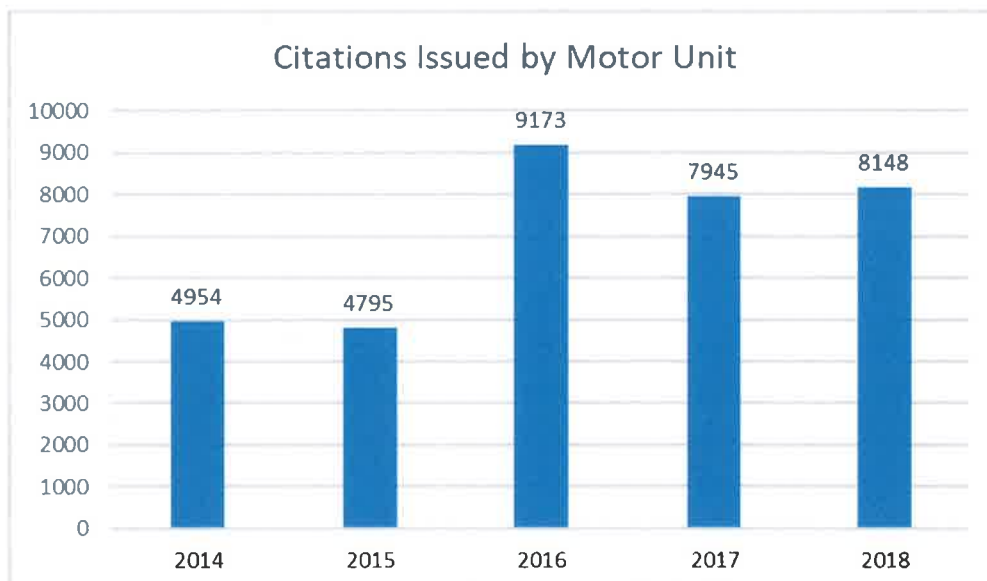
Traffic Enforcement Activities

Traffic enforcement activities for speeding, DWI/impaired driving, violations in conjunction with crashes, pedestrian/bicycle violations and passenger safety violations were reviewed. In CY 2018, there were 15,869 Traffic Stops that resulted in citations being issued. Of those Traffic Stops, 2,555 resulted in multiple charges for a total of 18,424 Virginia Uniform Summons (VUSs) issued in CY 2018. This is a 31.7% decrease in VUSs when compared to 2017.



Note: Total Citations: Crime Analysis Queries folder - Citations Access Database – 'CitationsByIndividualStopWebRMS' for Stops w/ Citations, and 'All Citations – SQL' for VUs.

Out of 18,424 citations issued during CY 2018, the Motor Unit issued a total of 8,148 citations, which accounted for 44.2% of the total citations issued for the entire police department.



Note: Total Citations: Crime Analysis Queries folder - Citations Access Database – 'All Citations – SQL' and filtered by 'DivDesc' for the division name 'Special Operations.'

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Enforcement for speeding, violations associated with crashes, and other violations were conducted through proactive patrol, selective traffic enforcement campaigns, and deploying traffic enforcement measures during peak hours to address the higher incidence of violations and crashes.

The department participated in special enforcement programs to emphasize pedestrian and bicycle safety in CY 2018. These efforts will continue in CY 2019 to reduce injuries and crash rates involving pedestrians and bicyclist. The goal in CY 2019 will be to increase patrol awareness for bicycle and pedestrian safety and increase the warnings or written citations if warranted.

Personnel Deployment

Through the use of the Traffic Safety Plan, specific roadways are identified for selective enforcement and traffic complaints are handled in a systematic method. Speed is the primary traffic complaint received from residents. Complaints are received by phone, from department personnel, council members, and social media and through the City's webpage. Focusing our available resources into the areas where they can be most useful is logical and stands the best chance of having a positive impact.

The Traffic Safety Section (TSS) maintains a log of all traffic complaints received. When a complaint is received, it is initially evaluated for validity. This process is accomplished by examining the frequency of complaints in that area, previous citation activity, and traffic surveys. If warranted by activity, a determination is then made as to whether motorist behavior can best be modified by use of the smart trailers, live enforcement, roadway modifications or a combination.

All complaints are routed to the Traffic Safety Section for investigation and enforcement. If a traffic complaint requires sustained follow-up and documentation, an appropriate number of TSS officers will be assigned to the complaint. The TSS Sergeant notifies each Patrol Sector Commander of any logged traffic complaints received in his or her respective area. By doing so, the Patrol Commander can assign resources as best benefits the individual Sector needs in addition to TSS enforcement. A total of approximately 222 traffic complaints were logged in 2018. There was only an increase of one complaint from CY 2017 to CY 2018. This shows the consistency of the many different avenues that the public has to send in their complaints (telephone, email, Call Click Connect, through Civic groups, Facebook, and Twitter) as well as a more informed public on these different ways to convey their concerns and complaints.

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Year	Traffic Complaints Logged
2018	222
2017	221
2016	207
2015	110
2014	79

Source data: 2018 Motor Unit Complaint Log

Aside from enforcement, an effective means of educating the public, deterring violations and addressing complaints remains the continuous deployment of the Smart Trailers in locations known for high rates of speeding violations. These trailers have become the tool of choice, effectively modifying violator behavior while allowing accurate assessments of traffic rates and speeds, broken down by location and time of day. Utilizing the trailers permits better allocation of staffing to achieve maximum effectiveness.

In 2018 we deployed the Smart Trailers on 50 occasions in an effort to gather speed data. This number is a significant increase from the number of times the trailers were deployed in the previous year. In 2018, the police department had four speed trailers that were running almost continuously for the entire year collecting data. When deploying the speed trailers, we would locate them at a specific location for a two week period. This was to gather data over a longer period of time to better evaluate the complaint and needs of that location.

Year	Smart Trailer Deployments	Working Trailers
2018	32	4
2017	50	1
2016	31	2/4
2015	77	1
2014	49	2

Source data: 2018 Traffic Unit Smart Trailer Log

The Alexandria Police Department also offers free child safety seat inspections. In 2018, we hosted a National Standardized Child Passenger training. To date, 15 officers and one volunteer are certified Child Passenger Safety Technicians. This program includes not only the traditional model of holding child safety events, but also providing on-site appointments. Anyone, regardless of where they reside, can request an appointment through our 24/7 Child Safety Seat line. On duty certified technicians (officers and volunteers) provide the inspections at a convenient location. Over 200 child safety seat inspections were completed in 2018.

Technology

We are currently utilizing the Naviline Records Management System that is managed by Information Services. This program allows us to obtain information regarding individual locations, officers, charge codes, types of offenses and other information as it relates to traffic citations issued and crash data. In 2017, officers began utilizing a new Field Based Reporting Software and WebRMS.

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We work with PRISM2 (Police Reporting and Investigative Search Module), which receives data uploads multiple times per day, allowing us to conduct meaningful analysis from crash data. It is critical that we have the means of examining entered data from crash reports to determine time, location, alcohol involvement, pedestrian involvement, injury, death, and causal factors in accidents if we expect to make informed decisions on how to effectively use resources or make our transportation system safer.

We are currently beta testing Brazos, an advanced electronic citation (e-citations) from Tyler Technologies. Brazos is an electronic citation solution that is used on handheld cellular devices that is used for capturing, processing and transmitting data into public safety and court systems. Electronic citations have shown officers spending less time on traffic stops, which results in improved safety for officers and the public when on the roadside. This technology is currently being used by several of our neighboring jurisdictions.

Conclusion

With the development of the Traffic Safety Plan, the Traffic Safety Section and the integration of Vision Zero, traffic safety has grown to be an utmost importance for the department. Through these movements, several targeted safety problems have been identified throughout the City. With the assistance of the Crime Analysis Unit, data analysis of these targeted problems will determine hot spot areas for enforcement.

Selective enforcement locations are determined by the Traffic Safety Section Supervisors based on traffic data analysis. Selected enforcement efforts are assigned to specific TSS officers and the criteria used to determine the selective enforcement includes patterns of similar causes or sudden increases in the severity or number of collisions, violations at a specific location and citizen complaints/concerns. When areas of concern are brought to our attention by citizens, they are studied and determined for Selective Traffic Enforcement efforts. When possible, the citizen voicing the concern was contacted and advised of the department's efforts. In CY 2018, the Selective Traffic Enforcement Program focused on the following issues:

- Decreasing the total number of crashes from CY 2017
- Decreasing crashes where alcohol was a factor
- Decreasing pedestrian and bicycle crashes
- Addressing citizen complaints
- Focusing efforts in locations that had increased traffic offenses or crashes
- Working in conjunction with the Traffic and Environmental Services to enhance traffic solutions

Locations with increased traffic offenses, pedestrian crossings and increased bicycle violations continued to be a high priority for selective enforcement efforts. These efforts in CY 2018 did show a reduction of one pedestrian related crash but an increase of three bicycle related crashes. Hopefully, the continued educational efforts with the Bicycle and Pedestrian Advisory Committee to get the word out among the cyclist and pedestrians to stop at controlled intersections (to include traffic signals and stop signs), follow the posted signs and use the marked cross walks will assist the police department in reducing the number of pedestrian and bicycle crashes in 2019.

The police department had approximately the same number of deployments, locations deployed to and length of deployments for the Smart Trailers in CY 2017. The reason the number listed is lower than CY 2017 is due to errors with the electronic card readers. The Smart Trailers alerted drivers of their actual speed for specific locations which appears to have reduced speeding and citizen complaints at these locations. The smart trailers were also used in a "ghost" status to record the actual speeds when drivers thought they were not working. In CY 2019 the police department will be deploying four Smart Trailers for an entire year and hopes to reduce citizen complaints as well as the number of violations taking place throughout the City.

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The continued growth of the City of Alexandria has impacted the major roadways which were not originally designed to accommodate the current volume of traffic commuting through the City on a daily basis. The City of Alexandria serves as a “cut through” for commuters as it is surrounded by major access roads. The Alexandria Police Department continued to participate in regional enforcement campaigns such as Street Smarts, both Spring and Fall. The department continues to stay involved with the department of Traffic and Environmental Services in locating and identifying roadway engineering issues that need to be changed or enhanced through design.

During the upcoming year, the Traffic Safety Section will not only look at enforcement, but education and promoting voluntary compliance throughout the City. This will rely heavily on continued participation in regional enforcement and educational campaigns such as Street Smarts, Bike Rodeos, and marketing Sober Ride programs. We also rely on a dedicated partnership with the department of Traffic and Environmental Services in locating and identifying roadway engineering issues that need to be changed or enhanced through design. In addition, we continue to grow and build partnerships with Non-Government Organizations such as the Alexandria Bicycle and Pedestrian Advisory Committee (BPAC) and Alexandria Families for Safe Streets (AFSS).

In conclusion, selective traffic enforcement efforts continue in an effort to reduce vehicle speeds and crashes for CY 2019. Continued diligence is needed to reduce citizen complaints/concerns.