NATIONAL POLICING INSTITUTE
Pursuing Excellence Through Science and Innovation

AN ASSESSMENT, EVALUATION, AND ANALYSES OF THE PRINCE WILLIAM COUNTY POLICE DEPARTMENT'S RESPONSE TO RESISTANCE/USE OF FORCE

PREPARED FOR:
Prince William County Police Department

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ABOUT NPI

The National Policing Institute is a nonpartisan and independent nonprofit organization dedicated to pursuing excellence in policing through science and innovation. We envision police and communities working together to implement best practices informed or supported by research, resulting in safe, healthy, economically thriving, and mutually trusting communities. Learn more at www.policinginstitute.org.

ABOUT THE PARTNER

The Prince William County Police Department (PWCPD), established in 1970, serves as the primary law enforcement agency for Prince William County, Virginia, with a mission to ensure community safety through proactive policing, crime prevention, and professional excellence. Led by the Chief of Police, the department is structured into various divisions, including Patrol, Criminal Investigations, Special Operations, Support Services, and the Office of Professional Standards. Emphasizing community policing, the PWCPD fosters positive relationships through outreach, youth programs, and partnerships with local organizations. The department prioritizes continuous training and professional development for its officers, leveraging modern technology and innovative strategies for crime prevention and public engagement. Committed to diversity and inclusion, the PWCPD recruits a diverse workforce, provides cultural competency training, and promotes equitable treatment, aiming to build a safer, more connected community through effective law enforcement and community collaboration.

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Opinions and conclusions do not necessarily reflect those of the National Policing Institute and its partners.

November 1, 2024

In March 2022, the Prince William County Police Department (PWCPD) announced a proactive review to examine response to resistance (RTR) incidents involving our officers. The study was conducted by the National Policing Institute (NPI), a non-partisan and independent nonprofit organization dedicated to pursuing excellence in policing through science and innovation, and funded through a congressional earmark for community improvement initiatives. We appreciate NPI's work on this study, as well as the opportunity to provide this letter of introduction.

The study examined data related to all RTR incidents by PWCPD members over the course of five years, 2018-2022. The study also included interviews with officers and supervisors and a comprehensive review of our related policies and training.

Of particular note, the study highlighted and recognized:

- The department's robust community engagement efforts.
- Our comprehensive policies and training.
- Our deep commitment to continuous review, evaluation, and improvement.
- The department goes to great lengths to document every instance that officers engage in a response to resistance. For instance, NPI notes that there was a consistent rise in the number of use of force or RTR incidents over the five-year time period, but emphasizes that this increase was driven by an expansion of reporting requirements. Moreover, NPI also noted that these incidents did not result in more injuries to officers and community members, and there was a decrease in higher levels of force over that time.

Since 2020, PWCPD has published an extensive review of RTR encounters in our Annual Report. Moreover, all policies relating to RTR encounters and investigations are available on the police department's website.

Background

In understanding these encounters, it's important to note the study explored RTR incidents which is defined as the officer's actions needed to counter (or respond to) the resistance of individuals who are being lawfully arrested or detained.

PWCPD takes a broad approach in documenting as much information as possible any time a member uses techniques to gain control in a lawful arrest or detention, considering not only what is lawful under state code, but also actions that are appropriate given the specific circumstances of each situation presented according to policy.

It is important to note that most police interactions with members of the community are ordinary and commonplace encounters with largely positive or productive outcomes. There are, however, situations when officers may encounter an individual in crisis or distress, someone who is actively assaulting or

hurting themselves or others, or a subject who is resisting being taken into custody. These challenging situations may require an officer to use the appropriate and lawful level of force to overcome such resistance or assaultive behavior.

Thankfully, PWCPD maintains historically low encounters where this response is needed in comparison to overall arrest numbers. In most instances, around 95 percent, the individual is arrested or detained without incident or resistance. In less than 5% of encounters where a level of response by the officer is needed to overcome resistance, the actions by the officer are typically minimal, meaning the officer used "hands-on" physical contact or chemical spray. Instances of injury during these encounters were either none or low, including a complaint of pain, no visible injury, or other relatively minor abrasion or laceration.

The vast majority of the RTR incidents over the course of the five-year period were lower level RTRs (Level 0 or Level 1), which the report defines and describes the levels in further detail. Of all RTRs over that time period, six percent were recorded as Level 2, the most serious type of response to resistance actions. And in each of those instances, the officers were found to have used the lawful and appropriate level of response in order to overcome or stop an individual who was actively resisting arrest or detention; actively assaulting an officer or other party; actively damaging property; and/or actively engaging in self harm.

NPI Recommendations

In their report, NPI presents eight recommendations:

1. Continue to strengthen community engagement
2. Expand mental health interventions
3. Examine nuisance enforcement
4. Incorporate data-driven policing
5. Monitor resource allocation
6. Institute data collection improvements
7. Document officer use of de-escalation
8. Conduct ongoing police review

We generally agree with these recommendations and will continue to expand and strengthen our efforts in those areas. We remain committed to enhancing our work and continuing to provide the highest quality services to the community. For instance, as NPI has recommended, we are in the process of implementing a process to better document officers' attempts to utilize de-escalation techniques.

Mental Health & Nuisance Calls

As part of their recommendations, NPI asked that we expand mental health interventions and examine nuisance enforcement. The department recognizes the involvement of law enforcement in instances of persons in crisis are extremely sensitive and challenging and have only increased over time across the country.

The Board of County Supervisors and the police department in Prince William County have continued to fund and staff the agency's Co-Responder Unit consisting of a crisis-intervention trained officer and a civilian mental health clinician. Additionally, the police department has devoted a large effort to training staff, especially those in a patrol function, on crisis-intervention techniques to de-escalate these situations. While the NPI study highlighted these instances specifically, the context in the complexity of these encounters is difficult to categorize. However, the presence of law enforcement during these instances, such as when an Emergency Custody Order (ECO) is involved, is required under Virginia law. For further context, although an officer's actions to overcome resistance in these calls for service may occur, the level of resistance by the officer is typically low, as described earlier. In dynamic situations, typically those involving the deployment of resources including our Crisis Negotiation Team, the agency attempts to ensure a mental health clinician is available to assist.

While the study examines nuisance calls as possibly connected with a mental health nexus, there are other "nuisance" calls for service, such as drunk in public or narcotics use, which may appear minor, but the community has vocally expressed their expectations for officers to address these types of quality-of-life issues.

While we agree with NPI's sentiment behind these two recommendations, the department must also consider the expectations set by the community we serve. We will also continue working with our community partners to implement holistic strategies to better and more effectively address both the mental health challenges and nuisance issues throughout the county.

Racial Disparities

The report also presents the racial disparities that are present within the data. Prince William County is a richly diverse community and the second most populated county in Virginia, with nearly 500,000 residents. It is also a heavily traveled corridor with I-95 on the east side of the county and I-66 on the west side.

The exploration into the complexities of why response to resistance encounters occur more within minority communities has been an unanswered question of many law enforcement agencies across the country for many years. This was also one of the first questions we posed to NPI at the beginning of their study: What are the reasons for such disparities and what should the breakdown of the data look like? We understand that this is an extremely difficult question to answer and would require much further study.

Human behavior is challenging, if not impossible, to explore numerically in data driven studies. Understanding this perspective in these encounters would involve a deeper academic exploration. During the RTR investigation, supervisors are required to interview the parties involved to ascertain a better understanding of what led to the resistance; however, this level of information is unable to be quantified and may sometimes be unavailable based on the cooperation level or other factors of those involved. The difficulties in further understanding these encounters may be centered around socioeconomic issues or trust in the police based on incidents covered by media with other law enforcement and not necessarily actions of PWCPD members specifically.

Considerations

All PWCPD officers are trained to use only the amount of response necessary to overcome the resistance presented, and to continually reassess the situation. This training centered on deescalating situations as a priority whenever possible is engrained on a continual basis throughout an officer's career, along with our values and expectations that officers treat everyone they encounter with dignity and respect.

PWCPD has established a robust community engagement-centered mission, partnering with many community leadership organizations, including the establishment of a Community Advisory Board in 2017. In addition to the topics highlighted above, the study's recommendations also included items the police department has previously instituted including the developing training objectives which are already required under DCJS requirements; the documentation of RTR incidents which is already thoroughly done by supervisory staff; exploration of banning practices such a shooting at moving vehicles which is already a policy of the agency except in deadly force encounters; and conduct on-going policy reviews which has been a standard practice of the agency in compliance with CALEA, our accrediting agency that ensures PWCPD has the best practices of policing in place.

RTR encounters often paint law enforcement in a negative light. While data points are necessary to gain information in these encounters, numerical points are only part of the overall context needed to adequately understand these complex encounters which are fundamentally based in human behavior. As each RTR is investigated, the dispositions of these encounters are vastly important. This level of insight was missing from this study and would highlight the agency's actions were not only lawful, but appropriate based on policy which follows best practices in the profession.

PWCPD is committed to continually evaluating ourselves, our practices, and our actions to ensure we effectively and impartially enforce the law, protect our community, and build upon the trust and cooperation in our community to make Prince William County a community for all.

Sincerely,

Peter Newham
Chief of Police

ABOUT THE AUTHORS

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Ryan Fisher, Ph.D., is a Senior Research Associate at the National Policing Institute. He joined the National Policing Institute in August of 2023. Previously, Dr. Fisher held roles at the American Institutes for Research and the City of Philadelphia, providing research and technical assistance on projects related to policing, crime and violence prevention, and criminal justice reform. Dr. Fisher's background is in quantitative and spatial analysis, and his published research includes work on policing practices, environmental criminology, and quantitative methods. In addition, he has extensive experience in public policy work, including researcher-practitioner partnerships and collaboration with local and federal criminal justice agencies. He earned his Ph.D. in Criminology and Criminal Justice from Temple University, focusing his dissertation work on spatial patterns of co-offending.

Colby Dolly, Ph.D.

Colby Dolly is the Director of Science & Innovation at the National Policing Institute. In this capacity, he is responsible for a portfolio of projects related to organizational assessments, policing improvements, policing accountability and reform, technology and innovations, and policing outcomes. Dr. Dolly has extensive experience in policing, having served with the St. Louis County (MO) Police Department for two decades. During his tenure at the agency, he worked as a patrol officer, trainer, patrol sergeant, executive aide, crime analysis supervisor, and research manager. Additionally, he has held roles as a manager for a Fortune 50 company where he was responsible for data analysis, process improvement, and change management. Dr. Dolly holds a Ph.D. in Political Science from the University of Missouri St. Louis, where his research focused on organizational change and research methods. This academic background provides him with a strong foundation for understanding complex organizational dynamics and implementing evidence-based strategies in his current role. In addition, he is a Prosci® Certified Change Practitioner and has a certificate in Lean Six Sigma.

Gabrielle Isaza, Ph.D.

Dr. Isaza joined the National Policing Institute as a Senior Research Associate in September 2022. Previously, Dr. Isaza spent nine years in research roles at the International Association of Chiefs of Police / University of Cincinnati Center for Police Research and Policy and at the University of Cincinnati Institute of Crime Science. She earned her Ph.D. in Criminal Justice from the University of Cincinnati, with a dissertation focused on evaluating police de-escalation training.

Dr. Isaza's research areas include police effectiveness, police reform, crime prevention, and evaluations of police training programs, including de-escalation, peer intervention, and implicit bias. She has worked directly with several police departments and advocates for the practice of police-academic partnerships. She serves as principal investigator and co-principal investigator on multiple grants funded by state, federal, and philanthropic organizations and has published in leading criminal justice journals and practitioner-focused publications.

Ellie Hansen, M.A.

Ellie Hansen is a Project Associate under the Science and Innovation team at the National Policing Institute. Before arriving at NPI, Ms. Hansen completed her Master of Arts program in Criminal Justice (MACJ) at Seattle University in the spring of 2022. As a graduate student, Ms. Hansen worked with the Office of Law Enforcement Oversight to provide research on police mental health responses and the efficacy of crisis intervention training across the country. She graduated from Christopher Newport University in 2020 after receiving a bachelor's degree in psychology and sociology with a concentration in criminology. Ms. Hansen's experience at NPI includes a diverse range of issues relating to policing, such as police culture, the organizational structure of agencies, critical incident reviews, technology and innovation, technical assistance and training, and officer safety and wellness.

EXECUTIVE SUMMARY

BACKGROUND

The Prince William County Police Department (PWCPD) serves a diverse population of over 450,000 residents within an area of 348 square miles. Dedicated to providing professional police services since 1970, the department emphasizes integrity, honesty, and equality. The PWCPD collaborates with community members through various engagement programs and is committed to continuous improvement and transparency in its operations. This report, prepared by the National Policing Institute (NPI), evaluates the PWCPD's use of force incidents from 2018 to 2022, aiming to provide insights into the patterns, trends, and disparities in the department's response to resistance.

METHODS

The evaluation employed a comprehensive mixed-methods approach, including quantitative and spatial analyses, policy reviews, surveys, interviews, and focus groups. The PWCPD provided several datasets covering use of force incidents, arrests, criminal incidents, and calls for service from 2018 to 2022. The data was cleaned, processed, and analyzed using descriptive statistics, time series analyses, spatial analyses, and multivariate logistic regression. The research team collected original data through officer and supervisor surveys, focus groups, in-person observations of training sessions, and policy analysis.

CONCLUSIONS

The assessment revealed that the PWCPD's use of force incidents increased steadily from 2018 to 2022. Various factors, including policy changes and external events like the COVID-19 pandemic and the nationwide protests against police-involved violence, influenced the rise in reported incidents. The data indicated significant racial and ethnic disparities in the use of force, with Black and Hispanic individuals experiencing force at higher rates than White individuals, along with an increase in force incidents involving emotionally disturbed people (EDP). Spatial analyses highlighted that force incidents were concentrated in specific geographic areas, particularly around medical centers and high-density population zones.

FINDINGS

1. Overall Increase in Use of Force: Over the five-year period, there was a consistent rise in the number of use of force incidents. The increase was driven by an expansion of reporting requirements and did not result in more injuries to officers and community members. Additionally, there was an increase in the reporting of lower level force incidents and a corresponding decrease in higher levels of force over time.

2. Racial and Ethnic Disparities: Black individuals experienced the highest number of use of force incidents, followed by Hispanic and then White individuals. Disparities were evident across different benchmarks, with Black subjects being disproportionately represented.

3. Geographic Concentration: Use of force incidents were concentrated in the Eastern and Western districts, particularly around medical centers and high-density population areas.

4. Impact of External Events: The COVID-19 pandemic and the Black Lives Matter movement and protests significantly influenced patterns in the use of force, crime, and arrests, with noticeable shifts in police enforcement actions during these periods.

5. Reasons for Force: The most common reasons for use of force included resisting arrest and assaulting officers or citizens, with variations in the likelihood of arrest depending on the specific circumstances of each incident.

RECOMMENDATIONS

1. Strengthen Community Engagement - The disparities in use of force incidents among Black and Hispanic populations highlight the need for continued community engagement to build trust through transparency and consistent communication. The PWCPD should leverage the existing community advisory board and focusing on areas with high police activity can facilitate dialogue and develop collaborative solutions, especially concerning mental health-related calls and low-level force incidents.

2. Expand Mental Health Interventions - The rise in incidents involving emotionally disturbed persons and mental health-related calls underscores the need for integrated mental health interventions. Expansion of the existing co-responder program to operate 24 hours and leveraging those resources for hospital-related calls may reduce low-level force incidents.

3. Examine Nuisance Enforcement - Nuisance-related arrests are associated with a significant increase in the likelihood of force, possibly linked to mental health conditions. PWCPD should review these incidents to identify patterns and implement changes in practices and training to reduce such events, potentially involving strategic shifts in enforcement and officer-level tactics.

4. Incorporate Data-Driven Policing - Enhanced data collection and regular analysis can improve operational decision-making by identifying patterns of police activity and use of force, especially in high-risk areas. By monitoring incidents and integrating data disaggregated by race and ethnicity, PWCPD can allocate resources more effectively and address disparities.

5. Monitor Resource Allocation - The concentration of force incidents in specific areas necessitates tailored resource allocation, including deploying additional patrol units and community engagement officers. Data-driven processes should inform these decisions, focusing on areas with high mental health calls and low-level offenses and the integration of specialized resources and training.

6. Institute Data Collection Improvements - Improving the accuracy and comprehensiveness of data collected by PWCPD is crucial for better analysis and informed decision-making. Enhancing data integration across systems and ensuring detailed records on various aspects of force incidents, including de-escalation techniques and context-specific information, will provide a more reliable dataset for monitoring and analysis.

7. Document Officer Use of De-Escalation - PWCPD should capture the use of de-escalation skills in the use of force reports, documenting the frequency and effectiveness of different techniques. This data can inform training refinements and support the promotion of de-escalation in organizational culture, recognizing and rewarding officers who regularly use these skills.

8. Conduct On-going Policy Review -Regularly reviewing and adjusting use of force policies is essential to maintaining effectiveness. PWCPD should enhance policy details to provide clearer guidance for specific scenarios, incorporate feedback from stakeholders, and implement evidence-based practices to ensure policies promote fairness and accountability.

The report underscores the importance of continuously monitoring and evaluating police practices to address disparities and enhance community trust and safety. It provides a

foundation for the PWCPD to implement data-driven policy reforms and improve its response to resistance and use of force.

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INTRODUCTION

BACKGROUND

The Prince William County Police Department (PWCPD) serves a diverse population of over 450,000 residents within an area of 348 square miles. The nationally accredited law enforcement agency has been operating since July 1, 1970, and is dedicated to providing professional police services to the community. The department's mission emphasizes integrity, honesty, and equality, aiming to build trust and cooperation with the community through accountability and transparency. The department is organized into several key divisions: Operations, Criminal Investigations, Support Services, and Financial & Technical Services. The Operations Division is crucial for maintaining constant readiness and handling 24-hour patrol coverage across Central, Eastern, and Western districts. Specialized units within this division include the SWAT Team, K-9 Unit, and Crisis Negotiation Team. The Criminal Investigations Division focuses on major offenses such as property crimes, special investigations, violent crimes, and youth services, which includes the School Resource Officer Program.

Community engagement is a cornerstone of the PWCPD's strategy. Programs like Coffee with a Cop, National Night Out, and various community fairs are designed to enhance public safety and build stronger relationships with residents. Additionally, the department collaborates with George Mason University on a Crisis Intervention Training (CIT) program, which aims to equip officers with skills to de-escalate situations involving individuals in crisis. The department was one of the first in the country to implement "Integrating Communications, Assessment, and Tactics" or ICAT to proactively train officers on de-escalation techniques to use in the field.

This commitment to community interaction and continuous improvement underscores the department's holistic and progressive approach to law enforcement. The assessment described in this report is an extension of that mindset. Department leaders sought to gain an in-depth understanding of the issues surrounding force and response to resistance by examining departmental and environmental factors possibly related to outcomes in the community.

OVERVIEW OF STUDY

This report is a comprehensive evaluation conducted by the National Policing Institute (NPI) for the Prince William County Police Department (PWCPD). It examines the department's use of force incidents from 2018 to 2022, highlighting patterns, trends, and potential disparities in the application of force across different racial and ethnic groups. The goals for the report are as follows:

1) Analyze the department's response to resistance policies and compare them to accepted practices in the field.
2) Analyze training programs, including ICAT, for response to resistance and de-escalation tactics and evaluate their fidelity as applicable.
3) Analyze possible factors contributing to the racial disparities in use of force against individuals.
4) Evaluate and assess the environmental factors that may be precursors to officers using force.
5) Assess the department's workplace culture and supervisory practices related to use of force training and training.
6) Create recommendations for improving response to resistance policies and training programs.
7) Create recommendations for data collection, analysis, and dissemination to the community.

The report employs a range of methodologies, including quantitative and spatial analyses, surveys, interviews, and focus groups to gather data. It also considers the impact of significant events (such as the COVID-19 pandemic and nationwide protests against police-involved shootings and excessive use of force) on police enforcement actions. Key findings indicate an overall increase in the use-of force-incidents over the study period, with notable disparities in the frequency of force used against Black and Hispanic individuals compared to White individuals. The report provides detailed analyses on the categorization of use of force, reasons for force, and the demographic and geographic distribution of these incidents, aiming to inform policy recommendations and improve policing practices within the community.

DATA AND METHODOLOGY

PWCPD CLASSIFICATION OF USE OF FORCE

The PWCPD maintains a collection of policies regarding the use of force by department members. These policies were provided to the NPI research team for the project but are also available to the public via an open data portal linked from the department's website. As is common with many law enforcement agencies, the PWCPD categorizes the force officer's use. In the case of PWCPD, they use a numbering system consisting of three levels to categorize force or response to resistance as they define it. The levels are as follows Level Zero, Level One, and Level Two. The levels are determined by the amount of force used and the extent of the injuries to the community members (Prince William County Police Department, 2024).

According to the policy, Level Zero responses are considered minimal. These responses are any physical contact by an officer to influence a community member's movement who is exhibiting minimal response to resistance. According to the PWCPD policy, an example of this type of response is an officer forcing a community members' hands together to apply handcuffs. Level One responses involve the use of chemical force or physical force greater than Level Zero. Examples of this type of force are officers using Oleoresin Capsicum spray or wrestling a community member to the ground.

Level Two responses involve significant force or serious injuries. This includes using impact devices, ERDs (Electronic Restraint Devices), police canines, or firearms, along with incidents resulting in serious injury, major bleeding, broken bones, treatment at a medical facility, or death. Examples of Level Two response to resistance are an officer discharging their firearm at a person, striking an arrestee with an ASP baton, or some other form of force where a community member must be treated at a medical facility or requests to be treated at a medical facility.

Categorizing responses allows the department to differentiate investigatory and administrative responses to incidents. In 2019, the PWCPD created and began recording categories for responses to resistance. Then in 2021, these categories were further expanded to include Level Zero responses. This date is essential because lowering the threshold for report response to resistance incidents will increase the overall number of incidents, holding other factors constant. As discussed later in the report, many other changes occurred in the months following the change in response to resistance

reporting. Those include the onset of the COVID-19 pandemic and widespread protests over the death of George Floyd and subsequent calls to "defund the police."

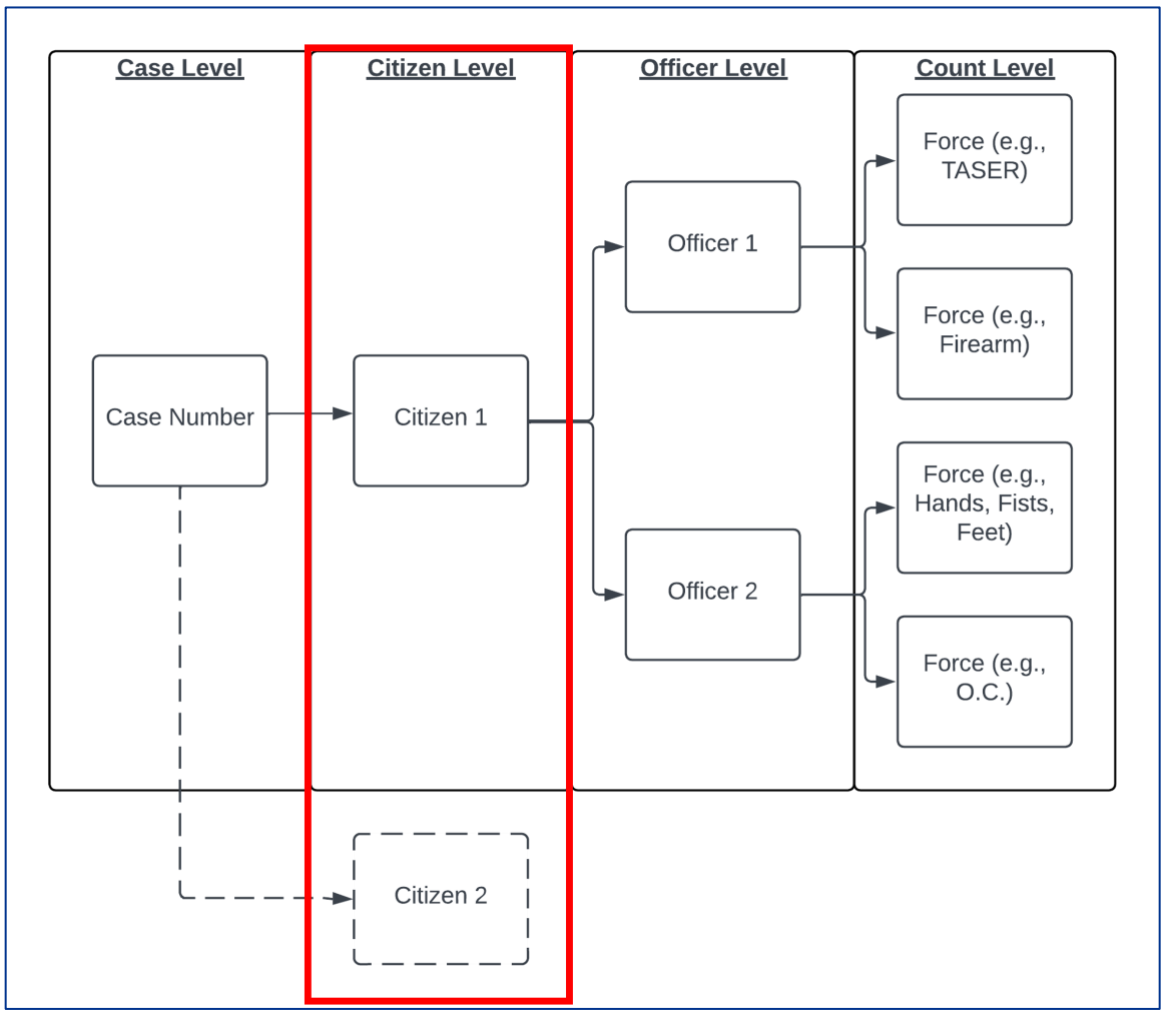
DATA DESCRIPTIONS

The PWCPD provided the NPI research team with several official datasets for quantitative and spatial analysis. Several data cleaning and processing steps were taken to prepare these datasets for analysis, outlined in the following sections. In addition, the NPI research team collected original data using surveys, in-person observation, interviews, and focus groups with department personnel.

Use of Force

PWCPD provided four different .csv files that contained information related to every reported use of force incident from 2018-2022. Each file contained information about the incident (e.g., date, time, address) that could be linked to subsequent files using a common identifier. Additional files containing subject information (e.g., demographics, force type, reason for force, injury, etc.), officer information (e.g., demographics, assignment, years of service, injury, etc.), and officer education and military information. When force is used against individuals, PWCPD officers request a supervisor respond to the scene to conduct an administrative investigation. The investigation includes interviewing officers and community members involved or witnessing the event as well as identifying other sources of information and evidence. The administrative investigation is subsequently reviewed by several additional commanders for added oversight. These reports record every individual and officer present at the force event, resulting in multiple reports per incident. For analytical purposes, information from the force reports must be aggregated to the unit of analysis of interest. The possible units of analysis are graphically displayed in Figure 1, with the unit of analysis for this research highlighted in red.

Figure 1. Hypothetical Example of Use of Force Measures by Unit of Analysis



The counts of use of force can vary dramatically depending on which unit of analysis is selected. For example, in Figure 1 above, there is one incident, two subjects or individuals, four force actions, and two officers. For all analyses in this report, use of force is analyzed at the individual/subject level (i.e., an individual who experiences a use of force within a single incident), given the interest in examining differences in uses of force across individuals of different racial/ethnic groups. The original dataset consisted of 3,619 use of force records, 8,019 subjects, and 4,336 officers. When generating the final dataset for analysis at the subject-incident level, this resulted in a final count of 1,941 use of force incidents across the five-year period.

In addition, the NPI research team recoded or created several new variables used in the subsequent analyses. One critical recoding task was creating a new race/ethnicity variable based on two separate race and ethnicity variables in the original data. If an individual was classified as Hispanic in the race variable, they were considered Hispanic, or if they were classified as White in the race variable and listed as Hispanic in the Ethnicity variable, they were considered Hispanic. All other classifications remained the same based on the race variable. Additional information regarding variable descriptions is included in the appropriate analysis sections below. Finally, PWCPD created a unique ID variable for each subject of force based on a unique combination of the individual's name and date of birth to provide the NPI research team with an anonymous ID variable to link individuals across datasets for analysis.

Arrest/Suspect Data

PWCPD provided five separate arrest files, one for each year. Each file included information related to the arrest incident (e.g., day/time, demographics of the arrestee, crime type, etc.). A total of 46,105 arrest records were included once all the files were aggregated and deduplicated. Unfortunately, PWCPD staff explained that the location information contained in the arrest data was not reliable enough to use for any geocoding or subsequent spatial analyses. The race/ethnicity of each arrestee also needed to be recoded as there were two fields listed, one for race and another for ethnicity (recording if the subject was Hispanic). Cases where the subject was listed as White and Hispanic were coded as Hispanic; if the race was recorded as Black, that individual was recorded as Black regardless of the ethnicity designation (this applied to only 213 cases)[1]. Finally, a unique ID was created for each individual in the arrest data to link with the unique ID created in the use of force data to be used in analyses.

Additionally, the PWCPD provided an additional dataset with suspect demographic information consisting of 45,953 records with gender, race, and ethnicity included. After several duplicates within the dataset were removed, the data was merged with the arrest data to create the suspect demographic files for the benchmarking analyses. To construct race/ethnicity variables in that benchmarking dataset, arrest demographic data was used as it is considered more accurate; otherwise, the suspect demographics were used to calculate benchmarks.

[1] Note: this differs slightly from PWCPD internal coding which prioritizes the ethnicity coding over the race designation. As this was only an issue in 213 cases, it had no material impact on the subsequent analyses.

Criminal Incidents

The criminal incident data provided by PWCPD consisted of 114,384 incidents from 2018-2022. The data consisted of information about each incident (date/time, location, crime type) that was further classified into broader crime type categories to match PWCPD Group A offenses that are used in their internal reporting and then further aggregated into violent, property, narcotics and nuisance crimes. The narcotics and nuisance crimes were classified into their own categories to explore their potential unique association with use of force incidents.

Calls for Service Data

In addition to the criminal incident data, PWCPD also provided call-for-service data for 2018-2022, consisting of 1,620,535 calls over the five-year period. The dataset included information related to the incident's date, time, location, and the original recorded incident type. In examining the incident classifications, it became apparent that some may not have been valid calls. Thus, in consultation with PWCPD, those incidents that did not result in the ultimate dispatch of an officer were dropped from the dataset, resulting in a final count of 1,165,645 calls. These were then geocoded using the provided XY coordinates for our analyses.

Officer and Supervisor Surveys

Two electronic, cross-sectional surveys were developed and administered for this research project. One survey was given to patrol officers and detectives ("officer survey"), and one survey was given to sergeants and first sergeants ("first-line supervisor survey"). Both surveys were administered using a Qualtrics weblink provided directly to officers through PWCPD's PowerDMS online learning management program. Surveys were analyzed using SPSS, a social sciences statistical software program. The surveys are designed to assess PWCPD officer's and supervisors' perceptions, attitudes, and experiences with their workplace culture and use of force, including specifics related to training and policies.

Focus Groups

The NPI project team conducted a series of focus groups with PWCPD officers and supervisors. The sessions were held at the PWCPD Central District Headquarters located at 5036 Davis Ford Road, Woodbridge, VA 22192. The focus groups were driven by a set of structured questions tailored for the respective groups of officers and supervisors. The purpose of the focus groups was to provide critical contextual details for the policies and practices of the department by speaking with the individuals who implement the

policies daily. Several key themes emerged from the focus groups, which will be discussed later in the report.

Interviews

Throughout the fall of 2023, the NPI research team interviewed members of the PWCPD to understand their approaches, policies, and practices regarding the use of force and training. The interviews were conducted through virtual meetings with executives, command staff, and training personnel. The sessions were not recorded but captured with detailed notes. The interviews revealed several key themes, particularly in the areas of training, supervision, and continuous improvement.

Training Observation

To enhance understanding of the use of force training at PWCPD, an NPI team member traveled to observe a portion of Decision-Making Week training for PWCPD police recruits. These observations allowed the research team to understand first-hand how training is created and conducted and provided context around its delivery method and officers' reception. A write-up of this qualitative training observation is provided later in this report.

METHODOLOGY

Most statistical analyses in this report were conducted at the overall department level. Where appropriate, analyses were also conducted at the PWCPD district level. To examine patterns and trends in PWCPD enforcement data, five analytical techniques were conducted: (1) descriptive analyses, (2) time series analyses, (3) benchmark comparisons, (4) spatial analyses, and (5) multivariate analyses. These statistical techniques, their limitations, and the appropriate interpretation of their findings are described below.

DESCRIPTIVE ANALYSIS

To better understand police enforcement actions, the first step is to describe the available data and examine its patterns and trends. Descriptive analysis is a fundamental data analysis step that involves summarizing and presenting outcome data. These analyses provide a clear and concise overview of key characteristics and patterns within a dataset, allowing analysts to gain insights into the data's central tendencies, variability, and distribution (Witte & Witte, 2015). Bivariate analyses or crosstabulations are a type of descriptive analysis examining the association between two variables (e.g., race and

use of force). Descriptive analyses provide a critical basis for understanding basic patterns and distributions in the data and offer an initial assessment of the general trends and potential correlations between the predictor and outcome variables before additional analytical techniques are employed. Descriptive analyses are often limited in scope and cannot be used to explain or predict trends. Thus, they are typically a precursor to more complex statistical techniques and illuminate appropriate methodological approaches (Witte & Witte, 2015).

SPATIAL ANALYSIS

A series of spatial analyses were conducted to examine the geographic patterns in use of force incidents in relation to the underlying environmental backdrop of Prince William County. First, all PWCPD-provided arrests, calls for service, crime, and use of force data, including addresses or XY coordinates, were geocoded to their nearest street segment using ArcGIS Pro. The geocoding results consistently demonstrated a hit rate of over 90%, well above the established standard of 85% (Ratcliffe, 2004). Each dataset was spatially joined with PWCPD-provided geographies to get aggregate counts per PWCPD sector, district, and county-wide for use in subsequent analyses. In addition, the NPI research team collected secondary spatial data from several sources. First, we collected population estimate data from the American Community Survey's five-year estimates for 2022 for use in the benchmarking analyses as these were the most accurate data publicly available. However, for additional spatial analyses, the NPI research team wanted to use the most recent data available for population estimates and used ESRI's population and demographic data. The ESRI data uses a combination of sources, including the American Community Survey and USPS household information, along with forecasting methods (see more at "2023/2028 Esri Updated Demographics") to create 2023 race/ethnicity population estimates. We also collected land use and facility data from the Prince William County Open Data Portal (PWC GIS Data Portal). This resource provides access to GIS data for several land uses and facilities of interest, including hospitals, police/fire stations, entertainment venues, schools, and parks. These are all potential areas that impact crime and can potentially influence use of force incidents. All the spatial data the NPI research team downloaded was analyzed using ArcGIS Pro, which involved a series of aggregation calculations resulting in the creation of both heat maps and proportional visualization techniques to create a series of choropleth and point maps to examine the association between the official PWCPD data and the underlying environment.

TIME SERIES ANALYSIS

It is essential to consider how patterns and trends in police enforcement actions fluctuate over time. Interrupted time series analyses are considered one of the most

robust quasi-experimental designs to determine whether the timing of a relevant intervention (e.g., police training or policy change) or a seminal event of interest (e.g., an arrest or use of force incident of public interest) corresponds with a significant shift in count outcomes, such as arrests or use of force counts (see Hudson et al., 2019). The critical feature of interrupted time series analysis is the collection of data on the frequency of a specific outcome aggregated at regular time points before and after the intervention or event. It is considered best practice to aggregate the data into a monthly[2] time series format with a sufficiently long pre-intervention period (i.e., at least two years of monthly data) that allows researchers to determine whether there is a statistically significant change in the outcome immediately following the intervention, while also accounting for any pre-existing trends or patterns in the data. Time series analyses also require a sufficiently long post-period, which ranges from a minimum of seven to 12 months.[3] Each time series analysis includes the following parameters: monthly dummy variables (where Jan is the reference category) to control for seasonal fluctuations in the time series, linear (and, where needed, curvilinear) trend parameters to account for a shift in the outcomes over time, and intervention dates (three in total for each outcome). Across the five years examined, numerous seminal events occurred that may have impacted – or disrupted – preexisting patterns in crime and police enforcement in Prince William County. The NPI team identified three critical events to consider when analyzing trends in crime and PWCPD enforcement activities over time to serve as intervention points in the time series analyses. These events include:

- Including minor uses of force in reporting (November 2019)
- The COVID-19 global pandemic (April 2020)
- Officer-involved death of George Floyd in Minneapolis (May/June 2020)[4]

RACIAL DISPARITY BENCHMARKING ANALYSIS

Benchmarking analyses examine racial disparities in policing outcomes by comparing data against established "benchmarks" to assess fairness and equity in law enforcement practices. Benchmarking provides a standardized basis for evaluating disparities by

[2] Traditionally, monthly event counts are preferred over weekly event counts because the data are more stable and consistent across multiple years of observations.

[3] CrimeSolutions.gov is a warehouse for the National Institute of Justice's evidence-based strategies and programs, which experts review and score for their scientific merit. For these programs, any strategy that has a follow-up period of less than 7-months is gauged as a 'short term' program, while a one-year follow-up is required to be considered a long-term program. Consistent with this framework, we obtain 7 to 12 months post-period for time series assessments to be consistent with rigorous evaluations.

[4] Since the killing of George Floyd occurred in the last week of May (May 25, 2020), we use June 2020 as the first-post event date in our time series analyses.

comparing outcomes across racial or ethnic groups using an external data source to represent the "expected" population for that outcome. For example, to determine racial disparities in arrests, the percentage of the arrestee population who are Black is compared to the percentage of the benchmark population who are Black. The estimated "at risk" benchmark population that is selected drives the results. Studies have consistently demonstrated that using different benchmark populations can result in dramatically different findings. Therefore, knowing and understanding the strengths and limitations of the benchmark population being used is critical. All benchmarks have limitations and vary in how much they accurately estimate the population of similarly situated individuals "at risk" of police enforcement actions, assuming no bias exists (Geller et al., 2021; Knox & Mummolo, 2020; PERF, 2021; Smith et al., 2017; Tregle et al., 2019).

For benchmark analysis, the groups are compared in terms of the frequency with which they experience a particular outcome (usually calculated as a rate), using some scaling factor (such as the underlying population). If certain groups experience significantly higher rates than expected based on their underlying risk set, this is typically interpreted as evidence of disparity. Conducting benchmark analyses promotes transparency and accountability and has been applied across various outcomes in criminal justice to highlight areas where disparities are more pronounced. Policymakers and law enforcement executives can use it to provide context, help guide reform efforts, and monitor the impacts of reform-related changes over time. For this report, benchmarking analysis is employed to examine racial/ethnic disparities in the use of force.

The most widely used external benchmark is the residential population, which compares the frequency of an outcome (e.g., arrest) by racial group to their representation in the residential population. Although intuitive, this methodology has been routinely demonstrated as flawed in identifying and quantifying racial disparities in law enforcement outcomes (Alpert et al., 2004; Geller et al., 2021). This is because not all people who reside in a city or neighborhood have the same "risk" of police enforcement activity. For example, the risk of being arrested is influenced by many factors – including involvement in criminal activity – which may not be evenly distributed across the residential population. Census data do not measure the types of characteristics shown by research to put individuals at risk of experiencing force, including several legally relevant behaviors, including subjects' resistance, presence of a weapon, and criminal behavior (Garner et al., 2002; Hollis & Jennings, 2018; Morgan et al., 2020). Using the residential population as a comparison benchmark does not include any accounting of the likelihood or risk of police enforcement activity and, therefore, is one of the weakest benchmark comparisons. Also, benchmark analyses (regardless of the comparison data

source) lack the depth to explain the reasons behind any reported disparities by failing to consider the complex factors potentially contributing to differential outcomes across racial and ethnic groups.

The NPI research team compared non-census-derived benchmarks that better approximate the risk of contact with police that could result in enforcement action to the percentage of racial/ethnic groups that receive police enforcement actions. These include the percentage of racial/ethnic groups among the following comparison data sources: (1) individuals identified in PWCPD calls for service data, (2) arrested individuals (all crimes), and (3) crime suspects as reported to the police (all crimes and includes arrestee population as well).

Most individuals who experience the use of force are arrested (Davis et al., 2018; Garner et al., 2018; Hickman et al., 2021, making arrest data a viable proxy measure for assessing the risk of use of force. However, suppose there is police bias in who is arrested. In that case, using arrest data to approximate the expected racial/ethnic percentages of those who experience force violates the assumption that no bias exists and may underestimate disparity (Cesario et al., 2019; Geller et al., 2021; Knox et al., 2020a, 2020b; Knox & Mummolo, 2020). Furthermore, not all use of force situations result in arrests. This is another limitation of solely using arrest data as a benchmark for measuring racial/ethnic disparities in use of force.

Criminal suspect data and calls for service data are additional benchmarks used to approximate the risk of police enforcement contacts. The police collect this information through crimes reported directly by community members. The information is based on community members' experiences and descriptions (Ridgeway & MacDonald, 2010; Smith et al., 2022). While this addresses one of the limitations of arrest benchmarks (potential officer bias in arrests), the criminal suspect-based benchmarks may reflect the likelihood of community members reporting certain types of crimes more than others (e.g., violent crimes more so than property crimes) (Klinger & Bridges, 1997), which may or may not be related to the likelihood of use of force. Likewise, reported crimes may themselves be biased against offenders of certain racial/ethnic groups based on the willingness of community members to report victimization. The research available regarding the validity of different benchmarks and the factors that influence police behavior suggests that criminal suspect-based benchmarks are stronger approximations of the population "at risk" of being arrested or having force used compared to other benchmarks, while residential census data is widely considered an unreliable and invalid comparison measure (Alpert et al., 2004; Geller et al., 2021; Smith et al., 2021 Smith et al., 2022).

To examine racial disparities in arrest and use of force, the NPI research team calculates disparity ratios, a valid and easily interpretable technique for comparing groups who experienced force (or arrest) to those groups at risk for force relative to the non-Hispanic, White population (Smith et al., 2021). The calculation of the disparity ratio is a two-step process. First, the disproportionality index (DI) is calculated by dividing a racial group's representation in use of force incidents by the same group's representation in the comparison benchmark (e.g., suspect population). The result of this calculation measures within-group differences. Values greater than one indicate that the group experienced police enforcement actions more often than would be expected based on their representation in the benchmark. In contrast, a value of less than one indicates they experienced enforcement actions less often than expected based on the same benchmark. Second, the disparity ratio can be calculated to measure between-group differences by dividing the DI of the minority group by the DI of the majority group. A disparity ratio greater than one suggests that Black or Hispanic individuals were more likely than their White counterparts to experience police enforcement actions based on the benchmark used, whereas a disparity ratio less than one indicates the opposite. While disparity ratios are a valuable method of estimating the size of disparities, there is no threshold value at which disparity can be attributed to racial bias (Fridell, 2017; Geller et al., 2021). For example, disparity ratios greater than one do not imply the existence of police bias; likewise, disparity ratios equal to one do not imply the absence of bias. Only the presence of disparities can be calculated with benchmark analyses, not the presence of bias.

Previous research shows that benchmark comparisons based on population statistics nearly always show racial/ethnic disparities in use of force, while benchmarks based on arrests or reported crime suspects show reduced or no racial/ethnic disparities (Cesario et al., 2019; Fryer, 2019; Geller et al., 2021; Tregle et al., 2019). Despite its limitations, the NPI research team includes benchmark comparisons based on the 2022 US Census five-year estimates and non-census benchmarking for two narrow purposes. First, these analyses provide a baseline of how different racial/ethnic groups experience enforcement actions. Second, comparing disparity ratios across various benchmarks helps to determine the validity of the analytical technique for representing the population at risk of police enforcement actions.

MULTIVARIATE LOGISTIC REGRESSION ANALYSIS

Multivariate regression modeling is a statistical technique that creates a mathematical equation that considers the influence of multiple variables on an outcome. For example, to understand the impact of subjects' race on the likelihood of having force used, a multivariate regression model can estimate the effect of various factors (other than race)

on the likelihood of experiencing force during an arrest event or injury from the force used. Here, the population (arrestees) is known (through arrest reports); likewise, whether force is used during the arrest encounter is also known (through use of force reports). The mathematical equation generated for regression modeling helps to predict or understand how changes across multiple factors might affect the likelihood of police use of force. Similarly, we can examine the likelihood of subject or officer injury within the use of force incidents using the use of force data alone. Both types of analyses are presented in the following sections.

While they are different analytical techniques, benchmark analyses are complemented by multivariate regression analysis. Unlike benchmark analyses, there is no need to compare to an estimated benchmark population because both populations (arrestees and those who had force used against them) are known and used in regression analyses. While benchmarking may help identify disparities, multivariate regression modeling helps uncover the complex underlying factors contributing to different outcomes. Multivariate logistic regression provides a more nuanced understanding by considering multiple variables simultaneously, offering insights into the interplay of factors potentially contributing to racial disparities. For example, to know if Black subjects are more likely than White subjects to have force used against them during arrest situations, it is essential to simultaneously consider other factors (e.g., other characteristics of the person, situation, and incident) that may also impact if force is used. Instead of focusing on just one component that may affect officer decision-making (e.g., subject's race), multivariate regression simultaneously quantifies the impact of multiple factors. It estimates how confident we can be that these results are not due to random chance.

Multivariate logistic regressions are typically employed to investigate complex relationships between multiple variables and assess their collective influence on binary outcomes, such as the decision to use force (Long, 1997; Witte & Witte, 2015).[5] Multivariate logistic regression techniques quantify the strength and direction of associations between various factors and the likelihood of use of force while controlling for potential confounding influences (Hanushek & Jackson, 1977; Meyers et al., 2016). The key factors (i.e., independent variables) typically included in analyses to predict the use of force within arrests or injury during a force event include (1) legal characteristics (e.g., outstanding warrants, type of criminal charges, presence of weapon, suspects

[5] Multilevel modeling is appropriate for data collected across different units of aggregation and produces unbiased estimates at each of the analysis levels (Raudenbush & Bryk, 2002). Importantly, the arrest data did not include reliable location data variables that cross units of analysis (i.e., nested data). Thus, the NPI team was limited in the capacity to conduct multilevel modeling.

resistance, etc.), (2) incident or situational characteristics (e.g., incident location, day, time, presence of bystanders, etc.), and (3) subject's or officer's demographic characteristics (e.g., age, race/ethnicity, gender).

Within logistic regression models, the estimated effects of the different variables are typically expressed as odds ratios, which indicate how strongly those factors are related to the outcome using a standardized scale.[6] An odds ratio greater than one indicates the variable is associated with higher odds of the event occurring, while an odds ratio less than one suggests an association with lower odds of that occurrence. The standard guidance regarding the size of odds ratios suggests that odds ratios less than 1.5 are substantively small, 1.5 to 2.5 are medium, and 2.6 or greater are substantively large (Chen & Chen, 2010). The reported regression results also include confidence intervals (a range of values likely to contain the actual value based on a 95% confidence level) and significance values indicating our confidence in the results for the regression models.[7]

The major limitation in multivariate regression models is that the results only measure variables included in the analysis. Unmeasured or unincluded variables can bias estimates and results. This is referred to as model misspecification or omitted variable bias (Hanushek & Jackson, 1977; Jung et al., 2018; Marvell & Moody, 1996). This is an essential limitation because no single data form or report can reliably quantify all relevant information regarding officer decision-making. When interpreting the multivariate regression results, the NPI research team notes what the models mean and do not mean (based on omitted variables, where they exist). As stated previously, the PWCPD arrest data do not include several potential explanatory factors of use of force, including measures of resistance, arrest location, and weapon presence.[8] The exclusion of these factors from the statistical models somewhat limits our confidence in the validity of the findings.

[6] The odds ratio is the exponentiated coefficient given the logarithmic distribution used in logistic regression models.

[7] Statistical significance is expressed as a p-value of 95% confidence intervals, which are the standard of scientific rigor required in most social sciences (Betensky, 2019)

[8] It is important to note that arrest data include charges, and criminal suspects may be charged with public intoxication, operating a motor vehicle under the influence, disorderly conduct, and resisting arrest (among others). However, these are not systematically available in all arrest reports, but rather would only represent when an officer charges the individual with an offense within these various categories. Since these situational characteristics are only collected when arrest charges occur, they are not included in any systematic analysis.

USE OF FORCE PATTERNS AND TRENDS

DESCRIPTIVE ANALYSES

This section describes the empirical analyses conducted on the use of force data provided by PWCPD. We first describe the characteristics of PWCPD-reported official contacts with the public from January 1, 2018, through December 31, 2022. We present use of force trends over time and examine whether these patterns were changed by (1) alterations in reporting and (2) pre/post event dates of interest during the current study period.

Figure 2 below shows that from 2018 through 2022, there was an increase in the use of force counts at the subject-encounter level (i.e., one event per individual who had force used on them, regardless of the number of officers who reported using force in the event), which ranged from a low number of incidents in 2018 (N = 215) to a high in 2022 (N = 528). However, while the graphic below indicates a linear increase in force incidents over this period, multiple factors may correspond with this increase in the use of force reporting. As will be seen below, the geographies, reporting types, reasons for use of force, and the overall patterns of force within arrests (and beyond arrests) all corresponded with this observed shift in the use of force counts.

Figure 2. Use of Force by Year

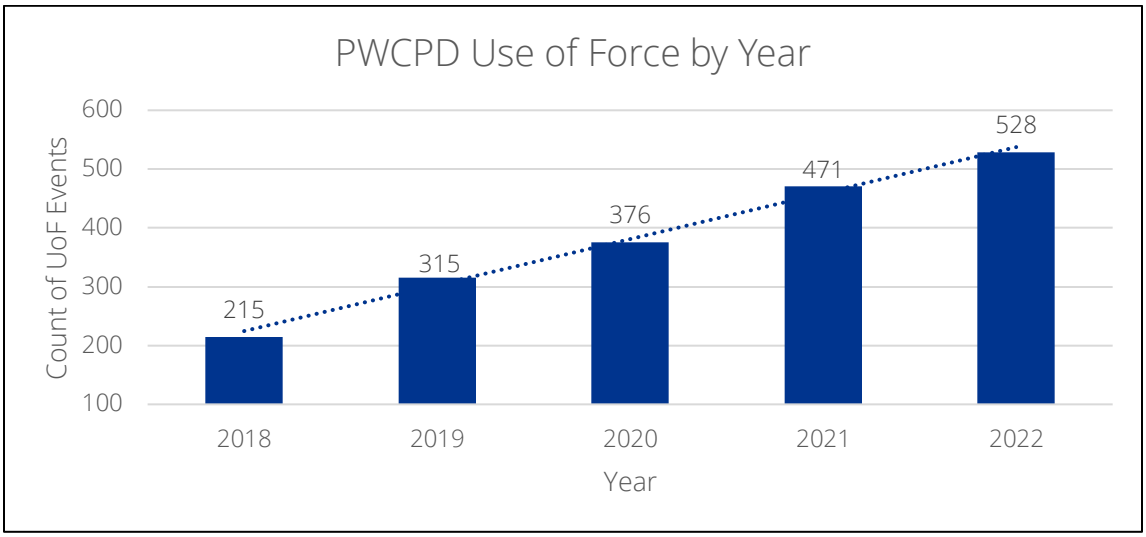
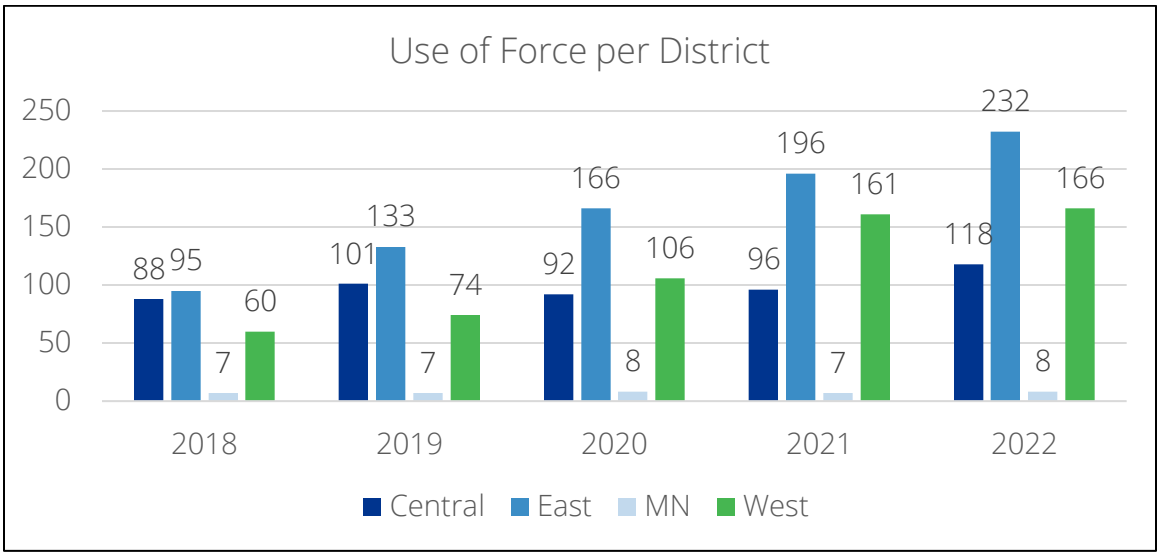


Figure 3 shows the use of force by the PWCPD district from 2018-2022. Post-2018, the most significant increase in the use of force was seen in the East and West districts of the county. In 2018, these two districts accounted for 38% and 24% of all the use of force calls in the county, for 62% of all force incidents. By 2022, these had increased substantially. The East district accounted for 44% of incidents and the West for 31%; a total of 75% of all use of force events originated in these two districts alone. In contrast, the Central district maintained a similar number of force incidents throughout the five-year period. While increasing over time, the most considerable difference is only 30 incidents between 2018 and 2022.

Figure 3. Use of Force by Year and District



Overall, there has been a clear increase in the number of reported force incidents by PWCPD since 2018, with the majority in the East and West districts. One major driving factor could be the change in the use of force policy enacted in November 2019, which corresponded with an increase in the reporting of use of force events. However, further analyses are necessary to examine whether these changes correspond more with a bureaucratic reporting change than a force-behavioral change. Additionally, it is imperative to understand whether the rise in reported use of force events is equally distributed geographically or demographically and if there are any potential drives of inequalities. The following sections present additional analytical findings into PWCPD use of force incidents.

Reasons for Force

Given that PWCPD changed use of force reporting over time, we also examined whether there were meaningful changes to the reasons for force provided by PWCPD officers. These were examined at the subject-incident level and consisted of 1,941 use of force incidents across the five-year period. In cases where multiple reasons for force were provided, the most serious reason for force was coded and used in the subsequent analyses.

Figure 4. Reasons for Use of Force

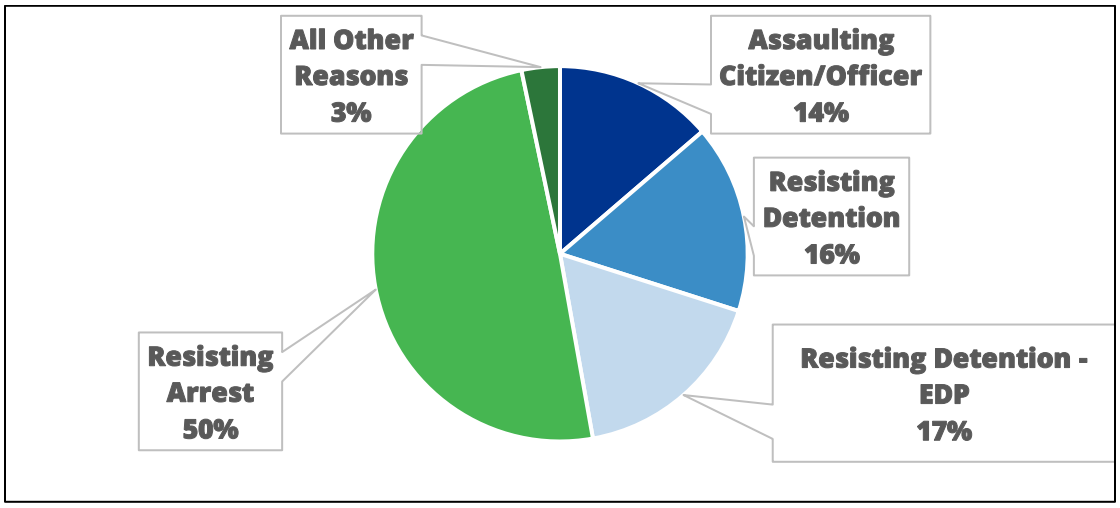


Figure 4 shows the reported reasons for using force overall. The most common reason was resisting arrest, representing nearly 50% of all incidents. The second most common reason—resisting detention—is divided into two subcategories: general resisting detention, which accounted for 16%, and resisting detention involving emotionally disturbed persons (EDPs), which accounted for 17%. Additionally, 14% of the incidents involved assaulting a police officer or community member. The remaining 3% of incidents included damaging property, self-harm, and cases where no force was used.

Table 1. Reason for Force Temporal Variability and Arrest

REASON FORCE USED	AVERAGE 2018-2020	2021 VS. 2020 AVG (%)	2022 VS. 2020 AVG (%)	SUBJECT ARRESTED (%)
ASSAULTING CITIZEN/OFFICER	46.6	56 (20.0%)	70 (50%)	176 (66.1%)
RESISTING ARREST	176.3	227 (28.7%)	205 (16.2%)	771 (80.2%)
RESISTING DETENTION – ONLY	55.0	83 (50.9%)	122 (121.8%)	217 (68.9%)
RESISTING DETENTION - EDP	45.6	89 (94.8%)	109 (138.6%)	13 (3.9%)

The reported reasons for using force were dynamic over time and are associated with the likelihood of arrest. Table 1 above shows that the likelihood of arrest varied considerably across classifications and that the reasons for force also varied over time. Before discussing the details of Table 1, it is important to clarify the authority of officers to lawfully detain individuals, arrest, and use force. Virginia statute 18.2-460 prohibits individuals from intentionally preventing or attempting to prevent a lawful arrest or detention. Officers can lawfully detain individuals without having a warrant or probable cause to arrest. Examples of such scenarios are officers stopping a person suspected of a crime or individuals believed to be a danger to themselves or others because of a mental health crisis. In these instances, officers may not have probable cause for arrest but can lawfully "seize" or detain an individual. If that individual makes efforts to prevent the seizure, officers can use a reasonable amount of force to overcome the resistance. The implication is that the use of force does not invariably lead to an arrest in the conventional sense, which typically involves transporting an individual to a jail facility for criminal charges. In many of the cases shown in Table 1, use of force was associated with an individual being lawfully taken into custody but transferred to a medical facility, juvenile detention center, or released to a third party.

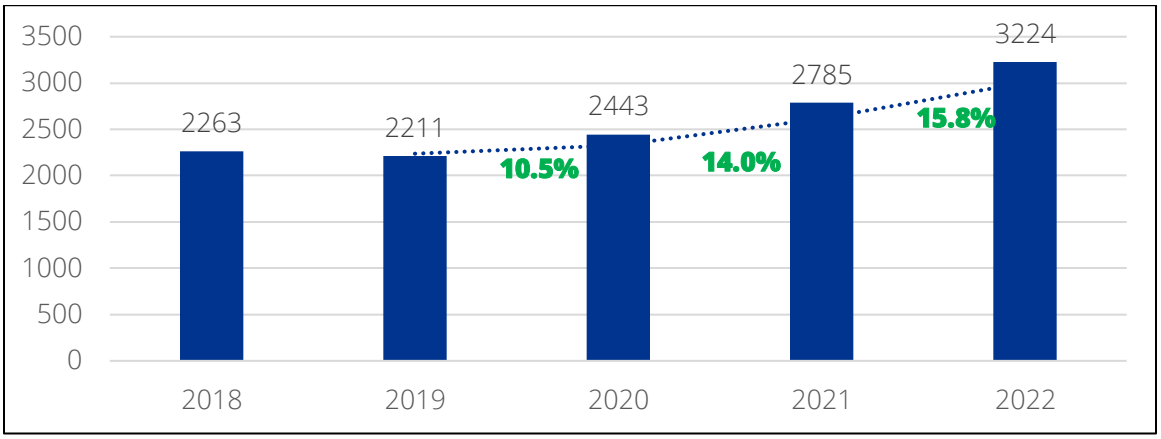
Comparing the raw count of the reasons for force by year for 2021 and 2022 compared to 2018-2020 highlights the variability over time. The force used against subjects who resisted arrest was reasonably stable, with a steady linear increase in 2021 and 2022 compared with the average of 2018-2020 (ranging from 16% to 29%). Additionally, force being used on subjects who assaulted police officers or citizens had a similar linear increase, and this rise was far steadier and more stable than all other reasons for force by year (ranging from 20% to 50%). Resisting detention with or without an emotionally disturbed person (EDP) increased considerably more than all other reason/force types. Specifically, resisting detention-EDP increased roughly 95% between 2021 and the 2018-2020 average and nearly 139% when comparing 2022 to the 2018-2020 average. General resisting detention (without EDP) increased by 51% from 2021 and the 2018-2020 average and 122% from 2022 and the 2018-2020 average. Thus, resisting detention-EDP (i.e., those subjects that were least likely to be arrested) had the most significant increase in force after 2020.

For those cases where the subject was arrested and documented as having assaulted a citizen or a police officer, the likelihood of arrest was roughly two-thirds (66.1%). In cases where the subject was documented as having resisted arrest, the likelihood of arrest was

80.2%.[9] Additionally, where the subject resisted detention (but was not classified as being an emotionally disturbed person), the likelihood of arrest was nearly 69% of incidents. This also means that 3 out of 10 subjects who resisted detention and were not emotionally disturbed were not arrested in the conventional sense. The most considerable discrepancy between arrest likelihood and reason for force were cases where the subjects were classified as having resisted detention and were classified as being emotionally disturbed. In these circumstances, the likelihood of arrest was less than 4%, meaning that the subjects were not arrested in over 96% of these cases. It is important to point out that although these individuals were not arrested in the conventional sense, they were lawfully detained.

In summary, subjects resisting detention were not arrested in 30 out of every 100 incidents, and subjects who resisted detention and who were classified as being emotionally disturbed were not arrested in over 95 out of every 100 incidents. Thus, subjects resisting detention were not as likely to be arrested in the aggregate relative to all other reasons for use of force, even as it increased over time.

Figure 5. Yearly Calls for Service for "Mental Subjects"



Due to the increased number of "Resisting Detention-EDP" reasons for force, the research team examined the calls for service data provided by PWCPD to determine if there were changes in call types over time. As seen in Figure 5, there has been a substantial increase since 2019 in the number of calls for service that are labeled as involving "Mental Subjects." Noting that in 2018, there were 2,263 calls involving "mental subjects." This number slightly decreased in 2019 to 2,211 calls. However, from 2020

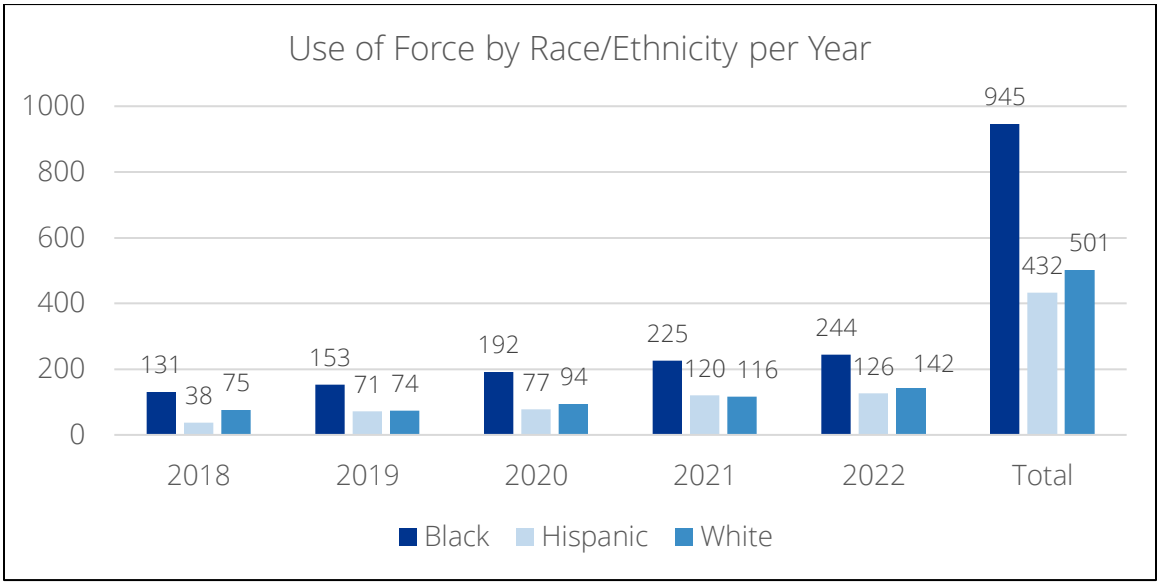
[9] In cases where a subject was resisting arrest, it is possible the arrest was not a conventional custodial arrest, but rather a citation-based arrest. Further detailed analyses linking citations to arrests would unravel this possible relationship.

onward, there was a notable upward trend—calls increased to 2,443 in 2020, marking a 10.5% rise from the previous year. In 2021, the number surged to 2,785, a 14.0% increase. The upward trajectory continued into 2022, with calls reaching 3,224, reflecting a 15.8% increase from the previous year. This consistent rise over the last three years underscores a growing demand for services related to mental health crises.

Use of Force and Race/Ethnicity

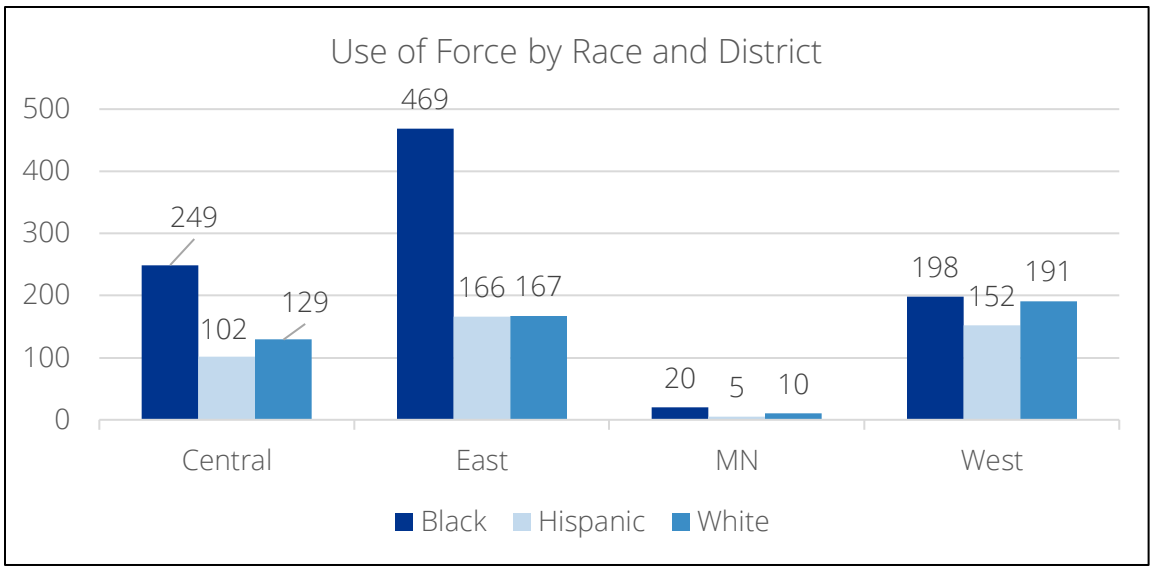
The NPI research team then examined the use of force incidents in the context of the subject's race and ethnicity. Figure 6 below shows the use of force incidents by race/ethnicity per year and the total number of incidents for each group. For each year, Black individuals experienced the highest number of force incidents, with a notable increase from 131 incidents in 2018 to 244 incidents in 2022, culminating in a total of 945 incidents over the five years. Hispanic individuals showed a more modest increase, starting with 38 incidents in 2018 and rising to 126 in 2022, totaling 432 incidents. White individuals had a relatively steady number of incidents, beginning with 75 in 2018 and reaching 142 in 2022, resulting in 501 incidents. The data reveals a significant disparity in the use of force incidents among different racial/ethnic groups, with Black individuals experiencing a consistently higher number of incidents each year. The total counts further highlight this disparity, as the cumulative number of incidents for Black individuals is substantially higher than for Hispanic and White individuals.

Figure 6. Use of Force by Race/Ethnicity and Year



Next, we examined the distribution of force events across PWCPD districts based on the subject's race/ethnicity involved in the incident. As seen in Figure 7, in each district, use of force incidents involving Black subjects account for over 50% of all use of force incidents. The lone exception is those force incidents occurring in the West district. In the Central district, Black individuals account for 249 incidents (53.8%), significantly higher than Hispanic (102 incidents, 22.9%) and White individuals (129 incidents, 28.9%). In the East district, Black individuals are involved in 469 incidents (58.5%), while Hispanic and White individuals each account for 166 and 167 incidents (20.7% and 20.8%, respectively). The Manassas (MN) district shows minimal use of force events, thus providing limited utility in highlighting disparities. In the West district, use of force incidents are relatively balanced among racial groups, with Black individuals at 198 incidents (39.8%), Hispanic individuals at 152 incidents (30.5%), and White individuals at 191 incidents (38.4%). These disparities highlight that PWCPD force incidents aren't distributed equally demographically or geographically. Specifically, in the Central and East districts, Black individuals are disproportionately represented compared to their Hispanic and White counterparts.

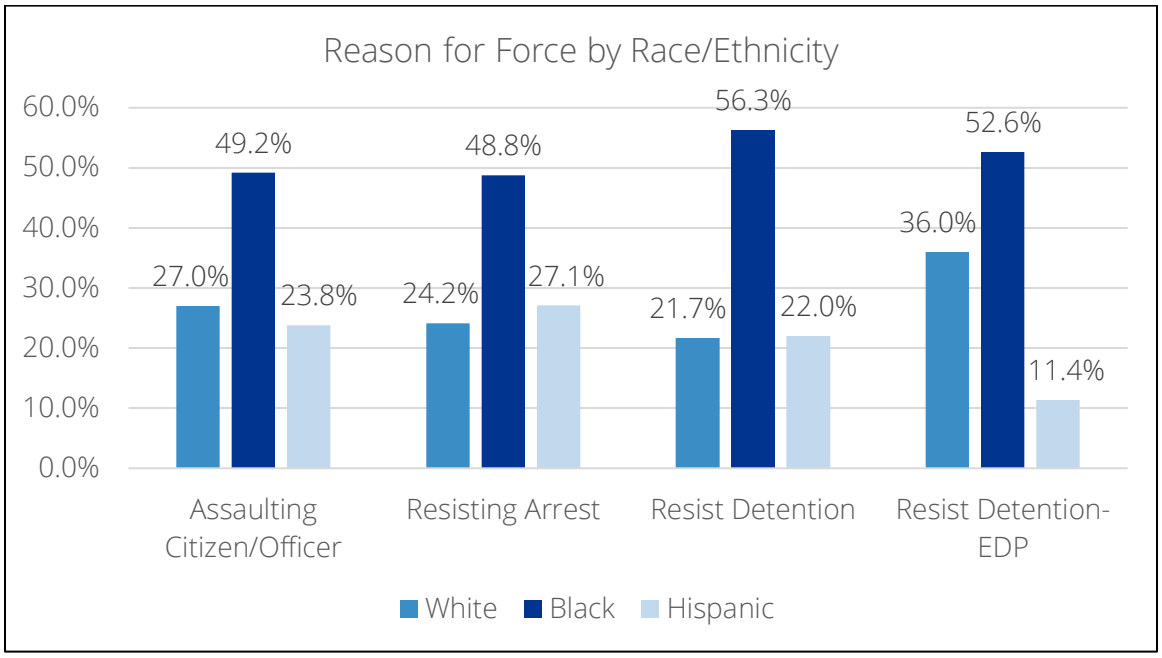
Figure 7. Use of Force by Race and District



Examining the reason for force by race and ethnicity in Figure 8, 49.2% of assaults on citizens or officers involve Black individuals, substantially higher than for White (27.0%) and Hispanic (23.8%) subjects. In resisting arrest cases, Black subjects again lead at 48.8%, followed by Whites (24.2%) and Blacks (27.1%). Black subjects are most often reported as resisting detention both with and without EDP, accounting for over half of the use of force incidents with those designations. The discrepancy between Black and

White subjects across all force reasons is roughly 2:1, apart from resisting detention-EDP events, with 36% of those having a White subject. Hispanic subjects have similar rates to White subjects across all force reasons, with the significant exception being Resisting Detention-EDP, at only 11.4%, which also creates the highest disparity between racial-ethnic groups in any category.

Figure 8. Reason for Force by Race/Ethnicity



USE OF FORCE SPATIAL ANALYSES

The NPI research team also conducted a series of spatial analyses to assess what geographic factors may be associated with use of force events. As mentioned previously, there is a well-established link between other forms of police activity (e.g., crime incidents, arrests) and use of force incidents. Thus, it is essential to consider these types of events alongside use of force events. Additionally, the underlying makeup of the community and urban/suburban environment (i.e., demographics, land use, etc.) can significantly influence crime and disorder, ultimately impacting the likelihood of use of force events occurring. The following analyses examine the spatial patterns of use of force incidents in the context of these underlying factors.

Call Volume and Use of Force

First, the NPI research team cleaned and geocoded PWCPD calls for service data, which was then aggregated, and heat and choropleth maps were created to examine call density across all PWCPD sectors in the county. Additionally, the 1,941 PWCPD use of force incidents were geocoded, and the point data was then aggregated into heat maps and graduated point clusters to examine the density of force incidents. In addition, we used aggregate population demographic data to explore the underlying distribution of race ethnicity in relation to force locations.

The maps in Figure 9 and Figure 10 below show the underlying PWCPD call volume, aggregated to each sector and overlaid with the density of force incidents. The darker-shaded sectors represent a higher call volume than the lighter-blue-shaded districts. Use of force incidents are presented in two formats, one as a heat map showing the hot spots of force incidents (where red/yellow indicate hotter areas) and second, where counts of incidents cluster together as represented as graduated circles from low to high. The highest density call volume areas are primarily found in sectors A15, C16, B11, and B10, which implies that these sectors are critical hotspots for police activity driven by community members. Furthermore, these sectors also have the highest densities for use of force incidents (represented by the bright red and yellow areas), which suggests a potential association between the frequency of service calls and the likelihood of use of force incidents. Similarly, in Figure 10, the higher number of uses of force is represented by the larger red circles. Again, the sectors with the highest call volume also stand out with the most prominent circles, with 321 and 703 use of force incidents. This map corroborates the heat map density findings, emphasizing that these areas not only experience the highest call volumes but also have the highest overall force counts.

Figure 9. Use of Force Heat Map and Calls for Service

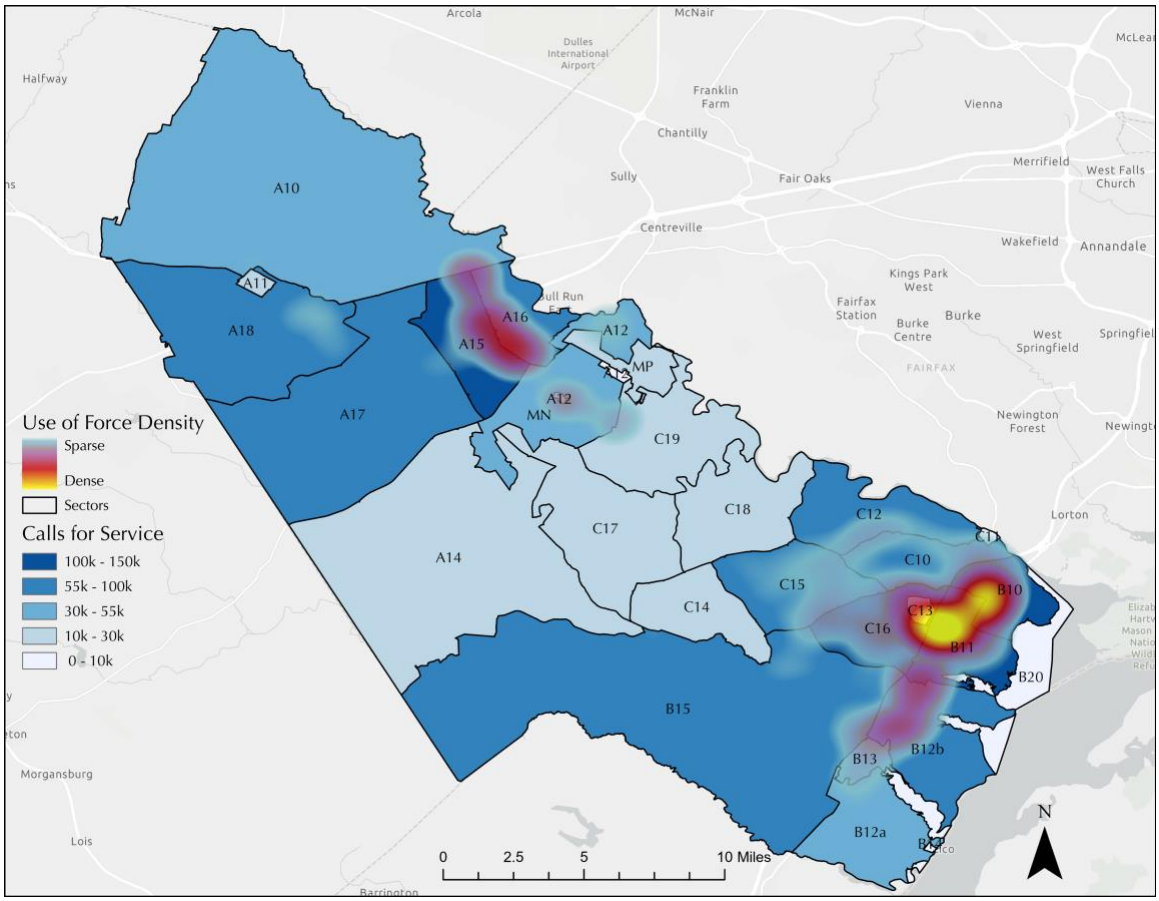
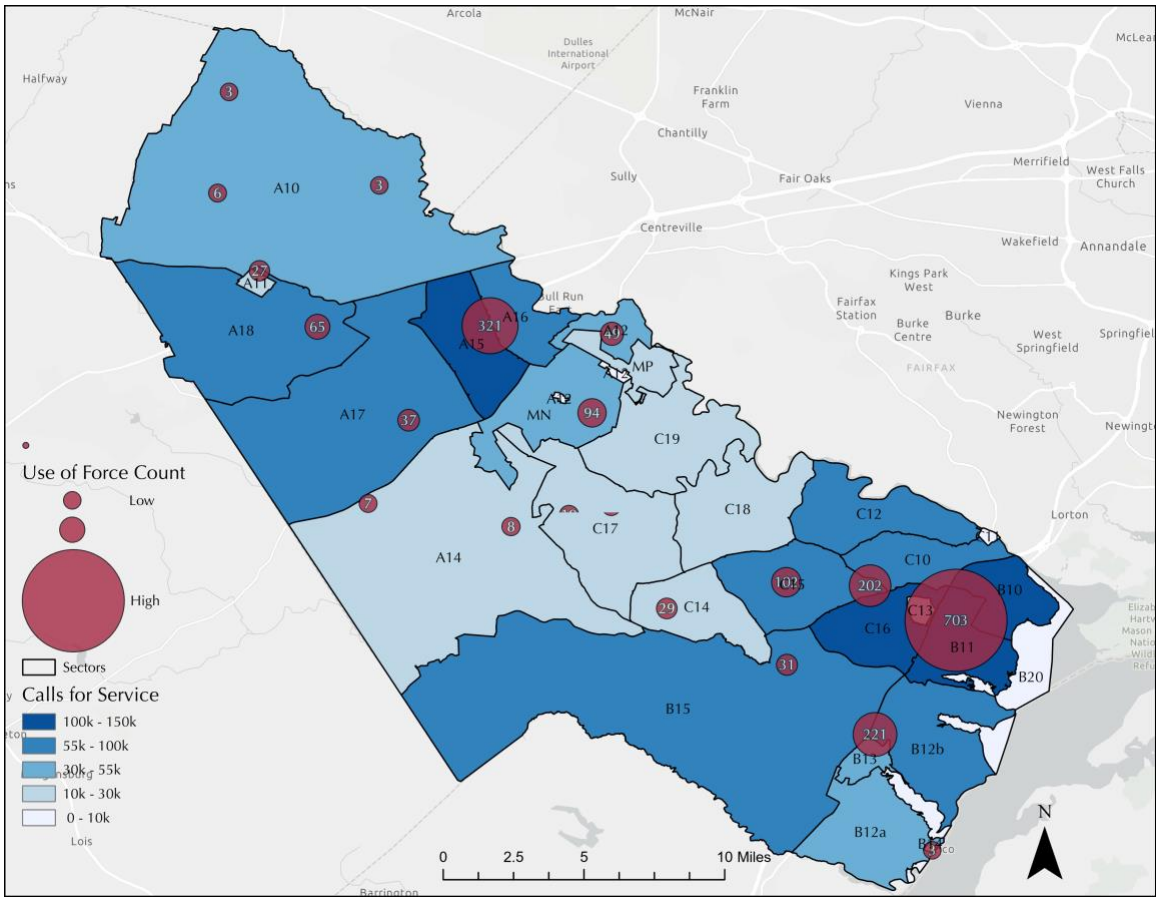


Figure 10. Use of Force Clusters and Calls for Service



Demographics and Use of Force

Next, the NPI research team examined the population distributions of different race/ethnicity groups in relation to call volume. As demonstrated in the descriptive analyses, Black and Hispanic subjects experience force at higher rates than their White counterparts. However, it is also clear that there is an association between the underlying call volume and use of force incidents, likely stemming from increased police-community interactions in those areas. Thus, it is essential to consider whether the call volume is also concentrated in areas with the majority of non-White populations. Figure 11 and Figure 12 below display the underlying Black and Hispanic population estimates, respectively, with density heat maps of the PWCPD call for service volume.

Figure 11 shows the density of calls for service overlaid with the population distribution of the non-Hispanic Black population. Notably, high-density areas of calls are concentrated along the sectors A15/16 border, C13, and B10/B11, indicating a significant volume of calls originating from these areas, likely driving greater police presence. These

sectors also coincide with areas with substantial non-Hispanic Black populations, as indicated by darker blue shades representing population ranges from 10,000 to 15,000 individuals. This alignment suggests a potential correlation between higher non-Hispanic Black populations and increased calls for service, highlighting areas that were also co-located with higher use of force incidents.

Figure 12 depicts the density of calls for service overlaid with the population distribution of the Hispanic population in 2023. The CFS density is shown using color gradients, with red indicating the densest areas of police activity with the same highest-density call areas. Similar to the map of the Black population, there is a significant overlap between these areas and sectors, with the highest Hispanic populations ranging from 10,000 to 20,000 individuals. This map indicates that there is a notable overlap between high-density call areas and high Hispanic population concentrations, implying that these communities also likely experience higher levels of police interaction and force incidents.

These four maps collectively illustrate the spatial distribution and density of police use of force incidents and calls for service across different sectors, with a particular focus on areas with significant Black and Hispanic populations. High-density areas of police activity, specifically sectors A15, B10, C13, and B11, consistently emerge across all maps, indicating these regions as critical hotspots. These areas not only show high frequencies of use of force incidents and calls but also coincide with substantial non-Hispanic Black and Hispanic populations. This overlap suggests that these demographic groups are experiencing higher levels of police interaction, highlighting the need for targeted interventions, such as enhanced community engagement, resource allocation, and tailored policing strategies to address the underlying causes of frequent police interactions and improve community-police relations. For PWCPD, understanding the underlying causes of high call volumes and subsequent force interactions in these areas is crucial for developing comprehensive strategies to address both the frequency and context of police use of force.

Figure 11. Call for Service Density and Underlying Black Population

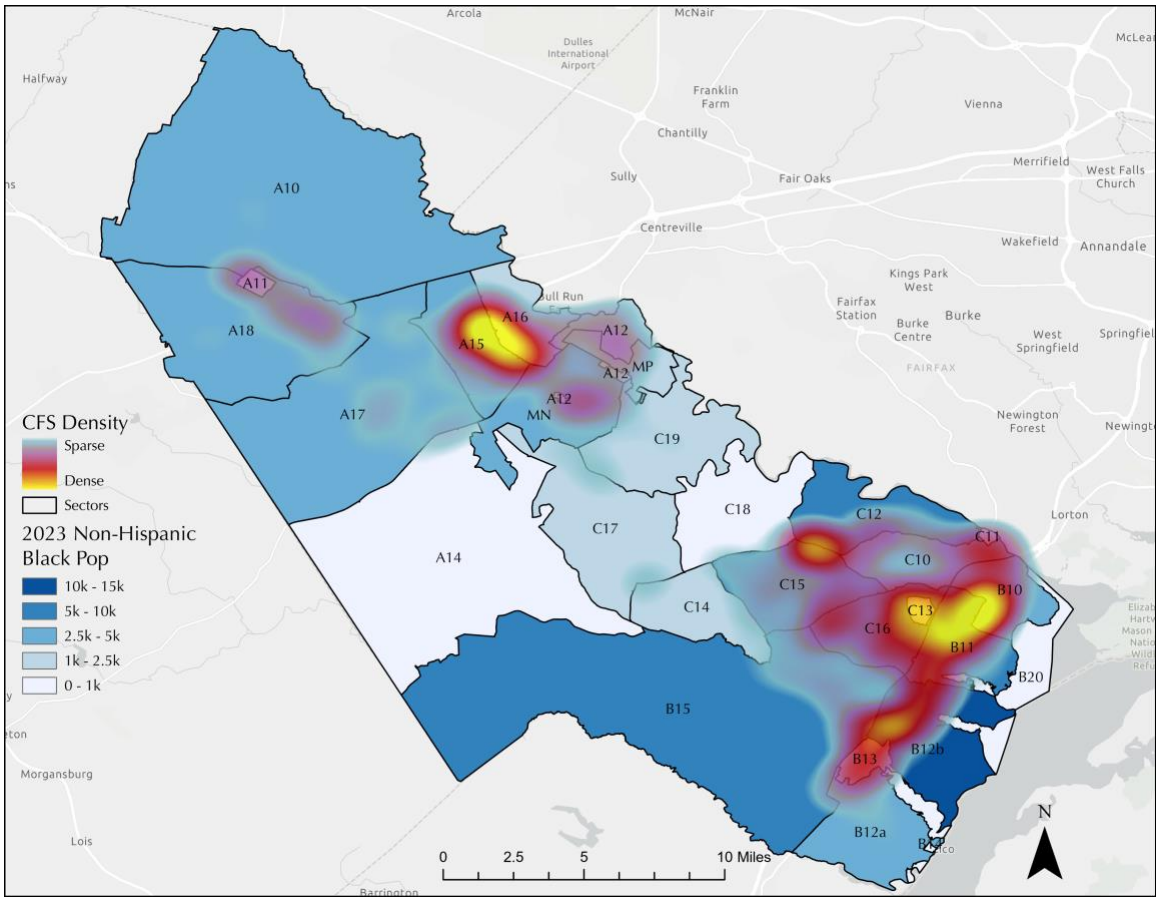
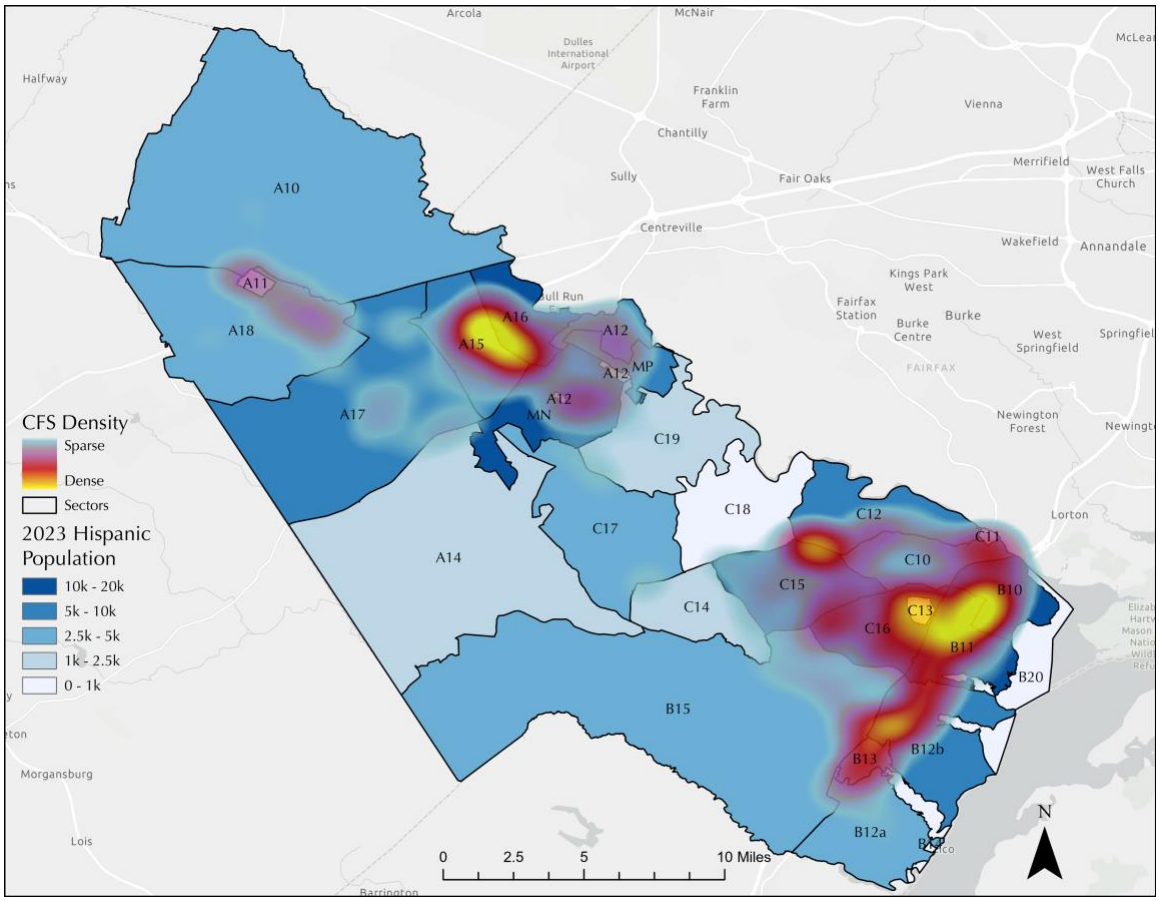


Figure 12. Call for Service Density and Underlying Hispanic Population



ENVIRONMENTAL FACTORS AND USE OF FORCE

As there is clear spatial concentration in the use of force incidents throughout the county, it is critical to investigate whether specific environmental elements potentially contribute to these patterns. To examine this further, the NPI research team collected spatial location data for different land uses that may be associated with uses of force for use in the analysis. Based on the initial spatial concentration findings for use of force incidents, we focused our attention on the areas with the densest concentrations of incidents in the Eastern and Western districts.

EASTERN DISTRICT

Figure 13 illustrates the density of force incidents, focusing on specific facilities that appear to be driving local hot spots of force incidents. In particular, high-density areas, indicated by red and dark purple shades, are concentrated around major medical centers such as the Sentara Northern Virginia Medical Center and shopping or mixed-use

retail areas such as Potomac Mills Mall and are mainly concentrated at/near Sentara Northern Virginia Medical Center in sector B11. Figure 14 quantifies the total number of incidents of use of force, represented by the size of the circles. The largest circles appear near the Sentara Northern Virginia Medical Center (128 incidents) and a mixed-use area on the northern border of Sectors B11 and B10 (77 incidents), reinforcing the findings from the density map. This mixed-use area consists of retail plazas, convenience stores, hotels, and apartments. In addition, PWCPD staff highlighted this area as having additional issues with substance use and homelessness. Other significant clusters of calls for service (CFS) are visible near Potomac Mills Mall in sector C13 (29 incidents) and PWCPD Eastern District station (63 incidents), suggesting that medical, commercial, and official areas are driving a significant amount of the force incidents in the district. Overall, these four locations alone account for 17% of the use of force calls for the county.

Figure 13. East District Use of Force Heat Map

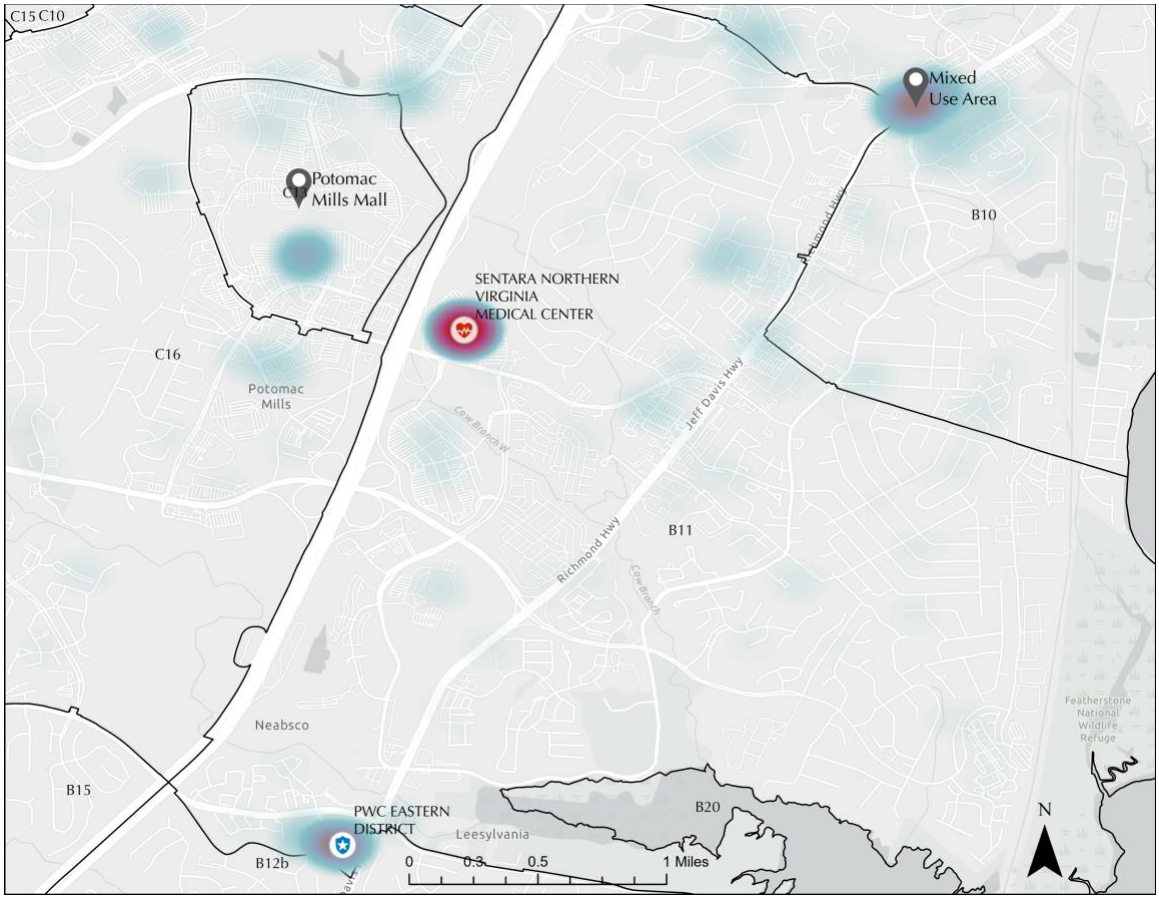
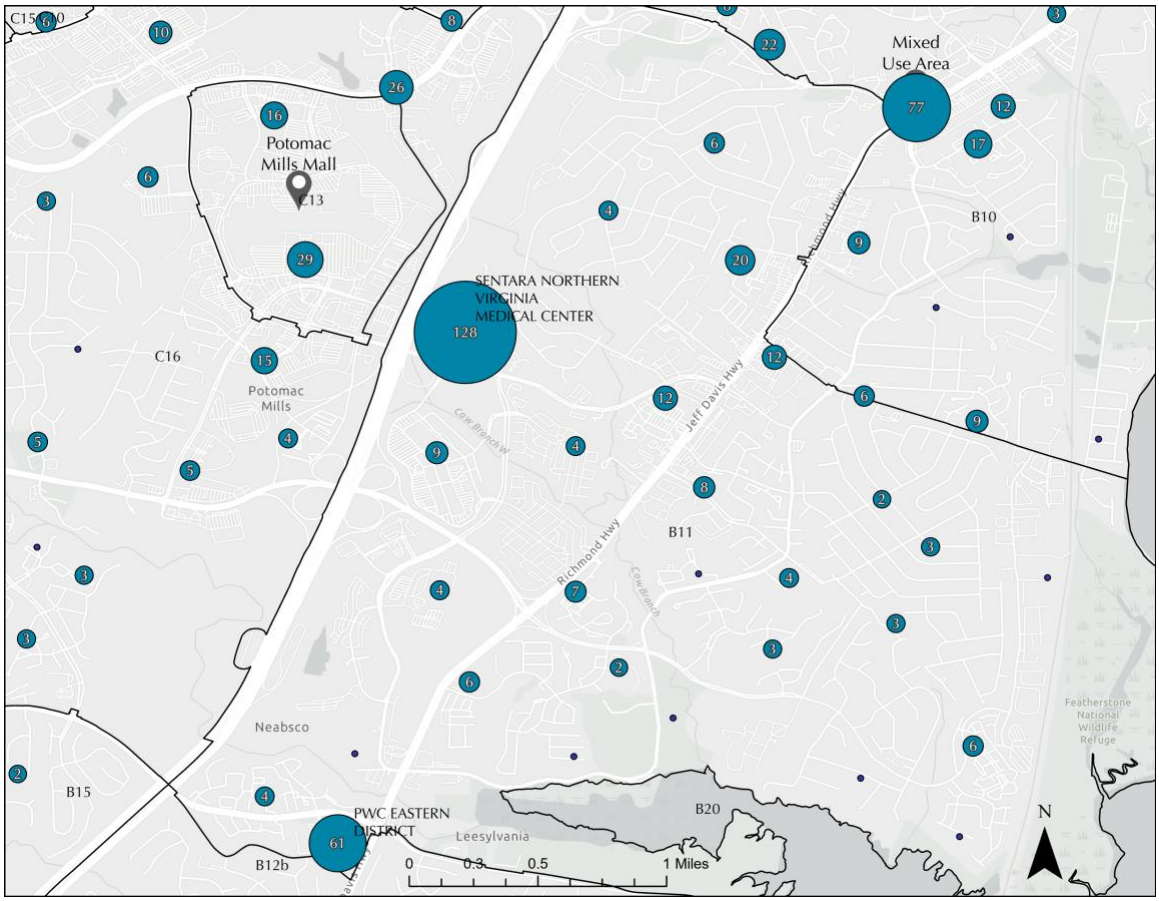


Figure 14. East District Use of Force Clusters



WESTERN DISTRICT

Figure 15 below highlights the density of use force incidents in the Western District of the county, with high-density areas concentrated around the University of Virginia (UVA) Health Prince William Medical Center and the Prince William County Court and Detention Center. The UVA Medical Center is an epicenter of use of force events in this sector[10]. In addition, there are smaller hot spots in sector A15 centered around the Manassas Mall and Unity Reed High School. Figure 16 highlights use of force incidents with varying-sized circles representing the incident counts. The largest circles appear at UVA Health Prince William Medical Center (58 incidents) and Prince William County Court and Detention Center (43 incidents), with Manassas Mall also recording a significant number of

[10] As discussed further in the focus group section on p. 116-117, Virginia law requires a mentally ill person to be in the custody of a law enforcement agent until a treatment facility bed is available.

incidents (25). Overall, these four locations account for an additional 7% of use force incidents in the county.

It is evident that these facilities are critical focal points for force events. PWCPD may want to investigate what is occurring at these locations that may be driving these patterns. Overall, the spatial analysis of these environmental factors underscores the critical role of medical, commercial, and criminal justice facilities in generating use of force incidents, highlighting the need for further investigation by PWCPD on what is occurring in these high-density areas. There may be a necessity for tailored policing or alternative public safety strategies at these locations to better address specific needs and incidents commonly occurring in these environments.

Figure 15. West District Use of Force Heat Map

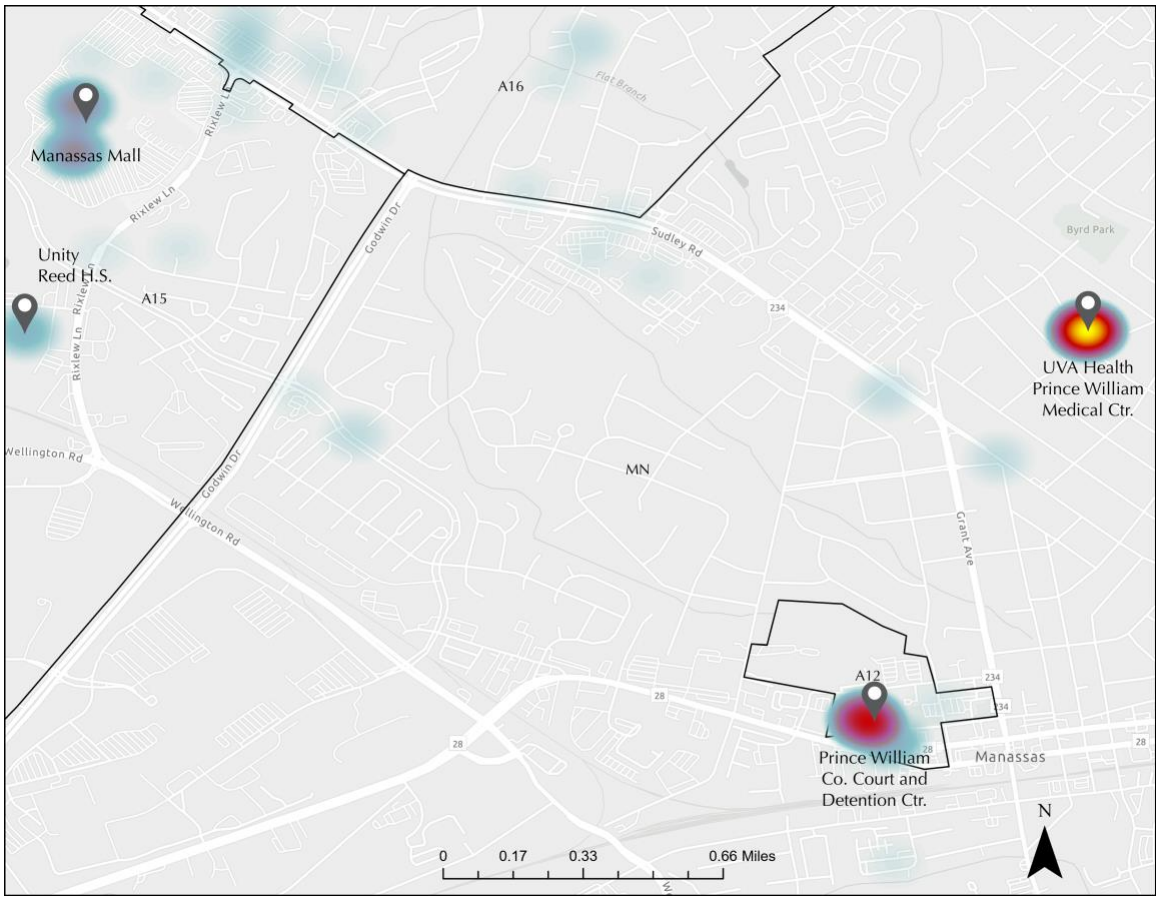
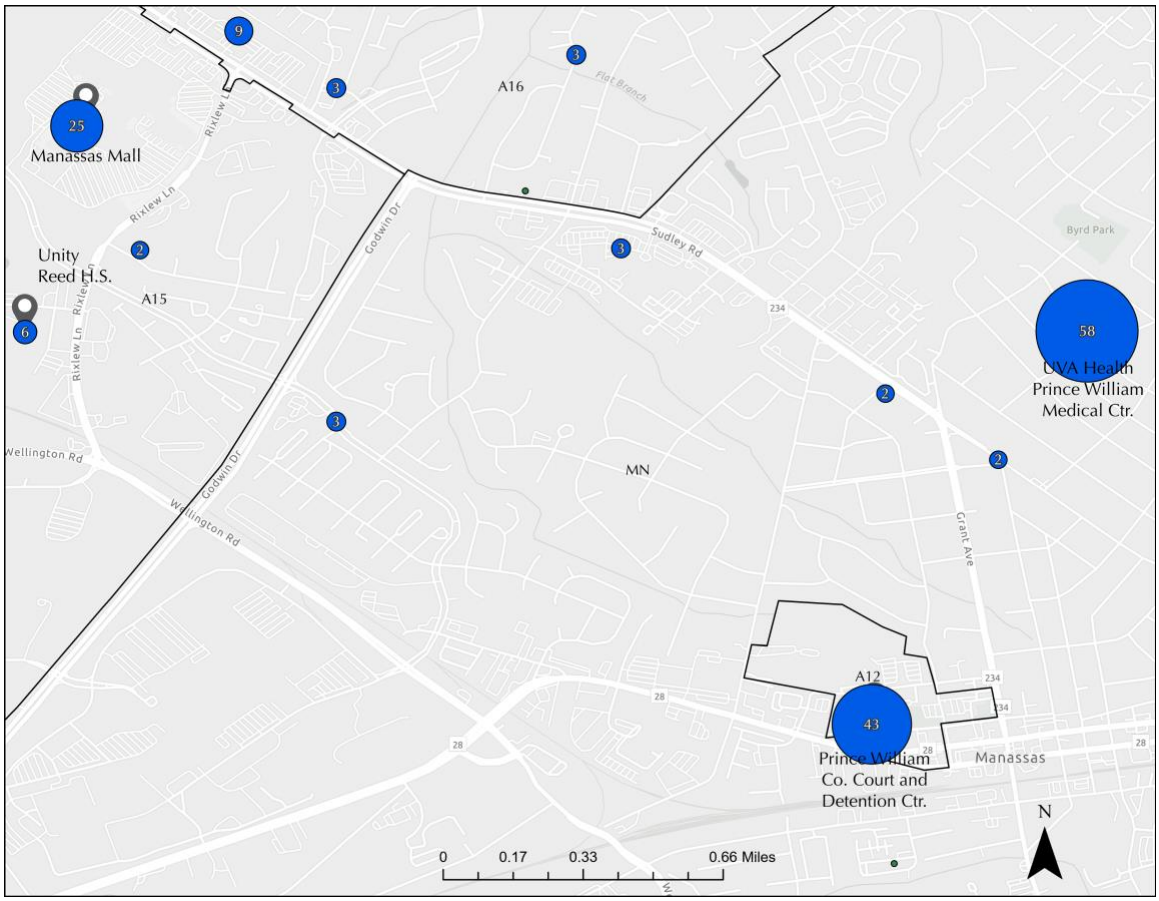


Figure 16. West District Use of Force Clusters



Spatial Analysis Summary

The spatial analyses collectively reveal significant insights into the interplay between the geographic distribution of police calls for service (CFS), use of force incidents, facilities, and population demographics. The findings highlighted high-density calls for service and use of force areas around key medical centers, commercial areas, and sectors with substantial non-Hispanic Black and Hispanic populations. Sections A15, B10, C13, and B11 consistently emerge as hotspots for both calls for service and use of force incidents, indicating these regions as critical points for police activity. Additionally, areas coincide with high-density populations of non-Hispanic Black and Hispanic residents, suggesting these demographic groups experience elevated levels of police interactions, potentially contributing to the higher rates of force that they experience.

Furthermore, specific facilities such as Sentara Northern Virginia Medical Center, UVA Health Prince William Medical Center, shopping/retail locations, and Prince William County Court and Detention Center are identified as significant hubs of force incidents.

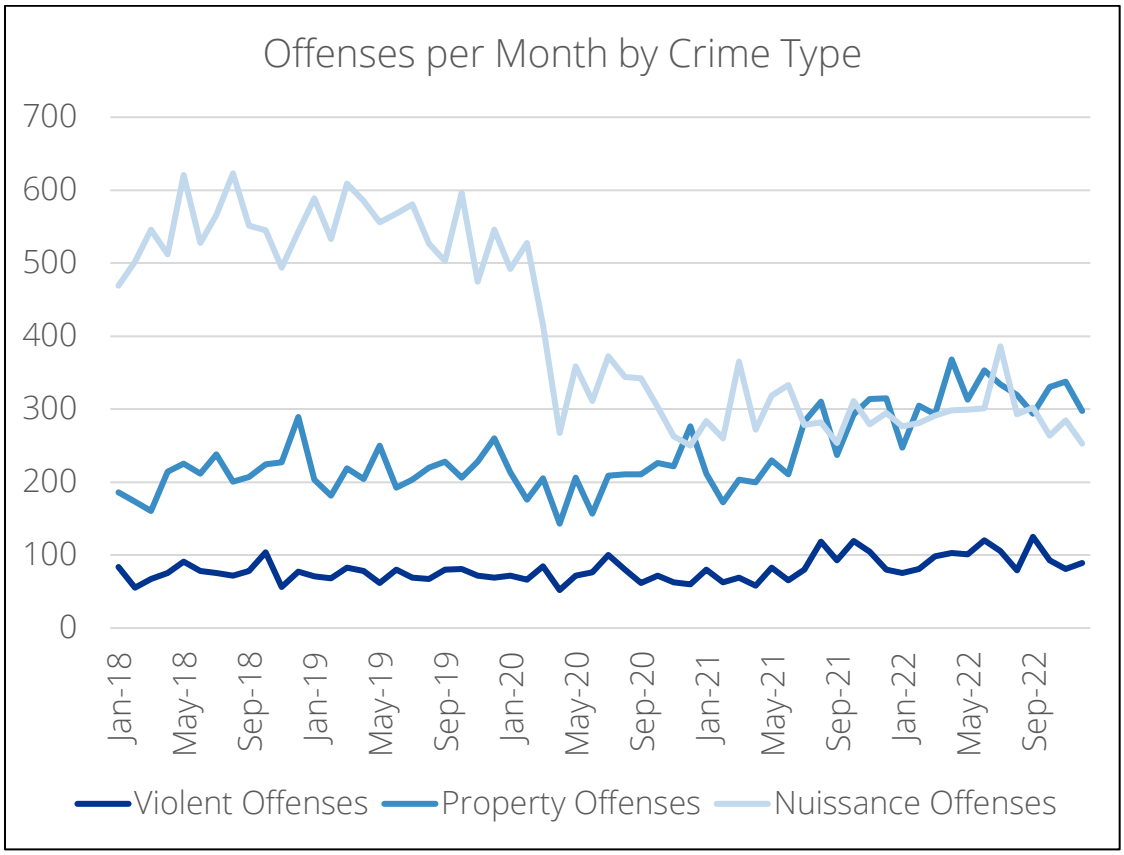
These high-density areas around medical and criminal justice facilities highlight the substantial demand for police services due to medical emergencies, public disturbances, and incidents requiring police intervention. While Manassas Mall and Potomac Mills are major commercial centers, they also show considerable force events, illustrating the correlation between high police-public interaction areas and increased force. These findings reinforce the need for a deeper understanding of what may be driving these incidents to improve resource allocation and tailored public safety strategies in high-demand areas.

TIME SERIES ANALYSES

Offenses and Arrests over Time

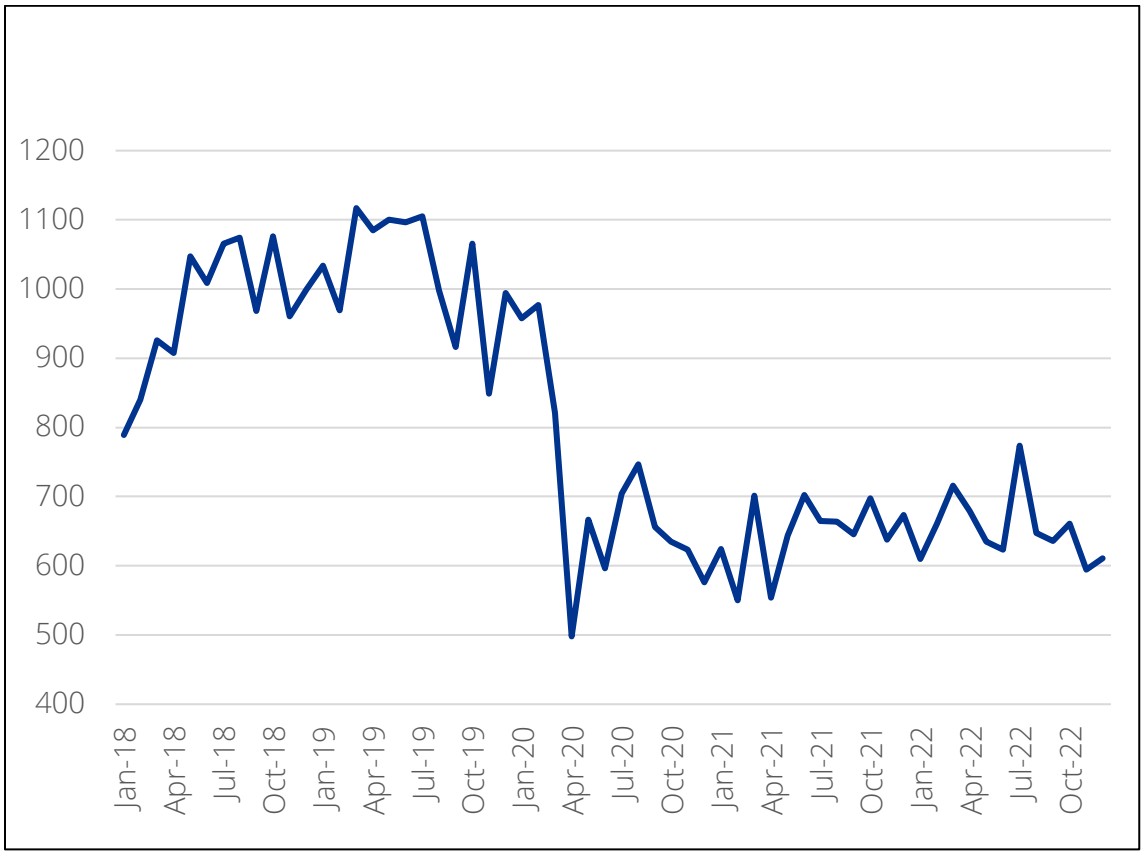
We first examined the patterns in reported criminal incidents over time to detect any patterns associated with changes in the use of force. While arrests are principally a product of police involvement in criminal incidents (i.e., incidents that yielded an arrest by a member of law enforcement), criminal incident reports are primarily driven by Community members, individuals, or public reporting of crime incidents. Figure 17 below shows that violent crime incidents increased by 13% after April 2020 (increasing from 75 to 84 monthly incidents). Property offenses increased from 212 per month (from 1/2018 through 3/2020) to 261 monthly (from 4/2020 through 12/2022). This meant that property crimes rose roughly 23% during this period. Finally, nuisance offenses (disorderly conduct, drug offenses, prostitution) experienced a significant decline from over 540 per month from January 2018–March 2022 to 300 per month after March 2020, or a decline of -45%. In summary, violent offenses increased slightly, property offenses increased more modestly, and nuisance offenses were cut in half before and after the COVID-19 pandemic (centering on April 2020).

Figure 17. Monthly Crime Incidents by Type (2018-2022)



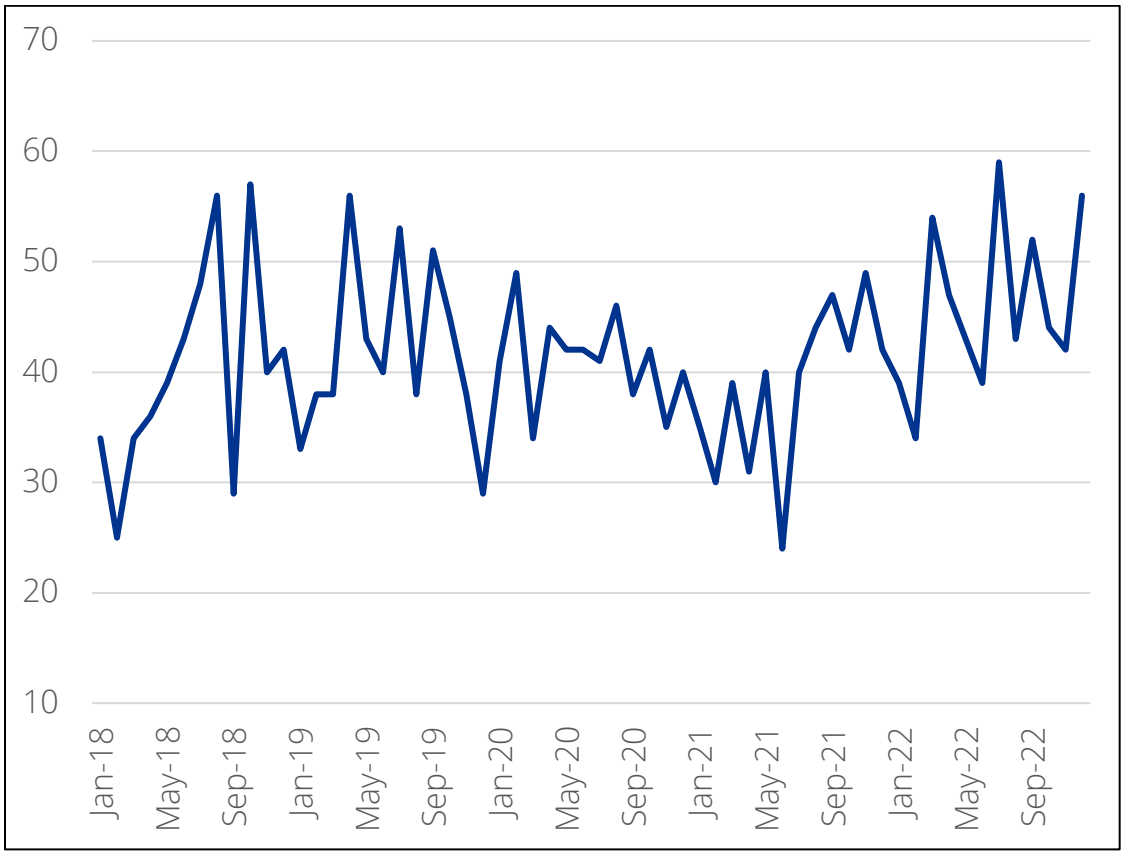
Next, the NPI research team examined PWCPD's arrests between January 1, 2018, and December 31, 2022. Figure 18 below shows overall arrests (i.e., one arrest per arrestee regardless of charges levied in the arrest) per month, and a significant and sizable shift occurred post-COVID (i.e., post-April 2020). Specifically, the average number of arrests was roughly 990 per month between January 2018 and March 2020. However, the average number of arrests from April 2020 through December 2022 was approximately 645 per month (roughly an overall -35% decrease in total arrests). Furthermore, the reduction in total arrests remained stable and consistent after April 2020.

Figure 18. PWCPD Monthly Arrests (2018-2022)



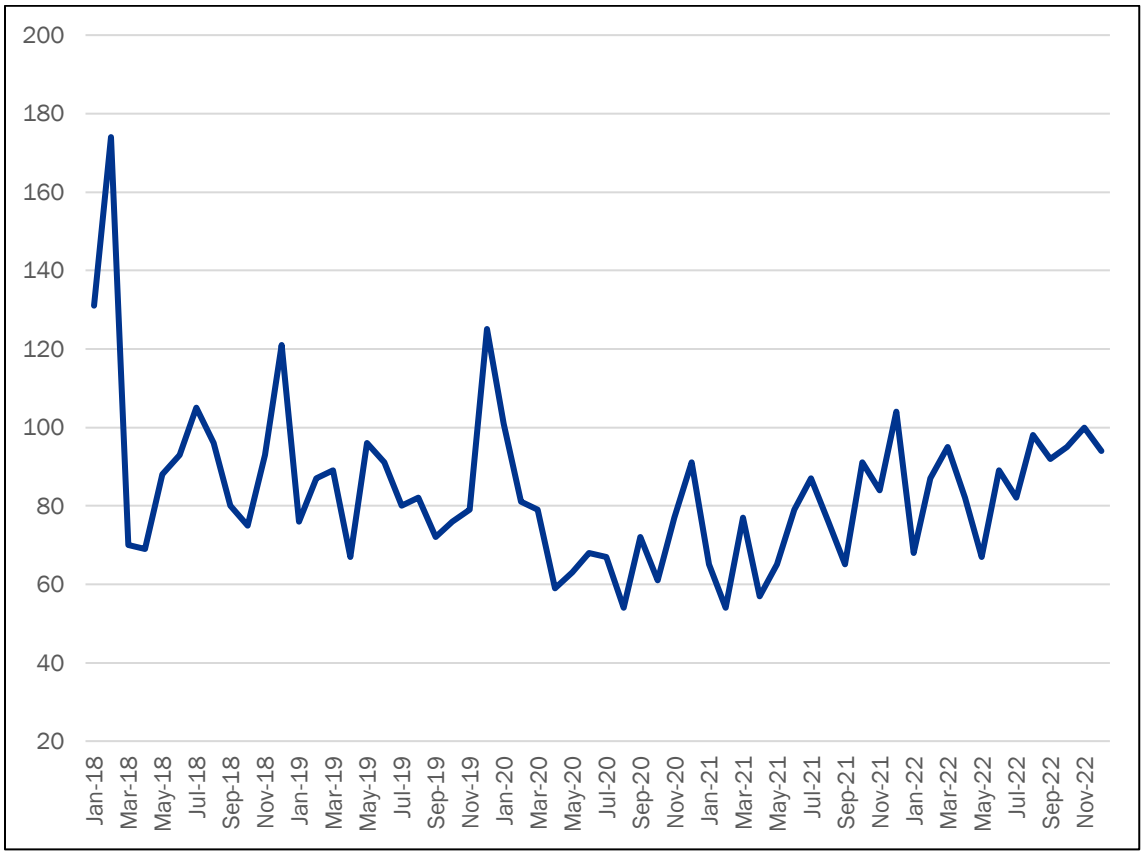
Next, we disaggregated the arrest data to examine whether different crime-type categories of arrest had different patterns in arrest over time. As shown in Figure 19, arrests that involved violent offenses (i.e., Part I violent charges, including aggravated assaults, robberies, rapes, or homicides) did not change in any discernable way during the study period. Specifically, the average number of violent arrests was 41 per month between January 2018 and March 2020 and was also 41 between April 2020 and December 2022. Overall, violent arrests were relatively stable over time, even as violent crime rose overall throughout the nation from 2020-2023.

Figure 19. Monthly Violent Arrests (2018-2022)



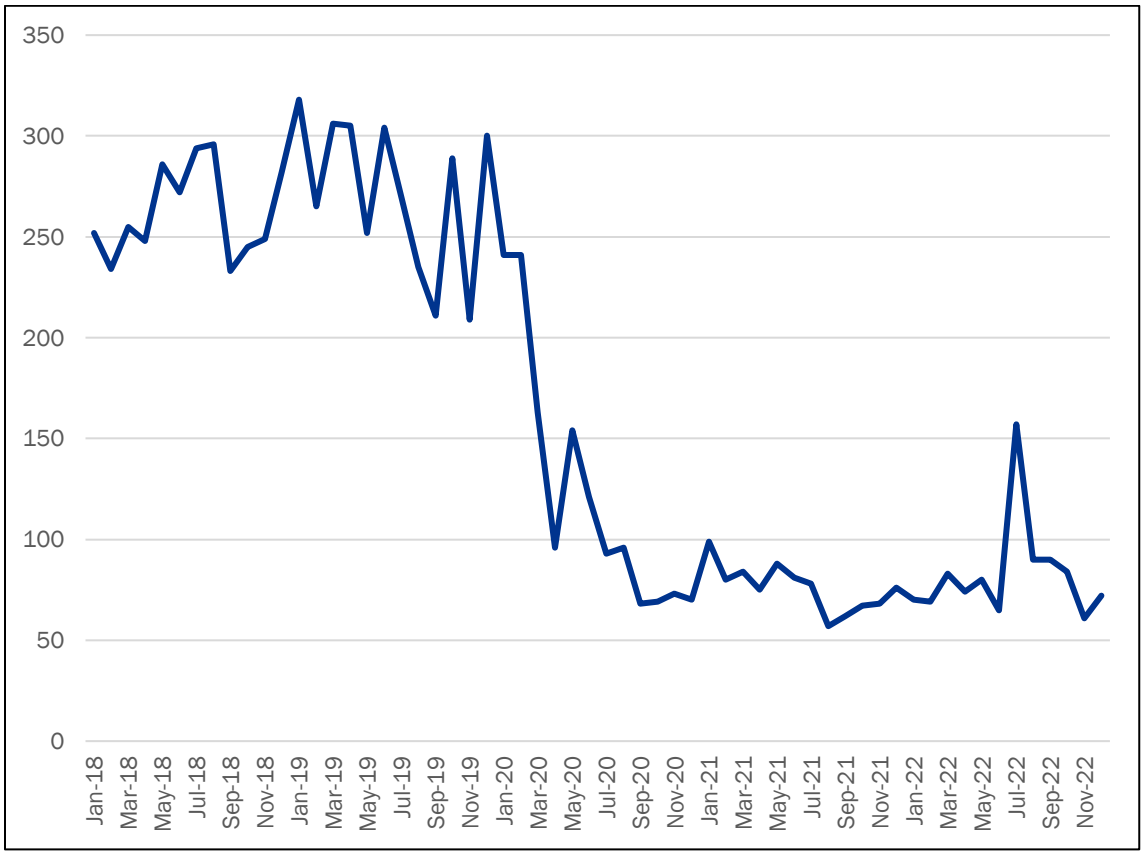
Next, as seen in Figure 20, there was evidence of a modest reduction in property offenses over time. From January 2018 through March 2020, the average monthly property arrests totaled roughly 91. From April 2020 through December 2022, the average number of property arrests was just over 77 per month (equating to a reduction of nearly -15%). Property arrests declined over time, though the reduction in total arrests (-35%) was roughly double that of the reduction in property arrests (-15%).

Figure 20. Monthly Property Arrests



The most significant and most salient declines observed in arrests were for drug and drug possession-based arrests (labeled here as Narcotics arrests), which declined -68% in the post-COVID period, as seen in Figure 21 below. From January 2018 through March 2020, the average number of drug or possession arrests was roughly 260 per month (and the average was relatively stable during the period). In contrast, the average number of drug or possession arrests from April 2020 through December 2022 was nearly 83 per month (only reaching 150-plus arrests per month twice in this period). In short, the reduction in total arrests was likely driven heavily by decreased drug and possession arrests over the post-COVID period.

Figure 21. Monthly Narcotics Arrests (2018-2022)



To summarize, overall arrests declined during the current study period, which ranged from 2018 through 2022. The most pronounced decline corresponded with the change in behavioral patterns associated with the April 2020 COVID-19 global pandemic, and that period corresponded with an overall reduction in arrests greater than 1/3 (35%). Arrests for violent offenses remained virtually identical over this period, while property arrests declined slightly (15%). The most significant and most pronounced decline in arrests corresponded with reduced drug and possession arrests (68%).

Interrupted Time Series Analysis

The prior descriptive and bivariate analyses demonstrate general trends and patterns in uses of force, arrests, and criminal incidents. These different data sources regarding Community member and officer behavior are often dependent upon one another given their conditional likelihood on external factors (i.e., arrests go down as crime changes, uses of force change as arrests change, etc.). It is also important to further consider if critical incidents or global events interrupt what would otherwise be a regular pattern of fluctuation in the use of force, arrests, and offenses across months. Such events might

include, for example, important changes to PWCPD reporting processes (e.g., the November 2019 change in minor use of force reporting) policies, external events (e.g., the COVID-19 pandemic), and/or high-profile events (such as the officer-involved death of George Floyd and other lethal use of force incidents that sparked national protests).

Interrupted time series analyses are based upon a rigorous quasi-experimental design (see Cook and Campbell, 1979) that allows researchers to assess whether, and to what extent, there are statistically significant shifts in the pre-existing trends on a given outcome that correspond with period-specific events (such as those events listed previously). Time series analyses are particularly salient when there are dates of interest that researchers want to assess whether outcomes experience a shift (increase or decrease) that corresponds with specific dates or periods (i.e., does the pre-existing pattern experience a change or break).

For the intervention dates, we examined the possible impact on the pattern of outcomes of interest relying upon three such critical events during this five-year period:

- Inclusion of minor uses of force in reporting (November 2019)
- The COVID-19 global pandemic (April 2020)
- Officer-involved death of George Floyd in Minneapolis (May/June 2020)[11]

The interrupted time series analyses are conducted on the monthly totals of criminal incidents, individuals who had force used against them, or individuals who were arrested. Note that the last two events—the death of George Floyd and the beginning of the global COVID-19 pandemic—took place within six weeks of each other. As a result, the monthly analyses that follow cannot disentangle the possible impact on the use of force resulting from the response to the death of George Floyd and the global pandemic (though the reductions in arrests, particularly for discretionary, drug, and alcohol arrests more than likely corresponded with the decrease in arrests during the lockdown periods than in response to civil protests).

Three interrupted time series analyses were conducted to examine if the trends in PWCPD use of force, arrests, and criminal offenses were "interrupted" or changed at or after the time following the events noted above. We begin by examining each aggregated outcome (uses of force, arrests, and criminal offenses) with each specific intervention date (to choose the most parsimonious dates of change across outcomes). Once the most noticeable and essential intervention dates that corresponded with changes in our

[11] Since the killing of George Floyd occurred in the last week of May (May 25, 2020), we use June 2020 as the first-post event date in our time series analyses.

outcomes of interest were selected, we next examined key dates across situational specific outcomes (including the racial and ethnic composition of individuals involved in the incidents and the types of incidents (e.g., types of arrests or incidents where force was used).

Table 2 below shows that total use of force incidents did not experience any statistically significant shift for any of the dates of interest (i.e., the county's use of force UOF reporting change, COVID-19, or protests related to the death of George Floyd). This is primarily because uses of force experienced a year-to-year linear increase over the entire duration of the time series, as indicated by the linear control variable being statistically significant in every model examined. Thus, once the linear trend in uses of force was controlled for, as well as the seasonal fluctuations via the monthly dummy variables, none of the point estimates with the intervention dates were significant correlates in the change in use of force counts over time. In short, the use of force increased each year from 2018 to 2022, net of all other time-situational factors examined in the models below.

Each of the dates of interest corresponded with reductions in total arrests. Arrests significantly declined by -24.5% in the post-November 2019 period, -38.6% in the post-April 2020 period, and -29.6% in the post-June 2020 period. These effect sizes were also net of monthly seasonality and linear trends in the data. These combined findings indicate that the driving force behind the most significant shift/decline in arrests was the April 2020 shift due to the COVID-19 pandemic (since the effect size was most significant and most pronounced during this period relative to all others by comparison). Similar reductions were observed for total offenses, which experienced statistically significant decreases in each intervention point of interest, net of seasonal and linear control variables. Similar to the arrest analyses, the largest effect sizes for the point estimates were for the April 2020 COVID period (-34.3% overall reduction in arrests) relative to the post-November 2019 change in use of force reporting (-25.2%) and the post-Floyd protest period (-24.7% estimated effect).

Table 2. Interrupted Time Series on Use of Force, Arrests, and Crime

	INTERVENTION 1: NOVEMBER 2019	INTERVENTION 2: APRIL 2020	INTERVENTION 3: JUNE 2020

	B	SE	Exp(B)-1	B	SE	Exp(B)-1	B	SE	Exp(B)-1
USES OF FORCE	.07	.104	--	-.042	.109	--	-.036	.111	--
ARRESTS	-.281*	.082	-.245	-.487*	.045	-.386	-.350*	.071	-.296
CRIME INCIDENTS	-.290*	.069	-.252	-.420*	.044	-.343	-.283*	.068	-.247
CONTROLS									
LINEAR TREND	#	#	#	#	#	#	#	#	#
MONTHLY	#	#	#	#	#	#	#	#	#

included in each model; *p < .05
Exp(B) – 1 is only provided for statistically significant point-estimates

To summarize, the total uses of force had no distinct period corresponding to its increase over time. Indeed, uses of force experienced a year-over-year increase, suggesting multiple time-varying factors associated with the rise in use of force counts (i.e., types of force, reasons for force, and force reporting). Comparatively, total offenses (Figure 24) and total arrests (Figure 23) experienced their largest and most noteworthy shifts (declines) in the post-COVID period (post-April 2020). Thus, the primary intervention estimate will center on April 2020 for all more specific and refined time series analyses since this is where multiple time series shifted in the most pronounced manner.

POST-COVID IMPACT ON USES OF FORCE BY RACE, TYPES OF ARRESTS, AND TYPES OF OFFENSES

Table 3 below shows that force use did not change discernably among Black, White, or Hispanic individuals. Specifically, the linear increases in total force corresponded with increases in uses of force across all racial and ethnic groups. There was no evidence of any divergence for any group for any of the dates of interest—suggesting the increases were somewhat unilateral and evenly distributed. Figure 22 below shows the distribution of Black, White, and Hispanic uses of force counts (at the subject-incident level) over time. While all uses of force increased between 2018 and 2022, the increases were evenly distributed across all groups.

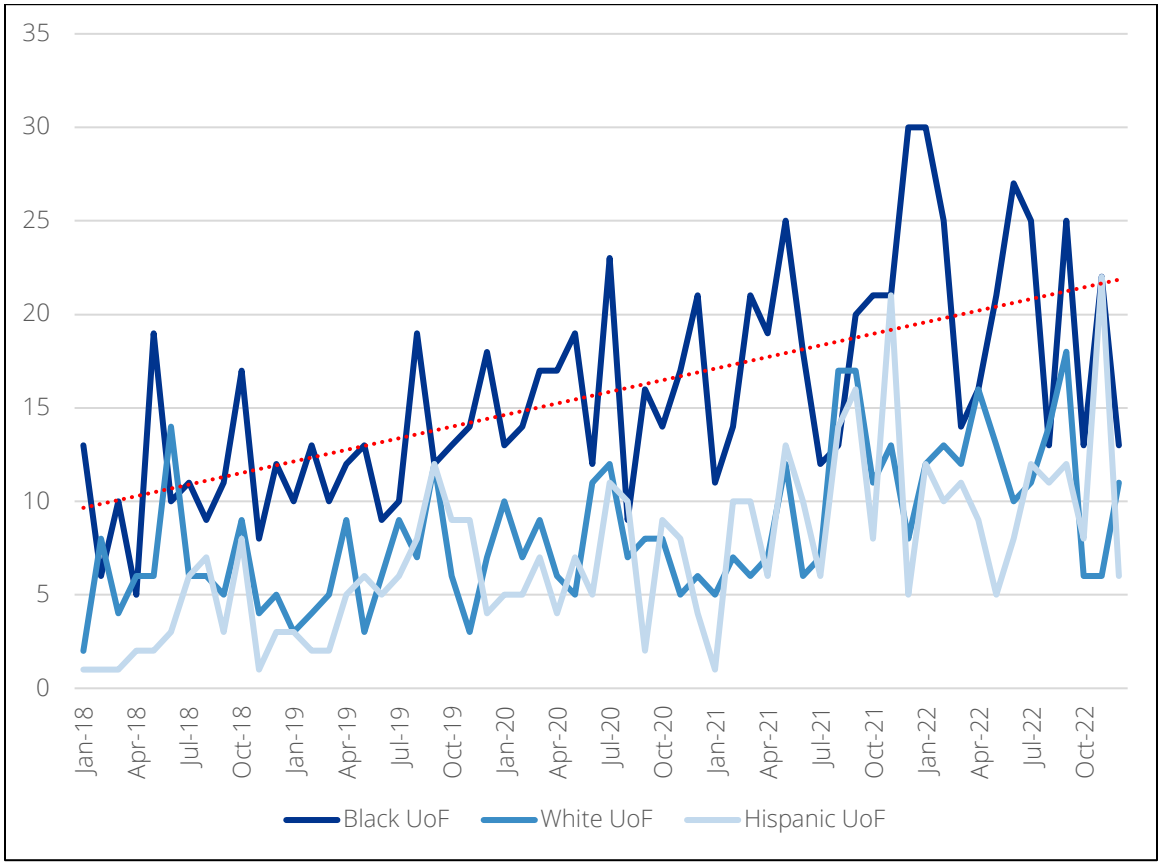
Table 3. Interrupted Time Series Analyses on Uses of Force by Race/Ethnicity

	BLACK UOF	HISPANIC UOF	WHITE UOF

	B	SE	Exp(B)-1	B	SE	Exp(B)-1	B	SE	Exp(B)-1
POST-COVID	.111	.124	--	-.095	.199	--	-.170	.148	--
CONTROLS									
LINEAR TREND	.009	.003	1.009	.024*	.005	1.02	.018*	.024	1.018
MONTHLY	#	#	#	#	#	#	#	#	#

included in each model; *p < .05
Exp(B) – 1 is only provided for statistically significant point-estimates

Figure 22. Monthly Use of Force by Race/Ethnicity (2018-2022)



In terms of arrests, Table 4 below shows that the most significant declines in arrests were observed for Black arrestees and Hispanic arrestees (-41.2% and -42.0% declines, respectively). Arrests also declined considerably (-31.8%) for White individuals, net of

seasonal controls and the linear trend in the count data.[12] In examining the monthly number of arrests in Figure 23 below, there is a considerable decline after the COVID pandemic (April 2020 onward) from 410 per month to 253 per month for Black arrestees. This decline was consistent with the overall decline in reported crime incidents shown in Figure 24. For Hispanic arrestees, arrest counts were roughly 250 per month pre-COVID and 190 per month post-COVID. Finally, arrests for White arrestees declined from an average of 311 per month to 187 per month). In short, there was a noteworthy change (reduction) in arrests for all individuals regardless of race. However, for non-Whites, the declines were greater in overall magnitude (i.e., for Black and Hispanic arrestees).

Table 4. Interrupted Time Series Analyses on Arrests by Race/Ethnicity

	BLACK ARRESTS			HISPANIC ARRESTS			WHITE ARRESTS		
	B	SE	Exp(B)-1	B	SE	Exp(B)-1	B	SE	Exp(B)-1
POST-COVID	-.530*	.051	-.412	-.536*	.057	-.420	-.381*	.059	-.318
CONTROLS									
LINEAR TREND	.000	.001	--	.008*	.001	1.008	-.004*	.001	0.995
MONTHLY	#	#	#	#	#	#	#	#	#

included in each model; *p < .05
Exp(B) – 1 is only provided for statistically significant point-estimates

[12] There was no evidence of any linear trend in Black arrests, a positive linear trend in Hispanic arrests, and a negative linear trend (decline) in White arrests. The negative linear trend in White arrests likely mediates some of its less pronounced direct decline in the post-COVID period.

Figure 23. Monthly Arrests by Race/Ethnicity (2018-2022)

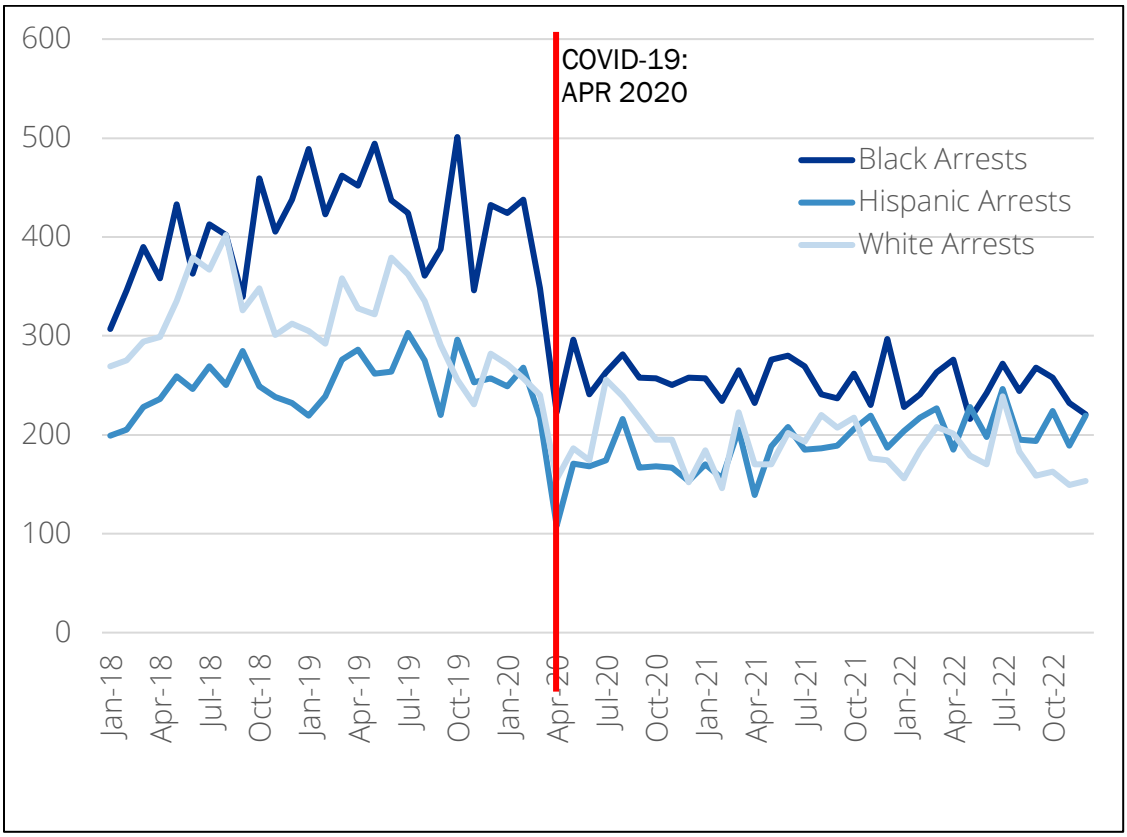


Table 5 below shows the post-COVID changes in violent, property, and drug-related arrests. Net of controls, violent arrests declined by roughly 18.1%. Similarly, property arrests declined by approximately 20.8%. The most sizable decline was the reduction in drug and possession arrests, which fell by roughly -64.5%. Thus, an overall decrease in arrests was observed for all arrests (though the most pronounced decline was for drug and possession arrests). The change in arrests (described previously) was likely driven, to some degree, by the change in offenses reported to PWCPD. Specifically, the interrupted time series analyses indicate that violent crimes in the post-COVID period were roughly -15.3% lower, as seen in Table 6 The findings show that net of controls and property offenses also declined by -22.2%, and nuisance offenses declined by roughly -41.8% post-COVID period. Thus, the reduction in total offenses was driven by the broad decrease in offenses across offense types, with the most pronounced decline in nuisance offenses.

Table 5. Interrupted Time Series Analyses on Violent, Property, and Drug/Possession Arrests

	VIOLENT ARRESTS			PROPERTY ARRESTS			DRUG/POSS ARRESTS		
	B	SE	Exp(B)-1	B	SE	Exp(B)-1	B	SE	Exp(B)-1
POST-COVID	-.199*	.073	-.181	-.233*	.099	-.208	-1.03*	.095	-.645
CONTROLS									
LINEAR TREND	.006	.002	1.006	.002	.003	--	-.003	.002	--
MONTHLY	#	#	#	#	#	#	#	#	#

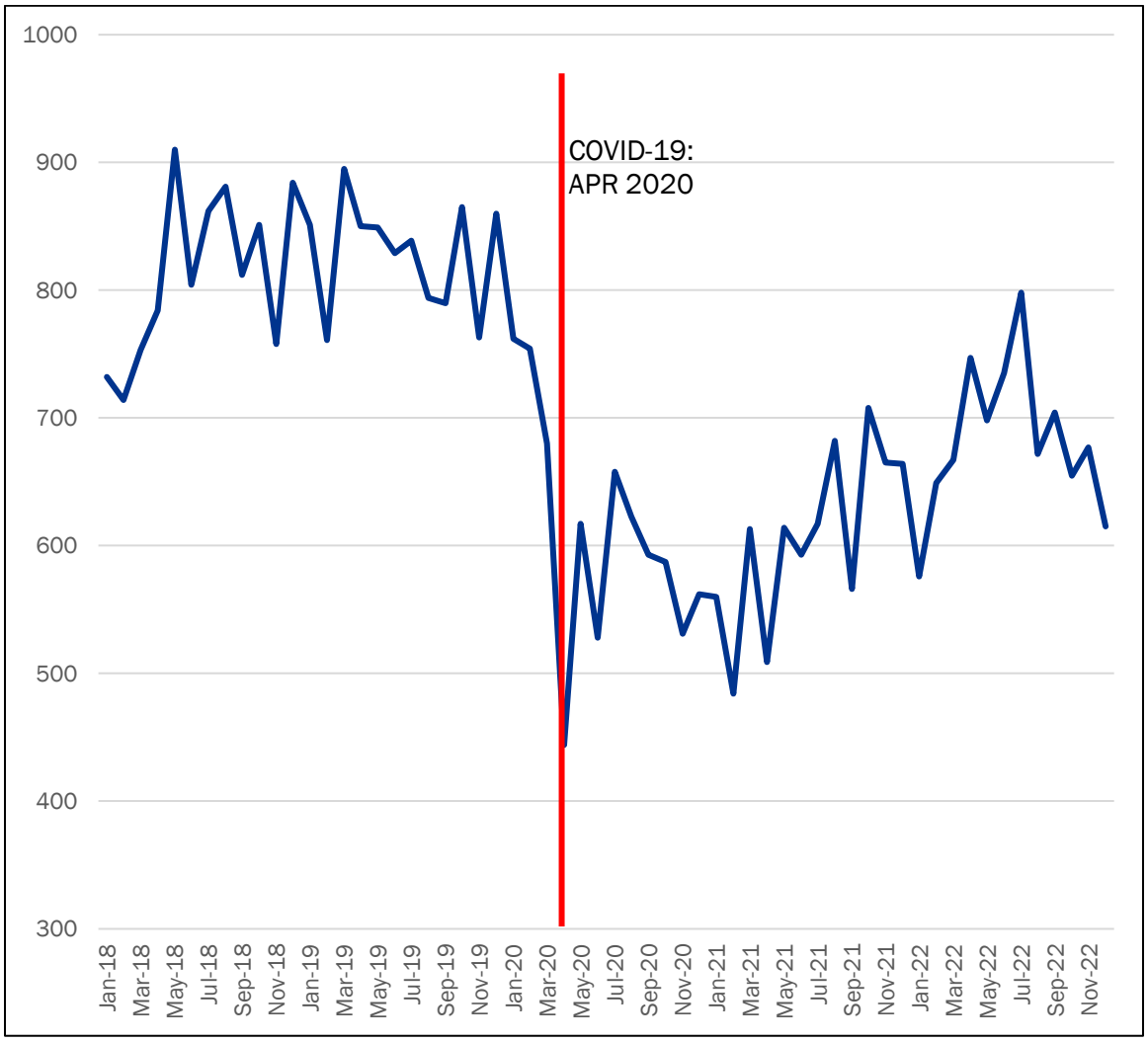
included in each model; *p < .05
Exp(B) – 1 is only provided for statistically significant point-estimates

Table 6. Interrupted Time Series Analyses on Violent, Property, and Nuisance Offenses

	VIOLENT OFFENSES			PROPERTY OFFENSES			NUISANCE OFFENSES		
	B	SE	Exp(B)-1	B	SE	Exp(B)-1	B	SE	Exp(B)-1
POST-COVID	-.165*	.078	-.153	-.249*	.064	-.222	-.542*	.051	-.418
CONTROLS									
LINEAR TREND	.009*	.002	1.009	.014*	.001	1.014	-.001	.002	--
MONTHLY	#	#	#	#	#	#	#	#	#

included in each model; *p < .05
Exp(B) – 1 is only provided for statistically significant point-estimates

Figure 24. Monthly Crime Incidents (2018-2022)



SUMMARY

Total uses of force experienced year-over-year increases from 2018 through 2022. The total uses of force had no distinct period corresponding to the observed increases over time. Indeed, uses of force experienced a linear sequential rise, suggesting multiple time-varying factors associated with increased use of force counts (i.e., types of force, reasons for force, and force reporting). For example, when examining the bivariate analyses, it was apparent that resisting detention with emotionally disturbed persons (96% of which were not arrested) increased considerably over time, showing that uses of force were not only associated with custodial arrests. Concurrently, calls for service involving "Mental Subjects" were increasing annually from 2019 through 2022. Additionally, the percentage of use of force events that resulted in civilian injury declined

each year since 2019 (from 51% in 2019 to 39% in 2022) – suggesting that the use of force increases each year involved mental health crises or were for minor force types after 2019. Finally, the linear increases in uses of force were also consistently observed for all racial and ethnic classifications (Black, White, and Hispanic individuals). In short, multiple time-based factors were associated with changes in uses of force counts over time.

Arrests experienced statistically significant decreases over time. This was particularly true when we controlled for the impact of the COVID pandemic (centering on April 2020). Violent and property arrests experienced moderate decreases (ranging from -18% to -20% fewer arrests, net of controls). However, the most significant declines in arrests were for drug and possession arrests (-64.5% fewer post-COVID). The declines in arrests were largest for Black and Hispanic arrestees (-41% and -42% respectively, net of controls). White arrestees also experienced a statistically significant decline, though moderately lesser in overall magnitude (-31%). There were also reported changes in criminal incidents post-COVID. Specifically, violent offenses declined by -15%, while property offenses declined by -22%, net of control variables. Nuisance offenses (associated with drug and disorderly crime) decreased by -42%, net of controls and linear trends.

In summary, serious crimes seemingly reduced over time, and arrests for serious offenses also declined. The most salient reductions in offenses and arrests combined were the reductions in drug and possession arrests and nuisance offenses. And, although PWCPD had more reported uses of force, particularly for events (i.e., resisting detention with emotionally disturbed persons) that were less likely to correspond with arrests, the likelihood that arrests focused on more serious crimes changed post-COVID. Thus, the layering of changes in reporting, behavior, and police activity is evident in these time series analyses.

EXAMINING RACIAL AND ETHNIC DISPARITIES

BENCHMARK ANALYSES

The research team reviewed four benchmarks to examine whether PWCPD use of force events differed across race/ethnicity based on residential population, calls for service allocated based on the underlying population, the arrestee population, and the suspect population. The results of the benchmark analysis can be seen in Table 7 below, presented as both disproportionality indices and disparity ratios, highlighting the demographic differences and how they change based on the underlying benchmark. As a reminder, disproportionality index (DI) values greater than 1.0 demonstrate that the group has force used against them more than would be expected based on their percentage in the benchmark population; conversely, a DI of less than 1.0 indicates that a group has force used against them less often than would be expected compared to a benchmark. The disparity ratio (DR) is interpreted as the likelihood of having force used against a person within that racial/ethnic group compared to the majority group. For example, if the disparity ratio is 2.0, this indicates that the group of interest (minority group) is roughly two times more likely to have force used against them in comparison to the majority group (White, non-Hispanic).

Table 7. Benchmarking Disparity Analysis

PRINCE WILLIAM COUNTY	PERCENT RACE/ETHNICITY			DISPROPORTIONALITY INDICES			DISPARITY RATIOS	
	White	Black	Hispanic	White	Black	Hispanic	Black	Hispanic
USE OF FORCE (N = 1941)	25.81%	48.69%	22.26%	--	--	--		--
RESIDENTIAL POPULATION	36.93%	19.50%	26.35%	0.70	2.50	0.84	3.57	1.21
CFS POPULATION (ALL CRIMES)	35.04%	18.50%	25.01%	0.74	2.63	0.89	3.57	1.21

ARRESTEE POPULATION (ALL CRIMES)	30.40%	40.45%	27.13%	0.85	1.20	0.82	1.42	0.97
SUSPECT POPULATION (ALL CRIMES)	28.98%	40.89%	24.51%	0.89	1.19	0.91	1.34	1.02

Table 7 highlights the disparity in the use of force incidents across different racial and ethnic groups within Prince William County, comparing these frequencies using various benchmarks. Black individuals account for 48.69% of use of force incidents, Hispanic individuals for 22.26%, and White individuals for 25.81%. When compared to the residential population (Benchmark 1), which is 19.50% Black, 26.35% Hispanic, and 36.93% White, Black individuals are significantly overrepresented. The disproportionality index (DI) for Black individuals is 2.50, meaning they experience the use of force 2.5 times more frequently than their share of the residential population would predict. Hispanic individuals have a DI of 0.84, indicating they experience the use of force slightly less frequently than expected. The disparity ratio for Black individuals is 3.57, suggesting they are 3.57 times more likely to experience use of force compared to Whites, while the disparity ratio for Hispanics is 1.21, meaning they are 1.21 times more likely than Whites.

For the calls for service (CFS) population (Benchmark 2), Black individuals represent 18.50%, Hispanic 25.01%, and White 35.04%. Here, the DI for Black individuals is 2.63, meaning they experience the use of force 2.63 times more frequently than their share of CFS would predict. Hispanic individuals have a DI of 0.89, experiencing use of force slightly less frequently than expected. The disparity ratios remain consistent with the residential benchmark, with Black subjects 3.57 times more likely and Hispanic subjects 1.21 times more likely to experience use of force compared to Whites.

In the arrestee population (Benchmark 3), Black subjects constitute 40.45%, Hispanic 27.13%, and White 30.40%. The DI for Black individuals shifts to 1.20, indicating they experience use of force 1.2 times more frequently than their share of arrestees would predict. For Hispanics, the DI is 0.82, showing they experience the use of force less frequently than expected. The disparity ratios change accordingly, with Blacks being 1.42 times more likely and Hispanics 0.97 times as likely to experience use of force compared to Whites. The suspect population (Benchmark 4) shows Blacks at 40.89%, Hispanics at 24.51%, and Whites at 28.98%. The DI for Black individuals is 1.19, meaning they experience the use of force 1.19 times more frequently than their share of suspects would predict. Hispanics have a DI of 0.91, indicating a lower frequency of use of force

than expected. The disparity ratios show Blacks being 1.34 times and Hispanics 1.02 times more likely to experience use of force compared to Whites.

Next, the NPI research team examined the disparity ratios for Black and Hispanic use of force subjects across PWCPD districts, as seen in Figure 25 and Figure 26 below. For each district, we compared the residential census and criminal suspect benchmarks to highlight the differences between the two measures and provide a more holistic picture of the geographic distribution of use of force disparities. The Black Census Disparity Ratio in the Central District shows a significant disparity, with a ratio of 3.62 for the census and 1.28 for suspects. The East district has ratios of 2.49 for census and 1.15 for suspects, indicating some disparity. The MN district displays a lower disparity with ratios of 2.74 for census and 0.89 for suspects. The West district shows the highest disparity with a census ratio of 4.59 and a suspect ratio of 1.47, indicating a significant overrepresentation of Black individuals in census data and as suspects. Turning to the Hispanic disparity ratios by district in Figure 26, the Central and East districts show ratios close to 1, indicating a balanced representation. The MN district has a significantly lower ratio, particularly for suspects (0.35 and 0.42), indicating underrepresentation. The West district displays the highest disparity, with a Hispanic Census Disparity Ratio of 1.68 and a Hispanic Suspect Disparity Ratio of 1.17, suggesting the overrepresentation of Hispanics as suspects in this district.

Figure 25. Black Disparity Ratio per PWCPD District

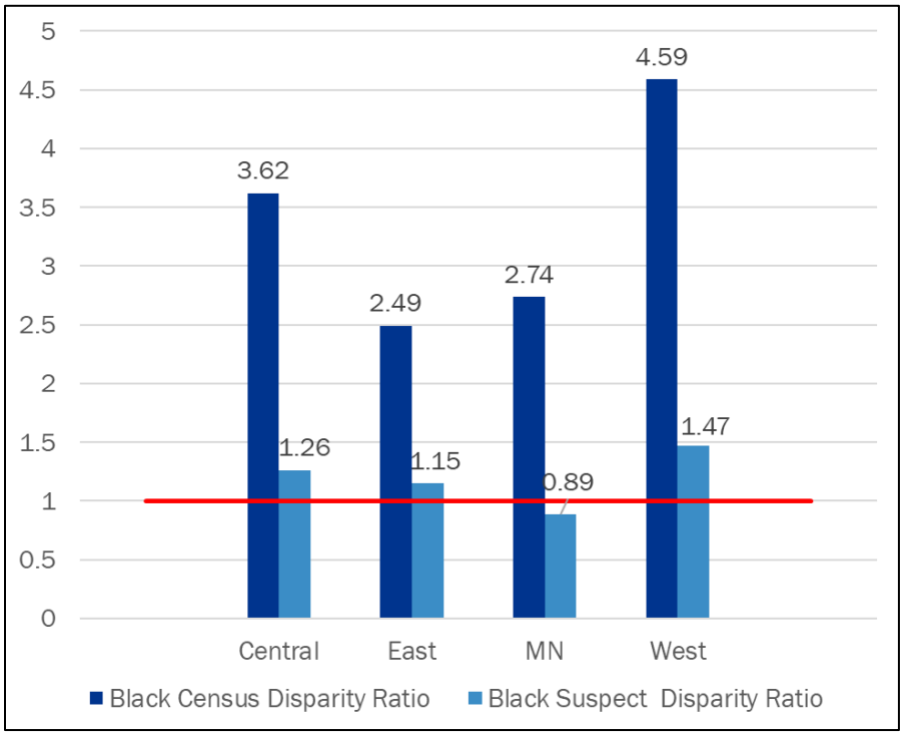
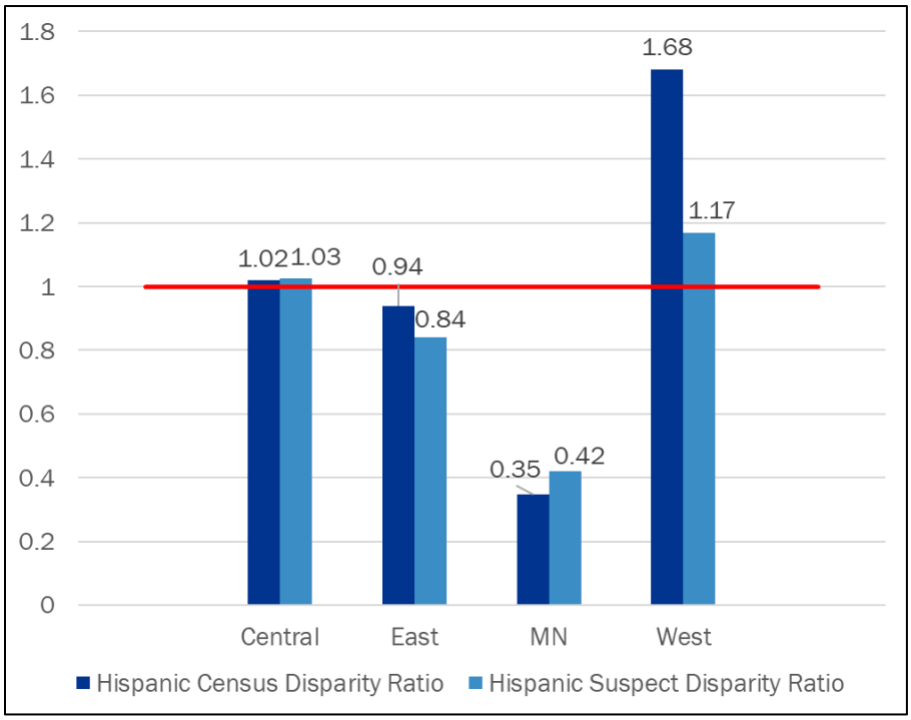


Figure 26. Hispanic Disparity Ratio per PWCPD District



Overall, depending on the benchmark used, the disparity level also fluctuates. However, there are no established thresholds for determining what a good vs. bad value is, and higher disparity ratio values are considered evidence of potential bias. However, this is not necessarily sufficient evidence of personal bias by officers based on race/ethnicity. There is evidence that Black and Hispanic subjects do experience force at higher rates than their White counterparts. In addition, these disparity ratios are not distributed equally geographically, with the Western District having some of the highest disparity ratios for Black and Hispanic subjects. It is imperative to use a benchmark that most closely reflects the population at risk for experiencing force, and the suspect/arrest population is the most theoretically appropriate measure present in the PWCPD data. When comparing these disparity ratios for the arrestee and suspect benchmarks (3 & 4) to the commonly used residential population benchmark, we can see that the Black and Hispanic values decrease significantly.

Spatial Analysis of Disparity

In addition to the tables and graphs presented above, the NPI research team also created maps comparing the census and suspect disparity ratios for Black and Hispanic subjects by district to highlight differences and potential spatial patterns. Figure 27 and Figure 28 below compare census and suspect benchmarks for measuring Black Disparities in uses of force across PWCPD sectors. Figure 27 utilizes census data to show the Black disparity ratio, where darker shades indicate higher disparity. Sectors A10, A14, C17, and C18 display the highest ratios, ranging from 4.3 to 6.0, suggesting that Black individuals in these areas are significantly overrepresented in use of force incidents compared to White subjects. Sectors A17, A16, and B15 also exhibit notable disparities with ratios between 3.2 and 4.3. Comparatively, Figure 28 employs suspect data to depict the Black disparity ratio. When using suspect demographic data as the underlying benchmark, we see a reduction in the disparity ratio values overall. In addition, only sector A14 maintains the highest disparity ratio, while sectors A10 and C17 show the next highest disparity ratios, ranging from 1.5-2.0. Thus, some stability in the data indicates that it may be critical for PWCPD to understand better what may be occurring in these sectors relative to others in use of force incidents. Interestingly, when using the suspect benchmark, Sector C18, which was one of the highest using census data, has one of the lowest disparity ratios. At the same time, C13 has moved into a higher category with disparity ratios of 1.25-1.5.

Figure 27. Black Disparity Ratio per Sector with Census Benchmark

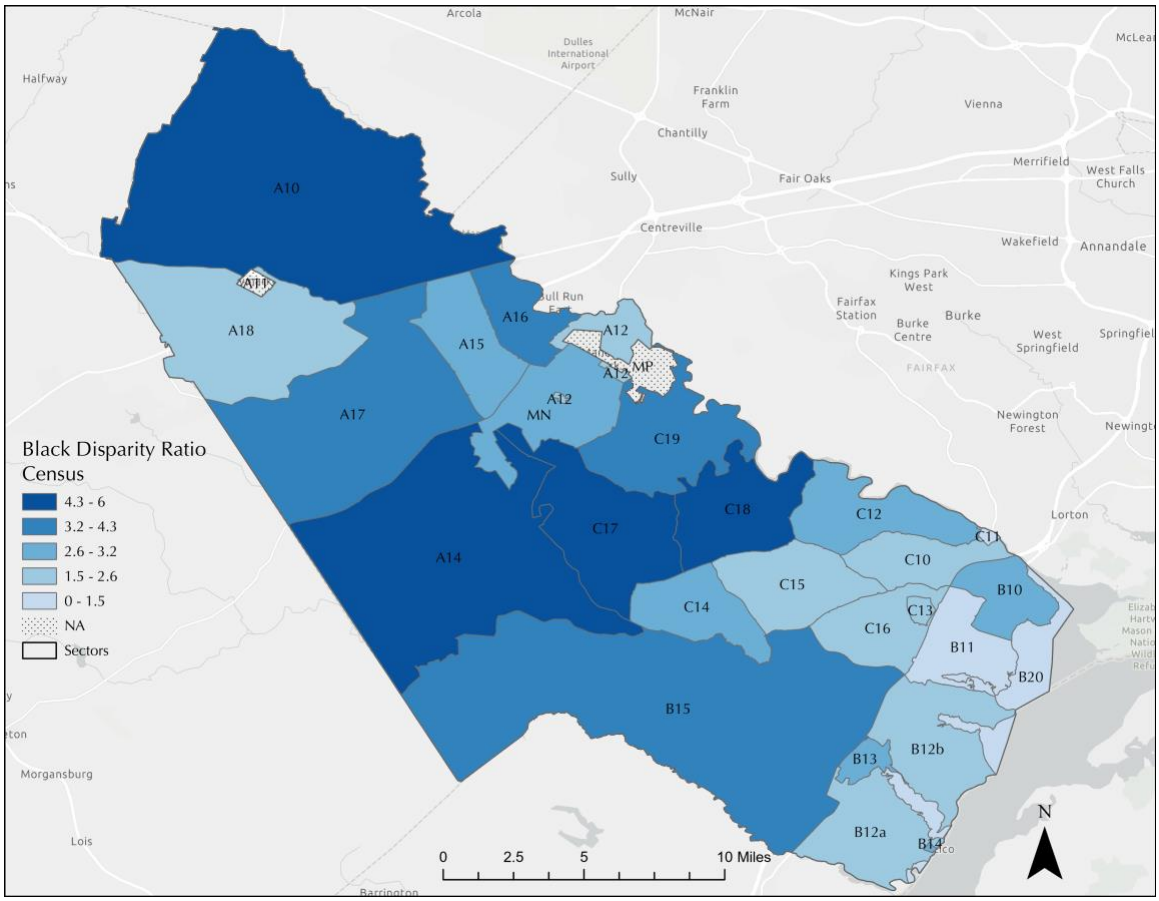


Figure 28. Black Disparity Ratio per Sector with Suspect Benchmark

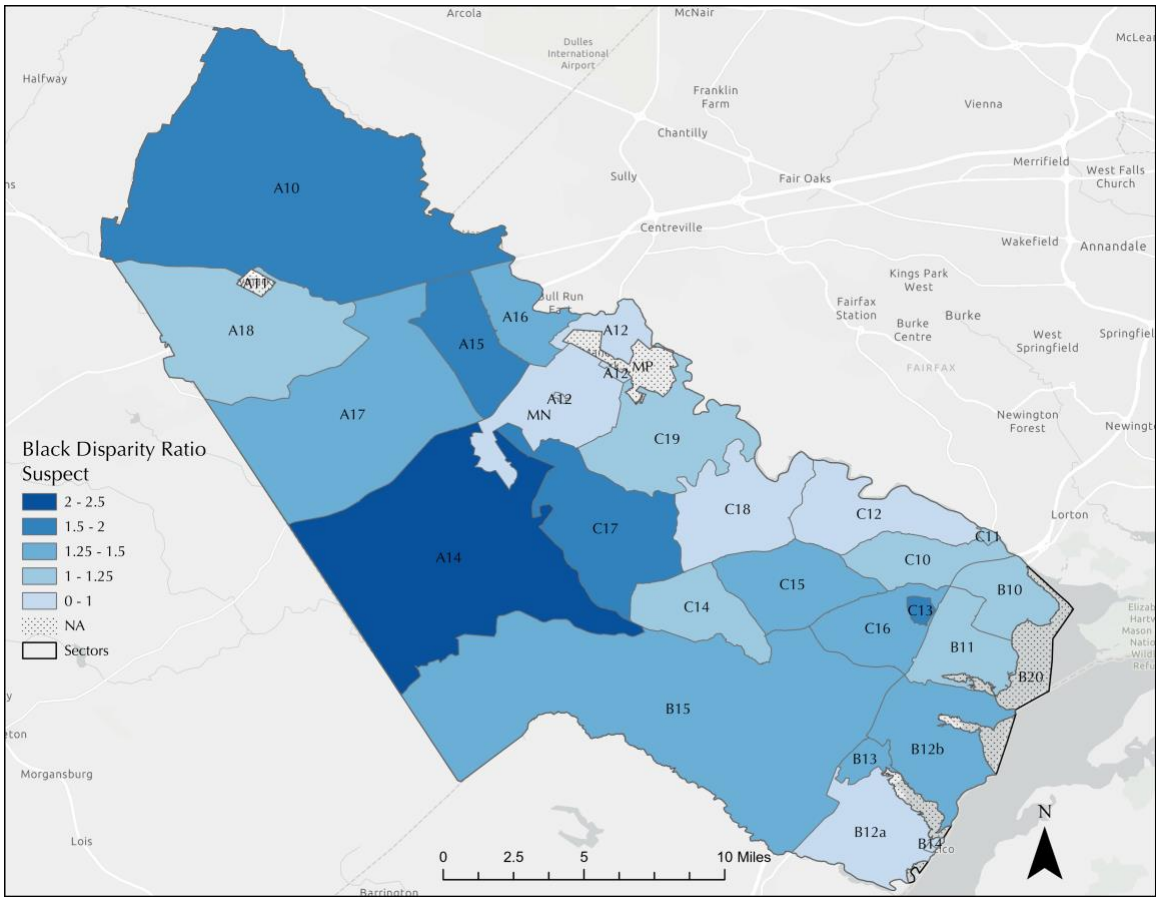


Figure 29 and Figure 30 below display Hispanic subject disparity ratios across PWCPD sectors, using both census data and suspect data to compare the extent of use of force events with Hispanic individuals. Figure 29 illustrates the Hispanic disparity ratio based on census data, where darker shades indicate higher disparity. Notably, sector A11 has the highest disparity ratio, possibly due to data anomalies and the sector's size. Next, sectors in the West and East Districts display disparities ranging from 1 to 1.5, relatively low to moderate. In contrast, the rest of the sectors have disparity ratios under 1. Figure 30, which utilizes suspect data, displays slightly different patterns than the census data, with some sectors increasing and others decreasing in their disparity ratios. In this context, sector A15 shows the highest disparity ratio (again with A11), indicating an overrepresentation of Hispanic individuals experiencing force compared to White subjects. However, the Western and Eastern District sectors that were previously the highest have also been reduced to disparity ratios of less than one, including B15, C12, and A17. It is clear that using the census benchmark results in inflated disparity ratios and that the location of the highest and lowest DR values may shift depending on which

benchmark is used. Thus, when investigating disparities, using the most accurate benchmarks that best represent the true population at risk is imperative. Additionally, these findings highlight several Western and Eastern district sectors that should receive additional focus from PWCPD to explore why they consistently experience higher force disparities.

Figure 29. Hispanic Disparity Ratio per Sector with Census Benchmark

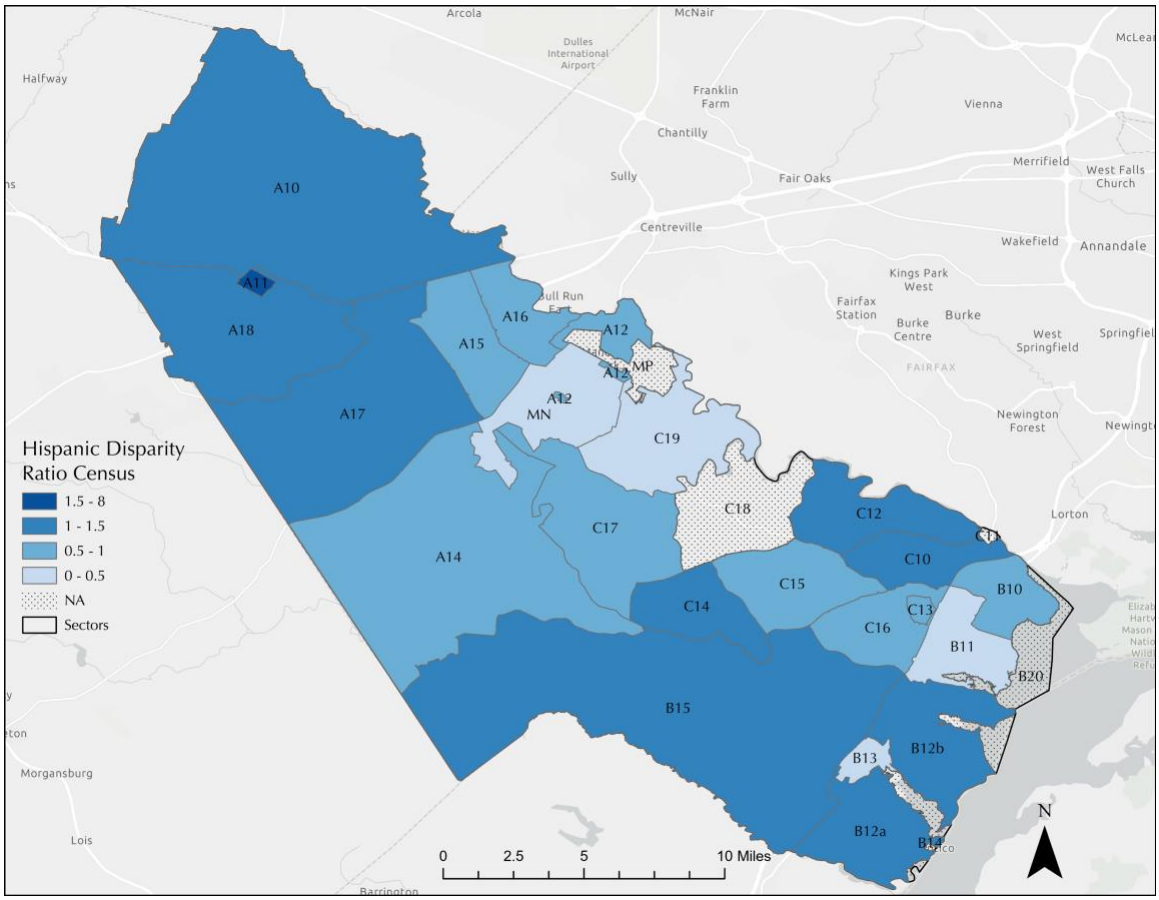
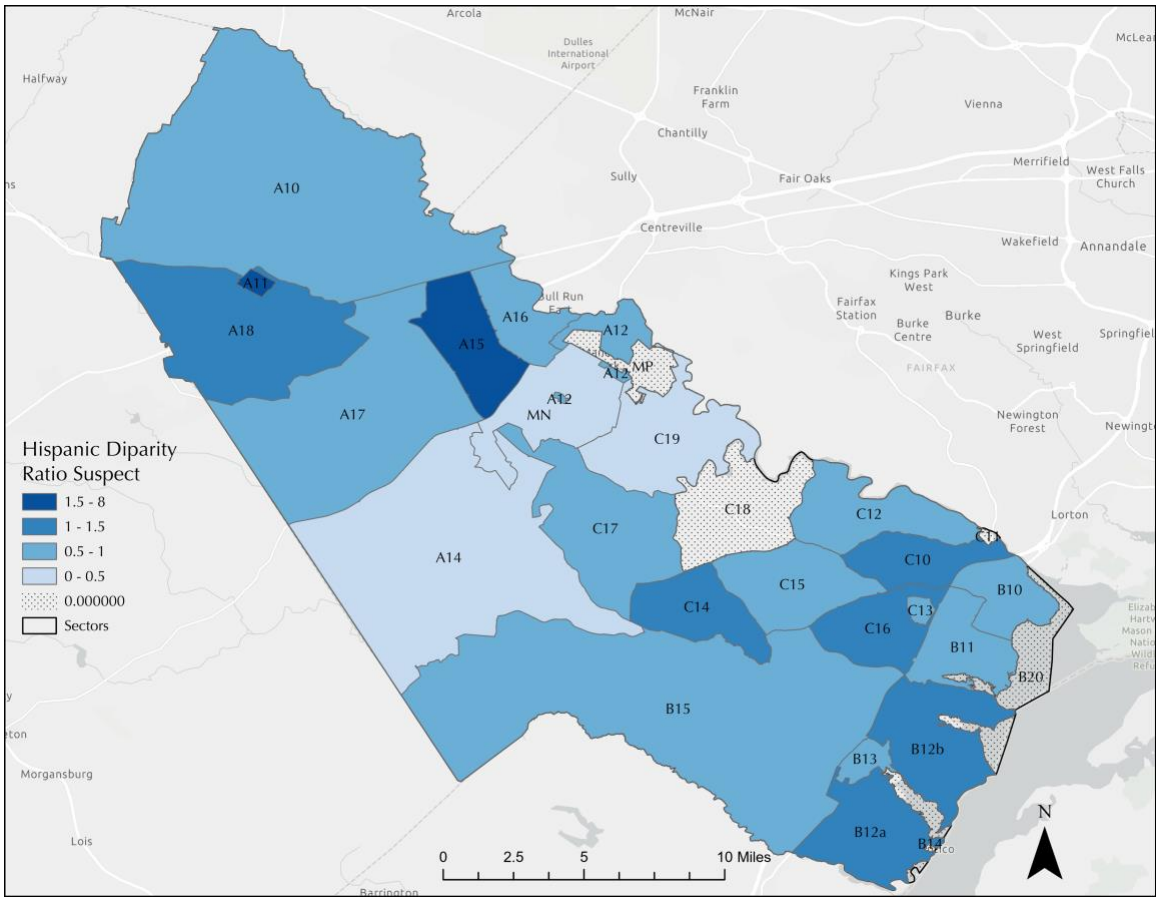


Figure 30. Hispanic Disparity Ratio per Sector with Suspect Benchmark



SUMMARY

The benchmark analysis reveals critical insights into the disparity in police use of force events across different racial and ethnic groups within PWCPD jurisdictions. The research team compared four benchmarks: residential population, calls for service allocated based on the underlying population, the arrestee population, and the suspect population (including arrestees) on both the disproportionality index and the disparity ratio. The analysis did reveal disparities for Black and Hispanic individuals when compared to their White counterparts, although the magnitude of these disparities depends heavily on the benchmark used. For Black individuals, the census calculated disparity ratio of 3.57 indicates that they are 3.5 times more likely to experience the use of force compared to White individuals. Similarly, Hispanic individuals have a disparity ratio of 1.2 times higher. However, when using the suspect population benchmark, both disparity ratios for Black and Hispanic individuals are reduced but remain above 1.0, at 1.34 and 1.02, respectively.

The disparity ratios were further examined across PWCPD districts, highlighting geographic differences. In the Central district, Black census disparity ratios are significantly higher at 3.62 compared to 1.28 when using suspect data. The East district shows disparity ratios of 2.49 for census and 1.15 for suspects, while the West district has the highest disparity ratio of 4.59 for census and 1.47 for suspects. Hispanic disparity ratios vary less dramatically by district. The Central and East districts have ratios close to 1.0, indicating balanced representation. The MN district has significantly lower ratios, particularly for suspects (0.35 and 0.42), indicating underrepresentation. The West district has the highest Hispanic disparity ratios, with 1.68 for census and 1.17 for suspects.

The spatial analysis of PWCPD sectors revealed significant geographic disparities in police use of force. For Black individuals, census-based disparity ratios were highest in sectors A10, A14, C17, and C18, ranging from 4.3 to 6.0. Using suspect data, the ratios generally decreased, with A14 remaining the highest and A10 and C17 showing the next highest ratios (1.5-2.0). Sector C18's disparity ratio notably decreased with suspect data, indicating potential inflation of disparities with census benchmarks. For Hispanic individuals, sector A11 showed the highest census-based disparity ratio, possibly due to data anomalies, while the West and East districts had moderate disparities (1-1.5). Using suspect data, sector A15 had the highest disparity ratio, with previously high West and East district sectors falling below 1.0.

Overall, the benchmark analysis did reveal the presence of racial and ethnic disparities in police use of force, particularly affecting Black and Hispanic individuals. Even though these results indicate that disparities are present, the analysis also shows that using the census benchmark alone without other benchmarks may inflate the level of disparities. The findings underscore the need for PWCPD to utilize a combination of benchmarks to best understand various aspects of at-risk populations and the sectors that have consistently higher disparities and the greatest need for targeted interventions. This approach will help mitigate racial disparities and promote equitable policing practices across all districts.

MULTIVARIATE ANALYSES

The NPI research team also conducted a series of multivariate logistic regression analyses to examine whether race and ethnicity predicted whether arrests would result in a force event or force events would end in subject or officer injury. The following analyses include race/ethnicity while controlling for other key demographic and situational variables.

Patterns of Arrests Resulting in Force

Figure 31. Yearly Arrests Resulting in Force

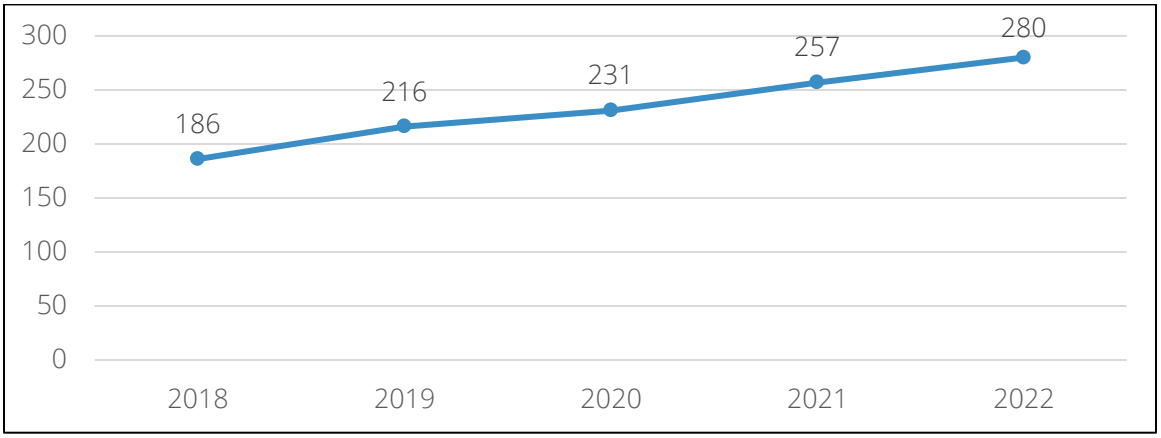


Figure 31 above displays the yearly trend in the number of arrests involving the use of force from 2018 to 2022. Over this five-year period, there is a clear upward trend in the frequency of such arrests, similar to patterns of use of force overall. In 2018, the total number of arrests involving force was 186, which increased 16.1% in 2019, the most significant yearly increase during the five years. The upward trajectory of arrests involving force in the county continued in 2020 with a 6.9% increase, followed by an 11.3% rise in 2021. By 2022, the number had further increased to 280 total arrests involving force. Overall, from 2018 to 2022, there was a 50.5% increase in the number of arrests involving the use of force, highlighting a significant and consistent upward trend over these years.

Figure 32. Yearly Arrests with Force per PWCPD District

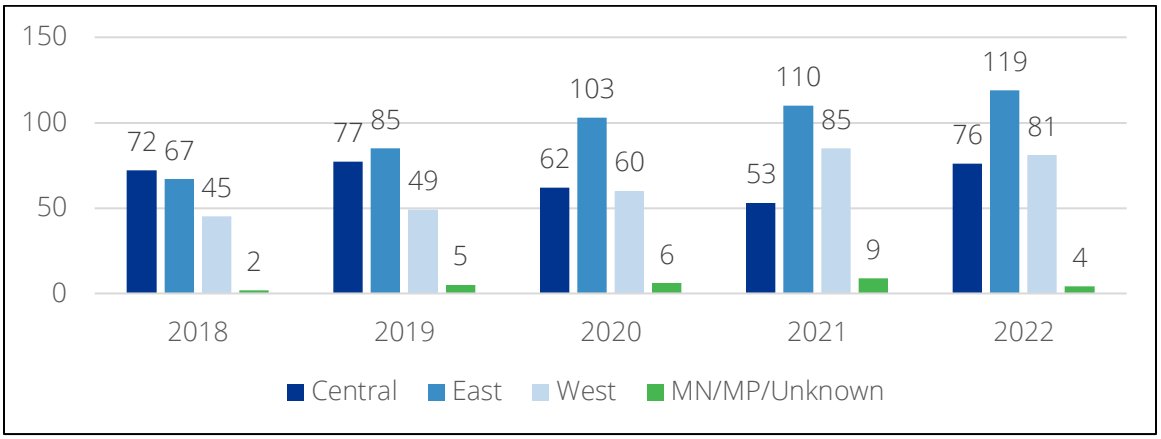


Figure 32 presents the number of arrests ending in use of force incidents reported by the Prince William County Police Department (PWCPD) across four districts—Central, East, West, and MN/MP/Unknown[13]—from 2018 to 2022. The data reveals several noteworthy trends and patterns. The Central district experienced fluctuations in arrests ending in force. However, arrests ending in force remained relatively stable over the five-year period. Incidents initially increased from 72 in 2018 to 77 in 2019, followed by a significant decrease to 62 in 2020 and 53 in 2021. However, the district saw a resurgence in 2022, with incidents rising to 76. In contrast, the East district experienced a consistent and notable increase in use of force incidents, rising steadily from 67 in 2018 to 119 in 2022. Similarly, the West district exhibits a clear, increasing trajectory, with 45 incidents in 2018 and a significant jump in 2021 to 85 incidents and 81 in 2022. This sharp increase between 2020 and 2021 was followed by a slight decline in 2022 but still equates to almost a two-fold increase in force incidents during arrests. Finally, the MN/MP/Unknown district represents a minority of all the force incidents in the county and has maintained single-digit counts of force events during arrests throughout the five-year period.

[13] These non-PWCPD patrolled areas were included in the PWCPD data, but due to low counts have been combined for parsimony.

Figure 33. Arrests Resulting in Force by Race/Ethnicity per Year

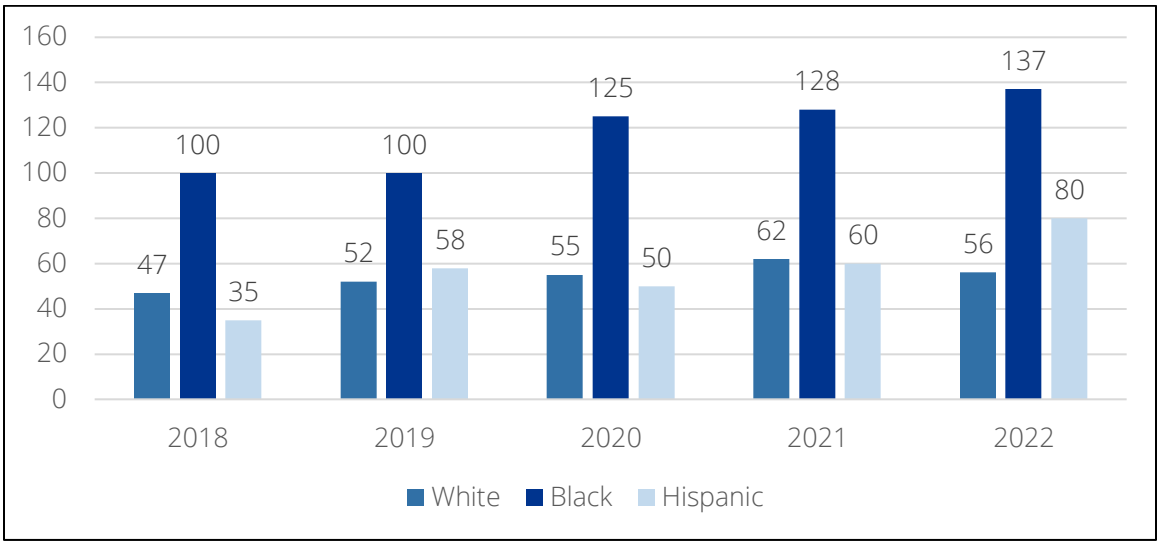


Figure 33 presents the number of arrests involving the use of force across the three racial/ethnic groups (White, Black, and Hispanic) from 2018 to 2022. For White individuals, the number of arrests involving force increased from 47 in 2018 to 56 in 2022, representing an increase of approximately 19.1% over the five years. The trend for Black individuals shows a more pronounced increase. In 2018, there were 100 force-related arrests of Black individuals, which rose 37% to 137 in 2022. Hispanic individuals also experienced a significant rise, from 35 force-related arrests in 2018 to 80 in 2022, reflecting a dramatic increase of 128.6%. Generally, Black arrestees consistently experienced force at higher levels than other race/ethnicity groups. For Hispanic individuals, the most noteworthy increase occurred from 2018 to 2019, where the number of arrests involving force jumped from 35 to 58, a 65.7% increase. The trend continued upward, reaching 80 in 2022, with the most significant year-over-year growth from 2021 to 2022, which saw a 33.3% rise. Conversely, White individuals experienced the least variation, with a 19.1% increase from 2018 to 2022. This graph further underscores the consistent and significant rise in the use of force during arrests across all racial/ethnic groups, with Black and Hispanic individuals experiencing the highest and most rapid increases in percentage terms.

Predicting Use of Force Incidents During Arrest

Scholarly research and police practitioners recognize that many factors influence whether arrest encounters escalate to the use of physical force and which of those may prompt officers to decide to use force. Increasingly, members of the public focus singularly on the influence of an individual's race/ethnicity at the expense of other

potential explanatory factors. However, to understand the true impact of an individual's race/ethnicity on the likelihood of having force used against them, race/ethnicity must be examined while holding the other potential explanatory factors constant. To conduct the analyses, we joined the use of force incidents that occurred during an arrest to the arrest data provided by PWCPD. This allowed us to consider key arrest variables in the model that may impact the likelihood of force being used. As not all arrests result in force, this new joint arrest-use of force dataset contains 46,105 total arrests, with 1,166 (~2.5%) of those resulting in a force incident.

The variables included in the following model are based on academic research that has demonstrated their influence on police use of force and, therefore, should be statistically controlled when examining the impact of race and ethnicity on the likelihood of force during an arrest encounter. The included variables fall into three general domains: temporal, subject demographic, and incident-level variables (see: Gau et al., 2010; Hickman et al., 2008; Kaminski et al., 2004; Nix et al., 2017a; Smith et al., 2017; Stroshine & Brandl, 2019; Terrill & Paoline, 2017; Worrall et al., 2021). Due to issues with the reliability of arrest location data, we could not examine the impact of spatial or community factors on the likelihood of force being used during the arrest. The following section describes these variables in greater detail, followed by the logistic regression model results.

MODEL VARIABLES AND DESCRIPTIVE STATISTICS

TEMPORAL VARIABLES

As was shown in the time series analyses and bivariate tables, PWCPD use of force incidents has increased over time, and well-specified models should account for different temporal factors. To begin, we created dummy variables (coded 1 or 0) for each year of data to determine if the year of the arrest incident impacted the likelihood of force being used. As discussed, 2019 had the highest percentage of arrests at 25.8%, followed by 2018 with 24.6%. Lower frequencies of arrest were seen in 2020, 2021, and 2022, which likely reflects the impact of external factors such as the COVID-19 pandemic, nationwide protests, staffing shortages, or changes in specific PWCPD practices over these years. In addition, we created dummy variables for each quarter of the year to account for seasonality and the impact of fluctuations in police activity throughout the year. The distribution of arrests is relatively balanced across the year's four quarters. Quarter 1 accounts for 25.6% of arrests, Quarter 2 for 24.7%, Quarter 3 for 25.6%, and Quarter 4 for 24.2%. This even spread suggests that arrests occur consistently throughout the year without significant seasonal variation. Finally, we also included a variable to indicate whether the arrest occurred on a weekday or not (Saturday and Sunday are considered weekend days).

DEMOGRAPHIC VARIABLES

Studies of the use of force frequently examine individual demographic characteristics and typically find that males are more likely than females to experience force, and older individuals are less likely to experience force than younger individuals. The impact of race/ethnicity on police use of force is complex and mixed, with some studies finding weak or non-significant effects after controlling for other factors. In contrast, others report that Black and Hispanic individuals are more likely than White individuals to encounter force or more severe types of force. Age was recorded at the time of arrest based on an individual's date of birth and provided by PWCPD. In cases where the age variable was missing, we imputed the mean age value. As seen in Table 8, the average age of arrestees is approximately 31 years, with a standard deviation of 12.55 years and a median age of 29, which aligns with previous research on the age-crime curve. Gender was dichotomously coded as male (1) or female (0), as PWCPD did not record additional gender designations. The dataset was primarily comprised of male arrestees, accounting for nearly 72%, compared to females, who accounted for 28%. The race and ethnicity of arrestees were recorded as four separate categories: White, Black, Hispanic, and Other, due to the underlying distributions of each group. Black individuals constitute the largest group of arrestees at 40.2%, followed by White individuals at 30.5%, Hispanics at 27.5%, and those categorized as Other at 1.8%.

INCIDENT-LEVEL VARIABLES

Key incident-level variables were also used to account for the differential impacts of the different crime types precipitating the arrest and the effect of "chronic offenders" who may be known to officers. First, to account for instances where an offender has committed multiple offenses, thus potentially increasing the overall severity of the situation, we counted the total number of charges that resulted from the arrest. Table 9 shows that the average number of charges per arrest is 1.33, with a standard deviation of 0.74 and a median of 1, indicating that most arrestees face a single charge. However, the range of charges spans from 0 to 14. To account for chronic offending, we calculated the total number of arrests per individual over the five years, so their first arrest counted as 1, and each subsequent arrest after that increased this value. Most arrestees had multiple arrests, with an average of 2.72 previous arrests, a standard deviation of 4.24, and a median of 1. In addition, we created a crime type variable to account for the impact of different crime types on the likelihood of force being used, as previous research has demonstrated that arrest incidents involving violent crime are more likely to result in the use of force than other types of offenses. The arrest data were classified into five crime type categories: Violent, Property, Nuisance (e.g., vandalism, trespassing, etc.), Narcotics, and Other. Nuisance crimes were included as these can often be the result of individuals struggling with concurrent issues that may make specific force types

more likely to occur (e.g., Resisting arrest with EDP). Regarding crime type, the most prevalent category is "Other" crimes at 39.4%, followed by nuisance crimes at 27.13%, narcotics-related offenses at 17.7%, property crimes at 10.3%, and violent crimes at 5.4%. These figures indicate that a significant portion of arrests is for non-Part A offenses, which may impact the likelihood of force being used.

Table 8. Arrest and Use of Force Descriptive Statistics

VARIABLE	MEAN	STD. DEV	MIN	MEDIAN	MAX
ARRESTEE AGE	31.11	12.55	6	29	87
TOTAL ARREST CHARGES	1.33	0.74	0	1	14
TOTAL ARRESTS (2018-2022)	2.72	4.24	1	1	59

VARIABLE	FREQUENCY	PERCENTAGE
USE OF FORCE	1,166	2.52
QUARTER 1	11,773	25.61
QUARTER 2	11,338	24.66
QUARTER 3	11,762	25.58
QUARTER 4	11,103	24.15
WEEKEND (NO)	33,038	71.86
WEEKEND (YES)	12,938	28.14
YEAR 2018	11,286	24.55
YEAR 2019	11,863	25.80
YEAR 2020	8,057	17.52
YEAR 2021	7,224	15.71
YEAR 2022	7,546	16.41
GENDER (FEMALE)	12,928	28.12
GENDER (MALE)	33,048	71.88
RACE/ETHNICITY (WHITE)	14,033	30.52
RACE/ETHNICITY (BLACK)	18,487	40.21
RACE/ETHNICITY (HISPANIC)	12,633	27.48
RACE/ETHNICITY (OTHER)	823	1.79
CRIME TYPE (PROPERTY)	4,752	10.34
CRIME TYPE (VIOLENT)	2,469	5.37
CRIME TYPE (NARCOTICS)	8,157	17.74
CRIME TYPE (NUISANCE)	12,472	27.13
CRIME TYPE (OTHER)	18,126	39.42

LOGISTIC REGRESSION RESULTS

As described previously, the multivariate logistic regression model assesses the likelihood of force being used during an arrest while accounting for all the additional variables in the model. This analysis allows the NPI research team to isolate the impact of the critical variable of interest—arrestee race/ethnicity, on force given similar characteristics of the incident and individual involved. The reference categories for the model are the Year 2018, Quarter 1, Female Gender, White Race, and Crime Type "Other." All results are presented in Table 9, with statistically significant results flagged for interpretation. To begin, it should be noted that the baseline likelihood of use of force, when all other variables are held constant, is extremely low as it is a rare event in the PWCPD data. The following sections highlight the significant temporal, demographic, and incident-level findings, expressed as odds ratios, with values greater than 1 indicating a higher likelihood of an arrest resulting in force and values less than 1 suggesting a lower likelihood of force.

TEMPORAL EFFECTS

To examine the influence of different temporal measures, we examined the yearly, quarterly, and weekend effects on the likelihood of an arrest event resulting in the use of force. The years 2020, 2021, and 2022 all were associated with a significantly increased likelihood of an arrest involving a force incident relative to 2018. Specifically, arrests in 2020 have an odds ratio of 1.78 (95% CI: 1.44 - 2.21, $p < 0.001$), indicating a 78% increase in the likelihood of force being used compared to 2018. For 2021, the odds ratio is 2.13 (95% CI: 1.71 - 2.64, $p < 0.001$), a 113% increase in the odds of an arrest resulting in force, and in 2022, the odds ratio is 2.35 (95% CI: 1.91 - 2.90, $p < 0.001$), a 135% increase. These results mirror the descriptive and time series analyses, highlighting a general rise in force incidents.

Arrests made in the year's second, third, and fourth quarters are more likely to result in the use of force than in the first quarter. The odds ratios are 1.25 for Quarter 2, 1.38 for Quarter 3, and 1.36 for Quarter 4, corresponding to a 25%, 36%, and 38% increase in the likelihood of an arrestee experiencing force in those periods. This seasonal variation might be due to differences in crime patterns, public behavior, or policing strategies throughout the year. Finally, weekend arrests are associated with a 22% higher likelihood of force being used than weekday arrests, with an odds ratio of 1.22 (95% CI: 1.07 - 1.40, $p < 0.01$). This 22% increase suggests that interactions on weekends, potentially influenced by other social factors, may escalate more frequently to the use of force.

DEMOGRAPHIC EFFECTS

Controlling for the temporal, incident-level, and other arrestee demographics, there was only one significant finding. Compared to white arrestees, the odds ratio for Black

subjects is 1.55 (95% CI: 1.32 - 1.82, $p < 0.001$), indicating a 55% increase in the likelihood of force being used during an arrest event. There were no significant differences for Hispanic or Other races compared to White subjects, suggesting that the use of force is more likely in arrest incidents involving Black individuals.

INCIDENT CHARACTERISTICS

Finally, in examining incident characteristics, several statistically significant results were found. Notably, the number of charges associated with an arrest has a substantial impact, with an odds ratio of 2.79 (95% CI: 2.62 - 2.96, $p < 0.001$), suggesting that each additional charge increases the likelihood of force being used by 179%. This underscores the connection between the severity or complexity of an incident and the likelihood of force being employed. The primary crime type for the arrest incident also impacts the likelihood of force being used. Arrests for narcotics-related offenses are less likely to result in force being used compared to crimes in the "Other" category, with an odds ratio of 0.68, indicating a 32% decreased likelihood of force being used. Similarly, both property and violent crimes are associated with a 67% decrease in the likelihood of force being used compared to "Other" crimes. In contrast, nuisance-related offenses have an odds ratio of 1.59, suggesting a 59% increase in the likelihood of force being used during an arrest incident. This is a potentially informative finding considering the frequency of force incidents that are classified as "Resisting Arrest- EDP" and the known co-occurrence of nuisance crimes and mental health difficulties.

Table 9. Arrest and Use of Force Logistic Regression Results

VARIABLE	ODDS RATIO	95% CI LOWER BOUND	95% CI UPPER BOUND
(INTERCEPT)	0.01***	0.01	0.02
YEAR 2019	1.12	0.91	1.39
YEAR 2020	1.78***	1.44	2.21
YEAR 2021	2.13***	1.71	2.64
YEAR 2022	2.35***	1.91	2.9
QUARTER 2	1.25*	1.04	1.5
QUARTER 3	1.38***	1.15	1.65
QUARTER 4	1.36**	1.13	1.64
WEEKEND (YES)	1.22**	1.07	1.4
ARRESTEE AGE	1.02	0.99	1.05
GENDER (MALE)	1	0.86	1.17
RACE/ETHNICITY (BLACK)	1.55***	1.32	1.82
RACE/ETHNICITY (HISPANIC)	1.02	0.85	1.22
RACE/ETHNICITY (OTHER)	1.43	0.9	2.28

TOTAL ARRESTS (2018-2022)	1.01***	1.01	1.02
TOTAL ARREST CHARGES	2.79***	2.62	2.96
CRIME TYPE (NARCOTICS)	0.68***	0.55	0.84
CRIME TYPE (NUISANCE)	1.59***	1.36	1.87
CRIME TYPE (PROPERTY)	0.33***	0.24	0.45
CRIME TYPE (VIOLENT)	0.33***	0.23	0.46
SIGNIFICANCE CODES: *** P < 0.001; ** P < 0.01; * P < 0.05			

Patterns of Subject and Officer Injury during Force Events

Given that PWCPD's reporting changed over time and there was a corresponding increase in incidents, particularly within events classified as resistance to detention, the research team examined whether there were corresponding increases in subject and officer injury. The bivariate analyses are presented below in Table 10. The proportion of force encounters that resulted in subject injuries decreased steadily after 2019--ranging from 47.4% to 51.4% in 2018-2019, and declined to 44.7% in 2020, and further declined to 38.2% in 2021 and 39.2% in 2022. In sum, nearly 50% of use of force events resulted in subject injuries, but this declined to roughly 40% in the 2020-2022 period. The proportion of force encounters that resulted in officer injuries was approximately 20% in 2018 but has averaged around 16% from 2019-2022 (with the highest being 17.8% in 2020). In addition, with an increase in force incidents overall, there have not been corresponding increases in subject or officer injuries. This is likely the result of changes in recording practices and increases in low-level (Level 0) incidents over time, which often are the result of EDPs and generate force reporting but are less likely to result in any injury.

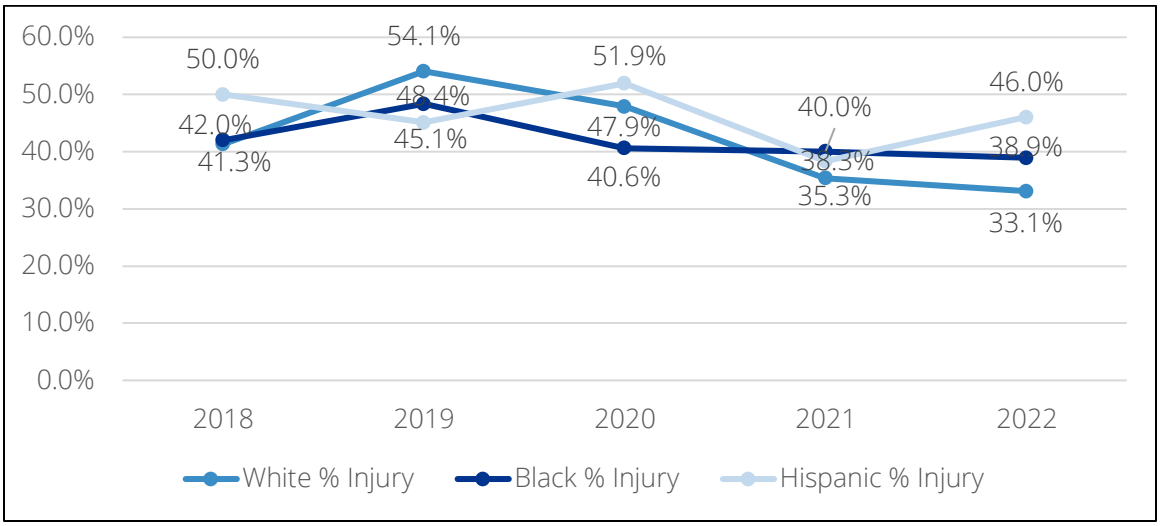
Table 10. Use of Force Counts and Injury

YEAR	TOTAL USES OF FORCE	SUBJECT INJURED – YES (%)	OFFICER INJURED – YES (%)
2018	251	119 (47.4%)	50 (19.9%)

2019	315	162 (51.4%)	50 (15.9%)
2020	376	168 (44.7%)	67 (17.8%)
2021	471	180 (38.2%)	72 (15.3%)
2022	528	207 (39.2%)	87 (16.5%)
TOTAL	1941	836 (43.1%)	326 (16.8%)

Figure 34 details the percentage of injuries resulting from use of force incidents over five years, broken down by race/ethnicity. Generally, each group experienced roughly similar, stable patterns in use of force injury, typically hovering between 40-50% of all incidents resulting in injury. In 2018, the injury rate among White subjects was 41.3%; among Black subjects, it was 42%; and among Hispanic subjects, it was 50%. In 2019, injury rates for Hispanic individuals increased to decreased to 45%, while White and Black injuries increased by 12% and 6%, respectively. In 2020, the injury rates for White and Black subjects decreased by between 3 and 8 percentage points, respectively, while Hispanic rates increased by nearly seven percentage points. The most significant changes occurred in 2021, where injuries for all race/ethnicity groups dropped sharply for White and Hispanic subjects to below 40%, while the rate for Black subjects remained stable at 40.0%. By 2022, the injury rates among Black individuals remained stable at 38.9%, while White injuries further decreased and Hispanic injuries increased. The injury rate for White subjects dropped to 33%, the lowest percentage across the five-year period and a continuation of the decline in injuries starting in 2020. The Hispanic injury rate jumped nearly eight percentage points over the 1-year period to 46%, which, compared to White subjects, was the largest yearly gap between the race/ethnicity groups. Overall, the decreasing injury patterns were more pronounced for White subjects than for Black or Hispanic subjects, and overall, Black and Hispanic subjects have a higher proportion of incidents that result in injury than their White counterparts.

Figure 34. Use of Force Injury by Race/Ethnicity per Year



Predicting Subject and Officer Injury during Force Events

Understanding the factors that influence the likelihood of subject and officer injuries during use of force incidents is crucial for developing effective policing strategies and policies aimed at minimizing harm. The following logistic regression analysis can help identify significant predictors of injury and quantify their effects, providing evidence-based insights into how various factors contribute to the risk of harm. The existing literature on police use of force underscores the complexity of these encounters and highlights key factors that may impact injury outcomes. Previous research has identified various factors in four broad categories: subject characteristics (e.g., demographics, intoxication), officer characteristics (e.g., experience and demographics), situational factors (e.g., number of force actions, the reason for use of force), and contextual variables (e.g., geographic location and temporal elements) that can all impact the outcome of force encounters (Bolger, 2021; Castillo et al., 2012; Hine et al., 2018 MacDonald et al., 2009; Morabito et al., 2017; Morabito & Socia, 2015; Smith et al., 2007).

In the data provided by PWCPD, there were cases where multiple officers were involved in a use of force event, resulting in numerous force entries per single event. The NPI research team reduced this data to examine the use of force and injury at the event level, resulting in a final dataset for analysis consisting of 1,941 use of force incidents. The following model included variables to help isolate the impact of subject AND officer race and ethnicity on the likelihood of injury during a force encounter. The included variables fall into the four domains mentioned above subject and officer characteristics, situational factors, and contextual factors. We could not examine suspect resistance or

isolate specific force types within the models based on the available data. The available variables are described in greater detail in the following section, and descriptive statistics are provided in Table 11 followed by the logistic regression model results.

MODEL VARIABLES AND DESCRIPTIVE STATISTICS

SUBJECT CHARACTERISTICS

The average age of subjects involved in use of force incidents was 30.4 years, with a range from 11 to 89 years, highlighting that use of force incidents involve a wide age range of individuals. For those cases where the subject age was missing, the median age (29) was imputed. The majority of subjects were male (70.7%) and identified as Black (48.2%), followed by White (26.2%), Hispanic (22.4%), and other races/ethnicities (3.2%). Due to the nature of the raw data provided by PWCPD, each officer present could indicate whether an individual was under the influence of drugs or alcohol. Therefore, if any officer stated the subject was under the influence, this variable was coded as 1 (0 otherwise), and approximately half of the subjects (49.1%) were recorded as being under the influence of drugs or alcohol at the time of the incident. Finally, 836 force events resulted in a reported subject injury, 43.1% of all force incidents.

OFFICER CHARACTERISTICS

As the original dataset had multiple entries per use of force event, officer characteristic variables were created that aggregated across all officers involved in the incident. Rather than using the average officer age, we calculated the average years of service per force event. Officers involved in use of force incidents had an average of 5.4 years of service, with a standard deviation of 4.1 years, ranging from 0 to 24 years, indicating a mix of relatively new and more experienced officers. Officer gender was recoded into three categories based on who was present at the force event: male officer(s) only, female officer(s) only, or mixed male and female officers. Most force events involved male-only officers (75.8%), followed by events involving mixed-gender officers (20.6%), and 3.5% with female-only officers. Officer race and ethnicity were coded similarly, with White, Black, Hispanic, and Other variables as well as a mixed race-ethnicity category if multiple officers of differing race/ethnicity were present. The majority of events involved White-only officers (48.6%), with mixed-race officer events making up 31.7%, followed by Hispanic officers (12.4%), Black officers (3.9%), and Other (3.4%). Of the 1,941 cases in the data, 326 resulted in a reported officer injury, equating to 16.8% of all use of force incidents.

SITUATIONAL FACTORS

We calculated the total number of subjects present at the force incident to account for the potential increased risk of officers being confronted with multiple subjects

simultaneously. On average, 1.1 subjects were present during use of force incidents, with a maximum of four subjects present, suggesting that most incidents involved a single subject. In addition, due to the inability to consider the type of force actions, we calculated the total number of force actions an individual was subjected to as part of the force event. The total number of force actions per incident averaged 2.4, with a range of 1 to 12 actions, demonstrating significant variability in the number of force actions employed per incident. Finally, we examined the reason(s) that officers cited for using force and, for each event, chose the most severe. The most common reasons for use of force were resisting arrest (49.61%) and resisting detention (33.38%), with assaulting a citizen/officer accounting for 13.69% of incidents.

CONTEXTUAL FACTORS

As was shown in the spatial maps, force incidents were not evenly distributed throughout the county, and thus, we included the total number of force events per PWCPD district in the model. The majority of use of force incidents occurred in the East district (42.6%), followed by the Central (27%) and West districts (26%), with the MN/MP/Unknown districts accounting for only 4.6%. Similarly to the models predicting force during arrest, we examined yearly, quarterly, and weekend trends. In addition, we created a binary variable to indicate whether the force event occurred during typical daylight hours (6:00 a.m.-6:00 p.m.). Over the years, there has been an increasing trend in the use of force incidents, peaking in 2022 at 27.5% and the lowest percentage recorded in 2018 at 12.9%. Incidents were relatively evenly distributed across the yearly quarters, with the highest percentage occurring in Quarter 3 (28%) and the lowest in Quarter 1 (21.9%). Additionally, use of force incidents were more common during non-daytime hours (56.3%) and on weekdays (55.3%).

Table 11. Use of Force Injury Descriptive Statistics

VARIABLE	MEAN	STD. DEV.	MIN	MEDIAN	MAX
AVERAGE YEARS OF SERVICE	5.35	4.12	0	4	24
SUBJECT AGE	30.39	11.76	11	29	89
TOTAL SUBJECT COUNT	1.09	0.35	1	1	4
TOTAL FORCE ACTIONS	2.43	1.34	1	2	12

VARIABLE	FREQUENCY	PERCENTAGE
SUBJECT INJURY	836	43.07
OFFICER INJURY	326	16.79
PWCPD DISTRICT (CENTRAL)	512	26.96
PWCPD DISTRICT (EAST)	808	42.55

PWCPD DISTRICT (MN/MP/UNKNOWN)	88	4.63
PWCPD DISTRICT (WEST)	491	25.86
YEAR 2018	245	12.90
YEAR 2019	309	16.27
YEAR 2020	359	18.90
YEAR 2021	464	24.43
YEAR 2022	522	27.49
QUARTER 1	415	21.85
QUARTER 2	476	25.07
QUARTER 3	531	27.96
QUARTER 4	477	25.12
DAYTIME (NO)	1,069	56.29
DAYTIME (YES)	830	43.71
WEEKEND (NO)	1,050	55.29
WEEKEND (YES)	849	44.71
SUBJECT GENDER (FEMALE)	533	28.07
SUBJECT GENDER (MALE)	1,342	70.67
SUBJECT GENDER (UNKNOWN)	24	1.26
SUBJECT RACE/ETHNICITY (WHITE)	497	26.17
SUBJECT RACE/ETHNICITY (BLACK)	916	48.24
SUBJECT RACE/ETHNICITY (HISPANIC)	425	22.38
SUBJECT RACE/ETHNICITY (OTHER)	61	3.21
USE OF FORCE REASON (ASSAULTING CITIZEN/OFFICER)	260	13.69
USE OF FORCE REASON (RESISTING ARREST)	942	49.61
USE OF FORCE REASON (RESISTING DETENTION EDP)	321	16.90
USE OF FORCE REASON (RESISTING DETENTION ONLY)	313	16.48
USE OF FORCE REASON (OTHER)	63	3.32
SUBJECT UNDER THE INFLUENCE OF DRUGS/ALCOHOL (NO)	967	50.92
SUBJECT UNDER THE INFLUENCE OF DRUGS/ALCOHOL (YES)	932	49.08
OFFICER RACE/ETHNICITY (WHITE ONLY)	922	48.55
OFFICER RACE/ETHNICITY (BLACK ONLY)	74	3.90
OFFICER RACE/ETHNICITY (HISPANIC ONLY)	236	12.43
OFFICER RACE/ETHNICITY (MIXED)	602	31.70
OFFICER RACE/ETHNICITY (OTHER ONLY)	65	3.42

OFFICER GENDER (FEMALE)	67	3.53
OFFICER GENDER (MALE)	1,440	75.83
OFFICER GENDER (MIXED)	392	20.64

SUBJECT INJURY LOGISTIC REGRESSION RESULTS

As described previously, the multivariate logistic regression model assesses the likelihood of subject injury during use of force incidents while accounting for all additional variables in the model. This analysis allows us to isolate the impact of various critical variables on the likelihood of injury, given similar characteristics of the incident and individuals involved. The reference categories for the model are the PWCPD District Central, Year 2018, Quarter 1, Female Gender, White Race/Ethnicity, Use of Force Reason "Other," and Subject Not Under the Influence of Drugs/Alcohol. All results are presented in Table 12, with statistically significant results flagged for interpretation. It should be noted that the baseline likelihood of subject injury, when all other variables are held constant, is relatively low. The following sections highlight the significant temporal, demographic, and situational findings, expressed as odds ratios, with values greater than 1 indicating a higher likelihood of injury and values less than 1 suggesting a lower likelihood of injury.

SUBJECT CHARACTERISTICS

Several subject demographic factors were significant predictors of injury during the use of force event. Older subjects were slightly more likely to be injured (OR = 1.02), suggesting that the odds of injury increased by 2% for each additional year of age. Male subjects had significantly higher odds of injury (OR = 1.51), indicating they were 51% more likely to be injured than female subjects. Hispanic subjects also had higher odds of injury (OR = 1.34), a 34% increase in the likelihood of injury, which was the only race/ethnicity group that had significantly higher odds of experiencing an injury compared to White subjects.

OFFICER CHARACTERISTICS

Regarding officer characteristics, officer experience impacts the likelihood of subject injury, with more experienced officers being slightly more likely to be involved in incidents resulting in subject injury (OR = 1.04). Specifically, each additional year of service increased the odds of injury by 4%. However, this finding contradicts previous research and may be a proxy for the number of officers present at the event, which impacts the likelihood of subject injury.

SITUATIONAL FACTORS

Only the total number of force actions was a significant situational predictor of injury, with each additional force action increasing the odds of injury by 12% (OR = 1.12). This finding mirrors previous research and highlights the relationship between the intensity of the force used and the risk of injury.

CONTEXTUAL FACTORS

Contextually, there were both significant geographic and temporal findings. Subjects in the East district had significantly higher odds of injury (OR = 1.29) compared to the Central district, indicating they were 29% more likely to be injured. The East District is also where most force events are reported, highlighting a potential area of focus for PWCPD. Additionally, incidents occurring in the year 2021 were associated with significantly lower odds of injury (OR = 0.69), indicating a 31% decrease in the likelihood of injury compared to the reference year 2018. This decrease may reflect changes in policing tactics or policies implemented during that year. Additionally, incidents occurring in Quarter 3 had higher odds of resulting in injury (OR = 1.45), suggesting a 45% increase in the likelihood of injury during this period.

Table 12. Use of Force and Subject Injury Logistic Regression Results

VARIABLE	ODDS RATIO	95% CI LOWER BOUND	95% CI UPPER BOUND
(INTERCEPT)	0.14***	0.05	0.37
PWCPD DISTRICT (EAST)	1.29*	1.02	1.64
PWCPD DISTRICT (MN/MP/UNKNOWN)	0.91	0.53	1.54
PWCPD DISTRICT (WEST)	1.13	0.86	1.48
YEAR 2019	1.17	0.82	1.68
YEAR 2020	0.87	0.61	1.23
YEAR 2021	0.69*	0.49	0.96
YEAR 2022	0.74	0.53	1.04
DAYTIME (YES)	1.18	0.96	1.46
WEEKEND (YES)	1.06	0.87	1.29
QUARTER 2	1.13	0.86	1.50
QUARTER 3	1.45**	1.10	1.91
QUARTER 4	0.96	0.72	1.28
SUBJECT AGE	1.02***	1.01	1.02
SUBJECT GENDER (MALE)	1.51***	1.20	1.89
SUBJECT GENDER (UNKNOWN)	2.12	0.87	5.15
SUBJECT RACE/ETHNICITY (BLACK)	1.04	0.81	1.32

SUBJECT RACE/ETHNICITY (HISPANIC)	1.34*	1.01	1.78
SUBJECT RACE/ETHNICITY (OTHER)	1.17	0.67	2.05
USE OF FORCE REASON (ASSAULTING CITIZEN/OFFICER)	1.46	0.80	2.68
USE OF FORCE REASON (RESISTING ARREST)	1.09	0.62	1.94
USE OF FORCE REASON (RESISTING DETENTION EDP)	0.84	0.46	1.54
USE OF FORCE REASON (RESISTING DETENTION ONLY)	0.96	0.53	1.75
SUBJECT UNDER THE INFLUENCE OF DRUGS/ALCOHOL (YES)	1.03	0.83	1.28
TOTAL SUBJECT COUNT	0.84	0.62	1.14
TOTAL FORCE ACTIONS	1.12*	1.02	1.22
OFFICER RACE/ETHNICITY (BLACK ONLY)	0.94	0.56	1.58
OFFICER RACE/ETHNICITY (HISPANIC ONLY)	1.21	0.89	1.64
OFFICER RACE/ETHNICITY (MIXED)	0.95	0.74	1.22
OFFICER RACE/ETHNICITY (OTHER ONLY)	1.23	0.71	2.13
OFFICER GENDER (MALE)	1.32	0.76	2.30
OFFICER GENDER (MIXED)	1.31	0.72	2.39
AVERAGE YOS	1.04***	1.02	1.07
SIGNIFICANCE CODES: *** P < 0.001; ** P < 0.01; * P < 0.05			

OFFICER INJURY LOGISTIC REGRESSION RESULTS

The same multivariate logistic regression analysis was conducted, using the same variables to examine the likelihood of officer injuries during force events. The results discussed below are presented in Table 13 below.

SUBJECT CHARACTERISTICS

Subject demographics were also significant in predicting officer injuries. Incidents involving male subjects were associated with higher odds of officer injury (OR = 1.37), indicating a 37% increase in the likelihood of injury compared to incidents involving female subjects. Additionally, incidents involving Black subjects were significantly more likely to result in officer injury (OR = 1.48, with a 48% increase in the likelihood of injury compared to incidents involving White subjects.

OFFICER CHARACTERISTICS

In addition to subject demographics, one of the officer race indicators was associated with increased injury likelihood. For instance, use of force events involving "Other" race/ethnicity had higher odds of injury compared to White-only use of force incidents (OR = 2.34), indicating that those officers were more than twice as likely to experience injury during a force incident.

SITUATIONAL FACTORS

Several situational factors were significant predictors of officer injury. Use of force incidents occurring in the daytime were associated with higher odds of officer injury (OR = 1.36), suggesting that officers were 36% more likely to report an injury during daytime force events. The reason for the use of force was also a critical factor, with incidents involving assaults on citizens or officers significantly increasing the odds of officer injury (OR = 3.26). The total number of force actions was also a significant predictor, with each additional force action increasing the odds of officer injury by 36% (OR = 1.36), similar to the findings from the subject injury model.

CONTEXTUAL FACTORS

Contextually, the PWCPD district and year of incident occurrence also influenced the likelihood of officer injury. Incidents in the MN/MP/Unknown districts had significantly higher odds of resulting in officer injury than in the Central district (OR = 3.05); however, caution is warranted in interpreting this finding due to the infrequency of events in these districts. Similarly to the subject injury model, incidents in 2021 were associated with lower odds of officer injury (OR = 0.58), indicating a 42% decrease in the likelihood of injury compared to 2018.

Table 13. Use of Force and Officer Injury Logistic Regression Results

VARIABLE	ODDS RATIO	95% CI LOWER BOUND	95% CI UPPER BOUND
(INTERCEPT)	0.03***	0.01	0.13
PWCPD DISTRICT (EAST)	1.05	0.76	1.46
PWCPD DISTRICT (MN/MP/UNKNOWN)	3.05***	1.68	5.53
PWCPD DISTRICT (WEST)	1.36	0.95	1.96

YEAR 2019	0.76	0.47	1.21
YEAR 2020	0.76	0.49	1.20
YEAR 2021	0.58*	0.38	0.91
YEAR 2022	0.68	0.44	1.06
DAYTIME (YES)	1.36*	1.02	1.82
WEEKEND (YES)	0.91	0.69	1.19
QUARTER 2	0.89	0.62	1.28
QUARTER 3	0.77	0.53	1.11
QUARTER 4	0.88	0.61	1.28
SUBJECT AGE	0.99	0.98	1.00
SUBJECT GENDER (MALE)	1.37	1.00	1.87
SUBJECT GENDER (UNKNOWN)	1.49	0.43	5.15
SUBJECT RACE/ETHNICITY (BLACK)	1.48*	1.05	2.08
SUBJECT RACE/ETHNICITY (HISPANIC)	1.33	0.90	1.98
SUBJECT RACE/ETHNICITY (OTHER)	0.74	0.30	1.83
USE OF FORCE REASON (ASSAULTING CITIZEN/OFFICER)	3.26*	1.31	8.07
USE OF FORCE REASON (RESISTING ARREST)	1.52	0.62	3.70
USE OF FORCE REASON (RESISTING DETENTION EDP)	1.35	0.53	3.43
USE OF FORCE REASON (RESISTING DETENTION ONLY)	1.75	0.70	4.40
SUBJECT UNDER THE INFLUENCE OF DRUGS/ALCOHOL (YES)	0.90	0.66	1.22
TOTAL SUBJECT COUNT	0.93	0.62	1.38
TOTAL FORCE ACTIONS	1.36***	1.22	1.52
OFFICER RACE/ETHNICITY (BLACK ONLY)	1.33	0.65	2.69
OFFICER RACE/ETHNICITY (HISPANIC ONLY)	1.21	0.80	1.83
OFFICER RACE/ETHNICITY (MIXED)	1.11	0.79	1.54
OFFICER RACE/ETHNICITY (OTHER ONLY)	2.34**	1.24	4.43
OFFICER GENDER (MALE)	2.12	0.78	5.77

OFFICER GENDER (MIXED)	1.97	0.70	5.57
AVERAGE YOS	1.00	0.96	1.03
SIGNIFICANCE CODES: *** P < 0.001; ** P < 0.01; * P < 0.05			

Summary of Multivariate Analyses

The logistic regression analyses provided valuable insights into the factors influencing the likelihood of use of force during arrests and the predictors of subject and officer injuries during force incidents. These findings have significant policy implications for policing practices and strategies to reduce the use of force and associated injuries.

USE OF FORCE DURING ARRESTS

The analysis demonstrated that temporal, demographic, and incident-level variables significantly impact the likelihood of force being used during an arrest. The likelihood of force being used increased substantially in 2020, 2021, and 2022 compared to 2018, which may reflect broader social and political contexts, including the impact of the COVID-19 pandemic, nationwide protests, staffing shortages, and changes in police practices. Examining subject demographics, the results showed that Black individuals were 55% more likely to experience force during arrests compared to White individuals. The lack of significant differences for Hispanic or Other races compared to White individuals suggests PWCPD may want to focus on where there may be potential bias against Black individuals in current arrest practices. Incident-level variables revealed that the number of charges and crime types significantly influenced the likelihood of force. Specifically, each additional charge increased the likelihood of force being used by 179%, and arrests for nuisance-related offenses were associated with a 59% increase in the likelihood of force. These findings suggest that the severity and complexity of an incident play crucial roles in arrest incidents escalating into force.

PREDICTORS OF SUBJECT AND OFFICER INJURIES

The analysis of subject injuries during force incidents highlighted several significant predictors. Older subjects (2% greater odds per additional year of age) and male subjects (51% greater odds compared to female subjects) were more likely to be injured, respectively. Hispanic subjects also had higher odds of injury (34%) compared to White subjects. Officer characteristics, particularly experience, were found to influence the likelihood of subject injury, with more experienced officers slightly more likely to be involved in incidents resulting in injury. This counterintuitive finding may reflect the complexity of high-risk situations that more experienced officers often handle or

differential beliefs about when force is necessary. Each additional force action increased the likelihood of injury by 12%, and a force incident in the East District increased the odds of subject injury by 29%. Regarding officer injuries, incidents involving male (37%) and Black subjects (48%) were associated with higher odds of injury. Situational factors, such as daytime incidents and force reasons reported as assaults on citizens or officers, significantly increased the likelihood of officer injury. Additionally, the number of force actions undertaken during a force event increased the odds of officer injury by 36%.

PWCPD SURVEYS

OFFICER SURVEYS

To assess PWCPD officer perceptions, attitudes, and experiences, the research team administered a cross-sectional survey to all patrol officers and detectives in the department from October 20 to November 30, 2023. The survey instrument was

developed by the research team and reviewed by members of the PWCPD. Surveys were administered electronically through a Qualtrics link sent to officers through PowerDMS, a learning management system. Officers were encouraged to participate in the survey through a joint video by the PWCPD Chief of Police and a senior research team member, which was included in the PowerDMS message. The video laid out the purpose and importance of the research, promised anonymity, and encouraged officers to participate. In total, 412 surveys were completed, representing a 91.6% response rate.

The officer survey aimed to assess officers' views on the use of force and de-escalation, the department's workplace culture, views on supervisory practices, and views on response to resistance[14] policies and related training programs to identify potential improvements in response to resistance policies and training programs. The survey contained questions grouped within nine conceptual areas. All items were adapted from previous research.

1. Views on Policing - Thirteen survey items were used to assess officers' views of the role of police—including the importance of various job duties—and officers' perspectives regarding their peers and agency. Respondents were asked to indicate their level of agreement with each survey item on a five-point Likert scale (1 = Strongly Disagree; 5 = Strongly Agree).
2. Attitudes Toward Use of Force - Eleven items were asked to gauge officers' attitudes toward using force, including their preference for using force and communication skills. Respondents were asked to indicate their level of agreement with each item on a five-point Likert scale (1 = Strongly Disagree; 5 = Strongly Agree). Higher scores indicate a greater agreement with the tenets of de-escalation.
3. Views on De-escalation Skills – Officers used nine items to self-assess their skills and/or behaviors when handling interactions with the public and persons in crisis. A person in crisis is defined as an individual who may be behaving erratically due to circumstances such as mental health, substance use, situational stress, and/or disabilities.
4. Using De-escalation Skills - Six items quantified the frequency with which officers use specific de-escalation strategies. A five-point Likert scale (1=Never; 5=Always) measured the frequency of skill use in the field.
5. Views on PWCPD – Thirteen items were used to measure officer views on their agency, including perceptions of their supervisors, command staff, fair treatment, and stress. Items were measured using a five-point Likert scale (1=Strongly Disagree; 5=Strongly Agree).

[14] Note "response to resistance" and "use of force" are used interchangeably.

6. Views on PWCPD Use of Force Policy – Ten items were used to measure officer views regarding the PWCPD use of force policy and/or the reporting of use of force policy. Items were measured using a five-point Likert scale (1=Strongly Disagree; 5=Strongly Agree).
7. Views on Training – Survey respondents were asked to indicate their level of agreement with seven statements related to training in law enforcement using a five-point Likert scale (1=Strongly Disagree; 5=Strongly Agree). These items were adapted from a study on employees' openness toward change conducted by Miller, Johnson, and Grau (1994).
8. Perceptions of Various Training Programs – This section assessed whether officers had trained on eight distinct training topics (Yes or No). Officers were asked their level of agreement (1=Strongly Disagree; 5= Strongly Agree) as to whether the training increased their skills or knowledge, was directly applicable to their job, and if the topic should receive additional training.
9. Demographics – Seven survey items measured respondents' demographics, including gender, age, race, ethnicity, rank, law enforcement tenure, and educational attainment.

Officer Demographics and Baseline Measures

Table 14 contains a breakdown of the demographics of the 412-officer survey sample. The sample is primarily male (72.1%), White (66.7%), and of the patrol officer rank (70.9%). There is an even distribution across age ranges and law enforcement tenure, with most of the sample holding a bachelor's degree or higher (60%). Given this survey's extremely high (91.6%) response rate, this sample accurately represents the PWCPD detective and patrol officer population.

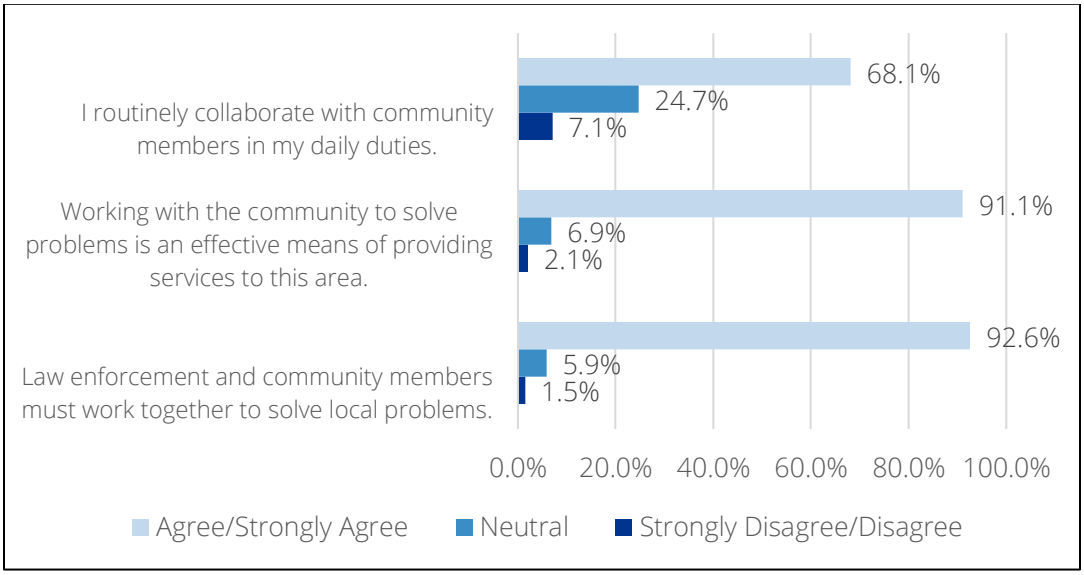
Table 14. Officer Sample Demographics

	%	(N)		%	(N)
GENDER			**LAW ENFORCEMENT TENURE**		
MALE	72.1	(297)	**< 1 YEAR**	9.7	(40)
FEMALE	15.5	(64)	**1 – 4 YEARS**	19.4	(80)
OTHER	2.7	(11)	**5-9 YEARS**	23.3	(96)
MISSING	9.7	(40)	**10-14 YEARS**	12.4	(51)
AGE			**15-19 YEARS**	13.8	(57)
21 - 24 YEARS OLD	8.7	(36)	**20+ YEARS**	9.5	(39)
25 - 29 YEARS OLD	19.4	(80)	**MISSING**	11.9	(49)
30 - 34 YEARS OLD	19.2	(79)	**EDUCATION**		

35 - 39 YEARS OLD	14.3	(59)	**HIGH SCHOOL**	11.2	(46)
40 - 44 YEARS OLD	11.4	(47)	**> 2 YEARS COLLEGE**	15.0	(62)
45 - 49 YEARS OLD	8.3	(34)	**ASSOCIATE'S DEGREE**	9.5	(39)
50 + YEARS OLD	7.8	(32)	**BACHELOR'S DEGREE**	52.9	(194)
MISSING	10.9	(45)	**GRADUATE DEGREE**	7.1	(26)
RACE			**MISSING**	10.9	(45)
ASIAN	1.9	(8)	**RANK**		
AFRICAN AMERICAN/BLACK	7.0	(29)	**PATROL OFFICER**	70.9	(292)
CAUCASIAN/WHITE	66.7	(275)	**DETECTIVE**	19.2	(79)
TWO OR MORE RACES	6.8	(28)	**MISSING**	10.0	(41)
OTHER	5.6	(23)			
MISSING	11.9	(49)			
ETHNICITY					
HISPANIC/LATINO	15.0	(62)			

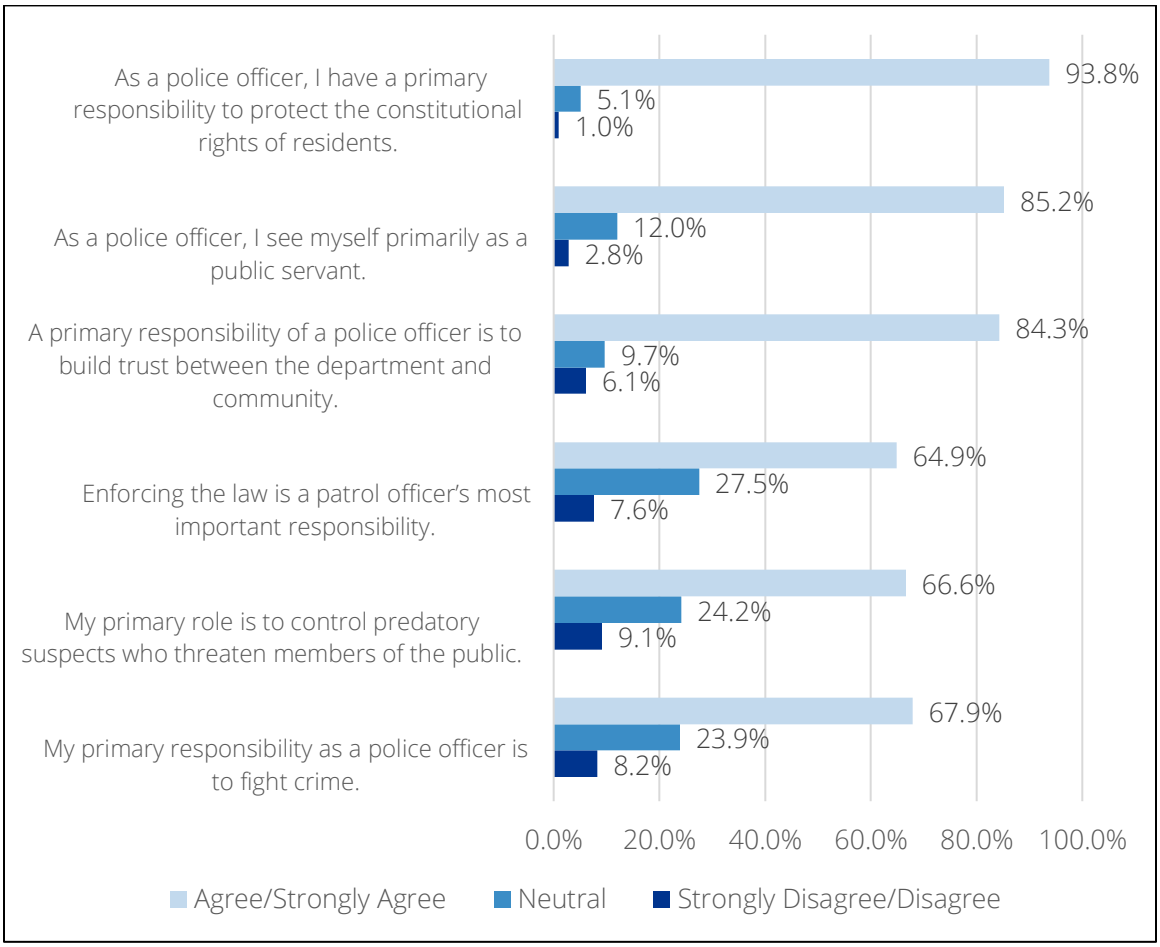
A series of items (presented in Figure 35, Figure 36, and Figure 37) were used to measure officer views on policing to set a baseline understanding of how officers perceive their profession. First, Figure 35 shows strong agreement among officers about the importance of working with the community, though only about 68% of respondents reported they routinely collaborated with community members. This is likely due to differing job responsibilities, which may hinder an officer's ability to collaborate with community members regularly.

Figure 35. PWCPD Officer Views on Community Policing (n=393)



In Figure 36, six survey items present what officers view as their primary responsibilities. As shown, the highest amount of agreement was demonstrated for officers viewing protecting the constitutional rights of residents as their primary responsibility (93.8%), followed by seeing themselves primarily as a public servant (85.2%) and viewing a primary responsibility to build trust between the department and community (84.3%). Though still receiving a majority agreement from the sample, there was less overall support for the primary responsibilities of fighting crime (67.9%), controlling predatory suspects (66.6%), and enforcing the law (64.9%). While all these responsibilities are important in the law enforcement role, it is essential to emphasize that PWCPD officers appear to place an extremely high value on serving the public and protecting their rights.

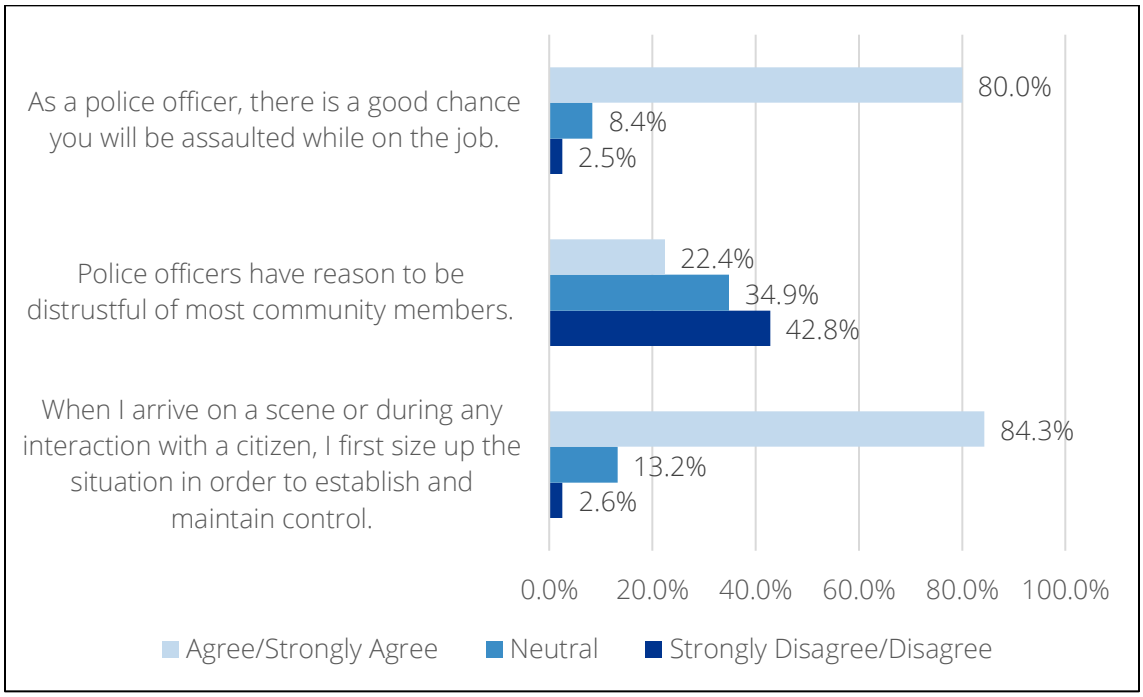
Figure 36. PWCPD Officer Views on Primary Responsibilities (n=389)



Finally, Figure 37 below displays the remaining three items used to measure officer views on policing. Of particular interest is the high agreement regarding the likelihood of being assaulted while on the job (80% agreement). Additionally, there appears to be

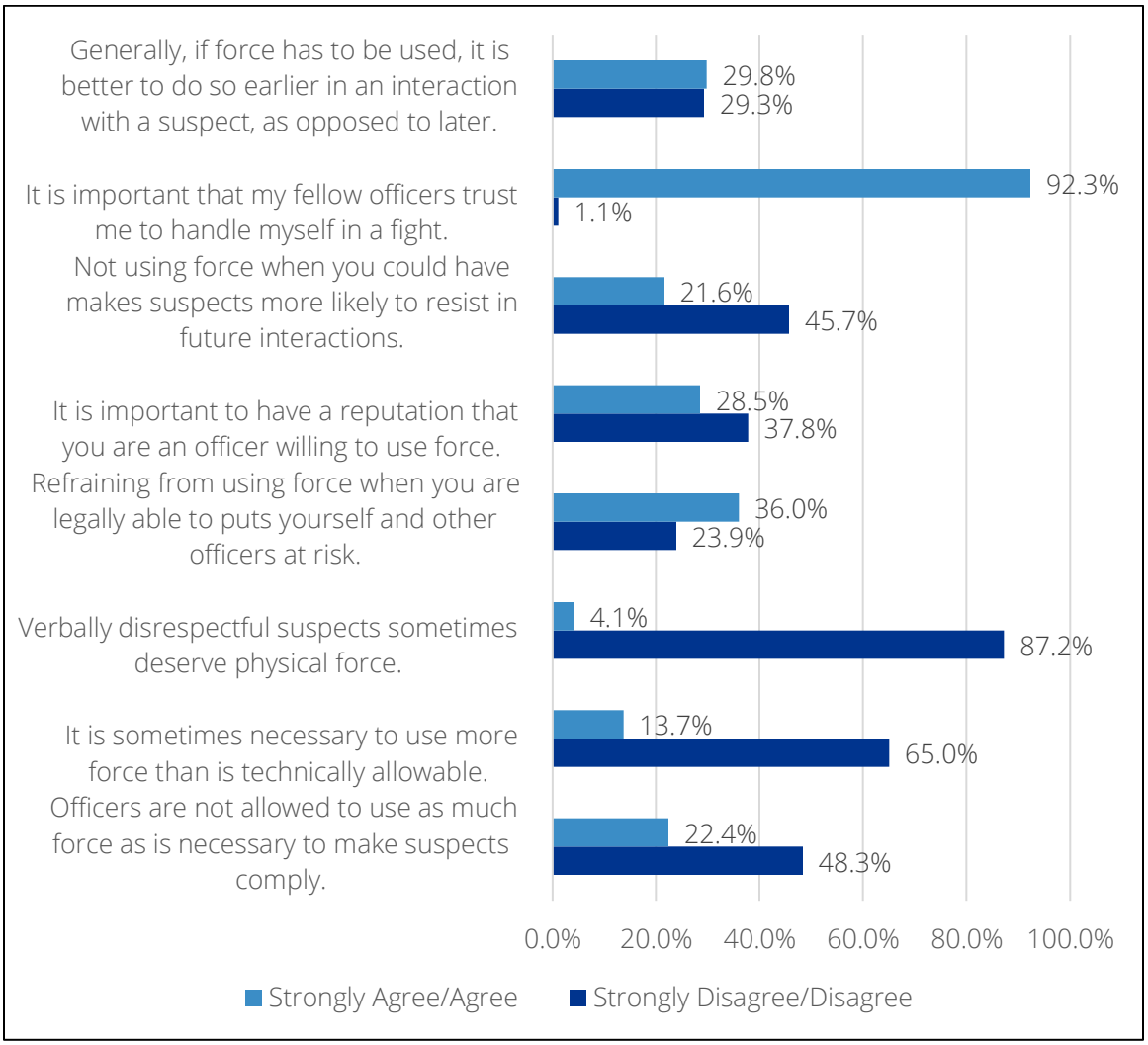
reasonably mixed agreement about whether officers have reason to distrust most community members, with 42.8% disagreeing, 22.4% agreeing, and 34.9% reporting a neutral response to this item. The third item demonstrates that most officers (84.3%) agree that they size up a situation before establishing control when they arrive on the scene.

Figure 37. PWCPD Officer Views on Policing (n=389)



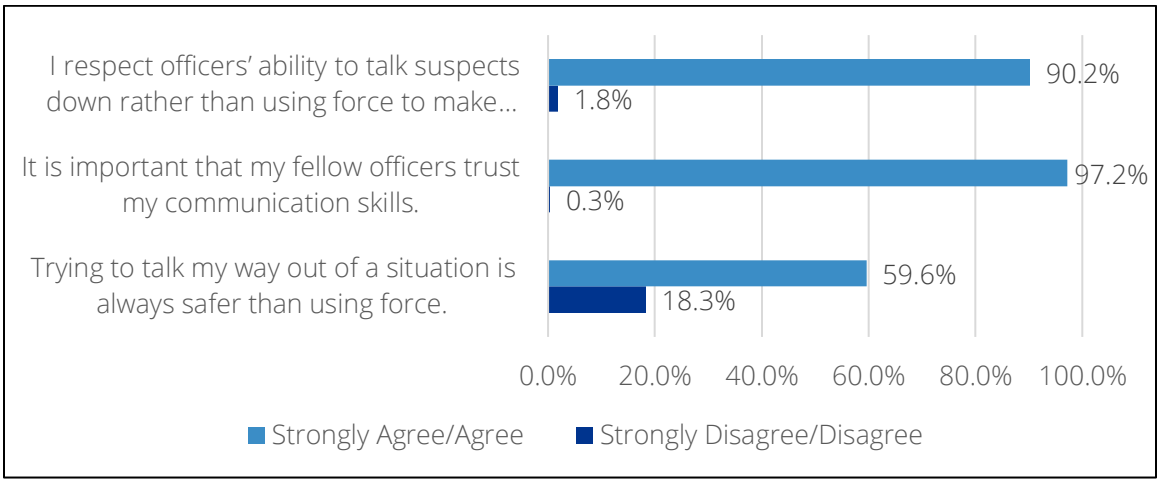
Next, Figure 38 and Figure 39 represent survey items that measure officer views on using force. These figures collapse the responses for Strongly Disagree/Disagree and Strongly Agree/Agree and exclude neutral responses to focus on the differences in agreement directions. Figure 38 presents officer views where an agreement to the item represents views that support the use of force. Of interest, most officers disagreed that verbally disrespectful suspects sometimes deserve physical force and similarly disagreed that it is occasionally necessary to use more force than is technically allowable (87.2% and 65%, respectively). Nearly all officers agreed that it is essential that their fellow officers trust them in a fight. There is mixed agreement among officers about their perceptions on when to use force during an interaction (top item in Figure 38), the importance of having a reputation for willingness to use force (Item 4), and whether refraining from using force puts themselves and others at risk (Item 5).

Figure 38. PWCPD Officer Views on Using Force (n=389)



In contrast, Figure 39 presents officer views on support for communication skills instead of using force. Nearly all officers (97.2%) agreed that it is essential that their fellow officers trust their communication skills, and 90.2% reported agreement that they respect officers' abilities to talk suspects down rather than using force. A majority (59.6%) of officers agreed that trying to talk their way out of a situation is always safer than using force, while 18.3% disagreed with this statement.

Figure 39. PWCPD Officer Views on Communication (n=389)



Views on De-escalation

Figure 40 and Figure 41 presents the responses to a series of items measuring officer views on de-escalation skills. Most respondents agreed or strongly agreed that they feel knowledgeable and confident in using various de-escalation skills. Thus, only percentages of officer agreement are shown in these two figures. For example, 91.3% of officers feel they are good at de-escalating encounters with the public, and 95.3% agreed they are comfortable changing their approach with a person in crisis if their initial approach is ineffective. Importantly, in terms of perceived abilities, 85.2% of officers agreed they have considerable ability to create positive outcomes during public encounters.

Figure 40. PWCPD Officer Views on De-escalation Abilities P.1 (n=387)

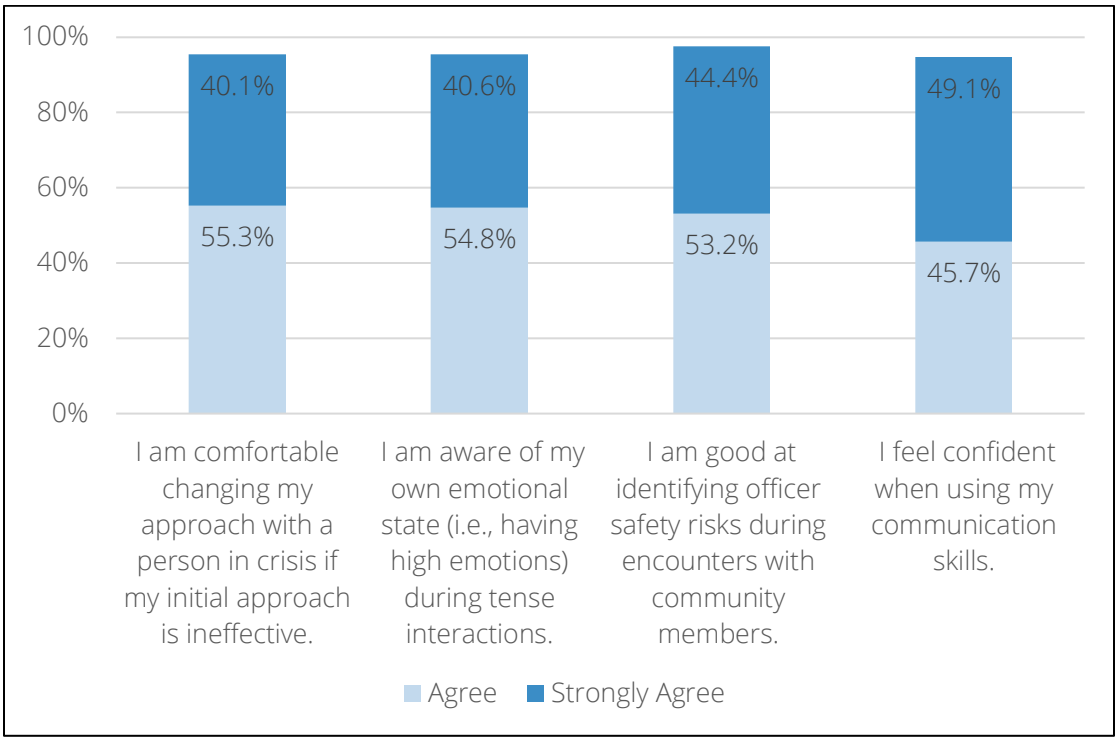
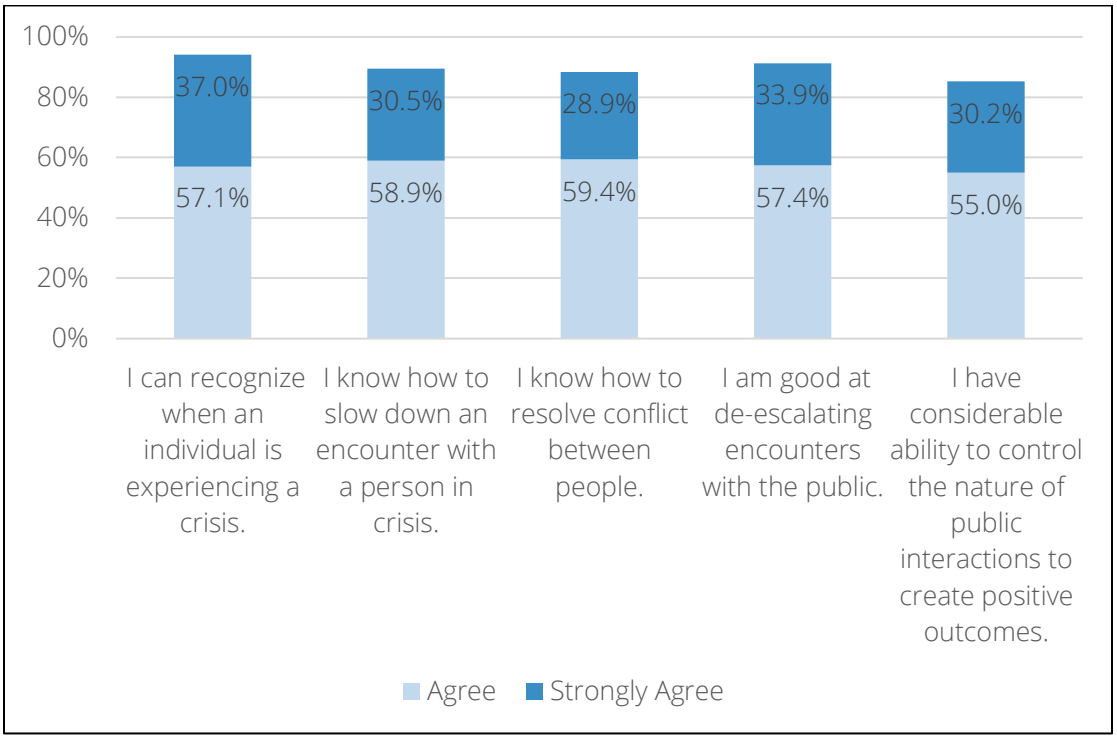
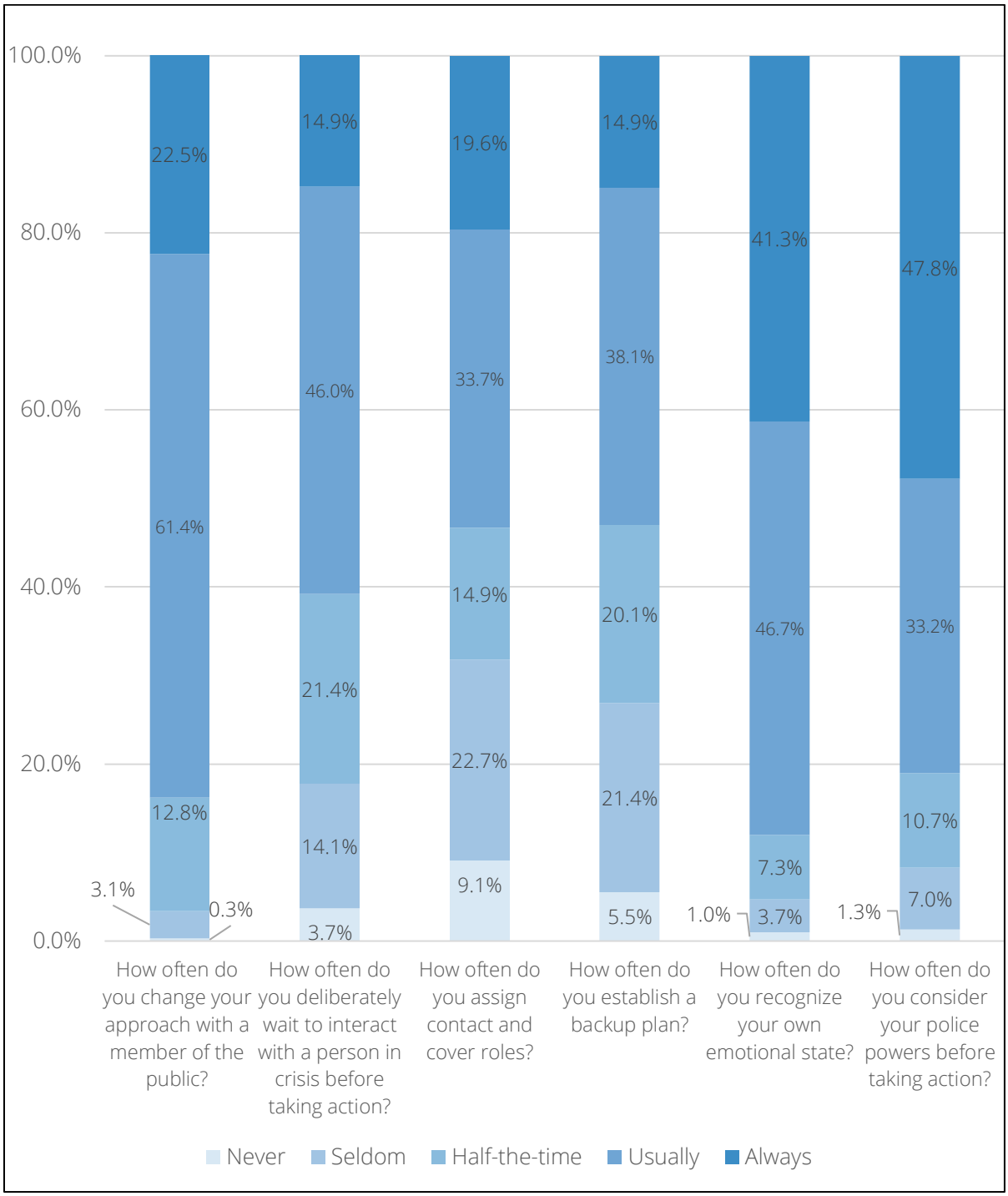


Figure 41. PWCPD Officer Views on De-escalation Abilities P.2 (n=387)



Next, the survey assessed the frequency with which PWCPD officers use specific de-escalation skills. The responses to these items are displayed in Figure 42. The most used de-escalation skills were officers' recognition of their (high) emotional state (5th survey item displayed) and changing their approach to a person in crisis if their previous approach was ineffective (1st survey item displayed). Additionally, Figure 42 illustrates that nearly half of PWCPD officers reported consistently considering their police powers before taking action (6th survey item displayed). However, officers reported establishing a backup plan less frequently when interacting with a person in crisis (4th survey item displayed) and less frequently reported assigned contact and cover roles (3rd survey item displayed

Figure 42. PWCPD Officer Use of De-escalation Skills (n=383)



Views on PWCPD and PWCPD Policies

The officer survey included thirteen items on views of PWCPD and ten items on PWCPD's Response to Resistance Policy. Figure 43 presents items related to officer views about working at the PWCPD, where responses have been collapsed into three categories: Strongly Disagree/Disagree, Neutral, and Strongly Agree/Agree. The results demonstrate that over three-fourths of officers agree that the PWCPD is a good agency to work for, and nearly 70% agree that they are usually calm and at ease when working. Only 14.2% of officers agree that they often feel tense or on edge at work, and only 18% agree that their job makes them frustrated and angry. However, 41.5% of officers agree that their jurisdiction is dangerous. This highlights that while many officers perceive their job as dangerous, they often do not report feeling tense or angry while working.

Figure 43. PWCPD Officer Views on Working at PWCPD (n=381)-

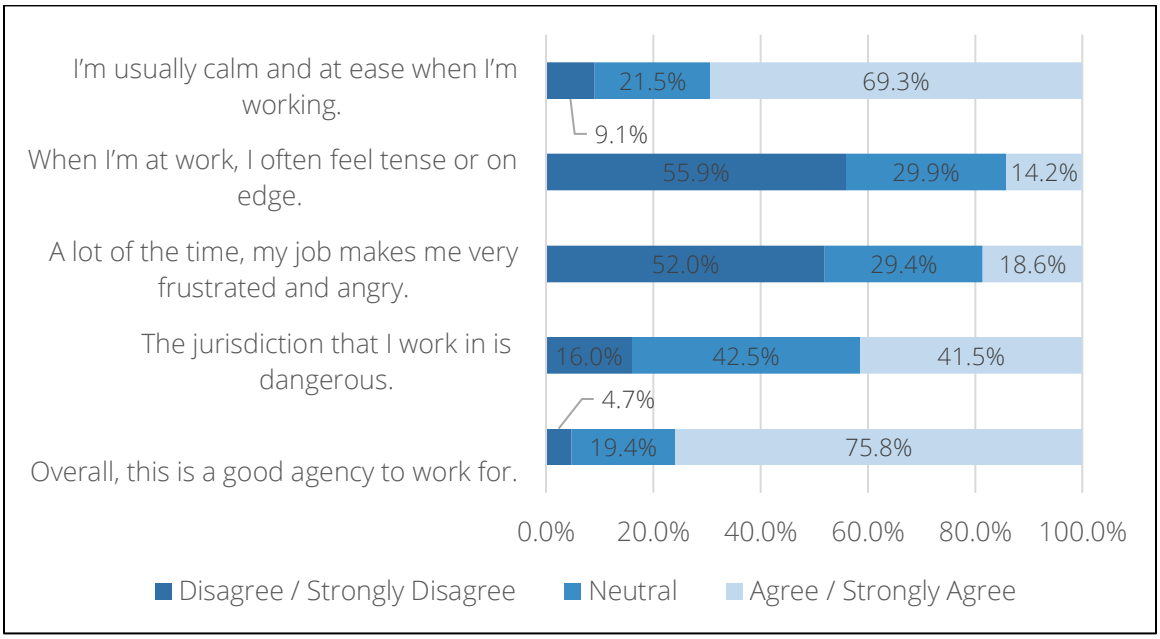
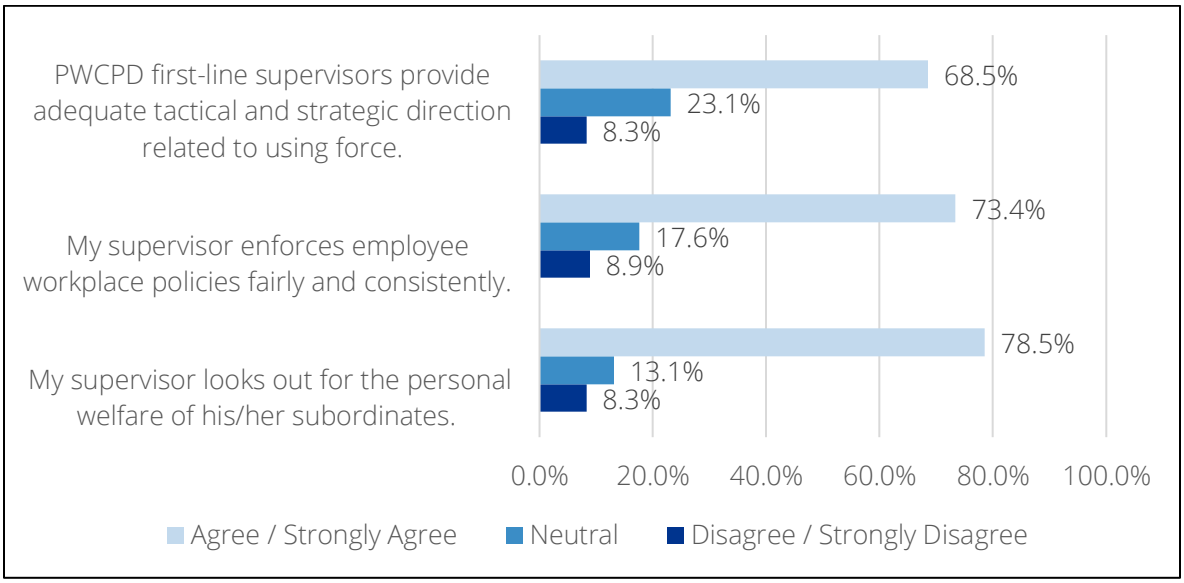


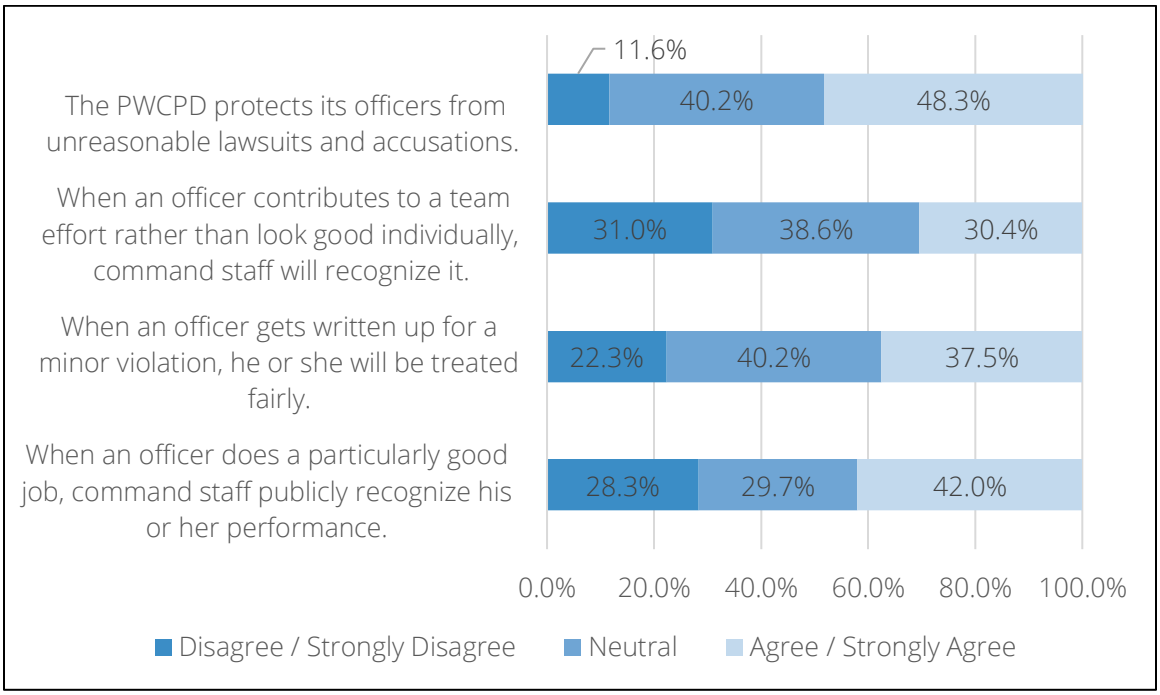
Figure 44 presents PWCPD officers' views on their agency's direct and first-line supervisors (in general). Most officers agree that their supervisor enforces workplace policies fairly and consistently and looks out for the personal welfare of their subordinates (73.4% and 78.5%, respectively). Additionally, 68.5% of officers agreed that first-line supervisors at PWCPD provide adequate tactical and strategic direction related to using force.

Figure 44. PWCPD Officer Views on Direct Supervisors (n=381)



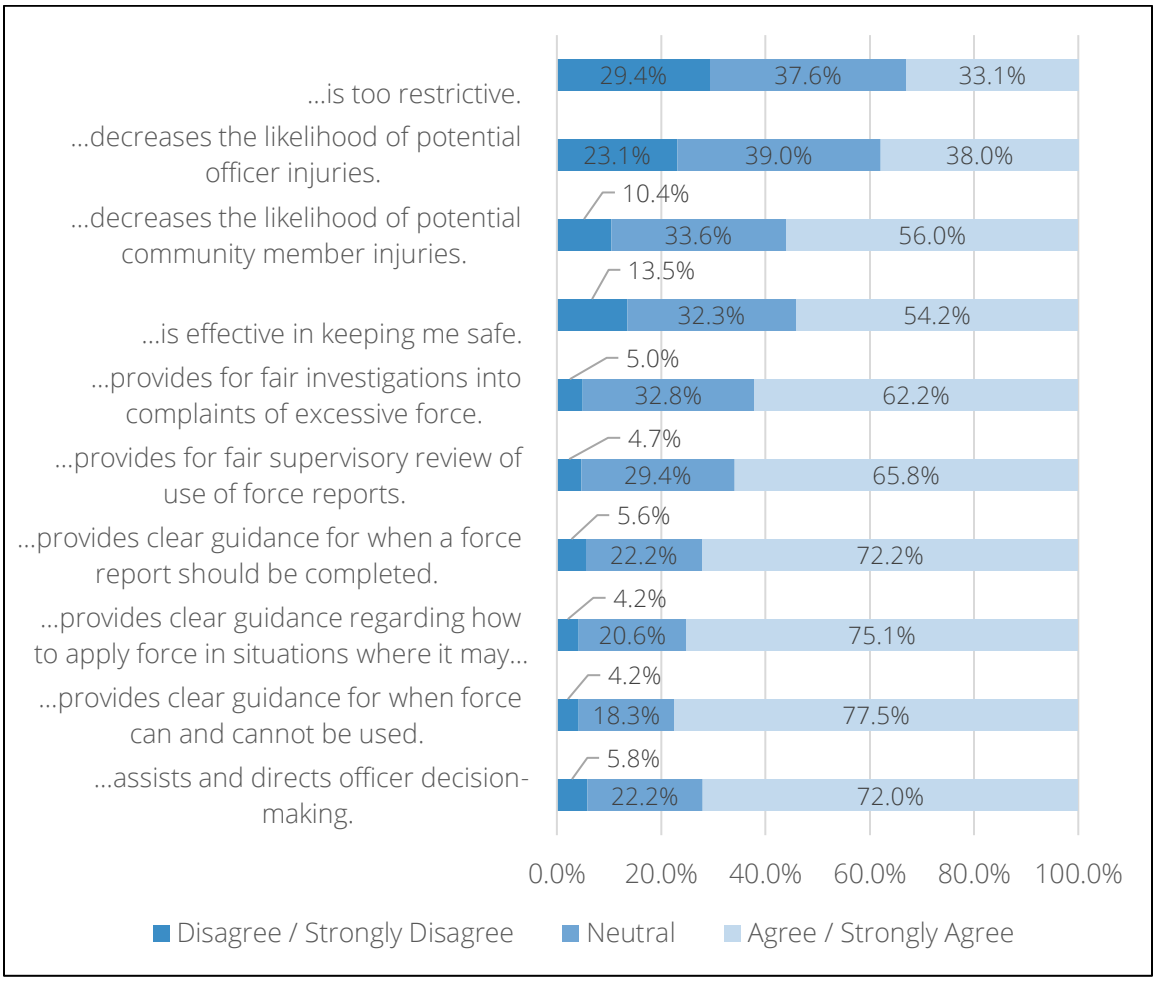
Four items were used to measure officer views on the command staff, which are displayed in Figure 45. Generally, there is a fair amount of dispersion in the response options for these four items. Only 42% of officers agree that command staff will publicly recognize their performance, and 30% agree that they recognize when an officer contributes to a team effort rather than looks good individually. Less than half (48.3%) of officers agree that the PWCPD protects them from unreasonable lawsuits and accusations, but only 11.6% disagree. Finally, only 37.5% of officers agreed that after being written up for a minor violation, they would be treated fairly.

Figure 45. Officer Views on Command Staff (n=381)



Due to this project's focus on the use of force policies and training, ten survey items were used to measure officer views regarding the PWCPD use of force ("UOF") policy and/or the reporting of use of force policy. Each item shown in Figure 46 responds to a statement preceded by "PWCPD's use of force policy and/or reporting use of force policy…" There is majority agreement on the clear guidance of PWCPD UOF policies, its assistance with guiding officer decision-making, and the fairness of the policies and review process. However, there is less agreement on the policy's effectiveness in keeping officers safe and decreasing the likelihood of community member or officer injuries. Additionally, one-third of officers agreed that the policy was too restrictive, while a little less than one-third (29%) disagreed.

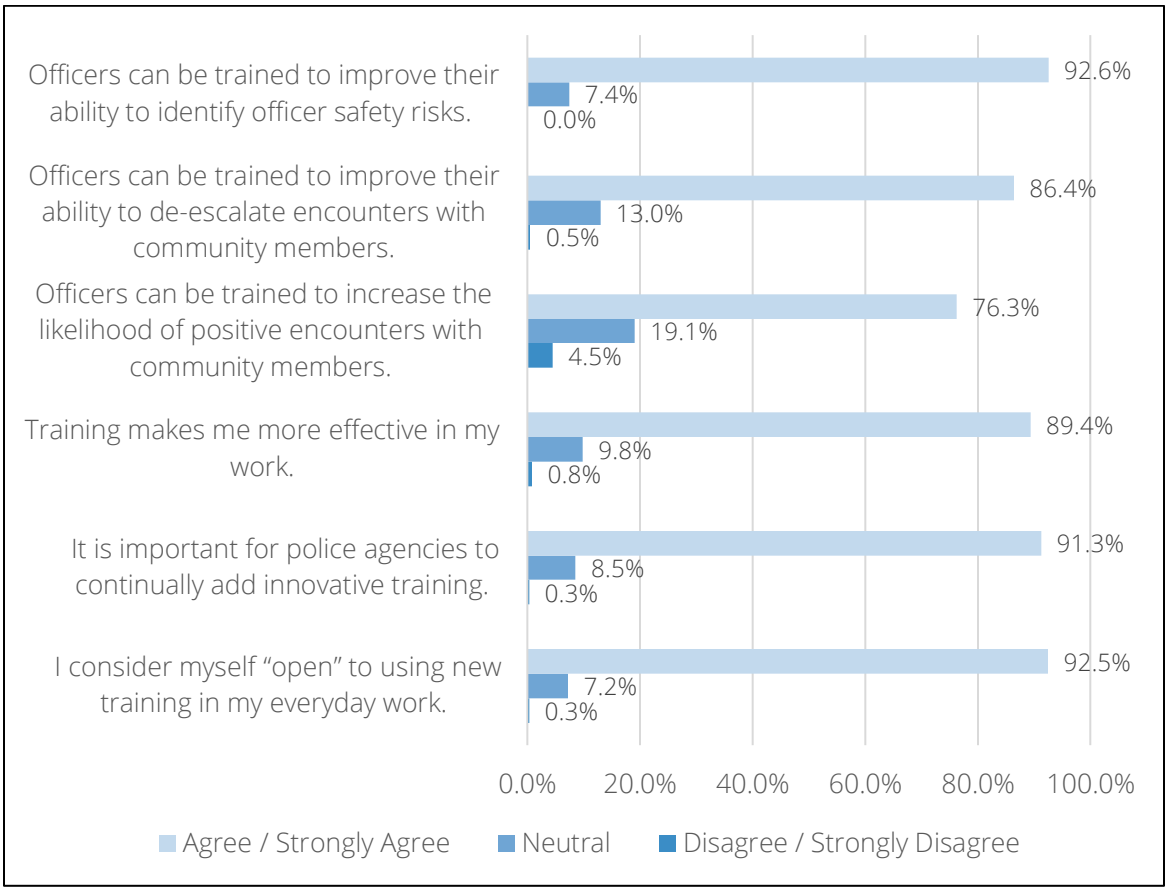
Figure 46. PWCPD Officer Views on PWCPD Use of Force Policy (n=378)



Views on Training

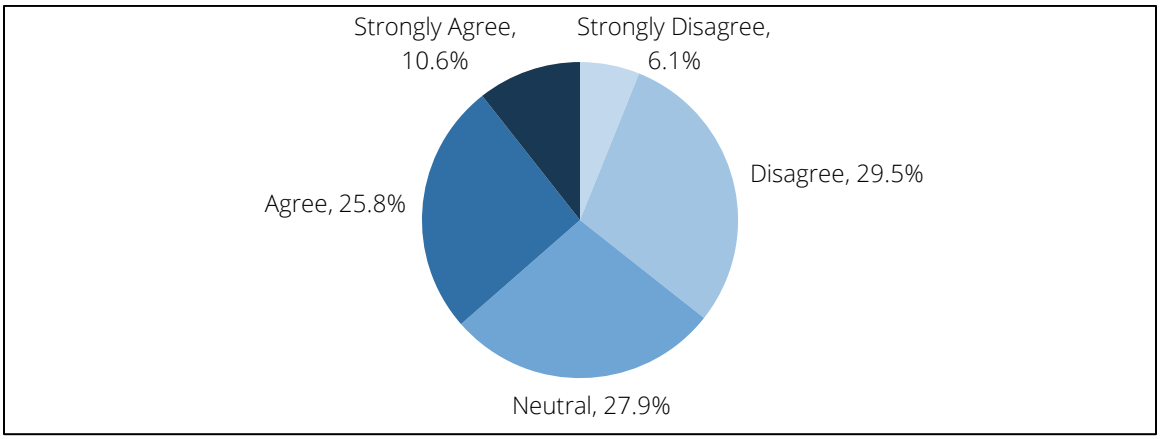
Six items were used to measure officers' openness to training and the general utility of police training, as shown in Figure 47. This chart illustrates that PWCPD officers and detectives are very open to the utility of new training and its positive impacts on their jobs. Nearly all officers (91.3%) agreed that it was important for agencies to continually add innovative training, and almost all agreed that officers could be trained to improve their ability to identify officer safety risks (92.6%). Compared to other statements in this section, fewer officers agreed that officers could be trained to increase the likelihood of positive encounters with community members (76.3% of the sample), with 4.5% of respondents disagreeing.

Figure 47. PWCPD Officer Openness to Training (n=376)



In contrast to the positive views expressed above, Figure 48 shows all responses to the survey item, "Police officers receive a significant amount of training that is irrelevant to their work," designed to measure police cynicism towards training. As shown, roughly equivalent percentages of respondents agreed (36.4%) and disagreed (35.6%) with this statement. This indicates that many officers appear to feel cynical regarding how much training they receive. Still, a similar number of officers perceive the training they receive as relevant to their work.

Figure 48. Responses to "Police officers receive a significant amount of training that is irrelevant to their work." (n=376)



Finally, we asked respondents three questions about eight different training topics that officers may have received training on. These included: (1) firearms training (including shoot/don't shoot scenarios), (2) non-lethal use of force weapons training and tactics, (3) defensive tactics, (4) crisis intervention, (5) de-escalation, (6) cultural diversity/bias-free policing, (7) legitimacy and procedural justice, and (8) interpersonal communication. For each training topic, respondents were asked the degree to which they agreed with the following statements:

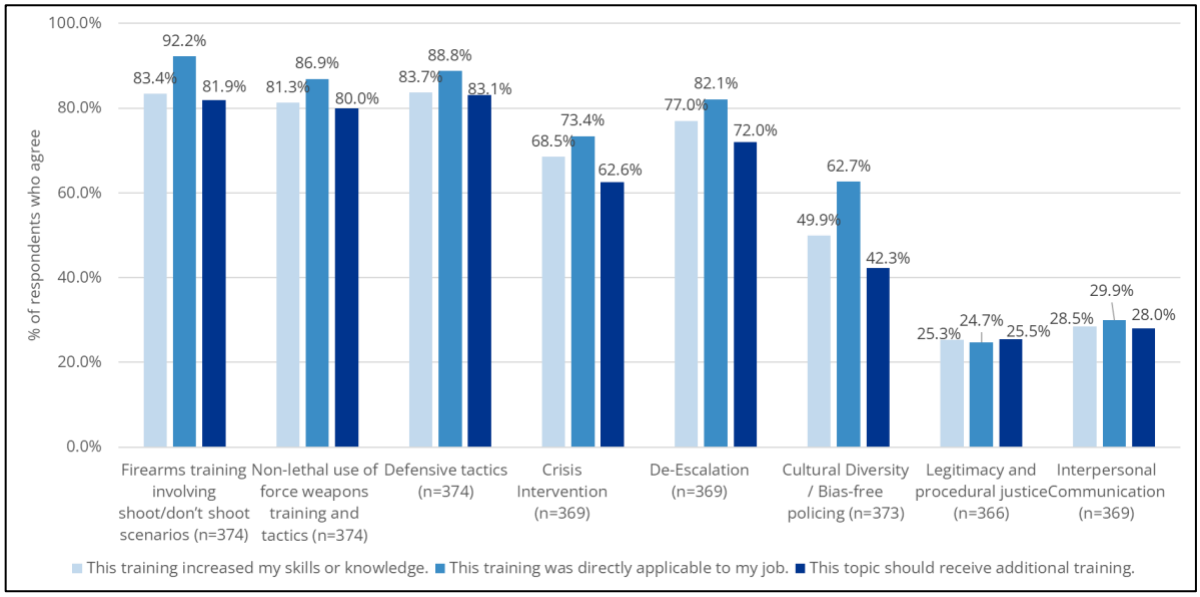
- This training increased my skills or knowledge.
- This training was directly applicable to my job.
- This topic should receive additional training.

Figure 49 displays the percentage of respondents who agreed or strongly agreed (collapsed together) with each of these statements for the different types of training. First, considering whether training increased skills or knowledge, the most positively assessed training topics were defensive tactics (83.7%), firearms (83.4%), non-lethal use of force (81.3%), de-escalation (77%), and crisis intervention (68.5%). Comparatively, legitimacy and procedural justice training was perceived to be the least effective for increasing skills or knowledge (25.3%), followed by training on interpersonal communication (28.5%) and cultural diversity (49.9%).

Regarding whether training was directly applicable to their job, the greatest amount of agreement from respondents was for firearms (92.2%), defensive tactics (88.8%), non-lethal use of force (86.9%), de-escalation (82.1%), crisis intervention (73.4%), and cultural diversity training (62.7%). Fewer respondents agreed that legitimacy and interpersonal communication training directly applied to their job (24.7% and 29.9%, respectively). Considering the final statement about whether the topic should receive additional

training, most agreed that defensive tactics (83.1%), firearms (81.9%), non-lethal use of force (80%), de-escalation (72.0%), and crisis intervention (62.6%) should receive more training. Legitimacy and procedural justice training had the least amount of support for additional training (25.5%), followed by interpersonal communication (28.0%) and cultural diversity training (42.3%).

Figure 49. PWCPD Officer Positive Perceptions of Various Training Programs



SUMMARY

A single, cross-sectional electronic survey was administered to all patrol officers and detectives at the PWCPD in October/November 2023, resulting in 412 responses. Based on the 92% response rate, this sample broadly represents the PWCPD officer-level population. In general, these officers value working directly with the community, with 93% of officers agreeing that law enforcement and community members must collaborate to solve local problems. Officers also highly value constitutional policing. Compared to other policing responsibilities, the largest group of officers agreed that their primary responsibility is to protect residents' constitutional rights. Trust amongst officers was a critical theme that emerged—nearly all respondents agreed that it was important that their fellow officers trust their communication skills and ability to handle themselves in a fight (97.2% and 92.3%, respectively). Additionally, most respondents agreed or strongly agreed that they feel knowledgeable and confident about using various de-escalation skills.

Most officers hold very positive attitudes about working at their agency and supervisors. Most officers agreed that the PWCPD was an excellent agency for which to work. Interestingly, nearly half of officers agree that their jurisdiction is dangerous, and almost 70% agree they are usually calm and at ease while at work; most officers disagree that their job frustrates them or makes them feel on edge. Officers also have generally favorable views toward their supervisors, but views toward command staff are less favorable. For example, only 42% of officers agree that command staff publicly recognize officer performance after a particularly good job, and only 38% of officers agree that after being written up for a minor violation, they would be treated fairly.

Regarding use of force training and policies, most officers agree that PWCPD use of force policies are clear and fair and assist with guiding officer decision-making. However, equivalent-sized groups of officers (roughly one-third for each) agreed and disagreed that the use of force policy was too restrictive. Most officers agreed that it was important that agencies continue to offer innovative training. However, a little more than one-third of officers agree that police officers receive a significant amount of training that is irrelevant to their work. This indicates that while officers value training, they also appear to feel that some training is not beneficial. In regard to the use of force training topics that officers may have received training on, the largest amounts of officers agree that firearms (92.2%), defensive tactics (88.8%), and non-lethal use of force (86.9%) are most directly applicable to their job. These same topics were the most commonly agreed upon for additional training. In contrast, training on legitimacy and procedural justice had the least support for additional training (25.5% of respondents).

SUPERVISOR SURVEY

To assess PWCPD first-line supervisor perceptions and self-reported activities, the research team used a cross-sectional survey sent to all sergeants and first sergeants in the department from October 20 to November 20, 2023. The survey instrument was developed by the research team and reviewed by members of the PWCPD. Surveys were administered electronically through a Qualtrics link sent to officers through PowerDMS, a learning management system. Officers were encouraged to participate in the survey through a joint video by the PWCPD Chief of Police and a senior research team member, which was included in the PowerDMS message. The video laid out the purpose and importance of the research, promised anonymity, and encouraged officers to participate. In total, 97 surveys were completed, representing a 99.0% response rate.

The supervisor survey was designed to measure supervisors' activities to oversee and reinforce de-escalation principles, views on their role, and perceptions about current use

of force training needs to identify potential improvements to response to resistance policies and training programs. The survey contained questions grouped within eight conceptual areas. All items were adapted from previous research.

(1) Perceptions Related to Supervising Officer Use of Force – Nine items were used to measure supervisor perceptions of supervising subordinates' use of force. Items were measured using a five-point Likert response scale (1=Strongly Disagree; 5=Strongly Agree).
(2) Supervision Activities Related to Use of Force and De-escalation Skills – Eleven items were used to quantify the frequency of activities related to supervising officer use of force and de-escalation. Items were measured using a five-point Likert response scale (1=Never; 5=Frequently)
(3) Views on PWCPD – Thirteen items were used to measure supervisor views on their agency, including perceptions of their supervisors, command staff, fair treatment, and stress. Items were measured using a five-point Likert scale (1=Strongly Disagree; 5=Strongly Agree).
(4) Perceptions Related to Using De-escalation Skills – Eight items were used to measure supervisor perceptions related to using de-escalation skills. Items were measured using a five-point Likert scale (1=Strongly Disagree; 5=Strongly Agree).
(5) Perceived Training Needs – Fourteen items were used to measure supervisor views about training that would benefit their officers. Specifically, supervisors were asked to respond using a five-point Likert scale (1=Strongly Disagree; 5=Strongly Agree) to various supplemental training topics for the officers they supervise.
(6) Self-Reported Supervisor Activities – Six items were used to measure how frequently supervisors engage in certain supervisory activities. Responses were measured using a five-point Likert frequency scale (1=Never; 5=Frequently).
(7) Perceptions of Supervisor Functions – Fourteen items were used to measure views on the importance of various supervisory functions. Responses were measured using a five-point Likert scale (1=Very Unimportant; 5=Very Important).
(8) Demographics – Eight survey items measured respondents' demographics, including gender, age, race, ethnicity, rank, years spent supervising, law enforcement tenure, and educational attainment.

Sample Demographics and Baseline Measures

Table 15 shows the demographics of the 97 first-line supervisors who responded to the survey. The majority of responding supervisors are male (80.4%), White (76.3%), and between 40 and 49 years old (55.7%). More than half the sample (57.7%) possess a Bachelor's Degree or higher. The respondents are a roughly even mixture of sergeants (48.5%) and first sergeants (41.2%), with 72.1% having 15 or more years of experience in

law enforcement. While 20.7% of supervisors have been supervising for more than ten years, 32% have been supervising between five and nine years, and 37.2% report supervising for four years or less.

Table 15. Supervisor Sample Demographics (N = 97)

	%	(N)		%	(N)
GENDER			**RANK**		
MALE	80.4	(78)	**FIRST SERGEANT**	41.2	(40)
FEMALE	8.2	(8)	**SERGEANT**	48.5	(47)
OTHER	2.0	(2)	**MISSING**	10.3	(10)
MISSING	9.3	(9)			
AGE			**How Many Years Supervising**		
30 - 34 YEARS OLD	1.0	(1)	**< 1 YEAR**	5.2	(5)
35 - 39 YEARS OLD	17.5	(17)	**1-4 YEARS**	32.0	(31)
40 - 44 YEARS OLD	32.0	(31)	**5-9 YEARS**	30.9	(30)
45 - 49 YEARS OLD	23.7	(23)	**10-14 YEARS**	18.6	(18)
50 + YEARS OLD	14.4	(14)	**15-19 YEARS**	2.1	(2)
UNKNOWN	11.3	(11)	**MISSING**	11.3	(11)
RACE			**EDUCATION**		
CAUCASIAN/WHITE	76.3%	(74)	**High School**	7.2	(7)
AFRICAN AMERICAN/BLACK	2.1%	(2)	**> 2 YEARS COLLEGE**	17.5	(17)
TWO OR MORE RACES	3.1%	(3)	**ASSOCIATE DEGREE**	6.2	(6)
OTHER	6.2%	(6)	**BACHELOR DEGREE**	46.4	(45)
MISSING	12.4%	(12)	**GRADUATE DEGREE**	11.3	(11)
ETHNICITY			**MISSING**	11.3	(11)
HISPANIC/LATINO	9.3	(9)			
LE TENURE					
5 – 9 YEARS	2.1	(2)			
10 – 14 YEARS	14.4	(14)			
15 – 19 YEARS	34.0	(33)			
20 OR MORE YEARS	38.1	(37)			
UNKNOWN	11.3	(11)			

The supervisor survey included the same 13 items used in the officer survey to assess views of the PWCPD. Figure 50 displays the response to supervisors' views on working at the PWCPD, where responses have been collapsed into three categories: Strongly Disagree/Disagree, Neutral, and Strongly Agree/Agree. Most supervisors agree that PWCPD is a good agency to work for (82.9% of respondents), with 59.1% agreeing that

they are usually calm and at ease while working. However, nearly 30% of supervisors reported that they often feel tense or on edge while they are at work. Additionally, 35.3% of supervisors reported that their job often frustrates and makes them angry. Most supervisors (62.5%) also agreed that the jurisdiction in which they work is dangerous. Despite close to one-third of supervisors feeling tense and frustrated at work, most supervisors hold positive views on working at PWCPD.

Figure 50. PWCPD Supervisor Views on Working at PWCPD (n=88)

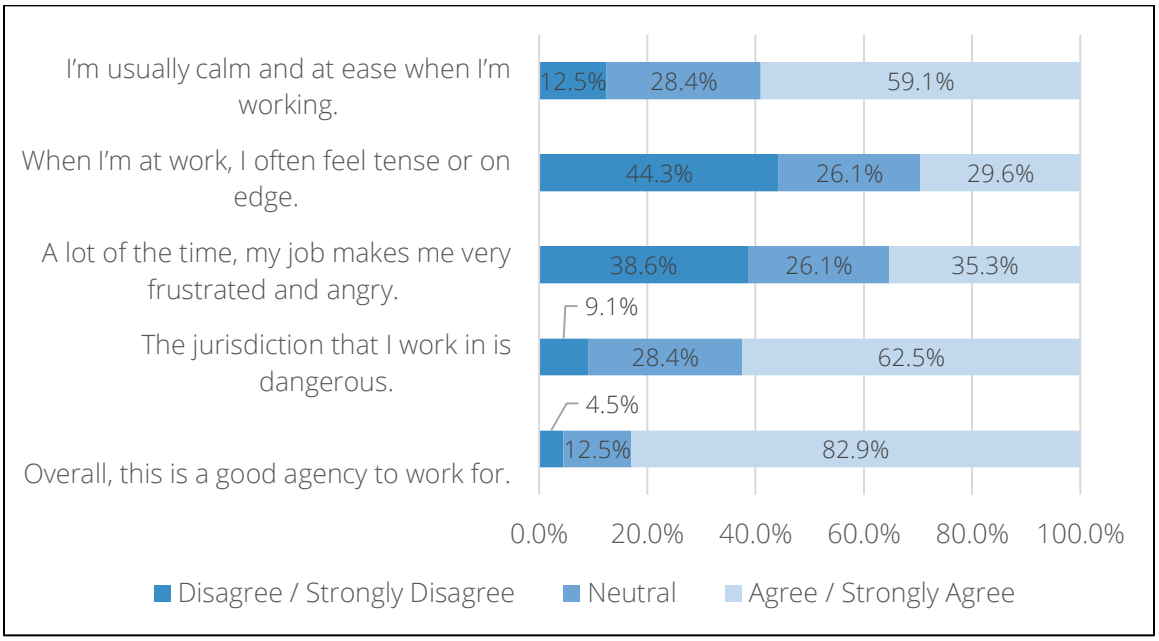


Figure 51 presents PWCPD supervisors' views on their direct and first-line supervisors more generally. In general, most supervisors report that the style of their supervisor does not discourage them from giving extra effort, with 80.7% of respondents disagreeing with the first survey item shown. A large majority of supervisors (81.8%) agree that first-line supervisors at PWCPD provide adequate tactical and strategic direction to officers related to using force. Notably, most supervisors agree that their supervisor enforces workplace policies fairly and looks out for the personal welfare of his/her subordinates (85.2% and 80.7%, respectively).

Figure 51. PWCPD Supervisor Views on Direct Supervisors (n=88)

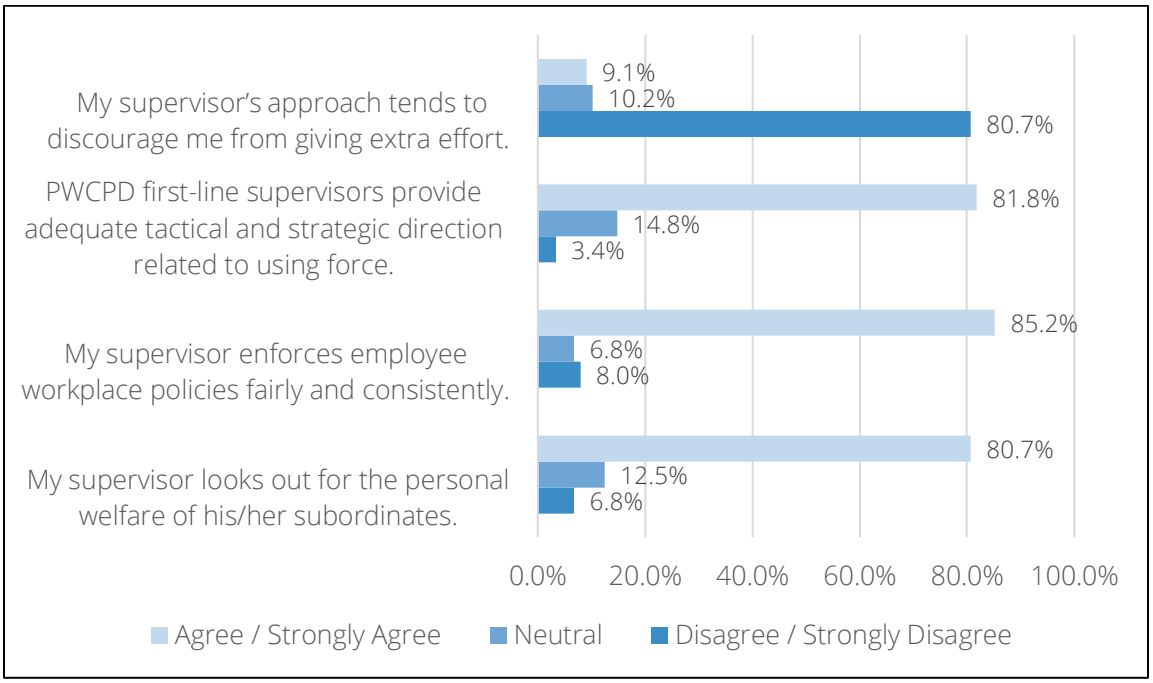
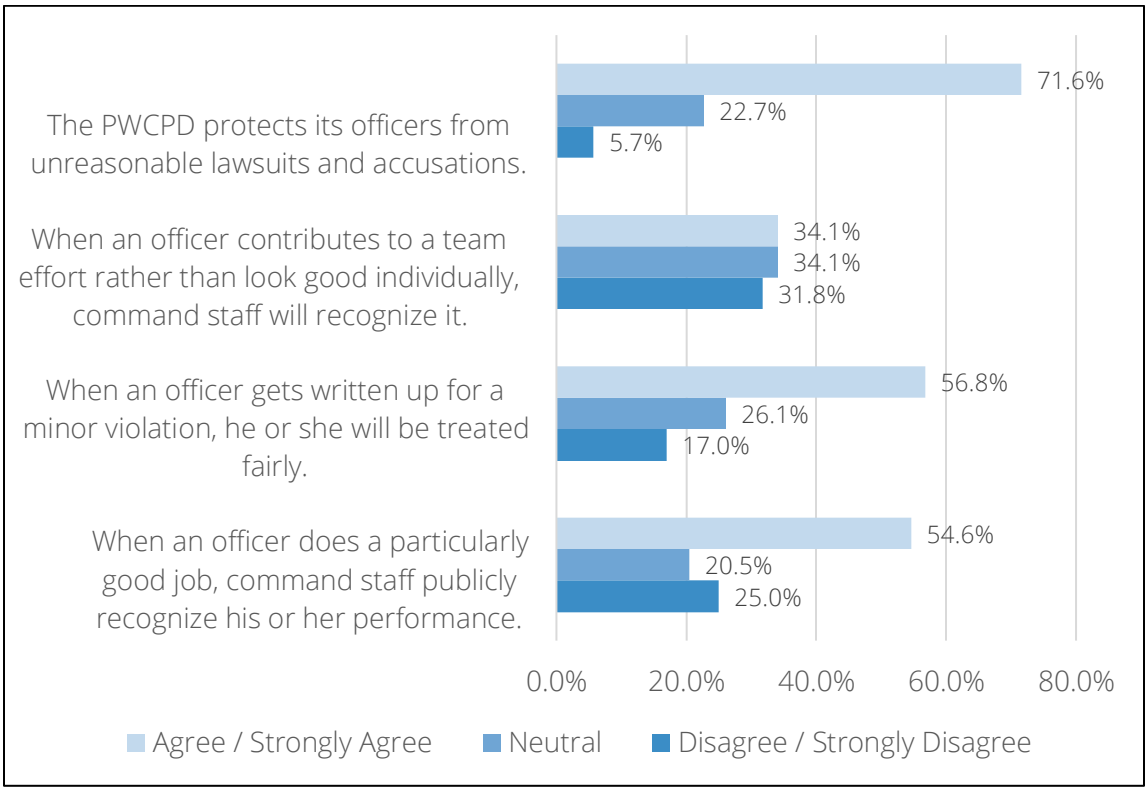


Figure 52 displays supervisor responses to survey items measuring views on the leadership at PWCPD. Supervisors have primarily positive views on PWCPD leadership, with 71.6% agreeing that the agency protects its officers from unreasonable lawsuits and accusations. Most supervisors agree that officers are treated fairly when written up for a minor violation and that command staff publicly recognize officer performance when they do a particularly good job (56.8% and 54.6%, respectively). However, there is mixed agreement about command staff recognizing when an officer contributes to a team effort rather than looking good individually, with 34.1% of supervisors agreeing with this statement and 31.8% disagreeing.

Figure 52. PWCPD Supervisor Views on PWCPD Leadership (n=88)



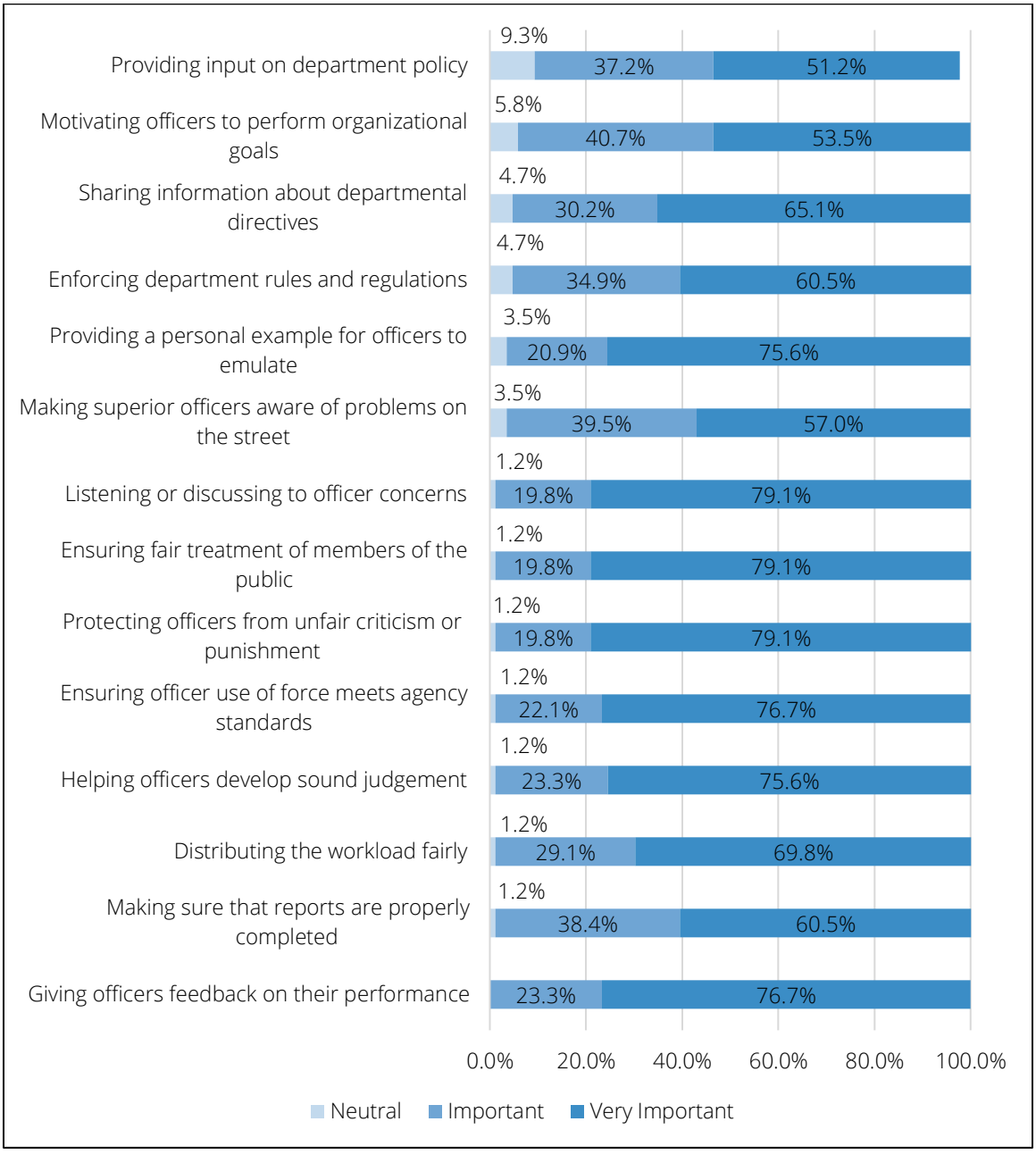
General Supervision Functions, Activities, and Perceptions of Officer Training Needs

A series of survey sections were developed to measure, on a general basis, how supervisors view the importance of certain supervisory functions and the frequency of certain supervisory activities. Additionally, a separate section assessed supervisor perceptions of their subordinates' most pressing training needs.

Supervisors were provided with a list of 14 functions that first-line supervisors might be expected to perform. In the survey, supervisors were asked to indicate how vital each function is on a scale of 1 (Very Unimportant) to 5 (Very Important). Responses in Figure 53 show only those who selected Neutral, Important, and Very Important. At the top of Figure 53, only one item had any officers report that the function was unimportant (2.4% of respondents). Figure 53 demonstrates that most supervisors (at least 50% or higher) indicated that every function was very important. Three items were tied for the highest percentage of "very important" responses—listening to officer concerns (about work on personal life), ensuring fair treatment for members of the public, and protecting officers

from unfair criticism or treatment (each with 79.1% of supervisors selecting this response).

Figure 53. PWCPD Supervisor Perceptions of Supervisor Functions (n=87)

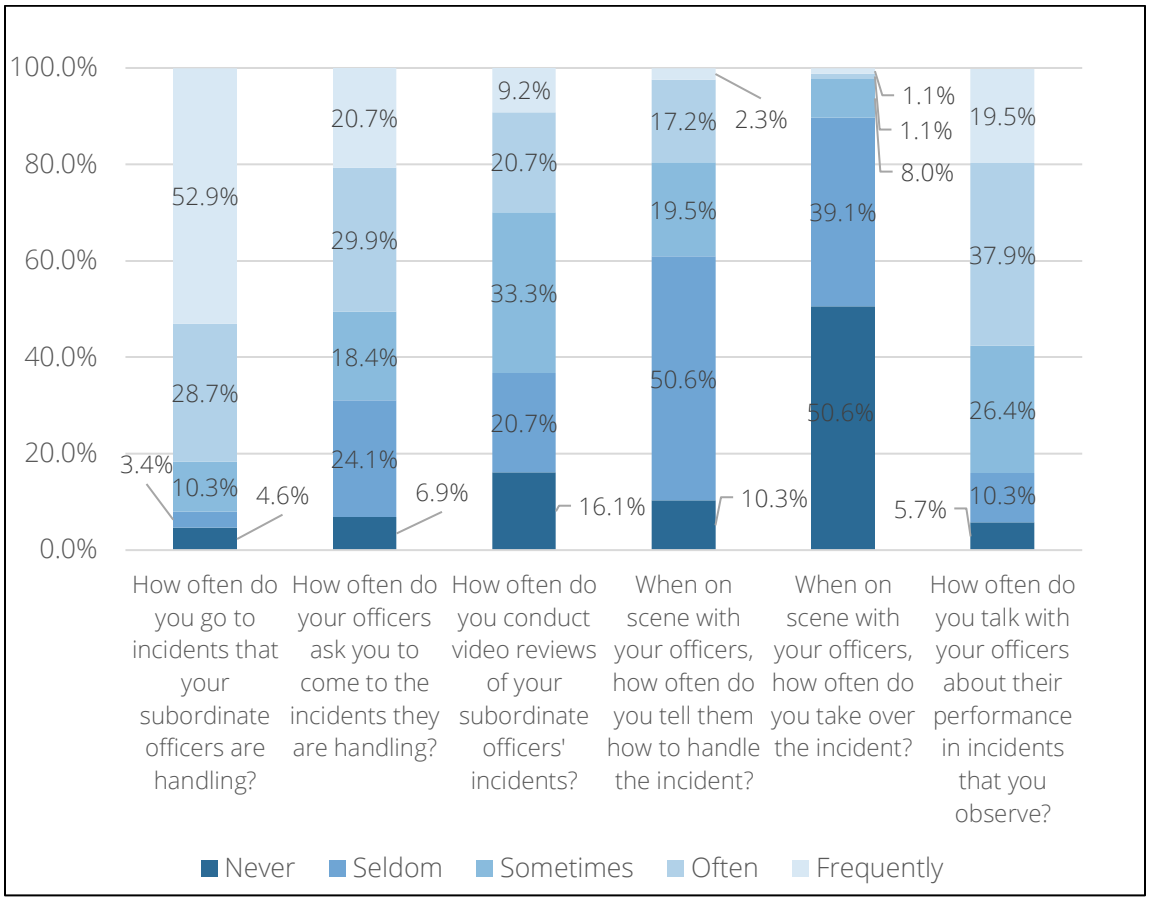


Next, six survey items measured how frequently supervisors engage in certain routine supervisory activities. Responses were measured using a five-point Likert frequency

scale (1=Never; 5=Frequently) and are presented in Figure 54.[15] Most supervisors (52.9%) report frequently traveling to incidents their subordinates handle (based on the supervisors' initiative). Most supervisors also report never taking over an incident once they arrive on the scene with their subordinate officers. Instead, they let the officers continue to manage the incident. Most supervisors also report that they seldom or never tell officers how to handle the incident when they are on the scene. Interestingly, only 20% of supervisors indicate they are frequently asked to come to the scene by their officers. However, given that supervisors regularly travel to scenes their subordinates handle, a direct request may not always be necessary. Finally, most supervisors often or frequently talk with their officers about their performance after an observed incident (57.4%). About 30% of supervisors regularly (at least once per week) conduct video reviews of subordinate officers' incidents.

[15] Responses were defined for supervisors as: Never = 0 times per month; Seldom = 1 per month; Sometimes = 2-3 times per month; Often = 1 per week; Frequently = more than 2 to 3 times per week.

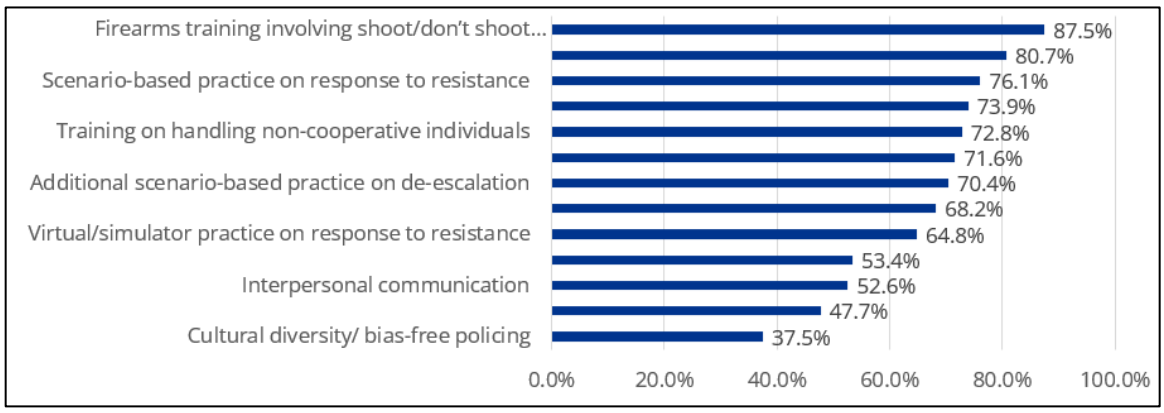
Figure 54. Self-Reported Frequency of PWCPD Supervisory Activities (n=87)



Related to the training needs of subordinate officers, supervisors were asked to recommend which training topics would benefit their officers the most. Thirteen topics were assessed, with a fourteenth free response option provided.[16] Figure 55 displays the respondents who agreed or strongly agreed with each topic, ranked by the highest agreement. The most significant support was given for additional firearms training involving shoot/don't shoot scenarios, followed by non-lethal use of force weapons training (87.5% and 80.7%, respectively). The least support was given for virtual/simulator practice on de-escalation and cultural diversity / bias-free policing (47.7% and 37.5%, respectively).

[16] Sixteen supervisors provided free responses for this item. These free responses are provided in Appendix B.

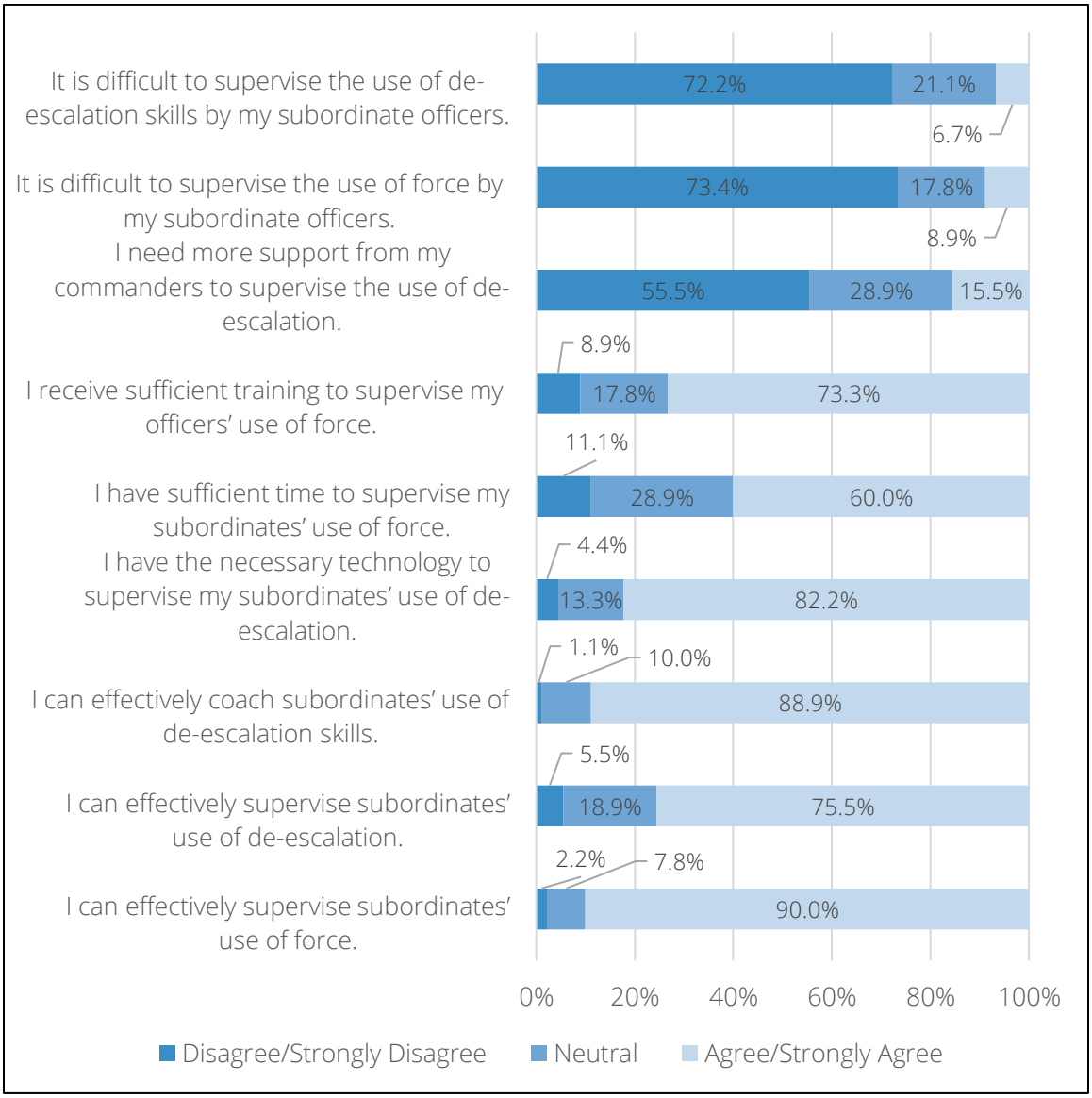
Figure 55. PWCPD Supervisor Agreement on Officer Training Needs (n=88)



Supervising and Using De-escalation

Two survey sections were developed and administered to supervisors to assess perceptions and activities related to supervising their subordinate officers' use of force and de-escalation activities. First, nine items measure supervisor confidence, difficulties, and resources associated with supervising the use of force and de-escalation. Responses to these survey items are shown in Figure 56. Most supervisors disagreed that it is difficult to supervise use of force and de-escalation by their subordinate officer (73.4% and 72.2%, respectively). Similarly, most supervisors agree that they can effectively supervise subordinates' use of force and de-escalation (90% and 75.5%, respectively) and effectively coach de-escalation (88.9%). While most supervisors agree that they have sufficient technology and training to supervise officer use of force (82.2% and 73.3%, respectively), fewer agree that they have enough time to supervise subordinates' use of force (60%). Additionally, most supervisors disagree that they need more support from their commanders to supervise de-escalation from their officers (55.5%). These findings demonstrate that there appears to be little difference in responses in the distinction between supervising the use of force more generally and supervising de-escalation specifically and that supervisors are confident in doing both.

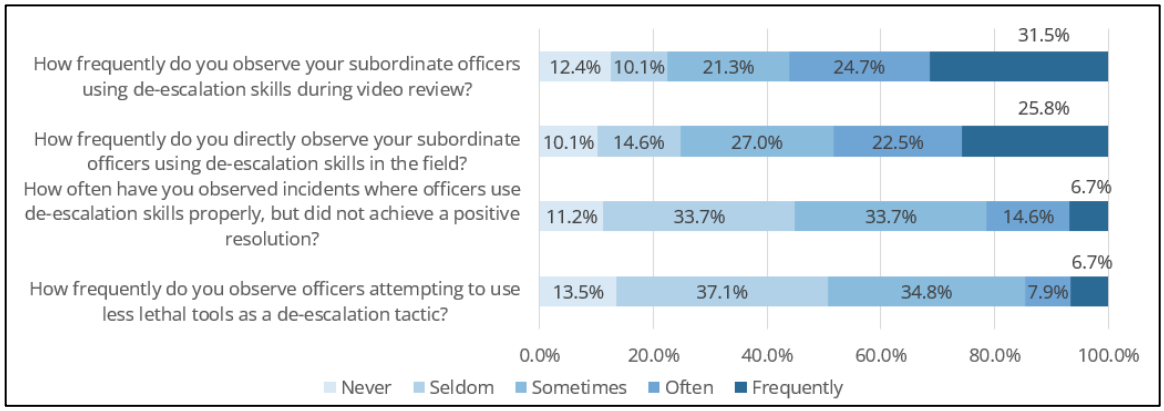
Figure 56. PWCPD Supervisor Perceptions Related to Supervising Officer Use of Force (n=90)



Eleven items were used to measure the frequency of supervisor activities dedicated to supervising officers' use of force, including directly observing, discussing, and documenting their subordinates' use of force and de-escalation. For each action, supervisors were asked to indicate how often they engaged in the activity based on a five-point scale (1=Never; 2=Seldom; 3=Half-the-time; 4=Usually; 5=Always). Figure 57 displays the response to four items, capturing the frequency of observation activities. Half of supervisors report often or frequently observing officers using de-escalation skills during video review or directly in the field (56.2% and 48.3%, respectively). Most

supervisors noted that they seldom or sometimes observe officers use de-escalation properly during an incident and that the incident did not achieve a favorable resolution (67.4), but this was not frequently reported. Finally, most supervisors reported that they seldom or sometimes observe officers using less-lethal tools as a de-escalation tactic (37.1% and 34.8%, respectively).

Figure 57. PWCPD Supervisor Self-Reported Behaviors Related to Observing Use of Force and De-escalation Skills (n=88)



Supervisors were also asked about direct discussions with their subordinates about using force and de-escalation. As seen in Figure 58, less than 10 percent of supervisors report engaging in these discussions frequently for any of the items measured. Instead, most of these activities occurred sometimes or once per month. For example, 40.4% of supervisors indicated they sometimes generally talk about de-escalation and discuss the use of de-escalation within a specific incident with their subordinates. Larger percentages of supervisors reported discussing use of force compared to de-escalation, with over 30% indicating that use of force conversations occur at least once per week. Finally, most supervisors report never or seldomly counseling officers about not using de-escalation when they should have (32.6% and 65.2%, respectively).

Figure 58. PWCPD Supervisor Self-Reported Behaviors Related to Discussing Use of Force and De-escalation Skills (n=88)

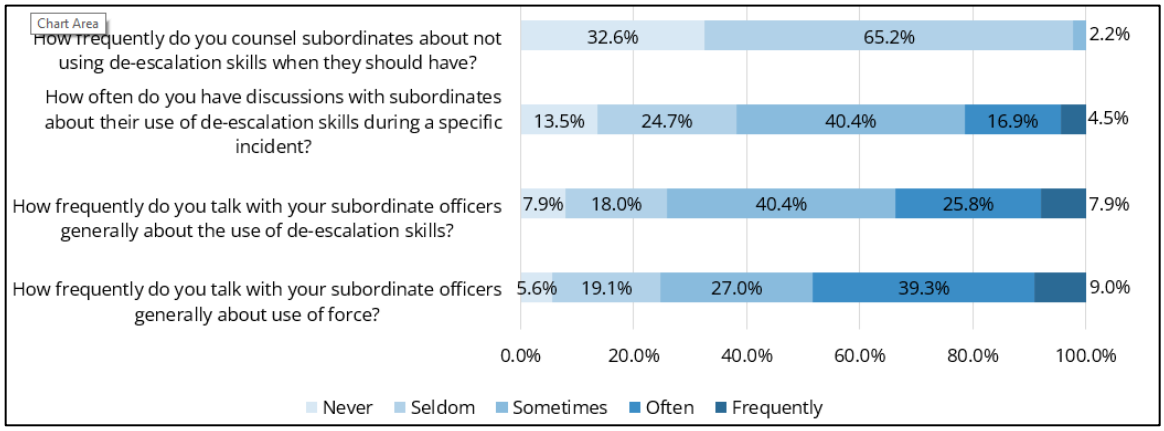
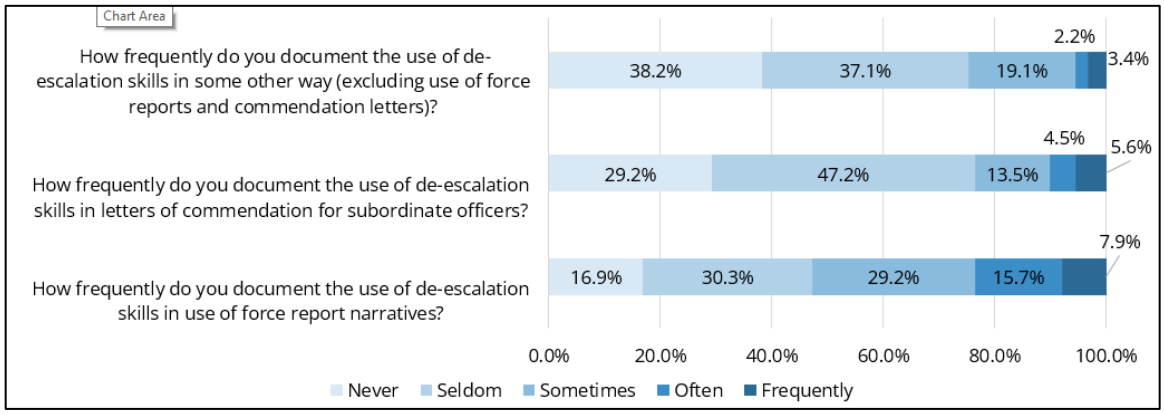


Figure 59 displays supervisor responses to three items measuring documentation of de-escalation in official PWCPD records. In general, supervisors do not often document officers' use of de-escalation skills. However, this may be due to officers' infrequency of use of force. Supervisors most frequently document de-escalation skills in their use of force narratives, but only 23.6% of supervisors engage in this activity often or frequently. Similarly, few supervisors report that they sometimes, often, or frequently document the use of de-escalation skills in some other way. Most supervisors report documenting de-escalation skills in letters of commendations for officers seldom or never (76.4% of respondents).

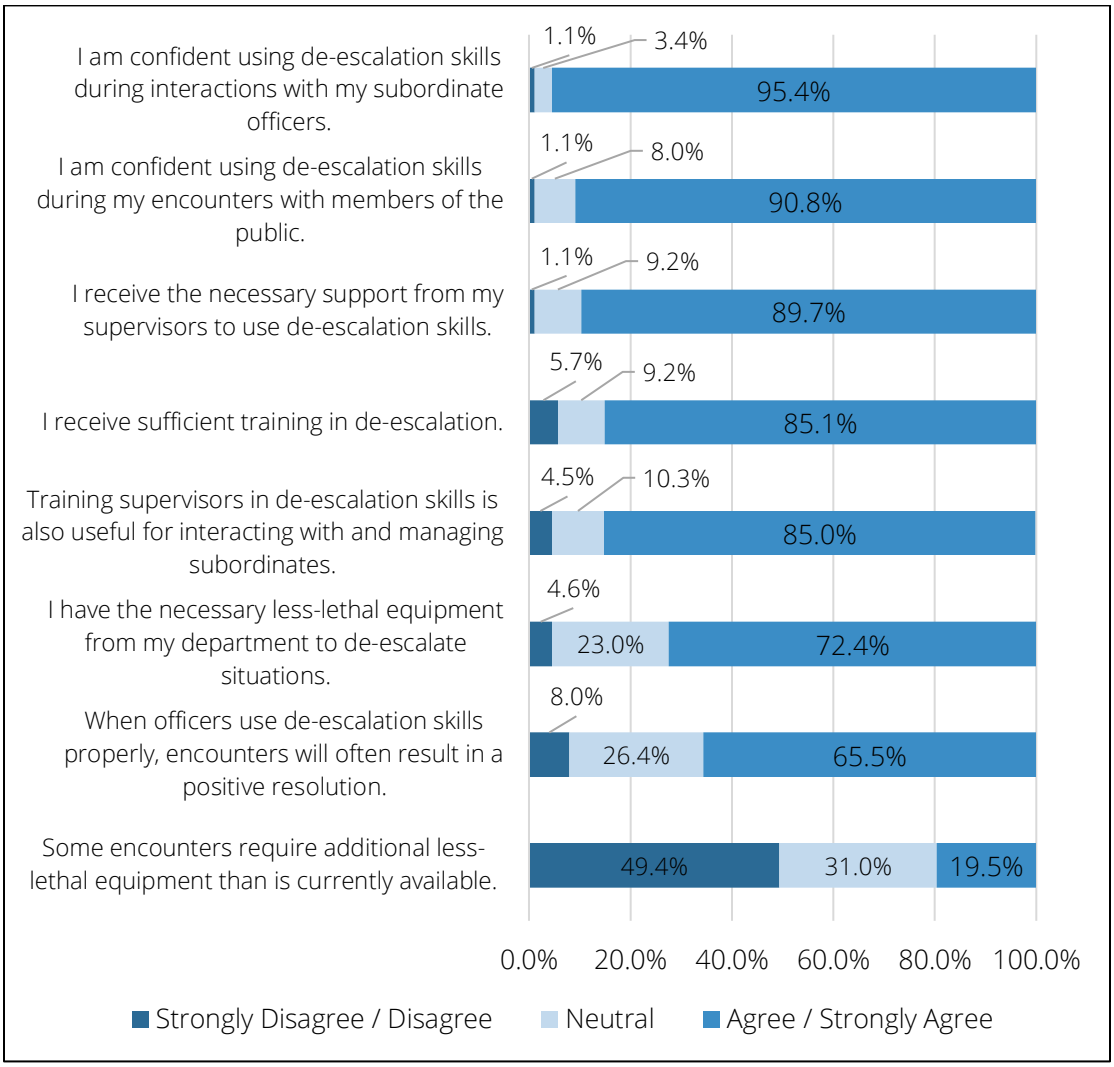
Figure 59. PWCPD Supervisor Self-Reported Behaviors Related to Documenting De-escalation Skills (n=88)



In addition to perceptions around supervision activities, supervisors were asked about their perceptions related to using de-escalation. As Figure 60 shows, most supervisors agree or strongly agree that they are confident using de-escalation with members of the

public and during interactions with subordinate officers (90.8% and 95.4%, respectively). Most officers agree that training supervisors in de-escalation skills is also helpful for interacting with and managing subordinate officers (85% of respondents). Most supervisors also agree they have the necessary training, less-lethal equipment, and support to use de-escalation skills (85.1%, 72.4%, and 89.7%, respectively). Most supervisors agreed that when officers use de-escalation skills properly, encounters will often result in a favorable resolution (65.5% of supervisors). However, this agreement was lower than that reported for other survey items measuring the use of de-escalation. Finally, while approximately 20% of supervisors agreed that some encounters require additional less-lethal equipment than is available, nearly half disagreed.

Figure 60. PWCPD Supervisor Perceptions Related to De-escalation Skills (n=87)



Summary of Supervisor Findings

A cross-sectional survey was conducted with sergeants and first sergeants in October/November 2023, resulting in responses from 97 supervisors (99.0% response rate). Most supervisors agree that PWCPD is a good agency to work for (82.9% of respondents), with 59.1% agreeing that they are usually calm and at ease while working. However, nearly 30% of supervisors reported that they often feel tense or on edge while they are at work. Notably, this percentage is twice as high as the responses for the officer-level survey. Additionally, a larger percentage of supervisors agreed that their job often frustrates and makes them angry (35% of supervisors compared to 18.6% of officers).

Supervisors viewed most supervisory functions as very important. However, they emphasized their roles as listening to officer concerns, ensuring fair treatment of the public, and protecting officers from unfair criticism or treatment as their most essential functions. Most supervisors also self-reported frequently traveling to incidents their subordinates handle, with over half indicating they do this more than two to three times per week. Despite their frequency of being on the scene of an incident with their officers, they do not often report telling officers what to do or taking over the incident altogether. After an observed incident, most supervisors often or frequently talk with their officers about their performance.

The survey requested officers identify which use of force training topic their subordinates would benefit from the most. The greatest support was given for additional firearms training involving shoot/don't shoot scenarios, followed by non-lethal use of force weapons training (87.5% and 80.7%, respectively). The least support was given for virtual/simulator practice on de-escalation and cultural diversity / bias-free policing (47.7% and 37.5%, respectively).

Most supervisors agreed they were confident in their abilities and had the necessary tools and training to effectively supervise subordinate officers' use of force and de-escalation skills. Fewer, however, agreed that they needed more time to do so. There appeared to be only minor differences in supervisors' confidence in supervising use of force compared to supervising de-escalation specifically, with supervisors feeling slightly more confident in their abilities to supervise force. While most supervisors indicated that they often or frequently observe officers using de-escalation skills, they less frequently reported directly discussing using force and de-escalation with subordinates. Similarly, supervisors do not usually document officers' use of de-escalation skills. The implications of these findings and the officer survey findings will be addressed in the Discussion section of this report.

QUALITATIVE FINDINGS

POLICY REVIEW

The NPI research team was provided with all policies related to use of force (response to resistance). The policies included a spectrum of broad policies that illustrate the department's philosophy and very specific protocols. The following policies were reviewed by the research team:

- 27.01 General Guidelines
- 27.02 Use of Deadly Force
- 27.03 Use of Deadly Force Investigations
- 27.04 Use of Force Investigations
- 27.05 Police Firearms
- 27.06 Police Impact Devices ASP Baton
- 27.08 Chemical Munitions
- 27.09 Other Department Equipment
- 27.10 Electronic Restraint Device
- 27.11 Less Lethal Projectile
- 27.12 Shotguns
- 27.13 Patrol Rifle

PWCPD's policies are comprehensive and reflect currently accepted practices in the field. The department updates its policies often, as was discussed with the introduction of Level Zero responses. This is further evidenced by the recent addition of the requirement to document pointing a firearm at individuals.

Even with the regular updates and thorough nature of the policies, some areas could be expanded to provide officers with further guidance and considerations. For example, policy 27.01 The logistic regression findings around subject injury indicated that older subjects were more likely to experience injuries during force incidents, highlighting the importance of recognizing vulnerable populations. These scenarios are not explicitly covered in the general use of force policy and could facilitate officers being more contemplative when faced with those situations.

INTERVIEWS

Throughout the fall of 2023, the NPI research team interviewed members of the PWCPD to understand their approaches, policies, and practices regarding the use of force and training. The interviews were conducted through virtual meetings with executives, command staff, and training personnel. The sessions were not recorded but captured with detailed notes. The interviews revealed several key themes, particularly in the areas of training, supervision, and continuous improvement.

Training within the PWCPD is extensive and continuously evolving. The department strongly emphasizes scenario-based training, starting from the academy and extending through in-service sessions. This comprehensive training includes Crisis Intervention Training (CIT), defensive tactics, de-escalation techniques, and specialized training for units like SWAT. Regular updates to training programs incorporate best practices and lessons learned from high-profile shootings and wrongful death cases, such as the Eric Garner, Breonna Taylor, and George Floyd cases. Realistic scenarios using tools like Body-Worn Cameras (BWC) and advanced systems like Virtra 300 are integral to this training. Particularly, scenario-based training helps officers prepare for real-life situations by emphasizing communication and de-escalation, forming a key component of both recruitment and ongoing in-service training.

Supervision plays a crucial role in the PWCPD's operations. Supervisors are tasked with reviewing use of force incidents, providing guidance, and ensuring compliance with department policies. They conduct BWC reviews and are deeply involved in training and development efforts. Leadership within the department emphasizes supporting officers through wellness programs and ensuring they have the necessary tools and training to perform their duties safely and effectively. Supervisors are also responsible for reinforcing de-escalation principles and fostering an environment where officers can learn and grow while maintaining accountability.

Continuous improvement is a core value of the PWCPD, reflected in their commitment to policy review and updates. Policies are regularly reviewed and updated to align with legal changes and best practices, incorporating feedback from accreditation bodies and external reviews. The Early Identification System (EIS) monitors and addresses potential issues with officer behavior, including repeated force incidents, ensuring accountability and providing a mechanism for early intervention. The department also engages actively with the community through various initiatives, such as neighborhood watch programs and community advisory boards, which result in positive relationships. Transparency is a crucial aspect of this engagement, with the department regularly releasing data and information about use of force incidents and maintaining open communication channels through community forums and social media.

Despite staffing levels and resource challenges, the PWCPD remains focused on maintaining high standards in training, policy implementation, and officer accountability. Technological and tactical innovations, including less-lethal options like beanbag rounds, tasers, and advanced training equipment, are continually evaluated and adopted to enhance officer safety and effectiveness. The department's commitment to de-escalation is evident in its training programs, which concentrate on communication and tactics that reduce the need for physical force.

In summary, the PWCPD's dedication to training, robust supervision, and a culture of continuous improvement underpins its efforts to enhance officer performance and community relations. These themes highlight the department's strengths and areas for potential growth, providing a comprehensive overview of its commitment to excellence in policing.

FOCUS GROUPS

Project staff from NPI conducted a series of in-person focus groups with PWCPD officers and supervisors on December 5 and 6, 2023. The sessions were held at the PWCPD Central District Headquarters located at 5036 Davis Ford Road, Woodbridge, VA 22192. Two evening sessions were conducted on December 5, one for officers and another for supervisors. The evening timing was chosen to accommodate the night shift staff's schedules. Similar sessions were held on December 6, separately for officers and supervisors, mirroring the structure of the first day. The focus groups were driven by a set of structured questions tailored for the respective groups of officers and supervisors. The purpose of the focus groups was to provide important contextual details for the policies and practices of the department by speaking with the individuals who implement the policies daily. Several key themes emerged from the focus groups, which will be analyzed in the subsequent paragraphs.

A theme of strong accountability emerged from the focus groups and was present for both the officers and the supervisors. Both groups agreed that the department has no tolerance for misconduct and "bad apples" and maintains high standards of ethics. The more tenured employees affirmed that the department's strong prohibition on misconduct had been the norm for decades. Much of the discussion around accountability centered around the numerous layers of reporting and review for use of force incidents. The participants provided examples of adding Level Zero responses to resistance and pointing a firearm, reporting as an example of strengthening accountability. The supervisors extensively deliberated on the protocol for reviewing

responses to resistance incidents and the feedback mechanisms designed to offer officers guidance for enhancing their performance.

One potential drawback of the thorough review process for responding to resistance incidents is a possible decrease in efficiency and the perception of excessive oversight. Integrating body-worn cameras (BWC) in response to resistance reviews has made the review process tedious, with supervisors spending a substantial amount of time reviewing footage from multiple officers. The supervisors understood the need to review the footage but were concerned with how much time they spent on the task. The ability to review BWC footage at each level resulted in some cases where commanders critiqued officers for minor tactical nuances, such as where they were standing during an incident. Some supervisors and officers expressed frustration with these instances, although they understand the prerogative of command staff and executives to make these judgments.

Training and decision-making were discussed at length by the focus group participants. The participants, officers, and supervisors recognized the department's effort to improve training. Even with the recognition of enhanced training, a sentiment from the groups was that the training could still be improved to refine de-escalation skills. Some participants believed that inexperienced officers go too far when trying to de-escalate. They believed in de-escalation but recognized that not all situations or individuals could be talked into voluntary compliance. An example of this type of situation is an emotionally disturbed individual with severe psychosis. These findings from the focus groups are similar to the survey results, where the most positively assessed training topics and needs identified by officers were defensive tactics, firearms, non-lethal use of force, de-escalation, and crisis intervention. Comparatively, legitimacy and procedural justice, interpersonal communication, and cultural diversity training were perceived to be the least effective for increasing skills or knowledge. Supervisors echoed a similar sentiment, where the most significant support was given for additional firearms training, followed by non-lethal use of force weapons training while the least support was given for virtual/simulator practice on de-escalation and cultural diversity / bias-free policing.

A final theme across all groups in the sessions was the response to resistance cases in hospitals for emotionally disturbed individuals. The issue was first identified by supervisors and confirmed with officers. The issue surrounds individuals who are ordered to be admitted to a mental health facility but are temporarily treated at a local hospital. Under Virginia Commonwealth Law, an individual must be in the custody of law enforcement until a treatment facility bed is available (*§ 37.2-808. (Effective July 1, 2026) Emergency Custody; Issuance and Execution of Order*, n.d.). The law has had several implications. One is that local law enforcement agencies must commit at least one officer to the hospital to maintain custody of the individual. The duration of the custody

may last for days, and these officers are typically either drawn from patrol duties or paid overtime.

A second implication of this arrangement is that officers are often put into positions where they face resistance from individuals awaiting treatment. The nature of their illnesses may increase the chances of irrational behavior and the requirement for restraint. Since these individuals are in the custody of law enforcement, officers often are in the unenviable position of intervening and responding to resistance by an ill person. Being placed in this circumstance over many hours or days creates a situation in which officers may respond to resistance numerous times for one person. The quantitative findings about the clustering of response to resistance cases at hospitals are evidence of this phenomenon. Additionally, over time the number of "Resisting Detention-EDP" force events have increased significantly, mirrored by increases in calls for service involving "Mental Subjects." While many of these instances of response to resistance are minor, they still require a supervisor response and administrative investigation, which adds to the overall workload of supervisors.

TRAINING OBSERVATION

On December 14, 2023, a NPI research team member traveled to the Prince William County Training Center to observe a portion of Decision-Making Week training for PWCPD police recruits.[17] This training week was developed and led by the Control Tactics Unit (CT Unit). While the PWCPD holds four academy sessions per year, each lasting 24 weeks, Decision-Making Week is the final week of training for recruits. During the observed session, 21 recruits participated. This week comprises three or four 8-hour days, depending on the class size. Each recruit participates in three days of intensive and immersive scenario-based training (SBT) covering 22 scenarios. If the course is four days, the fourth day is spent on tactical firearms training. To assist with the scenarios, the CT Unit brings in several role-players (sworn PWCPD officers working overtime), evaluators (basic academy instructors), and dispatchers. For two of the four days, recruits respond in scenarios with another partner recruit officer, while the third SBT day is spent responding to scenarios alone (without a partner).

Decision-making scenarios are set up similarly. All are staged outside the Training Center, with nearly all scenarios set up outdoors, using the woods, road, and buildings on the training center property. All recruits must sit in their patrol vehicles until dispatch calls and tell them where to respond for each scenario. Every scenario has a dedicated

[17] The researcher was meant to observe multiple days of scenario-based training but became ill during the trip and could only directly observe one day of the training.

evaluator assigned, as well as role-players who take turns acting in each scenario. Some scenarios include multiple role-players during encounters, while others use a single role-player. Role-players are sometimes active aggressors, persons in crisis, other officers, or victims. Often, PWCPD scenarios include alternate role-players who take turns role-playing so they have time to recover between scenarios, as some scenarios require strong physical exertion. In general, PWCPD staff report that they have good consistency in role players and evaluators for Decision-Making Week. This is important because consistency in role players and evaluators helps ensure consistent reinforcement of learning objectives for the recruit officers. In terms of duration, there is no set time for officers to participate in the scenario. Evaluators end the scenario when it comes to a natural close or when a significant action by the recruit needs to be corrected.

After a recruit completes a scenario, the evaluator debriefs the entire scenario with the recruit. Evaluators typically start this conversation by asking recruits to describe what they observed and planned as they arrived on the scene. The goal is to discuss why recruits made their decisions during the encounter. The evaluator will also coach the recruit about missed opportunities, additional considerations, or other ways the recruit might want to handle similar situations. After the recruit leaves the scene to move to the next scenario, the evaluator fills out a short online form that scores how the recruit performed during the scenario. These online forms are administered and collected through Google Forms, allowing evaluators flexibility in choosing the electronic device (cell phone, tablet, etc.) they use when completing their respective scene evaluations. Additionally, recruits have their body-worn cameras on during all scenarios, and evaluators may review this footage if needed.

A short review of the 10 scenarios directly observed by the NPI researcher include:

- Officers respond to a call for service (CFS) about a vendor selling Christmas trees. The vendor does not have a license and ultimately flees the scene. The officer should respond appropriately to the CFS and pursue the vendor after they flee to practice a safe and effective takedown. (Scenario is during the day, outside.)
- Officers stop a vehicle, and the driver is verbally aggressive and will not sign the court summons given by the officer. (Scenario is during the day, outside.)
- Officers receive a CFS about an officer in distress. Officers respond to a building with OC spray and chemical irritants in the air and are met with a physically aggressive suspect. They must secure the suspect and render aid to the officer down. (Scenario is during the day, inside.)
- Officers are instructed to follow a van that engages in a traffic violation; after the officer stops the vehicle, the passenger exits the vehicle and begins assaulting the officer. (Scenario is during the day, outside.)

- Officers receive a CFS about a suspect with a knife; they must communicate with the subject and use physical barriers until the subject complies. (Scenario is during the day, outside.)
- The officer responds to a scene where a supervisor is arresting a subject. The supervisor becomes overtly aggressive with the subject, and the officer must intervene. (The scenario is at night, in the dark outside.)
- Officers receive a CFS about an officer down. They must secure the injured officer while maintaining their safety with an active shooter assailant. (The scenario is at night, in the dark outside.)
- Officers receive a CFS about a person trying to hurt themselves. Officers must effectively communicate with the person to get them to stop hurting themselves and agree to be transported to a local hospital. (The scenario is at night, in the dark outside.)
- Officers receive a CFS about a domestic dispute. As officers arrive on the scene and communicate with the victim, the suspect in the house becomes verbally aggressive and then begins shooting at the officer and victim. The officers must secure themself and the victim and respond as trained. (The scenario is at night, in the dark outside.)
- Officers receive a CFS about a person walking in the road. The subject is severely inebriated and needs assistance. The officer is expected to respond, assess the situation, and offer resources to ensure the person is safely cared for, even if the subject is not initially willing. (The scenario is at night, in the dark outside.)

Based on what occurs each day, CT Unit instructors will engage in group debriefs with all recruit officers to reinforce performance issues that apply to all recruits—for example, reminding recruits to think about their police powers while on the scene, remembering to introduce themselves as PWCPD officers, and other themes that might emerge each day. After the Decision-Making Week, the CT Unit can review several hundred records submitted by the evaluators that score the recruit officers' performance. These data allow the CT Unit to identify outliers in the recruits, flagging some recruits that may need to be recycled into another academy.

In sum, the Decision-Making Week scenarios were conducted comprehensively and practically so that recruits could practice real-world skills in a safe and supportive environment. A strength of this type of training is that recruits do not go in with an expectation of how they should perform (e.g., practice only one particular skill). Instead, they are given various circumstances and violations to respond to, allowing them to use their police powers in different ways. Sometimes, recruits need to use verbal de-escalation immediately, and sometimes, recruits need to assess the situation and

respond with varying levels of force. Members of the CT Unit indicated that the scenario-based training setup and delivery method, and sometimes the exact scenarios, are replicated for in-service officer training. However, in-service training typically focuses on a much smaller number of scenarios spread across the year. A second strength of the observed PWCPD training is that each scenario has a designated evaluator who provides detailed feedback about the stages from start to end. This information is gathered and compiled into a database to provide evaluations across all scenarios in the week and/or the training academy overall. Having a uniform and objective evaluation process that can become quantifiable is an excellent way to develop effective debriefs and provide a robust picture of overall recruit performance.

RECOMMENDATIONS AND CONCLUSION

KEY FINDINGS

Quantitative Findings

USE OF FORCE TRENDS

From January 1, 2018, through December 31, 2022, the Prince William County Police Department (PWCPD) reported a significant increase in use of force incidents. The number of incidents rose from 215 in 2018 to 528 in 2022, indicating a linear increasing trend. The increase coincided with changes in the use of force reporting policies. The changes were enacted in November 2019 and suggest that altering the reporting policies significantly impacted the observed trends. Although force incidents increased overall, there was no corresponding increase in subject or officer injuries. The reasons for force incidents were primarily resisting arrest (50%), with the subcategory of resisting detention by emotionally disturbed persons (EDPs) showing a significant increase. The likelihood of arrest was highest for assaulting officers (66.1%) and lowest for resisting detention by EDPs (3.9%). The East and West districts saw the most notable increases, with the East district accounting for 44% of incidents and the West for 31% in 2022.

RACIAL DISPARITIES IN USE OF FORCE

There was some evidence of disproportionality in use of force incidents, with Black individuals experiencing the highest number of use of force incidents each year, rising from 131 in 2018 to 244 in 2022, totaling 945 incidents over the period. Hispanic individuals increased from 38 incidents in 2018 to 126 in 2022, totaling 432 incidents. White individuals had relatively steady numbers, from 75 in 2018 to 142 in 2022, totaling 501 incidents. In addition, Black individuals were disproportionately represented in use of force incidents across all PWCPD districts, particularly in the East and Central districts. When compared to residential population benchmarks, Black individuals were 3.57 times more likely to experience use of force than White individuals, while Hispanic individuals were 1.21 times more likely. However, when using more accurate suspect benchmarking, those disparity ratios dropped to 1.34 for Black subjects and 1.02 for Hispanic subjects.

SPATIAL ANALYSIS OF USE OF FORCE INCIDENTS

Spatial analyses revealed that high-density call volume areas also had high force incident densities, particularly in sectors with substantial Black and Hispanic populations. Sectors A15, B10, C13, and B11 emerged as critical hotspots, with significant overlaps between high call volumes and high non-White populations. These areas consistently showed high frequencies of use of force incidents and calls for service, suggesting a potential correlation between increased police-community interactions and the likelihood of force incidents. Additionally, use of force incidents were mainly concentrated around medical, police, and commercial entertainment facilities, with nearly one-quarter of all use of force incidents stemming directly from eight locations in the East and West PWCPD districts.

IMPACT OF COVID-19 AND NATIONAL EVENTS

The COVID-19 pandemic and national events, such as the George Floyd incident, had a noticeable impact on crime and arrest patterns. Violent crime incidents increased by 13% post-April 2020, while property offenses rose by 23%. However, nuisance offenses significantly declined by 45%. Overall arrests dropped by 35% post-April 2020, with the most significant reduction in drug and possession arrests (68%). However, the interrupted time series analysis indicated that these events did not significantly shift the linear trend of increasing use of force incidents.

MULTIVARIATE ANALYSIS

The multivariate logistic regression analysis revealed that race, temporal factors, and crime types significantly influenced the likelihood of force during arrests and injuries during force incidents. Black individuals were 55% more likely to experience force during arrests compared to White individuals. Incidents involving multiple charges and nuisance-related offenses were more likely to escalate into force. Injuries to subjects and officers during force incidents were influenced by the subject's age, gender, race, and the number of force actions employed. Older and male subjects, as well as those involved in resisting detention incidents, were more likely to sustain injuries. Additionally, arrests occurring in the East district were more likely to result in the use of force than in other districts.

OFFICER SURVEY

A survey of 412 patrol officers and detectives revealed strong sentiments supporting working with the community and protecting the constitutional rights of the public compared to other responsibility priorities. Most officers agreed that they feel knowledgeable and confident about using various de-escalation skills, illustrated by 85%

of the sample agreeing that they have considerable ability to create positive outcomes during public encounters.

Most officers viewed the PWCPD as an excellent agency for which to work. Interestingly, though nearly half of officers agree that their jurisdiction is dangerous, almost 70% agree they are usually calm and at ease while at work. While most officers had favorable views toward their supervisors, views toward command staff were less favorable. Less than half of officers (42%) agreed that command staff publicly recognize officer performance after a particularly good job, and even fewer officers (38%) agreed they would be treated fairly after being written up for a minor violation.

Most officers agreed that it was important that agencies continue to offer innovative training. However, a little more than one-third of officers agree that police officers receive a significant amount of training that is irrelevant to their work. This indicates that while officers value training, they also appear to feel that some training is not beneficial. Officers reported the greatest support for firearms, defensive tactics, and non-lethal use of force training as most directly applicable to their job, while training on legitimacy and procedural justice had the least support.

SUPERVISOR SURVEY

A survey of 97 sergeants and first sergeants demonstrated that most supervisors viewed the PWCPD as a good agency to work for, with more than half of supervisors agreeing that they are usually calm and at ease while working. However, nearly 30% of supervisors reported that they often feel tense or on edge while they are at work. Notably, this percentage is twice as high as the responses for the same survey item in the officer-level survey. Supervisors appear to be experiencing more stress on the job than PWCPD officers.

Most supervisors also self-reported frequently traveling to incidents their subordinates handle, with over half indicating they do this more than two to three times per week. Despite the frequency of being on the scene of an incident with their officers, they do not often report telling officers what to do or take over the incident altogether. After an observed incident, most supervisors reported that they often or frequently talk with their officers about their performance. These findings imply that supervisors are very actively engaged with their subordinates without being overbearing and controlling—they discuss performance later rather than immediately on scene.

While most supervisors agree that they have sufficient technology and training to supervise officer use of force (82.2% and 73.3%, respectively), fewer agree that they have enough time to supervise subordinates' use of force (60%). Supervisors must balance a

myriad of responsibilities, so it may be difficult to balance this supervision with their other responsibilities. Most supervisors reported never or seldom documenting officers' use of de-escalation skills. This represents an opportunity for the agency to increase the documentation of de-escalation and further promote the use of these skills in the field.

Qualitative Findings

The review of PWCPD's use of force policies and protocols revealed comprehensive and up-to-date practices, reflecting current best practices in the field. Policies such as General Guidelines (27.01) and Use of Deadly Force (27.02) are regularly updated to address new situations, demonstrating a commitment to transparency and accountability. However, there are areas for enhancement, such as expanding policy 27.01 to include guidance on shooting at moving vehicles, handling vulnerable populations, and managing scenarios involving handcuffed individuals.

Interviews with PWCPD personnel highlighted extensive, scenario-based training and strong supervision. Training programs, including Crisis Intervention Training (CIT) and the use of advanced tools like Body-Worn Cameras (BWC), emphasize realistic scenarios to prepare officers for real-life situations. Supervision involves reviewing use of force incidents and providing guidance to ensure compliance with policies. Continuous improvement is a core value, with regular policy reviews and an Early Identification System (EIS) to monitor officer behavior, ensuring accountability and fostering community engagement.

Focus groups with officers and supervisors underscored the department's commitment to accountability, with thorough review processes for use of force incidents. Participants noted the integration of BWCs, which, while enhancing transparency, can make the review process time-consuming. Training and decision-making discussions revealed a desire for improved de-escalation skills, particularly for handling emotionally disturbed individuals. Officers expressed concerns about managing such individuals in hospitals, as they often face resistance, increasing the likelihood of use of force incidents.

The observation of training for recruits during Decision-Making Week (the last week of their 24 weeks at the academy) showcased the department's dedication to practical, scenario-based training. Recruits participated in realistic scenarios, receiving detailed feedback to enhance their decision-making skills. This approach prepares recruits for diverse situations, ensuring they are well-equipped to handle complex incidents in the field.

RECOMMENDATIONS

The recommendations presented in the subsequent sections are derived from integrating the quantitative and qualitative findings by the NPI research team, combined with the team's expertise in the use of force, training, and organizational management. Many, if not all, of the recommendations can be viewed as an extension of the current efforts by the PWCPD. It can be noted that none of the recommendations suggest that the department is presently lacking in these areas. In large part, the recommendations should be considered an affirmation of the department's current practices and initiatives. Overall, there is a clear pattern of increasing force incidents, and it is important to understand the underlying context of the increases. Two factors have likely contributed to the rise: more detailed reporting and an environment geared towards greater accountability due to societal factors. The greatest increases in force incidents have been for events involving emotionally disturbed persons coupled with a greater proportion of calls for service related to mental health. Despite the increase in the reported incidents, there has not been a corresponding increase in injuries for subjects or officers. In addition, the finding that nuisance offenses are the most likely arrest incidents to result in force implies that low-level force incidents are driving the patterns in our findings.

COMMUNITY ENGAGEMENT

The disparities in use of force incidents among Black and Hispanic populations highlight the need for continued community engagement. Building trust through transparency and consistent communication can help reduce tensions and improve relations between the police and minority communities. PWCPD currently operates alongside a community advisory board to facilitate dialogue and develop collaborative solutions to community issues. With some of the key findings from this research, the PWCPD should leverage board members and community leaders to help address the underlying factors that may be impacting use of force incidents. These efforts should primarily focus on areas where use of force incidents have risen and where police activity is highly concentrated (e.g., the East and Western districts). PCWPD could consider using the findings in this report as a catalyst to have conversations in the community about improving safety for everyone, reducing force incidents, and dealing with the rise in mental health-related calls and increased reporting of low-level force incidents. The report has highlighted the complexity of the relationships among crime, race, mental health, and use of force. Ongoing community engagement efforts help build trust and transparency, essential for effective policing and maintaining positive community relations. There is likely no single solution, and progress will require close collaboration between PWCPD and the community.

MENTAL HEALTH INTERVENTIONS

The substantial rise in incidents involving emotionally disturbed persons (EDPs) and the corresponding increase in calls for service related to mental health underscores the need for integrated mental health interventions. PWCPD currently maintains a co-responder unit that has been operational for the last 3-4 years. They respond to crisis calls from roughly 10 a.m. to 10 p.m. daily. However, expanding the coverage of this program to a full 24-hour period would greatly benefit the county. Additionally, the county is currently building a medical receiving center for individuals in crisis that should provide PWCPD additional assistance in dealing with EDP calls. PWCPD should also consider further exploring what drives the co-occurrence of force incidents at medical facilities throughout the county. Current policies or practices may drive the increase in force reporting, especially regarding resisting detention events. Addressing the issue of managing emotionally disturbed individuals in hospitals is crucial. In the meantime, PWCPD should consider how individuals awaiting hospital interventions are monitored and whether the co-responders can be leveraged more in these situations. Implementing strategies to prevent unnecessary force incidents in these scenarios can reduce the workload on officers and supervisors, ensuring more appropriate responses to mental health crises.

EXAMINE NUISANCE ENFORCEMENT

Arrests for nuisance-related offenses were associated with a 59% increase in the likelihood of force. The NPI research team could not identify the precise cause of this rise; however, they hypothesize that certain arrests may be linked to mental health conditions. In addition, these nuisance offenses are primarily generated via calls for service and community member's reasonable expectations that these quality-of-life issues require solutions. These solutions may require additional county resources above and beyond the PWCPD, tailored to the specific needs of the community. However, PWCPD should review use of force incidents where there was a nexus to a nuisance offense and seek to understand what changes could be made to practices and training to reduce the frequency of these events. The review may involve looking at BWC footage and examining specific circumstances about each case, such as the location, community member, and the officer, to identify patterns. Such a review may result in changes to the overall strategic approach to enforcing nuisance offenses or changes to officer-level tactics when dealing with emotionally disturbed individuals.

DATA-DRIVEN POLICING

Improved data collection, linking of data across systems, and incorporating regular analysis to identify patterns of police activity and use of force, especially in high-risk

areas, can enhance operational decision-making. PWCPD can allocate resources more effectively and implement targeted interventions to prevent escalation by focusing on areas and situations with a high likelihood of force incidents and relevant calls. The PWCPD should consider regularly monitoring the types, locations, and outcomes of their force incidents combined with a review of additional internal data to uncover emerging patterns. For instance, comparing specific calls for service and criminal incident data to force incidents can identify patterns. Such analysis, for example, could reveal that mental health calls, driven by low-level offenses, are becoming low-level force incidents, and this finding could point to specific and actionable police and non-police responses. In addition, conducting these analyses disaggregated by race and ethnicity, can help identify patterns of disparity and inform policy adjustments and potential areas for increased community engagement.

RESOURCE ALLOCATION

The spatial concentration of force incidents in specific sectors suggests the need for tailored resource allocation. PWCPD should prioritize deploying additional resources, such as patrol units and community engagement officers, to high-density areas identified through spatial analyses. This is especially salient considering the increase in mental health calls and low-level offenses that may be driving force patterns described in this report. Specialized police and non-police resources may be required and should be tailored specifically to the communities where force incidents are concentrated. Integrating data-driven processes into operational decision-making and identifying areas of need that require additional county capital will help drive resource allocation and can help to prioritize deployment in critical areas in a resource-tight environment. In addition, enhancing the presence of officers trained in de-escalation and community policing practices can help improve police-community interactions and potentially reduce the frequency of force incidents.

DATA COLLECTION IMPROVEMENTS

Several recommendations have been proposed to improve the accuracy, reliability, and comprehensiveness of data collected by PWCPD. Implementing these recommendations will facilitate better analysis, enable more informed decision-making, and help address disparities in policing practices. PWCPD should consider integrating software that links multiple databases and systems (such as a records management system) to populate standard fields automatically and better integrate internal data for monitoring and analysis. Specifically, location/address and data on suspects, victims, witnesses, and complainants is unreliable or missing. It is essential to differentiate between arrests made in the community during incidents and arrests recorded at stations, detention centers, or courts when closing previous cases or issuing warrants. Additionally,

recording whether the arrest resulted from vehicle or foot pursuits, the presence of firearms or hazardous materials, the number of arrestees, and the presence of witnesses or bystanders will provide a more comprehensive dataset. Improving the reliability of data on arresting officers, involved officers, and the use of de-escalation techniques will enhance the understanding of arrest circumstances.

Recording the type of location where force was used (residence, business, street, etc.) will provide context for these incidents. Additionally, noting whether the use of force resulted from vehicle or foot pursuits, the presence of firearms or hazardous materials, the number of subjects involved, and the presence of witnesses or bystanders is recommended. Detailed records on de-escalation techniques, the sequence of force used, and specific types of force (e.g., compliance holds, strikes, chemical spray, taser usage) will contribute to more granular and actionable data. It is currently impossible to differentiate which levels of force were used in a force incident. Disaggregating the force used information and matching it to the levels of force outlined in PWCPD policy is a best practice and key to ongoing monitoring. Additionally, detailed injury data for subjects and officers and comprehensive records on subject resistance levels will further enhance the dataset. It is also beneficial to record incidents involving the display or pointing of firearms.

DOCUMENT OFFICER USE OF DE-ESCALATION

The supervisor survey revealed that supervisors rarely document officer use of de-escalation skills, and the absence of this data has been noted above. The PWCPD should consider capturing the use of de-escalation skills in use of force reports and ensure that these skills match what is taught and reinforced during their use of force training programs. Use of force reports should collect not only the frequency of different de-escalation techniques but also whether officers perceived the tactic was effective, partially effective, or not effective at all. It is also critical to match which techniques were used in relation to which types of subject resistance and whether these fall in line with training and use of force levels outlined in departmental policy. These data could help inform training refinement based on the patterns that emerge, underscoring skills that could use additional scenario practice. Further, this data can be used by the agency to publicly recognize and reward officers who use de-escalation regularly. This may be used to support PWCPD's efforts toward the promotion of de-escalation in their organizational culture.

POLICY REVIEW

Regular review and adjustment of use of force policies are essential to ensure they remain effective and equitable. Enhancing policy details, particularly in policy 27.01, to

cover specific scenarios, such as shooting at moving vehicles, managing vulnerable populations, and handling handcuffed individuals, will provide officers with clearer guidance, reducing the risk of inappropriate force use. Due to the increases in force incidents involving emotionally disturbed persons, mental health calls, and nuisance crimes resulting in force, it is important that PWCPD review current policies and practices that may be driving these patterns. Regular updates and reviews of policies ensure they remain aligned with evolving best practices and legal standards, maintaining a high standard of policing. PWCPD should consider establishing an ongoing process to evaluate current policies, incorporating feedback from community stakeholders and subject matter experts. Implementing evidence-based practices and continuous monitoring can help in maintaining policies that promote fairness and accountability.

Conclusion

The Prince William County Police Department (PWCPD) has demonstrated a commitment to transparency and continuous improvement through this comprehensive evaluation of its use of force incidents from 2018 to 2022. The assessment revealed significant insights into the patterns and disparities in the department's response to resistance, emphasizing the importance of data-driven policy reforms. Despite an overall increase in use of force incidents during the study period, the department has shown a proactive approach in identifying areas for improvement and implementing strategies to enhance community trust and safety. The collaboration with the National Policing Institute (NPI) has provided a robust foundation for understanding the complexities of use of force dynamics and their implications for policing practices.

Moving forward, the PWCPD is poised to leverage the findings from this report to further refine its policies, training programs, and community engagement efforts. Addressing the identified racial and ethnic disparities, as well as the geographic concentration of force incidents, will be critical in fostering a more equitable and effective policing strategy. The department's focus on de-escalation techniques, officer training, and community collaboration underscores its dedication to advancing policing practices that prioritize the well-being and trust of all residents. By continuously monitoring and evaluating its practices, the PWCPD can ensure that it remains responsive to the evolving needs of the community, thereby promoting a safer and more just environment for all.

APPENDIX A - OFFICER SURVEY

SECTION 1: VIEWS ON POLICING

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1. Enforcing the law is a patrol officer's most important responsibility. (n=393)	0	7.6	27.5	44.0	20.9
2. Law enforcement and community members must work together to solve local problems. (n=393)	0.2	1.3	5.9	37.4	55.2
3. Working with the community to solve problems is an effective means of providing services to this area. (n=393)	0.8	1.3	6.9	48.6	42.5
4. I routinely collaborate with community members in my daily duties. (n=393)	1.8	5.3	24.7	45.5	22.6
5. My primary responsibility as a police officer is to fight crime. (n=393)	1.3	6.9	23.9	46.3	21.6
6. As a police officer, I have a primary responsibility to protect the constitutional rights of residents. (n=393)	0.5	0.5	5.1	31.0	62.8
7. A primary responsibility of a police officer is to build trust between the department and community. (n=393)	1.5	4.6	9.7	40.5	43.8
8. As a police officer, it is important that I have non-enforcement contacts with the public. (n=393)	1.3	1.3	10.3	40.5	46.3
9. As a police officer, I see myself primarily as a public servant. (n=393)	0.5	2.3	12.0	45.8	39.4
10. My primary role is to control predatory suspects who threaten members of the public. (n=393)	1.0	8.1	24.2	41.7	24.9
11. As a police officer, there is a good chance you will be assaulted while on the job. (n=393)	0	2.5	8.4	23.3	56.7
12. Police officers have reason to be distrustful of most citizens. (n=393)	9.7	33.1	34.9	15.8	6.6
13. When I arrive on a scene or during any interaction with a citizen, I first size up	0.3	2.3	13.2	46.1	38.2

the situation in order to establish and maintain control. (n=393)	

SECTION 2: ATTITUDES TOWARD USING FORCE

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1. Officers are not allowed to use as much force as is necessary to make suspects comply. (n=389)	12.1	36.2	29.3	16.2	6.2
2. It is sometimes necessary to use more force than is technically allowable. (n=389)	30.3	34.7	21.3	9.8	3.9
3. Verbally disrespectful suspects sometimes deserve physical force. (n=389)	48.6	38.6	8.7	3.1	1.0
4. Refraining from using force when you are legally able to puts yourself and other officers at risk. (n=389)	2.6	21.3	40.1	21.1	14.9
5. It is important to have a reputation that you are an officer willing to use force. (n=389)	12.6	25.2	33.7	18.5	10.0
6. Not using force when you could have makes suspects more likely to resist in future interactions. (n=389)	7.7	38.0	32.6	13.4	8.2
7. It is important that my fellow officers trust me to handle myself in a fight. (n=389)	0.3	0.8	6.7	33.9	58.4
8. Trying to talk my way out of a situation is always safer than using force. (n=389)	5.4	12.9	22.1	32.9	26.7
9. It is important that my fellow officers trust my communication skills. (n=389)	0.3	0	2.6	40.1	57.1
10. I respect officers' ability to talk suspects down rather than using force to make them comply. (n=389)	0.3	1.5	8.0	40.6	49.6
11. Generally, if force has to be used, it is better to do so earlier in an interaction with a suspect, as opposed to later. (n=389)	3.9	25.4	40.9	21.3	8.5

SECTION 3: VIEWS ON DE-ESCALATION SKILLS

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1. I can recognize when an individual is experiencing a crisis. (n=387)	0	0	5.9	57.1	37.0
2. I know how to slow down an encounter with a person in crisis. (n=387)	0	0.3	10.3	58.9	30.5
3. I know how to resolve conflict between people. (n=387)	0	0.3	11.4	59.4	28.9
4. I am comfortable changing my approach with a person in crisis if my initial approach is ineffective. (n=387)	0	0	4.7	55.3	40.1
5. I am good at identifying officer safety risks during encounters with community members. (n=387)	0	0	2.3	53.2	44.4
6. I am good at de-escalating encounters with the public. (n=387)	0	0	8.8	57.4	33.9
7. I am aware of my own emotional state (i.e., having high emotions) during tense interactions. (n=387)	0	0.3	4.4	54.8	40.6
8. I have considerable ability to control the nature of public interactions to create positive outcomes. (n=387)	0	1.0	13.7	55.0	30.2
9. I feel confident when using my communication skills. (n=387)	0	0.3	4.9	45.7	49.1

SECTION 4: USING DE-ESCALATION SKILLS

	Never	Seldom	Half-the-time	Usually	Always
1. How often do you change your approach with a member of the public after you have determined those prior approaches are ineffective? (n=383)	0.3	3.1	12.8	61.4	22.5
2. How often do you deliberately wait to interact with a person in crisis who is not an imminent threat to assess the situation before taking action? (n=383)	3.7	14.1	21.4	46.0	14.9
3. When responding to a person in crisis with a second officer, how often do you assign contact and cover roles? (n=383)	9.1	22.7	14.9	33.7	19.6

4. When responding to a call for service for a person in crisis how often do you establish a backup plan? (n=383)	5.5	21.4	20.1	39.8	14.9
5. How often do you recognize your own emotional state (i.e., having high emotions) during your interactions with persons in crisis? (n=383)	1.0	3.7	7.3	46.7	41.3
6. How often do you consider your police powers before taking action during encounters with persons in crisis? (n=383)	1.3	7.0	10.7	33.2	47.8

SECTION 5: VIEWS ON PWCPD

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1. My supervisor looks out for the personal welfare of his/her subordinates. (n=381)	3.1	5.2	13.1	36.5	42.0
2. My supervisor's approach tends to discourage me from giving extra effort. (n=381)	28.6	40.4	16.8	9.4	4.7
3. My supervisor enforces employee workplace policies fairly and consistently. (n=381)	3.7	5.2	17.6	45.1	28.3
4. PWCPD first-line supervisors provide adequate tactical and strategic direction related to using force. (n=381)	3.1	5.2	23.1	42.5	26.0
5. When an officer does a particularly good job, command staff public recognize his or her performance. (n=381)	11.0	17.3	29.7	32.8	9.2
6. When an officer gets written up for a minor violation, he or she will be treated fairly. (n=381)	8.4	13.9	40.2	30.7	6.8
7. When an officer contributes to a team effort rather than look good individually, command staff will recognize it. (n=381)	10.0	21.0	38.6	24.4	6.0
8. The PWCPD protects its officers from unreasonable lawsuits and accusations. (n=381)	4.5	7.1	40.2	37.0	11.3
9. I'm usually calm and at ease when I'm working. (n=381)	1.8	7.3	21.5	46.7	22.6
10. Overall, this is a good agency to work for. (n=381)	1.0	3.7	19.4	51.7	24.1

11. A lot of the time, my job makes me very frustrated and angry. (n=381)	12.9	39.1	29.4	13.4	5.2
12. When I'm at work, I often feel tense or on edge. (n=381)	12.3	43.6	29.9	11.8	2.4
13. The jurisdiction that I work in is dangerous. (n=381)	3.9	12.1	42.5	30.7	10.8

SECTION 6: VIEWS ON PWCPD USE OF FORCE POLICY

PWCPD's use of force policy and/or reporting use of force policy…	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1….assists and directs officer decision-making. (n=378)	1.3	4.5	22.2	53.2	18.8
2….is effective in keeping me safe. (n=378)	3.2	10.3	32.3	41.8	12.4
3….is too restrictive. (n=378)	3.7	25.7	37.6	24.6	8.5
4….provides clear guidance for when force can and cannot be used. (n=378)	1.6	2.6	18.3	58.5	19.0
5….provides clear guidance regarding how to apply force in situations where it may be necessary. (n=378)	1.3	2.9	20.6	60.3	14.8
6….provides clear guidance for when a force report should be completed. (n=378)	1.1	4.5	22.2	53.4	18.8
7….provides for fair supervisory review of use of force reports. (n=378)	1.3	3.4	29.4	52.6	13.2
8….provides for fair investigations into complaints of excessive force. (n=378)	1.3	3.7	32.8	47.6	14.6
9….decreases the likelihood of potential community member injuries. (n=378)	1.9	8.5	33.6	45.0	11.0
10. …decreases the likelihood of potential officer injuries. (n=377)	5.6	17.5	39.0	30.0	8.0

SECTION 7: VIEWS ON TRAINING

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1. I consider myself "open" to using new training in my everyday work. (n=376)	0.3	0	7.2	58.5	34.0
2. Police officers receive a significant amount of training that is irrelevant to their work. (n=376)	6.1	29.5	27.9	25.8	10.6

3. It is important for police agencies to continually add innovative training. (n=376)	0	0.3	8.5	50.3	41.0
4. Training makes me more effective in my work. (n=376)	0	0.8	9.8	47.1	42.3
5. Officers can be trained to increase the likelihood of positive encounters with community members. (n=376)	0.8	3.7	19.1	46.8	29.5
6. Officers can be trained to improve their ability to de-escalate encounters with community members. (n=376)	0	0.5	13.0	54.0	32.4
7. Officers can be trained to improve their ability to identify officer safety risks in encounters with community members. (n=376)	0	0	7.4	55.1	37.5

SECTION 8: PERCEPTIONS OF VARIOUS TRAINING PROGRAMS

Training Topic #1: Non-lethal use of force weapons training and tactics

Have you trained on this topic in the last three years? (n=375) Yes: 94.4% No: 5.6%

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
This training increased my skills or knowledge. (n=374)	0	2.9	15.8	49.2	32.1
This training was directly applicable to my job. (n=374)	0.3	0.5	12.3	49.7	37.2
This topic should receive additional training. (n=374)	0.3	1.9	17.9	42.0	38.0

Training Topic #2: Defensive tactics

Have you trained on this topic in the last three years? (n=374) Yes: 97.9% No: 2.1%

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
This training increased my skills or knowledge. (n=374)	0.5	3.5	12.3	48.7	35.0
This training was directly applicable to my job. (n=374)	0.3	1.3	9.6	49.2	39.6
This topic should receive additional training. (n=374)	0.5	1.9	14.4	39.8	43.3

Training Topic #3: Crisis Intervention					
Have you trained on this topic in the last three years? (n=373)	Yes: 80.7%	No: 19.3%			
	Strongly Disagree	**Disagree**	**Neutral**	**Agree**	**Strongly Agree**
This training increased my skills or knowledge. (n=369)	3.3	4.9	23.3	43.6	24.9
This training was directly applicable to my job. (n=369)	1.9	3.8	20.9	43.9	29.5
This topic should receive additional training. (n=369)	3.8	5.1	28.5	33.6	29.0

Training Topic #4: De-Escalation					
Have you trained on this topic in the last three years? (n=373)	Yes: 88.7%	No: 11.3%			
	Strongly Disagree	**Disagree**	**Neutral**	**Agree**	**Strongly Agree**
This training increased my skills or knowledge. (n=369)	0.8	2.2	20.1	46.6	30.4
This training was directly applicable to my job.(n=369)	0.5	1.1	16.3	46.6	35.5
This topic should receive additional training. (n=371)	1.3	3.8	22.9	39.1	32.9

Training Topic #5: Cultural Diversity / Bias-free policing					
Have you trained on this topic in the last three years? (n=373)	Yes: 98.1%	No: 1.9%			
	Strongly Disagree	**Disagree**	**Neutral**	**Agree**	**Strongly Agree**
This training increased my skills or knowledge. (n=373)	9.9	16.1	24.1	31.4	18.5
This training was directly applicable to my job. (n=373)	7.0	5.9	24.4	41.0	21.7
This topic should receive additional training. (n=373)	11.5	13.9	32.2	26.5	15.8

Training Topic #6: Legitimacy and procedural justice					
Have you trained on this topic in the last three years? (n=372)	Yes: 76.6%		No: 23.4%		
	Strongly Disagree	**Disagree**	**Neutral**	**Agree**	**Strongly Agree**
This training increased my skills or knowledge. (n=364)	1.4	32.7	40.7	22.3	3.0
This training was directly applicable to my job. (n=364)	1.4	31.6	42.3	22.8	1.9
This topic should receive additional training. (n=366)	1.4	36.6	36.6	23.0	2.5

Training Topic #7: Interpersonal Communication					
Have you trained on this topic in the last three years? (n=372)	Yes: 72.8%		No: 27.2%		
	Strongly Disagree	**Disagree**	**Neutral**	**Agree**	**Strongly Agree**
This training increased my skills or knowledge. (n=365)	0.8	29.3	41.4	24.9	3.6
This training was directly applicable to my job. (n=365)	0.5	25.8	43.8	28.5	1.4
This topic should receive additional training. (n=369)	1.1	32.8	38.2	24.7	3.3

APPENDIX B - SUPERVISOR SURVEY

SECTION 1: PERCEPTIONS RELATED TO *SUPERVISING* OFFICER USE OF FORCE

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1. I can effectively supervise subordinates' use of force. (n=90)	0.0	2.2	7.8	67.8	22.2
2. I can effectively supervise subordinates' use of de-escalation. (n=90)	1.1	4.4	18.9	62.2	13.3
3. I can effectively coach subordinates' use of de-escalation skills. (n=90)	0.0	1.1	10.0	63.3	25.6
4. I have the necessary technology from my department to supervise my subordinates' use of de-escalation skills. (n=90)	1.1	3.3	13.3	64.4	17.8
5. I have sufficient time to supervise my subordinates' use of force. (n=90)	2.2	8.9	28.9	52.2	7.8
6. I receive sufficient training to supervise my officers' use of force. (n=90)	1.1	7.8	17.8	58.9	14.4
7. I need more support from my commanders to supervise my subordinates' use of de-escalation skills. (n=90)	11.1	44.4	28.9	13.3	2.2
8. It is difficult to supervise the use of force by my subordinate officers. (n=90)	6.7	66.7	17.8	7.8	1.1
9. It is difficult to supervise the use of de-escalation skills by my subordinate officers. (n=90)	10.0	62.2	21.1	5.6	1.1

SECTION 2: SUPERVISION ACTIVITIES RELATED TO USE OF FORCE AND DE-ESCALATION SKILLS

Please select how frequently you engage in the activities listed below.

	Never	Seldom	Sometimes	Often	Frequently

		(1 per month)	(2-3 times per month)	(1 per week)	(more than 2-3 times per week)
1. How frequently do you talk with your subordinate officers generally about use of force? (n=89)	5.6	19.1	27.0	39.3	9.0
2. How frequently do you talk with your subordinate officers generally about the use of de-escalation skills? (n=89)	7.9	18.0	40.4	25.8	7.9
3. How frequently do you directly observe your subordinate officers using de-escalation skills in the field? (n=89)	10.1	14.6	27.0	22.5	25.8
4. How frequently do you observe your subordinate officers using de-escalation skills during video review? (n=89)	12.4	10.1	21.3	24.7	31.5
5. How often do you have discussions with subordinates about their use of de-escalation skills during a specific incident? (n=89)	13.5	24.7	40.4	16.9	4.5
6. How frequently do you observe officers attempting to use less lethal tools as a de-escalation tactic? (n=89)	13.5	37.1	34.8	7.9	6.7
7. How often have you observed incidents handled by your subordinates where de-escalation skills were properly used, but were unsuccessful in achieving a positive resolution to an incident? (n=89)	11.2	33.7	33.7	14.6	6.7
8. How frequently do you counsel subordinates about not using de-escalation skills when they should have? (n=89)	32.6	65.2	2.2	0	0
9. How frequently do you document the use of de-escalation skills in use of force report narratives? (n=89)	16.9	30.3	29.2	15.7	7.9
10. How frequently do you document the use of de-escalation skills in	29.2	47.2	13.5	4.5	5.6

letters of commendation for subordinate officers? (n=89)					
11. How frequently do you document the use of de-escalation skills in some other way (excluding use of force reports and commendation letters)? (n=89)	38.2	37.1	19.1	2.2	3.4

SECTION 3: VIEWS ON PWCPD

Please indicate how strongly you agree with each of the following statements.

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1. My supervisor looks out for the personal welfare of his/her subordinates. (n=88)	3.4	3.4	12.5	52.3	28.4
2. My supervisor's approach tends to discourage me from giving extra effort. (n=88)	19.3	61.4	10.2	5.7	3.4
3. My supervisor enforces employee workplace policies fairly and consistently. (n=88)	5.7	2.3	6.8	60.2	25.0
4. PWCPD first-line supervisors provide adequate tactical and strategic direction related to using force. (n=88)	0	3.4	14.8	67.0	14.8
5. When an officer does a particularly good job, command staff publicly recognize his or her performance. (n=88)	3.4	21.6	20.5	48.9	5.7
6. When an officer gets written up for a minor violation, he or she will be treated fairly. (n=88)	4.5	12.5	26.1	51.1	5.7
7. When an officer contributes to a team effort rather than look good individually, command staff will recognize it. (n=88)	6.8	25.0	34.1	30.7	3.4
8. The PWCPD protects its officers from unreasonable lawsuits and accusations. (n=88)	3.4	2.3	22.7	56.8	14.8
9. I'm usually calm and at ease when I'm working. (n=88)	1.1	11.4	28.4	45.5	13.6
10. Overall, this is a good agency to work for. (n=88)	1.1	3.4	12.5	60.2	22.7

11. A lot of the time, my job makes me very frustrated and angry. (n=88)	4.5	34.1	26.1	27.3	8.0
12. When I'm at work, I often feel tense or on edge. (n=88)	9.1	35.2	26.1	23.9	5.7
13. The jurisdiction that I work in is dangerous. (n=88)	1.1	8.0	28.4	48.9	13.6

SECTION 4: PERCEPTIONS RELATED TO *USING* DE-ESCALATION SKILLS

Please indicate how much you agree with the statements listed below.

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1. I am confident using de-escalation skills during my encounters with members of the public. (n=87)	0	1.1	8.0	62.1	28.7
2. I am confident using de-escalation skills during interactions with my subordinate officers. (n=87)	0	1.1	3.4	70.1	25.3
3. I have the necessary less-lethal equipment from my department to de-escalate situations. (n=87)	2.3	2.3	23.0	60.9	11.5
4. I receive sufficient training in de-escalation. (n=87)	1.1	4.6	9.2	66.7	18.4
5. I receive the necessary support from my supervisors to use de-escalation skills. (n=87)	0	1.1	9.2	69.0	20.7
6. When officers use de-escalation skills properly, encounters with members of the public will often result in a positive resolution. (n=87)	1.1	6.9	26.4	54.0	11.5
7. Some encounters with members of the public require additional less-lethal equipment than is currently available. (n=87)	1.1	48.3	31.0	16.1	3.4
8. Training supervisors in de-escalation skills is also useful for interacting with and managing subordinates. (n=87)	1.1	3.4	10.3	58.6	26.4

SECTION 5: PERCEIVED TRAINING NEEDS

The officers that I supervise would benefit from…	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1. …refresher training on de-escalation. (n=87)	2.3	11.5	18.4	57.5	10.3
2. …new training on handling non-cooperative members of the public. (n=87)	1.1	10.3	16.1	60.9	11.5
3. …additional scenario-based practice on de-escalation. (n=87)	1.1	8.0	20.7	56.3	13.8
4. …additional scenario-based practice on response to resistance from members of the public. (n=87)	1.1	5.7	17.2	63.2	12.6
5. …virtual/simulator practice on de-escalation. (n=87)	4.6	16.1	21.8	47.1	10.3
6. …virtual/simulator practice on response to resistance from members of the public. (n=87)	4.6	9.2	21.8	49.4	14.9
7. …clearer policy guidance on use of force. (n=87)	3.4	13.8	29.9	36.8	16.1
8. …firearms training involving shoot/don't shoot scenarios. (n=87)	0	0	12.6	67.8	19.5
9. …nonlethal use of force weapons training. (n=87)	1.1	2.3	16.1	64.4	16.1
10. …defensive tactics. (n=87)	1.1	1.1	6.9	73.6	17.2
11. …crisis intervention. (n=87)	5.7	5.7	17.2	56.3	14.9
12. …cultural diversity/ bias-free policing. (n=87)	6.9	20.7	35.6	31.0	5.7
13. …interpersonal communication. (n=87)	1.1	5.7	23.0	51.7	18.4
14. …other trainings: _____ (list)					

SECTION 6: SELF-REPORTED SUPERVISOR ACTIVITIES

Please select how frequently you engage in the activities listed below.					
	Never	Seldom	Sometimes	Often	Frequently (more than 2-

		(1 per month)	(2-3 times per month)	(1 per week)	3 times per week)
1. How frequently do you go on your own initiative to incidents that your subordinate officers are handling? (n=87)	4.6	3.4	10.3	28.7	52.9
2. How frequently do your officers ask you to come to the incidents they are handling? (n=87)	6.9	24.1	18.4	29.9	20.7
3. How frequently do you conduct video reviews of incidents handled by your subordinate officers? (n=87)	16.1	20.7	33.3	20.7	9.2
4. When you are on the scene of an incident with your officers, how frequently do you tell them how to handle the incident? (n=87)	10.3	50.6	19.5	17.2	2.3
5. When you are on the scene of an incident with your officers, how frequently do you take it over and handle the incident yourself? (n=87)	50.6	39.1	8.0	1.1	1.1
6. How frequently do you talk with your officers about their performance in incidents that you observe? (n=87)	5.7	10.3	26.4	37.9	19.5

SECTION 7: PERCEPTIONS OF SUPERVISOR FUNCTIONS

Below is a list of fourteen functions that first-line supervisors might be expected to perform. Please select the response that best represents your opinion of how important each function is.

	Very Unimportant	Unimportant	Neutral	Important	Very Important
1. Disseminating information about departmental directives (n=86)	0	0	4.7	30.2	65.1
2. Helping officers develop sound judgement (n=86)	0	0	1.2	23.3	75.6
3. Protecting officers from unfair criticism or punishment (n=86)	0	0	1.2	19.8	79.1
4. Ensuring use of force by officers meets policy and training standards (n=86)	0	0	1.2	22.1	76.7

5. Giving officers feedback on their performance (n=86)	0	0	0	23.3	76.7
6. Distributing the workload fairly (n=86)	0	0	1.2	29.1	69.8
7. Making superior officers aware of problems on the street (n=86)	0	0	3.5	39.5	57.0
8. Making sure that reports are properly completed (n=86)	0	0	1.2	38.4	60.5
9. Enforcing department rules and regulations (n=86)	0	0	4.7	34.9	60.5
10. Providing input on department policy (n=87)	1.2	1.2	9.3	37.2	51.2
11. Ensuring fair and equal treatment of members of the public (n=87)	0	0	1.2	19.8	79.1
12. Listening or discussing concerns officers may have on the job or in their personal life (n=87)	0	0	1.2	19.8	79.1
13. Motivating officers to perform organizational goals (n=87)	0	0	5.8	40.7	53.5
14. Providing a personal example for officers to emulate (n=87)	0	0	3.5	20.9	75.6

FREE RESPONSE OPTIONS FOR "OTHER" TRAINING SUBORDINATE OFFICERS MAY BENEFIT FROM

ACTIVE VIOLENCE, OFFICER-INVOLVED SHOOTINGS
any of the above-listed training is beneficial regardless of how much or how often it is taught. Continuous training opportunities is critical for successful resolution of potential response to resistance encounters regardless of how many times Officers complete it. Additional training is always beneficial regardless of how often it is completed.

Any scenario-based training that effectively and accurately replicates the realism of a police encounter with live role players is more beneficial than anything virtual.
Any scenario-based training the department can provide and allot time for.
Anything other than mandatory surveys.
Anything we deal with that is super important we get right the first time, but may not see often.
CIT
Further Legal Training, Better FTO training
Ground fighting, intense decision making scenarios.
Learning how to speak to people and not like a robot. But also not have command staff look at them sideways when do talk like the victim
Pre-attack indicators from suspects, report and document composition
Proactive Policing, Towing cars for certain violations / drive on suspended, Traffic stop on non-compliant occupants
Reading Body Language and the Dangers.
Realistic De Escalation Training, Identifying when to use de escalation and when to use force, de escalation and its affect on officer safety
scenario based training
Signs of preassault indicators

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