Police Force Analysis System
Second Summary Report

Kirkland Police Department

Use of Force Data from January 1, 2016 to December 31, 2021

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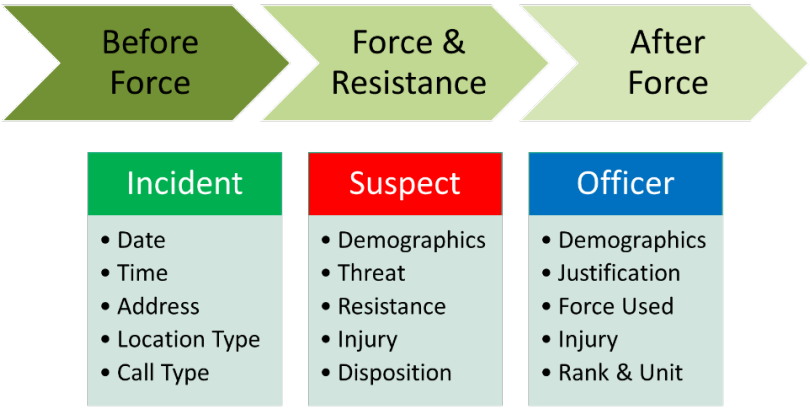
PFAS examines relevant temporal data from immediately before, during and after an application of force.



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 more than ninety 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

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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 Kirkland Police Department

Police Strategies LLC began working with the Kirkland Police Department in May 2021. Our first task was to code the Department's use of force reports and enter the data into the Police Force Analysis System℠. Kirkland PD personnel provided copies of the reports through a secure online file sharing system. These reports and electronic data came from the Department's IAPro/BlueTeam™ records management system. Use of force incident reports from 2016 to 2020 were analyzed. Our first report was issued in early 2022. This report will examine data from 2021.

Kirkland PD provided incident reports and officer narrative statements for each incident where force was used. Data was extracted from the incident reports and officer narrative statements and entered into a relational database. Interactive dashboards were then built for use by Kirkland PD.

The Police Force Analysis System℠ contains data on all use of force incidents where an officer used a weapon or any physical force. Kirkland PD also provided data and reports on incidents

where officers pointed a weapon (firearm, ECW[4] or projectile weapons) and/or held the weapon and low ready but did not use the weapon. The Department began to routinely collect information on show of force incidents in 2019. Show of force incidents are qualitatively different from actual use of force incidents, and they cannot be analyzed using the same methodology. Therefore, this report will focus on use of force incidents only.

The use of force database includes twenty-five incidents that occurred at the Kirkland Jail and involved Kirkland PD corrections officers.

[4] ECW means an electronic control weapon commonly known as a Taser™.

Summary of Kirkland PD's Police Force Analysis System

The Kirkland Police Department's Police Force Analysis System℠ (PFAS) contains six years of use of force data from 2016 to 2021. The database includes detailed information on 272 subjects who had force used against them and the 121 officers who used force during the 6-year period. In 2021 there were 52 use of force incidents involving 52 officers who used force a total of 96 times. This report will examine the 6-year trends in uses of force and will summarize the use of force data from the entire period.

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

From 2017 to 2020 the annual number of force incidents fell from 50 to 40 a 20% decline before rising in 2021 to 52 incidents (30% increase over 2020). In the Summer of 2021 (June to August) there were only 3 use of force incidents and there were no incidents in July 2021. In prior years there were no force incidents in December 2019 and March 2016. In October 2021 there was one party event that resulted in five use of force incidents.

Over the last six years the months with the most force incidents were March, July and December with 5 incidents per month per year. The months with the fewest incidents were February and August with 3 incidents per month per year. During the week, Fridays and Saturdays had the most incidents each year with eight each day. The peak hour for force incidents was between 1am and 2am (4 incidents per year).

Compared to prior years, use of force incidents in 2021 were more likely to occur at a business (29% vs 19% in prior years) and fewer incidents occurred in the street (29% in 2021 vs 39% in prior years).

Over the last six years use of force incidents occurring in zip code 98034 have declined from 73% to 54% while incidents in zip code 98033 have increased from 25% to 42%.

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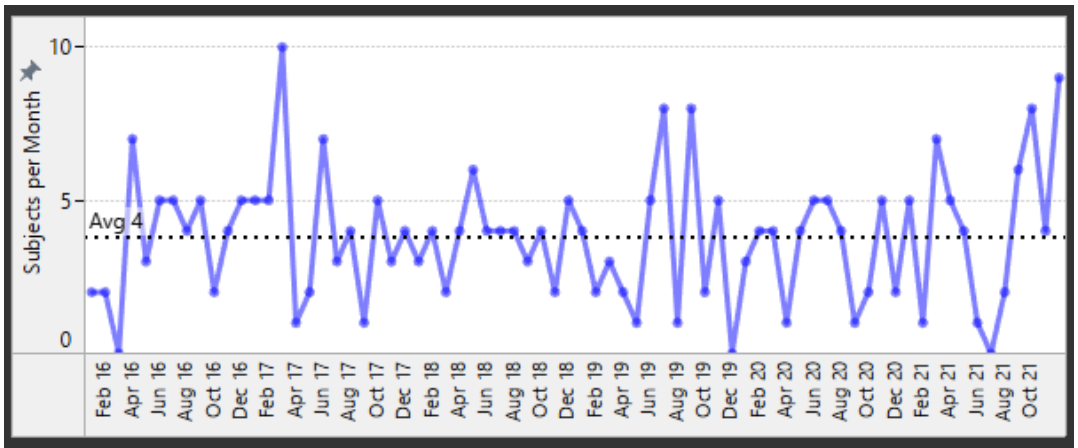
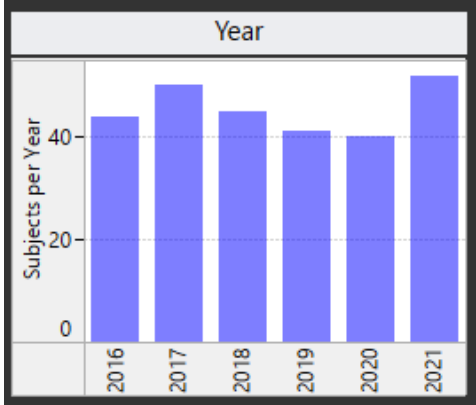
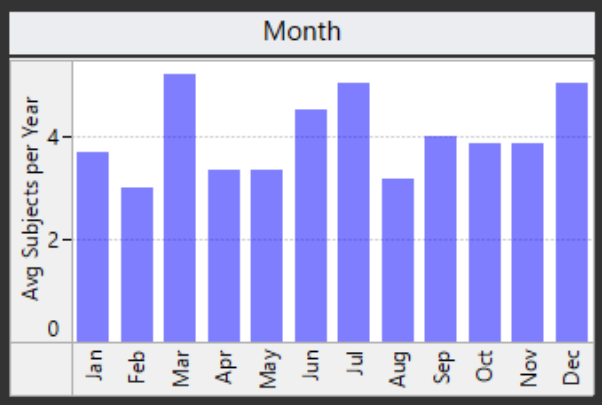
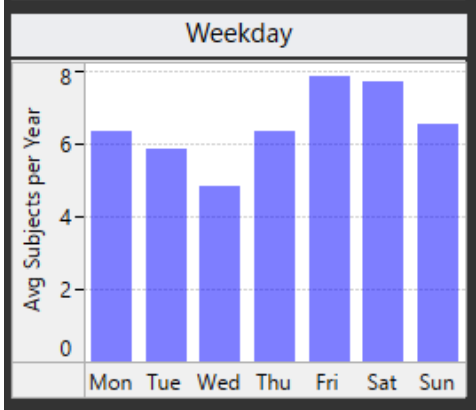
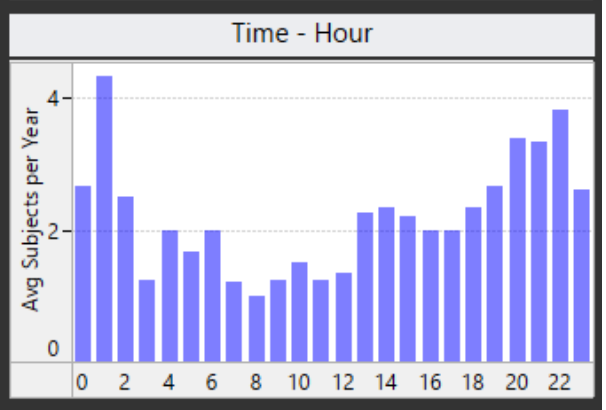
Use of Force Incidents – 2016 to 2021











Weekday & Time

	12am-4am	4am-8am	8am-Noon	Noon-4pm	4pm-8pm	8pm-12am
Mon	10	4	2	4	6	12
Tue	3	5	2	7	11	7
Wed	3	3		8	8	7
Thu	10	6	2	7	7	6
Fri	11	1	6	5	11	13
Sat	17	1	4	8	4	12
Sun	8	5	2	3	5	16

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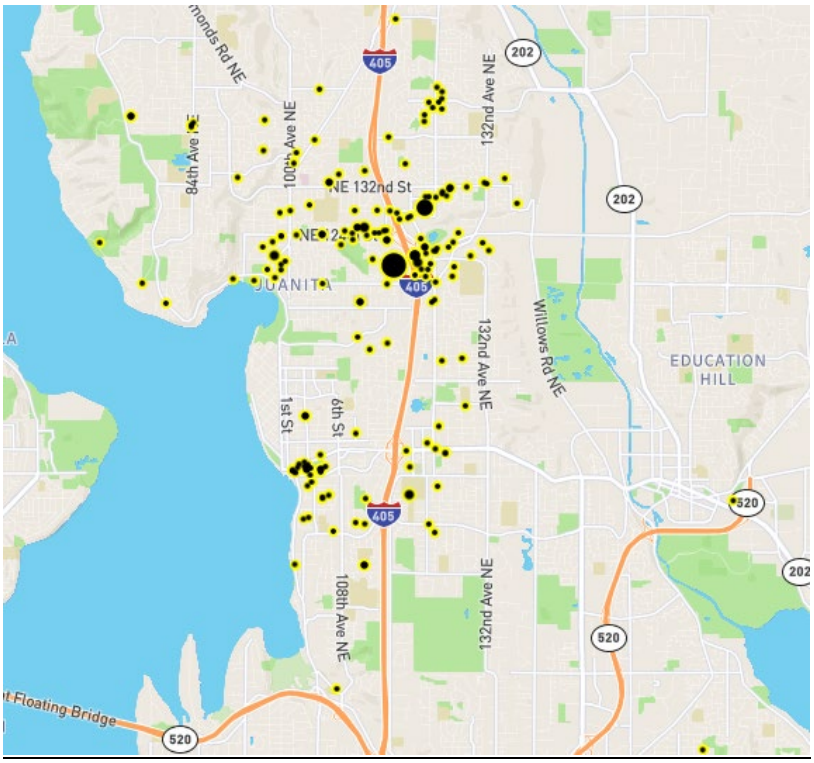
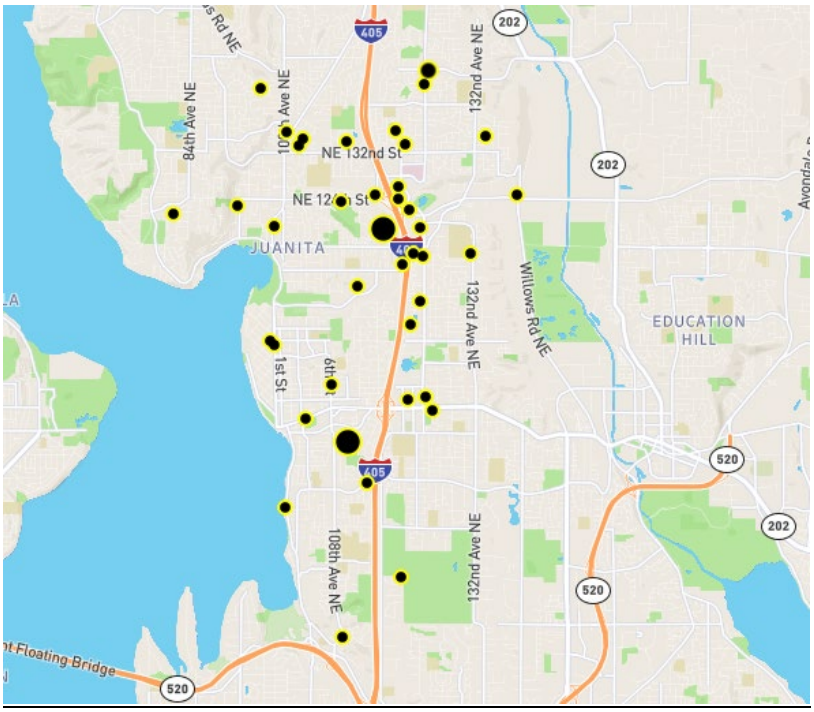
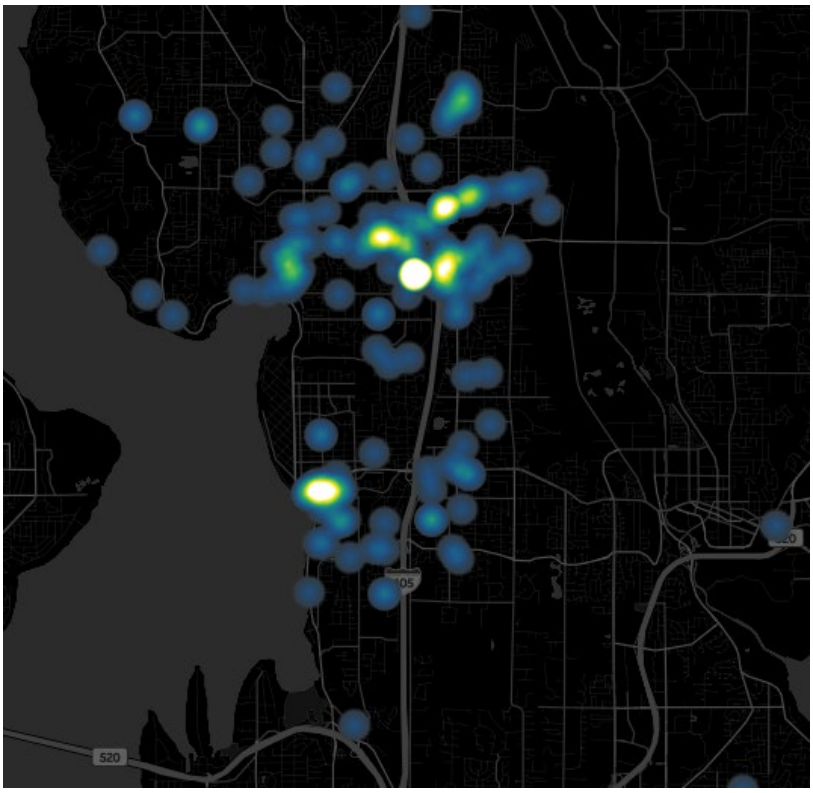
Use of Force Incident Locations – 2016 to 2020



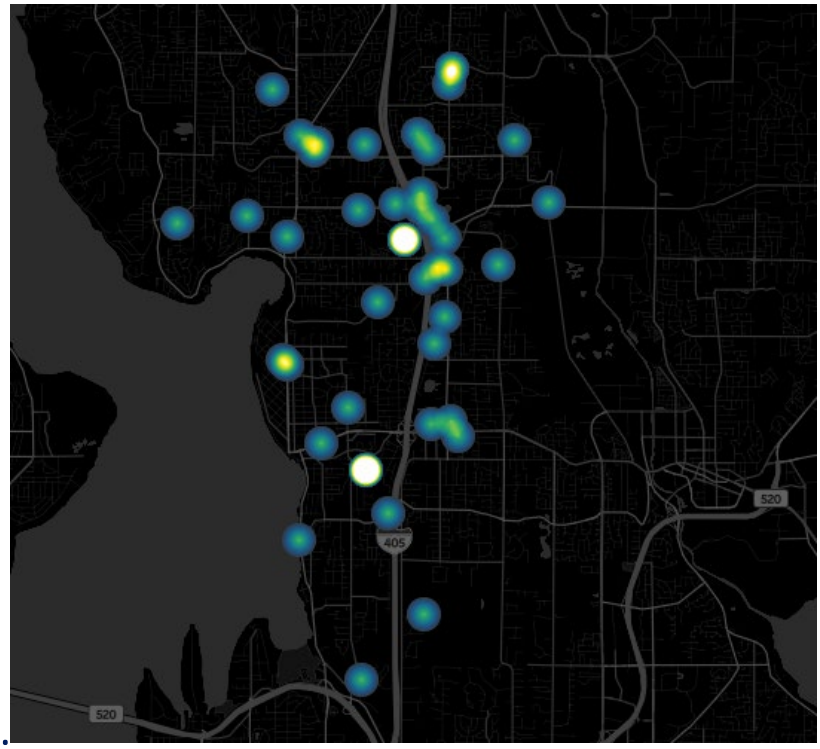
Use of Force Incident Locations – 2021



Use of Force Heat Map – 2016 to 2020



Use of Force Heat Map – 2021



2) Reason for Contact

Over the last six years 68% of officers who used force were responding to a dispatched call for service. Twenty-one percent of officers were making an officer-initiated contact and 11% of officers were responding to assist other officers. In 2021 dispatched incidents rose to 73% and officer-initiated contacts fell to 17%.

In 2021 the original call types for use of force incidents were higher for violent crimes (33% vs 25%) and welfare checks (21% vs. 11%). The most frequent call description in 2021 was general disturbances with 10 incidents.

3) Force Frequency

In 2021 there were 52 use of force incidents involving 52 officers who used force a total of 96 times. There was one officer who used force six times, two officers who used force five times, twenty-three officers who used force 2 or 3 times each and twenty-six officers who used force once. The top 10% of officers made up 23% of all force used by the Department.

Over the last six years, officers who used force most frequently were involved in fewer than five incidents each year. These are likely the officers who had patrol assignments during the period and were making the most arrests in 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.

From 2016 to 2021, 14% of the Department's use of force incidents had low Force Justification scores (<6). The average Force Justification score was 9.9 on a scale of 0 to 20. The annual average Force Justification score ranged from 8.0 in 2017 to 11.6 in 2017. In 2021

the average Force Justification Score was 9.6 which was near the average for the six-year period.

In 2021 there were four incidents that received the highest Force Justification score of 20. These incidents involved an assault on the officer before the officer made the decision to use force. The percentage of high Force Justification scores in 2021 is similar to prior years.

In 2021 15% of incidents had a low Force Justification score. This is similar to prior years. A smaller percentage of incidents had a low Force Justification score in 2021 (8%) than in prior years (15%). There were eight low Force Justification incidents involving 14 officers. No officers were involved in more than one low Force Justification incident.

Over the last six years average Force Justification Scores were similar for male and female subjects (9.9). White subjects had the highest average Force Justification score (10.4), and Black subjects had the lowest average scores (8.2). Average Force Justification scores were highest for juveniles (11.2) and were lowest for subjects between 40 and 49 (7.8).

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.

Over the last six years 7% of force incidents had a high Force Factor score (+3 or above). The average annual Force Factor score has remained stable at 0.5. In 2021 eight incidents had a +3 or +4 Force Factor score and there were no incidents with a higher score. In 2021 15% of force incidents had a high Force Factor score. Eight officers were involved in those eight high Force Factor incidents and no officer was involved in more than one incident.

Over the last six years, the average Force Factor scores were lower for female subjects (0.1) than male subjects (0.5). By subject race there was no significant difference in average Force Factor scores. Juvenile subjects had the lowest average Force Factor score (-0.2) and those 40 to 49 had the highest average scores (1.1). By Body Mass Index subjects who were obese have the highest average Force Factor score (1.5).

Over the last six years 90% of high Force Factor incidents involved the use of weapons: ECWs (37%), canines (32%), OC (11%), impact weapons (5%), and firearms (5%). Eleven percent of high Force Factor incidents involved physical force only. All high Force Factor incidents involved only one officer using force.

The most common Force Factor Score was +1 (42%) followed by 0 (31%) and +2 (12%). 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.

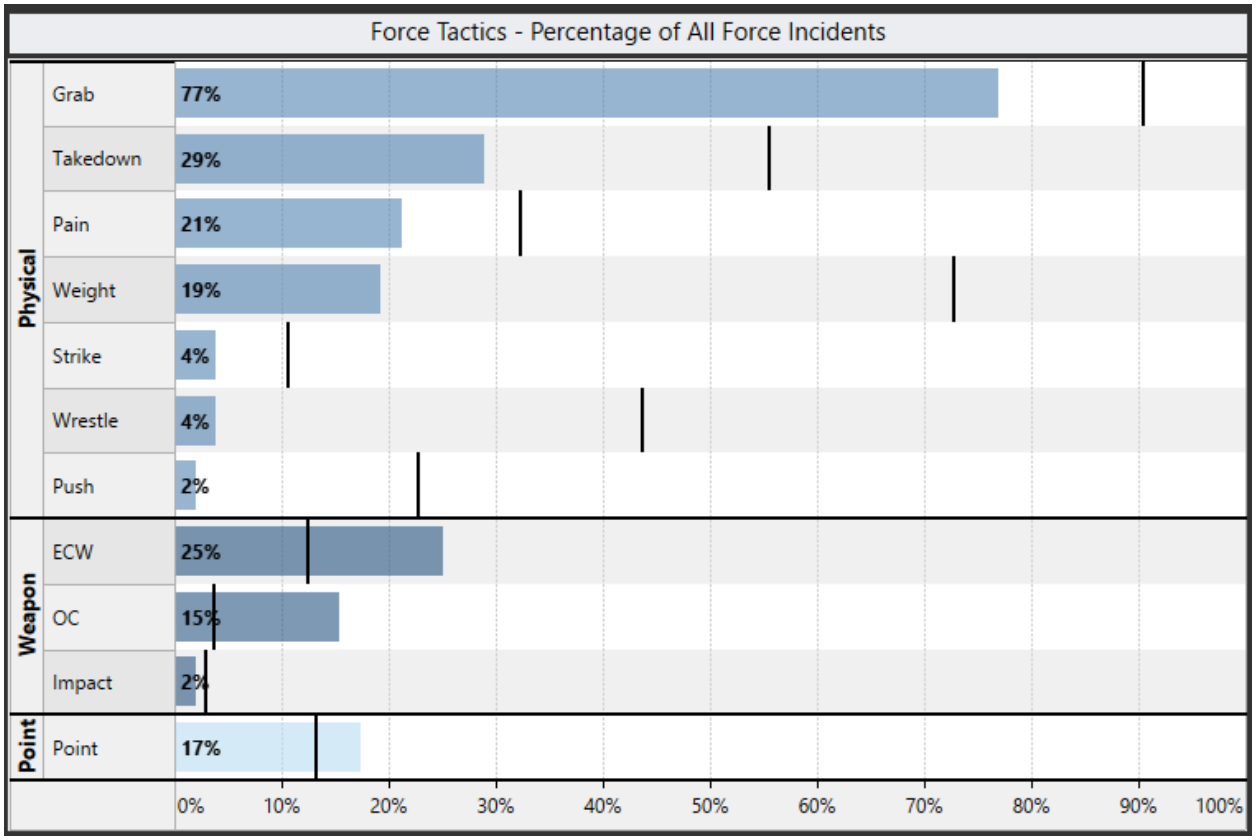
	Force Factor – 2016 to 2021		
	Low (-1 to -3)	Medium (0 to +2)	High (+3 to +5)
Subject brought under control within 1 or 2 Force Sequences	17%	7%	47%
Subject Injury Rate	13%	35%	63%
Officer Injury Rate	26%	14%	0%

6) Force Tactics

Of the 52 use of force incidents that occurred in 2021, 60% involved physical force only, 19% involved only the use of weapons by officers and 21% involved both physical force and the use of a weapon. In 2021 40% of all force incidents involved the use of a weapon compared to 18% in prior years.

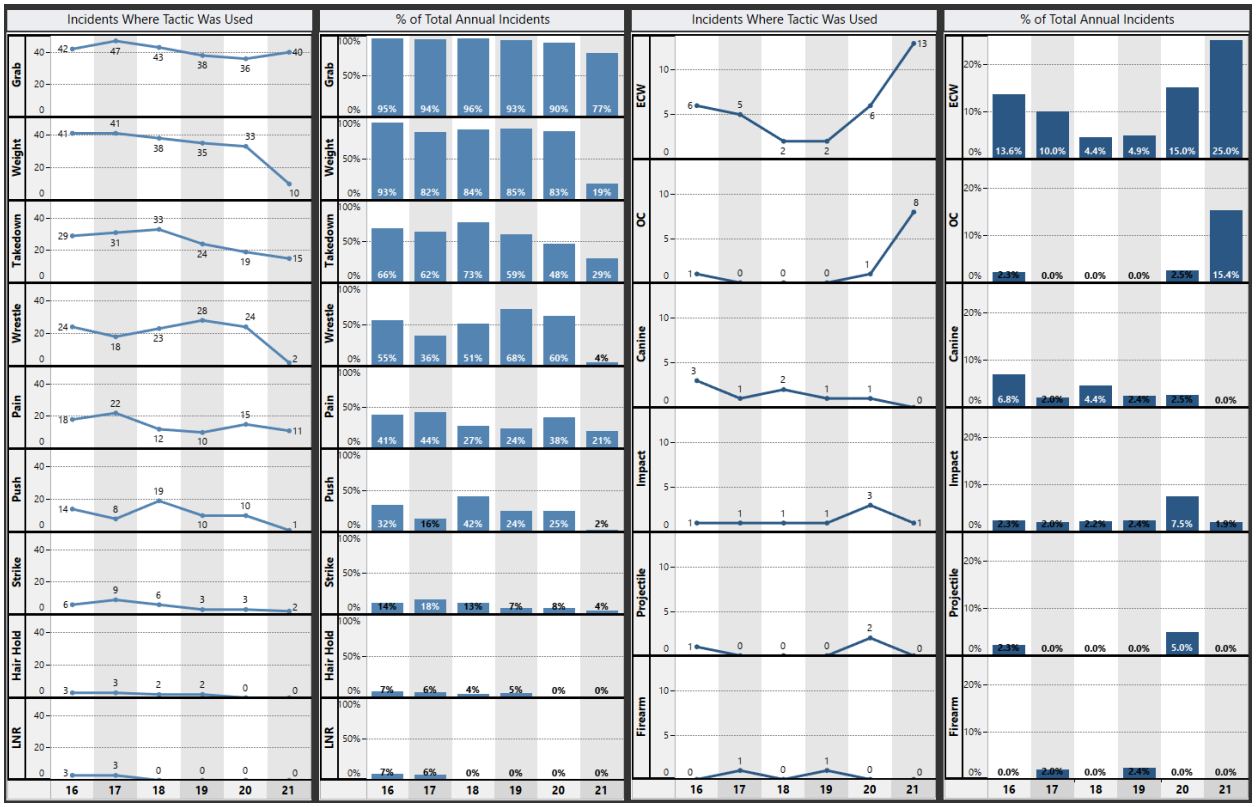
Compared to prior years, officers were less likely to use takedowns, strikes and neck restraints in 2021 and were more likely to use weight and wrestling. Electronic control weapons and projectile weapons were use more often in 2021 than in prior years while impact weapons were less likely to be used. Officers were less likely to use all types of physical force during force incidents in 2021 and were more likely to use ECWs (25% vs 10% in prior years) and OC including pepper balls (15% vs 1% in prior years). No canine bites occurred in 2021 and the use of impact weapons was lower than in prior years.

Force Tactics Used - 2021



Over the last six years officers have used 1,665 individual physical force tactics and weapons during 272 incidents. The use of takedowns has fallen steadily from 2018 to 2021. The use of physical strikes, wrestling and pushing was virtually nonexistent in 2021 and no hair holds, or neck restraints were used.

ECW use increased dramatically from 4.4% of force incidents in 2018 to 25% in 2021. From 2016 to 2020 OC was used only twice but in 2021 it was used eight times (mostly pepper balls). No canine bites occurred in 2021 where prior years had between one and three bites each year.



7) Subjects

From 2016 to 2020 there were three demographic groups (gender, race and age) that made up more than half of all use of force subjects – White and Black males between 18 and 39 and White females between 18 and 39. In 2021 the percentage of White males and females between 18 and 39 fell to 25% of all force incidents compared to 41% in prior years.

Most Common Characteristics of Use of Force Subjects 2016 – 2020				
Gender	**Race**	**Age**	**Number of Subjects**	**Percentage of Force Incidents**
Male	White	18-39	67	31%
Male	Black	18-39	25	11%
Female	White	18-39	23	10%
All Other Demographic Groups or Unknown			105	48%

Most Common Characteristics of Use of Force Subjects 2021				
Gender	**Race**	**Age**	**Number of Subjects**	**Percentage of Force Incidents**
Male	White	18-39	12	23%
Male	Black	18-39	7	13%
Female	White	18-39	1	2%
All Other Demographic Groups or Unknown			32	62%

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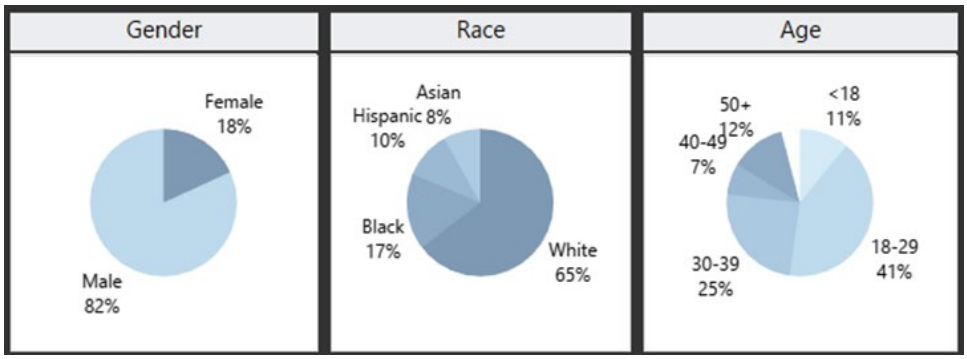
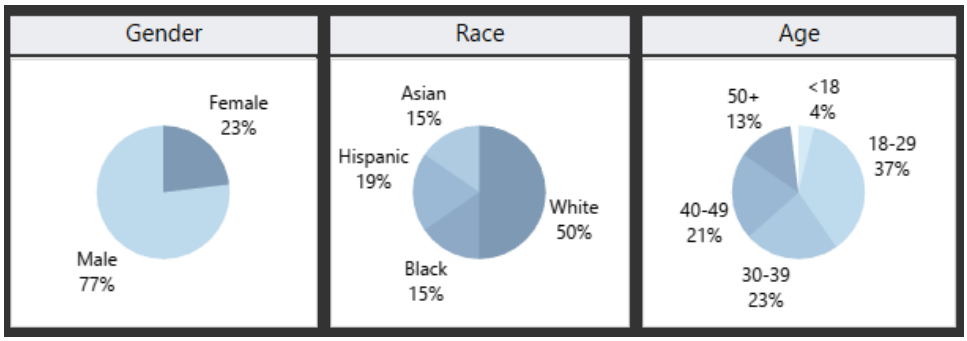
In 2021 there were higher percentages of the following demographic groups than in prior years: females, Hispanics, Asians, and those age 40 to 49. The following demographic groups appeared less frequently in use of force incidents in 2021: Whites and juveniles.

Use of Force Subject Characteristics - 2016 to 2020

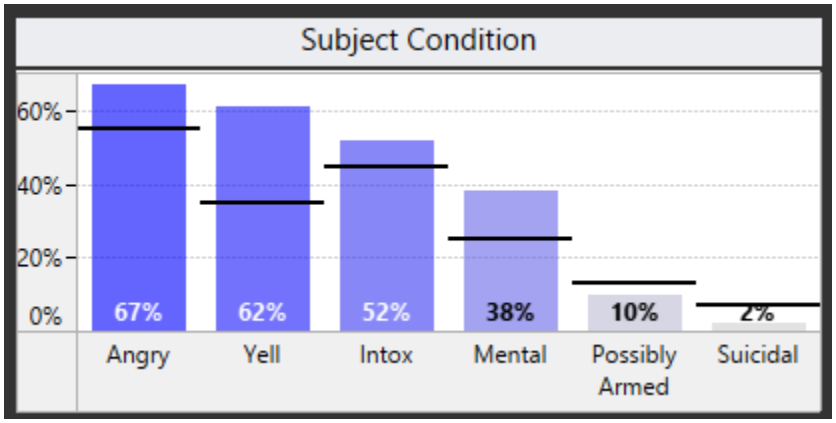


Use of Force Subject Characteristics - 2021



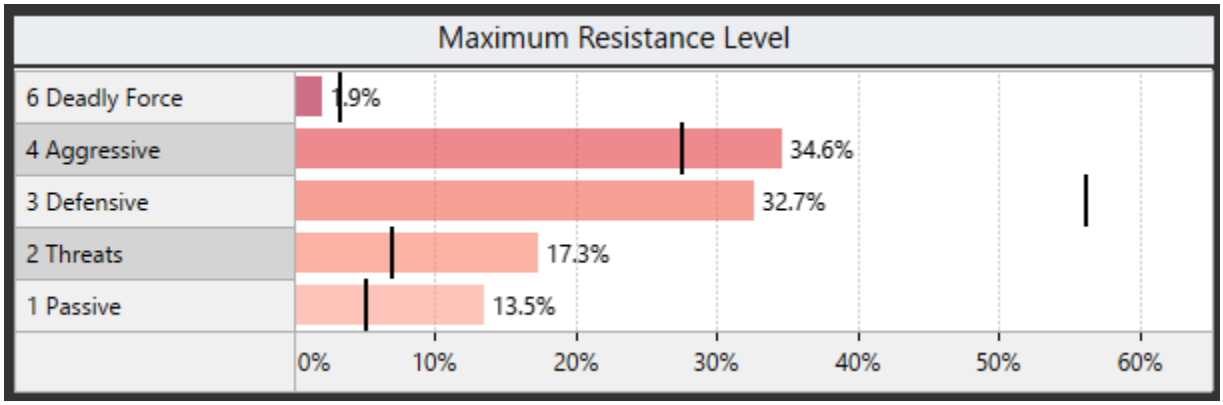
Compared to prior years, use of force subjects in 2021 were more likely to be angry, yelling, under the influence and have mental health issues.

Subject Condition in 2021



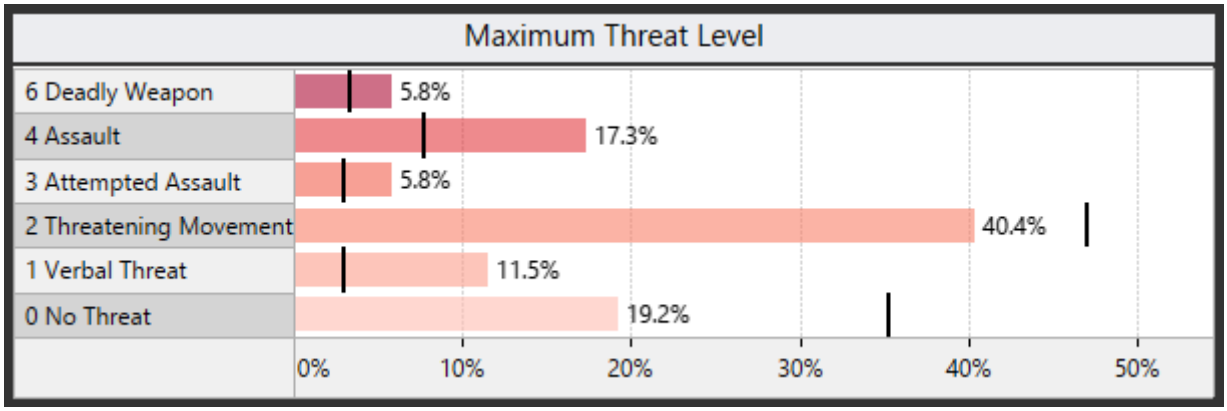
In 2021 officers were more likely to face aggressive resistance, threatening resistance and passive resistance than prior years and were less likely to encounter defensive resistance. This is likely due to the fact that officers were more likely to respond to threats and passive resistance with weapons in 2021 rather than going hands on and getting into a physical struggle with the subject.

Subject Maximum Resistance Level - 2021



In 2021 subjects were more than twice as likely to engage in assaultive behavior or make verbal threats than in prior years. Subjects were less likely to make threatening movements or present no threat in 2021.

Subject Maximum Threat Level - 2021



8) Injuries

Over the last six years there were 49 officers who were injured during a force incident. One of those officers was injured five times and nine officers were injured two or three times each. Nine percent of force applications by officers resulted in an injury to the officer who used force. Twelve officers only complained of pain, twenty-nine officers had a bruise or a scrape, six officers received a cut, one officer was contaminated with bodily fluid, and one officer received a fracture. About one in five injured officers received treatment from EMTs or at a hospital.

Over the last six years 96 subjects who had force used against them were injured (35% of all incidents). Of the subjects who were injured, most of the injuries were minor: complaint of pain (12%), ECW probe (14%), bruise/scrape (37%) or minor cut (23%). Four subject suffered chemical irritation, eight subjects were bitten by canines, one subjects had a broken bone or tooth and two subjects died.

Three quarters of subjects who were injured or complained of injury received treatment by EMTs or at the hospital.

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9) Trends

Over the period from 2016 to 2021 the following force trends were observed:

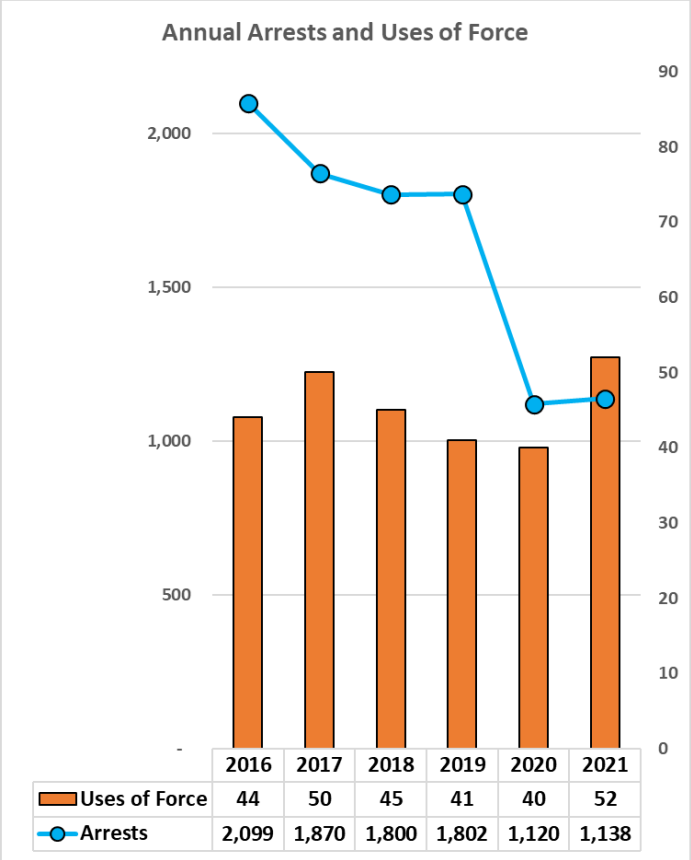
- The average number of Force Sequences remained high between 2016 and 2020 before falling significantly in 2021. Prior to 2021 more than half of all force incidents lasted five or six Force Sequences, but in 2021 only 21% of force incidents lasted that long. This change is likely due to a higher percentage of weapons used during force incidents in 2021. Between 2016 and 2020 18% of force incidents involved the use of a weapon and this increased to 40% in 2021.
- Over the last six years a greater percentage of use of force subjects reside outside the City of Kirkland. In 2016 34% of use of force subjects were non-residents, by 2021 the percentage of non-residents increased to 64%.
- Suicidal subjects declined from 18% in 2017 to 2% in 2021 but subjects with mental health problems jumped from 18% in 2020 to 38% in 2021.
- Officers found weapons on subjects less often in 2021 than in prior years.
- The percentage of subjects charged with a property crime has declined from 28% in 2017 to 6% in 2021.
- Subject injury rates have remained stable over the last five years at about 35% while officer injury rates have declined from 14% in 2017 to 5% in 2021.
- In 2021 there were no use of force incidents between June 10th and August 16th. This is the longest period of time without any use of force incidents in the last six years.

11) Use of Force Frequency Trends

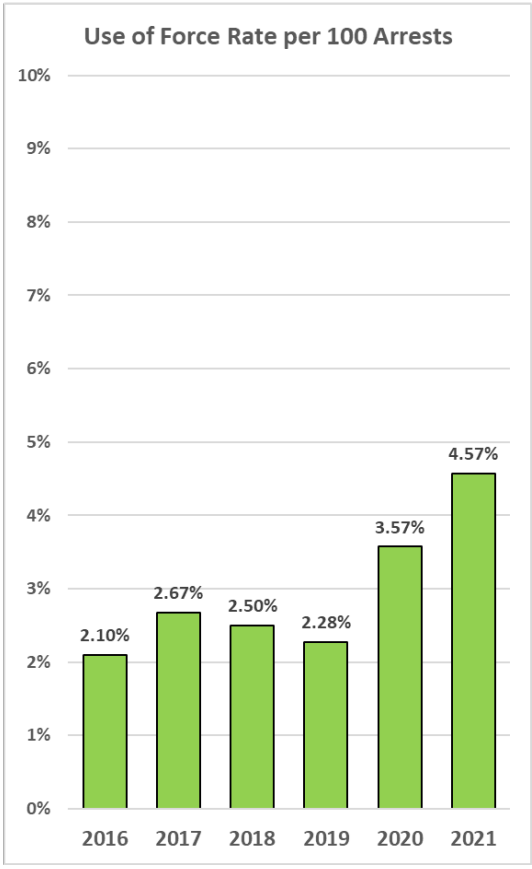
Arrests and Uses of Force

From 2016 to 2020 the number of annual arrests made by Kirkland PD fell by 47% from 2,099 arrests to 1,120 arrests. Most of the decline occurred in 2020 and was likely due to the pandemic. During this same time period the number of uses of force fell by 9% from 44 in 2016 to 40 in 2020. From 2016 to 2020 the use of force rate per one hundred arrests varied between 2.1% and 3.6%.

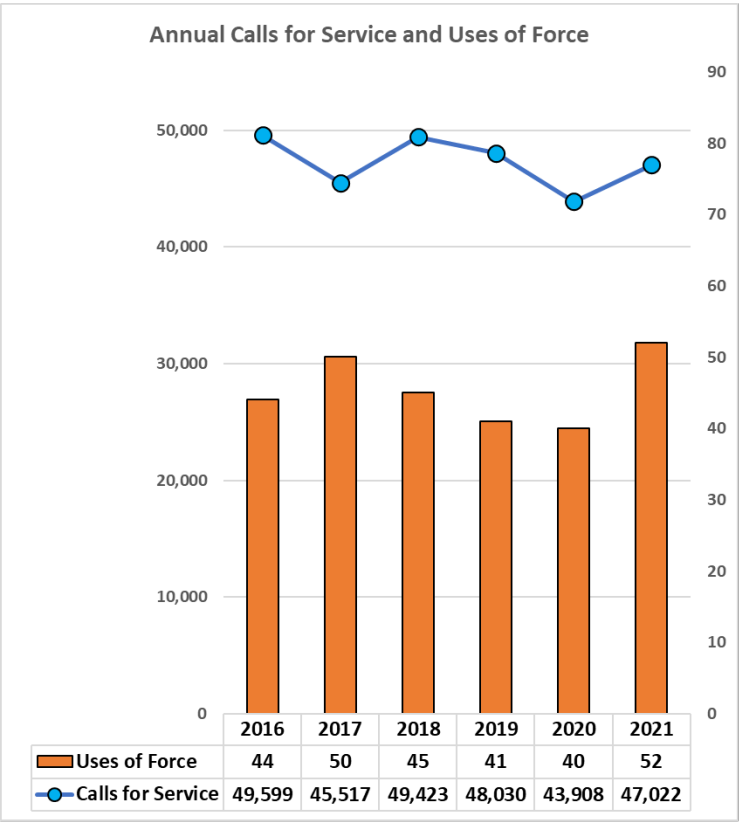
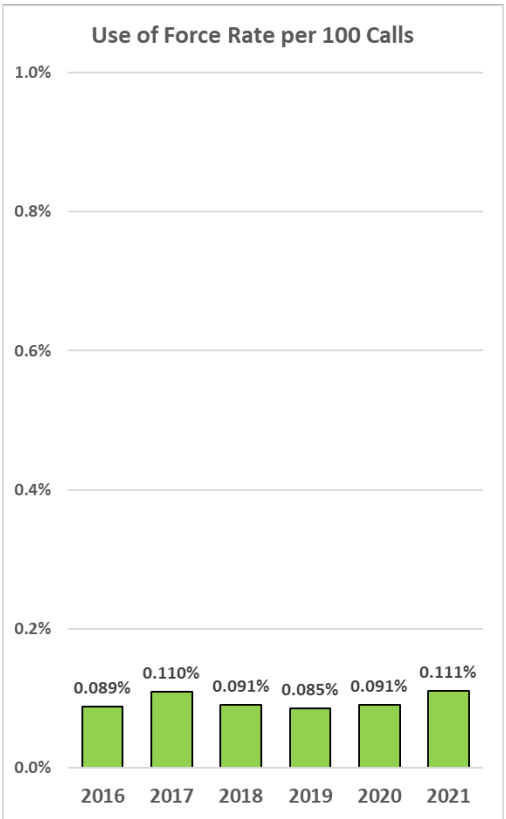
Arrests remained nearly the same between 2020 and 2021 but uses of force increased from 40 to 52. This increased the use of force rate per arrest from 3.6% to 4.6%. This rate is slightly higher than the 4% average rate among other law enforcement agencies.



	2016	2017	2018	2019	2020	2021
Uses of Force	44	50	45	41	40	52
Arrests	2,099	1,870	1,800	1,802	1,120	1,138



Calls for Service and Uses of Force

From 2016 to 2020 the number of annual calls for service to Kirkland PD fell by 11% from 49,599 calls to 43,908 calls. During this same time period the number of uses of force fell by 9% from 44 in 2016 to 40 in 2020. From 2016 to 2020 the use of force rate per one hundred calls for service varied between 0.09% and 0.11%.

Between 2020 and 2021 calls for service increased by 7% and uses of force increased by 30% so the force rate per call for service increased slightly from 0.09% to 0.11%