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The Fourth District Police Station Plan

Zhaokai Liu Virginia Commonwealth University

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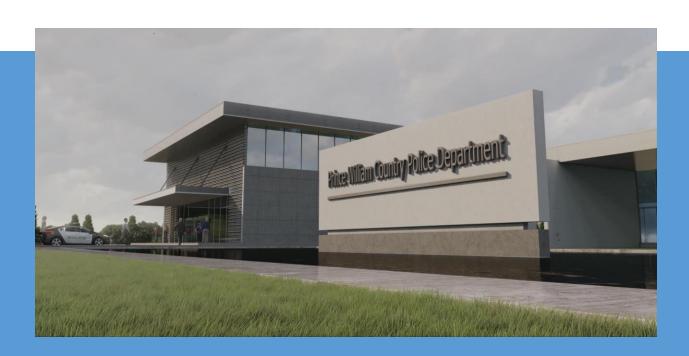
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The Fourth District Police Station Plan



Zhaokai Liu

Master of Urban & Regional Planning Program

L. Douglas Wilder School of Government & Public Affairs,

Virginia Commonwealth University

Spring 2018

The Fourth District Police Station Plan

Prepared for:

Prince William County Police Department,
Prince William County, VA



Prepared by:

Zhaokai Liu

Master of Urban & Regional Planning Program

L. Douglas Wilder School of Government and Public Affairs

Virginia Commonwealth University

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L. Douglas Wilder School of Government and Public Affairs

Professional Panel members:

Thomas J. Pulaski

James C. Smither, ASLA

Damian Pitt, PhD

Administrative Division Chief

Primary Content Advisor

Professional Plan Coordinator

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Dr. Damian Pitt

Professor James Smither

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Executive Summary

Prince William County is a community of choice with a strong, diverse economic base, where individuals and families choose to live, work and play, and businesses choose to locate. Residents and businesses also expect a high level of police service for their community. However, this mission cannot be achieved with inadequate police facilities and insufficient police officers.

The Fourth District Police Station Plan is designed to fulfill the need of law enforcement growth in Prince William County as compatible with the Prince William County 2008 Comprehensive Plan. The population in the County has increased at a rate of 43% since 2000 (Department of Economic Development, 2018). Based on the information from United States Census Bureau, the total population in Prince William County was 455,210 in 2016 (U.S. Census, 2017). Currently, there is a total of 673 law enforcement officers (Prince William County Police Department, 2018). It is anticipated that the number of law enforcement officers will be 850 by the year 2030 (Pulaski, 2018).

Currently, there are three police stations in the county (See Figure 1). The police stations will no longer be suitable for their occupants by the year 2030, which could result in lack of storage space and poor working conditions. Therefore, the addition of one police station is necessary in order to provide adequate space for the officers.

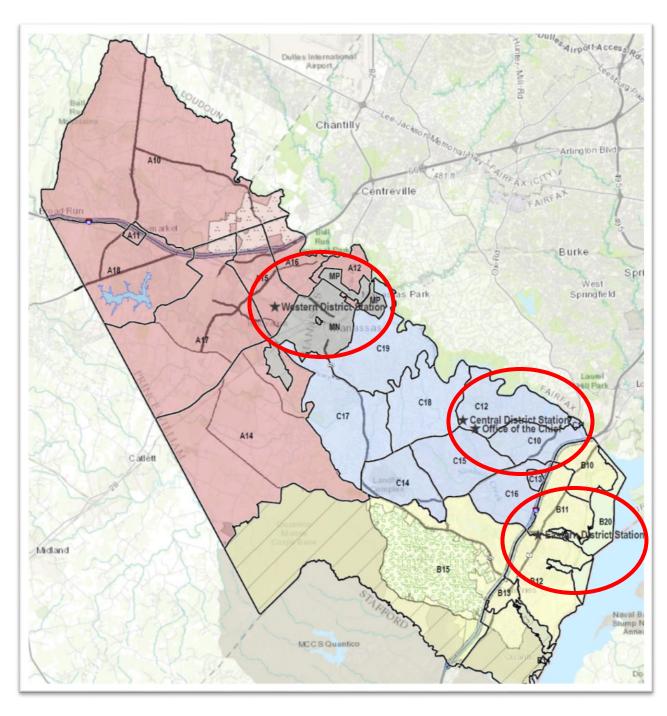


Figure 2 Current Three Police Stations in Prince William County
(Source: Prince William County Police Department)

Locating future police facilities can maximize public accessibility and police visibility, as well as permit an effective, timely response to citizen needs and concerns. Designing a citizen-friendly police station can improve community policing which could mutually identify and resolve crime issues that positively impact the quality of community life.

A successful police station design should embrace safety and security without the fortress look. Poorly designed fortified architecture creates physical and psychological barriers that prevent the people's access to their government and public spaces (See Figure 2). The J. Edgar Hoover Building is a good example of blocky, concrete and fortified law enforcement building; the first level resembled a castle wall (See Figure 3). The Leesburg Police Station is a good example of concreted law enforcement building (See Figure 4).



Figure 2 the Former Eighth Precinct Police Station in Detroit, Michigan

(Source: Mike Sonenberg)



Figure 3 the J. Edgar Hoover Building, F.B.I. Headquarters in Washington, D.C. (Source: Aaron Griffin)



Figure 4 the Leesburg Police Station in Virginia

(Source: Leesburg Police Department)

This plan is divided into two parts. The first is to locate potential police stations in the Haymarket area of Prince William County by using a Geographic Information System. The second part of the plan is to develop a list of design guidelines in written and graphic form based on the examples and best practices from the U.S. A total of six different designs of current police station in the U.S. will be illustrated in the plan. In addition, a massing model built with Google Sketch Up and Lubmion will illustrate the benefits of the potential police station for the best potential site.

Introduction

Purpose of Plan:

In order to continue maintaining the satisfaction of citizens and address the annual increases in population, the department had been hiring additional officers each year.

According to the Prince William County 2008 Comprehensive Plan, a total of four District Police Stations in the year 2030 were projected to be needed by the existing and projected population, as well as the rate of growth for the police department and police workload. The data was based on the ration of 250 square feet per sworn officer. However, the Fourth District Police Station currently is in a concept stage with no specific site nor defined conceptual plan. Based on the Comprehensive Plan, the ideal site for the Fourth District Police Station is in the Haymarket area of Prince William County (See Figure 5).

The Fourth District Police Station Plan maps out potential police station sites in the Haymarket area of the County by using Geographic Information System (GIS). The GIS can process and include important aspects of design such as: public visibility and accessibility, traffic and roadway considerations, patrol beat locations and workload, building adjacencies, developable land and related constraints and opportunities.

Establishing strong relationships among officers and the community members they serve has never been more important. The new police station should be designed in such a way that it conveys a message of community integration. The Fourth District Police Station will be expected to welcome community members with open arms and reflect the best of the community's values and expectations. The challenges facing law enforcement in the 21st Century are numerous and varied. Concerns include but are not limited to: community-police relations, mass shootings, people with mental illness, gang related crimes, rapid changes in technology, opioid epidemic, illegal immigration and challenges in keeping up with capital investment to include police facilities.

Generally speaking, citizens of Prince William County are very satisfied with the performance of their County Government based on the results of the 2016 Community Survey. In the survey, 94 percent of respondents indicated that they feel safe in their neighborhood and when they visit commercial areas (Pulaski, 2018). Quick police response and courteous police officers led to an overall 94 percent approval rating for the Police Department.

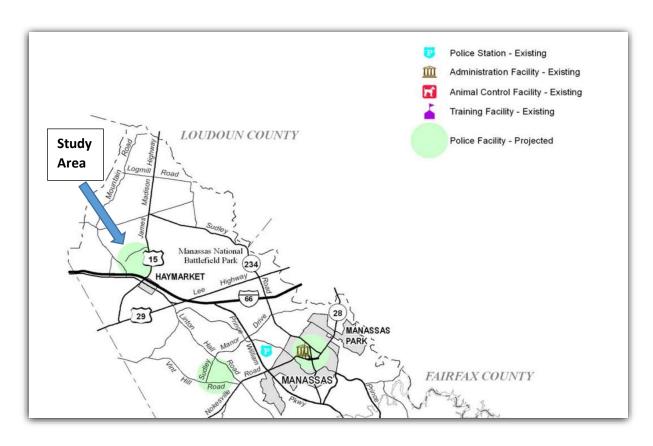


Figure 5 Study Area is Located Near the Town of Haymarket

(Source: Prince William County Comprehensive Plan)

The Client:

The client for <u>The Fourth District Police Station Plan</u> is the Prince William County Police Department. The mission of the Department is to enhance the quality of life by providing police services through shared responsibility with the public. The members of this department, which include both sworn police officers and civilian employees, make the mission possible by embodying their values in both their professional and personal lives, and through accountability to the Prince William County citizens (Prince William County Police Department 2018).

The Prince William County Police Department is currently divided into three districts: Eastern District, Central District and Western District, with a total of 673 Police Officers who are protecting and serving approximately 450,000 residents in 348 square miles of the County.

The Police Department has been operating with only two District Stations for many years. The new Central District Station opened at the beginning of 2018. The districts operate three patrol shifts which are days, evenings and midnights. It provides 24-hour police coverage, 7 days a week, 365 days a year, to the citizens and visitors of Prince William County.

Background

Plan Context

There are approximately 450,000 residents in Prince William County, which is the second largest county in the Commonwealth of Virginia. It should be noted that the population has increased 43% from 280,813 in 2000 to 402,002 in 2010(Department of Economic Development, 2018). Most importantly, the population growth is anticipated to grow to 559,000 residents by 2040 (See Figure 6).

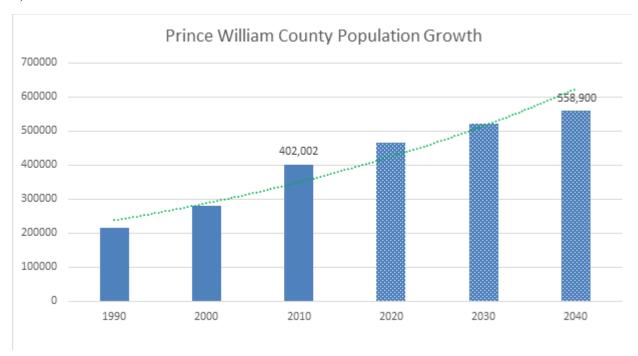


Figure 6 Prince William County Population Growth from 1990 to 2040

(Source: Department of Economic Development, Prince William County)

According to the Prince William County 2008 Comprehensive Plan, it is anticipated that the Police Department will have 850 police officers and 215 civilian employees by 2030, making a total of 1,056 employees (Pulaski, 2018). The ratio between police officers per 1,000 residents is expected to be 2.0 in 2030, which meets the primary level of service standards in Prince William County.

There is a total of 871 staff members, which includes 673 police officers, in the fiscal year of 2018. Multiple factors indicated that Police Department facilities will be very insufficient by 2030, with only three Police District Stations in operation. The department is constantly growing; thus, the goal is to meet the demands of this constant growth by providing customer-focused facility infrastructure to satisfy the needs of police department staff and of residents of Prince William County.

The Fourth District Police Station plan is firmly rooted in the mission of the Prince William County Police Department: to enhance the quality of life by providing police services through shared responsibility with the public.

A well-designed, community-friendly police station can bring the police and community together. The architecture of police stations can sometimes leave a negative impression if the element of community integration is missing (Gang, 2015). Involving the community in the design process of the Fourth District Police Station Plan can be an effective way to ensure that project development is transparent, obtains true community suggestions and results in an integrated public asset. The Fourth District Police Station could be a more community centered building. A community centered building could strengthen and also provide a lot of opportunity for interaction between police and community members that are not defined by law enforcements.

In today's society, police officers don't just solve crimes -- they provide proactive, community-based programs. Many outreach programs involve police officers in schools, places of worship and area businesses. In addition, other outreach programs exist to address domestic violence, fraud and cyber-crime, as well as neighborhood safety through Neighborhood Watch educational programs.

Public trust and satisfaction with police services can continue to strengthen with police facilities designed in a meaningful way to include features that promote accessibility, community engagement and safety. The Fourth District Police Station plan can make the police force more community-focused and make the building more accessible as a service and institution. The plan will ensure that the residents and visitors in the county would feel comfortable coming in to the police station to liaise with the officers.

Theory of Planning

The theory of planning that frames this plan is the Rational Planning Model. The theory and practice of planning has evolved since the mid-1800s with the objective of meeting the needs of a changing society. The Rational Planning Model consists of four basic steps: goal setting; identification of policy alternatives; evaluation of means with respect to ends; and implementation of decisions (Hudson 1979). The rational planning model is used in designing neighborhoods, cities and regions, which is ideal for the Fourth District Police Station Plan. Alternative plans will be provided if stakeholders such as local residents as well as business owners have any concerns of the proposed project.

The rational planning model is guiding the process of realizing problems, establishing and evaluating planning criteria, creating alternatives, implementing the alternatives, and monitoring the process of the alternatives to this project.

Theory in Planning

The theories of the Fourth District Police Station Plan fall under the umbrella of Pre-New Urbanism. The theories of this project are explained in the following paragraphs.

A community-oriented police station can build productive relationships between residents, officers, and local officials that are leading to future investments in the neighborhood. We know that what matters in a building or a town is not its outward shape, its physical geometry alone, but the events that happen there (Alexander, 1979). This plan proposes reorienting police stations

toward local communities to become sites of social connection where police officers and neighborhood residents can find many opportunities to interact in a non-enforcement context. The more life-giving patterns there are in a building, the more beautiful it seems (Alexander, 1979). The exterior design of the building and shape might change, depending on the different environments of the potential sites, however the key for this plan is to create a police station that is community-friendly.

Christopher Alexander introduced the idea to provide a language for building and planning. Alexander explained that the elements of this language are entities called patterns in his book A Pattern Language. A total of 253 patterns together form a language. They are capable of generating a million buildings, paths, parks, workshops, or gardens. He stated that these patterns can be used to generate an almost unimaginably large number of possible different smaller languages, for all the different projects. Alexander goes into great detail on how to achieve a good architectural design of public buildings. He reinforces the importance of activity nodes as one of the pattern forms. Kevin Lynch refers to these nodes as strategic focus points for orientation like squares and junctions in his book *The Image of the City*. Alexander points out that community facilities such as fire stations, hospitals and police stations should not be scattered individually throughout the county, as they do nothing for the life of the county (Alexander, 1977). The theory explains how public facilities should be grouped according to their functions, so they can support each other. Well-grouped public facilities can function as a node as well. The node is the key to creating these concentrations of people in a community. With all pedestrian and vehicular movement in the community organized to pass through the node, tasks can be completed more efficiently.

Alexander also describes that local public facility would contain two basic features:

- 1. It is community territory for the group it serves, it is made in a way which invites people in for service, spontaneously, to debate policy, and the open space around the building is shaped to sustain people gathering and lingering (Alexander, 1977)
- 2. It is located at the heart of the local community and is within walking distance of everyone it serves (Alexander, 1977).

The Fourth District Plan needs to balance the two basic features as Alexander describes above.

Alexander's theory explains how common land works. He defines that without common land, no social system can survive. There are two specific social functions for common land. First, the land makes it possible for people to feel comfortable outside their buildings and their private territory, therefore allowing them to feel connected to the large social system – though not necessarily to any specific neighbor. Second, common land acts as a meeting place for people. Alexander also discusses other related patterns such as building complex, position of the main building, parking, number of building stories, and site repair. These patterns working together will create a unique building design for The Fourth District Police Station Plan. We can reimagine the isolated fortresses of police district stations as welcoming community centers instead.

A good architectural design of a public building can be accomplished in many ways. In his book *The Smart Growth Manual*, Andres Duany believes that public buildings should physically

embody the highest aspiration of the people and their most valued institution. Public buildings should be placed on prominent sites that reinforce the importance of their role in the community (Duany, 2010). The Fourth District Police Station Plan can use this approach to design a building whose architecture sets it apart from more conventional private buildings. This outcome is best achieved by incorporating a more subdued and harmonious architectural vocabulary that does not call for undue attention (Duany, 2010). Therefore, the Fourth District Police Station should be encouraged to take on an appropriately communicative form.

Precedent Plans

One precedent plan that serves as an example is the *Concept Design for a Combined Police Facility* & *Parking Garage Orchard Street Lot, Dover, NH* (See Figure 7). The Dover Police Department is located on 46 Chestnut Street in Dover, NH (See Figure 8). The police facility is being planned at 31,169 square feet. The building will feature a full basement, two occupied levels above ground, and a mechanical penthouse level. Primary access by police officers and staff is through the parking garage at the basement level. The new police facility is being designed to facilitate public access and face to face contact of Police Staff with citizens. This plan demonstrates the process of spatial needs assessment and site data analysis. The proposed design accomplished its objectives by identifying three viable and strong site candidates for the proposed Dove Police Department Headquarters, based on the specific values for ten criteria such as zoning, site size, and vehicular/pedestrian access and so on. Therefore, the Orchard Street property is the favored site.



Figure 7 Site Plan with Critical Dimensions

(Source: Concept Design for a Combined Police Facility & Parking Garage Orchard Street Lot, Dover, NH)



Figure 8 Dover Police Department Bird's Eye View

(Source: Google Maps)

The second precedent plan is the *Salem Police Station* conducted by the University of Oregon (See Figure 9). The Salem Police Station was located in the basement of the Civic Center at 585 Liberty Street SE in Salem, OR. The facility was intended to be temporary. It had poor working conditions, inefficient circulation and lack of storage space. The plan was to create an atmosphere reflective of the police officers' positive public standing, as well as to provide adequate space for the officers. It has a total of 24 design ideas for the new Salem Police Station. All the designs share one objective, which is to express the connection between law enforcement and the public by providing a variety of safe public spaces. The Salem Police Station plan provides a guideline in developing community and public spaces; creating a "front door" for the site and ensuring adequate parking for the public, employees and police for this project.



Figure 9 Scenario F.1 Looking East across Plaza / East façade

(Source: Salem Police Station)

American architect and MacArthur Fellow Jeanne Gang conducted a very unique precedent plan. In her project *Polis Station*, Gang demonstrated the power of a public basketball court as being

able to change the way people relate to local police A half public basketball court was built right next to the West 10th District Police Station in North Lawndale, Chicago in 2015 (See Figure 10). The intention was to draw police officers onto the court to shoot hoops with young men and women they might otherwise never meet (See Figure 11).

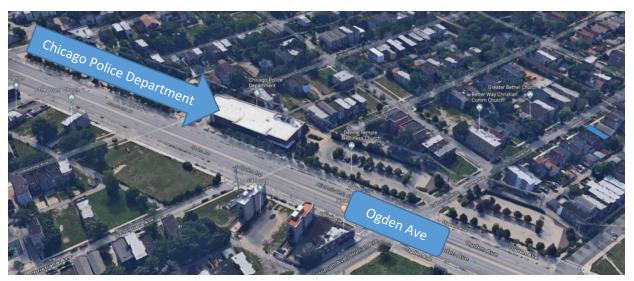


Figure 10 Chicago Police Department Bird's Eye Persepctive

(Source: Google Map)



Figure 11 Basketball Court

(Source: Studio Gang)

Her vision of the Polis Station Proposal was that "better police precincts could house a barber shop, a garden, a gym, and lounges with free Wi-Fi—all designed to draw community members to hang out in stations and eventually build friendlier and more trusting relationships with the cops sworn to protect them" (Gang, 2015). This was after Gang discovered that the project committee's top recommendation stressed the need to re-establish trust and mutual respect between law

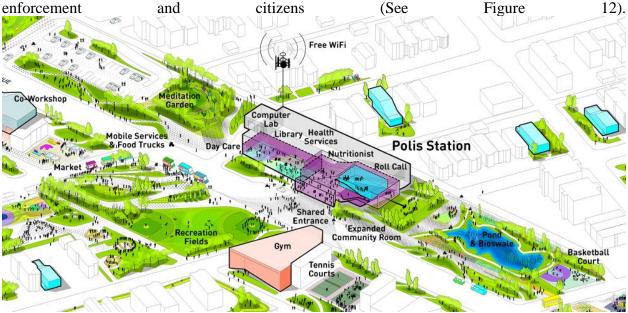


Figure 12 Polis Station

(Source: Station Studio Gang)

The Fourth District Police Station Plan will be planned with creating sites of social connection where police officers and neighborhood residents can find many opportunities to interact in non-enforcement situations. Gang's plan proved that if we look at the architecture alone, there are ways design can help improve the relationship between community members and police.

Best Practice

Moving from planning theories to best practice, The Federal Emergency Management Agency (FEMA) published the Continuity of Operations (COOP) as defined in the National Continuity Policy Implementation Plan. It is an effort within individual executive departments and agencies to ensure that Primary Mission Essential Functions (PMEFs) continue to be performed during a wide range of emergencies, including localized acts of nature, accidents and technological or attack-related emergencies (FEMA, 2017). It can be used as federal guidelines for planning, designing, and maintaining the Fourth District Police Station.

The Continuity Plan could be activated in response to a wide range of events or situations such as fire in the building, natural disaster, threat or terrorist attack. Officer safety is always the primary concern for every new police station being built. Everything from advanced metal

detection to bullet-resistant glass and fiber glass to sophisticated access control systems can be utilized for better protection. These guidelines will be considered in the recommendation section that help shape the desired outcomes of the project.

It is important to acknowledge that there is a delicate balance when reviewing design criteria, such as the amount of glass, large open areas, etc. and weighing that against occupant safety and security. Building materials that are capable of withstanding high winds and severe storms are also critical factors to consider when designing the new police station. The Fourth District Police Station Plan will make the station open and inviting while protecting the officers inside.

Research Plan

It is clear that the public uses police stations for a wide variety of purposes, such as reporting serious crimes and engaging in crime prevention.

The Fourth Police District Police Station Plan is designed to serve, connect and protect local residents and visitors. The plan will address a list of concerns that require further investigation before locating a potential site and designing a police station. These concerns include, but are not limited to:

- Where are the potential sites for the Fourth District Police Station?
- What are the zoning codes for the study area?
- Are there any examples of citizen friendly police stations in the U.S.?
- What does the study area consist of? (Apartments, townhouses, small businesses, etc.)
- What is the diameter of the building size?
- Will residents interact more with officers if there is a public space next to the police station?
- Have customer, civilian employee, and officer surveys been completed to document the needs of a new police station?
- How can we embrace safety and security without the fortress look?
- What are the important criteria for designing the new police station? (Visibility, aesthetic of the building, protection of the building, etc.)
- What are the top site selection criteria?

Source of Information:

Questions will be answered with a variety of data and collection methods. Primary potential sources of information that will be collected in order to answer the research questions include the following:

- Visits to potential police station sites
- Internet-based survey for local residents, including police officers
- Desk-based research into best practice in design for police stations in the U.S.
- Case study of successfully designed public buildings and police stations in the U.S.

Secondary Sources include:

- Road maps of the study area
- U.S. Census for population projection
- Prince William County Comprehensive Plan 2030
- Prince William County Comprehensive Plan 2008
- Police Records

Documents from the Federal Emergency Management Agency can be used as guidelines when a critical facility is designed, such as police stations. The functions that they perform are the most significant components of the system that protect the health, safety, and well-being of a community at risk.

Methods:

The Geographic Information System (GIS) can be a great tool to analyze and evaluate the data gathered. Police Departments already use GIS for mapping crime, identifying crime hot spots, assigning officers and profiling offenders. One of the first objectives for this project is to locate possible police station sites, based on the Prince William County suitability standards for police facilities as well as the online survey results from the overall rating of the criteria.

GIS map layers can be located from the GIS Division from Prince William County. The GIS map layers include but are not limited to: streets, roads parcels, topography, jurisdictions, hospitals, county properties, topography and police stations. While there are many approaches to developing the new police station, a total of six different designs of current police stations from the U.S. will be illustrated based on the theories from *Pattern Language*, *The Smart Growth Manual* and *Best Practice*.

Each of the designs will have its own unique strength, which means different designs will address different concerns. The six site designs with different attribute functions will be rated by the police officers and local residents in the survey.

The Fourth District Police Station Plan will significantly impact the lives of residents in the neighborhood near the town of Haymarket, as well as police officers in Prince William County. Therefore, local residents and police officers will be given the opportunity to provide opinions and visions.

Online surveying is one of the most widely utilized survey methods, as sending email questionnaires and other online questionnaires is more affordable than traditional face to face surveys. The online Google Form surveys will be created for both officers and residents, however the residents' survey will have additional questions that are focusing on police services. The residents' survey will be distributed by residents of the Virginia Oaks and Yorkshire Acres Subdivisions in Prince William County. The survey for police officers will be distributed within the Police Department. The major advantage of this qualitative research is that it provides useful information which the quantified surveys cannot. It will ensure that the data directly targets the

project's topic. Once the data is gathered, the analysis result will be used to create design guidelines for the new police station.

Google SketchUp will be used to build a massing model. Then the model will be exported from SketchUp to Lumion in order to build a 3D environment. The model will illustrate a new design of a police station that officers and other employees feel safe working inside, without the fortress look.

Research and Data

Existing Police Stations

Currently, there are three police stations in Prince William County. The first police station, Eastern District Police District Station, opened in 1996 (See Figure 13). It is located at 15948 Donald Curtis Drive in Woodbridge, Virginia 22191 (See Figure 14). The existing Eastern Police Station has more than 104 police officers and 10 civilian staff members. The Eastern District Police Station covers 101 square miles of the county, servicing the communities of North Woodbridge, Dumfries, Montclair, Triangle and the Town of Quantico. The total site size of the Eastern Police District Station can be calculated by the GIS software and measures 13.85 acres (See Figure 15). However, both the Eastern District Police Station and Prince William County Department of Social Services share one giant parking lot for public usage.



Figure 13 Eastern District Police Station, Main Entrance

(Source: Prince William County Police Department)

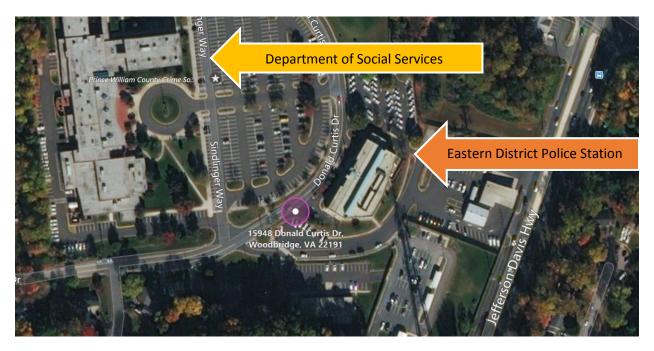


Figure 14 Easter District Police Station

(Source: Google Map)



Figure 15 Easter District Police Station 13.58 Acres. Area covered in yellow represents the site size of the Eastern Police Station. Area Covered in blue represent the site size of the Department of Social Service.

(Source: Prince William County GIS Data February 2018)

Western District Police Station is located at 8900 Freedom Center Boulevard in Manassas, Virginia 20110. (See Figure 16). The Western Station has been operating since 2006 and serving the communities of Haymarket, Gainesville, Broad Run, Catharpin, Bristow, Nokesville, Yorkshire and sections of Manassas (See Figure 17). Currently, more than 130 officers and 6

civilian staff protect and serve 169 square miles of County. The total site size of the Western Police District Station is 20.62 acres as calculated by the GIS software (See Figure 18). The 20.62 acres do not include the adjacent county property that had been operating as Molinari Juvenile Shelter.



Figure 16 Western District Police Station, Main Entrance

(Source: Prince William County Police Department)



Figure 17 Western District Police Station

(Source: Google Map)



Figure 18 Western District Police Station 20.62 acres. Areas covered in yellow represent the site size of the Western District Police Station. Areas Covered in blue represents they are owned by the county.

(Source: Prince William County GIS Data February 2018)

The new Central District Police Station opened at the beginning of 2018. The facility provides police services to the mid-County area, primarily the Dale City, Lake Ridge and Davis Ford Road corridor. It is located at 5036 Davis Ford Road in Woodbridge, Virginia 22192 (See Figure

19). There is a total of 114 officers and civilian staff members serving 68 square miles of the county. The facility is built on 83.63 acres of county-owned property with a new fire station next to it (See Figure 20 and 21). The station will also include offices for police chief, public information, detectives from violent crime and a financial services division.



Figure 19 Central District Police Station, Main Entrance

(Source: Prince William County Police Department)



Figure 20 Central District Police Station

(Source: Google Map)



Figure 21 Central District Police Station 83.63 acres. Areas covered in blue represent they are owned by the county. Area covered in yellow represents the site size of the Central Police Station.

(Source: Prince William County GIS February 2018)

Site Selection

The Prince William County 2008 Comprehensive Plan suggests that the minimum site size for district police facilities is 7 acres (See Figure 22). However, all of the existing police station sites in Prince William County are greater than 7 acres. The Eastern District Police Station and Central District Station share one common factor, which is that they are sharing county property with other facilities such as the fire station and Department of Social Services. The Western District Police Station is the only station built without any large public facility next to it.

SITE LOCATION AND SUITABILITY STANDARDS FOR POLICE FACILITIES

Site Selection	District Police	Satellite Field	Administrative	Animal Control	Training Facilities	Source
			Support		racilities	
Standards	Stations	Offices	Facilities	Bureau		
Minimum	7 acres	Variable	Variable	Variable	Variable	PWC
Site Size						Police
Minimum	50,000 sq.	Variable	Variable	11,000 sq.	Variable	PWC
Building	ft.			ft.		Police
Size						
Square	250 sq. ft.	1,500 sq.	258 sq. ft. per	40 sq. ft.	254 sq. ft.	PWC
Foot	per sworn	ft.	sworn officer	per 1,000	per 1,000	Police
Needs	officer			residents	residents	
Standards						

- Stations shall be strategically located to provide geographically dispersed service countywide
- Stations should be located near, but not at, intersections or arterial and/or collector highways.
- Building and site location should include target hardened areas for safe egress/ingress of the public, the police, and individuals in custody.
- Where possible, stations should not be located next to natural or man-made barriers, such as freeways, extreme topography, and railroad lines.
- Noise, light, and police activity impacts on neighboring uses should be considered and mitigated through site design.

Figure 22 Police Facilities Standards

(Source: Prince William County Comprehensive Plan 2008)

For the purpose of this project, the site size of Western District Police Station will be used as a standard to locate vacant property for the Fourth District Police Station in the study area (See Figure 23). A two-mile radius will be drawn between James Madison Hwy and I-66 in order to match the comprehensive plan. Vacant property will be selected that is greater than 20 acres in size. There are five sites that are selected which are greater than 20 acres (See Figure 24).

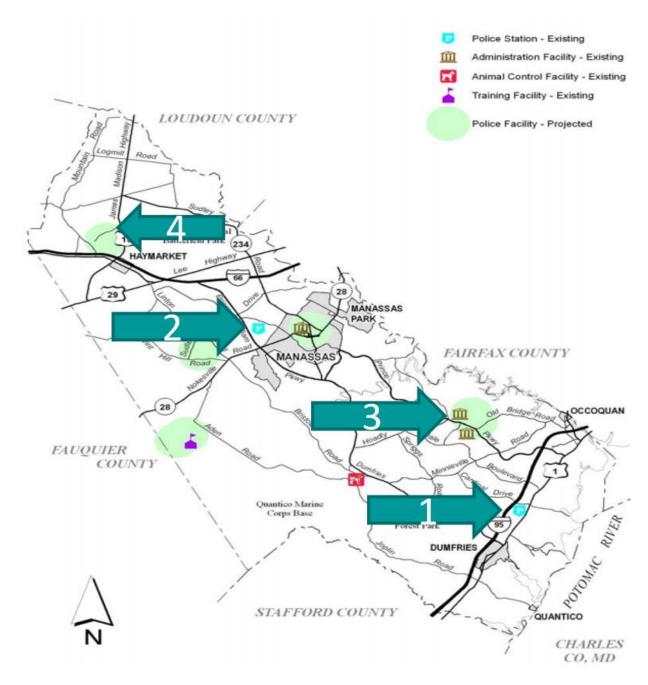


Figure 23 Current Police Station Locations and Study Area. 1. Eastern District Police Station. 2. Western District Police Station. 3. Central District Police Station. 4. Study Area.

(Source: Prince William County Comprehensive Plan 2008)

Contour Lines

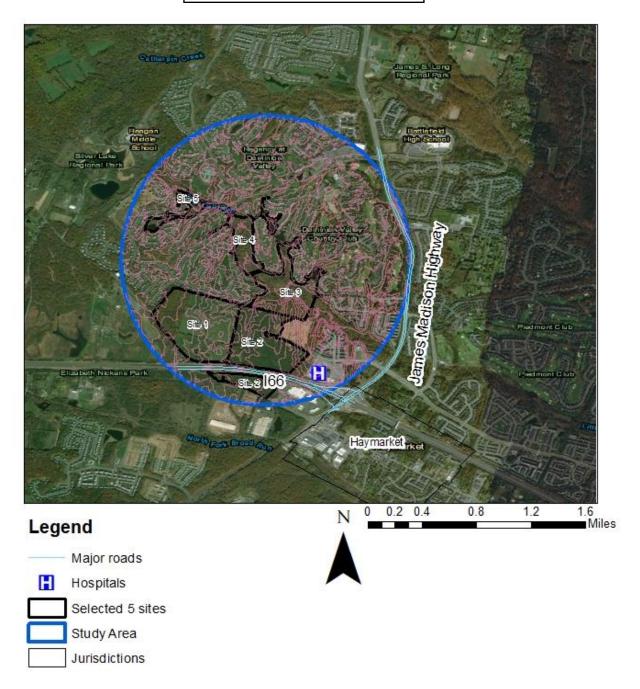


Figure 24 Contour Lines at 4 Feet Interval

(Source Prince William County GIS Data February 2018)

The size and shape of selected property varies. Site 5 will be eliminated first, due to its odd shape. Figure 20 also demonstrates the contour lines for the study area at 10-foot intervals. Closely paired lines represent greater slopes, such as hills or cliffs.

Distance between arterial roads to potential sites is drawn at 0.2-mile intervals (See Figure 25). The area covered in yellow represents that it is 0.2 mile from I-66 and James Madison Highway. Only Site 2 falls in this category. Sites 1 and 3 are within a 0.4 and 0.6 mile distance between arterial roads. Sites 4 and 5 are above a 0.8 mile distance between James Madison Highway and I-66.

Distance between major roads to potential sites

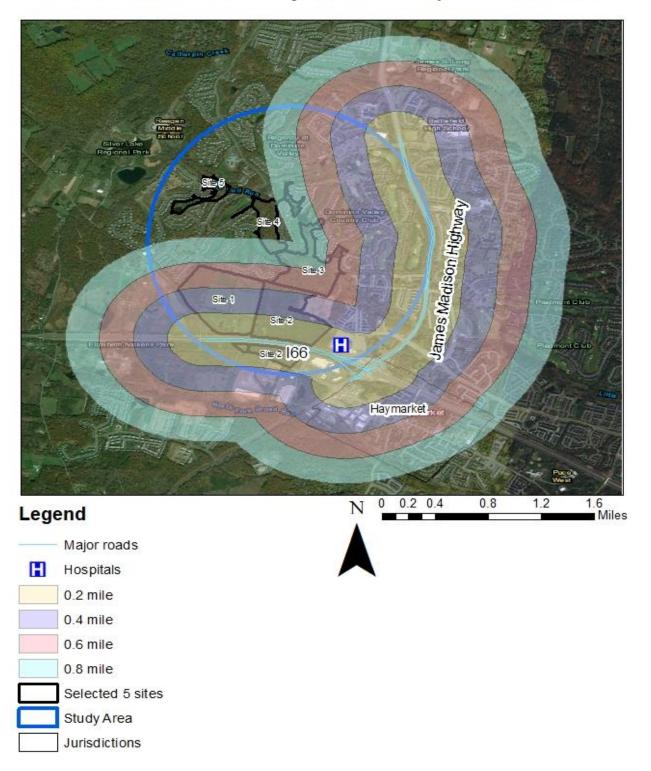


Figure 25 Distance Between Major Roads to Potential Sites at 0.2 Mile Interval

(Source: Prince William County GIS data, February 2018)

Zoning And Site Size

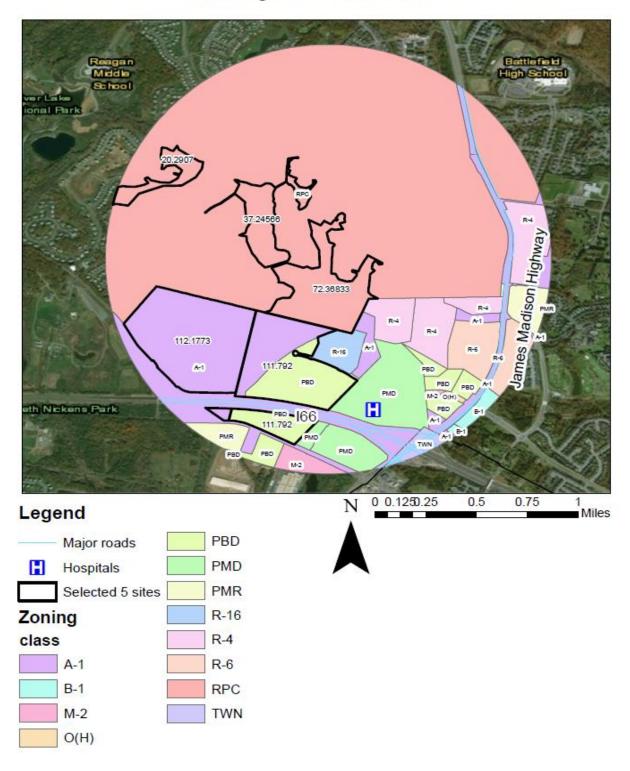


Figure 26 Zoning and Site Size

(Source: Prince William County GIS data)

Figure 226 displays the exact site size in acres for each potential site that is great than 20 acres, as well as the zoning in different areas. Sites 3, 4, and 5 are all in Residential Planned Community zoning. All of site 1 is covered in Agricultural zoning. Two thirds of Site 2 are covered in Planned Business District zoning, and the rest is covered in Agricultural zoning. Sites 2 is the best potential site for the Fourth District Police Station based on the data analysis.

Survey

Two types of online Google Form surveys have been created for police officers as well as community members in Prince William County. The police officers' surveys were distributed with the help of the Western District Police Station front desk Police Technician Artur Zaynullin. Community surveys were distributed by the residents of the Virginia Oaks and Yorkshire Acres Subdivisions in Prince William County. A total of 57 people completed both surveys. It should be noted that the respondents were not selected randomly.

Community Survey on the Fourth District Police Station Plan in Prince William County (Appendix A)

The first question in the community survey asked for the number of times residents requested police service in 2017. Chart 1 from Appendix A displays the results of this question. The majority responded as "did not request police service in 2017" (60.7%). Only 10.7% requested police service five or more times. Residents who requested police service in 2017 most often called 911 directly at 56.3%, while 25% went to a police station directly. The remaining residents both called 911 and went to the police station (See Chart 2 in Appendix A). This explains that the majority of the residents did not interact with police. In contrast, when residents do request police service, the majority do not visit the police station.

Police Officer Survey on the Fourth District Police Station Plan in Prince William County (Appendix B)

It should be mentioned that most of the same questions were asked in both police officer and community participants' surveys; surprisingly, most of the survey results are very similar. The majority of both police officer and community participants agrees that the façade of a police station is important. Pictures of each police station in Prince William County were displayed and rated by officer and public participants. More than 50% of the public participants agreed that the current three police stations are citizen friendly. However, results show 15.8% and 36.8% of the officers believe the Eastern Police District Station is intimidating and stately. Approximately one quarter of the participants from both surveys believed community facilities such as fire stations, police stations and hospitals should be scattered throughout the County.

More than half of the participants believe that they will interact more with officers if there is a public common area next to the police station. Questions 6-8 were designed to ask police officers only. Approximately three quarters of police officers believe they need or have no opinion for a new police station. Officers who believed in the need for a new police station also believed that the station will make significant improvement on decreasing the response time, increasing communication with citizens and creating more space for police officers. Public participants and police officers were asked to choose one of the most citizen friendly police stations between six

different designs of current police stations in the U.S (See Figure 27-32). Parker Police Department was selected as the most citizen friendly building with a total of 12 votes from community members and 14 votes from police officers (See Figure 26).



Figure 27 Franklin Police Department, Franklin, TN. 4 votes, ranked #5.

(Source: Franklin Police Department)



Figure 28 Parker Police Department, Parker, CO. 26 votes, ranked #1

(Source: Parker Police Department)

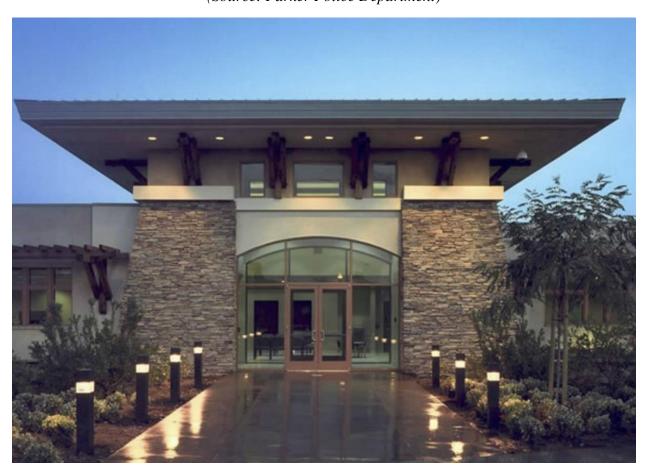


Figure 29 Murrieta Police Department, Murrieta, CA 13 votes, rank #2
(Source: Murrieta Police Department)



Figure 30 Alexandria Police Department Headquarters, Alexandria, VA. 5 votes, ranked #4

(Source: Alexandria Police Department)



Figure 31 Manassas Park Police Station, Manassas Park, VA. 6 votes, ranked #3

(Source: Manassas Park Police Department)



Figure 32 Franklin Police Station, Franklin, WI. 3 votes, rank #6
(Source: Franklin Police Department)

Each of the criteria is assigned a value rating from 1 (not important) to 5 (important). The specific values for each criterion are noted in Appendix A and Appendix B. The criteria that were rated by both officers and public include: size of land, visibility of the police station, site cost, and zoning, aesthetic of building, protection of the building, topography of the building, distance to major roads, and distance to local community.

Criteria such as size of the land, site cost, topography were averaged 3 or higher. Criteria such as distance to major roads, distance to local community zoning, aesthetic of building, protection of building, visibility of the police station averaged 4 or higher. A higher score for each criterion indicates a favorable condition. The citizen friendly design guidelines for The Fourth District Police Station will be created based on the favorable conditions.

Purchase Potential Vacant Property

It is important to know the value of potential vacant properties. Site 2, which is located on 15410 John Marshall Hwy, is the best potential site for the Fourth District Police Station based on the data analysis (See Figure 33). The 111-acre land is owned by Clavelli L J Trustee in Washington, D.C. The land value can be found on Prince William County Real Estate Assessments with its Gpin 7298-53-6088 (Appendix C, A). Currently, the assessed land value is worth \$7,803,700, however it does not represent the property is worth the same value as assessed.

The alternative site for this project is Site 1, located on 6115 Antioch Rd. Mr. Heflin's family has owned the 112-acre property since 1935. A detailed property information for Site 1 can also be found on Prince William County Real Estate Assessments (Appendix C, B). The total market value for Site 1 is \$1,602,700 which is significantly cheaper than Site 2. However, Mr. Heflin's family had no intention to sell their property at all. Appendix C, C shows a letter that Mr. Heflin's family wrote to the Virginia Department of Transportation (VDOT), explaining the history of his farm and reasons that they did not want to sell the farm. Mr. Heflin's property had been identified as a potential location for a Park and Ride Lot by VDOT in 2015. Mr. Heflin's family refused to let their land be used by VDOT for the Park and Ride Lot project. Therefore, Site 2 is the only available site for building the Fourth District Police Station.

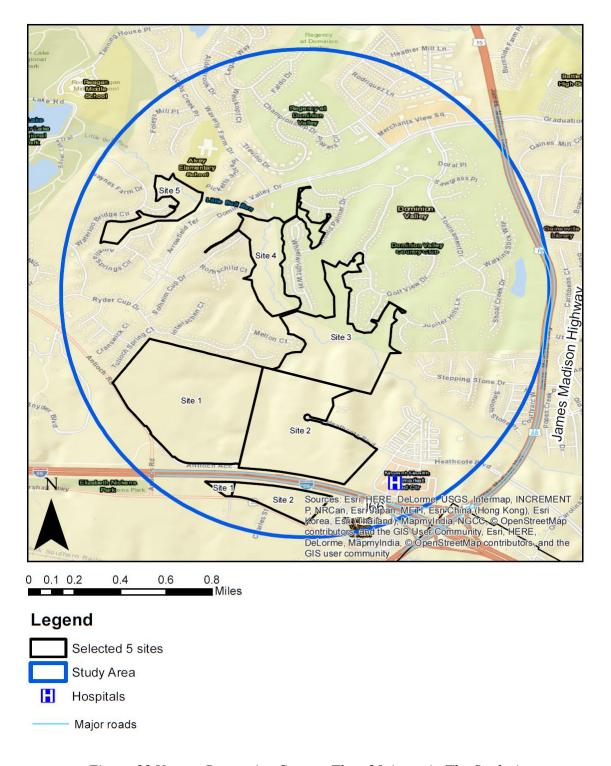


Figure 33 Vacant Properties Greater Than 20 Acres in The Study Area (Source: Prince William County GIS Data February 2018)

Plan Recommendations

Vision Statement

Establishing strong relationships among officers and the community members they serve has never been more important in Prince William County, VA.

The Fourth District Police Station Plan will locate future police facility sites and create design guidelines of a citizen friendly police station in Prince William County which will mutually identify and resolve crime issues that will positively impact the quality of community life. The new citizen friendly police station will embrace safety and security without fortress look. The public space next to the new police station will extend daily life in the study area. Residents, visitors and police officers will all benefit from a site of social connection.

Therefore, the Fourth District Police Station will be expected to welcome community members with open arms and reflect the best of the community's values and expectations.

Recommendations and Implementations

The main project has been broken into three goals, starting with designing a police station that fits the context of the surrounding neighborhood, make the police station visually attractive and ending with providing building and site security.

Goal 1: Design the police station that fit the context of surrounding neighborhood

Objective 1.	1 : Provide	contextual reference to	o its surrounding built environment. Design Context should include park, open space and fountain.
Strategies	Phase	Implementing Body	Description
1.1.1	2	2 PWCPD	Deisng building to blend with natural aand man-made landforms and maximize visual access to its view
1.1.2	1	2 PWCPD	Create a building size that is comparable in height and mass with the surrounding neighborhood.
Objective 1.	2 : Create	pedestrain frindly envior	nment
1.2.1		1 PWCPD	Create public space that are easily accessible from adjacent neighborhood
1.2.2		1 PWCPD	Place parking between police station and public space

Goal 1 can be achieved by creating a pedestrian friendly environment and providing contextual reference to its surrounding built environment. Public space can be an active or passive neighborhood park. Studies recommend that more space should be provided in high population density neighborhoods. The American Public Health Association suggests a minimum 3.5 acreage for a population of 5,000 (See Figure 34). The new public space will draw the interest of visitors and residents alike. Surveys indicated that residents are willing go to the open spaces such as a basketball court and playground next to the police station. Most importantly, when the Fourth District Police Station is built next to the public space, the public space will become a site of social connection where police officers and neighborhood residents can find many opportunities to interact in a non-law enforcement situation. The 3.5 acreage open space is designed based on the American Public Health Association recommendation (See Figure 35). The open public space will create simple everyday interactions for both police officers and residents. It is anticipated that the number of resident will be around 6000 near site 2 once all the townhouses are occupied (See Figure 36).

NEIGHBORHOOD PARK



	3.5 for	
A.P.H.A.	5,000	
	pop.;	
One or two	1.5 for	1.5 to 3.5
family	1,000	

Figure 34 Neighborhood Park Size

(Source: American Public Health Association)

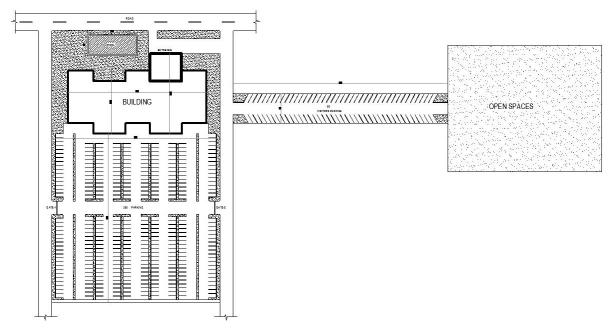


Figure 35 Overall layout of the Fourth District Police Station

(Source: Google SketchUP)

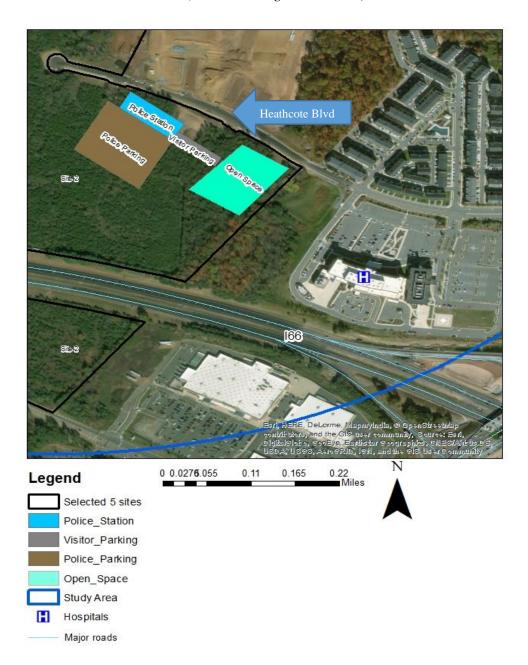


Figure 36 The Fourth District Police Station Plan on Site 2 (Source: Prince William County GIS Data February 2018)

Goal 2: Make the police station visually attractive

Objective 2.3	1: Creat	te Visual transparency						
Strategies	Phase	Implementing Body	Description					
2.1.1	3	PWCPD	Encourage transparent features on the façade of the building such as clear secured glass on windows and doors.					
2.1.2	3	PWCPD	Discourage large blank walls on all four side of the building exterior. Where appropriate, the exterior wall may employ artwork of fallen police officers.					
Objective 2.2	Objective 2.2: Design a visually attractive police station							
2.2.1	3	PWCPD	Make sure the visual flow of surface material such as brick or stone horizontally and vertically tie together the building as a whole.					
2.2.2	3	PWCPD	Create a sign of the police station that identify itself. Contribute to the attractiveness and pedestrian friendly orientation of the street.					

Goal 2 can be achieved by designing a visually attractive police station and creating visual transparency features. The 50,000 square foot Central District Police Station located on David Ford Road can be used as a building size reference when the new police station is designed. The one story new police station building is recommended to have 45,920 square foot. The length, width, and height for the new police station is 328 ft. x 140 ft. x 16 ft. The dimensions were selected based on the Parker Police Department Building which was the favorite design in the survey (See Figure 37).

The 30-foot transparent glass main entrance with a higher roof represents that it is the soul of the building. So, the eyes of residents and visitors will be drawn immediately to the prominent part of the building, which is most important (See Figure 38).



Figure 37 the Fourth District Police Station Design 1

(Source: Lumion)



Figure 38 the Fourth District Police Station Design 2

(Source: Lumion)

Goal 3: Provide building and site security

Objective 3.	1: Create a safety environme	nt for the employees.
Strategies	Phase Implementing Body	Description
3.1.1	2 PWCPD	Use exterior material that offer a reasonable degree of bullet resistance such as concrete walls and bullet resistance glasses.
3.1.2	2 PWCPD	Provide lightning for safe parking and secured gates.
Objective 3.2: Create passive barrier		
3.2.1	2 PWCPD	Install large planters as a barrier in front of the building
3.2.2	2 PWCPD	Construct concrete barrier wall that incorporate art work on its face behind the building.

Goal 3 can be accomplished by creating a safe environment for the employees and creating a passive barrier. The police parking is attached to the police station on the rear side in order to create a shielded parking area; the large parking lots will not be visible from outside (See Figure 39). Concrete barrier walls that incorporate artwork on its face behind the building can protect the police parking lots for security reasons (See Figure 40). Figure 41 demonstrated that the 10 feet concreate wall can be designed with artwork on it without fortress look.



Figure~39~The~Fourth~District~Police~Station~Employee~Parking.

(Source: Lumion)



Figure 40 Concrete Wall That Incorporate Artwork

(Source: concreteart.wordpress.com)



Figure 41 The Fourth District Police Station Rear Wall

(Source: Lumion)

The overall design incorporates harmony among elements on site and between the site and its surroundings. The design adopts a "good neighbor" policy to collaborate with the survey results from both police officers and local residents and implements local best design practice. In order to implement the goals, objectives, and strategies of this plan, a timeline of events is showed to outline the scope of the project (See Figure 42). Total cost for land acquisition and the building will vary based on the size of final location site. The price per square foot for the Central District Police Station is \$563. It is estimated that the total cost for constructing 45,920 square foot Fourth District Police Station is \$25,852,960. If site 2 is selected with the land value of \$7,803,700. The overall cost of completing the Fourth District Police Station is \$33,656,660.

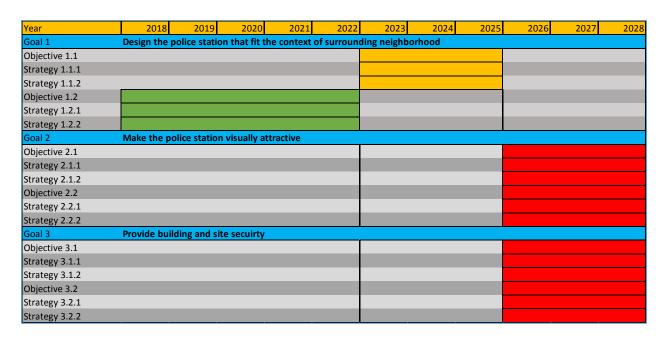


Figure 42 Implementation

Conclusion

In conclusion, this plan identified the best two viable site candidates for the proposed Fourth District Police Station, with the overwhelmingly favored site being the site 2 property. Site 2 offers many favorable attributes and opportunities including topography, size of land, site cost, zoning, distance to major road and communities. The detailed design guidelines are created to accommodate the need of favorable criterion that embrace safety and security without the fortress look. The Fourth District Police Station will be expected to welcome community members with open arms and reflect the best of the community's values and expectations.

Works Cited:

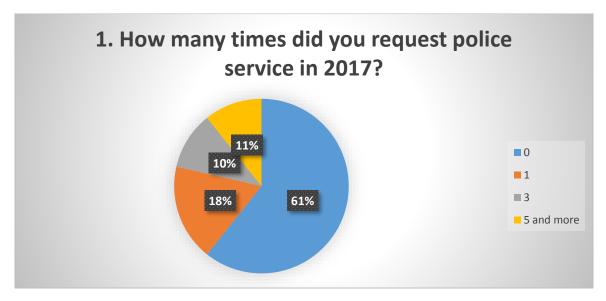
- Alexander, C. (1977). A Pattern Language, Oxford University Press
- Alexander, C.1979). The Timeless Way of Building, Oxford University Press.
- Architects Design Group, Walker Parking Consultants and Lavallee Brensiger Architects (2014). Concept Design for a Combined Police Facility & Parking Garage Orchard Street Lot, Dover, NH.
- Concrete Art. (2010). concreteart.wordpress.com
- Duany, A. (2010). The Smart Growth Manual. New York McGraw-Hill.
- Department of Economic Development. (2018). *Demographics*. http://www.pwcecondev.org/demographics.
- FEMA. (2017) *Continuity of Operations* Department of Homeland Security.https://www.fema.gov/media-library/assets/documents/72598#.
- Friedmann, Robert R. (1992). Community Policing. Comparative Perspectives and Prospects.
- Gang, J. (2015). *Polis Station*. Studio Gang. http://studiogang.com/project/polis-station.
- Hudson, B. M. (1979). 'Comparison of current planning theories: Counterparts and contradictions.' J. Am. Plng. Assoc., 45(4) 387–398.
- Jacobs, J. (1961). The Death and Life of Great American Cities.
- Lynch, K. (1960). The Image of The City, MIT Press.
- Prince William County Police Department (2018). *Prince William County Government* http://www.pwcgov.org/government/dept/police/pages/default.aspx.
- Prince William County Comprehensive Plan 2008 (2008). *Prince William County Government* http://www.pwcgov.org/government/dept/planning/pages/comprehensive-planning.aspx.
- Pulaski, T. (02-02-2018). Personal Communication. Prince William County Police Department.
- Pulaski, T. (02-02-2018). 2016 County Survey Data. Prince William County Police Department.
- Shaw, J. (2012). Brunswick Police Station.
- University of Oregon (2010). Salem Police Station.

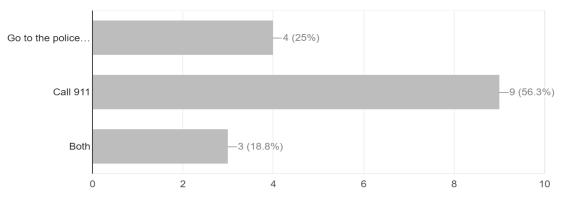
U.S. Census. (2017). Prince William County, Virginia

https://www.census.gov/quickfacts/fact/table/princewilliam countyvirginia/PST045216.

APPENDIX A

Survey Results: Community Survey







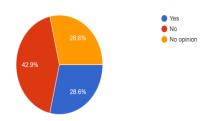
5. In how large range, do you think there should be a police station near your community?

28 responses



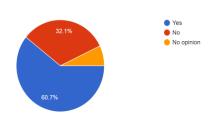
6. Are you going to have less comfort (less welcoming) walking toward current police stations in Prince William County?

28 responses



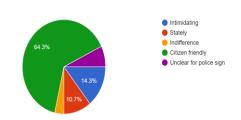
7.Do you think the façade (the face of the front building) of the police station is important?

28 responses



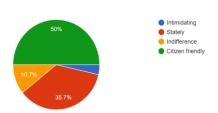
8. How would you describe the current design of the Eastern Police District Police Station in Prince William County, VA?

28 responses



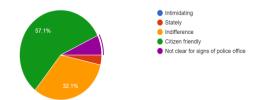
9. How would you describe the current design of the Western Police District Police Station in Prince William County, VA

28 responses



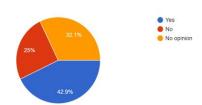
10. How would you describe the current design of the Central Police District Police Station in Prince William County, VA?

28 response



11. Do you think community facilities such as fire stations, hospitals and police stations should not be scattered individually through the county?

28 responses

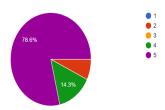


On a scale of importance from 1 to 5, 5 being the most important.



27. Distance to local community

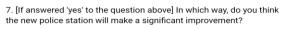
28 responses

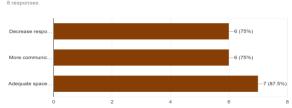


APPENDIX B

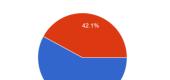
Survey Results: Police Officer Survey

2. How would you describe the current design of the Eastern Police 1.Do you think the façade (the face of a front building) of a police District Police Station in Prince William County, VA? station is important? 19 responses IntimidatingStately YesNo Indifference No opinion Citizen friendly 3. How would you describe the current design of the Western Police 4. How would you describe the current design of the Central Police District Police Station in Prince William County, VA? District Police Station in Prince William County, VA? IntimidatingStatelyIndifference IntimidatingStately Indifference Citizen friendly Citizen friendly 5. Do you think community facilities such as fire stations, hospitals and 6. Do you think we need a new police station? police stations should not be scattered individually through the county? Yes No No Opionion

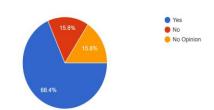




9. Do you regularly communicate with community members?



8. Do you feel the current police stations are secured and safe to work $\mbox{?}$



On a scale of importance from 1 to 5, 5 being the most important.

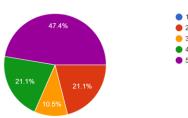
No

17. Size of the land

19 responses

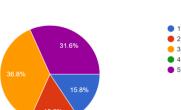


18. Visibility of the police station



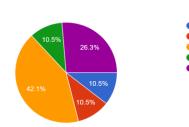
19. Site cost

19 responses



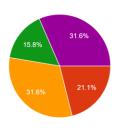
20. Zoning

19 responses



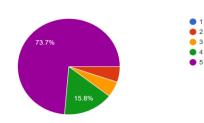
21. Aesthetic of building

19 responses



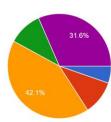
22. Protection of the building

19 responses



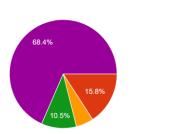
23. Topography of the building

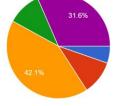
19 responses



24. Distance to major roads

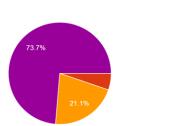
19 responses





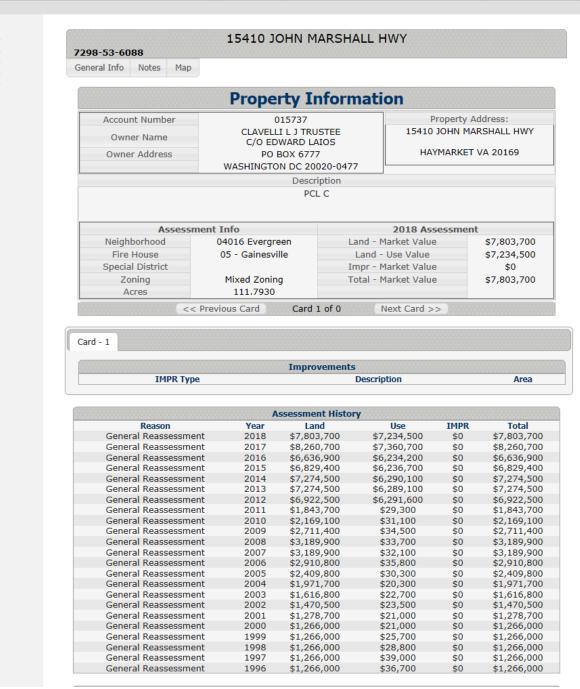
25. Distance to local community

19 responses



APPENDIX C





A. Site 2 land assessed value

3-35-4814 ral Info Not	es Map	•						
		P	rope	erty	Info	rmation		
Account Nu	ımber			0796	00		Property /	
Owner Na		H			ON V ETA	L	6115 ANT	IOCH RD
Owner Add	dress				OCH RD		HAYMARKET	VA 20169
			HAYMA		VA 20169			
					escription NE 137-1-			
				1101	12 137 1			
	Asses	sment Inf	0			20	18 Assessme	nt
Neighborho			Thorou	ughfar	e	Land - Marke		\$1,518,100
Fire Hous		05 -	Gaine	sville		Land - Use		\$155,600
Special Dist	rict					Impr - Mark		\$84,600
Zoning			gricultu			Total - Mark	et Value	\$1,602,700
Acres	NAME OF TAXABLE PARTY.		24.558			ALL CONTROL OF		000000000000000000000000000000000000000
	<	< Previous		1111111	ard 1 of 1		ard >>	
of Stories	2	# Bedro		wellin 3	Inform	nation vel Use Code	011 0	FD Detached
Year Built	1901	# Beard		2		ment Type		7 Crawl
Fin Area	2992	Half Ba		0	Dase	Style		y, 2 plus Story
Unfin Area	0	Basemen		0	Ext	erior Wall		Wood Siding
Fireplaces	o							_
- 1	0	FIN Base	ment	0	Parcel L	evel Use Code	011 -	SFD Detac
- 1	0	HIN Base	ment				011 -	SFD Detac
- 1	IMPI	R Type	ment		Parcel Le	nts Descr	iption	Ar
-1	IMPI Add	R Type lition	ment			nts Descr DEK	iption Deck	Ar 9
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B. Site 1 land assessed value

6115 Antioch Road Haymarket VA 20169

October 7, 2015

Ms. Michelle Holland Virginia Department of Transportation 4975 Alliance Drive Fairfax, VA 22030

Subject: Study of Park and Ride Alternative Sites near I-66 and Route 15, Haymarket

Dear Ms. Holland:

In response to John Muse's letter dated August 10, 2015, I would like to bring to your attention a few facts about my farm and the history of this farm in Prince William County. My farm was purchased in 1935 by my father and has been farmed continuously since that time. We have raised cattle, hogs, crops, three daughters and a son, and enough fresh garden produce to see us through every winter since. My wife and I have been good and faithful stewards of our land, being very aware of the environmental impact on the headwaters of Bull Run. We have installed livestock exclusion fencing best management practices for natural resources conservation, and routinely renew our water quality and nutrient management conservation plan with the Prince William Soil & Water Conservation District. We have participated in the Western Prince William Farm Tour and invite folks to come to our farm for fresh produce. We are good citizens, good farmers and good neighbors.

We are here for the long haul. It has always been our intention to farm this land and pass it on to our children to farm when the time comes. This is not a short term project, or a wait until the real estate market is ripe to sell the land for a big profit. This is our livelihood. Farming is our passion, our joy and our pleasure. Feeding ourselves and our neighbors is what we do. It is also what we do well.

C. A letter from Heflin's Family to VDOT