



Police Force Analysis SystemSM

Third Summary Report

King County Sheriff's Office

Use of Force Data from January 1, 2014 to December 31, 2019

By:

Bob Scales, J.D.
Police Strategies LLC
bob@policestrategies.com
www.policestrategies.com

June 2020

Background

In 2017 we produced the first Summary Report using data from the King County Sheriff's Office's Police Force Analysis SystemSM. That report included data from 2014 to 2016. We produced a second Summary Report in June 2019 with data from 2017 and 2018. This is our Third Summary Report which includes use of force data through the end of 2019. Police Strategies will continue to update the system on an annual basis and produce annual Summary Reports.

Police Strategies LLC

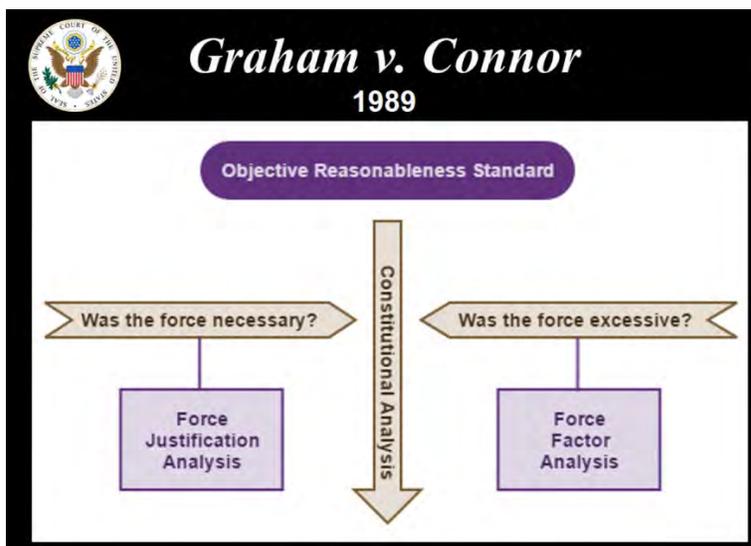
Police Strategies LLC is a Washington State based company that was formed in February 2015. The company was built by law enforcement professionals, attorneys and academics with the primary goal of helping police departments use their own incident reports to make data-driven decisions and develop evidence-based best practices. The company's three partners are all former employees of the Seattle Police Department and were directly involved with the Department of Justice's pattern or practice investigation of the department in 2011 as well as the federal consent decree that followed. They wanted to take the lessons learned from that experience and provide other police departments with the tools they need to monitor use of force incidents, identify high risk behavior and evaluate the outcomes of any reforms that are implemented. The company has a partnership with the Center for the Study of Crime and Justice at Seattle University to assist in the analysis of the data.

Police Force Analysis SystemSM

In the summer of 2015, Police Strategies LLC launched the Police Force Analysis SystemSM (PFAS). PFAS combines peer-reviewed research with state-of-the-art analytical tools to produce a powerful data visualization system that can be used by law enforcement, policy makers,

academics, and the public.¹ The core of PFAS builds upon the research work of Professor Geoff Alpert and his Force Factor method. Force Factor analysis formed the basis of Professor Alpert's 2004 book "Understanding Police Use of Force – Officers, Subjects and Reciprocity"² and has been the subject of several scholarly articles.³

PFAS is a relational database that contains 150 fields of information extracted from law enforcement agencies' existing incident reports and officer narratives. The data is analyzed using legal algorithms that were developed from the evaluation criteria outlined in the United States Supreme Court case of *Graham v. Connor*, 490 U.S. 386 (1989). The Court adopted an objective reasonableness standard which evaluates each case based upon the information that the officer was aware of at the time the force was used and then comparing the officer's actions to what a reasonable officer would have done when faced with the same situation. PFAS uses Force Justification Analysis to determine the risk that a use of force incident would be found to be unnecessary and Force Factor Analysis to evaluate the risk that the force would be found to be excessive.



¹ [Capitola Police creates online database to track use of force stats, Santa Cruz Sentinel, August 2016.](#)
[KCSO puts use-of-force data online in pioneering move, KCSO Mercury, January 2018](#)

² [Understanding Police Use of Force – Officers, Subjects, and Reciprocity, Cambridge Studies in Criminology, 2004.](#)

³ See, e.g., [Reliability of the Force Factor Method in Police Use-of-Force Research, Police Quarterly, December 2015.](#)

PFAS examines relevant temporal data from immediately before, during and after an application of force.



PFAS uses powerful data visualization software to display the information on dynamic dashboards. These dashboards can be used by police management to identify trends and patterns in use of force practices and detect high risk behavior of individual officers. The system can also be used to spot officers who consistently use force appropriately and effectively. Since the system can find both high risk and low risk incidents, PFAS can be used both as an Early Intervention System to correct problematic behavior as well as a training tool that highlights existing best practices.

PFAS contains several years of historical data for each agency and is designed to be updated on a regular basis. This allows the department to immediately identify trends and patterns as well as measure the impacts and outcomes of any changes that are made to policies, training, equipment or practices. For example, if a department provides crisis intervention and de-escalation training to its officers, the system will be able to evaluate whether that training has had any impact on officer behavior.

PFAS currently has use of force data from 87 law enforcement agencies in seven states involving more than 10,000 incidents and 4,000 officers who used force a total of 19,000 times. PFAS is the largest database of its kind in the nation. Although the incident reports from each of these agencies uses a different format, all the data extracted and entered into the system has been standardized which allows us to make interagency comparisons. The Police Force Analysis

NetworkSM allows agencies to compare their use of force practices with other agencies in the system.

The Police Force Analysis SystemSM provides comprehensive information about police use of coercive authority and permits the study of the intersection of individual and contextual factors that explain situational, temporal, and spatial variation in the distribution of police coercive authority. PFAS supports meaningful community engagement about police coercion by providing comprehensive and relevant data to address and inform community concern regarding police-citizen interactions.

Data Collection from the King County Sheriff's Office

KCSO provided the following data for coding: (1) Raw data from the IAPro system; (2) BlueTeam reports; and (3) incident reports with officer narratives. These reports were received as Word and Adobe Acrobat files.

In February 2020 Police Strategies LLC received KCSO use of force reports from 2019. Data entry was completed in March 2020 and then the information was processed through the system's legal algorithms. Finally, the interactive dashboards were updated. All the data entered into the system was also geocoded.

The Department has contracted for ongoing updates of PFAS. The next Summary Report will be produced in early 2021.

Summary of KCSO's Police Force Analysis SystemSM

The King County Sheriff's Office's Police Force Analysis SystemSM contains 6 years of use of force data from 2014 to 2019. The database includes detailed information on 1,096 subjects who had force used against them and the 547 officers who used force during the 6-year period. In 2019 there were 174 use of force incidents involving 213 officers who used force a total of 351 times. This report will examine the 6-year trends in uses of force and will summarize the use of force data from 2019.

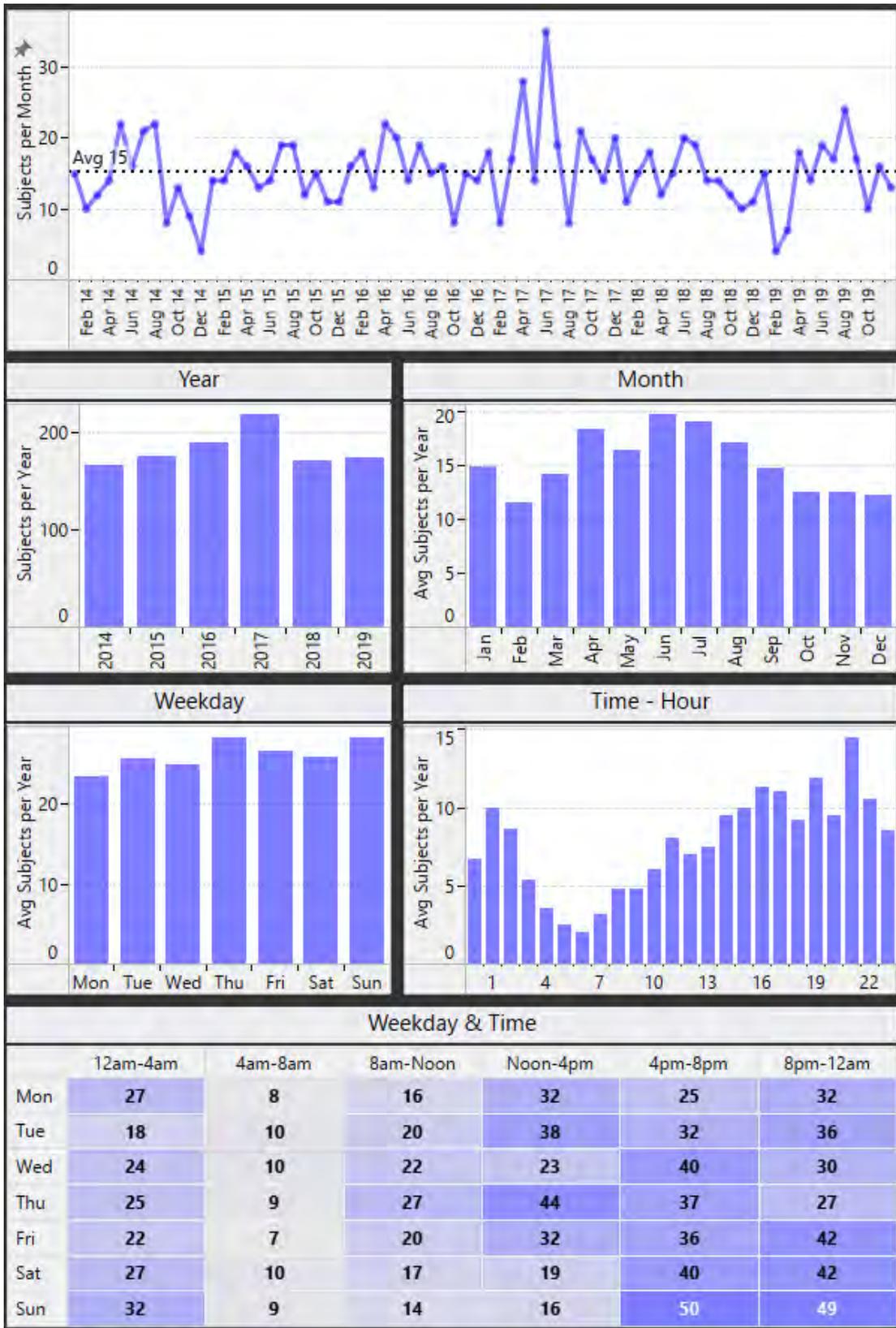
1) Date, Time and Location of Use of Force Incidents

In 2019 the month with the most force incidents was August with 24 incidents and the month with the fewest incidents was February with 4 incidents. During the week, Thursdays had the most incidents (28) and Tuesdays had the fewest (20). There were 3 peak time periods for force incidents: 2pm-5pm (33 incidents); 7pm-10pm (29 incidents); and 1am-4am (29 incidents).

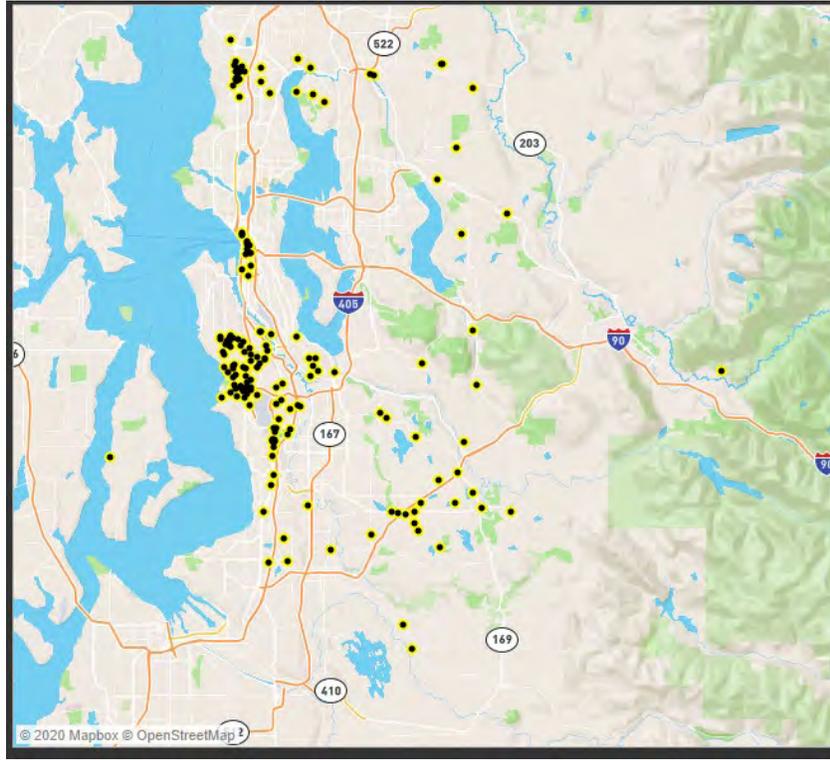
Half of all force incidents in 2019 occurred on the street, 12% occurred at a business and 31% occurred inside or outside a home.

From 2014 to 2017 the number of force incidents rose from 166 to 219 before falling to 171 incidents in 2018. Between 2018 and 2019 there was an increase of only 3 incidents.

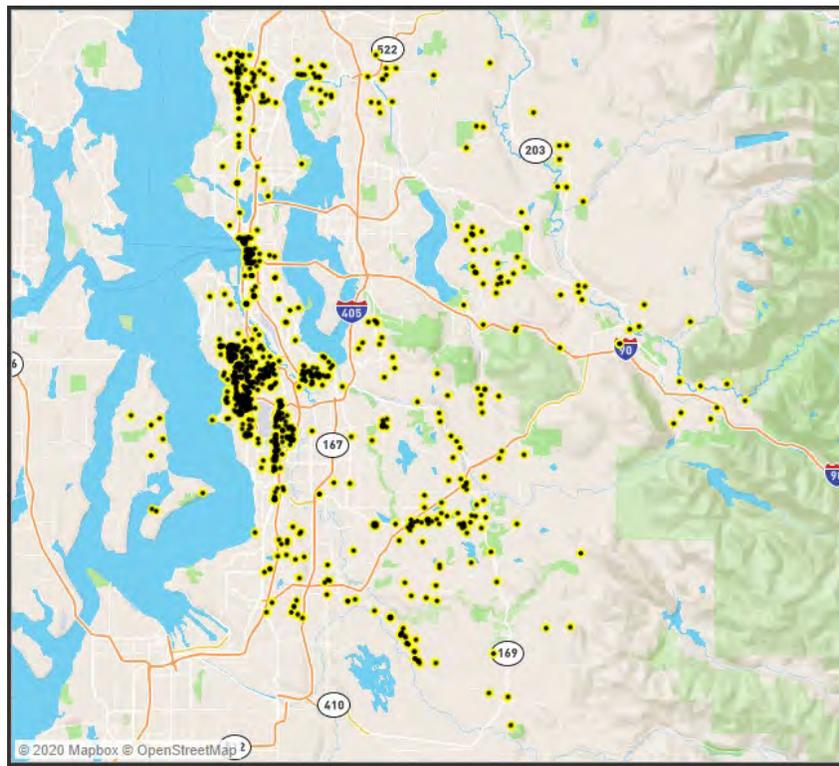
Use of Force Incidents – 2014 to 2019



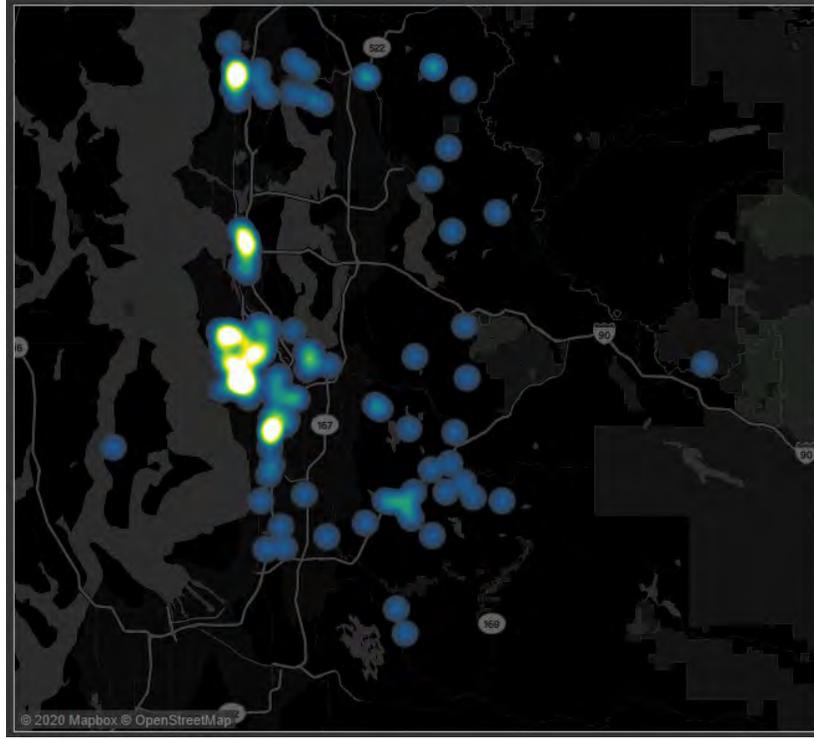
Use of Force Incident Locations – 2019



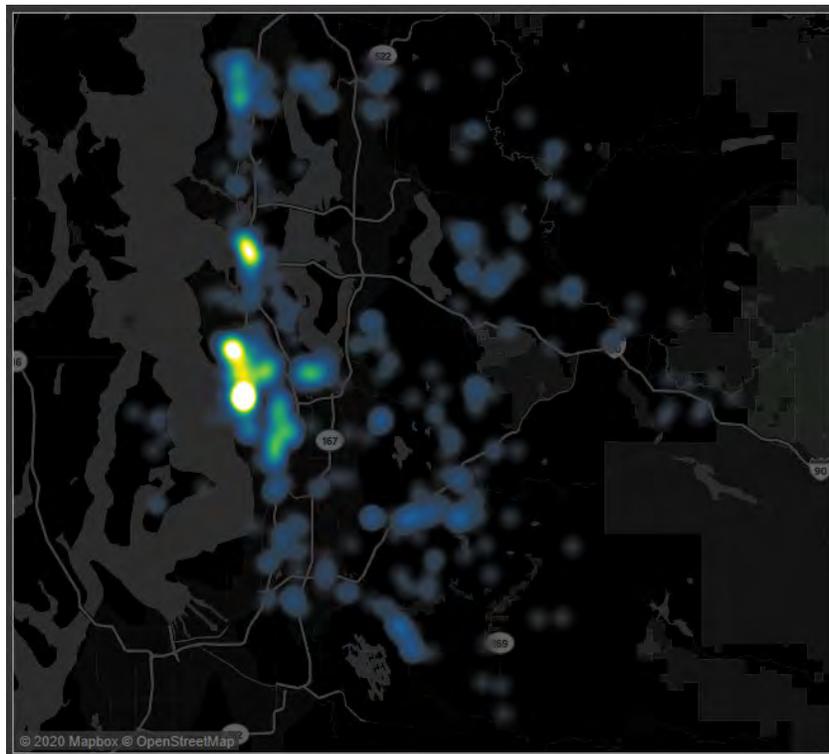
Use of Force Incident Locations – 2014 to 2018



Use of Force Heat Map - 2019



Use of Force Heat Map – 2014 to 2018



2) Reason for Contact

Over the last 6 years 64% of officers who used force were responding to a dispatched call for service. Twenty-seven percent of officers were making an officer-initiated contact and 9% of officers were responding to assist other officers. From 2014 to 2019 the percentage of officer-initiated contacts leading to a use of force fell from 33% to 21%.

Over the last 6 years there has been a trend towards more officers being present on scene when force was used. In 2014 30% of all force incidents had 3 or more officers on scene when force was used and that percentage rose to 56% by 2019.

Over the last 6 years the most common original call types for force incidents were violent crimes (26%) and property crimes (26%). There were 157 incidents related to a traffic offense, 101 assaults and 100 thefts.

3) Force Frequency

In 2019 there were 174 use of force incidents involving 213 officers who used force a total of 351 times. There were two officers who used force 8 times each, seven officers who used force 5 or 6 times each, twenty-three officers who used force 3 or 4 times, forty-four officers who used force twice and 137 officers who used force once. The top 10% of officers made up 26% of all force used by the Department.

4) Force Justification

The Force Justification Score is based upon the four Graham Factors: (1) seriousness of the crime being investigated; (2) the level of threat to the officer or others; (3) the level of resistance; and (4) whether the subject fled from the officer. Low Justification Scores are indicative of incidents where subjects were not committing serious crimes, did not pose a significant threat to the officer or others, did not present a high level of resistance and did not flee.

In 2019, 11% of the Department's use of force incidents had low Force Justification scores (<6) which was similar to prior years. The average Force Justification score was 11.3 on a scale of 0 to 20 which was also similar to prior years. For each of the four Graham factors,

KCSO scored highest in the resistance level and crime level and lowest in the threat level and flight level categories. This indicates that when KCSO officers use force, they are facing higher levels of resistance and more serious crimes, but subjects are less likely to threaten officers or flee from officers. The threat level, crime level and resistance level scores were higher in 2019 than prior years.

In 2019 there were 18 incidents that received the highest justification score of 20. These incidents involved an assault on the officer before the officer made the decision to use force.

In 2019 there were 28 officers who were involved in at least one incident with a low Force Justification score. Four officers were involved two low Force Justification incidents each.

Low Force Justification incidents were more likely to have the following characteristics than cases with higher Force Justification scores:

- Subject was under the influence of alcohol or drugs (60%)
- The most serious charge referred for prosecution was obstructing (12%), DUI (11%), trespass (10%) or a warrant arrest (10%)
- Subject was held for a mental health evaluation (17%)

Average Force Justification Scores were higher for women than men. Native American subjects had the highest average Force Justification score (11.2) and White and Black subjects had the lowest scores (10.2). Average Force Justification scores were lowest for subjects age 40 to 49 (9.6) and were highest for subjects age 18 to 29 (10.7).

Officers were less likely to use ECWs during a low Force Justification incident. Officers were more likely to resolve a low Force Justification incident by using physical force only (54%), but they were less likely to use weight, wrestling and pushing.

5) Force Factor

The Force Factor Score is based upon the proportionality of force to resistance and scores range from -6 to +6. A negative score means that the subject's resistance level was higher than the officers' force level. A medium Force Factor Score is between 0 and +2. This is the range where most officers can gain control of a subject by using force that is at least proportional to the level of resistance or slightly above. A Force Factor of +3 or above is considered a high score. This does not mean that the force was excessive, but these incidents do present a higher risk to the department.

In 2019 there were 28 incidents that had a high Force Factor score (+3 or above). Over the last 6 years the average Force Factor score has declined from 1.2 to 0.6, but 2019 had the highest percentage of high Force Factor incidents at 16%. In 2019 two incidents had a +5 Force Factor, ten incidents had a score of +4 and sixteen incidents had a score of +3.

Over the last six years most high Force Factor incidents involved only the use of weapons: ECWs (62%), Canines (15%) and OC (13%). Only 8% of high Force Factor incidents involved physical force only.

In 2019 the most common Force Factor Score was +1 (35%) followed by 0 (24%) and +2 (19%). These numbers indicate that most officers in the department behave very consistently when faced with a given level of resistance and they tend to use the minimal amount of force necessary to gain compliance.

When high levels of force are used against lower levels of resistance the subjects are controlled much faster with lower injury rates for officers but higher injury rates for subjects.

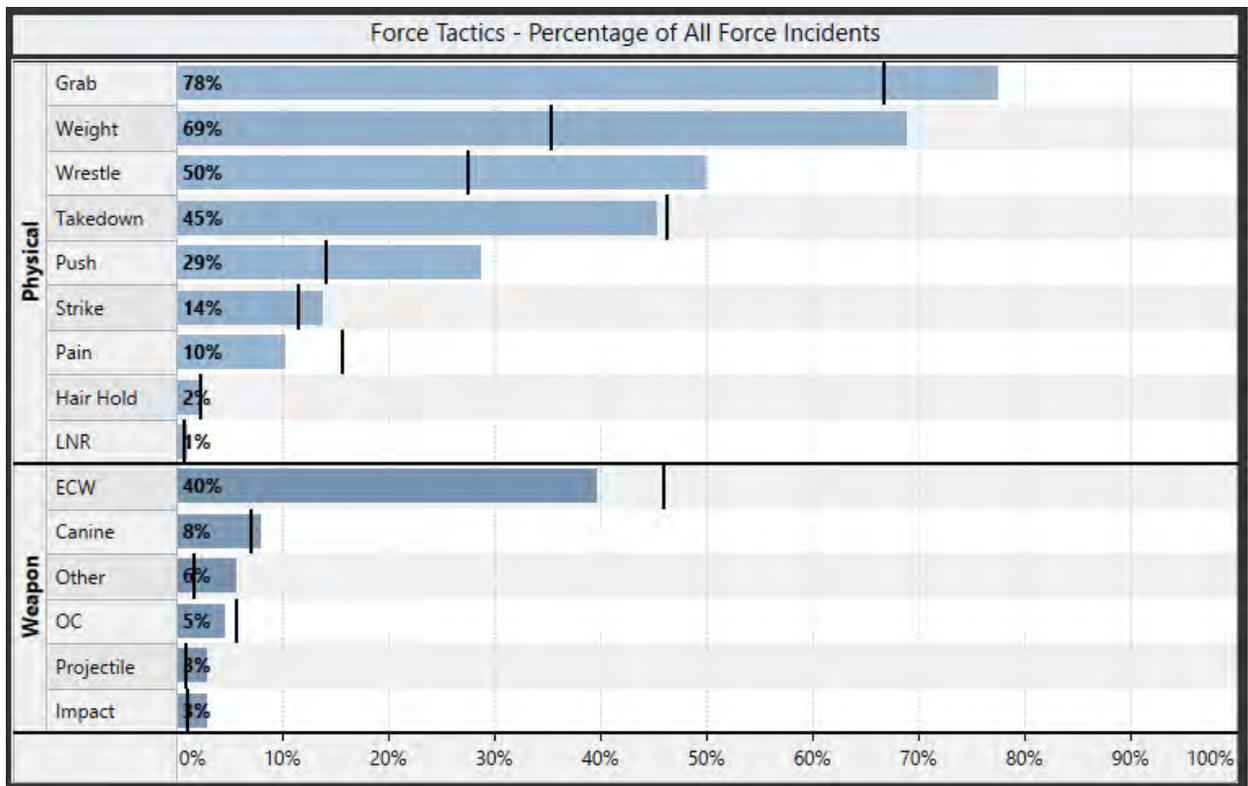
	Force Factor – 2014 to 2019		
	Low (-1 to -3)	Medium (0 to +2)	High (+3 to +5)
Subject brought under control within 1 or 2 Force Sequences	28%	22%	65%
Subject Injury Rate	59%	76%	75%
Officer Injury Rate	32%	22%	5%
Weapon Used by Officer	44%	56%	93%

6) Force Tactics

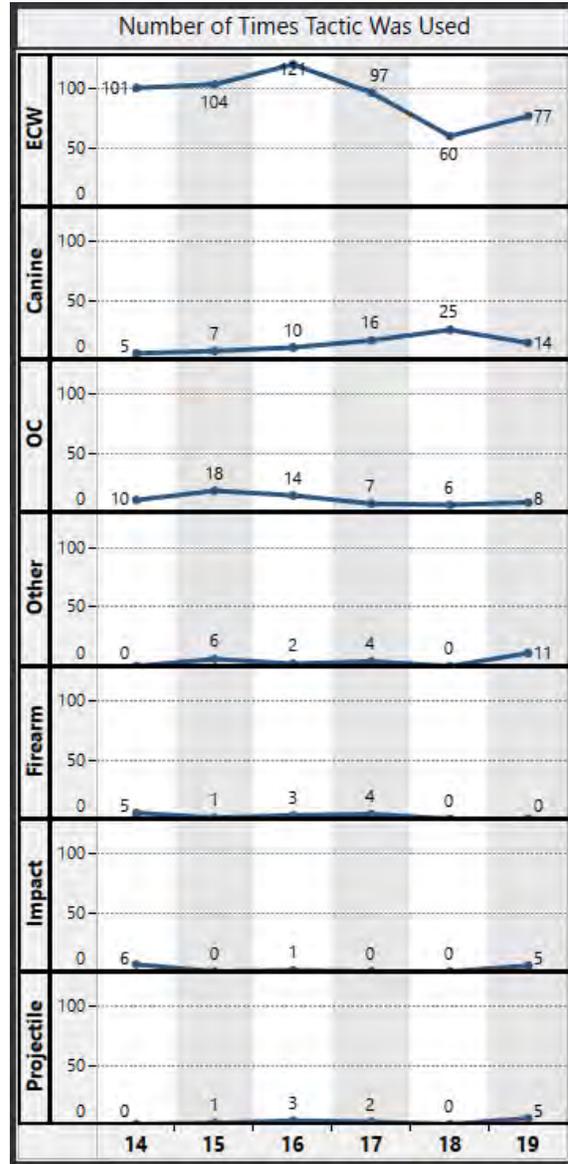
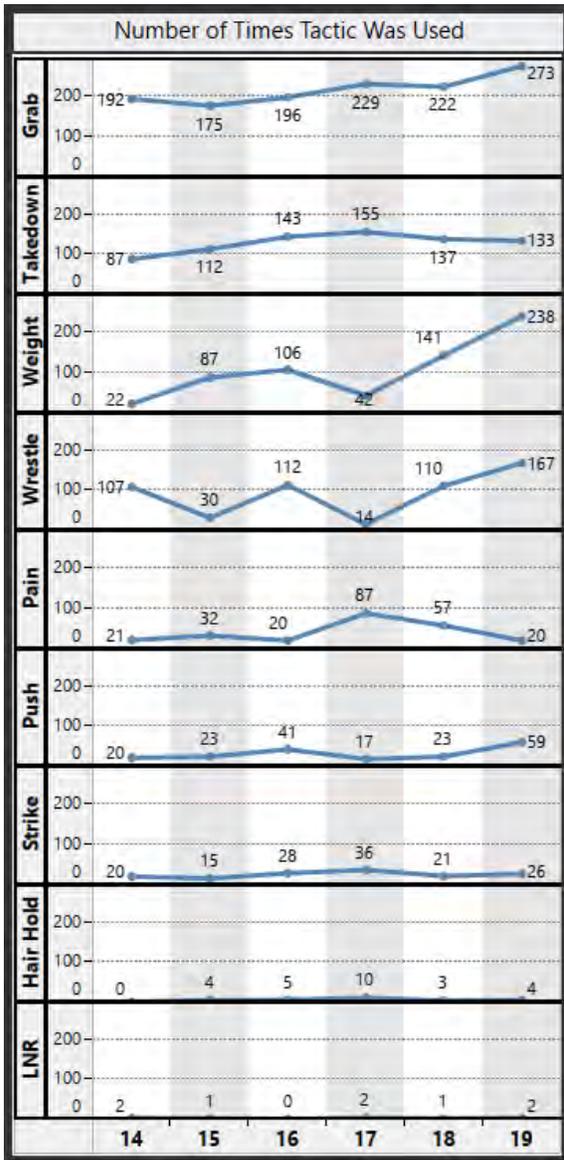
Of the 174 use of force incidents that occurred in 2019, 45% involved physical force only, 22% involved only the use of weapons by officers and 33% involved both physical force and the use of a weapon.

Compared to prior years, officers were less likely to use pain compliance techniques and more likely to use grabbing, weight, wrestling and pushing. Officers were less likely to use Electronic Control Weapons (ECW) in 2019 than in prior years.

Force Tactics Used in 2019



Over the last six years officers have used 4,589 individual physical force tactics and weapons during 1,069 incidents. The long-term trends indicate that the use of grabbing, takedowns, using weight and wrestling have become more common. The use of ECWs and OC has declined in recent years while the use of canines increased from 5 in 2014 to 25 in 2018 before falling to 14 in 2019. Officers rarely use impact weapons or projectile weapons.



7) Subjects

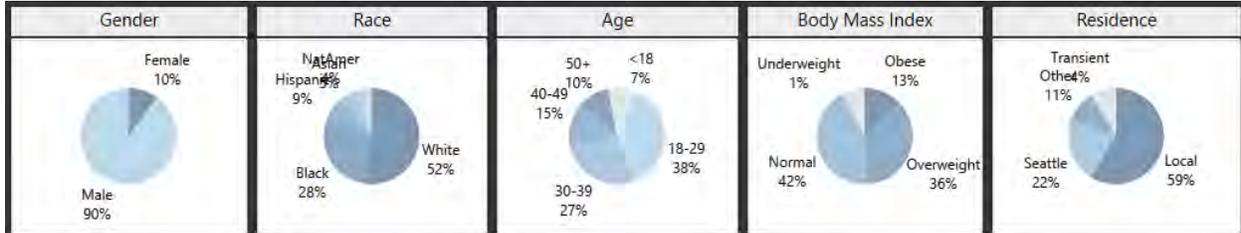
From 2014 to 2018 there were three demographic groups (gender, race and age) that made up more than one-third of all use of force subjects. In 2019 these demographic groups shifted slightly with Black males between the ages of 18 and 39 making up the two top groups.

Most Common Characteristics of Use of Force Subjects 2014 - 2018				
Gender	Race	Age	Number of Subjects	Percentage of Force Incidents
Male	White	30-39	145	15.7%
Male	White	18-29	142	15.4%
Male	Black	18-29	105	11.4%
All Other Demographic Groups or Unknown			530	57.5%

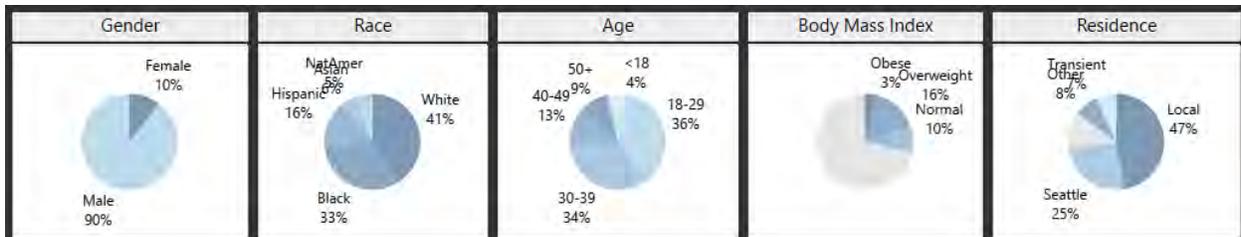
Most Common Characteristics of Use of Force Subjects 2019				
Gender	Race	Age	Number of Subjects	Percentage of Force Incidents
Male	Black	30-39	20	11.5%
Male	Black	18-29	20	11.5%
Male	White	30-39	19	10.9%
All Other Demographic Groups or Unknown			115	66.1%

When we compare the demographic characteristics of subjects in 2019 with prior years, we see that Black and Hispanic subjects were more common in 2019 and White subjects were less common. Age and gender characteristics of subjects in 2019 were similar to prior years.

Use of Force Subject Characteristics - 2014 to 2018

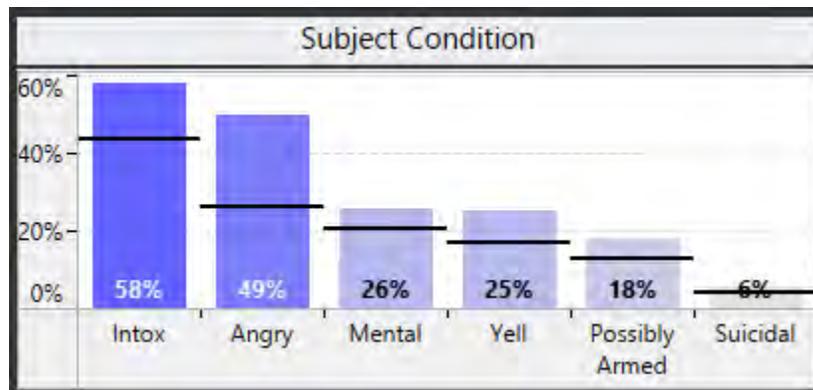


Use of Force Subject Characteristics - 2019



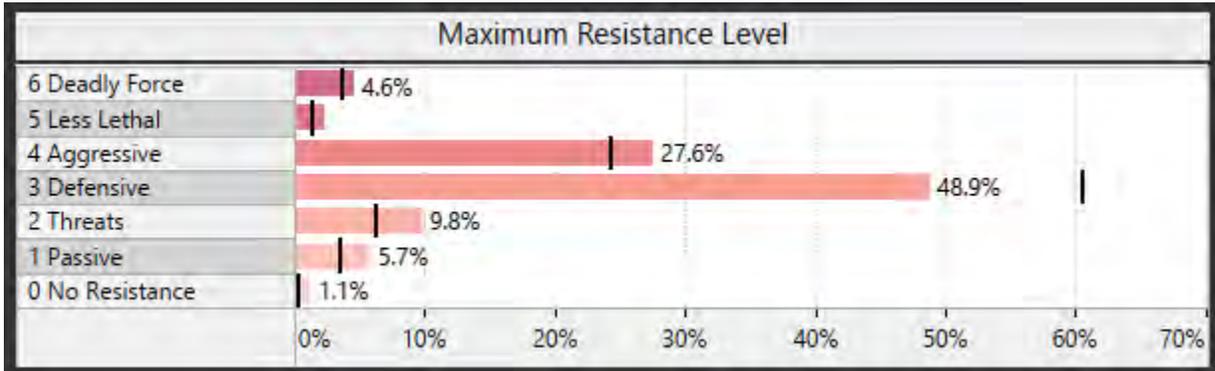
Compared to prior years, use of force subjects in 2019 were more likely to be under the influence of alcohol or drugs (58% vs 44%), be angry (49% vs 26%), have mental health issues (26% vs 20%), be yelling (25% vs 17%) and possibly be armed (18% vs 13%).

Subject Condition in 2019



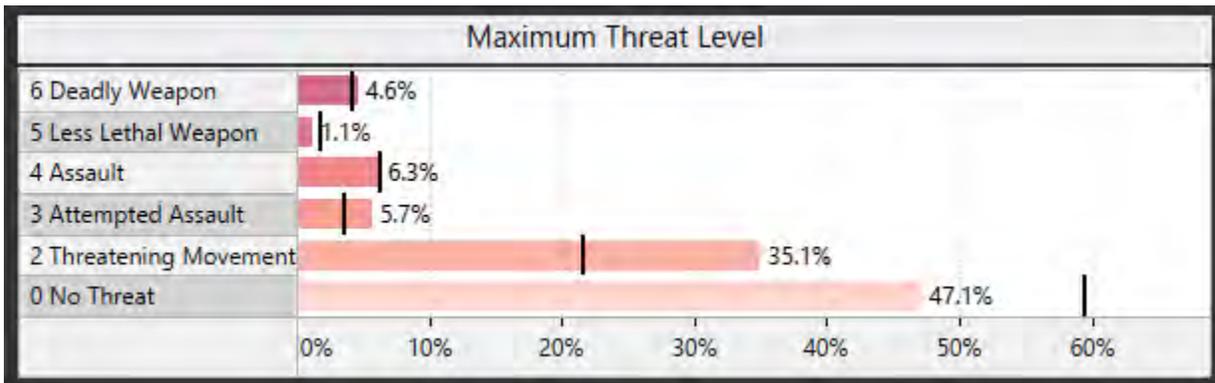
In 2019 officers were more likely to face aggressive resistance (28%), verbal threat resistance (10%) or passive resistance (6%) and less likely to encounter defensive resistance (49%) than in prior years.

Subject Maximum Resistance Level - 2019



In 2019 subjects were more likely to make furtive or threatening movements towards the officers (35% vs 22%) than in prior years. In 2019 53% of subjects either threatened or assaulted officers before force was used compared to 40% of subjects in prior years.

Subject Maximum Threat Level - 2019



8) Injuries

In 2019 there were 35 officers who were injured. Four of those officers were injured twice during the year. Eleven percent of force applications by officers resulted in an injury to the officer who used force. Sixteen officers received a cut, thirteen had a bruise and two broke a bone or tooth. About half the injured officers received treatment from EMTs or at a hospital.

In 2019 126 subjects who had force used against them were injured (72% of all incidents). Of the subjects who were injured, most of the injuries were minor: complaint of pain (14%), ECW probe (25%), bruise/scrape (29%) or minor cut (20%). Thirteen subjects were bitten by canines and one subject lost consciousness.

Eighty percent of subjects who were injured or complained of injury received treatment. EMTs treated 56% of injured subjects and 24% were treated at a hospital.

9) Trends

Over the period from 2014 to 2019 the following force trends were observed:

- Average Force Justification Scores rose from 8.9 in 2015 to 11.4 in 2019. This indicates that in recent years use of force incidents have involved more serious crimes, higher levels of resistance, greater threat levels and more fleeing subjects.
- Average Force Factor Scores fell from 1.2 in 2014 to 0.6 by 2019. This shows that in recent years officers have been using lower levels of force compared to the levels of resistance.
- The average number of Force Sequence has varied significantly over the last six years ranging between 3.2 in 2017 to 5.4 in 2019. The high average number of Force Sequences in the last two years is due to the declining average Force Factor scores and the increasing average Force Justification scores. Officers are facing higher threats and more resistance from subjects and are resolving incidents with lower levels of force, but they are taking longer to control the subjects.
- In recent years a smaller percentage of force incidents were the result of an officer-initiated stop and a much higher percentage of force incidents involve officers who are responding to assist other officers (35% in 2019).
- Over the last six years a greater percentage of incidents have had three or more officers present on scene and using force.
- From 2014 to 2016 about two-thirds of all force incidents involved the use of a weapon by officers. Over the last three years 52% of incidents have involved the use of a weapon.
- Over the last 6 years the percentage the demographic characteristics of subjects has not changed significantly, but there was a 50% drop in juvenile subjects from 2018 to 2019.
- Over the last three years the percentage of subjects who were under the influence of alcohol or drugs, who were angry, who were yelling, who had mental health issues or who were possibly armed, steadily increased.

- From 2014 to 2019 the percentage of subjects fleeing from the police dropped from 38% to 24%.
- In 2019 use of force subjects were more likely to possess knives (9%), firearms (6%), and other weapons (9%) than in prior years.
- The percentage of subjects charged with a violent crime increased from 24% in 2014 to 37% in 2019 while the percentage of subjects booked on a warrant, obstructing or other minor charges all decreased.
- Both subject and officer injury rates have remained stable over the last 6 years, but the average severity of subject injuries has been declining.
- The geographic distribution of force incidents throughout King County has remained consistent over the last 6 years. About half of all force incidents occurred in Precinct 4.

Interagency Comparative Analysis Using the Police Force Analysis NetworkSM

As a contributor of data to the Police Force Analysis SystemSM, KCSO also has access to information from other agencies in the system through the Police Force Analysis NetworkSM (PFAN). PFAN currently has use of force data from 87 law enforcement agencies in seven states with more than 10,000 incidents involving 4,000 officers who used force 19,000 times. This is the largest database of its kind in the nation. Although the incident reports from each of these agencies uses a different format, all the data extracted and entered into the system has been standardized which allows us to make meaningful interagency comparisons. The Police Force Analysis NetworkSM allows agencies to compare their use of force practices with other agencies in the system.

This report is designed to alert the Department of potentially high-risk areas that may need improvement as well as areas where the Department is performing with low levels of risk. A high-risk score does not necessarily mean that there is a problem that needs to be addressed and for that reason this report does not recommend any specific corrective actions. Instead, the annual use of force reports and comparative dashboards will allow the Department to focus more attention on higher risk areas and determine whether any adjustments to policies, procedures or training are warranted. Similarly, a low risk score does not mean that there are no issues that need to be addressed. Departments are encouraged to continue to conduct individual force reviews and use the dashboard systems to supplement and enhance those reviews to identify issues that might not otherwise be uncovered. The system will also help to highlight those areas where the Department is performing well and will help to maintain those performance levels.

Since use of force characteristics can vary from year to year, the comparative data includes all available data for each agency. For KCSO, the comparative data includes all 1,096 use of force incidents from 2014 to 2019.

1) Risk Factor Comparisons

PFAN provides a comprehensive comparative risk analysis of relevant factors involved in use of force incidents. The primary risk areas are:

1. Frequency of Force – The more uses of force an agency has the greater the risk of injuries, complaints and lawsuits resulting from these incidents.
2. Graham v. Connor - Force Justification and Force Factor Scores – Force incidents with low Force Justification Scores are at higher risk of being found to be unnecessary while incidents with high Force Factor Scores are at higher risk of being found to be excessive.
3. Force Speed and Duration – The speed of the officer’s decision to use force as well as the duration of the force incident are both measured. The faster the force incident occurs the less opportunity there is for de-escalation. The longer a force incident lasts the greater the risk of injury to both officers and subjects.
4. Injury Rates – Higher injury rates pose risks to the health and safety of officers and subjects and are more likely to generate complaints and lawsuits.

The following risk rankings are based upon a comparison with the 87 agencies currently in the Police Force Analysis NetworkSM. “Lower Risk” scores are more than one standard deviation below the mean. “Higher Risk” scores are more than one standard deviation above the mean. “Medium Risk” scores are within one standard deviation of the mean.

● Higher Risk
 ● Medium Risk
 ● Lower Risk

Risk Level	Risk Type	Metric	Value	Interagency Comparison
●	Force Frequency	Uses of force per 1,000 population	0.3	Below Average
●	Force Frequency	Use of force rate per 100 calls for service	0.03%	Low
●	Force Frequency	Use of force rate per 100 arrests	2.1%	Below Average
●	Force Frequency	Percentage of officers in the department using force annually	41%	Average
●	Force Concentration	Average annual uses of force per officer using force	1.5	Below Average
●	Graham v Connor	Percentage of incidents with low Force Justification Scores	15%	Average
●	Graham v Connor	Percentage of incidents with high Force Factor Scores	9.7%	High
●	Graham v Connor	Percentage of incidents with both low Justification and high Force Factor scores	3.5%	Above Average
●	Force Duration	Percentage of incidents with 5 or 6 Force Sequences	27%	Average
●	Force Duration	Percentage of incidents where the Speed of Force was immediate	34%	Below Average
●	Injury	Subject total injury rate	75%	High
●	Injury	Subject severity of injuries	2.2	Average
●	Injury	Subject medical treatment rate	75%	Above Average
●	Injury	Officer injury rate	21%	High
●	Injury	Officer severity of injuries	2.2	Average

KCSO was within one standard deviation of the mean for 11 of the 15 risk metrics. The Department was one standard deviation above the mean in the percentage of high Force Factor cases and the injury rates for both officers and subjects. The Department was one standard deviation below the mean for the use of force rate per 100 calls for service. This suggests that many calls for service received by KCSO are not the type that is likely to result in a use of force.

2) Force Tactics Comparisons

PFAN contains data on all the physical force tactics and weapons that officers use. The system allows department wide usage rates to be compared across agencies. The following tables list the usage rates for weapons and physical tactics by KCSO officers and then compares that with the averages from other agencies.

KCSO officers are much more likely to use ECWs than officers from other agencies. Canines and OC are used more often by KCSO officers than officers from other agencies while impact weapon use was less common.

For most physical force tactics KCSO was in the average range except for grabbing which was much lower than other agencies.

In general, KCSO officers are much more likely to use weapons during force incidents than officers from other agencies. In 41% of all KCSO force incidents only physical force was used which was well below the 68% average for all other agencies.

Weapon	KCSO Percentage of Incidents Used	Interagency Average	Interagency Comparison
Electronic Control Weapon	46%	25%	High
Canine Bite	7.1%	2.7%	Above Average
Pepper Spray	5.7%	2.5%	Above Average
Impact Weapon	1.1%	2.3%	Below Average
Projectile Weapon	0.9%	0.6%	Average

Physical Tactic	KCSO Percentage of Incidents Used	Interagency Average	Interagency Comparison
Grab/Hold/Pull	67%	80%	Below Average
Takedown	47%	53%	Average
Used Weight	36%	28%	Average
Pain Compliance	16%	24%	Average
Wrestle	28%	18%	Above Average
Push	14%	17%	Average
Strike	12%	11%	Average
Hair Hold	2.4%	3.2%	Average
Lateral Neck Restraint	0.7%	2.1%	Average

All Force Tactics Used	KCSO Percentage of Incidents Used	Interagency Average	Interagency Comparison
Only Physical Tactics Used	41%	68%	Low
Both Physical Tactics and Weapons Used	35%	23%	Above Average
Only Weapons Used	23%	9%	High

3) Subject Injury Rate Comparisons

Compared to other agencies, KCSO's use of force subjects were much more likely to sustain a minor injury or canine bite. This higher injury rate is due to the more frequent use of less-lethal weapons.

Minor Injury	Subjects Injured	Interagency Average	Interagency Comparison
Complaint Only	8%	3%	High
ECD Probe	18%	9%	Above Average
Bruise or Scrape	20%	12%	Above Average
Cut or Bleeding	16%	10%	Above Average
Chemical	4.1%	1.1%	High

Serious Injury	Subjects Injured	Interagency Average	Interagency Comparison
Canine Bite	6.6%	2.2%	High
Unconscious	0.6%	0.6%	Average
Fracture (including teeth)	0.5%	0.6%	Average

4) Other Force Characteristics

For most of the criteria measured by the Police Force Analysis NetworkSM, KCSO is within the average range of the other agencies. The following table lists those force characteristics which are significantly different in KCSO compared with the other agencies. These are simply descriptive measures and are not necessarily associated with increased risk.

Characteristics of Force Incidents that are More Common in KCSO than Other Jurisdictions	Characteristics of Force Incidents that are Less Common in KCSO than Other Jurisdictions
Officers used force after a short talk or long talk with the subject	Officers used force immediately upon contact with the subject
The reason force was used was because the subject threatened the officer or others before force was used	The reason force was used was because the subject failed to comply with an order or command
The subject fled on foot	The subject did not flee from the officer
The subject was a Male	The subject was a Female
The subject was a Non-White	The subject was White
The original call was about a property crime	The original call was about a welfare check
Subject was charged with a property crime or booked on a warrant	Subject was charged a traffic offense or was not charged
The force incident occurred on the street	The force incident occurred inside a home or at a school