POLICE STRATEGIES

Police Force Analysis System℠
Fifth Summary Report

King County Sheriff's Office

Use of Force Data from January 1, 2014 to December 31, 2021

By:

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October 2022

Background

In 2017 we produced the first Summary Report using data from the King County Sheriff's Office's Police Force Analysis System℠. That report included data from 2014 to 2016. We produced a second Summary Report in June 2021 with data from 2017 and 2018, a third Summary Report in June 2021 with data from 2019 and a Fourth Summary Report in May 2021 with data from 2020. This is our Fifth Summary Report which includes use of force data through the end of 2021. Police Strategies will continue to update the system on an annual basis and produce annual Summary Reports.
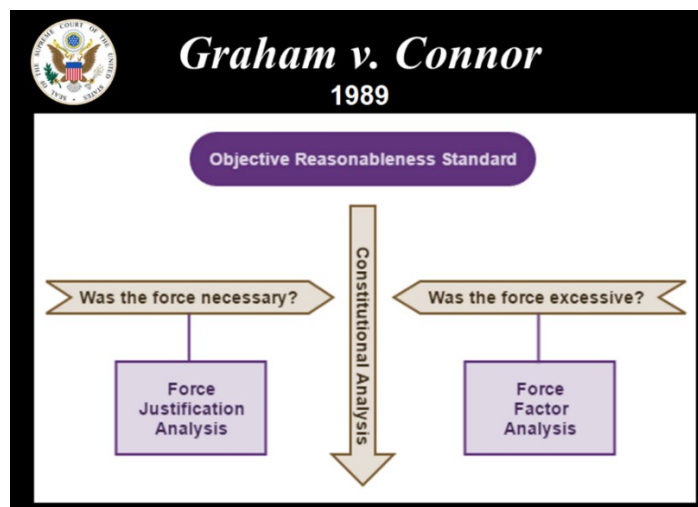
Police Strategies LLC

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 System℠

In the summer of 2015, Police Strategies LLC launched the Police Force Analysis System℠ (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.
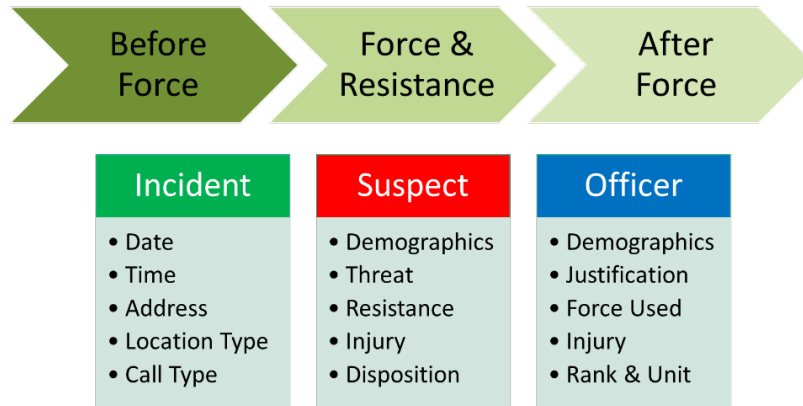

PFAS examines relevant temporal data from immediately before, during and after an application of force.

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 94 law enforcement agencies in eight states involving about 15,000 incidents and 5,000 officers who used force more than 20,000 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 Network℠ allows agencies to compare their use of force practices with other agencies in the system.

The Police Force Analysis System℠ 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 June 2022 Police Strategies LLC received KCSO use of force reports from 2021. Data entry was completed in August 2022 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 the summer of 2023.

<u>Summary of KCSO's Police Force Analysis System℠</u>

The King County Sheriff's Office's Police Force Analysis System℠ contains eight years of use of force data from 2014 to 2021. The database includes detailed information on 1,334 subjects who had force used against them and the 648 officers who used force during the 8-year period. In 2021 there were 117 use of force incidents involving 189 officers who used force a total of 316 times. This report will examine the 8-year trends in uses of force and will summarize the use of force data from 2021.

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

In 2021 the month with the most force incidents was November with 16 incidents and the months with the fewest incidents were July and August with 6 incidents each. During the week, Wednesdays had the most incidents (25) and Fridays had the fewest (9). The peak hours for force incidents were between 1pm and 2pm (13 incidents) and between 9pm and 10pm (12 incidents).

Forty-seven percent of all force incidents in 2021 occurred on the street, 36% occurred inside or outside a home and 15% occurred at a business.

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. In 2020 there was a decline of 31% to 121 and in 2021 there were four fewer incident than the prior year.

Over the last eight years the average annual number of force incidents was 167. There was an average of 42 force incidents per quarter and 14 incidents per month. There was no single day that had more than four use of force incidents.

In 2021 the longest period of time with no use of force incidents was between July 10th and July 27th.

Use of Force Incidents – 2014 to 2021
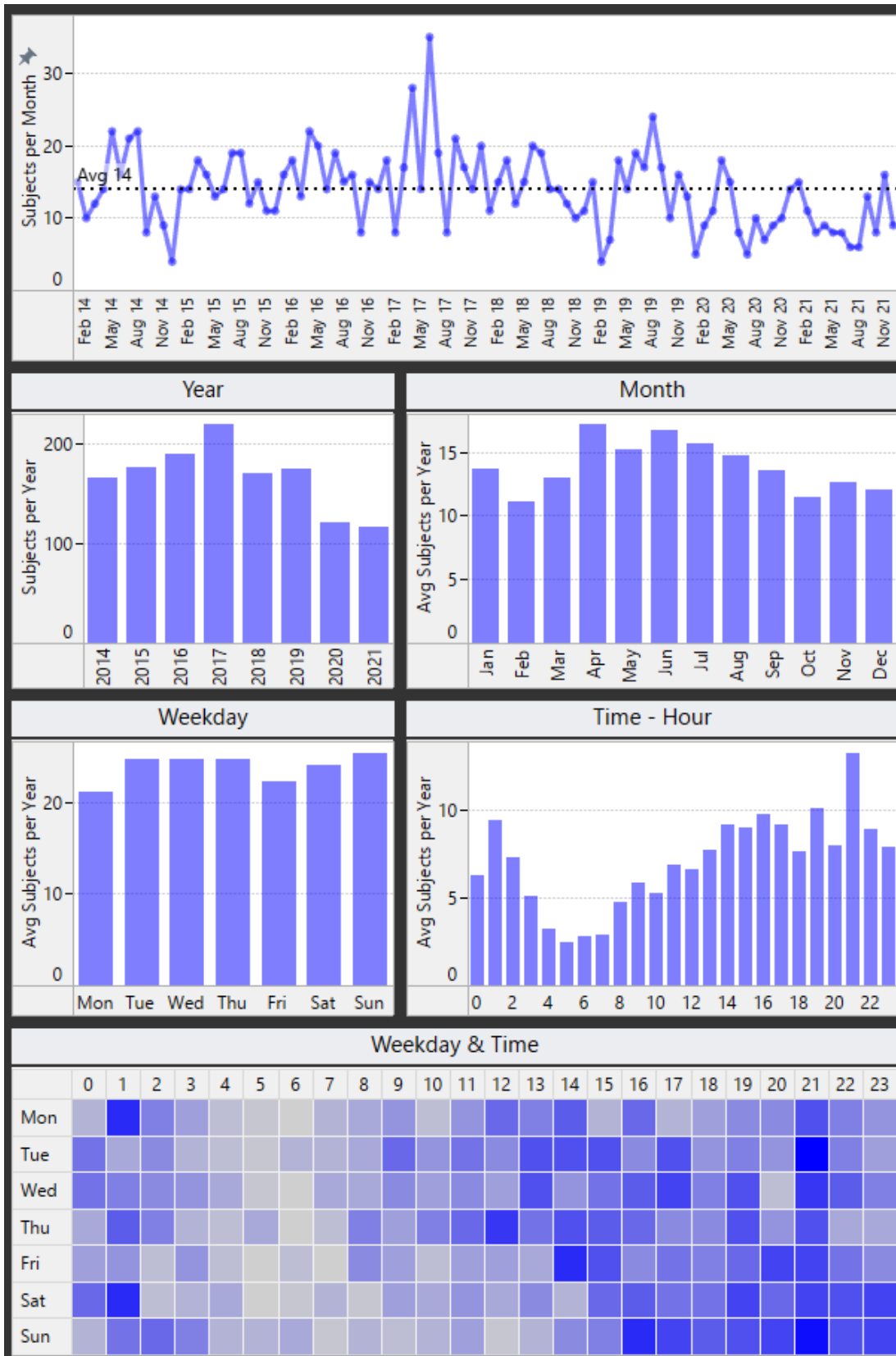
Use of Force Incident Locations – 2021
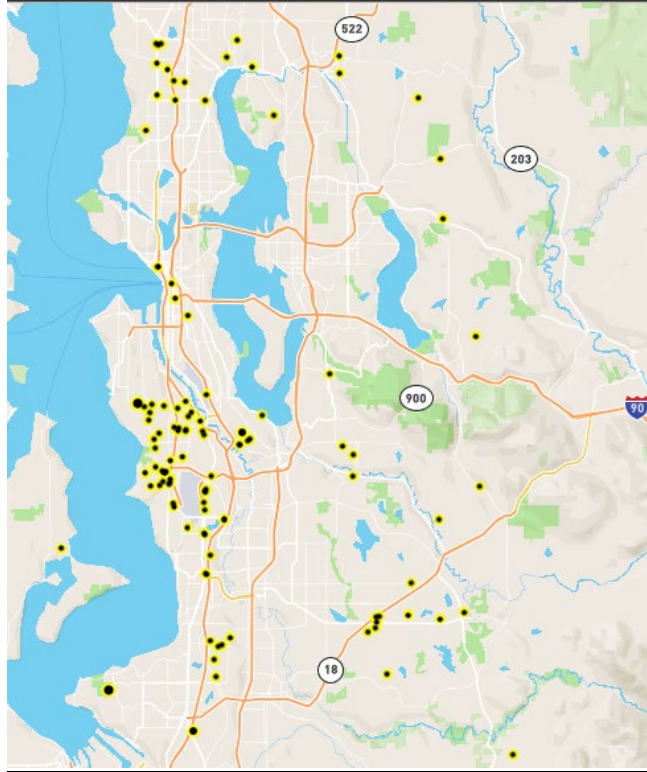
Use of Force Incident Locations – 2014 to 2020

Use of Force Heat Map - 2021

Use of Force Heat Map – 2014 to 2020

2) Reason for Contact

Over the last eight years 65% of officers who used force were responding to a dispatched call for service. Twenty-five percent of officers were making an officer-initiated contact and 10% of officers were responding to assist other officers. From 2015 to 2021 the percentage of use of force incidents resulting from an officer-initiated contact fell from 28% to 5%.
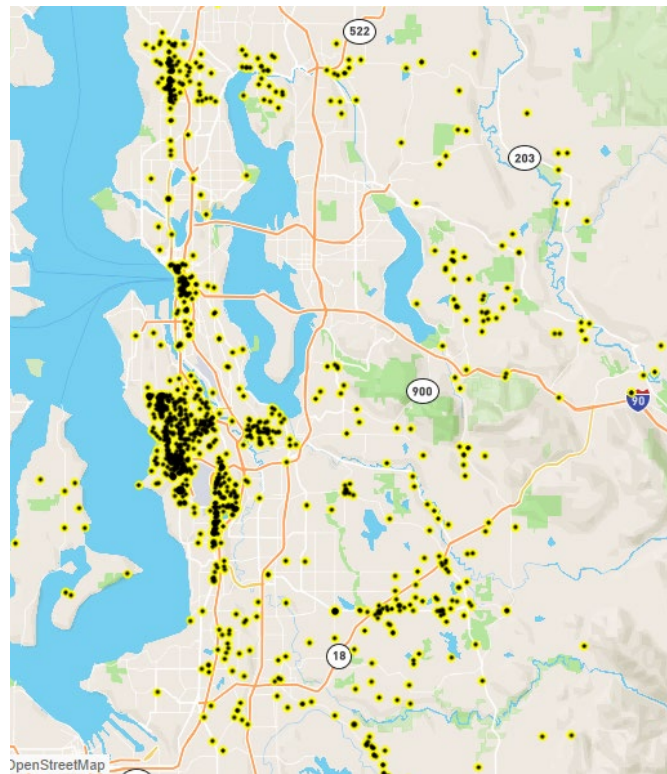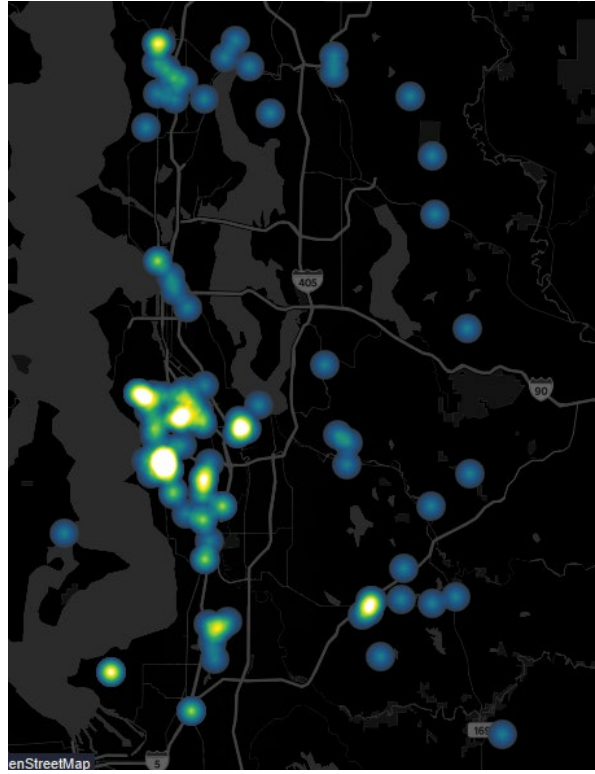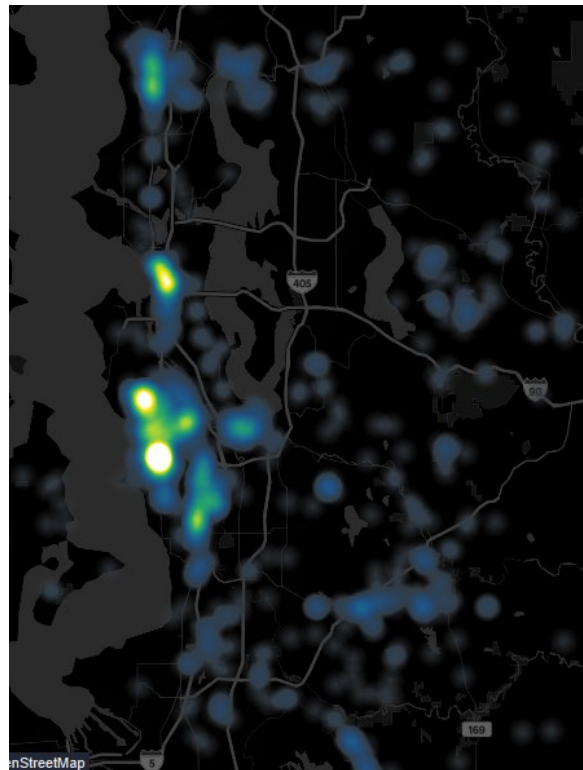
Over the last four years there has been a trend towards more officers being present on scene when force was used. In 2018 18% of all force incidents had four or more officers on scene when force was used, and that percentage rose to 53% by 2021. With more officers on scene, more officers were also involved in the use of force incidents. In 2018 54% of use of force incidents involved only one officer using force and this fell to 15% by 2021. During this same time period the percentage of force incidents involving three or more officers rose from 14% to 51%.

Over the last eight years the most common original call types for force incidents were violent crimes (28%) and property crimes (26%).   There were 185 incidents related to a traffic offense, 133 assaults and 107 thefts.

3) Force Frequency

In 2021 there were 117 use of force incidents involving 189 officers who used force a total of 316 times. There were two officers who used force between 7 or 8 times each, ten officers who used force 4 or 5 times each, sixty-two officers who used force 2 or 3 times, and 115 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 2021, 10% of the Department's use of force incidents had low Force Justification scores (<6). The average Force Justification score was 10.9 on a scale of 0 to 20 which was higher than the average for prior years (10.3). For each of the four Graham factors, the average crime level score and flight level score were higher than prior years and the resistance level score was slightly lower. This indicates that subjects involved in force incidents in 2021 were more likely to be involved in violent crimes and were more likely to flee than subjects from prior years.

In 2021 there were 14 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 2021 there were 31 officers who were involved in at least one incident with a low Force Justification score. Three officers were involved two low Force Justification incidents each.

Over the last eight years average Force Justification Scores were higher for women (11.0) than men (10.2). Asian subjects had the highest average Force Justification score (11.1), and White and Black subjects had the lowest scores (10.2). Average Force Justification scores were lowest for juvenile subjects (9.6) and were highest for subjects between 18 and 29 (10.6).

Officers were less likely to use electronic control weapons (ECW) (32%) during a low Force Justification incident than a medium or high Force Justification incident (46%). Officers were more likely to resolve a low Force Justification incident by using physical force only (52%), but they were less likely to use weight (25%), wrestling (20%) and pushing (10%) than in higher Force Justification incidents.

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 2021 there were 14 incidents that had a high Force Factor score (+3 or above). In 2021 the percentage of low Force Factor incidents increased to 18% compared to 7% in prior years. The percentage of zero Force Factor cases also increased from 20% to 28%. This indicates that in 2021 officers were using much lower levels of force compared to resistance than in prior years.

Over the last eight years most high Force Factor incidents involved only the use of weapons: ECWs (59%), OC (14%), and canines (13%). Only 8% of high Force Factor incidents involved physical force only.

In 2021 the most common Force Factor Score was 0 (28%) followed by +2 (22%) and +1 (20%). These numbers indicate that most officers in the department behave 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 2021		
	Low (-1 to -3)	Medium (0 to +2)	High (+3 to +5)
Subject brought under control within 1 or 2 Force Sequences	32%	23%	68%
Subject Injury Rate	67%	74%	73%
Officer Injury Rate	29%	22%	5%
Weapon Used by Officer	50%	55%	92%

6) Force Tactics

Of the 117 use of force incidents that occurred in 2021, 43% involved physical force only, 7% involved only the use of weapons by officers and 50% involved both physical force and the use of a weapon.

Compared to prior years, officers were more likely to use grabbing and takedowns in 2021. Officers were less likely to use Electronic Control Weapons (ECW), OC and canines in 2021 than in prior years.

Force Tactics Used in 2021

Force Tactics - Percentage of All Force Incidents

Physical	Grab	83%
	Takedown	56%
	Weight	27%
	Pain	8%
	Strike	8%
	Push	5%
	Hair Hold	3%
	Wrestle	2%
	LNR	1%
Weapon	ECW	33%
	Other	11%
	OC	3%
	Projectile	2%
	Canine	2%
	Impact	1%
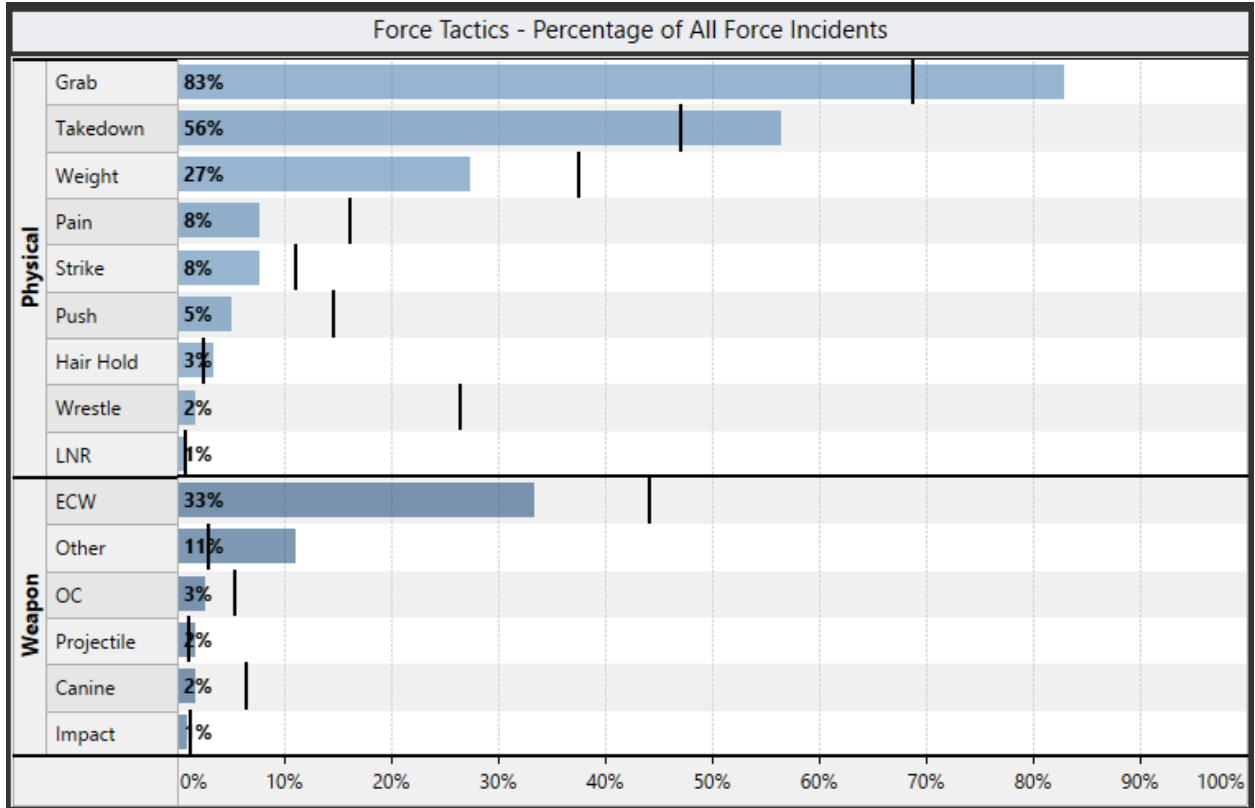
Over the last eight years officers have used 5,899 individual physical force tactics and weapons during 1,334 incidents.

The frequency of use of grabbing and takedowns was higher in 2021 than in any prior year. Other physical force tactics were used less frequently in 2021 than in 2020.

ECW use has declined from 56% in 2014 to 33% in 2021. The use of canines rose from 3% in 2014 to 15% in 2018 before falling to 1.7% in 2021. OC use has fallen from a high of 10% in 2015 to 2.6% in 2021.
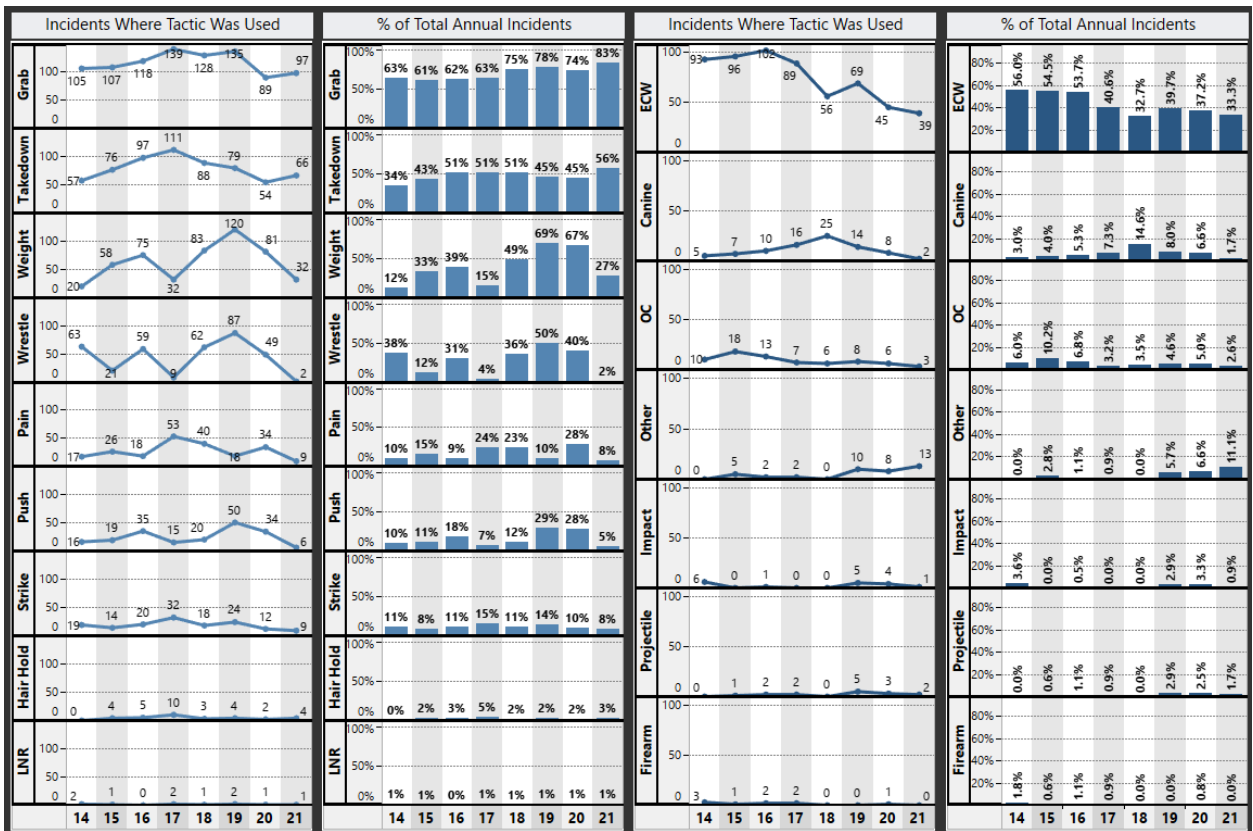
Incidents Where Tactic Was Used

Tactic	14	15	16	17	18	19	20	21
Grab	105	107	118	139	128	135	89	97
Takedown	57	76	97	111	88	79	54	66
Weight	20	58	75	83	120	81	32	32
Wrestle	63	21	59	9	62	87	49	2
Pain	17	26	18	53	40	16	34	9
Push	16	19	35	15	20	50	34	6
Strike	19	14	20	32	18	24	12	9
Hair Hold	0	4	5	10	3	4	2	4
LNR	2	1	0	2	1	2	1	1

% of Total Annual Incidents

Tactic	14	15	16	17	18	19	20	21
Grab	63%	61%	62%	63%	75%	78%	74%	83%
Takedown	34%	43%	51%	51%	51%	45%	45%	56%
Weight	12%	33%	39%		49%	69%	67%	27%
Wrestle	38%	12%	31%	4%	36%	50%	40%	2%
Pain	10%	15%	9%	24%	23%	10%	28%	8%
Push	10%	11%	18%	7%	12%	29%	28%	5%
Strike	11%	8%	11%	15%	11%	14%	10%	8%
Hair Hold	0%	2%	3%	5%	2%	2%	2%	3%
LNR	1%	1%	0%	1%	1%	1%	1%	1%

Incidents Where Tactic Was Used

Tactic	14	15	16	17	18	19	20	21
ECW	93		96		102	89	69	56 / 45 / 39
Canine	5		7	10	16	25	14	8 / 2
OC	10		18	13	7	6	8	6 / 3
Other	0	0	5	2	2	0	10	8 / 13
Impact	6		0	1	0	0	5	4 / 1
Projectile	0		1	2	2	0	5	3 / 2
Firearm	3		1	2	2	0	0	1 / 0

% of Total Annual Incidents

| Tactic	14	15	16	17	18	19	20	21
ECW	56.0%	54.5%	53.7%	40.6%	32.7%	39.7%	37.2%	33.3%
Canine	3.0%	4.0%	5.3%	7.3%	14.6%	8.0%	6.6%	1.7%
OC	6.0%	10.2%	6.8%	3.2%	3.5%	4.6%	5.0%	2.6%
Other	0.0%	2.8%	1.1%	0.9%	0.0%	5.7%	6.6%	1.1%
Impact	3.6%	0.0%	0.5%	0.0%	0.0%	2.9%	3.3%	0.9%
Projectile	0.0%	0.6%	1.1%	0.9%	0.0%	2.9%	2.5%	1.7%
Firearm	1.8%	0.6%	1.1%	0.9%	0.0%	0.0%	0.8%	0.0%

Subjects

Between 2014 and 2020 there were three demographic groups (gender, race, and age) that made up more than 60% of all use of force subjects. Adult White males made up 43% of all force subjects while Black males between 18 and 39 made up 18% of all subjects. In 2021 the demographics of use of force subjects were similar to prior years but adult White males made up 5% less of all force subjects.

Most Common Characteristics of Use of Force Subjects 2014 - 2020				
Gender	Race	Age	Number of Subjects	Percentage of Force Incidents
Male	White	18-39	350	29%
Male	Black	18-39	220	18%
Male	White	40+	168	14%
All Other Demographic Groups or Unknown			479	39%

Most Common Characteristics of Use of Force Subjects 2021				
Gender	Race	Age	Number of Subjects	Percentage of Force Incidents
Male	White	18-39	31	26%
Male	Black	18-39	21	18%
Male	White	40+	14	12%
All Other Demographic Groups or Unknown			51	44%

In 2021 Female and Hispanic subjects and subjects between 30 and 39 were more likely to be involved in a force incident than in prior years while White, Asian, juvenile and transient subjects were less likely.

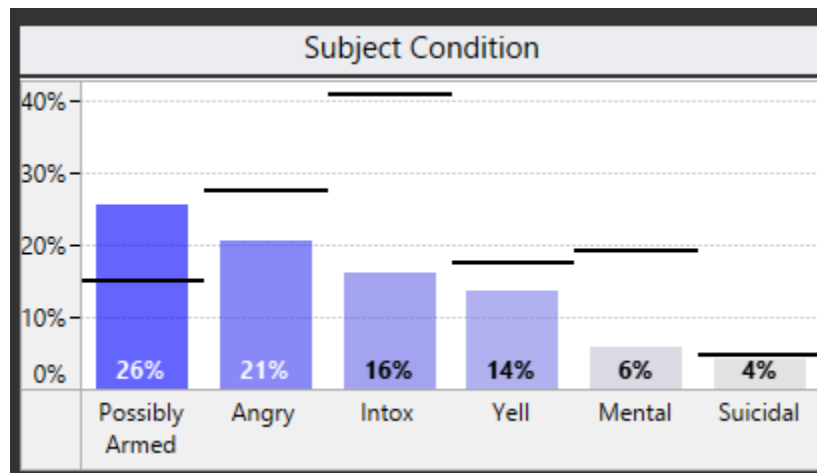**Use of Force Subject Characteristics - 2014 to 2020**
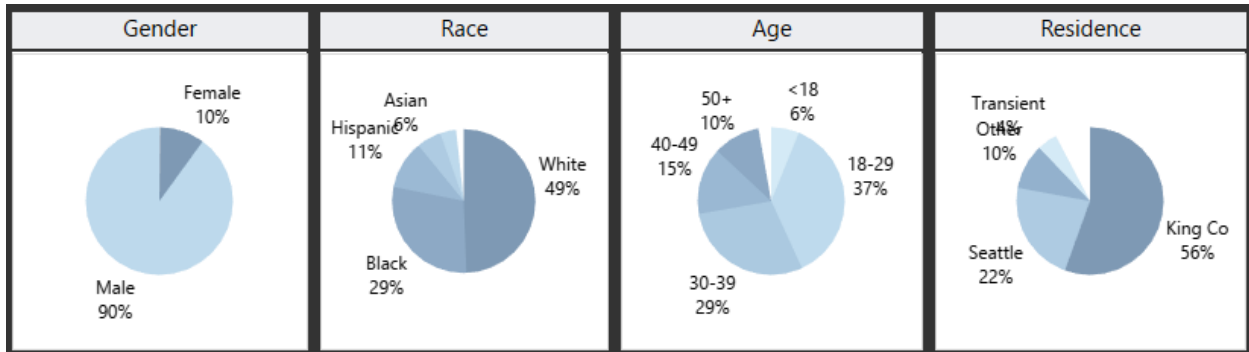

Use of Force Subject Characteristics - 2021
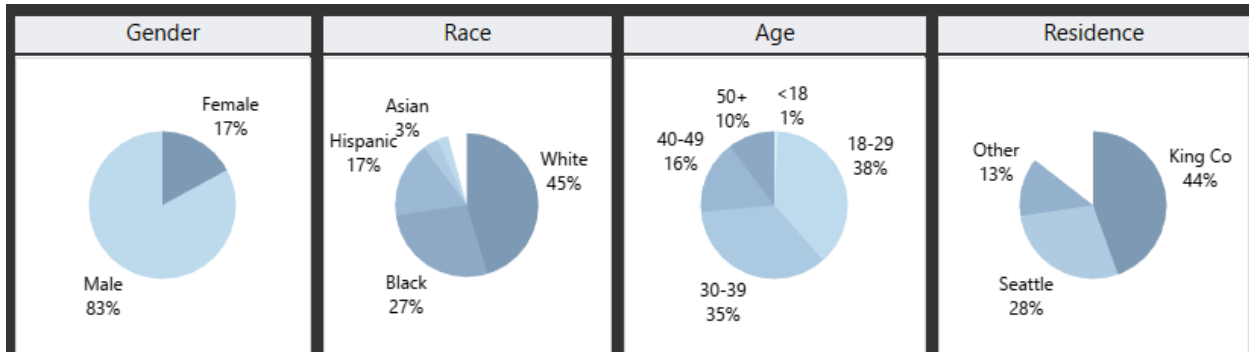
Compared to prior years, use of force subjects in 2021 were more likely to be possibly armed (26% vs 15%) but were less likely to be under the influence of alcohol or drugs (16% vs 41%) or have mental health issues (6% vs 19%).

Subject Condition in 2021

In 2021 officers were more likely to face resistance with deadly force (13% vs 5%) or resistance with a less lethal weapon (7% vs 2%) and were less likely to encounter defensive resistance (48% vs 58%) than in prior years.

Subject Maximum Resistance Level - 2021
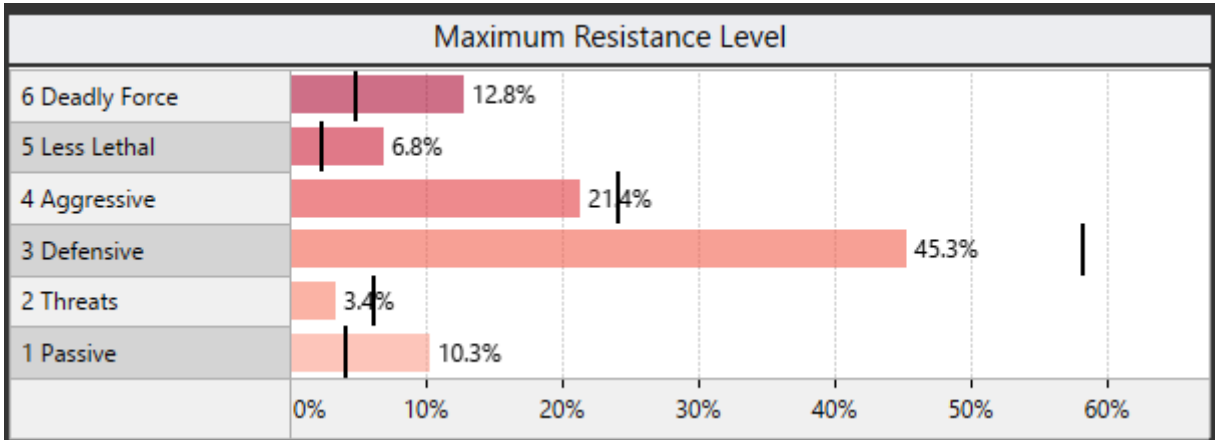
In 2021 subjects were more likely to make furtive or threatening movements towards the officers (33% vs 25%) or assault officers (11% vs 6%) than in prior years.

Subject Maximum Threat Level - 2021
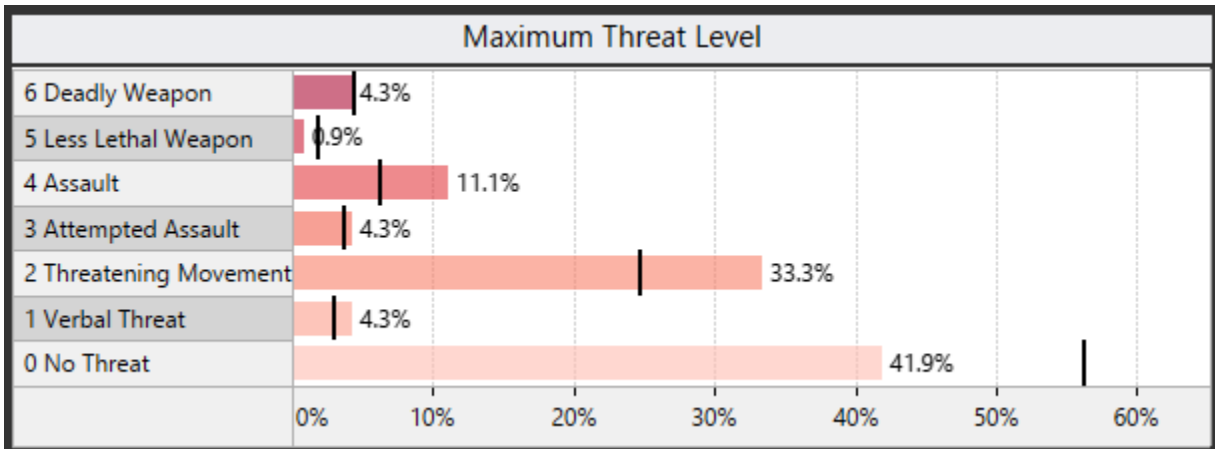
7) Injuries

In 2021 there were 30 officers who were injured during 316 uses of force. Two officers were injured twice during the year. Nine percent of force applications by officers resulted in an injury to the officer who used force. Seven officers complained of pain only. Nineteen officers received a bruise or scrape, and four officers had a minor cut. One in five injured officers received medical treatment from EMTs or at a hospital.

In 2021 86 subjects who had force used against them were injured (74% of all incidents). Of the subjects who were injured, most of the injuries were minor. Two subjects were bitten by canines, one subject lost consciousness, and one subject received a gunshot wound.

Eighty-six percent of subjects who were injured or complained of injury received treatment. EMTs treated 59% of injured subjects and 27% were treated at a hospital.

8) Trends

Over the 8-year period from 2014 to 2021 the following force trends were observed:

- The year with the lowest average Force Justification score was 2015 (8.9) and the highest score was in 2019 (11.4). In 2021 the average Force Justification score was 10.9.

- The average annual Force Factor Scores fell from 1.2 in 2014 to 0.5 in 2020 before rising to 0.7 in 2021.

- The average number of Force Sequence was very high between 2018 and 2020 at 5.3 Force Sequences. In 2021 the average number of Force Sequences dropped to 2.6 which is the lowest level in the last eight years.

- Use of force incidents that started with an officer-initiated contact dropped from 28% in 2015 to 5% in 2021.

- The percentage of Female subjects averaged 11% over the last eight years but in 2021 it jumped to 17%.

- The percentage of most racial groups remained stable during the last eight years, but the percentage of Hispanic subjects rose from 1.7% in 2015 to 18% in 2021.

- The percentage of juvenile subjects reached a high in 2018 at 8% before falling to 1% in 2021.

- Since 2017 the percentage of subjects who were possibly armed rose from 8% to 26% in 2021.

- The year 2021 saw fewer subjects who were under the influence of alcohol or drugs, angry, yelling, suicidal or had mental health issues than in prior years.

- In 2021 21% of use of force subjects were investigated for violent crimes involving weapons compared to an average of 5% in prior years.

- More subjects possessed a firearm (7%) in 2021 than in prior years and a higher percentage possessed a knife (10%).

- The percentage of use of force subjects who are charged with a volent crime rose from 24% in 2014 to 56% in 2021.

- Warrant arrests involving a use of force fell from 26% in 2015 to 7% in 2021.

- Use of force incidents where the only charge was obstructing fell from 9% in 2016 to 0.9% in 2021.
- 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. In 2015 28% of officers who used force made an officer initiated stop and by 2021 that percentage fell to 13%.
- Since 2017 officers are more likely to resolve a force incident with physical force only. From 2014 to 2016 about two-thirds of all force incidents involved the use of a weapon by officers. Over the last four years about 53% of incidents have involved the use of a weapon.
- Since 2015 the percentage of force subjects who were Hispanic grew from 2% to 21%.
- In 2021 there was a higher percentage of subjects who were suicidal or armed than in prior years.
- In 2014 12% of subjects were armed with a firearm, knife, or other weapon. By 2021 the number of armed subjects increased to 33%.
- In 2021 43% of force subjects were charged with a violent crime compared to 24% in 2014. By 2021 a smaller percentage of force subjects were booked on a warrant and only one subject was charged with obstructing only.
- Subject injury rates have been falling since 2016 and the average injury severity was lower in 2021 than any prior year. Officer injury rates and severity of injuries have remained stable over the last eight years.