PRINCE WILLIAM COUNTY

PLANNING COMMISSION RESOLUTION

MOTION: **September 14, 2022**
Regular Meeting
SECOND: **Res. No**

RE: **COMPREHENSIVE PLAN AMENDMENT #CPA2021-00004**
PW DIGITAL GATEWAY PLAN
GAINESVILLE MAGISTERIAL DISTRICT

ACTION: **RECOMMEND ADOPTION**

WHEREAS, a request to initiate an out of turn Comprehensive Plan Amendment was filed with the Planning Office for an area along Pageland Lane requesting to change 27 parcels consisting of approximately ±801.59 acres from AE, Agricultural or Estate, and ER, Environmental Resource to T/F, Technology/Flex and was accepted on June 15, 2021; and

WHEREAS, on July 20, 2022, the Board of County Supervisor via Res. No. 21-445 initiated an amendment to the Comprehensive Plan for PW Digital Gateway with an expanded study area for the entire corridor between Route 29 and Sudley Road, in order to review in a more holistic manner (traffic, land use, and environmental concerns); and

WHEREAS, the study area was expanded to include approximately ±2,139 acres generally located along Pageland Lane, south of Sudley Road, north of Route 29, east of Conway Robinson Memorial State Park, Heritage Hunt and Catharpin Valley subdivisions, and west of Manassas National Battlefield Park and Sudley Mountain subdivision; and

WHEREAS, the Planning Office published the PW Digital Gateway Plan on August 15, 2022, which proposes changing the Comprehensive Plan Land Use designation for the study area from AE, Agricultural or Estate, and ER, Environmental Resource to T/F, Technology/Flex with a T-3 Transect, POS, Parks and Open Space, CRHS, County Registered Historic Site, and an Environmental Resource Overlay; and

WHEREAS, the PW Digital Gateway provides a comprehensive look at the study area including land use, community design, cultural resources, economic development, green infrastructure, mobility, sustainability, level of service analysis, and implementation plans; and

WHEREAS, on January 27, 2022, and February 3, 2022, the Planning Office held community meetings in which feedback was received on the Comprehensive Plan Amendment #CPA2021-00004, PW Digital Gateway; and

WHEREAS, on July 20, 2022, the Planning Office held a public information meeting and Planning Commission Work Session at which the Comprehensive Plan Amendment #CPA2021-00004, PW Digital Gateway was available for review and input; and

WHEREAS, the Prince William County Planning Commission duly ordered and advertised a public hearing for September 14, 2022, on Comprehensive Plan Amendment #CPA2021-00004, PW Digital Gateway Plan and interested citizens were heard; and.

NOW, THEREFORE, BE IT RESOLVED that the Prince William County Planning Commission does hereby recommend that the Board of County Supervisors adopt Comprehensive Plan Amendment #CPA2021-00004, PW Digital Gateway.

Votes:
Ayes:
Nays:
Abstain from Vote:
Absent from Vote:
Absent from Meeting:

MOTION CARRIED

Attest: _____

Antoinette Brzyski
Acting Clerk to the Planning Commission

Planning Office
Rebecca Horner, AICP, CZA
Acting Director of Planning

STAFF REPORT

PC Meeting Date:	September 14, 2022
Agenda Title:	Comprehensive Plan Amendment #CPA2021-00004, PW Digital Gateway
District Impact:	Gainesville Magisterial District
Requested Action:	Recommend Adoption of Comprehensive Plan Amendment #CPA2021-00004, PW Digital Gateway Plan
Department:	Planning Office
Staff Lead:	David McGettigan Sr., AICP

EXECUTIVE SUMMARY

This is a Comprehensive Plan Amendment to change ±2,139 acres from AE, Agricultural or Estate, and ER, Environmental Resource, to T/F, Technology/Flex with a T-3 Transect, POS, Parks and Open Space, CRHS, County Registered Historic Site, and an Environmental Resource Overlay. The site is generally located along Pageland Lane, south of Sudley Road, north of Route 29, east of Conway Robinson Memorial State Park, Heritage Hunt and Catharpin Valley subdivisions, west of Manassas National Battlefield Park and Sudley Mountain subdivision. This CPA is based on an original request accepted by the Planning Office on June 15, 2021, to initiate an out of turn CPA consisting of 27 parcels that are collectively ±801.59 acres. On July 20, 2021, through Res. No. 21-445, the Prince William Board of County Supervisors initiated an amendment to the Comprehensive Plan for PW Digital Gateway which included an enhanced study area for the entire corridor between Route 29 and Sudley Road. In order to review the CPA, in a holistic manner (traffic, land use, and environmental concerns), the Planning Office developed the PW Digital Gateway Plan to include areas directly abutting Conway Robinson Memorial State Forest and the Manassas National Battlefield Park and coordinate the review with the open space corridor concepts (native plant buffering and sustainability) to preserve as much of the area as possible. Planning staff completed the first draft of the PW Digital Gateway Plan on July 7, 2022, and the latest version of the Plan was published on August 15, 2022.

It is the recommendation of staff that the Planning Commission recommend adoption of Comprehensive Plan Amendment #CPA2021-00004, PW Digital Gateway Plan, to the Board of County Supervisors.

BACKGROUND

A. Comprehensive Plan Amendment (CPA) – Under Section 15.2-2229 of the Code of Virginia, the Board of County Supervisors may consider amendments to the adopted Comprehensive Plan.

B. Annual Update – The Comprehensive Plan Land Use chapter outlines the County policy for the annual review of amendments to the Comprehensive Plan text and/or the Long-Range Land Use Plan designation for a given property. The submission deadline for consideration of potential CPAs in 2021 was Friday, January 8, 2021.

Applications for amendments for "targeted industries," as defined by the Department of Economic Development are exempt from this due date in accordance with Action Strategy LU16.2 of the Long-Range Land Use Plan. This proposed CPA is to support data center development. Data centers are on the Board's adopted List of Targeted Industries for New and Expanding Companies revised on August 4, 2020. This proposed CPA application was accepted for review on June 15, 2021 and initiated by the Board of County Supervisors on July 20, 2021.

C. Request – This is a request to amend the Comprehensive Plan to change the long-range land use designation for approximately ±2,139 acres from AE, Agricultural or Estate, and ER, Environmental Resource, to T/F, Technology/Flex, with a T-3 Transect, POS, Parks and Open Space, CRHS, County Registered Historic Site, and an Environmental Resource Overlay as identified in the PW Digital Gateway Plan published August 15, 2022,.

The proposed Comprehensive Plan Amendment area is in the Gainesville Magisterial District. The vicinity map (see attachment) shows the general location of the initiated Comprehensive Plan amendment. The chart below summarizes the acreage involved in the initiated CPA to amend the Long-Range Land Use map.

LRLU Classification	Existing Acreage (±)	Proposed Acreage (±)
AE, Agricultural or Estate	± 1,699.2	± 0
ER, Environmental Resource	±439.8	± 0
T/F, Technology/Flex -T-3 Transect	± 0	± 1,321.5
POS, Parks and Open Space	± 0	± 807.9
CHRS, County Historic Registered Site	± 0	±9.6
Total	± 2,139	±2,139
Additionally, approximately 439.8 acres are recommended to be designated Environmental Resource Protection Overlay.		

D. Site Location – The study area consists of approximately 194 parcels that are 2,139 acres and are located along both sides of Pageland Lane south of Route 234 and

north of Route 29. The site is generally located along Pageland Lane, south of Sudley Road, north of Route 29, east of Conway Robinson Memorial State Park, Heritage Hunt and Catharpin Valley subdivisions, and west of Manassas National Battlefield Park and Sudley Mountain subdivision.

E. Existing Zoning and Land Use – The subject properties are mostly zoned A-1, Agricultural, with a few parcels designated SR-5, Semi-Rural Residential, and classified as AE, Agriculture or Estate, and ER, Environmental Resource, in the Comprehensive Plan. The CPA study area is located within the Rural Area Boundary, the Airport Safety, Domestic Fowl, 100-year Flood Hazard Zone, Resources Protection Area Overlay Districts, and the Silver Lake Dam Inundation Zone. The southern properties, east of Pageland Lane, abut the Manassas National Battlefield Park, Federal Land, which is classified a County Registered Historic Site, on the south side and are surrounded by protected open space land on the north and west sides. The southern properties, located on the west side of Pageland Lane, abuts Conway Robinson Memorial State Forest and Manassas National Battlefield Park, Federal Land, which is classified a County Registered Historic Site. All properties are located within the Domestic Fowl and Airport Safety Overlay Districts. The parcels that front on Route 234 are located in the Highway Corridor Overlay District and the Resource Protection Overlay District and 100-year Floodplain areas are also designated on the attached zoning map. The existing land uses of the properties include vacant land, Agricultural Related Services, and single-family detached residences as reflected in the Existing Conditions Map in the attachment. The site is generally surrounded by A-1, Agricultural zoned properties.

F. Demographics – The following table summarizes the range of demographic impacts of both the existing long-range land use designations and the changes proposed with this CPA. The application impacts are based on the draft plan's designation of 1,321 acres as T/F, Technology Flex, with a T-3 Transect.

CPA2021-00004 Digital Gateway	**Existing Capacity**		**Proposed Capacity For Tech/Flex***	
	Low	**High**	**Low**	**High**
Non-residential (Potential GFA)	0	0	13,240,145 SF	27,000,000 SF
Total Jobs (***** for Data Centers only)	0	0	1,471-2,036	3,000- 5,048
Dwelling Units	213	213	0	0
People	718	718	0	0

G. Rezoning – The Planning Office has received the following 3 applications for rezoning, within the study area which allows for opportunities for mitigation of impacts that align with the guidance found in the CPA2021-00004, PW Digital Gateway.

1) **Rezoning, H&H Capital Acquisitions Digital Gateway, REZ2022-00036**: This is a request to rezone ±824.9 acres from A-1, Agricultural and a few properties SR-5, to PBD, Planned Business District, as implemented by the O(H) Office High-Rise District, O(F) Office/Flex District, and M-2, Light Industrial District, to allow for data centers and accessory uses.

2) **Rezoning, Digital Gateway North, REZ2022-00032:** This is a request to rezone ±470.42 acres from A-1, Agricultural, to PBD, Planned Business District implemented with the O(H), Office High-Rise District, to allow for data centers and supporting facilities, including a maximum of 10 percent secondary office and ancillary uses.

3) **Rezoning, Digital Gateway South, REZ2022-00033:** This is a request to rezone ±341.9 acres from A-1, Agricultural, to PBD, Planned Business District implemented with the O(M), Office Mid-Rise District, to allow for data centers and supporting facilities, including a maximum of 10 percent secondary office use and ancillary uses.

For additional information about pending cases under review by the Planning Office please see the Development Application Processing Schedule (DAPS) Report: https://eservice.pwcgov.org/planning/documents/DAPS/DAPS.pdf

H. Strategic Plan – On July 20, 2021, the BOCS adopted the 2021– 2024 Strategic Plan that seeks to significantly expand the County's commercial tax base. The 2021– 2024 Strategic Plan is available on the County's website at www.pwcva.gov/strategic-plan. The PW Digital Gateway CPA includes a resilient economy goal which also proposes continued expansion of the County's commercial tax base as well as attract and expand targeted industries. This CPA goal aligns with the first two objectives of the resilient economy section of the County's Strategic Plan.

- Objective RE-1: Create and support programs, policies and strategies that encourage profit-generating business expansion, new business development and redevelopment that enhances or complements targeted industries.

- Objective RE-2: Continue efforts to preserve and expand the commercial tax revenue base.

I. Organization of the Plan- This CPA consists of the PW Digital Gateway Plan which includes ten major components which are identified below and follow an extensive

existing conditions and data analysis that sets the foundation upon which the plan is built.

1. Land Use Plan – Consists of a land use plan with development standards including density, form, and layout as well as provides additional policies and action strategies that apply specifically to the Study Area.

2. Community Design- Consists of policies and action strategies in support of the County's goal to provide quality development and a quality visual environment throughout Prince William County for residents, businesses, and visitors

3. Cultural Resources Plan – Plans for the identification and preservation of architectural and archaeological sites, historic assets, cemeteries, battlefields, cultural landscapes, museum objects, and archival materials in the study area. In addition, a viewshed analysis was conducted to inform proposed policy that help minimize visual impacts to important cultural resources.

4. Economic Development Plan – Promotes a significant opportunity to increase in the County's commercial tax revenue, expansion of an identified targeted industry identified by the Board of County Supervisors, and opportunity to promote Prince William County as a "high-tech" community.

5. Green Infrastructure Plan – Plans for a robust and connected system of greenways, trails, open space, and parks which provide a benefit to the environment, County residents, and local wildlife.

6. Mobility Plan – Mobility has a close relationship with land use, this plan calls for multi-modal mobility that interfaces with potential future development. In this section, the mobility network proposes enhancements to the local roadway and trail network. Policies and action strategies are provided to meet the needs of the proposed development while supporting the County's goal to reduce through traffic through the Manassas National Battlefield Park, ensure acceptable levels of service, and provide enhanced multimodal connectivity.

7. Water and Sewer Plan –Ensures adequate infrastructure is provided to support the proposed development in a cost effective and environmental friend manner since the study area is not currently served by public water and sewer.

8. Sustainability -Provides an opportunity to encourage development which provides world-class sustainability initiatives which prioritize the environmental, social, and fiscal impact of development as well as policies that help the County reach the greenhouse gas emission goals endorsed by the Board.

9. Level of Service Plan –The Level of Service "LOS" component provides additional policies to ensure the successful implementation of these infrastructure improvements coincide with development and are equitably provided by each development within the Study Area where appropriate and consistent with applicable law.

10. Implementation Plan – This section activates this plan, so that action strategies are implemented in the short, mid, long term, and ongoing time frames to ensure the plan is actualized by 2040.

J. Additional Requests: Staff received a total of 22 requests consisting of approximately 215.86 acres for inclusion into the CPA study area after the boundaries were developed and analyzed. The CPA completed multiple review submittals and community engagements with the current boundary so changing at this point should be not be an administrative decision rather this is a legislative decision to be made by the Board of County Supervisors. On the following table is a list of properties that requested to be included in the CPA study area after the boundaries were developed and analyzed.

GPIN	Property Address	Acres
7499-11-0606	13308 CATHARPIN VALLEY DR	10.00
7499-11-4608	13290 CATHARPIN VALLEY DR	10.00
7499-21-0709	13280 CATHARPIN VALLEY DR	10.00
7499-21-2811	13270 CATHARPIN VALLEY DR	10.30
7499-21-5331	13250 CATHARPIN VALLEY DR	10.30
7499-21-7275	13240 CATHARPIN VALLEY DR	10.00
7499-22-7921	13230 CATHARPIN VALLEY DR	10.00
7499-22-8563	13220 CATHARPIN VALLEY DR	12.18
7499-23-9305	13210 CATHARPIN VALLEY DR	10.10
7499-33-3142	13200 CATHARPIN VALLEY DR	10.00
7499-33-8741	13201 CATHARPIN VALLEY DR	10.01
7499-32-8152	13211 CATHARPIN VALLEY DR	10.08
7499-31-6288	13229 CATHARPIN VALLEY DR	10.00
7499-31-6034	13239 CATHARPIN VALLEY DR	10.00
7499-30-3999	13249 CATHARPIN VALLEY DR	10.01
7499-30-1456	13259 CATHARPIN VALLEY DR	10.50
7499-20-9020	13269 CATHARPIN VALLEY DR	10.00
7499-20-4913	13279 CATHARPIN VALLEY DR	10.00
7499-20-0504	13289 CATHARPIN VALLEY DR	10.00
7498-19-4899	13299 CATHARPIN VALLEY DR	10.00
7499-10-0502	13309 CATHARPIN VALLEY DR	10.20

7498-39-9250	13104 THORNTON DR	2.18
TOTAL ACRES		**215.86**

The Planning Commission can forward a recommendation to the Board of County Supervisors to initiate a new CPA for these properties which have not been evaluated as part of the CPA process for PW Digital Gateway.

STAFF RECOMMENDATION

The Planning Office recommends that the Planning Commission recommend adoption of Comprehensive Plan Amendment #CPA2021-00004, PW Digital Gateway Plan into the Comprehensive Plan. The proposed amendment is supported by staff for the following reasons:

1. The CPA Plan includes action strategies to mitigate potential impacts determined through a rezoning process.

2. The CPA Plan helps achieve goals, policies and strategies of the County's Comprehensive Plan including:

    - Partner with other government agencies, businesses, and non-government organizations, including nonprofit organizations and homeowner associations to permanently protect open space and increase public access to open space areas.

    - Partner with others to plan and manage heritage and open space corridors.

    - Encourage preservation of the County's most significant historic properties through use of the County Registered Historic Site (CRHS) classification.

    - Incorporate the Community Design Plan into the County's development application review and approval processes.

    - Recognize targeted industries and existing county-based companies— including class A and class B office buildings—as the priority focus of the County's economic development initiatives.

3. The CPA Plan helps achieve the resilient economy goal of the 2021-2024 Strategic Plan which proposes continued expansion of the County's commercial tax base as well as attract and expand targeted industries

4. The Plan provides detailed guidance and implementation strategies for the development of the County.

5. The Plan guides development within the PW Digital Gateway Special Study Area to prioritize preservation and protection of existing cultural resources, minimizing impacts to significant

historic viewsheds, while leveraging opportunities to provide meaningful contributions to preservation and interpretation of the extensive local and national history.

6. The Plan capitalizes on an opportunity to ensure a robust and connected system of greenways, trails, open space, and parks which provide a benefit to the environment, County residents, and local wildlife.

7. The Plan incorporates the feedback from the community and the Planning Commission as part of the public participation process.

Community Input

The PW Digital Gateway Plan process included research, stakeholder, and community engagement, leading to the final plan. Notice of the Comprehensive Plan Amendment ("CPA") has been advertised and proposed amendments have been published on the Prince William County government web site and have been available in the Planning Office. PWC Alerts were sent to all who subscribe to PWC Alerts. Additionally, the Planning Office received feedback during the Comprehensive Plan Update Community meetings held on January 27, 2022, and February 3, 2022. The comments provided at the community meetings have been considered in the proposed amendment. Below is a summary of the comments, that ranged from opposition to support.

The majority of comments can be categorized under key themes which emerged in the comments in opposition to the Comprehensive Plan Amendment:

1. Concerns about the environmental impacts of the proposed CPA on the County's wildlife, water table, and supply, environmental resources, soils, and stormwater runoff.
2. Concerns about impacts on cultural resources by the proposed CPA regarding Civil War history, specifically the Manassas National Battlefield Park, historic viewsheds, the Settlement Community, the Thornton School, cemeteries, and other historically significant features.
3. Concerns and opposition to the change of previously agricultural designated land to industrial for the development of data centers.
4. Request for additional studies to be conducted to further evaluate the feasibility and potential impact of the proposed development.
5. Concerns about impacts to adjacent uses including viewsheds, noise, and pollution.
6. Concerns about the long-term viability of data center technology and marketability.
7. Concerns about energy and water consumption, and sustainability.
8. Concerns about the proposed CPA trigger the need for additional transmission lines.
9. Concerns about increased traffic.

The following are key themes which emerged in the comments in support of the Comprehensive Plan Amendment:

1. Support of anticipated economic activity generated by data centers, an identified targeted industry.
2. Support for the potential increase in commercial tax offering relief to residential tax burden and supporting County Infrastructure and services.
3. Support for the location offering access to existing transmission lines, fiber optics, and available land.
4. Largely supported by property owners within the Study Area.
5. Support for the widening of Pageland Lane to relieve traffic.
6. Support for reevaluating the land use as it is no longer "rural."

In addition, the County held a Planning Commission work session on July 20, 2022. Several questions were asked by Planning Commissioners including inquiries regarding the methodology of the viewshed analysis. Staff provided a response to each of the questions from the work session and included a document explaining the viewshed analysis methodology. Both these documents are included as attachments to the staff report and were posted on the PW Digital Gateway project web page. These files can be found at the following link: https://www.pwcva.gov/department/planning-office/pw-digital-gateway.

Adjacent Jurisdiction Notice

Adjacent jurisdictions notices were sent. Previous comments were considered in development of the Plan.

Legal Issues

In accordance with Section 15.2-2223, the PW Digital Gateway Plan will provide guidance for future rezoning and special use permit applications as well as any future infrastructure improvements needed.

Timing

Section 15.2-2229, Code of Virginia states that if the governing body desires an amendment, it may prepare such an amendment and refer it to the local planning commission for public hearing within 60 days after written request by the governing body or direct the local planning commission to prepare an amendment and submit it to public hearing within 60 days or such longer timeframe as may be specified after written request by the governing body. A public hearing before the Planning Commission was advertised for September 14, 2022.

STAFF CONTACT INFORMATION

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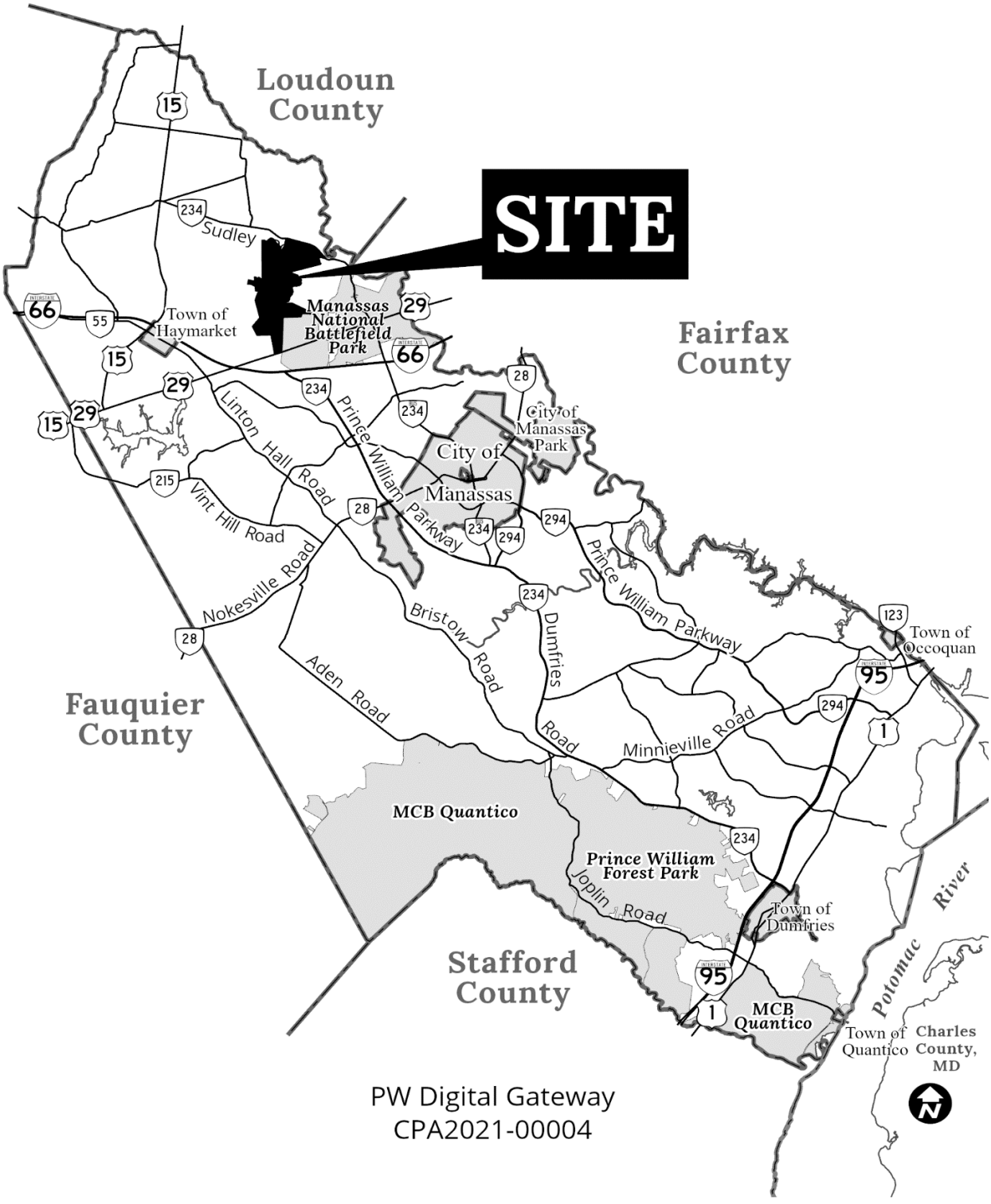
AVanegas@pwcva.gov

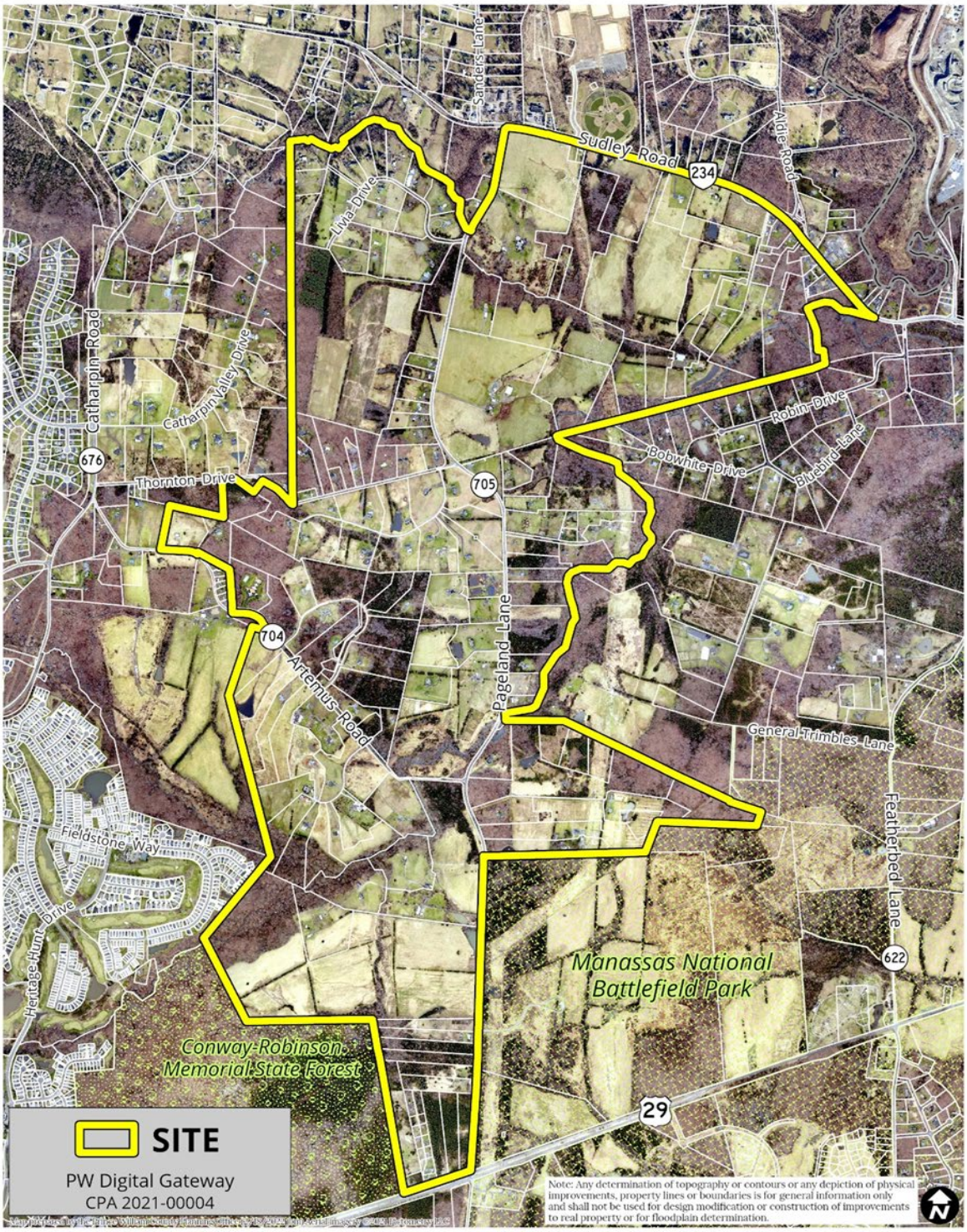
ATTACHMENTS

Vicinity and Aerial Maps
Long-Range Land Use & Zoning Maps
Project Summary & Staff Analysis
Board of County Supervisors Initiating Resolution#21-445
Historical Commission Resolution#22-027
List of Targeted Industries for New and Expanding Companies dated August 4, 2020
Viewshed Analysis Methodology
Responses to Questions from July 20, 2022, Planning Commission Work Session
Draft PW Digital Gateway Plan

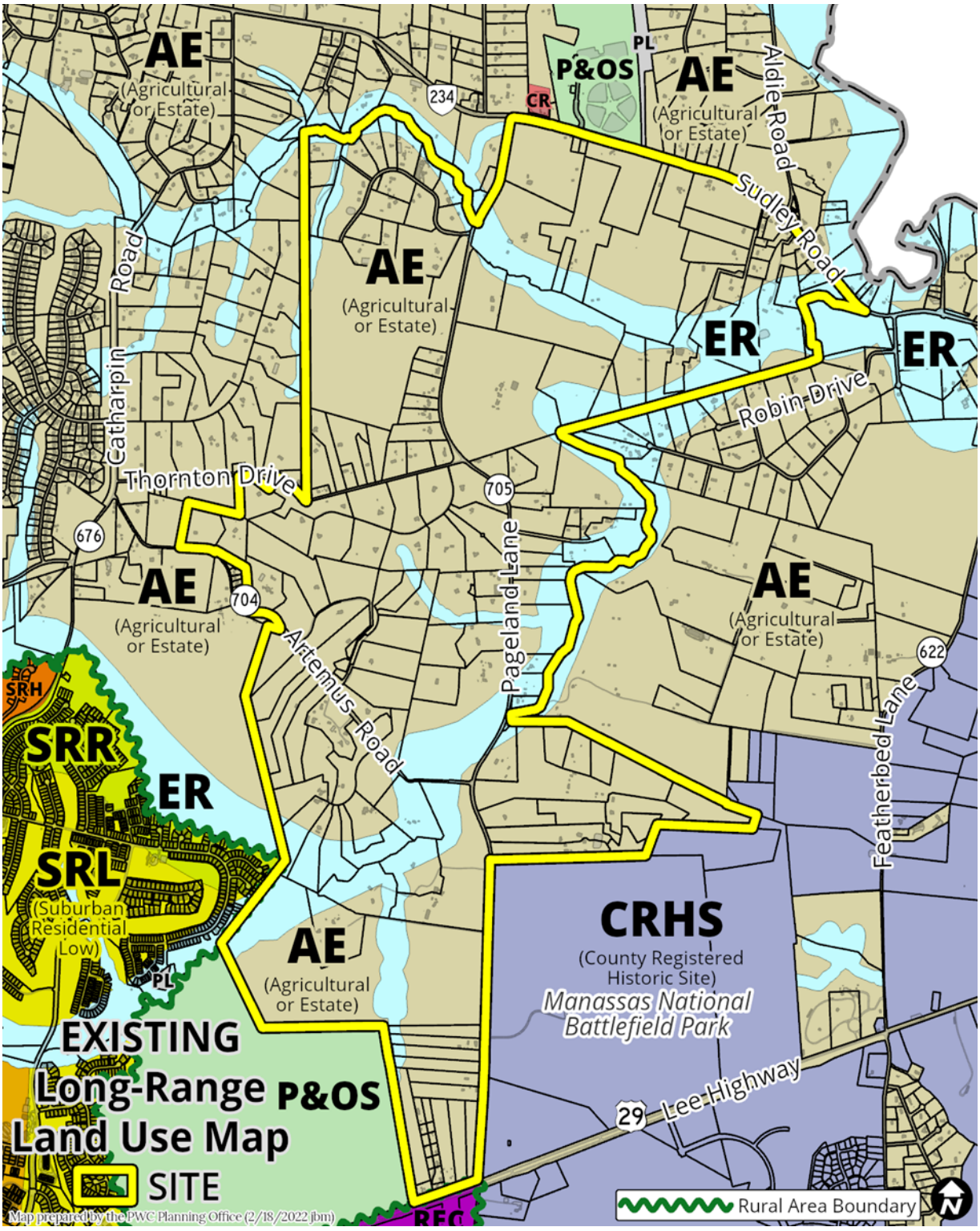
Draft PW Digital Gateway Plan, dated August 15, 2022, is available online at https://www.pwcva.gov/department/planning-office/pw-digital-gateway .



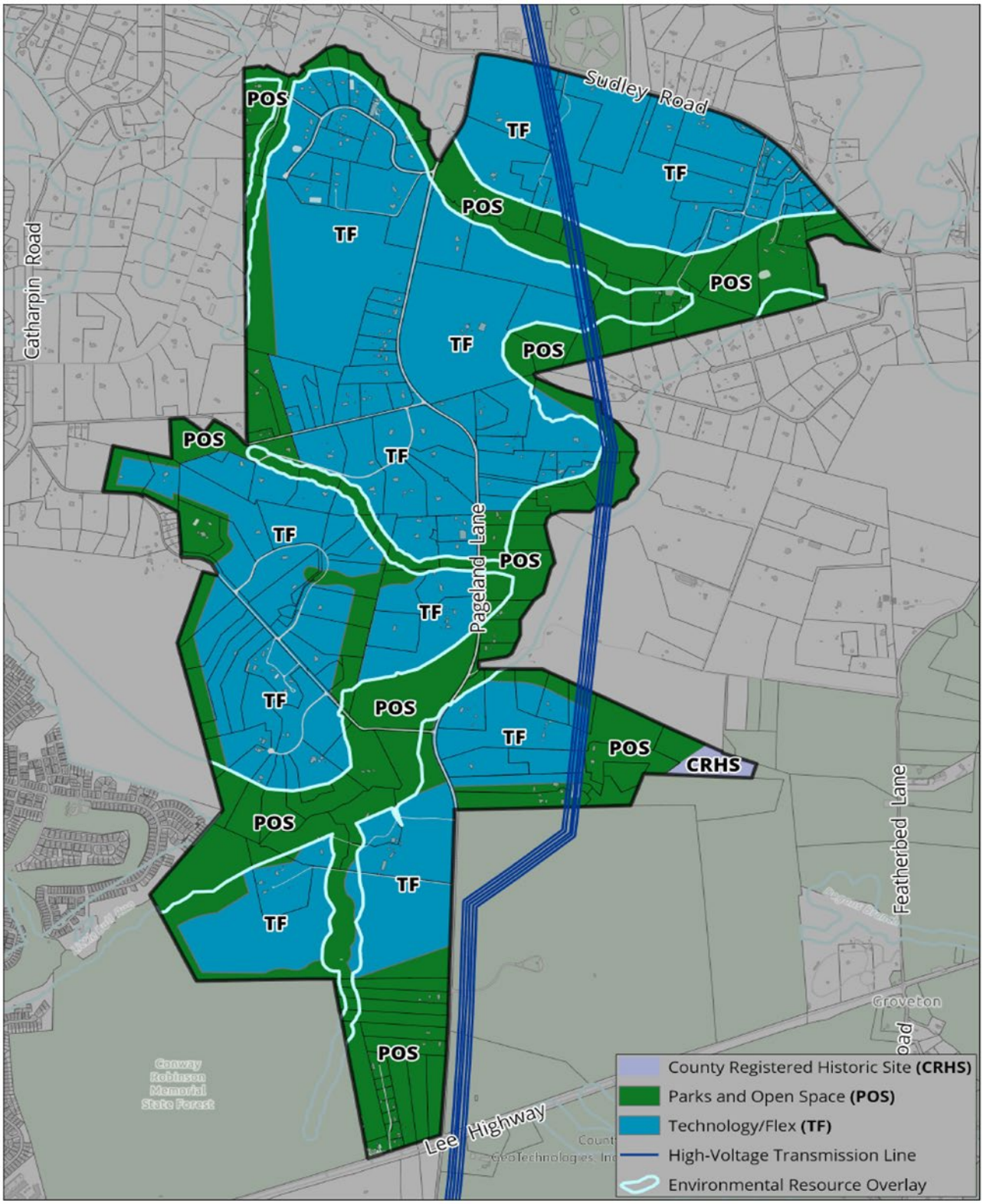
PW Digital Gateway Location Map



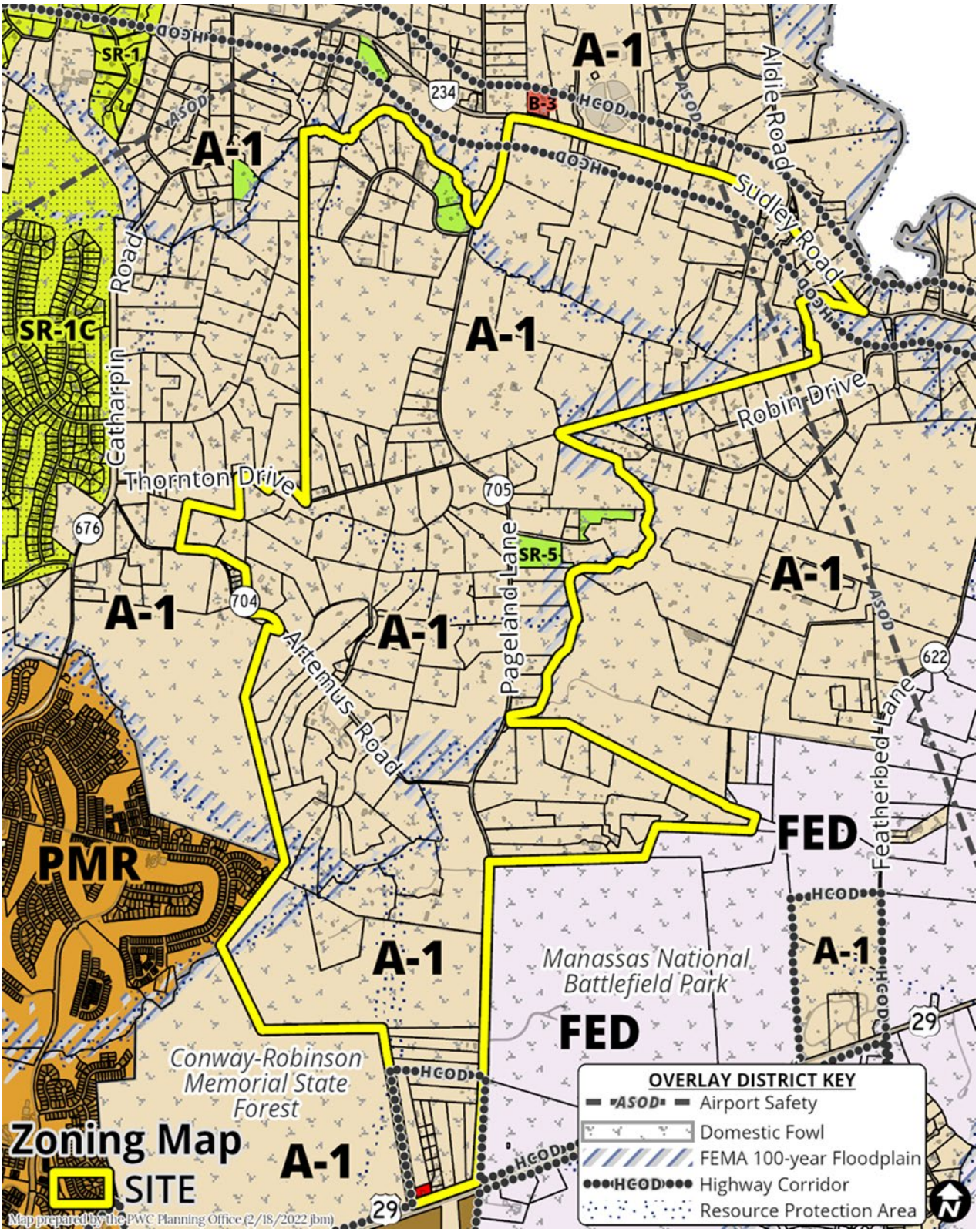
PW Digital Gateway Boundaries



Existing Long-Range Land Use



Proposed Long-Range Land Use



Existing Zoning

PW Digital Gateway Plan

Request: This is a request to amend the Comprehensive Plan to change the Long-range Land Use classification for approximately ±2,139 acres from AE, Agricultural or Estate and ER, Environmental Resource to T/F, Technology/Flex with a T-3 Transect, POS, Parks and Open Space, CRHS, County Registered Historic Site, and an Environmental Resource Overlay for 194 parcels along Pageland Lane. The properties are located in the Rural Area of the County.

Long-Range Land Use Summary

Location: The subject properties (194 parcels) are located on along both sides of Pageland Lane south of Route 234 and north of Route 29. Reference the vicinity map in the attachment.

The following table summarizes the request:

LRLU Classification	Existing Acreage (±)	Proposed Acreage (±)
AE, Agricultural or Estate	± 1,699.2	± 0
ER, Environmental Resource	± 439.8	± 0
T/F, Technology/Flex -T-3 Transect	± 0	± 1,321.5
POS, Parks & Open Space	± 0	± 807.9
CHRS, County Historic Registered Site	± 0	± 9.6
Total	± 2,139	±2,139
Additionally, approximately 439.8 acres are recommended to be designated Environmental Resource Protection Overlay.		

The following table summarizes the uses and densities intended in the existing Land Uses of AE, Agricultural or Estate and ER, Environmental Resource and the requested proposed designation of T/F, Technology/Flex, with a T-3 Transect, POS, Parks and Open Space, CRHS, County Registered Historic Site, and an Environmental Resource Overlay:

AE, Agricultural or Estate ***Existing Land Use Designation***	The purpose of the Agricultural or Estate classification is to protect existing agricultural lands, cultural resources, and open space, as well as other important rural environmental resources, and to provide areas within the County where large lot residential development is appropriate. The maximum density is one dwelling per 10 gross acres.

ER, Environmental Resource ***Existing Land Use Designation***	This classification is explained in detail within the Environment Plan. Therein are located goals, policies, action strategies, and other Plan components designed to protect the sensitive nature of the identified resources. Environmental Resources include all 100-year floodplains as determined by the Federal Emergency Management Agency (FEMA), Flood Hazard Use Maps or natural 100-year floodplains as defined in the DCSM, and Resource Protection Areas (RPAs) as defined by the Chesapeake Bay Preservation Act. In addition, areas shown in an environmental constraints analysis submitted with a rezoning or special use permit application with wetlands; 25 percent or greater slopes; areas with 15 percent or greater slopes in conjunction with soils that have severe limitations; soils with a predominance of marine clays; public water supply sources; and critically erodible shorelines and stream banks are considered part of the Environmental Resource Designation.
T/F, Technology/Flex ***Proposed Land Use Designation***	Technology/Flex Industrial areas provide opportunities for production, flex office/warehouse space, and warehousing uses that do not require large outdoor storage or produce nuisances such as noise, dust, or vibration. They are less hazardous and limited impacts on surrounding areas compared to heavy manufacturing. Buildings in this area have medium to deep setbacks and larger block sizes. Surface parking is acceptable.
T-3, Transect	Primary Uses: Data Centers, Healthcare, Life Sciences, Federal government Contracting, Research and Development, Flex Space, Light Industrial, Warehousing & Logistics, Advanced Manufacturing Secondary Uses: Retail & Service Commercial, Office, Institutional, Public Facilities/Utilities Target non-residential FAR of up to .57 FAR Target Land Use Mix: Residential 0%, Non-Residential 100% Target Building Height: T-3: 3-5 Stories Minimum Open Space: 20% of the site Implementing Zoning Districts: PBD, O(F), M-2

POS, Parks & Open Space ***Proposed Land Use Designation***	The purpose of this classification is to designate existing and projected parks, open space and recreational areas of the County. This classification designates all existing federal, state, and local parks, and of planned parks within the County. These areas allow for either active or passive activities or in some cases both types of uses may occur. Those areas that are dedicated open space may be planned for passive use provided there are no restrictions associated with the land.
CHRS, County Historic Registered Site ***Proposed Land Use Designation***	This classification is designed to protect important cultural resources. Cultural resources include architectural, archaeological, and historical resources. CRHS designations that are mapped on the Long-Range Land Use Plan Map include existing sites and districts that have a preservation easement or are either listed, pending, or deemed eligible for listing on the National Register of Historic Places or Virginia Historic Landmarks Register; are incorporated into the County Zoning Ordinance as an Historic Overlay District or other zoning overlay district; are recorded as part of the Historic American Building Survey or the Historic American Engineering Record; or has been selected for inclusion in the annual evaluation and update of such list by the Historical Commission and approved by the Board of County Supervisors
ERPO, Environmental Resource Protection Overlay	Environmental Resource Protection Overlay (ERPO) is an overlay area located in sensitive environmental places in which special building regulations and restrictions operate in order to help to maintain natural integrity. Th purpose of the Environmental Resource Protection Overlay is to maintain natural spaces, provide a safe environment for residents, control the safety of houses, keep the surface water clean, preserve habitats of wild animals, maintain slope and soil stability, as well as maintaining open spaces between buildings. All 100-year floodplains, Resource Protection Areas, areas with 25 percent or greater slopes, areas with 15 percent or greater slopes in conjunction with soils that have severe limitations, soils with a predominance of marine clays, public water supply sources, wetlands, and critically erodible shorelines and stream banks. These areas should be considered as open space. ER areas should not be included in density calculations.

The long-range land use plan identifies the subject parcels of approximately ±2,139 acres as AE, Agricultural or Estate and ER, Environmental Resource to T/F, Technology/Flex with a T-3 Transect, for 194 parcels along Pageland Lane. In addition, the properties are entirely located within the Airport Safety and Domestic Fowl Overlay Districts. The properties adjacent to Route 234 are located in a Highway Corridor Overlay District and some of the parcels are in a Resource Protection Area Overlay District. The properties are not located in the Data Center Opportunity Zone Overlay District.

Below are key components of the land use designation with comment on how the CPA supports those components.

T/F, Technology/Flex- this classification consists of industrial areas that provide opportunities for production, flex office/warehouse space, and warehousing uses. The Technology Flex classification has Data Centers, Healthcare, Life Sciences, Federal government Contracting, Research and Development, Flex Space, Light Industrial, Warehousing & Logistics, Advanced Manufacturing as primary use and Retail & Service Commercial, Office, Institutional, Public Facilities/Utilities as secondary uses.

T-3 Transect- this transect when associated with the T/F classifications consists of target non-residential Floor Area Ratio (" FAR") of up to 0.57 and target land use mix: Residential 0%, Non-Residential 100% with Target Building Heights of 3-5 Stories and a minimum open space: 20% of the site.

The Technology/Flex classification within PW Digital Gateway CPA consists of industrial areas that provide opportunities for technology uses such as data centers, and accessory uses. Non-data center uses are encouraged to be proffered out of development proposals within the Study Area. Heavy Industrial uses and those which generated higher traffic are strongly discouraged that do not require large outdoor storage or produce nuisances such as noise, dust or vibration.

The T-3 transect is consistent with proposed data centers gross floor area cap of 27,000,000 square feet. Furthermore, the CPA Plan recommends development to be at the lower end of the FAR for the areas closest to Manassas National Battlefield Park and Conway Robinson State Forest.
The target building height of up to 5 stories is consistent with the 45 feet limit for the southern district but not the northern district which would allow up to 85 feet in height identified in the PW Digital Gateway Plan. Lastly, the Plan which calls for a 30% minimum open space requirement exceeds the 20 % minimum open space requirement in the TF classification.

POS, Parks and Open Space-the purpose of this classification is to designate existing and projected parks, open space and recreational areas of the County. This classification designates all existing federal, state, and local parks, and of planned parks within the County. These areas allow for either active or passive activities or in some cases both types of uses may occur. Those areas that are dedicated open space may be planned for passive use provided there are no restrictions associated with the land.

The PW Digital Gateway Plan provides an opportunity to ensure a robust and connected system of greenways, trails, open space, and parks which provide a benefit to the environment, future

employees, County residents, and local wildlife. The Plan envision three parks in the Green Infrastructure Plan to promote meaningful open space preservation and cultural resource protection. In addition, a 500' wildlife corridor is included as part of the Plan.

CRHS, County Registered Historic Site- this classification is designed to protect important cultural resources. Cultural resources include architectural, archaeological, and historical resources. CRHS designations that are mapped on the Long-Range Land Use Plan Map include existing sites and districts that have a preservation easement or are either listed, pending, or deemed eligible for listing on the National Register of Historic Places or Virginia Historic Landmarks Register; are incorporated into the County Zoning Ordinance as an Historic Overlay District or other zoning overlay district; are recorded as part of the Historic American Building Survey or the Historic American Engineering Record; or has been selected for inclusion in the annual evaluation and update of such list by the Historical Commission and approved by the Board of County Supervisors.

The PW Digital Gateway Plan includes the addition of new CRHS area that is within the Manassas Battlefield Congressionally Authorized Boundaries that aligns with the Cultural Resources Plan.

ERPO, Environmental Resource Protection Overlay- this overlay area located in sensitive environmental places in which special building regulations and restrictions operate in order to help to maintain natural integrity. Th purpose of the Environmental Resource Protection Overlay is to maintain natural spaces, provide a safe environment for residents, control the safety of houses, keep the surface water clean, preserve habitats of wild animals, maintain slope and soil stability, as well as maintaining open spaces between buildings. All 100-year floodplains, Resource Protection Areas, areas with 25 percent or greater slopes, areas with 15 percent or greater slopes in conjunction with soils that have severe limitations, soils with a predominance of marine clays, public water supply sources, wetlands, and critically erodible shorelines and stream banks. These areas should be considered as open space. ER areas should not be included in density calculations.

The PW Digital Gateway Plan establishes protected open space that prioritizes the establishment of a substantial amount of public and private protected open space. These areas should preserve and restore natural landforms which includes area associated with the ERPO.

Demographics:

The following chart summarizes the demographic impacts of the application based on long range land use designation proposed:

PW Digital Gateway Plan		
	Existing AE and ER	**Proposed T/F**
Total Acres	**±2,139**	**±2,139**
Residential Acres	**±1,699**	**0**
Employment Acres	**0**	**±1,322**

PW Digital Gateway Plan				
	Existing AE and ER		Proposed T/F	
ER Acres	±439.8		0	
	Low	High	Low	High
Total Employees	0	0	1,471-2,036	3,000-4,154
Total Dwellings	213	213	0	0
Total GFA for T/F Uses	0	0	13,240,145	27,000,000
Residents	718	718	0	0

These calculations assume that the AE will develop with 1 dwelling unit per 10 acres and 3.32 persons per unit. The T-3 Transect is assumed to develop at 0.23-0.57 FAR and T/F Tech/Flex to develop with data centers and supportive uses. Employees per square foot "SF" are calculated using a range: 1 employee per 9,000 SF of building for data centers and supportive uses, and also 1 employee per 6,500 SF. This information is based on the population, housing, and employment projection methodology used by the Metropolitan Washington Council of Governments, and recent County studies.

*Information from Trip Generation Estimates indicate a potential GFA range for Data Center use only to be Low: 13,240,145 SF and High: 27,000,000 SF.

Economic Development/Planned Employment Capacity

The proposed amendment will result in an increase of planned employment capacity. Under the proposed Comprehensive Plan amendment, T/F, Technology/Flex with a T-3 Transect, increases the planned employment capacity to an average of 2,665 jobs based on the population, housing and employment projection methodology used by the Metropolitan Washington Council of Governments. The increase in planned employment capacity supports the adopted Strategic Plan goal to increase the County's commercial tax base.

Community Design

An attractive, well-designed County will attract quality development, instill civic pride, improve the visual character of the community, and create a strong, positive image of Prince William County. The Community Design Plan sets out policies and action strategies that further the County's goals of providing quality development and a quality living environment for residents, businesses, and visitors, and creating livable and attractive communities.

The PW Digital Gateway Study Area establishes Pageland Lane as a technology corridor promoting opportunities for the expanding data center industry. Development within the CPA Study Area prioritizes context sensitive design considerations towards adjacent land uses, historic viewsheds, and natural resources.

Cultural Resources Analysis

Prince William County promotes the identification, evaluation, and protection of cultural resource sites throughout the County, as well as the tourism opportunities these sites present. The Cultural Resources Plan recommends identifying, preserving, and protecting Prince William County's significant historical, archaeological, architectural, and other cultural resources – including those significant to the County's minority communities – for the benefit of all the County's citizens and visitors. To facilitate the identification and protection of known significant properties that have cultural resource values worthy of preservation, the land use classification County Registered Historic Site (CRHS) is used in the Comprehensive Plan. This Plan area includes areas of potentially significant known but ill-defined or suspected pre-historic sites, Civil War sites, historic viewsheds, landscapes or areas of potential impact to important historic sites, and encourages the identification, preservation, protection, and maintenance of all cemeteries and/or gravesites located within the County.

Previously Recorded Resources

Portions of this Plan area were subjected to systematic testing for the presence of cultural resources during corridor analysis review of the Tri-County/Bi-County Parkway. These studies were required for the proposed Parkway to comply with the National Environmental Policy Act of 1969, as amended; and Section 106 of the National Historic Preservation Act of 1966, as amended. Individual property owners also conducted archaeological investigation of a portion of their property. The County identified seven cemeteries in this Plan area during the Historical Commission's countywide survey of cemeteries. Even with these previous identification studies, most of the Plan area has not been subject to systematic survey at the Phase I level.

The Southern district as identified in Figure 1 of the draft Comprehensive Plan Amendment CPA2021-00004, PW Digital Gateway contains the following previously recorded cultural resources:

State Site #	**Name**
44PW0580	Railroad
44PW0593	Cemetery - Mass Civil War Burial
44PW0594	1916 Pit Latrine
44PW1931	Cemetery - Philips
076-0137	Farm, 6312 Pageland Lane
076-0138	Farm, 6308 Pageland Lane
076-0271	Manassas Battlefield Historic District**
076-0434	House, 6612 Lolan Drive
076-5106	Single Dwelling
076-5190	Manassas II Battlefield
	*Manassas National Battlefield Park
*Cultural resource adjacent to the plan area ** National Register of Historic Places district	

This district is within the National Register listed Manassas Battlefield Historic District, the Second Manassas Battlefield Study Area*, the Manassas Battlefield Core Area*, and the Manassas Battlefield Potential National Register District* [Note: areas designated with an "*" were designated by the American Battlefield Protection Program, a division of the National Park Service, which the County uses for Planning purposes and studies; and to analyze potential impacts to battlefield resources].

The Northern district as identified in Figure 1 of the draft Comprehensive Plan Amendment CPA2021-000, PW Digital Gateway contains the following previously recorded cultural resources.

State Site #	**Name**
NA	Cemetery - Manuel
44PW0595	19th Century Road
076-0166	Cemetery - Pattie
076-0292	House Site & Cemetery – Haislip
076-5103	House – Thornton Drive
076-5105	Claas Farm, 5904 Pageland Lane
076-5190	Manassas II Battlefield
NA	Cemetery - Settle
NA	Cemetery – Marble Hill (slave)
44PW0596	Trash Midden, 1900-1924
076-0186	Mount Pleasant, 12895 Livia Drive
076-5102	House, 4904 Sudley Road
076-5190	Manassas II Battlefield
076-5321	Lone Oak Farm, 3505 Pageland Lane
076-5323	Barn, Pageland Lane
076-5330	Cemetery – Cushing; Farm, 12150 Marble Hill Lane

This district is within the National Register listed Manassas Battlefield Historic District, the Second Manassas Battlefield Study Area*, the Manassas Battlefield Core Area*, and the Manassas Battlefield Potential National Register District* [Note: areas designated with an "*" were designated by the American Battlefield Protection Program, a division of the National Park Service, which the County uses for Planning purposes and studies; and to analyze potential impacts to battlefield resources].

Viewshed Analysis

The purpose of the viewshed analysis was to provide information to inform policies for this Plan area. This analysis is not based on any specific development or rezoning proposal and did not use data such as:

- specific, proposed, building locations,
- finished grades,
- building elevations above finished grades,
- rooftop mechanical heights; and
- removal of existing vegetation or the inclusion of new vegetation/buffers.

This viewshed analysis shows the locations where potential buildings or structures, at the tested height, are likely to be visible from one or more observer points. Potential heights of 35 feet through

105 feet from existing grades were evaluated. The evaluated heights represent potential data center building heights and their associated structures like rooftop mechanical equipment. See figures 7 – 12 in the Plan. Specific policies in the Plan conditionally recommend additional, more detailed viewshed analysis when more detailed information is available.

Summary Statements

The previous studies during the Tri/Bi-Count Parkway and the Viewshed analysis indicate there are significant resources in the Plan area and indicate there are potentially undiscovered resources that could be significant in the Plan area. These resources include archaeology sites, architectural sites and previously evaluated architectural sites who potentially have an important person or persons; or event or events associated with them that are not fully researched or evaluated, significant landscapes, and historically important viewsheds that provide important historic context (setting, feeling, association. These resources warrant further study and analysis when proposals that contain site specific development data are submitted.

Plan areas within the boundaries of the Manassas Battlefield National Register Historic District, the Second Manassas Battlefield Study Area, the Manassas Battlefield Core Area, and the Manassas Battlefield Potential National Register District should be considered sensitive for unmarked military burials.

Historical Commission

The Historical Commission (Commission) provided comments and recommendations on owner/applicant submitted comprehensive plan for this Plan area. The most recent is for the third submission from the owner/applicant, which are included below and are attached to this report. Staff strongly considered these comments in our proposed Plan. The Commission will review this proposed plan during their regularly scheduled meeting on September 13, 2022, and those comments will be supplied to the Planning Commission on September 14, 2022.

- For Comprehensive Plan Amendment (CPA): Recommend splitting the parcel into South and North sections (see attached map).
- Southern Section - keep existing land use or change to Parks and Open Space (P&OS).
- Northern Section – before decision on the CPA, request an Architectural Survey and Evaluation of above ground resources; those above ground resources eligible for listing on the National Register of Historic Places should be preserved in place.
- Northern Section - mitigation so any new buildings, structures, power lines, towers are not visible from the Manassas National Battlefield Park.
- Northern Section - request Phase I study with a rezoning application and, if warranted, Phase II evaluation and Phase III data recovery study. Artifacts to be donated to and curated with the County.
- Cemeteries - in all sections to be preserved in place with enhanced preservation area/buffers.
- If rezoning is requested: Southern section same as CPA recommendation.

Proposal's Strengths

- Detailed viewshed analysis when conditions are met
- Phase I and Phase II evaluation cultural resources studies
- Research of the Settlement and Thornton School and public interpretation of these resources
- Plan area-wide interpretive plan
- Plan area-wide landscaping plan (including signage)
- Encourages citizens donations of archaeological collections
- Creation of cultural resource parks

Proposal's Weakness

- The size of this Plan area creates difficulty in crafting very specific policy recommendations for individual resources that are already identified and recorded
- Plan recommendations such Plan wide interpretive plan and landscaping plan will likely not be proffered by applicants due to the fact it impacts are plan wide and not specific to a given rezoning project area. Which means the County will have find a different funding source.

Surrounding Land Uses

The site is comprised of four geographical areas as reflected in the Attachment. The subject properties and surrounding properties are designated AE, Agricultural or Estate and zoned A-1, Agricultural (1unit/10 acres).

The northwest area is generally surrounded by agricultural related services, single family detached units, and vacant land. Pageland Lane forms the eastern boundary. This area abuts a small SR-5 zoned area.

The northeast area is generally surrounded by agricultural related services, single family detached units, and vacant land. This area lies east of Pageland Lane and fronts on Route 234. The Dominion powerline bisects this area running in a north/south direction. The area is bisected in an east/west direction with a creek area designated ER, Environmental Resource. Across Route 234 is a park and a small CR, Convenience Retail designated area, zoned B-3.

The southeast area is generally surrounded by agricultural related services, single family detached units, and vacant land. The Dominion power easement bisects this area running in a north/south direction. This parcel is surrounded on three sides by protected open space and/or the Manassas National Battlefield Park (a designated CRHS, County Registered Historic Site) which abuts the eastern and southern boundary. Pageland Lane forms the western boundary.

The southwest area generally surrounded by agricultural related services, single family detached units, and vacant land. Pageland Lane forms the eastern boundary of this area. Conway Robison

Memorial State Forest forms the southern and southwestern boundary. The northeast corner of this area is designated ER, Environmental Resource.

See the attached Long Range Land Use Map for the alignment of the 250' wide power easement which runs along the east side of Pageland Lane.

Direction	Land Use	Long Range Future Land Use Map Designation	Zoning
North	Vacant, Agricultural, Single Family Detached, Route 234	AE, ER, CR, P&OS	CR3, A-1, SR-5
South	Conway Robinson Memorial State Park, Manassas National Battlefield Park	AE, P&OS, CRHS, ER	A-1, SR-5
West	Residential Single-Family Detached Dwellings are located southwest	AE	A-1, PMR
East	Vacant, SFD Residential, Agricultural	AE	A-1

Transportation Analysis

Transportation Infrastructure – The existing long-range land use designations are expected to generate trips based on their planned future land uses. The proposed change to the long-range land use of this site from AE, Agricultural or Estate and ER, Environmental Resource to T/F, Technology/Flex, results in a maximum 143,182 weekday vehicle trips versus a maximum of 808 weekday vehicle trips for the existing AE and ER long range land use designations, calculated assuming approximately 9,078,488 sq. ft. of light industrial, 3,491,726 sq. ft. of office space and 1,296,690 sq. ft. of retail. Overall, the projected increase is 142,374 weekday daily trips over the existing planned land uses.

The average daily trips based on a single use for Data Centers with up to 27,000,000 sq. ft. which resulted in approximately 27,337 weekday daily vehicle trips versus the 808 weekday daily vehicle trips for the existing AE and ER designation resulting in an increase to 6,637 weekday daily vehicle trips per day.

The specific transportation impacts would be reviewed and addressed during the rezoning process.

PWC Department of Transportation has provided that converting the long-range land use of these sites from an AE designation to T/F, Technology/Flex uses including Data Center uses will add significant vehicle trips to the adjacent road network with a significant increase overall in vehicle miles traveled. The CPA proposes consideration for the necessary infrastructure improvements such as widening Pageland Lane or adding Rt. 234 Bypass Extended North.

Note that a CPA that significantly affects a VDOT road is required by Section 15.2-2222.1 of the Code and 24V AC30-155-30. A. of the Traffic Impact Regulations to be submitted to VDOT for a Regional review with a 90-day review period. Pageland Lane, Sudley Road and Lee Highway are VDOT roads that will be significantly affected by the proposed land use and will require this review period.

There is no correlation between PW Digital Gateway and the Bi-County Parkway. The traffic related to the CPA will need to be mitigated in some way. The Bi-County Parkway was a regional facility that was to connect two interstates. When shown on the County's Thoroughfare Plan, Pageland Lane and the Bi-County Parkway were not the same facility. They were two distinct and separate facilities serving two different purposes. The applicants for any rezonings in this area will need to mitigate traffic impacts. PW Digital Gateway's analysis stated that a 4-lane Pageland Lane as a minor arterial with six signalized intersections between Sudley Road and Rt. 29 could handle the traffic generated by its development, and therefore it did not include a model run including the Bi-County Parkway.

Other Comprehensive Plan Analysis

Environment & Open Space Plan- The intent of the Environment Plan is to ensure that in developing the County, the natural beauty is preserved, water quality is protected, property values and quality of life are enhanced, and ecological diversity is preserved. With sound protection measures, such as those presented herein, Prince William County's citizens, business community, and visitors enjoy a healthy environment co-existing with a vibrant economy.

In accordance with § 15.2-2224, Code of Virginia various surveys and studies, including environmental studies are consulted in evaluation of the Comprehensive Plan. The County uses a variety of existing surveys and studies in its evaluation including, but not limited to, floodplain, Chesapeake Bay Preservation Areas, soils, topography and tree cover. The Planning Office reviews this information in collaboration with the County's Environmental Services division to ensure all environmental resources are identified and inform policy recommendations to ensure environmentally sensitive features are protected. Subsequent rezoning applications will be required to submit a more detailed Environmental Constraints Analysis (ECA) which shows specific site conditions

The CPA addresses the Environmental and Open Space plan through several polices in the Green Infrastructure and Sustainability sections of the PW Digital Gateway Plan. These respective sections address policies and action strategies in support of the County's goals to preserve, protect, and enhance the significant environmental resources, open space, and opportunities for both passive and active recreation which promote a healthy lifestyle for County residents. Within the PW Digital Gateway Plan, Open Space requirement is 30% which exceeds the proposed 20 minimum open space requirement in the TF, Technology/Flex classification.

Potable Water & Sanitary Sewer Chapter-The Potable Water and Sanitary Sewer Chapters of the Comprehensive Plan states the policies and action strategies in support of the County's goals to provide adequate potable water and wastewater treatment in a cost effective and efficient manner. The Water and Sewer component of the PW Digital Gateway Special Study Area provides additional policies and action strategies that apply specifically to Study Area.

The PW Digital Gateway Study Area is not currently served by public water and sewer. Policies are provided to ensure adequate infrastructure is provided to support the proposed development in a cost effective and environmentally friendly manner.

The Prince William County Service Authority ("SA") indicated that data center water consumption

varies depending on several factors, including but not limited to the size of the facility. The Comprehensive Plan Amendment #CPA2021- 00004, PW Digital Gateway bases the potential use of water on the Service Authority records for 25 operational data centers in Prince William County, the average daily water consumption of a single data center building is about 18,000 gallons per day while the maximum day consumption of a single data center building is about 88,000 gallons per day. The amount of water data centers consume also fluctuates based on seasonal weather conditions. Facilities typically use less water during the winter months and more during the summer months. Currently, the combined water consumption of the operational data centers in Prince William County accounts for about 1.5% of the Service Authority's average-day demand and about 3.9% of the Service Authority's maximum-day demand. The type of data center and water requirements will be evaluated by the SA with the rezoning applications.

The Applicant states: "most data centers are migrating to closed-loop or zero water cooling systems. In either case, only domestic water usage is required (i.e. – sinks and toilets). If refrigerant is used, it is maintained in a separated, sealed line and only opened for a controlled recycling process. The Service Authority water usage estimates appears to be based upon historical data from existing data centers that mostly use older water-assisted cooling systems".

The CPA for PW Digital Gateway includes Action Strategy DGWS1.2:

> Encourage efficient water usage for data center development within the Study Area, such as utilized "closed loop water" or "no water" cooling systems. Encourage development to further minimize water consumption through the use of recycling water.

In accordance with the Service Authority's Development Review Process and System Improvement Policy, "growth pays for growth". The applicant/developer, and not the Service Authority's existing customer base, would be responsible for the design and construction of the infrastructure necessary to serve their development through any approved zoning requests. All proposed development projects are reviewed by the Service Authority to determine if the existing water distribution, sewer collection systems, and pump stations are adequate to meet the projected water demands and wastewater flows. Deficiencies will be identified, and the applicant will be notified of their requirements to meet the Service Authority's established performance standards for service. The applicant would be required to pay for the extension of water and sewer lines into the Pageland Corridor as a part of the rezoning, development review and construction process.

Technology and Connectivity Chapter – This chapter provided guidelines for the development of the technology needs of the County. The Board adopted the Technology and Connectivity Chapter of the Comprehensive Plan on November 26, 2019, which provides numerous policies and action strategies to address the technology needs of the County. Specifically, strategies TC13, TC16, TC17, TC18, TC19, and TC20 include promoting a competitive environment to secure reliable services, goals for expanding the 5G network, encourage collaborative efforts with carriers, define critically sensitive view sheds and environmental resources to be protected, and adoption of land use regulations to guide data center development.

Electric Utility Service- Although this is not a Chapter of the existing Comprehensive Plan, there have been several questions regarding if there is adequate power in the system to meet the needs of the proposed data center uses in the PW Digital Gateway Plan.

The PW Digital Gateway Plan has policies and action strategies that address power efficiency in the Sustainability section. These sustainability initiatives include; onsite renewable energy such as solar power, achieve LEED-Core and Shell standard, energy efficiency design and operation standards, such as the Design PUE (Power Utilization Effectiveness) or Green Globes.

In addition to these initiatives, Dominion Energy and NOVEC responded to questions regarding power infrastructure. NOVEC indicated that they would construct electric facilities of sufficient capacity to meet the electric requirements of any prospective NOVEC data center customers (the PW Digital Gateway is wholly within NOVEC's distribution service territory). NOVEC would request Dominion Energy to interconnect these NOVEC facilities to Dominion Energy's regional transmission network. Dominion Energy, as owner of the regional transmission facilities, would determine the availability of transmission system capacity. Dominion Energy has an obligation to serve its customers (NOVEC in this case) and meet any new power needs from the community. Dominion Energy will continue to evaluate capacity needs in line with current federal standards and rules governing electric transmission reliability criteria, such as megawatt load on lines and substations.

MOTION: **ANGRY** **July 20, 2021 Regular Meeting**

SECOND: **BAILEY** **Res. No. 21-445**

RE: **INITIATE COMPREHENSIVE PLAN AMENDMENT #CPA2021-00004, PW DIGITAL GATEWAY – GAINESVILLE MAGISTERIAL DISTRICT**

ACTION: **APPROVED**

WHEREAS, under Section 15.2-2229 of the Virginia Code, the Prince William Board of County Supervisors (Board) may consider amendments to the Comprehensive Plan; and

WHEREAS, an application for an amendment to the Comprehensive Plan was received to change the Long Range Land Use designation for approximately ±801.59 acres (Property) from Agricultural or Estate (AE) and Environmental Resource (ER) to Technology / Flex (TF) with a T-3 Transect. The parcels are grouped into four (4) separate geographical areas located on both the east and west side of Pageland Lane, south of State Route 234 and north of State Route 29. The request includes 27 GPINs: 7498-83-1869, 7498-83-1842, 7498-93-5350, 7498-93-7484, 7498-94-5907, 7498-83-6698, 7498-74-6800, 7498-42-6117, 7498-51-1835, 7499-81-6203, 7499-82-1020, 7499-70-3896, 7499-73-5646, 7499-83-4804, 7499-83-9783, 7499-92-7290, 7499-84-1172, 7499-62-5386, 7499-50-2914, 7499-51-0789, 7499-72-1255, 7498-84-605, 7498-85-3325, 7498-85-7316, 7498-94-1180, 7598-13-2096, and 7498-74-3579; and

WHEREAS, initiation allows for a more detailed analysis of the requested use and impact on Prince William County; and

WHEREAS, the initiation is for a targeted industry use as identified by the Board to support a robust economy; and

WHEREAS, this request aligns and compliments the initiation of the Data Center Opportunity Zone Overlay District by the by the Board on May 18, 2021; and

WHEREAS, initiation would provide an opportunity to align decisions regarding technology and connectivity options with the Technology and Connectivity Chapter; and

WHEREAS, County staff recommends that the Board initiate this comprehensive plan amendment; and

WHEREAS, the Board finds that initiation of the comprehensive plan amendment guides and accomplishes a coordinated, adjusted and harmonious development of the territory which will, in accordance with present and probable future needs and resources, best promote the health, safety, morals, order, convenience, prosperity, and general welfare of the inhabitants, including the elderly and persons with disabilities;

July 20, 2021
Regular Meeting
Res. No. 21-445
Page Two

NOW, THEREFORE, BE IT RESOLVED that the Prince William Board of County Supervisors hereby initiates an amendment to the Comprehensive Plan of the Property described above from AE, Agricultural or Estate and ER, Environmental Resource to Technology / Flex (T/F) with a T-3 Transect to include related impacts on supporting infrastructure and consider alternative comparable land use designation options that meet the needs of the Applicant and the priorities of the Prince William Board of County Supervisors;

BE IT FURTHER RESOLVED that a friendly amendment was made and approved to enhance the study area to include the entire corridor between Route 29 and Sudley Road in order to review in a more holistic manner (traffic, land use, and environmental concerns), look carefully at the areas directly abutting Conway Robinson Memorial State Forest and the Manassas National Battlefield Park, and coordinate the review with the open space corridor concepts of the rural area (native plant buffering and sustainability) to preserve as much of the area as possible.

Votes:
Ayes: Angry, Bailey, Boddye, Franklin, Wheeler
Nays: Candland, Lawson, Vega
Absent from Vote: None
Absent from Meeting: None

For Information:
Planning Director

Mary Ann Ghadban, Authorized Agent
5389 Pageland Lane
Gainesville, VA 20155

ATTEST: Andrea P. Madden
Clerk to the Board

HISTORICAL COMMISSION RESOLUTION

MOTION: **PORTA** **May 10, 2022**
Regular Meeting

SECOND: **GREEN** **Res. No. 22-027**

RE: **LAND DEVELOPMENT RECOMMENDATIONS**

ACTION: **APPROVED**

WHEREAS, the Prince William County Historical Commission seeks to identify, preserve and protect historic sites and structures in Prince William County; and

WHEREAS, the Prince William County Historical Commission's review of pending land development applications assists in determining the necessity for cultural resource surveys and other research and evaluations; and

WHEREAS, the Prince William County Historical Commission believes that the identification, preservation and protection of historic sites and structures throughout Prince William County is well served by this action;

NOW, THEREFORE, BE IT RESOLVED, that the Prince William County Historical Commission does hereby recommend to the Prince William County Planning Commission the action(s) noted for the following properties:

Case Number	Name	Recommendation
REZ2022-00018	Youth for Tomorrow Crosses – Proffer Amendment	No Further Work
REZ2021-00020	John Marshall Village Addition	In response to the Applicant's request for information on the type, cost, and potential location of the historical marker please note: current price to manufacture the standard Historical Commission marker with the Prince William County seal is approximately $3000 not including installation; a preferred location for the historical marker is proximate to the entrance of the development with a pull-off area to enable citizens to safely read the historical marker.

Case Number	Name	Recommendation
SUP2022-00003	John Marshall Village Addition	No Further Work
REZ2016-00021	Kline Property 14th Submission	If a Phase I study and, if warranted, Phase II evaluation and Phase III data recovery study are performed artifacts to be donated to and curated with the County. Investigate possibility of preserving the silos on the site. As previously requested, confirm 25 foot buffer for the existing Lutheran Machpelah Cemetery.
SUP2017-00037	Kline Property – Pharmacy (Drive-Through) 8th Submission	No Further Work
CPA2021-00004	PW Digital Gateway 3rd Submission	In the absence of a response from the applicant to the Historical Commission's previous recommendations (included below), the Historical Commission is compelled to recommend denial. For Comprehensive Plan Amendment (CPA): Recommend splitting the parcel into South and North sections (see attached map). Southern Section - keep existing land use or change to Parks and Open Space (P&OS). Northern Section – before decision on the CPA, request an Architectural Survey and

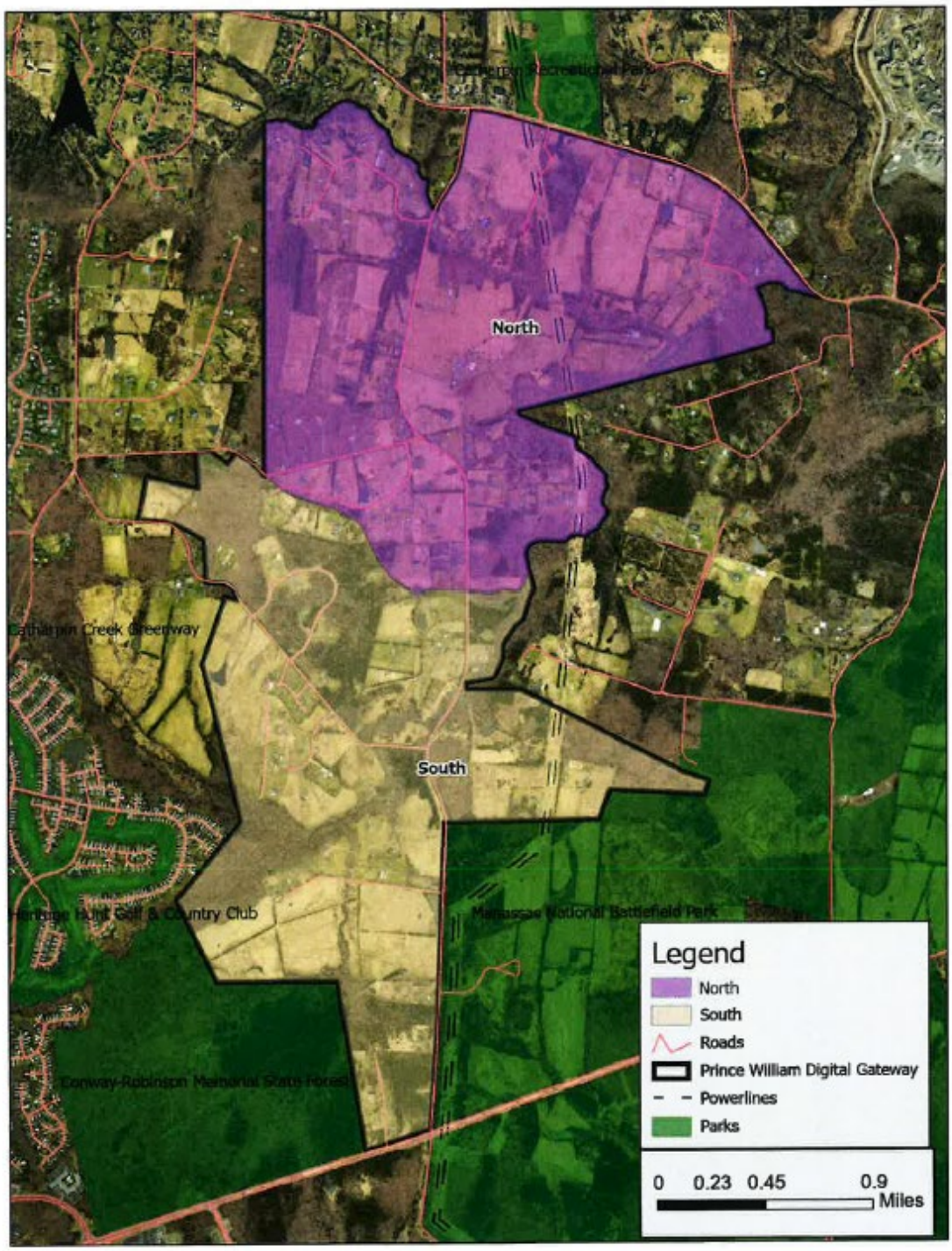
Case Number	Name	Recommendation
		Evaluation of above ground resources; those above ground resources eligible for listing on the National Register of Historic Places should be preserved in place. Northern Section - mitigation so any new buildings, structures, power lines, towers are not visible from the Manassas National Battlefield Park. Northern Section - request Phase I study with a rezoning application and, if warranted, Phase II evaluation and Phase III data recovery study. Artifacts to be donated to and curated with the County. If rezoning is requested: Southern section same as CPA recommendation. Cemeteries - in all sections to be preserved in place with enhanced preservation area/buffers.
REZ2022-00021	Interstate Drive	Following up on the Phase I study and Phase II evaluation, continue to donate and curate any future artifacts with the County. Request the rare vegetation flower that was discovered be labeled and preserved in a garden. Request creating a habitat/sanctuary for the bats.

Case Number	Name	Recommendation
REZ2022-00027	St. Katharine Drexel SUP Amendment	Request applicant follow The Journey Through Hallowed Ground landscape guidelines.
PFR2022-00013	Woodbridge Area Elementary School	Phase I study and, if warranted, Phase II evaluation and Phase III data recovery study. Artifacts to be donated to and curated with the County.
SUP2022-00022	Kline Property – Self Storage Center	No Further Work
SUP2022-00023	Kline Property – Restaurant with Drive-Through	No Further Work
REZ2022-00022	Devlin Technology Park	No Further Work

Votes:
Ayes: by acclamation
Nays: None
Absent from Vote: None
Absent from Meeting: Moser, Sargo, Shockley
MOTION CARRIED

ATTEST: Antoinette Brzydek
Secretary to the Commission

May 10, 2022
Regular Meeting
Res. No. 22-027
Page 5



List of Targeted Industries for New and Expanding Companies

MOTION: **ANGRY** **August 4, 2020 Regular Meeting**

SECOND: **BAILEY** **Res. No. 20-587**

RE: **AMEND THE LIST OF TARGETED INDUSTRIES FOR NEW AND EXPANDING COMPANIES TO INCLUDE RETAIL REUSE AND COVID-19 RECOVERY TARGETED FAST TRACK PERMITTING**

ACTION: **APPROVED**

WHEREAS, the Prince William Board of County Supervisors adopted, as part of its Strategic Plan, a list of targeted industries for its economic development efforts; and

WHEREAS, these targeted industries reflect the investment and employment goals of the County's economic development program; and

WHEREAS, the Department of Economic Development uses these targeted industries to develop specific marketing efforts; and

WHEREAS, this list of targeted industries was developed in 1995; and amended in 1999, 2014, and 2019; and

WHEREAS, the County's marketing initiatives should reflect the impacts of the COVID-19 pandemic in changing the economy of the Northern Virginia and Metropolitan Washington area and emerging new technologies; and

WHEREAS, changing market conditions and the rise of e-commerce may result in vacant retail space that can negatively impact surrounding businesses and neighborhoods; and

WHEREAS, the County's Robust Economy Strategic Plan has goals of increasing investment in redevelopment areas and increasing the commercial tax base; and

WHEREAS, the County may provide incentives to assist locating targeted industries in the County; and

WHEREAS, the Director of Economic Development makes the determination of whether a company meets the criteria of targeted industries;

NOW THEREFORE, BE IT RESOLVED that the Prince William Board of County Supervisors hereby amends the list of targeted industries for new and expanding companies to include Retail Reuse and COVID-19 Recovery Targeted Fast Track Permitting.

Prince William County, Virginia

List of Targeted Industries
New or Expanding Companies
August 4, 2020

Information Communication Technology

- Software design, production and testing
- Equipment design, production and testing (telecom, computers, internet service equipment)
- Satellite design, production, testing and servicing
- Communication providers (ISP's)
- Data Centers
- Computer Game Design
- IT and Cyber Security
- Modeling/Simulation
- Data Analytics
- Computer-aided design and controls
- Internet of Things design and production

Life Sciences

- Pharmaceutical-research, drug development and manufacturing
- Contract research organization
- Contract manufacturing organization
- Biomedical-research, development, testing, manufacturing, clinical trials
- Medical and diagnostic devices
- Manufacturing of biological materials
- Personalized Medicine
- Bioinformatics
- Proteomics
- Nanotechnology related to life sciences and health care

Medical Networks

- Medical Networks
- Sports and preventive medical practices and other large specialty practices
- Laboratory testing facilities with no on-site patients
- Healthcare providers that partner with a research university; or, involved in product development or clinical trials.

Federal Government Contracting

- Biosecurity
- Cybersecurity
- Forensics
- Information Communications Technology

Corporate Facilities

- Headquarters – global, national, regional and divisional
- Technical/operations centers and training facilities
- Back Office Facilities

Logistics and Supply Chain

- E-Commerce Fulfillment or Distribution Centers
- Last-Mile Fulfillment or Distribution Centers
- Retail Distribution Centers
- Wholesale Distribution Centers (except those with on-site retail operations)
- Food and Beverage Distribution Centers

Advanced Manufacturing

- Advanced Manufacturing is defined as companies and organizations that are engaged in the manufacturing of goods with an advanced technological component or support the

manufacturing process through research and development and technological advances, to help advance manufacturing processes and produced goods.

Destination based revenue positive tourism-related projects

- Including distilleries, wineries and breweries that provide a customer venue in a commercial space for tastings, sales and/or restaurant services.

Retail Reuse

- Unique and/or innovative anchor retail tenant opportunities in Small Area Plans, Opportunity Zones, redevelopment geographies and blighted areas, or that fill and/or reuse vacant retail space that assists in revitalizing an area.

COVID-19 Recovery Targeted Fast Track Permitting

- The temporary condition will be in effect for 1 year, from August 4, 2020 through August 3, 2021.
  The Department of Economic Development Executive Director may designate any commercial project not already included in a category on the Targeted Industry List as Targeted, to receive expediting permitting and associated fee reduction if it can be clearly demonstrated that the project will create jobs or stimulate economic development in this COVID-19 recovery.

Other Companies and Opportunity Zone locations:

Companies that do not meet the definition of one of the industries listed above may be deemed by the Prince William County Board of County Supervisors, upon recommendation of the Department of Economic Development, as appropriate to merit as a targeted industry if the company meets at least two of the following criteria:

- A company that plans to create 50 net new full-time jobs because of a new business location, or 25 net new full-time jobs as a result of an existing business expansion; or
- A company whose average wage is 125% of Prince William County's average annual wage; or

- A company investing at least $5,000,000 (new business) $2,500,000 (existing business expansion) in manufacturing equipment, computer or processing equipment, building or capitalized lease value; and/or business equipment, furniture, and fixtures as a result of a new business location or business expansion.
- Or, the company is locating in an Opportunity Zone or designated redevelopment area.

Any project deemed by the Board of County Supervisors, upon recommendation of the Department of Economic Development, as appropriate to merit such designation as being in accordance with the County's Economic Development Strategic Plan.

Viewshed Analysis Methodology - CPA2021-00004, PW Digital Gateway

The purpose of this viewshed analysis is to provide information to inform development of policies for Comprehensive Plan Amendment, CPA2021-00004, PW Digital Gateway. This analysis is not based on any specific development or rezoning proposal and did not use data such as:

- specific, proposed, building locations,
- finished grades,
- building elevations above finished grades,
- rooftop mechanical heights; and
- removal of existing vegetation or the inclusion of new vegetation/buffers.

This viewshed analysis shows the locations where potential buildings or structures, at the tested height, are likely to be visible from one or more observer points. Potential heights of 35 feet through 105 feet from existing grades were evaluated. The evaluated heights represent potential data center building heights and their associated structures like rooftop mechanical equipment.

Key Tools and Data

See the attached methodology in Appendix A for a full technical description for preparation of the Viewshed Analysis maps.

- ESRI's ArcGIS Pro (v2.8.0) – mapping program
- ESRI's Geodesic Viewshed tool
- average person is just over 5 foot tall
- 20 observation points
- 2011Digital Surface Model (DSM) includes terrain, existing vegetation and trees

Observation Points

Twenty (20) Observation Points were selected for this analysis. These locations were determined in consultation with Planning staff and staff at Manassas National Battlefield Park. Of these 20 points, 10 points used in this study, were identified during the *Manassas Battlefields Viewsheds Plan* (2010). Three points were identified during viewshed analysis for the Gainesville Crossing and Westview 66 rezonings and in consultation with staff from Manassas National Battlefield Park. Seven observation points were added to this current analysis to ensure coverage, due to the large number of unknowns about this comprehensive plan amendment. These seven points were identified in consultation with staff from Manassas National Battlefield Park and at the direction of the County Archaeologist.

Observation Point Criteria

- Areas selected feature a high elevation in order to include the optimal amount of relevant land area
- Areas selected feature the most historically significant lands relative to the two battles
- Areas selected either currently have reasonable public accessibility or have the potential to have reasonable public accessibility to benefit the broadest spectrum of visitors. Accordingly, selected areas have reasonable access to the park's driving tour route or trail network
- Points were selected that assess impacts to both the First and Second Manassas. Although, it is likely the greatest impacts will occur to historical resources associated with Second Manassas

Battlefields Areas

The American Battlefield Protection Program, a division of the National Park Service, identifies three primary areas of a battlefield.

> *Battlefield Core Area*: This area consists of locations where the primary combat occurred. These are lands from which fire was delivered or received. In other words, shots were fired and soldiers were killed or wounded.
>
> *Battlefield Study Area*: In addition to the Battlefield Core Areas, this area consists of lands peripheral to the Battlefield Core Area where troop movements, encampments, staging areas, field hospitals and similar activities occurred and are directly related to, but ancillary to, combat.
>
> *Areas of Integrity*: This area consists of locations where a high level of visual integrity has survived and the historic landscape has remained substantially intact with only minor intrusions. Intrusions are changes to the landscape since the battles, such as post-war roads, buildings, parking areas, utility poles and lines, and significant landscape alterations.

The plan area's southern sector possesses a high degree of integrity. It is in the Manassas Battlefield Historic District (076-0271), which is listed on the National Register of Historic Places. While just outside the primary of engagement, the Core Area, it is in the Battlefield Study Area. Field hospital(s), mass burials, troop movements, and artillery battery locations are documented in this area.

Digital Gateway Viewshed Process

Project Summary

Conduct a viewshed analysis for CPA2001-00004, PW Digital Gateway. The viewshed analysis will provide data about which areas, if buildings were to be built at specific elevations, are more or less likely to be visible from predetermined observation points in Manassas National Battlefield Park.

Analysis Method

The "Geodesic Viewshed" ESRI tool, found in the Visibility (3D Analyst) toolset, was chosen to provide the viewshed analysis. A viewshed analysis determines visibility to an observer (or multiple observers) in all directions. Another option would have been the ESRI "Visibility" tool, however the "Geodesic Viewshed" tool, according to ESRI, has enhanced performance and functionality. The Geodesic Viewshed tool seems to be a more accurate option due to the fact that it takes the curvature of the earth at each cell into consideration. Additionally, the performance speed can be increased since the Geodesic Viewshed tool can leverage the computing power of a graphics card. See Appendix A for more information on the Geodesic Viewshed tool from the ESRI website.

Coordinate Systems

County standard coordinate systems of "NAD 1983 StatePlane Virginia North FIPS 4501 (US Feet)" for XY and "NAVD 1988" for Z values were used.

Project Details

Geodesic Viewshed Inputs

All the data used in this project can be found in the ArcPro Package "DigGatewayViewshed_2022.ppkx". See Appendix B for a pictorial example of these inputs for a 35-foot building height.

- Input raster: "DSM_2011" (see more information below)
- Input point or polyline observer features: "Observer Points" (see more information below)
- Output raster: "Viewshed_Xft"
    - X is a numerical placeholder here that represents the appropriate surface offset in feet, and was changed for each viewshed analysis, as specified below.
- Analysis method: All Sightlines
    - This provides a more accurate viewshed with a full sightline on every cell of the raster rather than only on the perimeter of the visible areas.
- Analysis type: Frequency
    - This method will provide the number of occurrences each cell is visible from an observer point. This option allows us to run the tool on all observer points simultaneously, simplifies the output for usability purposes, and provides improved performance time. It does not specify which observers are likely or unlikely to see any given area.
    - To determine which specific observation points were likely visible, you could use the "Observers" option instead.
- Surface offset (e.g. building height): 35, 45, 55, 65, 75, 85, 95 and 105 ft
    - The tool was run 6 times using each of these values separately.
    - These potential building heights were provided by Planning.

- Observer offset: 1.54 Meters
    - This height of just over 5 feet, depicts a standard eye height of a person, the value of which is used for similar calculations.
- Default parameters used for:
    - Vertical error: 0 Meters
    - Refractivity coefficient: 0.13
    - Observer elevation: Unknown (uses the raster)
    - Inner radius: blank, Unknown (defaults to 0)
    - Outer radius: blank, Unknown
    - Horizontal start angle: Double, 0
    - Horizontal end angle: Double, 360
    - Vertical upper angle: Double, 90
    - Vertical lower angle: Double, -90
- On the Environment tab, we updated the output coordinate system to match county standards as listed above. We are able to transform on the fly because the underlying geographic coordinate system of the two layers is the same. See Appendix C for more information.

Project Layers

- "Observer Points" are the points provided by the Planning Office that are a combination of (1) locations determined by the Manassas Battlefields Viewsheds Study (see methodology) and (2) sites used to evaluate specific rezoning proposals, identified based on interpretive focal points, and areas identified during the evaluation that were visible.
- "Study Area" is the single polygon representing planning case "CPA2021-00004", taken directly from "VECTOR.PLAN_PENDING" in the production database. This study area represents approximately 2,133 acres which are being examined for potential data center development.
- "DSM_2011" is a digital surface model (DSM) that was provided by the Manassas National Battlefield Park, a division of the National Park Service, based on data from 2011. The model was completed by graduate students from George Mason University and provided to NPS.
- Viewsheds:
    - "Viewshed_35ft" is the layer showing visibility frequency from the observer sites at a 35-foot surface offset or building height. In other words, it portrays the parts of the surface where a 35-foot building is likely to be visible to any of the observer points, and how many different observer points it would likely be visible to.
    - "Viewshed_45ft" is similar to the "Viewshed_35ft" layer, except using a 45 ft surface offset.
    - "Viewshed_55ft" is similar to the "Viewshed_35ft" layer, except using a 55 ft surface offset.
    - "Viewshed_65ft" is similar to the "Viewshed_35ft" layer, except using a 65 ft surface offset.
    - "Viewshed_75ft" is similar to the "Viewshed_35ft" layer, except using a 75 ft surface offset.

- "Viewshed_85ft" is similar to the "Viewshed_35ft" layer, except using an 85 ft surface offset.
- "Viewshed_95ft" is similar to the "Viewshed_35ft" layer, except using a 95 ft surface offset.
- "Viewshed_105ft" is similar to the "Viewshed_35ft" layer, except using a 105 ft surface offset.

Limitations and Assumptions

- The digital surface model is from 2011 even though the analysis is being performed in 2022. This is the most recent digital surface model available at PWC that fully covers the Manassas National Battlefield Park and study area. Trees may have grown or been removed from the landscape since 2011.
- This analysis is not based on any specific development proposal and does not include data such as specific, proposed, building locations; finished grade; building elevations above finished grade; rooftop mechanicals; removal of existing vegetation; addition of new vegetation, etc.
- The GTS viewshed data is intended to assist Planning's efforts to provide a sensitivity model and not a definitive recommendation.
- The vertical datum used [NAVD88 (height) (ftUS)] is not tied to a spheroid and therefore may not be utilizing the geodesic functionality (related to the curvature of the earth) of the "Geodesic Viewshed" tool to its fullest.
- That if A can see B, the reverse is also true.

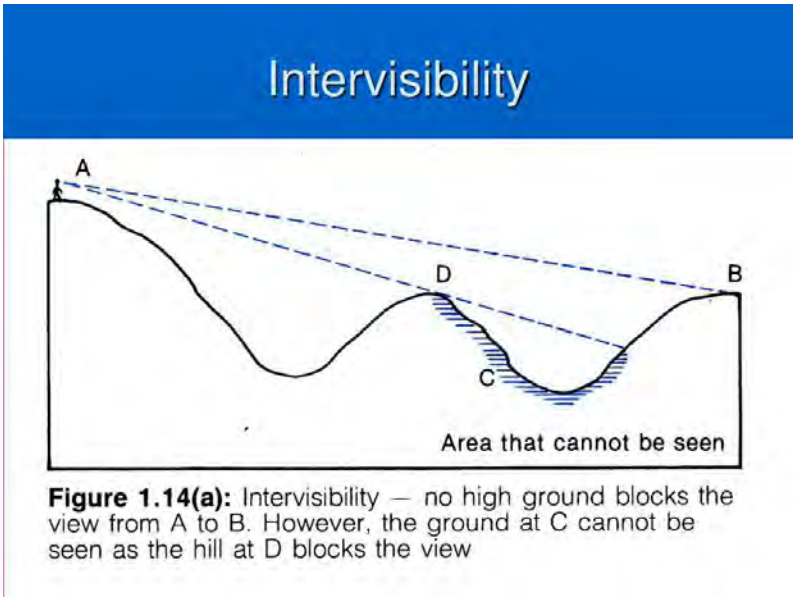


Figure 1.14(a): Intervisibility — no high ground blocks the view from A to B. However, the ground at C cannot be seen as the hill at D blocks the view

Image from Google Images, published by Márton Pataki on slideplayer.com: https://images.app.goo.gl/n8M5NFMjiwCCGyGr9

- The version of ArcPro used to perform these calculations was 2.8.0. The tools and projections may behave or look differently in other versions of ArcPro.

Appendix A

These are screen shots of what ESRI has currently published about the Geodesic Viewshed Tool.

Geodesic Viewshed (3D Analyst)

ArcGIS Pro 2.8

In this topic

Available with Spatial Analyst license.

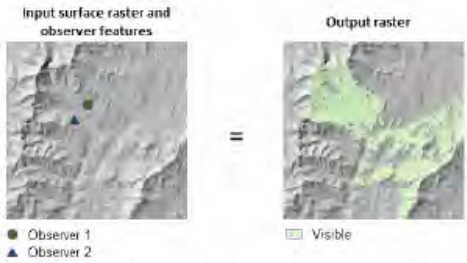
Available with 3D Analyst license.

Summary

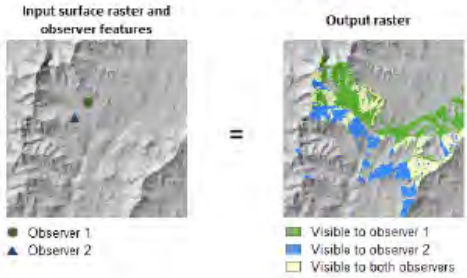
Determines the raster surface locations visible to a set of observer features using geodesic methods.

Learn more about how the Geodesic Viewshed tool works

Illustration



Geodesic Viewshed output with the Frequency option, displayed on a hillshaded elevation surface



Geodesic Viewshed output with the Observers option, displayed on a hillshaded elevation surface

Usage

- This tool performs two types of visibility analysis, Frequency and Observers, which can be set using the Analysis type parameter.
- To ensure the accuracy of the output, assign a vertical coordinate system to the input raster, if it does not already have one.
- This tool does not require a z-factor parameter. It will compute a z-factor internally using the vertical (Z) unit and the map (XY) units from the spatial reference of the input raster.
- Input rasters that contain noise, most commonly seen in high resolution data, may produce some unexpected results. Before running this tool, you can correct the data in a pre-processing step. If you have the ArcGIS Spatial Analyst extension available, you can smooth out the effect of the error by first using the Focal Statistics or the Filter tool before performing the viewshed operation.
- When the input raster needs to be resampled, the bilinear technique will be used. An example of when an input raster may be resampled is when the output coordinate system, extent, or cell size is different from that of the input.

- To enhance performance, you can explicitly set the Outer radius parameter to a value that represents the maximum viewing distance of interest for your analysis.
- By default, the Analysis Method parameter uses the All Sightlines option, which gives the most accurate output. To improve the performance of the tool in terms of processing time, use the Perimeter Sightlines option.
- The observer parameters related to height, such as Surface offset, Observer elevation and Observer offset, can be specified as a linear unit or as a field. During the calculation, the linear unit value will be converted internally to the Z unit of the input raster. However, if the linear unit is unknown or a numeric field is specified, the value is assumed to be in the Z unit of the input raster.
- The observer parameters related to viewing distances, such as the Inner radius and the Outer radius, can be specified as a linear unit or as a field. During the calculation, the linear unit value will be converted internally to the XY units of the input raster. However, if the linear unit is unknown or a numeric field is specified, the value is assumed to be in the XY unit of the input raster.
- The field specified for an observer parameter, such as Surface offset or Observer offset, can be string type that contains a numerical value and a unit. For example, if field obs_height is specified for Observer offset, it can contain values like '6 Feet'.

  In scripting, the observer parameters like observer_offset can be specified in various forms of strings. In each form, a value and a linear unit is parsed from the string. The following table list some example input strings and how the linear unit is determined for each case. For other parameters, you can follow the same pattern.

  Examples of input strings and linear units

Example of input string for Observer offset	Linear unit used
' ' or '#'	Default value and unit is used, which is 1 meter.
'6'	The Observer offset is 6 and since no unit is specified, the tool would use the default unit, meter.
'6 Feet'	The Observer offset is 6 Feet.
'6 Unknown'	The Observer offset is 6 and since no unit is specified, the tool would use the default unit, meter.

- This tool will automatically take advantage of a GPU (Graphics Processing Unit) for enhancing the performance of the tool, if it is available in your system and is configured correctly.

  More information on how to configure your GPU device is available in ArcGIS Spatial Analyst extension help in the GPU processing with Spatial Analyst help topic.
- If you do not want the tool to take advantage of the available GPU devices installed in your system, create a system environment variable CUDA_VISIBLE_DEVICES, set its value to -1 and restart your application. The tool will then execute using the CPU only. To enable your tool to use a GPU device again, either delete the system environment variable CUDA_VISIBLE_DEVICES or set the value of this environment variable to the index value (0 for the first one, 1 for the second one and so on) of the GPU device you would like to use, and restart your application.

Parameters

DialogPython

Label	Explanation	Data Type
Input raster	The input surface raster. It can be an integer or a floating-point raster. The input raster is transformed into a 3D geocentric coordinate system during the visibility calculation. NoData cells on the input raster do not block the visibility determination.	Raster Layer
Input point or polyline observer features	The input feature class that identifies the observer locations. It can be point, multipoint, or polyline features. The input feature class is transformed into a 3D geocentric coordinate system during the visibility calculation. Observers outside of the extent of the surface raster or located on NoData cells will be ignored in the calculation.	Feature Layer
Output raster	The output raster. For the Frequency analysis type, when the vertical error parameter is 0 or not specified, the output raster records the number of times that each cell location in the input surface raster can be seen by the input observation points. When the vertical error parameter is greater than 0, each cell on the output raster records the sum of probabilities that the cell is visible to any of the observers. For the Observers analysis type, the output raster records the unique region IDs for the visible areas, which can be related back to the observer features through the output observer-region relationship table.	Raster Dataset

Label	Explanation	Data Type
Output above ground level raster (Optional)	The output above ground level (AGL) raster. The AGL result is a raster where each cell value is the minimum height that must be added to an otherwise nonvisible cell to make it visible by at least one observer. Cells that were already visible will be assigned 0 in this output raster. When the vertical error parameter is 0, the output AGL raster is a one-band raster. When vertical error is greater than 0, to account for the random effects from the input raster, the output AGL raster is created as a three-band raster. The first band represents the mean AGL values, the second band represents the minimum AGL values, and the third band represents the maximum AGL values.	Raster Dataset
Analysis type (Optional)	Specifies the type of visibility analysis you wish to perform, either determining how visible each cell is to the observers, or identifying for each surface location which observers are visible. • Frequency —The output records the number of times that each cell location in the input surface raster can be seen by the input observation locations (as points or as vertices for polyline observer features). This is the default. • Observers —The output identifies exactly which observer points are visible from each raster surface location. The allowed maximum number of input observers is 32 with this analysis type.	String
Vertical error (Optional)	The amount of uncertainty (the Root Mean Square error, or RMSE) in the surface elevation values. It is a floating-point value representing the expected error of the input elevation values. When this parameter is assigned a value greater than 0, the output visibility raster will be floating point. In this case, each cell value on the output visibility raster represents the sum of probabilities that the cell is visible to any of the observers. When the analysis type is Observers or the analysis method is Perimeter Sightlines, this parameter is disabled.	Linear Unit
Output observer-region relationship table (Optional)	The output table for identifying the regions that are visible to each observer. This table can be related to the input observer feature class and the output visibility raster for identifying the regions visible to given observers. This output is only created when the analysis type is Observers.	Table
Refractivity coefficient (Optional)	The coefficient of the refraction of visible light in air. The default value is 0.13.	Double
Surface offset (Optional)	A vertical distance to be added to the z-value of each cell as it is considered for visibility. It must be a positive integer or floating-point value. You can select a field in the input observers dataset, or you can specify a numerical value. If this parameter is set to a value, that value will be applied to all the observers. To specify different values for each observer, set this parameter to a field in the input observer features dataset. The default value is 0.	Linear Unit; Field
Observer elevation (Optional)	The surface elevations of the observer points or vertices. You can select a field in the input observers dataset, or you can specify a numerical value. If this parameter is not specified, the observer elevation will be obtained from the surface raster using bilinear interpolation. If this parameter is set to a value, that value will be applied to all the observers. To specify different values for each observer, set this parameter to a field in the input observer features dataset.	Linear Unit; Field
Observer offset (Optional)	A vertical distance to be added to the observer elevation. It must be a positive integer or floating-point value. You can select a field in the input observers dataset, or you can specify a numerical value. If this parameter is set to a value, that value will be applied to all the observers. To specify different values for each observer, set this parameter to a field in the input observer features dataset. The default value is 1 meter.	Linear Unit; Field
Inner radius (Optional)	The start distance from which visibility is determined. Cells closer than this distance are not visible in the output but can still block visibility of the cells between inner radius and outer radius. You can select a field in the input observers dataset, or you can specify a numerical value. If this parameter is set to a value, that value will be applied to all the observers. To specify different values for each observer, set this parameter to a field in the input observer features dataset. The default value is 0.	Linear Unit; Field

Label	Explanation	Data Type
Inner radius is 3D distance (Optional)	Specifies the type of distance for the inner radius parameter. • Unchecked—The inner radius is to be interpreted as a 2D distance. This is the default. • Checked—The inner radius is to be interpreted as a 3D distance.	Boolean
Outer radius (Optional)	The maximum distance from which visibility is determined. Cells beyond this distance are excluded from the analysis. You can select a field in the input observers dataset, or you can specify a numerical value. If this parameter is set to a value, that value will be applied to all the observers. To specify different values for each observer, set this parameter to a field in the input observer features dataset.	Linear Unit; Field
Outer radius is 3D distance (Optional)	Specifies the type of distance for the outer radius parameter. • Unchecked—The outer radius is to be interpreted as a 2D distance. This is the default. • Checked—The outer radius is to be interpreted as a 3D distance.	Boolean
Horizontal start angle (Optional)	The start angle of the horizontal scan range. The value should be specified in degrees from 0 to 360, either as integer or floating point, with 0 oriented to north. The default value is 0. You can select a field in the input observers dataset, or you can specify a numerical value. If this parameter is set to a value, that value will be applied to all the observers. To specify different values for each observer, set this parameter to a field in the input observer features dataset.	Double; Field
Horizontal end angle (Optional)	The end angle of the horizontal scan range. The value should be specified in degrees from 0 to 360, either as integer or floating point, with 0 oriented to north. The default value is 360. You can select a field in the input observers dataset, or you can specify a numerical value. If this parameter is set to a value, that value will be applied to all the observers. To specify different values for each observer, set this parameter to a field in the input observer features dataset.	Double; Field
Vertical upper angle (Optional)	The upper vertical angle limit of the scan relative to the horizontal plane. The value is specified in degrees and can be integer or floating point. The allowed range is from above -90 up to and including 90. This parameter value must be greater than the Vertical Lower Angle parameter value. You can select a field in the input observers dataset, or you can specify a numerical value. If this parameter is set to a value, that value will be applied to all the observers. To specify different values for each observer, set this parameter to a field in the input observer features dataset. The default value is 90 (straight up).	Double; Field
Vertical lower angle (Optional)	The lower vertical angle limit of the scan relative to the horizontal plane. The value is specified in degrees and can be integer or floating point. The allowed range is from -90 up to but not including 90. This parameter value must be less than the Vertical Upper Angle parameter value. You can select a field in the input observers dataset, or you can specify a numerical value. If this parameter is set to a value, that value will be applied to all the observers. To specify different values for each observer, set this parameter to a field in the input observer features dataset. The default value is -90 (straight down).	Double; Field
Analysis method (Optional)	Specifies the method by which the visibility will be calculated. This option allows you to trade some accuracy for increased performance. • All Sightlines — A sightline is run to every cell on the raster in order to establish visible areas. This is the default method. • Perimeter Sightlines — Sightlines are only run to the cells on the perimeter of the visible areas in order to establish visibility areas. This method has a better performance than the All Sightlines method since less sightlines are run in the calculation.	String

```
arcpy.ddd.Viewshed2(in_raster, in_observer_features, out_raster, {out_agl_raster}, {analysis_type}, {vertical_error}, {out_observer_regic
```

Name	Explanation	Data Type
in_raster	The input surface raster. It can be an integer or a floating-point raster. The input raster is transformed into a 3D geocentric coordinate system during the visibility calculation. NoData cells on the input raster do not block the visibility determination.	Raster Layer
in_observer_features	The input feature class that identifies the observer locations. It can be point, multipoint, or polyline features. The input feature class is transformed into a 3D geocentric coordinate system during the visibility calculation. Observers outside of the extent of the surface raster or located on NoData cells will be ignored in the calculation.	Feature Layer
out_raster	The output raster. For the Frequency analysis type, when the vertical error parameter is 0 or not specified, the output raster records the number of times that each cell location in the input surface raster can be seen by the input observation points. When the vertical error parameter is greater than 0, each cell on the output raster records the sum of probabilities that the cell is visible to any of the observers. For the Observers analysis type, the output raster records the unique region IDs for the visible areas, which can be related back to the observer features through the output observer-region relationship table.	Raster Dataset
out_agl_raster (Optional)	The output above ground level (AGL) raster. The AGL result is a raster where each cell value is the minimum height that must be added to an otherwise nonvisible cell to make it visible by at least one observer. Cells that were already visible will be assigned 0 in this output raster. When the vertical error parameter is 0, the output AGL raster is a one-band raster. When vertical error is greater than 0, to account for the random effects from the input raster, the output AGL raster is created as a three-band raster. The first band represents the mean AGL values, the second band represents the minimum AGL values, and the third band represents the maximum AGL values.	Raster Dataset
analysis_type (Optional)	Specifies the type of visibility analysis you wish to perform, either determining how visible each cell is to the observers, or identifying for each surface location which observers are visible. • FREQUENCY —The output records the number of times that each cell location in the input surface raster can be seen by the input observation locations (as points or as vertices for polyline observer features). This is the default. • OBSERVERS —The output identifies exactly which observer points are visible from each raster surface location. The allowed maximum number of input observers is 32 with this analysis type.	String
vertical_error (Optional)	The amount of uncertainty (the Root Mean Square error, or RMSE) in the surface elevation values. It is a floating-point value representing the expected error of the input elevation values. When this parameter is assigned a value greater than 0, the output visibility raster will be floating point. In this case, each cell value on the output visibility raster represents the sum of probabilities that the cell is visible to any of the observers. When the analysis type is Observers or the analysis method is Perimeter Sightlines, this parameter is disabled.	Linear Unit
out_observer_region_relationship_table (Optional)	The output table for identifying the regions that are visible to each observer. This table can be related to the input observer feature class and the output visibility raster for identifying the regions visible to given observers. This output is only created when the analysis type is Observers.	Table
refractivity_coefficient (Optional)	The coefficient of the refraction of visible light in air. The default value is 0.13.	Double
surface_offset (Optional)	A vertical distance to be added to the z-value of each cell as it is considered for visibility. It must be a positive integer or floating-point value. You can select a field in the input observers dataset, or you can specify a numerical value. If this parameter is set to a value, that value will be applied to all the observers. To specify different values for each observer, set this parameter to a field in the input observer features dataset. The default value is 0.	Linear Unit; Field

Name	Explanation	Data Type
observer_elevation (Optional)	The surface elevations of the observer points or vertices. You can select a field in the input observers dataset, or you can specify a numerical value. If this parameter is not specified, the observer elevation will be obtained from the surface raster using bilinear interpolation. If this parameter is set to a value, that value will be applied to all the observers. To specify different values for each observer, set this parameter to a field in the input observer features dataset.	Linear Unit; Field
observer_offset (Optional)	A vertical distance to be added to the observer elevation. It must be a positive integer or floating-point value. You can select a field in the input observers dataset, or you can specify a numerical value. If this parameter is set to a value, that value will be applied to all the observers. To specify different values for each observer, set this parameter to a field in the input observer features dataset. The default value is 1 meter.	Linear Unit; Field
inner_radius (Optional)	The start distance from which visibility is determined. Cells closer than this distance are not visible in the output but can still block visibility of the cells between inner radius and outer radius. You can select a field in the input observers dataset, or you can specify a numerical value. If this parameter is set to a value, that value will be applied to all the observers. To specify different values for each observer, set this parameter to a field in the input observer features dataset. The default value is 0.	Linear Unit; Field
inner_radius_is_3d (Optional)	Specifies the type of distance for the inner radius parameter. • GROUND —The inner radius is to be interpreted as a 2D distance. This is the default. • 3D —The inner radius is to be interpreted as a 3D distance.	Boolean
outer_radius (Optional)	The maximum distance from which visibility is determined. Cells beyond this distance are excluded from the analysis. You can select a field in the input observers dataset, or you can specify a numerical value. If this parameter is set to a value, that value will be applied to all the observers. To specify different values for each observer, set this parameter to a field in the input observer features dataset.	Linear Unit; Field
outer_radius_is_3d (Optional)	Specifies the type of distance for the outer radius parameter. • GROUND —The outer radius is to be interpreted as a 2D distance. This is the default. • 3D —The outer radius is to be interpreted as a 3D distance.	Boolean
horizontal_start_angle (Optional)	The start angle of the horizontal scan range. The value should be specified in degrees from 0 to 360, either as integer or floating point, with 0 oriented to north. The default value is 0. You can select a field in the input observers dataset, or you can specify a numerical value. If this parameter is set to a value, that value will be applied to all the observers. To specify different values for each observer, set this parameter to a field in the input observer features dataset.	Double; Field
horizontal_end_angle (Optional)	The end angle of the horizontal scan range. The value should be specified in degrees from 0 to 360, either as integer or floating point, with 0 oriented to north. The default value is 360. You can select a field in the input observers dataset, or you can specify a numerical value. If this parameter is set to a value, that value will be applied to all the observers. To specify different values for each observer, set this parameter to a field in the input observer features dataset.	Double; Field

Name	Explanation	Data Type
vertical_upper_angle (Optional)	The upper vertical angle limit of the scan relative to the horizontal plane. The value is specified in degrees and can be integer or floating point. The allowed range is from above -90 up to and including 90. This parameter value must be greater than the Vertical Lower Angle parameter value. You can select a field in the input observers dataset, or you can specify a numerical value. If this parameter is set to a value, that value will be applied to all the observers. To specify different values for each observer, set this parameter to a field in the input observer features dataset. The default value is 90 (straight up).	Double; Field
vertical_lower_angle (Optional)	The lower vertical angle limit of the scan relative to the horizontal plane. The value is specified in degrees and can be integer or floating point. The allowed range is from -90 up to but not including 90. This parameter value must be less than the Vertical Upper Angle parameter value. You can select a field in the input observers dataset, or you can specify a numerical value. If this parameter is set to a value, that value will be applied to all the observers. To specify different values for each observer, set this parameter to a field in the input observer features dataset. The default value is -90 (straight down).	Double; Field
analysis_method (Optional)	Specifies the method by which the visibility will be calculated. This option allows you to trade some accuracy for increased performance. • ALL_SIGHTLINES —A sightline is run to every cell on the raster in order to establish visible areas. This is the default method. • PERIMETER_SIGHTLINES —Sightlines are only run to the cells on the perimeter of the visible areas in order to establish visibility areas. This method has a better performance than the All Sightlines method since less sightlines are run in the calculation.	String

Code sample

Viewshed2 example 1 (Python window)
This example determines the surface locations visible to a set of observers without using any observer parameters.

```
import arcpy
from arcpy import env
env.workspace = "C:/data"
result = arcpy.Viewshed2_3d("elevation", "obser1.shp", "C:/output/outvwshd01",
                            "", "OBSERVERS", "", "C:/output/obstable01.dbf")
```

Viewshed2 example 2 (stand-alone script)
This example determines the surface locations visible to a set of observers using attributes in the input feature class as the observer parameters.

```
# Name: Viewshed_3d_Ex_02.py
# Description: Determines the raster surface locations visible to a set of
#              observer features.
# Requirements: 3D Analyst Extension

# Import system modules
import arcpy
from arcpy import env

# Set environment settings
env.workspace = "C:/data"


parmSurface = "elevation"
parmObservers = "obser2.shp"
parmOutput = "c:/output/outvshd02"
parmAGL = ""
parmAnalysisType="OBSERVERS"
parmVerticalError = ""
parmAnalysisRelationTable = "C:/output/obser_region2.dbf"
parmRefractCoeff = ""
parmSurfaceOffset = "offsetb"
parmObserverElevation="spot"
parm_ObserverOffset="offseta"
```

```
parmInnerRadius = "radius1"
parmInnerIs3D="False"
parmOuterRadius = "radius2"
parmOuterIs3D="True"
parmAz1 = "azimuth1"
parmAz2 = "azimuth2"
parmVert1 = "vert1"
parmVert2 = "vert2"

# Execute Viewshed2
result = arcpy.Viewshed2_3d(parmSurface, parmObservers, parmOutput, parmAGL,
parmAnalysisType, parmVerticalError, parmAnalysisRelationTable,
parmRefractCoeff, parmSurfaceOffset, parmObserverElevation,
parm_ObserverOffset,parmInnerRadius, parmInnerIs3D, parmOuterRadius,
parmOuterIs3D, parmAz1, parmAz2, parmVert1, parmVert2)
```

Environments

Auto Commit, Cell Size, Cell Size Projection Method, Compression, Current Workspace, Extent, Geographic Transformations, Mask, Output CONFIG Keyword, Output Coordinate System, Parallel Processing Factor, Scratch Workspace, Snap Raster, Tile Size

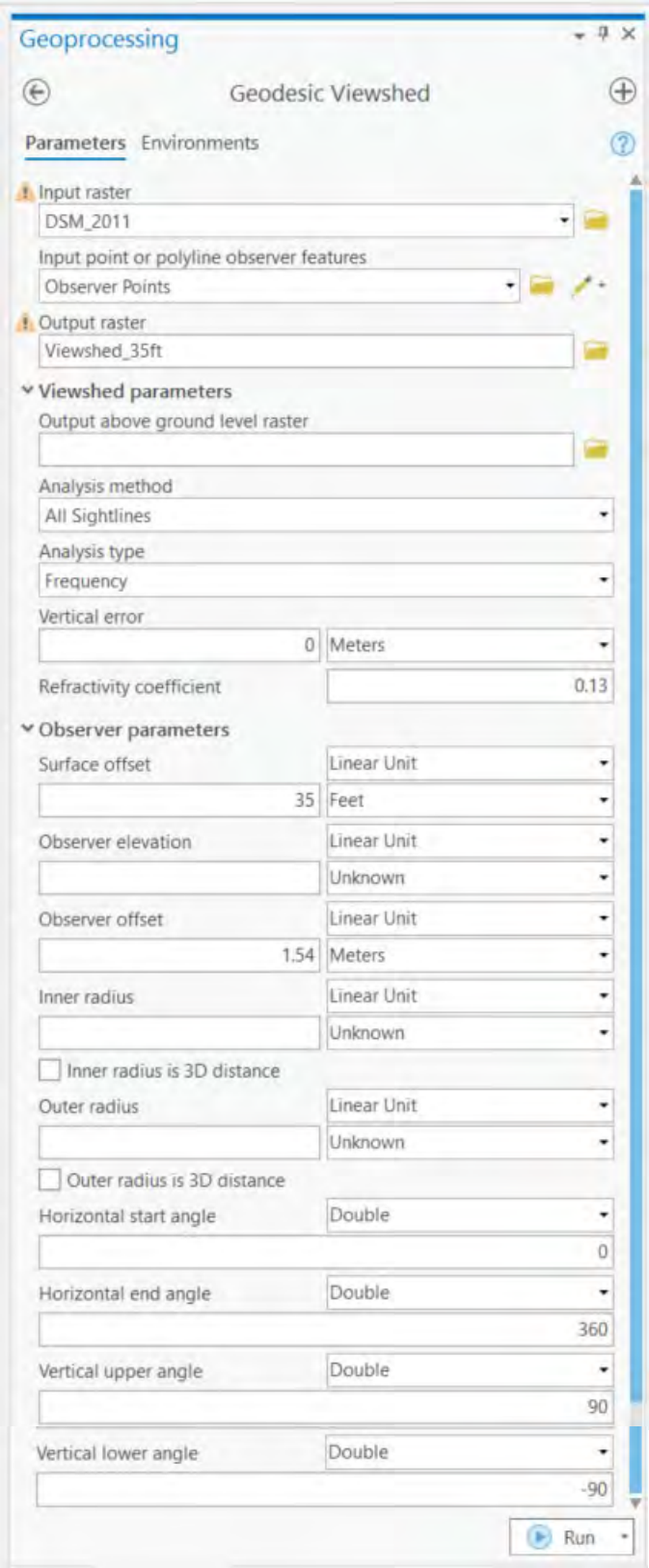
Licensing information

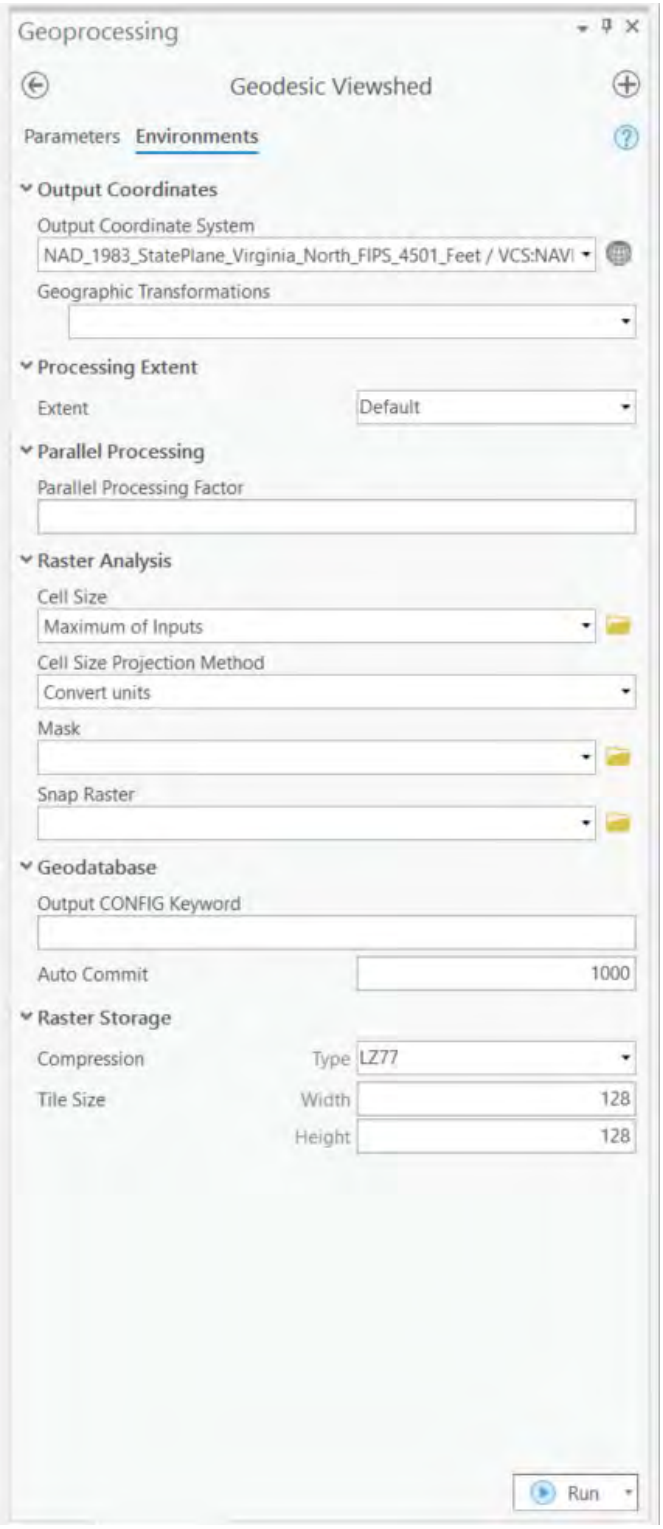
- Basic: Requires 3D Analyst or Spatial Analyst
- Standard: Requires 3D Analyst or Spatial Analyst
- Advanced: Requires 3D Analyst or Spatial Analyst

Related topics

- An overview of the Visibility toolset
- Find a geoprocessing tool
- Analyze Visibility

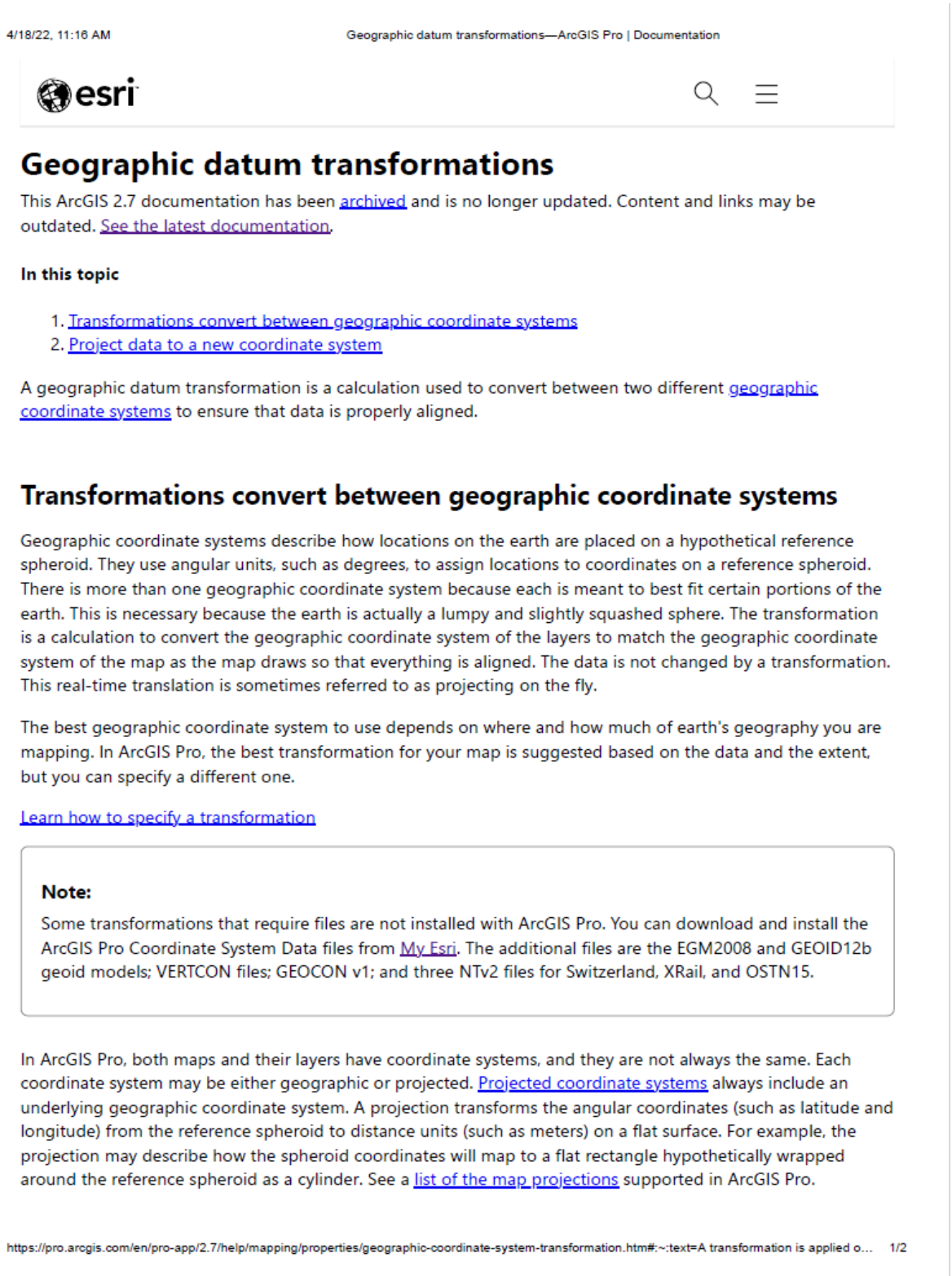
Appendix B


Geoprocessing
Geodesic Viewshed
Parameters
Environments
Input raster
DSM_2011
Input point or polyline observer features
Observer Points
Output raster
Viewshed_35ft
Viewshed parameters
Output above ground level raster
Analysis method
All Sightlines
Analysis type
Frequency
Vertical error
0
Meters
Refractivity coefficient
0.13
Observer parameters
Surface offset
Linear Unit
35
Feet
Observer elevation
Linear Unit
Unknown
Observer offset
Linear Unit
1.54
Meters
Inner radius
Linear Unit
Unknown
Inner radius is 3D distance
Outer radius
Linear Unit
Unknown
Outer radius is 3D distance
Horizontal start angle
Double
0
Horizontal end angle
Double
360
Vertical upper angle
Double
90
Vertical lower angle
Double
-90
Run


Geoprocessing
Geodesic Viewshed
Parameters
Environments
Output Coordinates
Output Coordinate System
NAD_1983_StatePlane_Virginia_North_FIPS_4501_Feet / VCS:NAVI
Geographic Transformations
Processing Extent
Extent
Default
Parallel Processing
Parallel Processing Factor
Raster Analysis
Cell Size
Maximum of Inputs
Cell Size Projection Method
Convert units
Mask
Snap Raster
Geodatabase
Output CONFIG Keyword
Auto Commit
1000
Raster Storage
Compression
Type
LZ77
Tile Size
Width
128
Height
128
Run

Appendix C

These are screen shots of what ESRI has published about [on the fly projections and coordinate system transformations](#) in ArcPro.



4/18/22, 11:16 AM Geographic datum transformations—ArcGIS Pro | Documentation

esri

Geographic datum transformations

This ArcGIS 2.7 documentation has been archived and is no longer updated. Content and links may be outdated. See the latest documentation.

In this topic

1. Transformations convert between geographic coordinate systems
2. Project data to a new coordinate system

A geographic datum transformation is a calculation used to convert between two different geographic coordinate systems to ensure that data is properly aligned.

Transformations convert between geographic coordinate systems

Geographic coordinate systems describe how locations on the earth are placed on a hypothetical reference spheroid. They use angular units, such as degrees, to assign locations to coordinates on a reference spheroid. There is more than one geographic coordinate system because each is meant to best fit certain portions of the earth. This is necessary because the earth is actually a lumpy and slightly squashed sphere. The transformation is a calculation to convert the geographic coordinate system of the layers to match the geographic coordinate system of the map as the map draws so that everything is aligned. The data is not changed by a transformation. This real-time translation is sometimes referred to as projecting on the fly.

The best geographic coordinate system to use depends on where and how much of earth's geography you are mapping. In ArcGIS Pro, the best transformation for your map is suggested based on the data and the extent, but you can specify a different one.

Learn how to specify a transformation

Note:

Some transformations that require files are not installed with ArcGIS Pro. You can download and install the ArcGIS Pro Coordinate System Data files from My Esri. The additional files are the EGM2008 and GEOID12b geoid models; VERTCON files; GEOCON v1; and three NTv2 files for Switzerland, XRail, and OSTN15.

In ArcGIS Pro, both maps and their layers have coordinate systems, and they are not always the same. Each coordinate system may be either geographic or projected. Projected coordinate systems always include an underlying geographic coordinate system. A projection transforms the angular coordinates (such as latitude and longitude) from the reference spheroid to distance units (such as meters) on a flat surface. For example, the projection may describe how the spheroid coordinates will map to a flat rectangle hypothetically wrapped around the reference spheroid as a cylinder. See a list of the map projections supported in ArcGIS Pro.

https://pro.arcgis.com/en/pro-app/2.7/help/mapping/properties/geographic-coordinate-system-transformation.htm#:~:text=A transformation is applied o... 1/2

Transformations relate to the underlying geographic coordinate systems only. **A transformation is applied only when the geographic coordinate systems are not identical. If layers have a different projected coordinate system than the map they are in, but both the layers and the map reference the same underlying geographic coordinate system, a transformation is not needed.**

Transformations in scenes

When you work with global scenes, there are only two available coordinate systems available: World Geodetic System 1984 (WGS84) or China Geodetic Coordinate System 2000 (CGCS 2000). In the case of CGCS 2000, there are no publicly available transformations. In the absence of a custom transformation, data added to a scene that uses CGCS 2000 is transformed to WGS84. In or near China, WGS84 closely matches CGCS 2000, but datum shifts may be substantial outside China.

Project data to a new coordinate system

Relying on transformations to project layers in real time is helpful when you are exploring data because everything aligns. However, applying a transformation comes with costs in drawing performance and accuracy. It is a best practice to work with data in the same coordinate system when performing edits or analysis on your data. It is recommended that you use one coordinate system for the map and all the data in it. Use the Project tool to project vector spatial data from one coordinate system to another. If you are working with raster data, use the Project Raster tool.

Related topics

- Specify a datum transformation
- Specify a coordinate system
- Coordinate systems, projections, and transformations
- Vertical coordinate systems

PRINCE WILLIAM COUNTY

Planning Office
Rebecca Horner, AICP, CZA
Director of Planning

August 19, 2022

TO: Planning Commission

FROM: David J. McGettigan Sr., AICP
Planning Office

RE: Responses to questions from the July 20, 2022- Planning Commission work session on Comprehensive Plan Amendment #CPA2021-00004, PW Digital Gateway Draft Plan

Please find attached the responses to questions that were asked by Planning Commissioners during the PW Digital Gateway Draft Plan work session on July 20, 2022.

The attached document includes the questions and responses as well as supportive information that addresses the inquiries from the Commissioners. In addition, the Planning Office has included several documents that we received from the applicant that respond to questions raised at the Planning Commission work session on the PW Digital Gateway Draft Plan.

Equally important, the Planning Office's published the second draft plan of the Prince William Digital Gateway CPA on August 15, 2022. The update includes the Level of Service (LOS) section, text language for the implementation plan and new viewshed analysis maps for 35 feet, 95 feet and 105 feet. In addition, staff has published a Viewshed Analysis Methodology document on the project web page.

Lastly, all the aforementioned documents are posted on the PW Digital Gateway project web page which can be accessed at the following link: https://www.pwcva.gov/department/planning-office/pw-digital-gateway .

Planning Office Responses to 7/20/2022 PC Work Session Questions on PW Digital Gateway Draft Plan

August 19, 2022

Viewshed Analysis

1. **What are the visual impacts on Manassas National Battlefield Park and why does that matter?**

   Response: The Planning Office distributes all projects to necessary agencies. The Manassas Battlefield Park Superintendent is one of the reviewing agencies. Planning Office staff received feedback from the Manassas National Battlefield Park which identified their interest in preserving historic view-sheds. Staff also heard from the public and community about their desire and interest to protect the integrity of the Park. Therefore, staff identified this as an important issue for both the community as well as one of our reviewing agencies. Historic views associated with the Manassas National Battlefield Park (MNBP) provide important historical context as they tell visitors where battles took place, where soldiers stood and fought. The views west from Manassas National Battlefield Park across Pageland Lane to Conway Robinson State Forest and Little Bull Run are in the Manassas National Battlefield Historic District which is listed on the National Register of Historic Places. The views to the northwest from Manassas National Battlefield Park are in the Battlefield's Core of engagement. The Viewshed analysis shows the impact at several different heights which include roof top mechanicals from specific points within the MNBP.

2. **How was the viewshed analysis completed?**

   Response: Staff recently posted the Viewshed Analysis Methodology on the PW Digital Gateway project page located at the following link: https://www.pwcva.gov/assets/2022-08/Viewshed_Analysis_Methodology.pdf

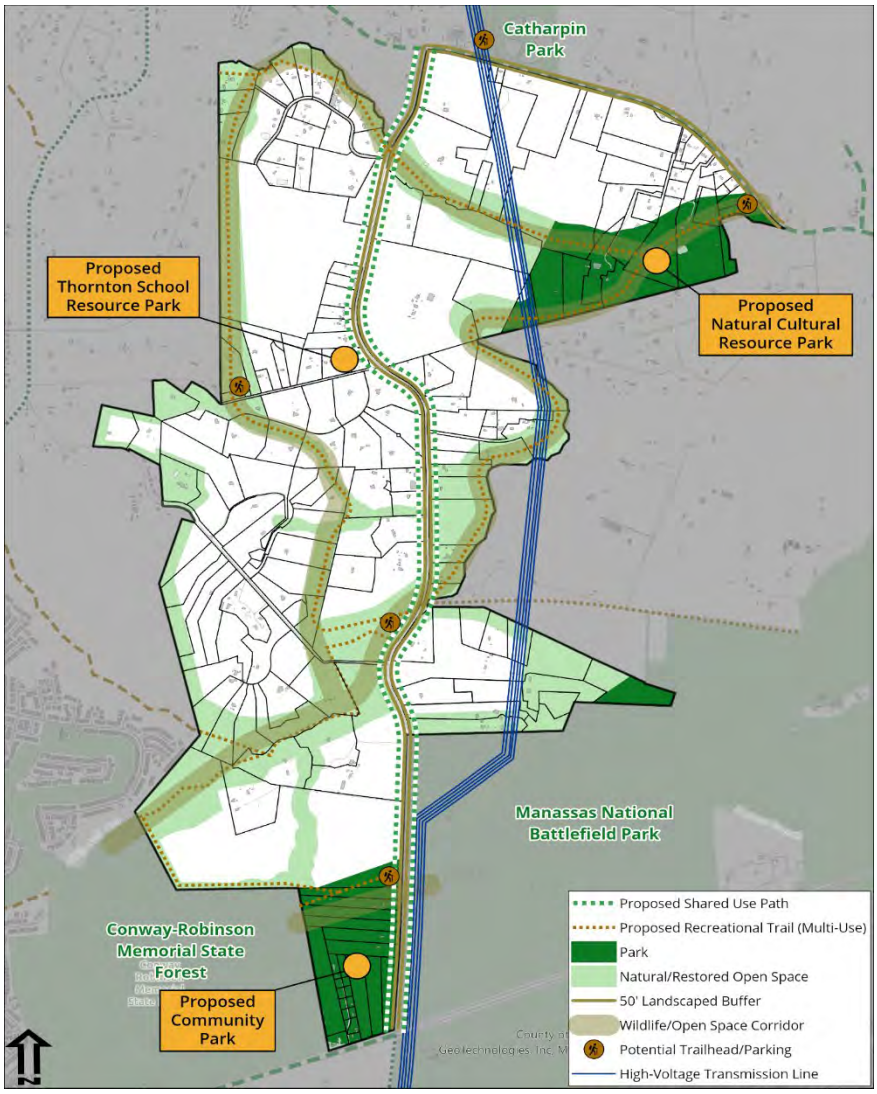
Proximity to Homes

3. **If PW Digital Gateway is implemented, how many homes will be left in the area?**

   Response: Based on the proposed plan, the majority of the area will be associated with uses defined in the Technology/Flex or Parks & Open Space classifications, both of which do not allow for residential uses. In addition, the plan does not anticipate any new residential units within the study area boundaries.

4. **How much acreage of open space or land is surrounding Heritage Hunt that protects them?**

   Response: As shown on the Green Infrastructure Map below, the PW Digital Gateway draft plan shows natural/restored open space areas with a goal to achieve 30 % natural open space throughout the study area.

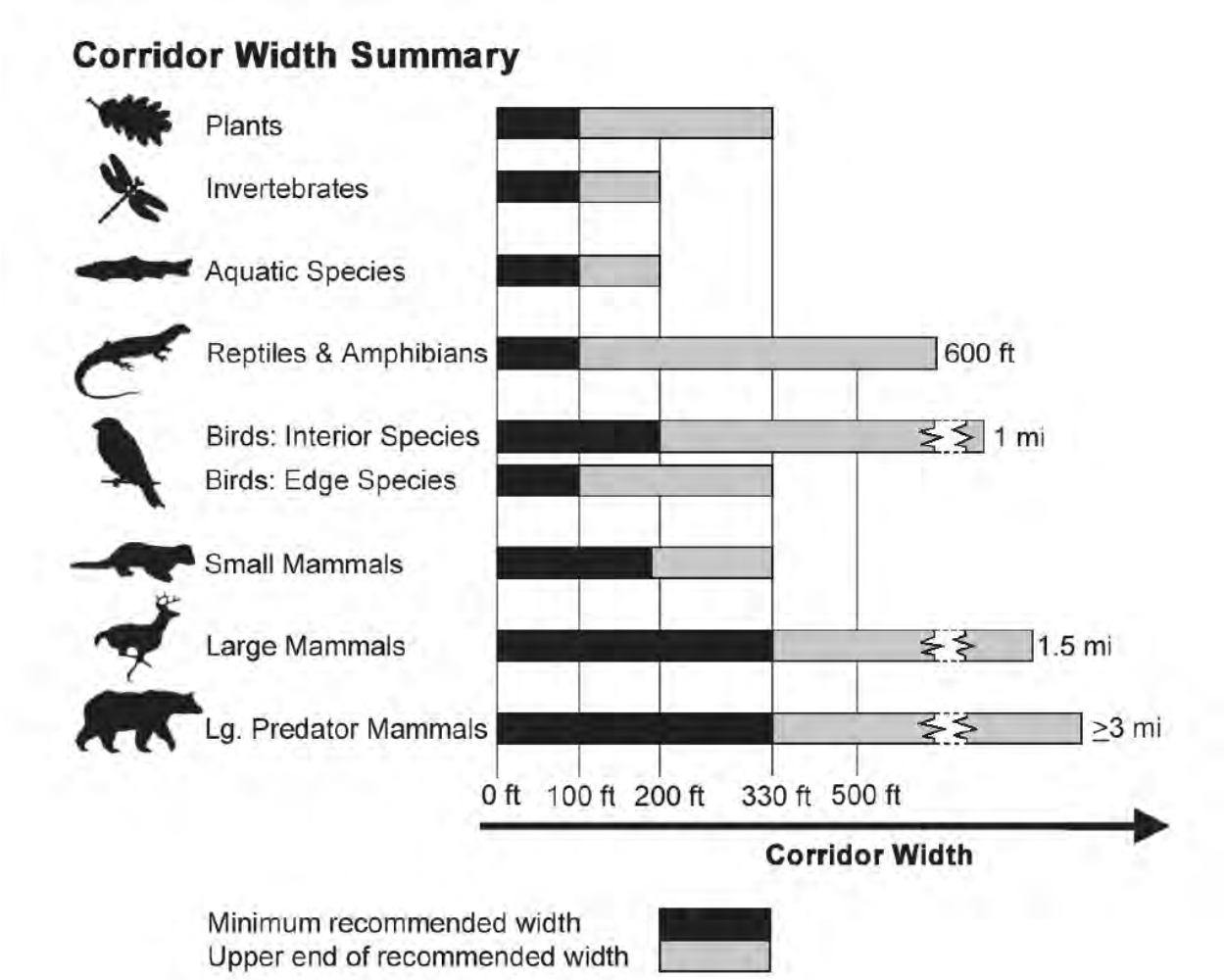


The study area boundary abuts approximately 1,750 linear feet of the property that is part of Heritage Hunt Phase 6 subdivision or owned by the Heritage Hunt Homeowner Association. Most of the land adjacent to Heritage Hunt is shown as natural open space which consists of existing forest and two water features that bisect these forested areas (Catharpin Creek and Little Bun Run). Using County mapper, staff used GIS to measure the area and found that there is approximately 57.5 acres of natural open space between the Heritage Hunt property and the development area of the PW Digital Gateway draft plan. This figure does not include open space areas of the Heritage Hunt Homeowner Association's property.

Wildlife Corridor

5. **For the wildlife corridor how was the analysis done? Is there a County wildlife biologist? What are the best corridors for wildlife that tend to traverse in this area?**

   Response: While the County did not engage a wildlife biologist, Planning staff worked with the Watershed Management division of Public Works and discussed the parameters needed to maintain wildlife corridors. These corridors serve as connections across the landscape that link up areas of habitat. They support natural processes that occur in a healthy environment, including the movement of species to find resources, such as food and water. As a result, staff did evaluate the wildlife corridors within the study area by looking at areas that were to be preserved from an environmental sensitivity perspective. Two of the wildlife corridors follow area designated as parks. The north to south corridor is identified with environmental resources, small perineal stream, mature tree canopy and tree coverage which was identified as a possible connection for wildlife corridor, identified as possible opportunity for enhanced connectivity of trail network and enhanced open space recommendations. Although the width of these corridors vary based on numerous factors, we do know that according to the USDA National Agroforestry Center suggests that for large mammals there should be approximately 330 feet.



Source: https://www.fs.usda.gov/nac/buffers/guidelines/2_biodiversity/9.html

Also, staff received a lot of community feedback as residents have sighted bears, turkey and deer in this respective area. Based on the best practices and community feedback, staff recommended a minimum of 300 feet up to 500 ft for these corridors where appropriate.

Power

6. **What additional electrical infrastructure would be needed to serve PW Digital Gateway?**

   Response: Planning staff had previously coordinated with Dominion Energy and NOVEC to respond to Frequently Asked Questions (FAQs) posed by the community about power needs associated with PW Digital Gateway. Those FAQs are linked on the project page. Below are

the relevant questions from the FAQ and responses previously provided by Dominion Energy and NOVEC.

Is there enough power?

Response: As stated in a response from Dominion Energy, NOVEC would construct electric facilities of sufficient capacity to meet the electric requirements of any prospective NOVEC data center customers (the PW Digital Gateway is wholly within NOVEC's distribution service territory). NOVEC would request Dominion Energy to interconnect these NOVEC facilities to Dominion Energy's regional transmission network. Dominion Energy, as owner of the regional transmission facilities, would determine the availability of transmission system capacity.

Dominion Energy has an obligation to serve its customers (NOVEC in this case) and meet any new power needs from the community. Dominion Energy will continue to evaluate capacity needs in line with current federal standards and rules governing electric transmission reliability criteria, such as megawatt load on lines and substations.

Will there be new substations and transmission lines?

Response: As stated in a response from Dominion Energy, a final decision has not been made by Prince William County regarding the total acreage that could be available for data center development in the PW Digital Gateway. Accordingly, NOVEC cannot determine at this time the specific electric infrastructure needed to support data center development in the PW Gateway but will construct facilities of sufficient capacity necessary to meet the data center electric requirements which could include the construction of new substation facilities.

Generally speaking, and dependent on how the PW Digital Gateway is developed over time, Dominion Energy expects that new substations and transmission lines will be necessary to meet NOVEC's needs.

7. **Power infrastructure is a critical element. Need to understand broader impact. Could impact numerous magisterial districts? Helpful to understand if additional infrastructure will be required? If there is additional infrastructure, what are the options? What does that infrastructure look like and who impacted by that?**

Response: Staff has reached out to Dominion Energy and NOVEC for additional comment regarding power impacts and infrastructure needs potentially beyond the study area of PW Digital Gateway. Additional information will be provided as it becomes available from the utility providers. In response to the questions from the Planning Commission at the work

session, the Applicant also forwarded relevant memos provided by NOVEC related to the proposal. The Applicant's responses are also attached.

Other Questions

8. **What areas are the most environmentally sensitive or culturally sensitive areas and how are those being protected in the Land Use Chapter, Data Center Overlay Comprehensive Review and PW Digital Gateway?**

   Response: In the Land Use Chapter, Planning staff and our consultant identified areas that are culturally valuable and/or environmental sensitive to the County that require protection or mitigation as identified in the policies and action strategies within the Chapter. In addition, many of these respective areas are recommended as either Parks & Open Space or are included as part of the Environmental Resources Overlay on the Long-Range Land Use Map. Likewise, the PW Digital Gateway draft plan considered Cultural Resource and Environmental Resources (ER) areas as not ideal for data center facilities. In the case of PW Digital Gateway, specific mitigation of impacts is recommended. As a result, all three projects identified environmental sensitive areas to be excluded from developing as part of the decision making process. There is not yet a draft of the Data Center Overlay Zoning Text Amendment (Comprehensive Review), however the zoning overlay is not a policy, but rather an ordinance. Therefore, the zoning overlay district will be written similar to a zoning ordinance and have ordinance requirements as opposed to policies and action strategies that would be in a Comprehensive Plan document.

9. **Where are the remaining areas (outside of environmentally sensitive and culturally sensitive areas) that are most well-suited to development including housing, commercial and industrial?**

   Response: For the Land Use Chapter and Long-Range Land Use Map, staff identified areas that are best suited for various types of development including residential, commercial and industrial uses. The Data Center Opportunity Zone Overlay (DCOZOD) Comprehensive Review focuses on identifying areas suited for data centers and developing new regulations and design guidelines for these facilities. The PW Digital Gateway Plan identifies areas for industrial uses identified in the Technology/Flex classification, and also Parks & Open Space to protect open space for cultural resources mitigation or environmental reasons.

10. **If the southern portion of the study area were removed, how would that affect the infrastructure for the rest of the study area?**

    Response: Our office has not created an alternative plan that removes the southern portion of the study area. The PW Digital Gateway Plan identifies a list of infrastructure, and facility needs including a timeframe for the current boundary of the study area. A reduction in overall gross square footage (GFA) would likely reduce impacts which would then require

less mitigation. Infrastructure and facility needs and mitigation thereof would be addressed during the process of a rezoning or SUP application within the study area.

ATTACHMENT:

Letter from Odin, Feldman, Pittleman , PC. dated August 9, 2022

Odin
Feldman
Pittleman PC

John L. McBride, Esquire
john.mcbride@ofplaw.com
Direct: 703-218-2133

August 9, 2022

VIA ELECTRONIC DELIVERY
Alex Vanegas, Principal Planner
Prince William County Planning Office
5 County Complex Ct., Ste. 210
Prince William, VA 22192
avanegas@pwcgov.org

Re: PW Digital Gateway CPA #2021-0004

Mr. Vanegas,

This letter shall serve to forward information which we think is relevant to some of the questions raised by Planning Commissioners at their Work Session, held on July 20, 2022. If you agree, use it as you see fit in your drafting of the Plan and please forward it to the Planning Commission at the appropriate time.

It needs to be clarified to the Planning Commission that if the PW Digital Gateway Draft Plan is approved, the area adjacent to Pageland Lane, Lee Highway and Sudley Road – the area in Prince William surrounding the Manassas Battlefield – will be planned for approximately 1,760 acres of Data Center Targeted Industry use and approximately 5,910 acres of public parkland and state forest (including the entirety of the existing Manassas National Battlefield Park, Catharpin Park and the Conway Robinson State Forest). The Draft Plan (excluding its new proposed north-south wildlife corridor) provides a vehicle to add approximately 370 acres of new parkland to the 5,540 acres of existing parkland, as shown on the attached chart.

The Draft Plan (excluding its new north-south wildlife corridor) envisions approximately 800 acres of permanent open space (parks, buffers, private protected Environmental Resource areas & Pageland streetscape areas) and 1,330 acres of Data Center sites. Buildout of the Data Centers is projected to be in 2040.

The attached information is organized into four subjects:

1. Electric infrastructure
2. Viewshed protection and buffers
3. Civil War mass grave and Pageland II (previously provided to you on 8/8/2022)
4. Noise

The attached information is best summarized by the following *takeaways*:

Electric Infrastructure. The *takeaway* we have heard recently from NOVEC and read in industry media confirms one of the many reasons why PWDG is an optimal location for Data Centers. PWDG Data Centers will be powered by new substations that connect directly (less than 1 mile) into the Dominion "Regional Backbone" High Voltage Power Transmission line corridor. They will not rely upon or overburden NOVEC's wider network of substations and distribution lines, as is apparently happening in Ashburn.

We understand there are two primary questions. The first is what effect, if any, does Dominion Energy's need to upgrade its transmission infrastructure in Ashburn have on the ability of the "Regional Backbone" Transmission Corridor to serve data centers in the PWDG. The second question is what new electric infrastructure may be needed to support data center developments in the PWDG.

The first question has now been answered:

> "Dominion Energy's warning last week that it may not be able to support future Loudoun County data centers owes to a lack of power lines in the county, not the availability of power itself....Digital Realty Trust Inc.....CFO Andy Power described the limiting factor as "the power line infrastructure, not the actual power," saying new projects could be delayed through 2026 until new [Loudoun] infrastructure is brought online. In other words, the power is there, it just needs to be brought to users in the affected part of the county. This has been confirmed by Dominion and PJM Interconnection LLC, a federally empowered operator of the impacted area's grid." (Washington Business Journal, *Dominion Energy says more power lines needed to support Loudoun data centers*, August 1, 2022)

The second question deals with the additional infrastructure that may be needed to support the PWDG. Industry observers have noted that the location of the PWDG adjacent to the existing transmission lines makes it ideal for data center campus development and minimizes the need to construct or upgrade long-distance transmission lines and conductors dedicated to serve a single or limited number of data centers at far-flung locations.

> "Pageland Lane Technology Corridor is the best area for data center development for the following reasons:
> 1. Dominion's transmission easement for 500, 320 and 115kV power abuts and bisects the properties....meaning that transmission level power required by data center development would be added with NO NEW OVERHEAD POWER LINES in the county. New NOVEC substations required to power Phase 1 would be built on the property and distribution would be constructed underground on the property." (Data Energy Consulting, *Pageland Lane Technology Corridor*, 2020)

> "The transmission lines that run along Pageland Lane are the backbone of Dominion's transmission grid, comprising both 500kV and 230kV conductors. As such, they are continually being upgraded and maintained to have adequate ability

to supply the Northern Virginia region with power." (Data Energy Consulting, *Pageland Lane Technology Corridor*, 2020)

"Data centers require the highest levels of electrical reliability for their mission. As such, the electrical service of choice is transmission level service, which in northern Virginia is served by Dominion Energy Virginia's (Dominion) 230kV transmission lines and either Dominion or NOVEC substations. Electrical utilities measure electric system reliability with a metric called System Average Interruption Duration Index (SAIDI). This metric is a computation of the average minutes without service per year, so a low number is indicative of reliable performance. The index for Dominion's bulk transmission system is around ten minutes outage per year, while the three-year rolling average index for Dominion's distribution system for 2016-2018 was 134 minutes per year. This metric alone tells the story of the 10x level of reliability that a customer can expect when taking power directly from a substation versus routed through a distribution system. Of course, these are only averages, and individual experience varies, but typically transmission is much more reliable than distribution....Since the substation would be driven by the load requested by a data center customer on the property, the power would be distributed underground from the substation to the data center buildings." (Data Energy Consulting, *Pageland Lane Technology Corridor*, 2020)

Viewshed Protection and Buffers. The *takeaway* is that 2 floor Data Center buildings (including parapets and rooftop mechanical equipment) that are located within the Digital Gateway South rezoning area and west of the Dominion high voltage "Regional Backbone" corridor, cannot be seen from Heritage Hunt or the Manassas National Battlefield Park, if they are limited to no more than seventy (70) feet in height. This is due to the dense tree canopy and ridgeline, which will be preserved as natural area parkland. Heritage Hunt will abut 55 acres of mature forest within the PWDG, which is preserved and donated to the County as public Open Space.

Civil War Mass Grave and Pageland II. The Mass Grave *takeaway* is that the only evidence of possible burials are two small soil anomalies – both of which are located within planned open space, which will not be disturbed. The Pageland II *takeaway* is that the original farmhouse has been enlarged (to triple its original size), altered and modernized to such a great extent that it is ineligible for listing on the National Register of Historic Places.

Noise. The two Data Center providers that have 3/4 of the land within PWDG under contract, QTS Data Centers (QTS Realty Trust) and Compass (H&H Capital Acquisitions, LLC), state that their facilities (including HVAC equipment) will be designed and built in a manner which meets the perimeter noise levels contained in the Noise Ordinance. The exterior noise levels at QTS facilities can be confirmed by a walkaround at their facility next to George Mason University at Innovation or at their facility in Ashburn, which was the subject of tours this year by County officials, residents and staff. A tour was offered to Heritage Hunt residents, but they refused to go. Compass has developed data centers in multiple states and internationally, and it has never (to its recollection) received a complaint about noise at one of its facilities.

Thank you for your careful review and consideration of this new information. Do not hesitate to contact me with any questions or requests.

Sincerely,

John L. McBride

Attachments

cc: Meika Daus
Rebecca Horner
David McGettigan
Nick Blessing, QTS Data Centers
Paul Bradford, QTS Data Centers
Chris Curtis, Compass Data Centers
Mary Ann Ghadban
Antonio J. Calabrese, DLA Piper
Jonelle Cameron, Walsh, Colucci, Lubeley & Walsh
Mark Looney, Cooley, LLP

PW Digital Gateway
Parkland Acreage Totals

Existing Parks and State Forest	Acres (estimated)
Catharpin Park	100
Conway Robinson State Forest	440
Manassas National Battlefield Park	5000
	5,540 TOTAL

New Parkland	Acres (estimated)
Northeast Natural Area Park	120
Catharpin Greenway Extension	140
Southern Park (Freedom Park)	90 (some of this may be an expansion of the State Forest)
MNBP Addition	10
Thornton School and Honeywood Plantation archaeological sites	10
	370 TOTAL

#5345229v1

PW Digital Gateway CPA #2021-0004

Enclosure 1:

Electric Infrastructure

Dominion Energy says more power lines needed to support Loudoun data centers

New data centers in Loudoun County, where much of "the cloud" physically resides, require additional electricity transmission infrastructure.

IMAGINIMA

By Dan Brendel – Staff Reporter, Washington Business Journal
Aug 1, 2022 **Updated** Aug 3, 2022, 5:11pm EDT

Dominion Energy's warning last week that it may not be able to support future Loudoun County data centers owes to a lack of power lines in the county, not the availability of power itself.

The electricity-guzzling data center sector, a goliath in Loudoun's economy, and county leaders were blindsided by Dominion's warning, which could put dozens of new data center developments north of Dulles International Airport and tens of millions of dollars

of investment at risk. Dominion (NYSE: D) said the problem had to do “transmission constraints,” but provided few details. But on its earnings call last week, Digital Realty Trust Inc. (NYSE: DLR), a global data center titan with a Loudoun footprint, shed a bit more light on the issue, perhaps providing some modicum of comfort to those trying to build data centers.

Digital’s CFO Andy Power described the limiting factor as “the power line infrastructure, not the actual power,” saying new projects could be delayed through 2026 until new infrastructure is brought online. In other words, the power is there, it just needs to be brought to users in the affected part of the county. This has been confirmed by Dominion and PJM Interconnection LLC, a federally empowered operator of the impacted area's grid.

If this "comes to fruition, as we've recently learned, it will obviously likely be a slowdown in delivery of new supply in what is our largest and the largest and most consistently in-demand data center market in the world," Power said on the call.

While that's little consolation if a project dies in the interim, overall it's probably better than if Dominion had said it didn't have enough power at all. It’s likely less time-consuming to improve or expand power lines than it is to build an entirely new generating station — even if it’s no political cakewalk to build unsightly towers and lines that homeowners won’t broadly support.

Data center owners themselves may be able to help solve the transmission problem, such as by allowing easements on their land, whereas they could do comparatively little to help build an entirely new power plant, sources told the Washington Business Journal. Power said as much on the call, that Digital Realty is a "very important player in that market to help the power company address this problem given our strategically important land parcels and easements."

It’s worth noting the data center industry isn’t monolithic, so Dominion's pinch is much worse news for the market's newcomers than those already with a foot in the door. Power speculated that Digital Realty, which owns facilities that it rents out to data center tenants, could experience “favorable” pricing power. Generally speaking, keeping out competitors benefits incumbents by preventing downward pressure on the prices incumbents are able to charge.

Some industry players have said the news about Dominion’s transmission capacity shortfall came out of the blue. In reality, it doesn't owe to any particular communication or planning breakdown, but merely to the lag between Loudoun's rapid data center growth and PJM's cycle of modeling infrastructure requirements, Sami Abdulsalam, a senior PJM transmission planner, said in an interview late Monday.

While slated transmission infrastructure upgrades were based on an earlier model of electricity demand and deemed sufficient at the time, a more up-to-date analysis indicates those upgrades would no longer be able to meet ballooning demand.

New data centers report their demand forecasts to Dominion, which reports them to PJM, which then does its modeling before any necessary changes are undertaken. That process takes time, so forecasts don't immediately incorporate new data about rising demand, Abdulsalam said. In order for the present transmission needs to have been known earlier, PJM would need to receive information about future load demands further in advance, he added.

Additional information may become available with Dominion's second-quarter earnings call Aug. 8.

PO Box 2710 • Manassas, VA 20108-0875 • (703) 335-0500

August 4, 2022

Chris Curtis
SVP Development & Acquisitions
Compass Datacenters
14555 N. Dallas Parkway
Suite 125
Dallas, TX 75254

Dear Mr. Curtis:

Northern Virginia Electric Cooperative ("NOVEC") is pleased to provide you with this response based on your inquiry for a new multiphase datacenter project in our service territory to be located near the Pageland Lane corridor in Prince William County, Virginia. The project will consist of multiple buildings requiring approximately 1,000 MVA of electric service capacity. Please note that all information related to your request is kept in strictest confidence.

The following should be conveyed to your clients who may not be familiar with NOVEC. NOVEC is one of the top fifteen electric distribution cooperatives in the country. At the present, we serve over 175,000 customers throughout Northern Virginia, which include more than 28 separate data center facilities. NOVEC has an extremely reliable electric system consisting of a 115 kV sub-transmission grid that supports the underlying distribution network, which operates at either 12.5 kV or 35 kV at the primary voltage depending on the customer's capacity requirements. Secondary voltages are available for smaller loads at 208V/120V and 480V/277V. NOVEC has constructed its system with 64 substations linked by distribution ties. This provides increased switching capability furthering overall system reliability and integrity.

In terms of energy supply costs, NOVEC can assure your clients that they will be served under the most applicable attractive tariff on file with the Virginia State Corporation Commission. For loads greater than 5 MWs we offer market-based rates that are competitive with the bulk wholesale power supply market and commensurate with your desired power supply risk profile.

NOVEC will provide the electric service required by you and your clients to this site in Prince William County in a phased approach. We will serve the loads from new substations, designed based on your actual clients load requirements, site plans, and available capacity on the NOVEC system at the time of actual project initiation. Please note that any physical transmission capacity constraints that Dominion may have on its system may also affect the project. NOVEC will require your clients to complete our Data Center Client Request form and provide the required information, detailed load ramp, redundancy requirements, site plan, and actual in-service date before an Electric

Business Center
10323 Lomond Drive
Manassas, VA 20109-3113

Corporate Center
10432 Balls Ford Road, Suite 220
Manassas, VA 20109-2516

Technical Center
5399 Wellington Branch Drive
Gainesville, VA 20155-4004

Service Agreement can be made available. The timeline for NOVEC's electric service delivery will be contained in the Electric Service Agreement. Providing a commitment of electric service delivery to the projects is dependent on your clients providing the requisite information described above along with a thorough understanding of the land permitting and regulatory approvals that will be required based upon the specific information associated with your clients' projects. Grid electric power capacity cannot be reserved and is made available on a first-come-first serve-basis.

Based on the scale of this project and the multiple phases, NOVEC would recommend that Compass Datacenters enter into an Engineering Agreement to plan the infrastructure to service this campus. There would be multiple Electric Service Agreements required with NOVEC. They would be identified as part of the scope of the Engineering Agreement.

In addition to meeting your clients' electrical service requirements, NOVEC is also pleased to offer your clients the opportunity to consider access to our Northern Virginia metro-fiber ring and its interconnection to carrier hotels (e.g., Equinix & NTT) in Ashburn, VA over our existing 300+ miles of dark fiber, new fiber construction builds, or through our 100 Gbps Metro-Ethernet lit fiber network.

In closing, we look forward to working with you and your clients on the site. NOVEC's electric distribution system is designed to support the datacenter critical electrical requirements and is proven by our experience designing, building, and turning-up over 28 datacenters to date. As you progress further with the development of this site, please contact me at (703) 392-1604 or rbarr@novec.com.

Respectfully,

M. Renee Barr
Project Manager, Large Accounts

cc. Gil Jaramillo, NOVEC
Mike Dailey, NOVEC
Kevin Whyte, NOVEC
Heather Anderson, NOVEC

PO Box 2710 • Manassas, VA 20108-0875 • (703) 335-0500

August 3, 2022

Travis Wright
Vice President – Energy and Sustainability
QTS Data Centers
12851 Foster Street
Overland Park, KS 66213

Dear Mr. Wright:

Northern Virginia Electric Cooperative ("NOVEC") is pleased to provide you with this response based on your inquiry for a new multiphase datacenter project in our service territory to be located near the Pageland Lane corridor in Prince William County, Virginia. The project will consist of multiple buildings requiring approximately 1,000 MVA of electric service capacity. Please note that all information related to your request is kept in strictest confidence.

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NOVEC will provide the electric service required by you and your clients to this site in Prince William County in a phased approach. We will serve the loads from new substations, designed based on your actual clients load requirements, site plans, and available capacity on the NOVEC system at the time of actual project initiation. Please note that any physical transmission capacity constraints that Dominion may have on its system may also affect the project. NOVEC will require your clients to complete our Data Center Client Request form and provide the required information, detailed load ramp, redundancy requirements, site plan, and actual in-service date before an Electric Service Agreement can be made available. The timeline for NOVEC's electric service

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Based on the scale of this project and the multiple phases, NOVEC would recommend that QTS Data Centers enter into an Engineering Agreement to plan the infrastructure to service this campus. There would be multiple Electric Service Agreements required with NOVEC. They would be identified as part of the scope of the Engineering Agreement.

In addition to meeting your clients' electrical service requirements, NOVEC is also pleased to offer your clients the opportunity to consider access to our Northern Virginia metro-fiber ring and its interconnection to carrier hotels (e.g., Equinix & NTT) in Ashburn, VA over our existing 300+ miles of dark fiber, new fiber construction builds, or through our 100 Gbps Metro-Ethernet lit fiber network.

In closing, we look forward to working with you and your clients on the site. NOVEC's electric distribution system is designed to support the datacenter critical electrical requirements and is proven by our experience designing, building, and turning-up over 28 datacenters to date. As you progress further with the development of this site, please contact me at (703) 392-1604 or rbarr@novec.com.

Respectfully,

M. Renee Barr
Project Manager, Large Accounts

cc. Gil Jaramillo, NOVEC
Mike Dailey, NOVEC
Kevin Whyte, NOVEC
Heather Anderson, NOVEC

Pageland Lane Technology Corridor

Prince William County, Virginia

Data Center Viability Report

Prepared for:
Mary Ann Ghadban
Magland Broker

Coleman Rector
Weber Rector Commercial Real Estate Services, Inc.

Prepared by:
Phillip M Sandino
Owner, Data Energy Consulting

Version/Date:

Draft Version 4.0
July 6, 2020

TABLE OF CONTENTS

Executive Summary: Pageland Lane Technology Corridor

Speed to Market with the Least Utility Infrastructure

Prince William County has benefitted from proximity to Loudoun County's Data Center Alley in that spillover of demand has provided opportunities for development of data centers. But Loudoun County' data centers - and tax base - have grown larger at an increasing rate because of their development of land with obvious physical and geographical attributes are consistent with prime data center development.

The Pageland Lane Technology Corridor shares the characteristics of the most desirable land in Loudoun County, and must be considered for development to increase the competitiveness of Prince William County with other competing jurisdictions and to take advantage of the current demand for data center development, which is not guaranteed to last or to stay focused on counties that do not provide real competitive advantages for developers.

Phase 1 of Pageland Lane Technology Corridor is the best area for data center development for the following reasons:

1. Dominion's transmission easement for 500, 320 and 115kV power abuts and bisects the properties in Phase 1, meaning that transmission level power required by data center development would be added with NO NEW OVERHEAD POWER LINES in the county. New NOVEC substations required to power Phase 1 would be built on the property and distribution would be constructed underground on the property.
2. There are 20 network connectivity options for the Pageland Lane Technology Corridor including metro network carriers, long-haul carriers and dark fiber providers. These carriers give developers access to the major Internet Exchange Point and Interconnection in Ashburn and to the International Subsea cables in Virginia Beach.
3. With Phase 1 being 430 acres, the Pageland Lane Technology Corridor would rival the largest land deals in Loudoun County and give Prince William County the fastest path to tax revenue of any land in the county.
4. At 0.5 FAR and estimated 75 percent usable land, Phase 1 could potentially yield 7 million square feet of building development, exceeding the current size of Prince William County's data center market.
5. Phase 1 would be a digital and physical gateway between Prince William County and Loudoun County, providing ultra low latency connection between the heart of Data Center Alley, Equinix, and Innovation Park.
6. Development of this land for data centers would upgrade sewer and roads, provide hundreds of construction jobs for several years and increase permanent technology and skilled labor jobs for the duration of the projects. These workers would support local businesses and educational institutions.

In order to increase the competitiveness of Prince William County's data center market, which is being threatened by neighboring jurisdictions in Virginia and Maryland, county leaders should consider the technological and geographic benefits of the Pageland Lane Technology Corridor and add this land to the comprehensive plan

History of Data Center Development in Northern Virginia

Northern Virginia has been the largest and fastest growing market over that timeframe, a significant amount of that money has been invested here. Cushman and Wakefield's 2020 Data Center Global Market Comparison stated that over the last decade $100 billion dollars has been invested globally in data center development. In 2010, just a few of the established data centers - Equinix, DuPont Fabros and Digital Realty – were large companies using significant amounts of energy to power their clients. In fact, a report by Environmental Systems Design, Inc, *2011 Data Center Technical Market Report*. February 2011 barely mentions Northern Virginia, stating "Reston, VA has excess supply and new construction will be minimal for a few years."

One of the key catalysts for Northern Virginia to become the leading data center market globally has been its network connectivity. In 1992, the formation of Metropolitan Area Exchange (MAE-East) in Tysons Corner was the first commercial exchange that facilitated networks such as UUNET, PSINet and Sprint. By 1997, more than half of the world's Internet traffic was passing through MAE-East. It was eventually moved from Tysons Corner to Ashburn. Formation of Equinix in 1998 was the other catalyst that further expanded the commercial exchange of Internet traffic in Ashburn. By 2000, more than 70% of the world's Internet traffic was passing through Loudoun County in Northern Virginia. Over the last two decades (2000-2020), the data center explosion in Northern Virginia has been second to none in the world and this growth has not been restricted to Loudoun County, but expanded to Prince William County, Fairfax County, Chesterfield County, Henrico County and more recently to Virginia Beach (due to the landing of trans-Oceanic subsea cables).

In 2018, DuPont Fabros and Digital Realty merged (via the acquisition of DuPont Fabros by Digital Realty) and other data center providers—both 'third-party' data center companies and enterprise/Cloud data center companies including Amazon, CyrusOne, Cloud HQ , QTS, Iron Mountain, Sabey Data Centers, Aligned Energy and NTT Data Centers (formerly RagingWire) - have grown to be significant land owners, energy users and tax payers. The change has transformed Northern Virginia into the headquarters of the cloud. It has transformed Loudoun and Prince William Counties into global destinations for data centers and cloud companies seeking low latency access to the Northeastern US.

The addition of Power Loft was the start of data centers for Prince William County. By the mid to late 2010's, Cloud HQ, Iron Mountain and Amazon were building large cloud campuses in PWC, drawn by the availability of land and transmission power lines.

According to Upstack, data centers have been drawn to Northern Virginia because of "unmatched fiber infrastructure, reasonable energy costs, and great tax incentives", along with abundant skilled workforce and state and government tailwinds provided through a stable tax environment and fast-tracked permitting and project delivery.

The two things that have not stopped in Northern Virginia over the last two decades—1) data center construction 2) splicing and digging for laying more fiber optic cables.

The demand for data centers and networks is expected to increase as artificial intelligence, virtual reality/augmented reality, internet of things (IOT), connected cars and self-driving vehicles (autonomous cars) permeate all industries and drive computing demand. According the NVTC's 2020 The Impact of Data Centers on the State and Local Economies of Virginia, the "large capacity of Northern Virginia's data center market is matched by its growth. Twenty-two percent of the total data center capacity in Northern Virginia was added between the second half of 2018 and the first half of 2019".

Even market disruptors, like subsea cables landing in coastal Virginia and edge computing have benefitted Northern Virginia. While various 2nd tier markets for data centers have emerged, their growth has not matched the demand for new land and projects in Northern Virginia.

These new subsea cables represent economic development and growth opportunities across the entire commonwealth. With high-speed and low-latency capacity from Virginia directly to Europe, South America, Africa and Asia, these 'international runways' provide unique, low-latency and high-capacity fiber routes that span through the ocean beds. Data Centers in the Richmond area and in the Northern Virginia region (including Loudoun and Prince William) have been aggressively working with the subsea industry to have the subsea capacity distributed and accessed from their respective data centers. This makes the data centers 'magnets' for various other players in the connectivity landscape—including terrestrial metro fiber providers, long-haul carriers, Content Distribution Networks (CDNs), content providers, Internet Service Providers (ISPs) and Cloud Service Providers (CSPs). These various connectivity-centric companies each form a crucial part of an Interconnectivity Ecosystem.

Competitive Environment for Data Centers in NOVA

Threats to Data Center development in Prince William County

Northern Virginia has the lion's share of the commonwealth's co-location data centers, which are drawn to the proximity to other data centers and network hubs like Equinix (on Filigree Court, Ashburn). But other parts of Virginia have their own attractions for data centers. Anywhere in Dominion territory enjoys the same low power rates, but the southern part of the state has economic development help from the tobacco fund, a willing partner in Mid-Atlantic Broadband Communities (MBC) and very aggressive economic development teams. MBC is a fiber provider and was formed in 2004 to solve the rural telecom infrastructure challenge. With the strong support of the Virginia Tobacco Commission (VTC) and the US Department of Commerce Economic Development Administration (EDA), MBC received $12 million in capital grants to build the first phase of the open-access fiber network in early 2004. Additional capital grants of $24 million were awarded by the VTC in 2005 and 2006 to finish the first phase of the network.

Enterprise data centers are placed not only based on fiber latency, interconnection capability and power; the developers seek an array of benefits that they often find in more rural settings or second tier cities. Microsoft in Boydton and Facebook in Henrico County are examples of companies that chose placement of mega-campuses (over 100 MW) on criteria that favored more rural environs. For both Microsoft and Facebook, the location of their mega-campuses further strengthened their value-proposition for a diverse subsea cable landing, hence they selected Virginia Beach for landing of the MAREA cable from Spain along with Telxius as the operator. Telxius is a Spanish subsea and tower company representing the Internet Infrastructure sector.

Southwest Virginia's coalition of economic development teams are working to attract data centers to that part of the state. Senator Mark Warner, in an address to the Data Center Coalition in Feburary 2020, stated that *"if any of you were to ever be willing to look at southside or southwest, I will move heaven and earth in terms of state and federal incentives."*

Additionally, Maryland has moved to finally adopt a formidable tax package to attract data centers. There is activity by developers and site selectors to evaluate land in certain parts of Maryland considered attractive to data centers. And while power rates are typically higher in Maryland, the ease of obtaining green power through the open market in Maryland will be an advantage in Maryland that does not exist in Virginia. According to the Chestertown Spy *"The bill would offer data centers exemptions to Maryland's personal property and sales and use tax, provided they invest $5 million within three years of filing for the exemption — and hire at least five personnel earning 1.5 times the state's minimum wage."*

Pandemic Effects on the Data Center Market

The COVID-19 pandemic has shocked society with social isolation and work from home. Both of these have been enabled by broadband internet, which allow for remote work, video conference for both professional and personal use, distance learning as schools and university campuses are shut down and social media/ gaming. Most of these services are now considered essential, and will be viewed as resiliency options for any societal disruptions. The quantitative impact of these societal adjustments on the internet are manifold as documented by Rich Miller of Data Center Frontier here.

Multiple experts are bullish on the outlook for increased growth of the sector, (Miller, April 14, 2020). Some companies that have benefitted from the increase of online tools, like Zoom Videoconferencing, are growing within the cloud. Zoom chose Oracle to host their cloud presence, and Oracle has a significant footprint in Northern Virginia. Additionally, Zoom also uses Amazon Web Services (AWS); they use AWS Cloud services for back-office traffic and their own dedicated servers for real-time traffic. Corporate enterprises are embracing the Cloud much faster in these past two month, than in the past. They realize that their employees are not coming back to the offices anytime soon, and some may never (this week LinkedIn, Twitter, Square, Spotify announced that they will allow all their employees to work from home forever).

What this really means is that the enterprises have to make more of their corporate data easily and securely accessible to their remote employees. The quickest and probably the safest and most economical way to do this to embrace the Cloud. The increase in demand for Cloud-based services has a direct correlation with the increase in demand for data centers because the Cloud resides in the data center. The Cloud providers (be it Microsoft, AWS, Google or others) are either going to build more data centers on their own or they will outsource and lease data center space from third-party data center providers like Digital Realty, CloudHQ, QTS, Aligned, Sabey, COTP and others.

The effects of this shock happened fast, but the pandemic has acted more as an accelerant of existing trends than an outright disruptor. Work from home, distance learning, gaming were all growing in popularity and driving cloud adoption. Social distancing has put a sharp increase in the usage curve.

There are indications that the largest customers of cloud companies are pulling back on advertising, which challenges a major part of their income. (Levitsky, April 15, 2020). However, recent leases of data center space in Loudoun show continued strong absorption of data center space.

Data Center Demand for Land

According to Cushman and Wakefield's 2020 Data Center Global Market Comparison, Northern Virginia (inclusive of Fairfax, Loudoun and Prince William Counties) is the largest data center market by square foot of IT floor space in the world, with a top 5 development pipeline and the lowest vacancy rate (less than 4%) of any market. This has been the case for many years now with Ashburn and Prince William developing mega projects larger than other global competitors combined.

Both enterprise and colocation data center developers are competing for land in Northern Virginia, with a premium being placed on land that is closest to the Equinix campus in Ashburn.

While Prince Wiliam County's total data center floor space surpassed 5 million square feet in 2019, that number is dwarfed by Loudoun County's "more than 18 million square feet currently in operation and millions more being planned or developed." The potential for smart, sustainable development in Prince William County is robust especially if the county prioritizes land that is ready for development and causes the least amount of disruption to neighbors. Land adjacent to existing electrical transmission corridors and substations give developers the least expensive and fastest development opportunities. This same land provides the least amount of political exposure because requirements for additional overhead power lines are minimized.

Site Selection Criteria for Power

How far from transmission lines can Data Centers be sited?

Electric utilities are required to serve the electric power needs of their clients. As such, a data center can be located miles from existing and adequate electrical infrastructure, however distance requires additional time and expense to develop. The rule of thumb for above ground electric transmission cost is $1M/mile. Additionally, there can be significant problems with rights-of-way, easements, and unpopularity of new power lines, which Prince William County experienced with a data center project in Haymarket. Typically, developers will evaluate the route needed for power lines by talking with the electric utility and will make a decision on effort and cost. Given that the reliability requirement for infrastructure is concrete encased underground conductors or above ground steel structures, developers would like to minimize the expense of the installation.

Data Center Development Without New Overhead Transmission

Data Center developers covet land adjacent to existing transmission lines and substations. A Google Earth map of Ashburn, VA, shows numerous data centers located along the W&OD trail, which houses Dominion's 230kV "backbone" transmission lines. The reason that this corridor was selected for development was for speed, ease and cost of development. Developers knew that if a data center could be place near substations, the amount of easement and infrastructure would be decreased and speed to develop would be increased. This would make the project more profitable and would allow data centers to begin commercial service sooner. Additionally, there would be less potential for legal issues from easement, quit claims and right of way that occur when new facilities are required to feed one project.

The tiers of land desirability for data center development increase with proximity to transmission level power and substations. Existing substations with capacity are the fastest to develop, but large land tracts may require their own substations.

Statements and Evidence of Transmission Level Reliability

Data centers require the highest levels of electrical reliability for their mission. As such, the electrical service of choice is transmission level service, which in northern Virginia is served by Dominion Energy Virginia's (Dominion) 230kV transmission lines and either Dominion or NOVEC substations.

Electrical utilities measure electric system reliability with a metric called System Average Interruption Duration Index (SAIDI). This metric is a computation of the average minutes without service per year, so a low number is indicative of reliable performance. The index for Dominion's bulk transmission system is around ten minutes outage per year, while the three-year rolling average index for Dominion's distribution system for 2016-2018 was 134 minutes per year. This metric alone tells the story of the 10x level of reliability that a customer can expect when taking power directly from a substation versus routed through a distribution system. Of course, these are only averages, and individual experience varies, but typically transmission is much more reliable than distribution.

Source: https://sustainability.dominionenergy.com/energy-reliability-and-affordability/electric-reliability

Pageland Lane Existing Transmission Lines

The transmission lines that run along Pageland Lane are the backbone of Dominion's transmission grid, comprising both 500kV and 230kV conductors. As such, they are continually being upgraded and maintained to have adequate ability to supply the Northern Virginia region with power. Dominion files an Integrated Resource Plan (IRP) every year with the State Corporation Commissions of Virginia and North Carolina to detail how the company will meet system load.

The plans that Dominion makes for the capacity of these lines is based on real assessments of client power demand which is gathered from client load applications and partnership with power cooperatives that Dominion serves, in this case NOVEC.

Phase 1 of Pageland Lane - Requirement for NOVEC Substation

Phase 1 of Pageland Lane development would require substation development on land adjacent to the existing transmission lines. Since the transmission lines bisect one of the phase 1 properties, there would be no additional overhead transmission lines required away from the site. Substations would be sized according to the load that is requested from data center development. Since the properties along Pageland Lane are in NOVEC's franchise service territory, NOVEC would be the substation developer and would take the client's request to Dominion for approval from the State Corporation Commission and local AHJ's.

Since the substation would be driven by the load requested by a data center customer on the property, the power would be distributed underground from the substation to the data center buildings.

The substations would conform to local requirements for setback, view shed and sound.

Water and Sewage Requirements for Data Centers

Data Centers use different types of cooling depending on local conditions and water availability. If water is readily available, the conventional air conditioning with cooling towers for heat transfer are deployed. The alternative in this region is air cooled heat exchangers, which are physically larger but use no water to cool the data center.

Recent conversations with Prince William County Service Authority (PWCSA) were well received. PWCSA stated their need for a new pump station and sewer line today due to the overburdened pump station located at Catharpin Road and the need to expand this station. Plans to increase the station and lines have been delayed for 3 years due to the citizen opposition in Heritage Hunt. Planning this area for Data Centers and locating a new pump station on Snyder property would be a win-win for the PWCSA and citizens of Heritage Hunt. Water and sewer lines for this corridor would be at the developer's expense.

Acreage Needed for Data Center to be Cost Effective

Stand-alone data centers in Northern Virginia have evolved over time from 5 to 10 megawatts in the 1990's and 2000's to single buildings over 65 megawatts. It is common that cloud infrastructure companies seek leases with data centers where they can continue to grow.

Therefore, the ideal development locations are in the hundreds of acres, however smaller sites are still being purchased because of proximity to Ashburn. Pageland Lane Phase 1 is an exceptional property because of both size and proximity.

Early data centers were very utilitarian buildings because of the need to deploy investment money to other aspects of the building and because there were no expectations being set by the local AHJ's.

Image of early data center (Courtesy Loudoun Now)

Modern architecture for Cloud HQ (Courtesy of Data Center Hawk)

Height Variations for Data Centers

Data centers in Northern Virginia have typically been built as single-story buildings. The abundance and affordability of developable land and the increased cost and complexity of building multi-story buildings are the reasons that data centers grew out versus up. This is in contrast to data center markets like New York City, Santa Clara, CA, Tokyo and Singapore, where land is scarce and expensive and the data centers grew vertically.

The recent move in Loudoun County to multi-story data centers originated from the relative scarcity of developable land and the County's request for increased density of IT floor space per acre. This change is recent and obvious in large developments along Loudoun County Parkway and Waxpool Road in Ashburn where Cloud HQ, Digital Realty and QTS have multi-story data centers.

If there were adequate land available and zoning requirements limited height, data centers may decide to build single-story buildings as they are typically less expensive to build. This would take outreach from the County to the developers to assure an abundant amount of land for future development.

Competitive Environment for Taxes and Depreciation

Local leaders should be aware of the fluidity and fungibility of data center infrastructure. The data center is easily mistaken for a factory, with unmovable assets. However, in the co-location data centers that are the majority of all data centers in Northern Virginia, the owners depend on tenant leases for business. So, whenever a lease expires, the tenant is free to move on from that space.

NVTC's study cites Phoenix, AZ as an example of a market that can change rapidly, stating that "A year ago, the data center market in Phoenix had enormous growth, but between the second half of 2018 and the first half of 2019, Phoenix saw net outflows of 26.5 MW worth of tenants, which is almost the same amount that Northern Virginia added in the same period. The computer equipment in data centers is replaced on average every three years. Should circumstances require it, data center tenants can move from one location to another and leave significant vacancies in colocation data centers."

The tax rates for data centers are updated and compared by the Virginia Economic Development Partnership (VEDP). The latest version of the tax comparison is 2018-2019. Data Centers focus on real estate taxes and the personal property tax, which is used to calculate the value and tax computer equipment, which is typically worth more than the real estate investment and is refreshed every few years. Further, tax rates must be combined with depreciation factors to fully analyze the cost of ownership for data centers.

Local competitors to PWC have aggressively positioned themselves to compete for data center business as the industry looks more favorably outside of Northern Virginia.

Henrico County, Virginia is home to QTS and Facebook's mega data center at White Oak Business Park. The county is leveraging these success stories and low tax rates, fast track permitting and new connectivity to subsea cables that are routed through the Richmond NAP at QTS. Additionally, there are large parcels in White Oak Technology Park that are publicly controlled.

Stafford County, Virginia has large parcels, they are close to Ashburn, Quantico and Fort Belvoir and they have a relatively low tax rate for Northern Virginia.

The State of Maryland has a new Sales and Use Tax and Personal Property Tax - Exemptions - Data Centers which became effective on July 1, 2020. The compelling case for Maryland lies in proximity to Ashburn and that the qualifying thresholds for investment and jobs are low compared to Virginia. The requirements are $2M or $5M, depending on location and five (5) qualifying jobs.

Need to expand District Ordinance 19-24 to Pageland Lane

Overhead transmission line development can cost approximately $1M per mile, while underground costs are 4x to 5x that cost, depending on barriers to development. This makes land adjacent to existing transmission power lines and substations the fastest, least expensive and least intrusive development opportunity for data centers. Prioritization of developable land in existing electric transmission corridors would ensure that minimal new electrical infrastructure is built to accommodate the additional load. This would minimize development costs and timelines, both of which are high on the list of development priorities for data centers.

Prince William County has the opportunity to open land for data center development that would immediately compete with the most competitive parcels in Northern Virginia based on all the objective criteria for fast, economic and sustainable land development. Pageland Lane would compete favorably with White Oak Technology Park in Henrico, parcels along electric transmission in Stafford and Maryland.

Beneficial Economic Effects of Data Centers

Mangum Economics, based in Richmond, VA, has been the industry go-to for Economic Data on the benefits of data center grown in Virginia. The company was retained to write influential studies for the Northern Virginia Technology Council in recent years, the most recent titled "The Impact of Data Centers on the State and Local Economies of Virginia" in January 2020.

According to the report:
Taking into account the economic ripple effects that direct investment generated, we estimate that the total impact on Virginia from the data center industry in 2018 was approximately:

- 45,290 full-time-equivalent jobs,
- $3.5 billion in associated pay and benefits, and
- $10.1 billion in economic output.

Specific to Prince William, the report states that "for every dollar in county expenditures that the data center industry was responsible for generating in 2018, it provided approximately $17.80 in tax revenue."

According to Loudoun County Economic Development and the Loudoun County Board of County Supervisors Chair Phyllis Randall, the county has benefitted from:

- More than $1.2B in transportation improvements
- Full day kindergarten in LCPS
- Strength of public education
- 10,500 full time equivalent jobs paying $1.6B in wages
- $3.5B in economic output
- $300M in annual tax revenue, saving $2,100 in household taxes per year

Pageland Lane is a Premier Location for Data Centers

Pageland Lane is an excellent location for data center expansion based on objective criteria for data center site selection:

Location - Pageland Lane is approximately 19 miles to Ashburn, VA and less than 8 miles to Innovation Park in Manassas. The estimated latency to either location is less than 4 milliseconds, making this area highly desirable for all forms of computing. There would be little to no marketing required to explain this location to site selectors. Additionally, there are multiple fiber providers—offering both dark fiber and lit services that are both in Prince William and in Loudoun. What that means is that these network carriers are ready to provide services interconnection the two regions, regardless of the use case—be it Enterprise, Colocation or Cloud Data Center. Additionally, access to the subsea cables (which land in Virginia Beach) and be a key differentiator. (Details on that will be included in the Fiber report).

Power - Pageland Lane is served by NOVEC, which is very experienced at handling data center projects including substation additions. The utility is transparent in pricing and offers industrial customers a variety of competitive power supply.

Water - Developers seek designs that apply to any geography and climate to reduce engineering, procurement and permit time. Waterless cooling is typical in modern data centers as a sustainability and energy savings measure. For example, CyrusOne Data Centers, a Dallas, Texas, based company with a large footprint in Northern Virginia, builds only Waterless Cooling designs. So, data centers can build regardless of large scale water supply and sewage.

Fiber - Proximity to fiber and internet exchange points is covered in the June 11 report by Vinay Nagpal of Interglobix.

Land Acreage - Phase 1 of Pageland Lane is 430 acres, making it a significant potential addition to the data center land portfolio for Northern Virginia. This compares with the large recent transactions made by Digital Realty near Dulles Airport.

Workforce - The Pageland Lane site will benefit from pulling from the same workforce and supplier network as Prince William and Loudoun Counties do now. There will be no lag in finding qualified people to run the facilities and will add to the demand for qualified technicians and leaders from military, NOVA Community College and local universities.

Eco-system - Pageland Lane will be welcomed by the same suppliers, vendors, constructors, fiber providers, utilities and AHJ's as currently exist for Prince William, Loudoun and Fairfax Counties.

Mutual Interests - The County and developers can align on the characteristics of the land making up Pageland Lane Technology Corridor because power intensive development can be done without new transmission lines, which would allow for commercial operations and tax revenue sooner than parcels that are not located adjacent to transmission lines.

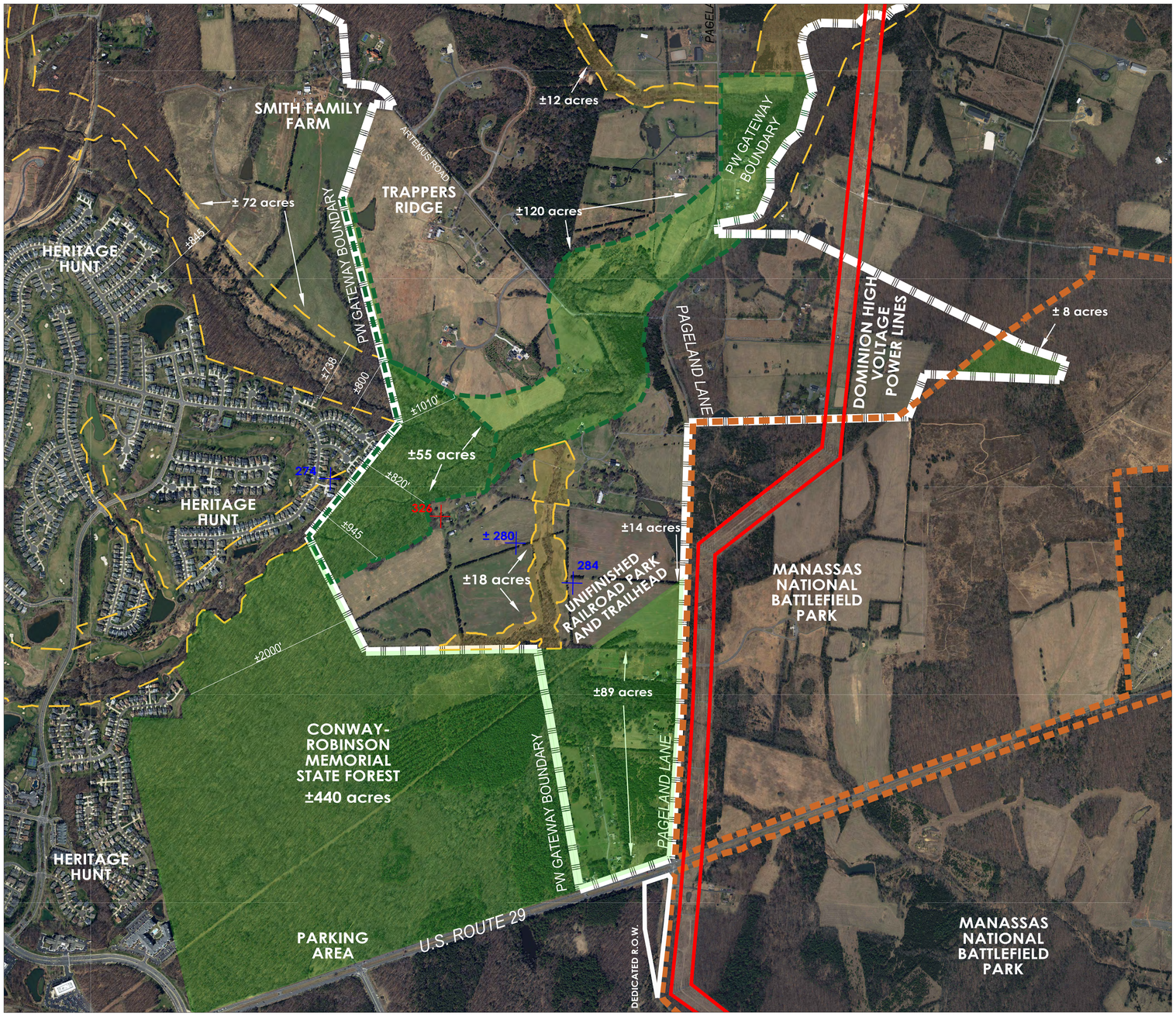
PW Digital Gateway CPA #2021-0004

Enclosure 2:

Viewshed Protection and Buffers

Heritage Hunt Viewshed Protection

Aerial taken in 2020.



LEGEND

- ENVIRONMENTAL RESOURCE (ER)
- CATHARPIN GREENWAY EXTENSION
- MANASSAS BATTLEFIELD LEGISLATIVE BOUNDARY
- PW DIGITAL GATEWAY
- ELEVATION POINT > 300'
- ELEVATION POINT < 300'

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engineering • surveying • land planning

PW DIGITAL GATEWAY

GAINESVILLE MAGISTERIAL DISTRICT, PRINCE WILLIAM COUNTY, VIRGINIA

MARK	DATE	DESCRIPTION

PROJECT No.: 20143.003.00
DRAWING No.: 111430
DATE: 08/02/2022
SCALE: SEE SHEET
DESIGN: GB
DRAWN: GB, CL
CHECKED:

SHEET TITLE:

OPEN SPACE SURROUNDING HERITAGE HUNT

SHEET No.

1

This plan is preliminary in nature and is subject to change based on site surveying and final site engineering.

500 250 0 500 1000
GRAPHIC SCALE
1" = 500'

NORTH

AREA LABEL	VIEW POINT	ELEVATION
1	BRAWNER HOUSE - CEDAR TREE	324 FEET
2	BRAWNER HOUSE - ARTILLERY LINE/UNFINISHED RAILROAD	325 FEET
3	BRAWNER HOUSE - ARTILLERY LINE	327 FEET
4	BRAWNER HOUSE - ENTRANCE DRIVE	309 FEET

CONTEXT PLAN

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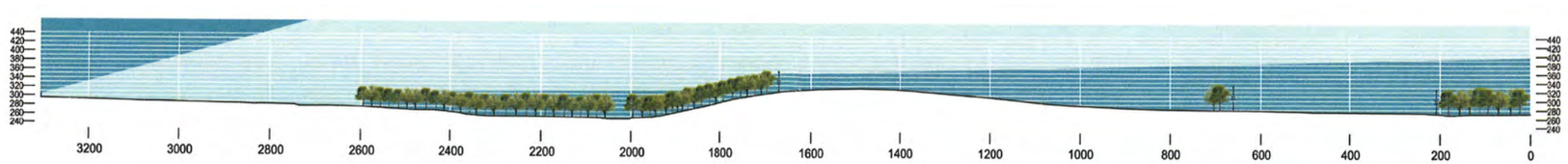
NORTH



SIGHTLINE DISTANCE (FEET)

SITE SECTION

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GRAPHIC SCALE
1" = 100'

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PW DIGITAL GATEWAY

GAINESVILLE MAGISTERIAL DISTRICT, PRINCE WILLIAM COUNTY, VIRGINIA

MARK	DATE	DESCRIPTION

PROJECT No.: 20143.000.00
DRAWING No.: 111598
DATE: 04/28/2022
SCALE: SEE SHEET
DESIGN: GB
DRAWN: GB
CHECKED:

SHEET TITLE:

SIGHTLINE EXHIBIT

SHEET No.

20

AREA LABEL	VIEW POINT	ELEVATION
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2	BRAWNER HOUSE - ARTILLERY LINE/UNFINISHED RAILROAD	325 FEET
3	BRAWNER HOUSE - ARTILLERY LINE	327 FEET
4	BRAWNER HOUSE - ENTRANCE DRIVE	309 FEET

CONTEXT PLAN

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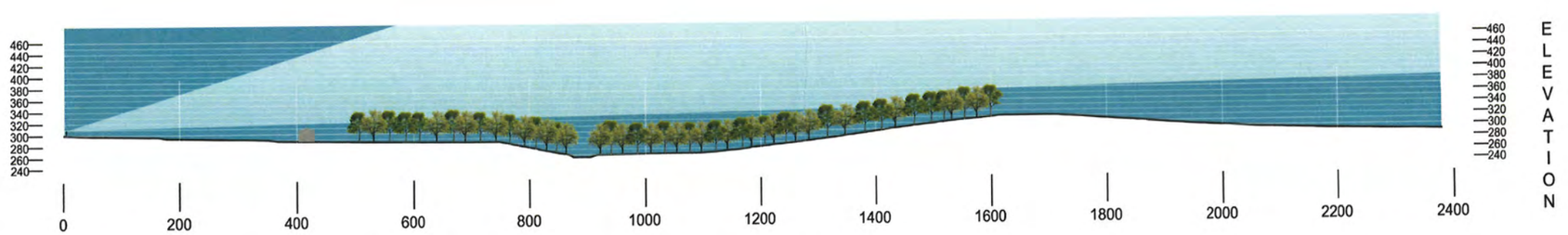
GRAPHIC SCALE
1" = 300'

NORTH



SIGHTLINE DISTANCE (FEET)

SITE SECTION

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GRAPHIC SCALE
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PW DIGITAL GATEWAY

GAINESVILLE MAGISTERIAL DISTRICT, PRINCE WILLIAM COUNTY, VIRGINIA

MARK	DATE	DESCRIPTION

PROJECT No: 20143.003.00
DRAWING No.: 111430
DATE: 03/29/2022
SCALE: SEE SHEET
DESIGN: GB
DRAWN: GB
CHECKED:

SHEET TITLE:

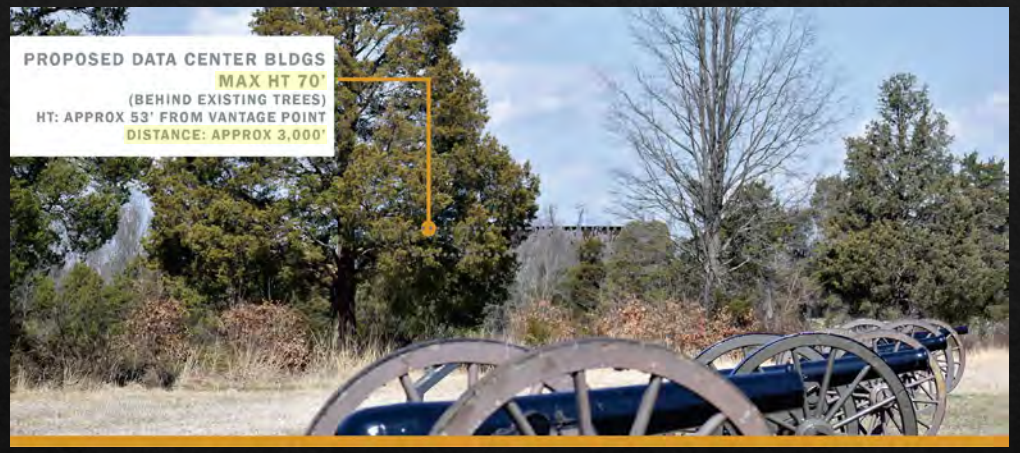
SIGHTLINE EXHIBIT

SHEET No

21

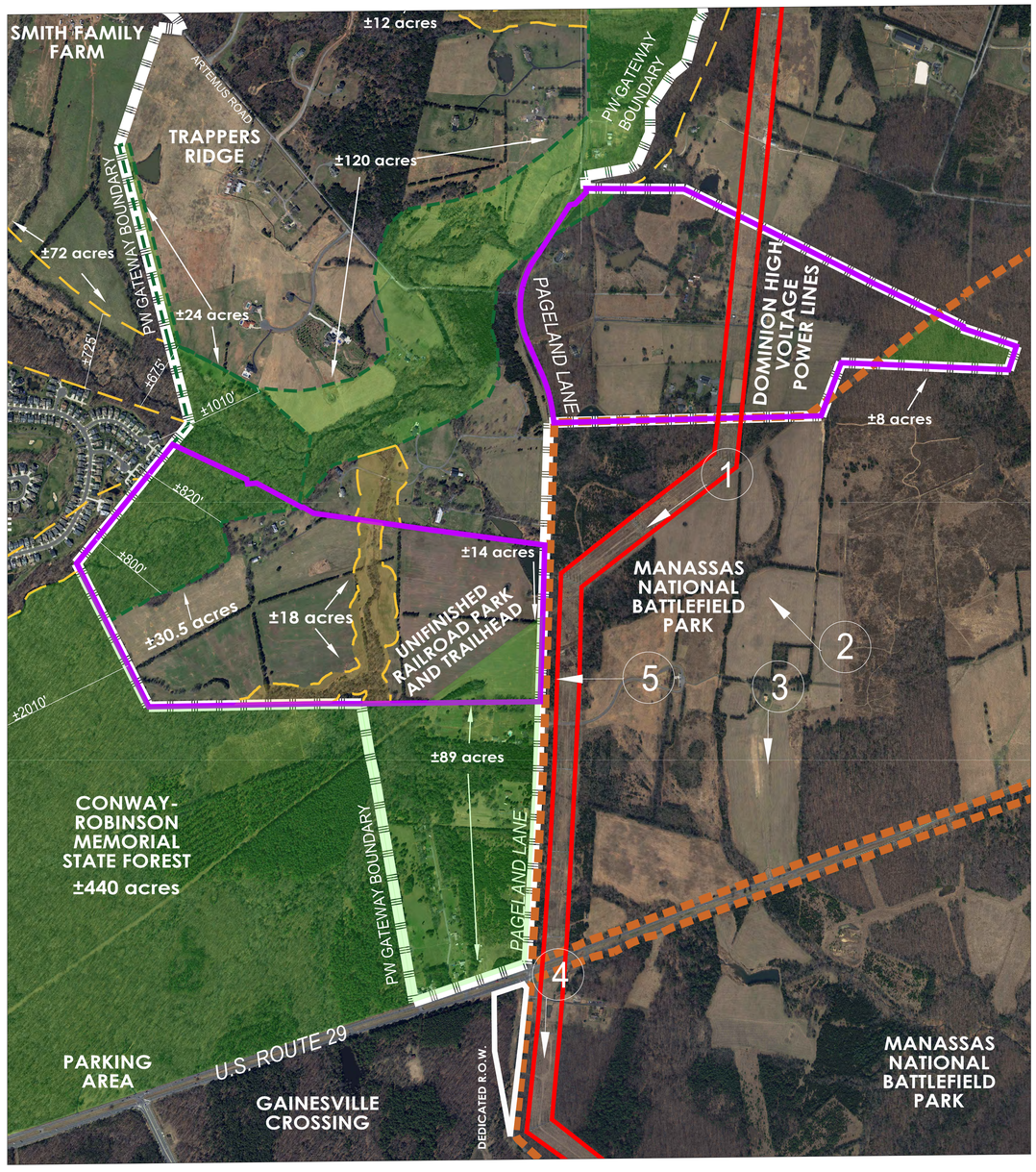
Manassas National Battlefield Park Viewshed Protection

VISUAL IMPACT STUDY - BRAWNER HOUSE - ARTILLERY LINE
PWC DIGITAL GATEWAY



VISUAL IMPACT STUDY - BRAWNER HOUSE - ENTRANCE DRIVE
PWC DIGITAL GATEWAY

VISUAL IMPACT STUDY - BOUNDARY TREE SITE
PWC DIGITAL GATEWAY



LEGEND

- ENVIRONMENTAL RESOURCE (ER)
- CATHARPIN GREENWAY EXTENSION
- REZ 202200032
- MANASSAS BATTLEFIELD LEGISLATIVE BOUNDARY
- PW DIGITAL GATEWAY
- LINE OF SIGHT

This plan is preliminary in nature and is subject to change based on site surveying and final site engineering.

500 250 0 500 1000
GRAPHIC SCALE
1" = 500'

NORTH

1 BRIDLE TRAIL (LOOKING SOUTHWEST)

2 BATTERY HEIGHTS VIEW (LOOKING NORTHWEST

4 FROM RT. 29 (LOOKING SOUTH)

5 BRAWNER FARM ENTRANCE (LOOKING WEST)

3 BRAWNER HOUSE (LOOKING SOUTH)

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PW DIGITAL GATEWAY

GAINESVILLE MAGISTERIAL DISTRICT, PRINCE WILLIAM COUNTY, VIRGINIA

MARK	DATE	DESCRIPTION

PROJECT No.: 20143.003.00
DRAWING No.: 111430
DATE: 08/02/2022
SCALE: SEE SHEET
DESIGN: GB
DRAWN: GB, CL
CHECKED:

SHEET TITLE:

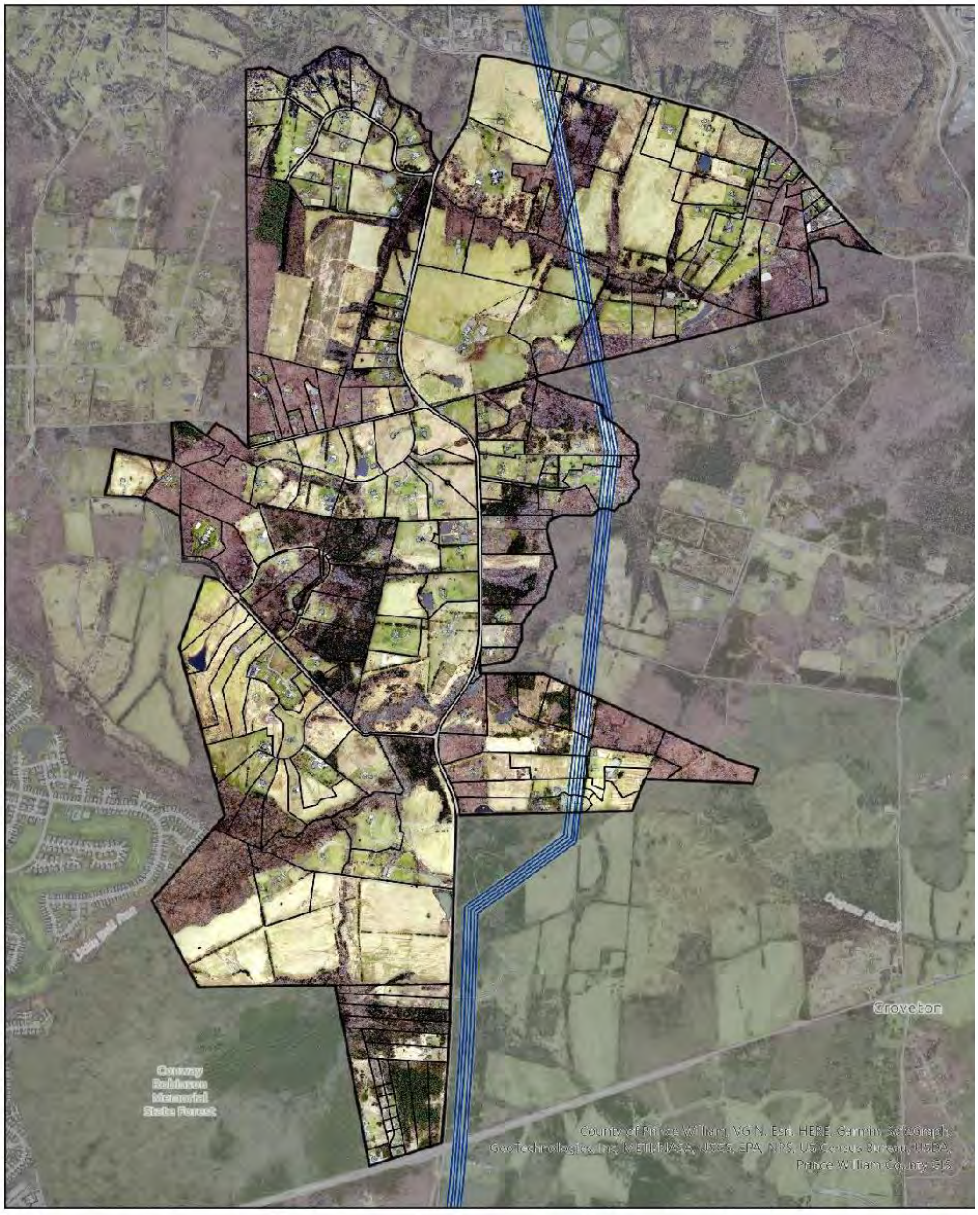
VIEWS FROM BRAWNER FARM

SHEET No.

1

PRINCE WILLIAM COUNTY

PW Digital Gateway



Second Draft: August 15, 2022

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Contents

INTRODUCTION

INTENT

PW Digital Gateway Special Study Area envisions creating a technology corridor along Pageland Lane for the development of data center uses, a defined targeted industry, while preserving and protecting key environmental and cultural resources. The corridor was originally an applicant initiated Comprehensive Plan Amendment for 27 parcels located on both sides of Pageland Lane in four geographic areas south of Sudley Road and approximately one mile north of Route 29. On July 20, 2021, through Res. No. 21-445, the Prince William Board of County Supervisors initiated an amendment to the Comprehensive Plan for PW Digital Gateway to change the Long Range Land Use from AE, Agricultural or Estate and ER, Environmental Resource, to Technology/Flex (T/F) with a T-3 Transect to include related impacts on supporting infrastructure and consider alternative comparable land use designation options that meet the needs of the original applicant and the priorities of the Prince William Board of County Supervisors. Additionally, the Prince William Board of County Supervisors also approved an enhanced Study Area to include the entire corridor between Route 29 and Sudley Road in order to review in a holistic manner (traffic, land use, and environmental concerns), look carefully at the areas directly abutting Conway Robinson Memorial State Forest and the Manassas National Battlefield Park, and coordinate the review with the open space corridor concepts of the Rural Area (native plant buffering and sustainability) to preserve as much of the area as possible.

PW Digital Gateway serves as an addition to the Comprehensive Plan and the Policies and Action Strategies contained below represent additions or modifications to the relevant chapters of the Comprehensive Plan to address the unique conditions within the Study Area. Existing Comprehensive Plan components and action strategies remain applicable, but where PW Digital Gateway Study Area conflicts with these policies, the PW Digital Gateway Special Study Area prevails.

STUDY AREA

In order to establish the boundary of the Study Area staff developed five criteria for consideration of inclusion:

1. Original PW Digital Gateway application,
2. Board directed expansion to include US Route 29 through VA Route 234,
3. Property owner expressed interest,
4. Established communities, and
5. Existing cultural and environmental resources.

In consideration of the five criteria established above an expanded study area boundary was defined. The proposed Study Area consists of 194 parcels and 2,139 acres between Route 234 and Route 29. The Study Area has also been divided into two districts to better target policy recommendations to identify and address existing conditions.

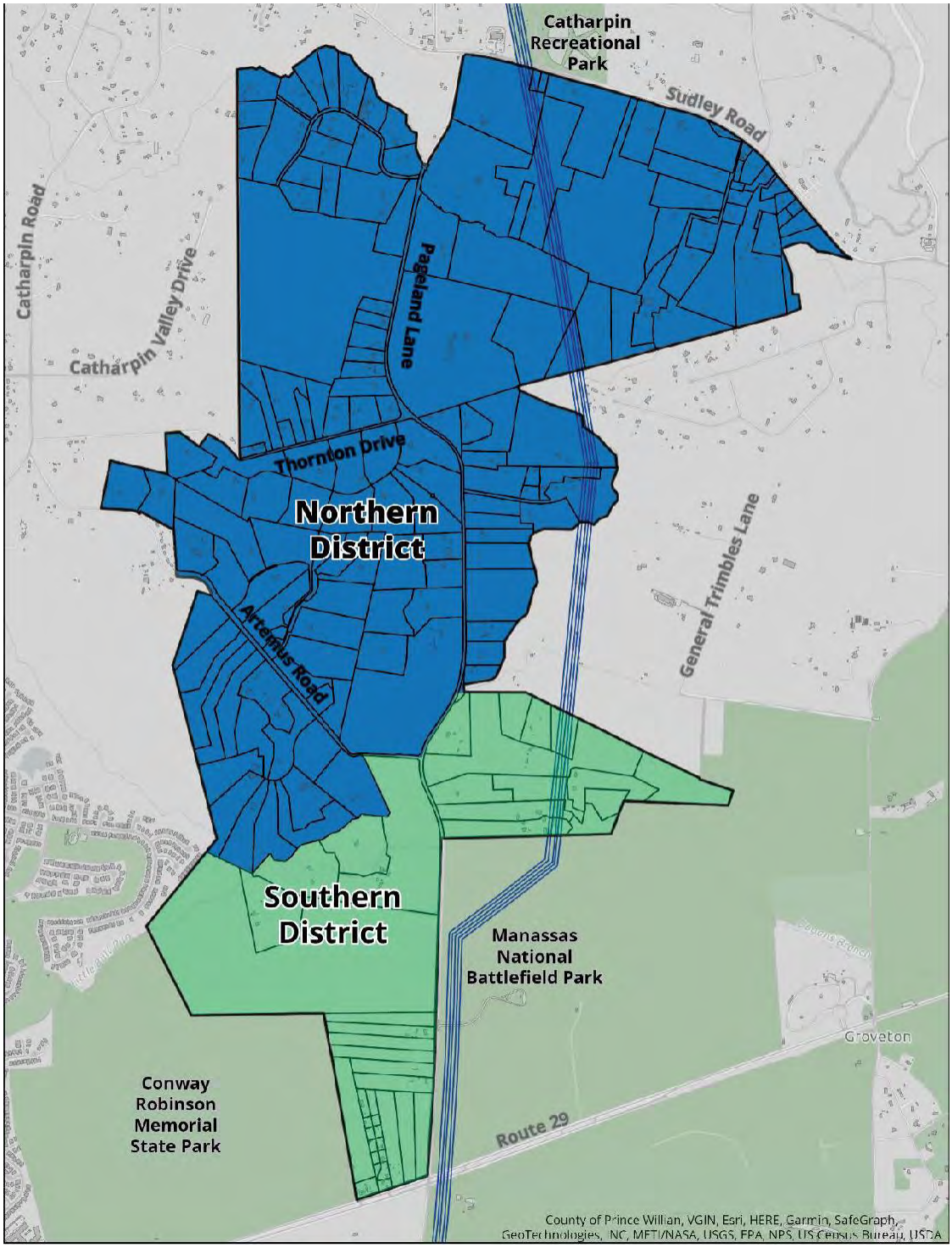

Figure 1: PW Digital Gateway Study Area and Subdistrict Map

Following establishment of the Study Area the Planning Office established Principles of Decision Making to identify the key considerations for the Study Area.

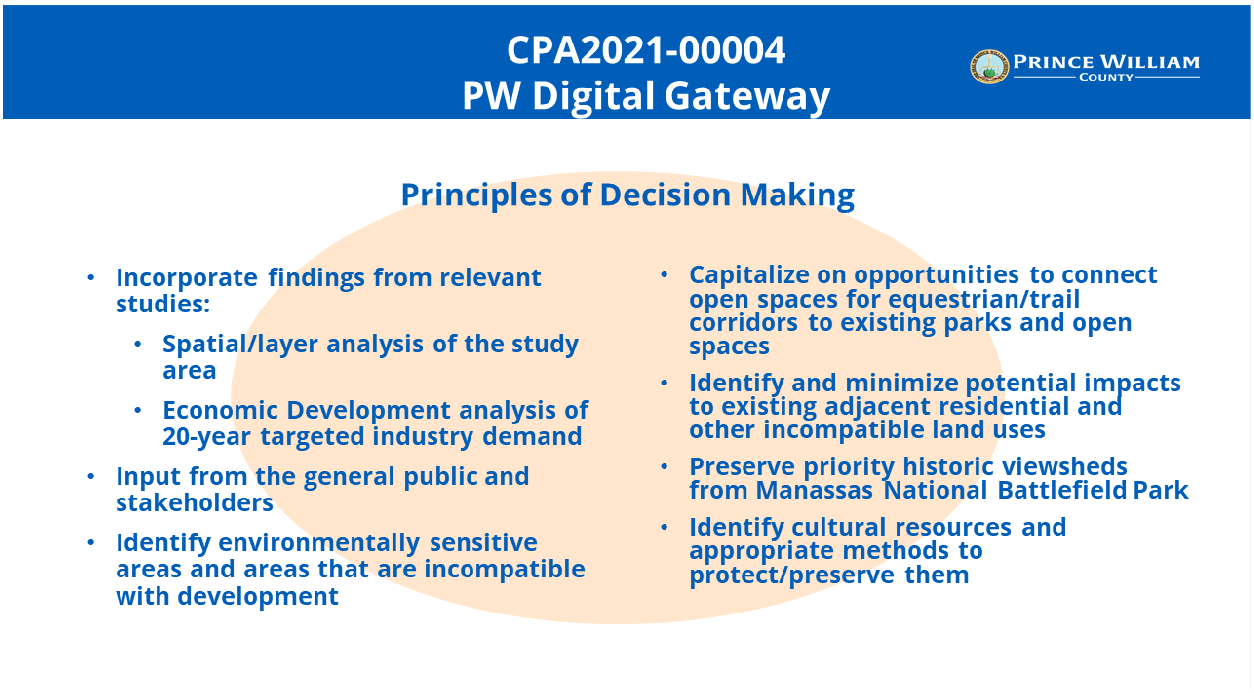

Figure 2: Principles of Decision Making

STAFF ANALYSIS

McHarg Analysis -The spatial/layer analysis also known as a McHarg analysis was developed by the Planning Office and the Department of Information Technology to identify and better understand constraints within the Study Area and ultimately develop a recommendation on the CPA. The concept behind this analysis is that logical conclusions can be drawn by overlaying key layers such as environmental constraints, cultural resources and historic viewsheds, and infrastructure. The interactive map with the layer analysis is posted on the project webpage (www.pwcva.gov/PWDigitalGateway). The direct link to the PW Digital Gateway data analysis map is https://pwcgov.maps.arcgis.com/apps/webappviewer/index.html?id=37eff925d5c5482588f42ffd0a3c05cd.

Targeted Industry Land Need Analysis - The Department of Economic Development contracted Camoin Associates to prepare a land needs analysis for all Targeted Industries in Prince William County for the next 20 years based on industry projections and past performance. The analysis estimates the aggregated amount of land for all of the Targeted Industries and compares that with the Planning Office's Build Out Analysis to identify any gaps for additional land that may be needed to support the growth of these industries and

increase the County's overall commercial tax base.

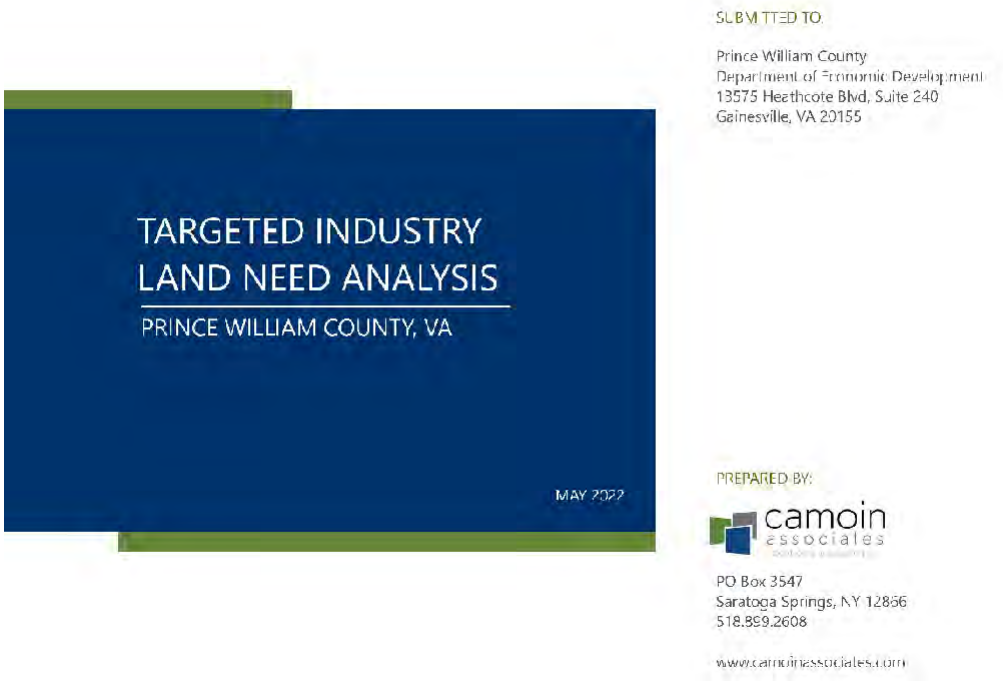

Figure 3: Camoin Targeted Industry Land Need Analysis

COMMUNITY ENGAGEMENT

Community Meeting - January 27, 2022 & February 3, 2022

The Planning Office hosted an in-person community meeting on the PW Digital Gateway Comprehensive Plan Amendment on Thursday, January 27, 2022, at the Beacon Hall Conference Center on the George Mason University SciTech Campus in Manassas. The open house began at 6:00 PM and was followed by in person public comment time after 7:00 PM. Due to a large number of speakers registered for the January 27, 2022, community meeting, a continuation (virtual only) meeting was scheduled for February 3, 2022. This meeting was planned to allow for virtual public comment for those who signed up to participate virtually prior to January 27, 2022 and had not provided in-person public comment. More information about the public engagements as well as materials from the meeting can be found at www.pwcva.gov/PWDigitalGateway.

Public Comments

Since Initiation of the Comprehensive Plan Amendment the Planning Office has received thousands of comments from the general public and other organizations in the form of phone calls, emails, letters, online, and in-person comments. The comments provide range from support to opposition. In evaluation of these comments staff provides the following

summary:

The following are key themes which emerged in the comments in opposition to the Comprehensive Plan Amendment:

1. Concerns about the environmental impacts of the proposed CPA on the County's wildlife, water table, environmental resources, soils, and stormwater runoff.
2. Concerns about impacts on cultural resources by the proposed CPA regarding Civil War history, specifically the Manassas National Battlefield Park, historic viewsheds, the Settlement Community, the Thornton School, cemeteries, and other historically significant features.
3. Concerns and opposition to the change of previously agricultural designated land to industrial for the development of data centers.
4. Request for additional studies to be conducted to further evaluate the feasibility and potential impact of the proposed development.
5. Concerns about impacts to adjacent uses including viewsheds, noise, and pollution.
6. Concerns about the long-term viability of data center technology and marketability.
7. Concerns about energy and water consumption, and sustainability.
8. Concerns about the proposed CPA trigger the need for additional transmission lines.
9. Concerns about increased traffic.

The following are key themes which emerged in the comments in support of the Comprehensive Plan Amendment:

1. Support of anticipated economic activity generated by data centers, an identified targeted industry.
2. Support for the potential increase in commercial tax offering relief to residential tax burden and supporting County Infrastructure and services.
3. Support for the location offering access to existing transmission lines, fiber optics, and available land.
4. Largely supported by property owners within the Study Area.
5. Support for the widening of Pageland Lane to relieve traffic.
6. Support for reevaluating the land use as it is no longer "rural."

LONG RANGE LAND USE

The Long-Range Land Use Chapter of the Comprehensive Plan states the policies and action strategies in support of the County's goal to promote a Countywide pattern of land use that encourages fiscally sound development and achieves a high-quality living environment. The Land Use component of the PW Digital Gateway Special Study Area provides additional policies and action strategies that apply specifically to the Study Area.

The PW Digital Gateway Special Study Area establishes Pageland Lane as a technology corridor promoting opportunities for the expanding data center industry. The Study Area is primarily intended for data center and associated uses. Other industrial uses within the corridor are discouraged.

DGLU POLICY 1: Encourage high-quality data center development within the Study Area which meets the densities and intensities outlined in the proposed land use map and achieves the vision of creating a world class technology corridor that promotes economic development while preserving and protecting key environmental and cultural resources.

DGLU 1.1 The primary use within the Technology/Flex designated areas of the Study Area are data centers and accessory uses. Non-data center uses should be discouraged and proffered out of development proposals within the Study Area. Heavy industrial uses and those uses which generate higher traffic, such as distribution centers, are strongly discouraged.

DGLU 1.2 Require development within the Study Area to follow the intensity and density of development as prescribed in the Technology/Flex designation at the T-3 transect density, as shown in Figure 4, with the following additional considerations:

1. The maximum overall intensity of development within the Study Area should be limited to 27 million gross square feet of building area.
2. Encourage development in the Southern District, closest to Manassas National Battlefield Park and Conway Robinson State Forest to develop at the lower end of the T-3 Transect density.
3. Allow development proposals to include land dedicated as POS, Parks and Open Space, to count towards the gross land area when calculating the floor area ratio of the proposed gross development. ER, Environmental Resource Areas, should be excluded from this calculation.

DGLU 1.3 Coordinate with the Department of Economic Development to monitor and maintain an inventory of development within the Study Area.

Technology/Flex (T/F)



The Technology/Flex classification within PW Digital Gateway consists of Industrial areas provide opportunities for technology uses such as data centers, and accessory uses. Non-data center uses are encouraged to be proffered out of development proposals within the Study Area. Heavy Industrial uses and those which generated higher traffic are strongly discouraged that do not require large outdoor storage or produce nuisances such as noise, dust or vibration.

Primary Uses	Secondary Uses	Implementing Zoning Districts
• Data Centers	• Office • Retail & Service Commercial (supporting)	• PBD • O(F) • M-2
Target FAR	**Building Height**	**Minimum Open Space**
0.23 – 0.57	1-3 Stories* As outlined in the Cultural Resource DGCR 1.5	30%

Figure 4: Technology/Flex Land Use Description

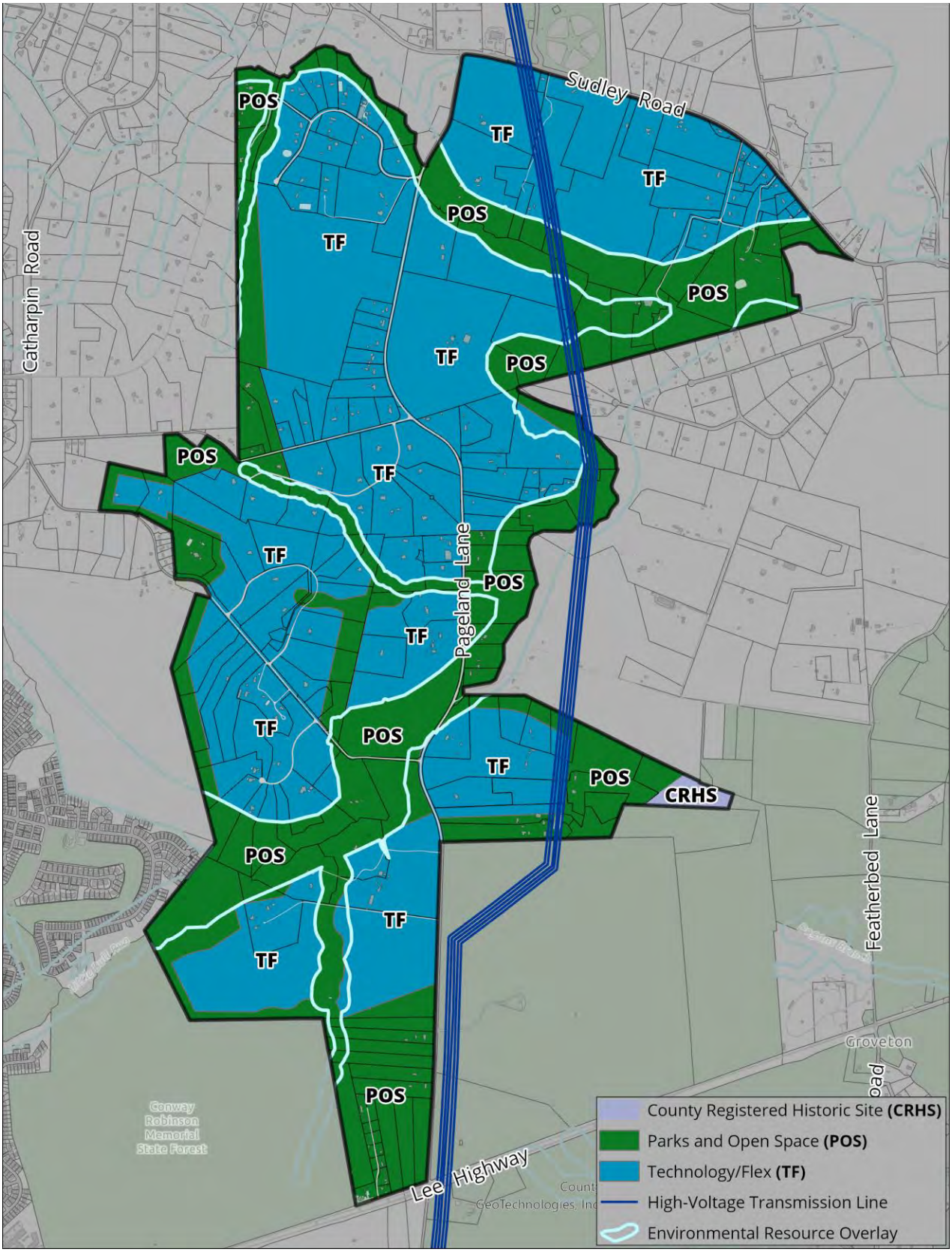

Figure 5: PW Digital Gateway Land Use Plan

COMMUNITY DESIGN

The Comprehensive Plan states the policies and action strategies in support of the County's goal to provide quality development and a quality visual environment throughout Prince William County for residents, businesses, and visitors. The Community Design section of the PW Digital Gateway Special Study Area provides additional policies and action strategies that apply specifically to Study Area.

The PW Digital Gateway Special Study Area establishes Pageland Lane as a technology corridor promoting opportunities for the expanding data center industry. Development within the Study Area should prioritize context sensitive design considerations towards adjacent land uses, historic viewsheds, and natural resources.

Protection of historic viewsheds is important to the economic development of Prince William County, as well as preservation of significant national history. The policies below are necessary to provide these protections and proposed uses need to address these issues as a matter of mitigating the impacts of their proposed uses and structures.

DGCU: POLICY 1: Ensure high-quality development within the Study Area that utilizes context sensitive design considerations to ensure development respects existing adjacent uses and historic viewsheds.

DGCD 1.1 Require generalized development plans and master zoning plans submitted with applications for rezonings, special use permits, and public facilities to include limits of disturbance, site layouts, colored architectural elevations, and conceptual illustrative and design considerations which show how the proposed development implements context-sensitive design that align with DGCR 1.15 for all structures visible to adjacent cultural designated areas.

DGCD 1.2 Require line of sight exhibits for all portions of a development proposal which border adjacent incompatible uses, and historic viewsheds.

DGCD 1.3 Encourage site specific designs for buildings that are visible from incompatible uses, the Manassas National Battlefield Park, and the public right-of-way that use innovative design approaches in respect to the building design, screening, and landscaping.

DGCD 1.4 Building façade architectural treatments such as variations in building materials, patterns, and texture, and other design elements are recommended to provide visual interest. These treatments are not recommended for portions of buildings facing and visible from the Manassas National Battlefield Park where building facades are

encouraged to blend into the surrounding area.

DGCD 1.5 Building façades facing and visible from Manassas National Battlefield Park should be non-reflective and earth tone, for example dark green and/or dark brown in color. Other colors may be appropriate provided a rezoning applicant demonstrates the other color(s) will facilitate the ability for the building façade to blend into the horizon or tree line or will be screened by other topography and/or other buildings. Alternative paint colors or patterns may be utilized on rooftop screening facing Manassas National Battlefield Park.

DGCD 1.6 Encourage design guidelines for landscaping, reforestation, signage and architectural standards for data center sites visible from incompatible uses and public right-of way along Pageland Lane. These guidelines should recognize, complement, and reflect the nearby historic and natural resources in a manner which creates a unique sense of place.

DGCD 1.7 All rooftop mechanical equipment should be screened when visible from adjacent cultural, residential, and agricultural designated areas and public rights of way. Ground level mechanical equipment not screened by a principal building topography or vegetation and when visible from adjacent cultural, residential, and agricultural designated areas and public rights of way should be screened by a visually solid fence, screen wall or panel, or other visually solid screen that is constructed with materials and colors compatible with those used in the exterior construction of the principal building.

DGCD 1.8 Require strict conformance with outdoor lighting standards, especially the use of “full cut-off fixtures” for all parking lot and building-mounted lighting.

DGCD 1.9 Require the use of sound attenuation enclosures or walls around generators and other mechanical equipment (including rooftop equipment) where appropriate to minimize noise impacts to the cultural and residential designated areas. Additionally, development proposals should condition strict times for routine testing of generator equipment and backup power systems.

DGCD 1.10 Substations are encouraged to be located to the interior of proposed development, when possible, to minimize viewshed impacts. Additionally, substations are encouraged to use innovative designs to enhance screening from adjacent cultural and residential designated areas such as the use of enhanced architectural screening elements to mimic a structure. Such elements should follow the above architectural

standards related to design, color, and reflectivity to promote context sensitive design.

CULTURAL RESOURCES

The Comprehensive Plan states the policies and action strategies in support of the County's goal to identify, preserve, and protect Prince William County's significant historical, archaeological, architectural, and other cultural resources including those significant to the County's minority communities, for the benefit of all of the County's residents and visitors. The Cultural Resources section of the PW Digital Gateway Special Study Area provides additional policies and action strategies that apply specifically to the Study Area, in addition to those policies in the Cultural Resources section of the Comprehensive Plan.

The PW Digital Gateway Special Study Area is located northwest of the congressionally designated Manassas National Battlefield Park and contains portions of the Manassas Battlefield Historic District (076-0271) as identified on the National Register of Historic Places. Due to the cultural sensitivity of this area, all development within the PW Digital Gateway Special Study Area should be developed with the utmost sensitivity to cultural resources and historic viewsheds while leveraging opportunities to provide meaningful contributions to preservation and interpretation of the extensive local and national history.

DGCR POLICY 1: All development within the PW Digital Gateway Special Study Area should prioritize preservation and protection of existing cultural resources, minimizing impacts to significant historic viewsheds, while leveraging opportunities to provide meaningful contributions to preservation and interpretation of the extensive local and national history

DGCR 1.1 County staff should require rezoning, special use permit, and public facility review applicants to provide detailed viewshed analyses to ensure accurate evaluation of potential visual impacts from the proposed development to significant historic viewsheds and to help ensure that any visual impacts are appropriately addressed. These analyses include, but are not limited to, topographic, LIDAR-assisted line of sight, digital imaging, drone visual horizon tests, augmented reality digital imaging, or other appropriate techniques and technologies determined by County staff, in consultation with Manassas National Battlefield Park. These analyses should identify key observer points, in consultation with the Planning Director or their designee and Manassas National Battlefield Park staff, to use in the viewshed analysis.

DGCR 1.2 Because of the overall historical and cultural sensitivity of the area and its close proximity to Manassas National Battlefield Park, County staff should require rezoning, special use permit, and public facility review applicants to provide a Phase I cultural resource studies with the first submission of

their application. If warranted, County staff should require the applicant to conduct a Phase II evaluations during review of the land use application. If a site or sites is determined significant and it will be negatively impacted by the proposed application, mitigation should be proffered and can be in the form of Phase III/Data Recovery.

DGCR 1.3 Encourage property owners within the plan area to curate and donate archaeological collections discovered during development of property in the plan area which are during development of property in the plan area to the County.

DGCR 1.4 Encourage property owners within the plan area to curate and donate archaeological collections related to the mission of the Manassas National Battlefield Park ("MNBP") to the MNBP. If MNBP does not accept the donations of such an archaeological collection, encourage the property owner to curate and donate such collection to the County.

DGCR 1.5 In the Southern District (shown in Figure 1), building height, including roof top mechanicals and parapets, should be limited to 45' feet, unless a viewshed analysis is provided that shows, at the studied building height, either no impacts to viewsheds from Manassas National Battlefield Park or a mitigated impact to viewsheds from Manassas National Battlefield Park. In the Northern District (shown in Figure 1), building height, including roof top mechanicals and parapets, should be limited to 85' feet, unless a viewshed analysis is provided that shows, at the studied building height, either no impacts to viewsheds from Manassas National Battlefield Park or a mitigated impact to viewsheds from Manassas National Battlefield Park. In other locations in Figure 1, rezoning and special use permit requests should analyze viewsheds from Manassas Battlefield Park for heights of 45' and higher for potential impacts to identified historic viewsheds.

DGCR 1.6 Employ internal vegetative buffers (such as between structures), within proposed development outside of MNBP, to soften or mitigate impacts to historic viewsheds.

DGCR 1.7 Encourage significant mitigation of viewshed impacts including but not limited to proffered maximum elevations, of all structures, above mean sea level ("AMSL") for all development. Proffered maximum elevations shall include rooftop mechanical equipment and parapets, parking lot lighting fixtures.

DGCR 1.8 Property owners are encouraged to preserve the following resources in situ (in place): Honeywood Site complex (076-0138; also known as Pageland I); Pageland II complex (076-0137); the Phillips Cemetery; and the Civil War Mass Grave. County staff should work with any interested property owner to help transfer these resources to an entity or organization that provides for the long-term preservation of these resources. County staff should work with any interested property owner to allow access to the public for interpretive programming.

DGCR 1.9 Work with the County Archeologist to develop a detailed history of the antebellum dwelling known as Honeywood (076-0138, Pageland I), which is located on the original Pageland landholdings of the Marsteller family.

DGCR 1.10 Where appropriate, encourage the dedication of privately owned land located within the legislative Boundary of Manassas National Battlefield Park to the MNBP.

DGCR 1.11 The County should encourage and facilitate the voluntary establishment of preservation easements on private land, by landowners, to protect historic landscapes, viewsheds, historic districts, individual architectural and archaeology sites, and other cultural resources. The County should cultivate private, local, State, and federal partners, including private landowners, to accomplish this task.

DGCR 1.12 The County should encourage and facilitate private landowners to voluntarily provide public access and public trails to viewsheds and other cultural resources on private land, such as the Phillips Cemetery.

DGCR 1.13 County staff should require rezoning, special use permit, and public facility review applicants to conduct archaeology and historical research (including oral histories and other methods of historical research) to determine the boundaries of the "Settlement" community and Thornton School. Based on this archaeology and historical research, and the recommendations therein, and other relevant information, County staff should work with applicants on appropriate, site-specific mitigation measures.

DGCR 1.14 Prepare an interpretative plan that includes elements such as, but not limited to: (i) historical markers and other interpretative media in areas of public access; (ii) a self-guided brochure for the trail system incorporating interpretation of historic resources along the trail; (iii)

interpretative kiosks in the two proposed parks in this section of the Comprehensive Plan; and (iv) digital media (including augmented reality). The interpretative plan should be developed in consultation with the Planning Director, or their designee, the County's Office of Historic Preservation, the Manassas National Battlefield Park and shall be submitted within one (1) year of approval of the first rezoning application or at the time of the first site plan and thereafter, each applicable site plan should include those elements of the interpretative plan that are to be implemented by that site plan which are appropriate and consistent with applicable law.

DGCR 1.15 Prepare a master landscaping, vegetation, fencing, and signage plan ("Plan"), with phasing and an implementation strategy for this comprehensive plan area. This master landscape plan should be submitted within one (1) year of approval of the first rezoning application for review and approval by the County Archaeologist, and thereafter, each applicable site plan shall include those elements of the plan that are to be implemented by that site plan which are which are appropriate and consistent with applicable law. The intent is to design a Plan that mitigates adverse effects of development on the Manassas National Battlefield Park, Conway Robinson State Forest and the surrounding area; integrates new development with the historic landscape; and integrates new development with proposed parks and open spaces and trails; through a set of context sensitive, design guidelines. The intent is to build a strong, practical, and adaptable framework.

DGCR 1.16 Cemeteries located in the plan area should be preserved in place and treated in accord with Section 32-250.110 of the County's Ordinance (Preservation of Existing Cemeteries). However, based on site-specific evaluation, a larger cemetery preservation area may be appropriate to help ensure that a cemetery is protected and improve the transition between the development and each cemetery.

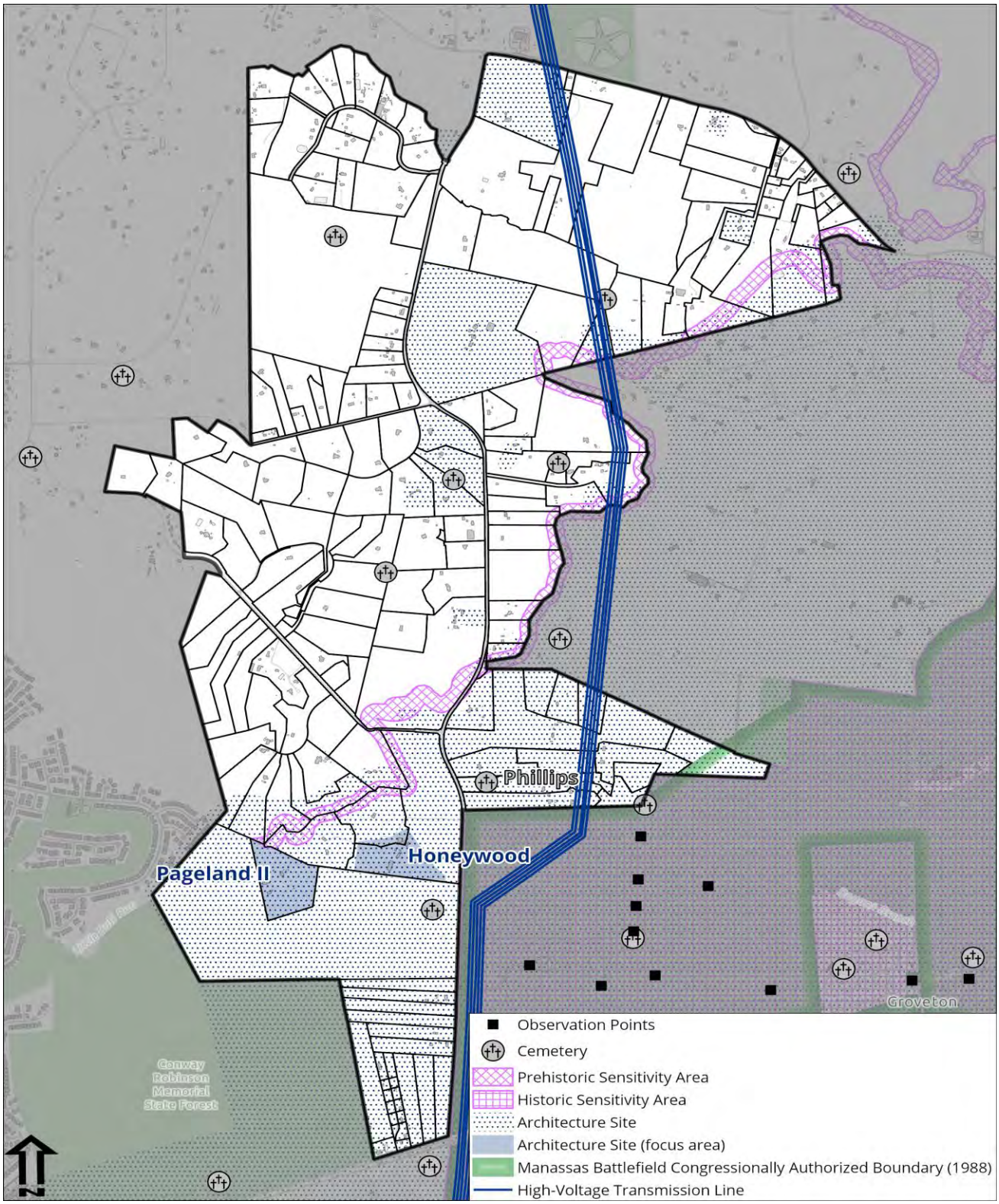

Figure 6: PW Digital Gateway Cultural Resources Map

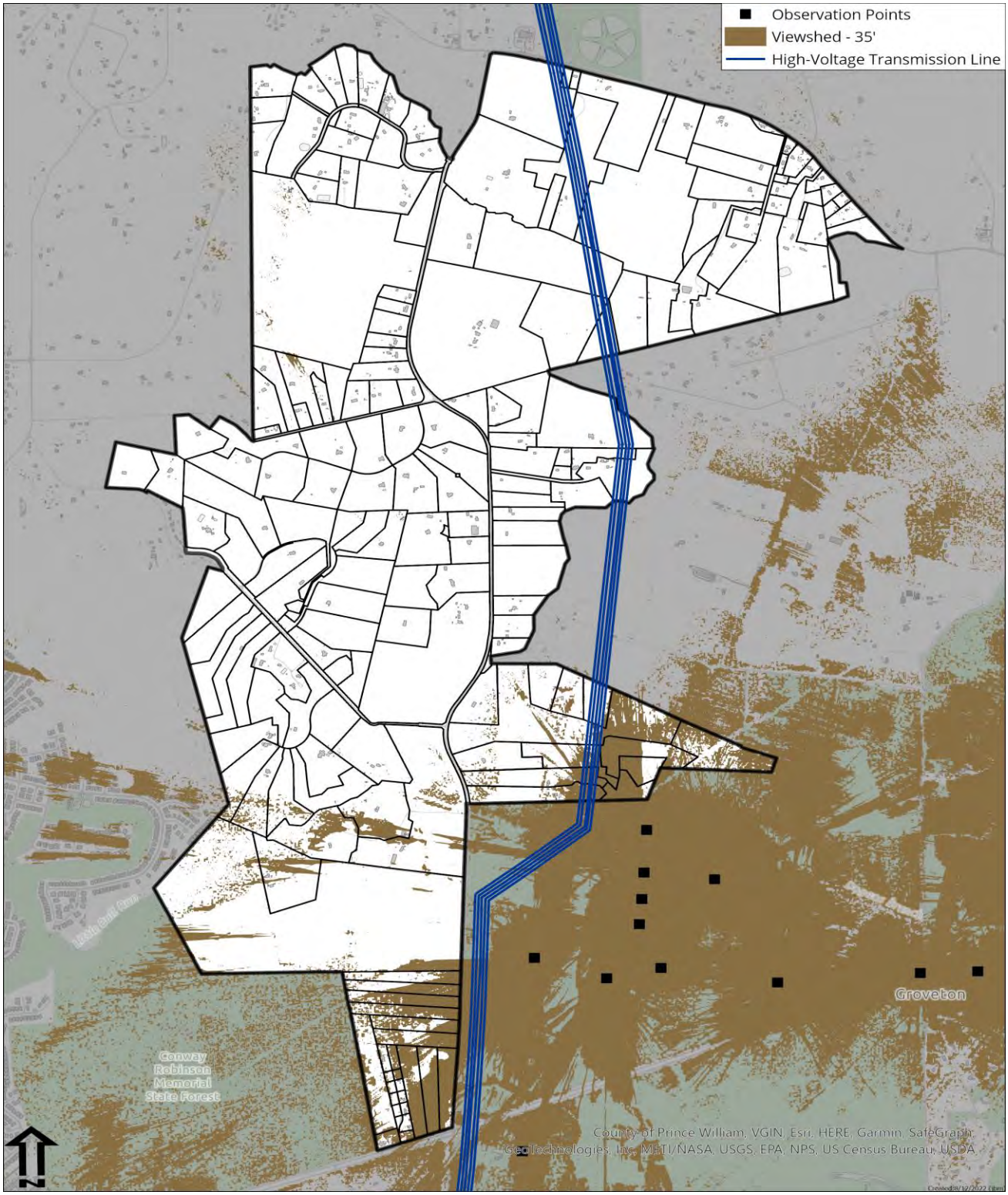

Figure 7: 35' Viewshed Analysis

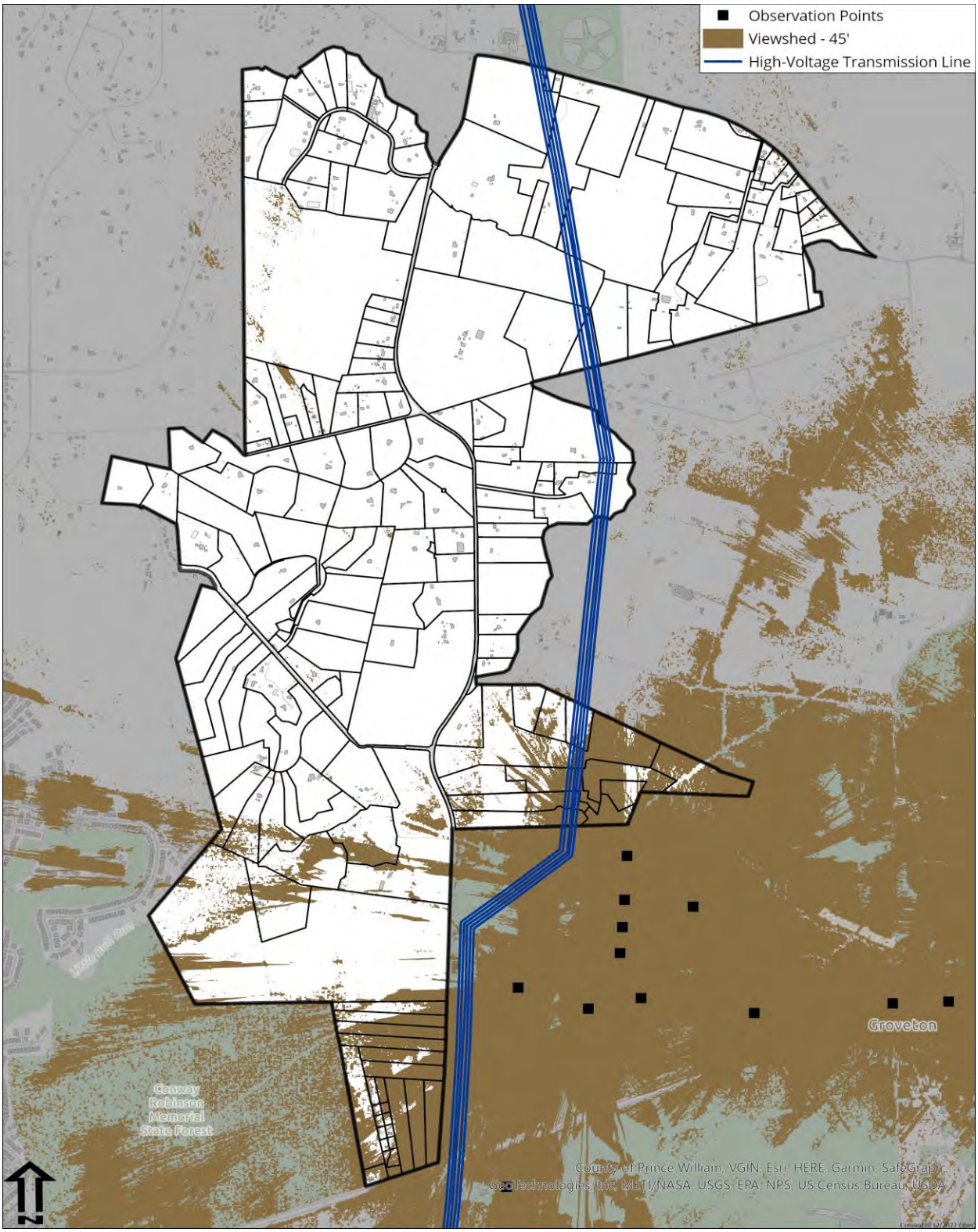

Figure 8: 45' Viewshed Analysis

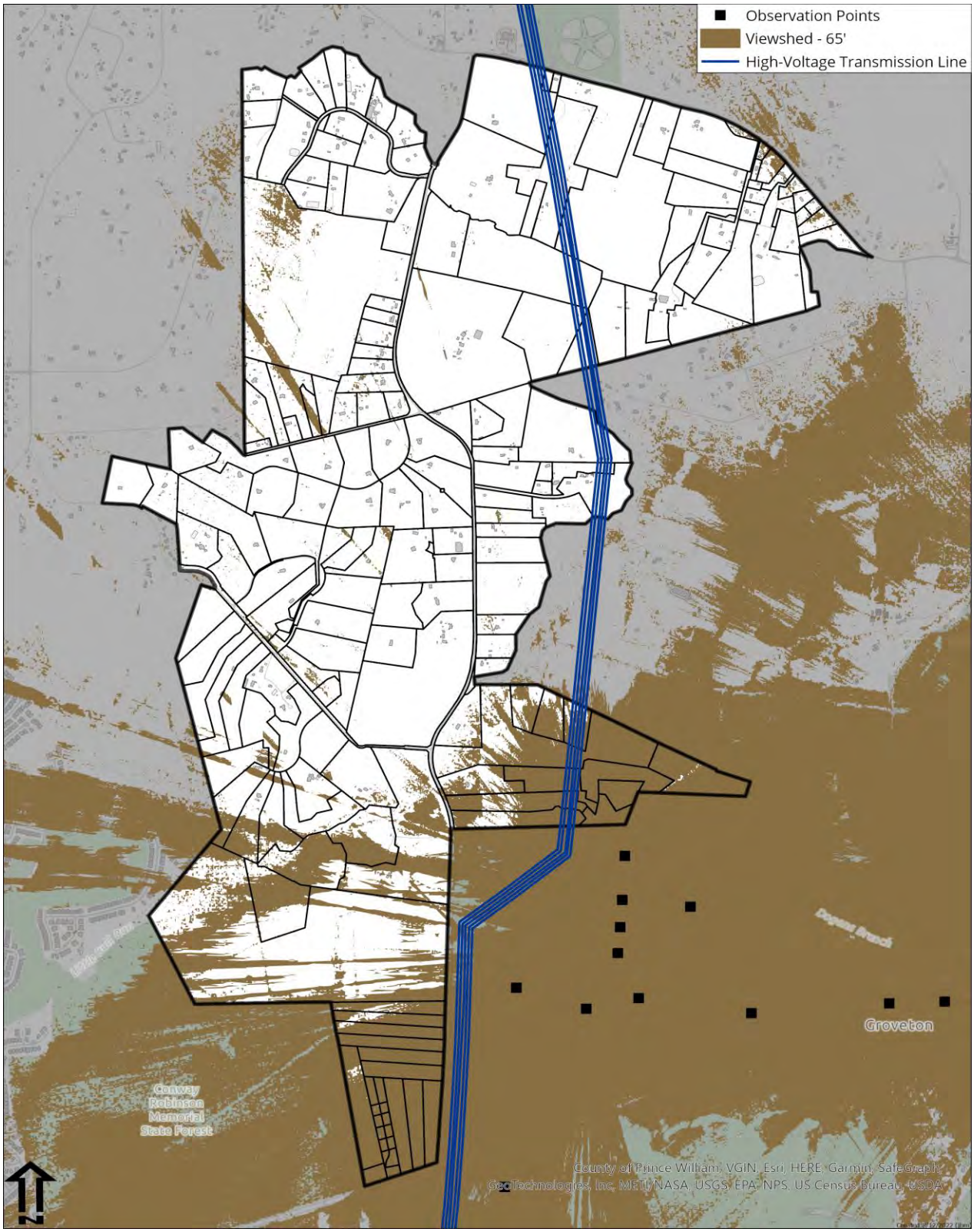

Figure 9: 65' Viewshed Analysis

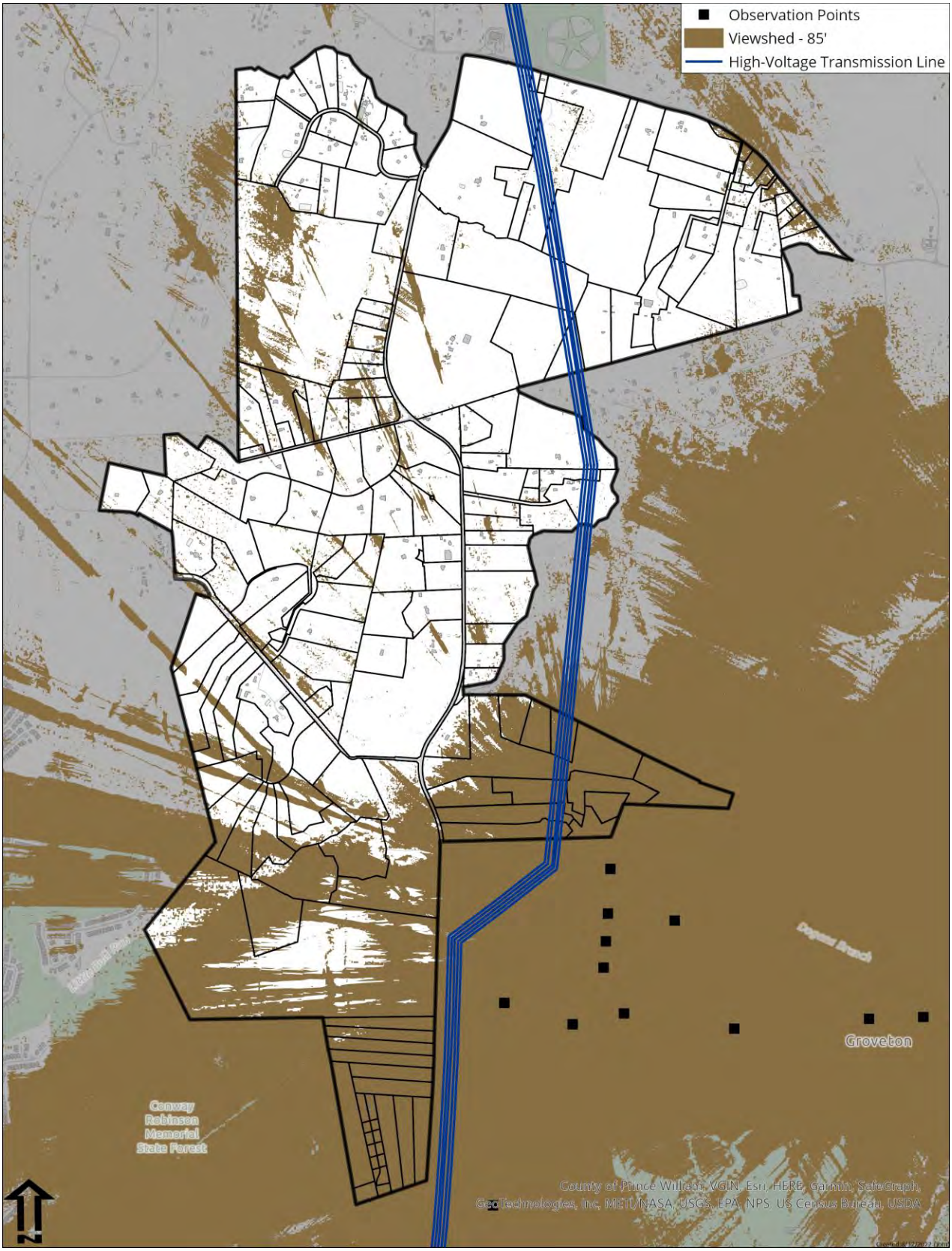

Figure 10: 85' Viewshed Analysis

Figure 11: 95' Viewshed Analysis

Figure 12: 105' Viewshed Analysis

ECONOMIC DEVELOPMENT

The Economic Development Chapter of the Comprehensive Plan states the policies and action strategies in support of the County's goal to maintain an economic development climate that will attract and foster the expansion of environmentally sound industries to create quality jobs, diversify the non-residential tax base, and encourage people to live and work in Prince William County. The Economic Development component of the PW Digital Gateway Special Study Area provides additional policies and action strategies that apply specifically to Study Area.

PW Digital Gateway represents a substantial investment with the potential to propel Prince William County as a leader in the Data Center Industry from a regional, national, and global level. This includes a significant increase in the County's commercial tax revenue, expansion of an identified targeted industry identified by the Board of County Supervisors, and opportunity to promote Prince William County as a "high-tech" community.

DGED Policy 1: Promote development that furthers enhances economic vitality, creates a range of employment opportunities, and promotes public private partnership for the benefit of the County and residents.

DGED 1.1 Increase the commercial tax base by identifying a pipeline of available land to meet future data center industry projections.

DGED 1.2 Reduce competition between data centers and distribution facilities, which are both targeted industries, for existing M-1, Heavy Industrial, and M-2, Light Industrial, zoned land by providing additional land for data center development.

DGED 1.3 Continue the growth of the information communication technology sector and related small business vendor and contractor businesses.

DGED 1.4 Create a range of inclusive job opportunities to increase at place employment for residents with different skills sets, from construction workers, information communication technology related trades, to high-paying technology jobs.

DGED 1.5 Encourage Partnership with George Mason University Science and Technology campus to support their Master Plan for creating a Center for Data Center Excellence at the Prince William campus.

DGED 1.6 Partner with the Northern Virginia Community College and Prince William County Public Schools to create opportunities for information communication technology related internships and apprenticeships.

DGED 1.7 Support public private partnership with data center and tourism industries, the Virginia Department of Conservation and Recreation, and the National Parks Services to maintain and increase programing to ensure visitors have authentic, accurate, and educational experiences.

DGED 1.8 Support high design standards that minimize Manassas National Battlefield Park viewshed impact while creating high-end technology office façades towards roadways.

DGED 1.9 Where possible, leverage recreational facilities and activities to promote outdoor recreation and complementary industries such as breweries, wineries, and tourism.

Tools & Incentives

Prince William County already offers competitive incentives to attract target industries and businesses to the County. These include competitive tax rates, the Prince William County Economic Development Opportunity Fund and Low Business Tangible Personal Property Tax Rates. While PW Digital Gateway is not currently part of a Targeted Revitalization Zone, HUB Zone or Opportunity Zone, the County can leverage other powerful tools and incentives to encourage and to shape development in the PW Digital Gateway Special Study Area. Assistance in sharing the costs of new and upgraded public infrastructure such as road improvements, water extension, sewer extension, and parks, open space and trails are examples of improvements that the County can facilitate through tax increment financing, business improvement districts, and other programming. Other tools exist and may be options to aid the development of PW Digital Gateway Special Study Area, however the following tools may be available to supporting economic growth within the Special Study Area.

Available Tools, Incentives, and Programs

Tax Increment Financing

Tax increment financing ("TIF") is a way to set aside, for a limited period of time, all or part of the presumed increment of new taxes generated by new development, to invest in public improvements. New and improved roads, expanded sewer and water systems, undergrounding of utilities, streetscapes, as well as public parking structures and park space, are some of the potential uses of TIF revenue. Projects can be accomplished on a pay-as-you-go basis or through the issuance of general obligation bonds. Another approach is to create a 'virtual TIF' where the County would participate on a case-by-case basis through diversion or abatement of incremental taxes via a development agreement with private sector partners.

Business Improvement Districts

The County can establish by ordinance a business improvement district ("BID") in a defined area within which property owners pay an additional tax on real estate in order to fund improvements or services within the district's boundaries. Taxes generated by BIDs can be used for district maintenance, security, capital improvements, marketing and promotion, facilities operation and staffing, and more. The services provided by a BID would be supplemental to those already provided by the County.

Industrial Revenue Bonds

The County can issue tax-exempt or taxable industrial revenue bonds ("IRBs") on behalf of qualified companies to finance the construction of buildings and related infrastructure (including parking). Examples of qualifying projects are construction of corporate headquarters and facilities for nonprofit corporations, such as trade associations.

Public/Private Partnerships

The Prince William County Economic Development Department already maintains a host of state and local partnerships to promote cooperative economic development in the County. The complete list can be found here: http://www.pwcecondev.org/state-local-partners

GoVirginia Support and Grant Programs

Prince William County is part of the GoVirginia Region 7. GO Virginia supports programs to create more high-paying jobs through incentivized regional collaboration between business, education, and government to diversify and strengthen the economy in every region of the Commonwealth. The organization maintains a database of grants programs and administers grants regionally.

State-Level Grant Programs and Incentives

The Commonwealth of Virginia through the Virginia Economic Development Partnership ("VEDP") offers a catalogue of incentives to promote economic development throughout the commonwealth. These incentives include grants for localities, direct financial assistance

to businesses, tax incentives for businesses, infrastructure support and training programs. The most applicable programs are listed below. The full list is available at: https://www.vedp.org/incentives

Discretionary Incentives

The Commonwealth of Virginia offers an array of discretionary incentives for competitive projects evaluating a Virginia location, providing financial inducements that make good fiscal sense for all parties. Performance-based incentives target the needs of companies as well as the development plans of localities and the Commonwealth.

Commonwealth's Development Opportunity Fund ("COF")

A discretionary financial incentive established to support projects that create new jobs and investment in accordance with certain criteria established by state legislation. Grants are made to the community and may be used for such things as site acquisition and development; transportation access; public or private utility extension or capacity development; construction or build-out of publicly or privately-owned buildings or training.

Infrastructure Assistance

The Virginia Department of Transportation ("VDOT") and the Virginia Department of Rail and Public Transportation ("DRPT") offer several programs to assist localities in providing adequate infrastructure access for industrial and commercial projects. These programs are designed to assist Virginia localities in attracting companies that will create jobs and generate tax revenues within the locality.

Economic Development Access Program

A state-funded incentive to assist localities in providing adequate road access to new and expanding manufacturing and processing companies, research and development facilities, distribution centers, regional service centers, corporate headquarters, government installations, and other basic employers with at least 51% of the company's revenue generated from outside the Commonwealth. The program is administered by the VDOT.

Transportation Partnership Opportunity Fund ("TPOF")

Awarded at the discretion of the Governor in the form of grants, revolving loans, or other financial assistance to an agency or local government of the Commonwealth for activities associated with eligible transportation projects. The VDOT administers TPOF. Projects developed with monies from TPOF do not become private property, but rather become or remain public property following completion. The transportation improvements have to be accomplished according to VDOT standards and specifications and have to be maintained by the appropriate public entity pursuant to relevant agreements.

GREEN INFRASTRUCTURE

The Parks, Recreation and Tourism, Open Space, and Environmental Chapters of the Comprehensive Plan state the policies and action strategies in support of the County's goals to preserve, protect, and enhance the significant environmental resources, open space, and opportunities for both passive and active recreation which promote a healthy lifestyle for County residents. The Green Infrastructure component of the PW Digital Gateway Special Study Area provides additional policies and action strategies that apply specifically to the Study Area.

The PW Digital Gateway Special Study Area provides an opportunity to ensure a robust and connected system of greenways, trails, open space, and parks which provide a benefit to the environment, County residents, and local wildlife.

The following three parks are envisioned in Green Infrastructure Map to promote meaningful open space preservation and cultural resource protection:

1. Southern Community Park – Community-sized park located between Manassas National Battlefield Park and Conway Robinson State Forest Park at the southern entrance to the corridor. The park may allow for both passive and active recreation, including but not limited a southern trailhead providing access to the overall trail network, equestrian facilities, or interactive passive recreation such as orienteering or geocaching. Tree preservation is envisioned adjacent to Conway Robinson State Forest.
2. Thornton School Cultural Resource Park – A cultural resources type park providing opportunities for the education and preservation of local history including the Thornton School and the "Settlement Community".
3. Natural Cultural Resources Park – A cultural resources park which is intended to be primarily preserved in a natural state and allow for opportunities for passive recreation.

The proposed land uses will have an impact on existing wildlife corridors, the uses may be incompatible with adjacent uses and the employment center will need access to open space, trails for pedestrian and bicycle commuting. As such, the policies below provide necessary mitigation of the impacts of the potential uses in this corridor. As a major employment center in the County, which will be home to many employees, it is imperative that proposed development provides adequate incompatible use buffers, open space for employees to access during their workday as well as providing necessary resources for pedestrian and bike commuting as a means of transportation facilities to the proposed developments. Additionally, future development will displace existing wildlife corridors and mitigating the displacement of these corridors is vital to Prince William County.

DGGI Policy 1: Prioritize the creation of a connected series of parks and open spaces which allow for a variety of passive and active recreational opportunities in a context sensitive to the existing cultural resources, parks, and communities.

DGGI 1.1 Establish Protected Open Space that prioritizes the establishment of a substantial amount of public and private protected open space. Protected Open Space should consist of two types of open space aimed specifically at preserving and restoring natural landforms: Natural Open Space as defined in the Zoning Ordinance and Restored Open Space. Restored Open Space consist of previously disturbed areas that will be restored to native forest, wetlands or meadows during development and subsequently protected from further disturbance. Protected Open Space areas should include:

1. Environmental Resource areas which include FEMA floodplain, and FEMA flood Hazard, natural 100-year floodplains as defined by the DCSM, Chesapeake Bay RPAs, wetlands, 25% or greater slopes, areas with 15% or greater slopes in conjunction with soils with severe limitations, areas, of marine clays, public water supply sources, and critically erodible shorelines and streambanks.

DGGI 1.2 Utilize qualified third-party Virginia Conservation Easement Act conservation easements to permanently protect public and private natural open space areas.

DGGI 1.3 Encourage applicants to provide above minimum requirements for open space with an emphasis on natural open space where they exist and restoration of forest cover where it does not exist. The overall goal of the study area is to achieve 30% natural open space over the entire study area.

DGGI 1.4 Establish and protect the wildlife corridors identified in the Green Infrastructure map. These corridors are encouraged to be 500’ in width. Where reduced the corridors should be a minimum of 300’ in width. Any shifting or relocation of corridors should ensure effective wildlife movement throughout the Study Area. The Little Bull Run wildlife corridor should extend under a new Pageland Lane bridge.

DGGI 1.5 Encourage the restoration of previously disturbed areas within the P&OS designation to native forest, wetlands, and/or meadow. Priority should be given to areas which contribute to wildlife corridors or provide screening and buffering to the Manassas National Battlefield Park, Conway Robinson State Forest, and adjacent incompatible uses.

DGGI 1.6 Buffers along the perimeter of the Study Area should be as shown Figure 11, PW Digital Gateway Green Infrastructure Map. Buffers should prioritize preserving and restoring existing forest and native meadows. Partner with the Planning Office and Manassas National Battlefield Park to identify areas where mitigation of viewshed impacts from development prevail over meadow restoration.

DGGI 1.7 Minimize stormwater runoff through the use of Low Impact Development ("LID") design, wet ponds, and other methodologies recommended in current state and local stormwater ordinances. Applicants should address water quality through the use of enhanced Low Impact Development practices, such as cisterns, permeable pavement, and rain gardens. Low Impact Development and other combination of best management practices that reduce the post-development phosphorous loads leaving the site beyond the state minimum requirements are encouraged.

DGGI 1.8 Encourage engineering and design solutions that achieve no net runoff from mean annual precipitation, to contain potential pollutants on site and to reduce downstream erosion. County staff should explore whether regional stormwater is appropriate to help achieve these goals.

DGGI 1.9 Developers should minimize land erosion and siltation during construction by providing enhanced erosion control measures beyond what current standards require in areas meriting special attention, i.e., close to environmentally sensitive areas, such as along stream valleys, wetlands, and steep slopes. Additional erosion control measures, such as the use of the polymer polyacrylamide (PAM) to reduce turbidity, construction phasing, larger sediment basins, and two-layer erosion controls are encouraged as appropriate to site conditions.

DGGI 1.10 Adhere to all DCSM requirements for canopy coverage and internal parking lot landscaping.

DGGI 1.11 Strongly encourage new development to remove or abandon existing wells and septic systems, per Health Department requirements, to protect the local aquifer.

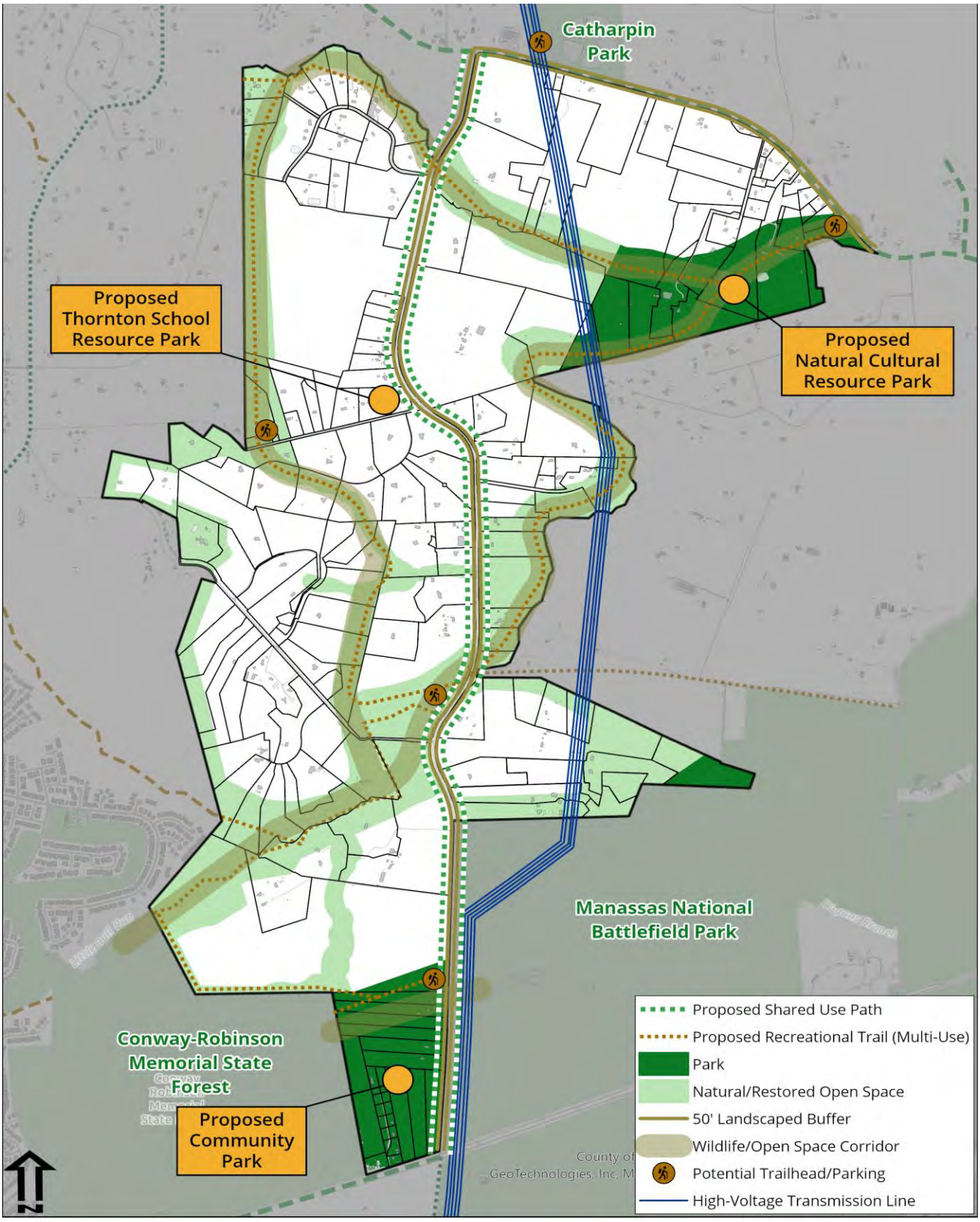

Figure 13: PW Digital Gateway Green Infrastructure Map

MOBILITY

The Mobility Chapter of the Comprehensive Plan states the policies and action strategies in support of the County's goals to create a multimodal transportation network (including roadways, transit, railroad, airplanes and trails) that allows for the safe and efficient movement of goods and people throughout the County and into surrounding jurisdictions. The Mobility component of the PW Digital Gateway Special Study Area provides additional policies and action strategies that apply specifically to the Study Area.

The PW Digital Gateway Special Study Area includes a robust mobility network that proposes enhancements to the local roadway and trail network. The following policies are provided to meet the needs of the proposed development while supporting the County's goal to reduce through traffic through the Manassas National Battlefield Park, ensure acceptable levels of service, and provide enhanced multimodal connectivity.

As a major employment center of the County, provision of open space and trails is an important mitigation of mobility needs for this corridor. Provision of trails and sidewalks, bike lanes, etc. will help to mitigate the proposed land uses in this corridor and provide for a multi-modal mobility network.

DGM POLICY 1: Establish a Multimodal transportation network which enables the safe and efficient movement of people within the Study Area.

DGM 1.1 Pageland Lane should be widened to 4 lanes utilizing a modified Minor Arterial cross section (see figure 10) with shared use paths on both sides and a landscaped median utilizing native plant species.

DGM 1.2 Coordinate with Manassas National Battlefield Park, Conway Robinson State Forest, and the County Arborist to develop a Comprehensive Landscape Plan utilizing native plants along public rights of way and private road easements and in medians to enhance the streetscape and reduce adverse environmental impacts of roadway improvements. Buffering along Pageland Lane should be a minimum of 50' but is encouraged to be more when appropriate.

DGM 1.3 Access to development within the Study Area is required to be from Pageland Lane. Access/crossovers should be limited to 900 feet minimum but is encouraged to be 1,100 feet. Intersections, where possible, should be roundabouts which offer opportunities for interpretive features/amenities such as artillery emplacement or monuments which do not hinder visibility but contribute to the interpretive history of the

area. Roundabouts offer a quieter alternative to vehicles starting and stopping at traffic signals with less light pollution for the Battlefield.

DGM 1.4 Support the goal of Manassas National Battlefield Park to restrict through traffic in the park on Route 29 and Sudley Road.

DGM 1.5 Enhance access to cultural and environmental assets through the creation of a robust multimodal trail network, providing connections between and greater access to Conway Robinson State Forest, the Manassas National Battlefield Park, the Catharpin Greenway and Catharpin Park. Trailhead and parking areas should be strategically placed along the system to allow for multiple access points.

DGM 1.6 Evaluate new opportunities for pedestrian and equestrian connections to Manassas National Battlefield Park.

DGM 1.7 Improve safety and visitor experience along recreational trails through appropriate and consistent trail routes and distance markings and incorporate technology such as Quick Response ("QR") codes and Uniform Resource Locator ("URL") to provide trail maps, contact information, language translation services, and user guides.

DGM 1.8 Encourage creation of a variety of accessible public recreational trail experiences (bicycle, equestrian, nature trails, orienteering, etc.) for a diverse mix of populations (i.e., various age groups, level of mobility, etc.)

DGM 1.9 Encourage participation in an "adopt-a-trail" program by data center owners and other private parties.

DGM 1.10 Require all buildings to include bike racks, to promote and encourage multimodal access.

DGM 1.11 Analyze a connection from Pageland Lane to I-66 and Rte. 234 to provide a direct route to the Study Area and to reduce traffic congestion at the intersection of Rte. 29/Heathcote Blvd./I-66 Ramp and the intersection of Pageland Lane and Rte. 29. It may also allow Rte. 29 between Pageland Lane and University Blvd. to be planned as 4 lanes instead of 6 lanes as currently shown in the Roadway Plan. This connection would allow Sudley Road to be limited to Park traffic only north of Northern Virginia Community College ("NVCC") and south of Gum Spring Road until a more direct route through either the Manassas Battlefield Bypass or the Rte. 29 Alternate Road is constructed.

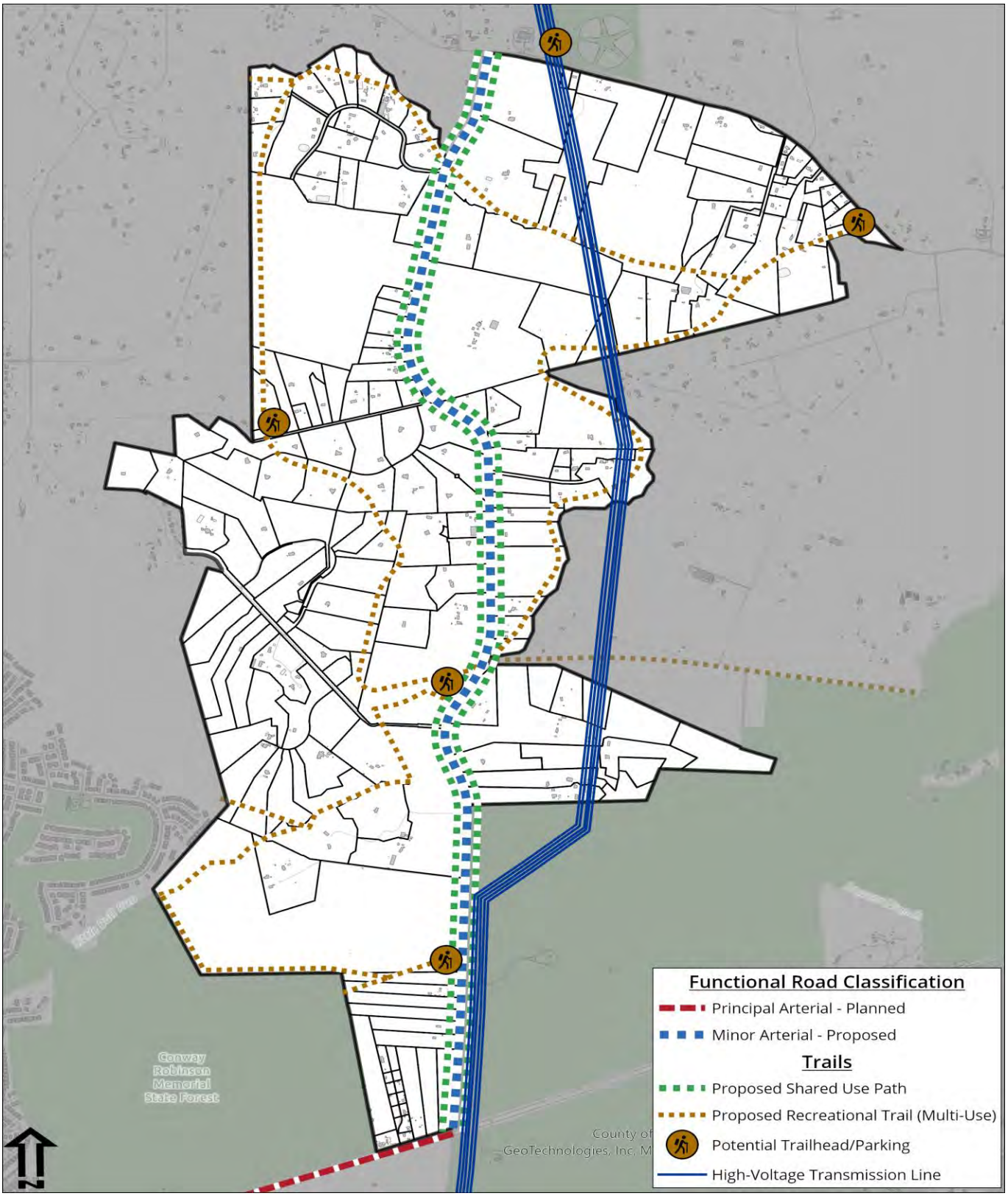

Figure 14: PW Digital Gateway Mobility Map

Pageland Lane
Modified Minor Arterial

Pageland Lane is planned as a 4-lane modified Minor Arterial including shared use paths on both sides and a landscaped median with native plantings coordinated with the County Arborist, Manassas National Battlefield Park and Planning Office. Intersections are encouraged to be designed as roundabouts with a design speed of 45 mph.

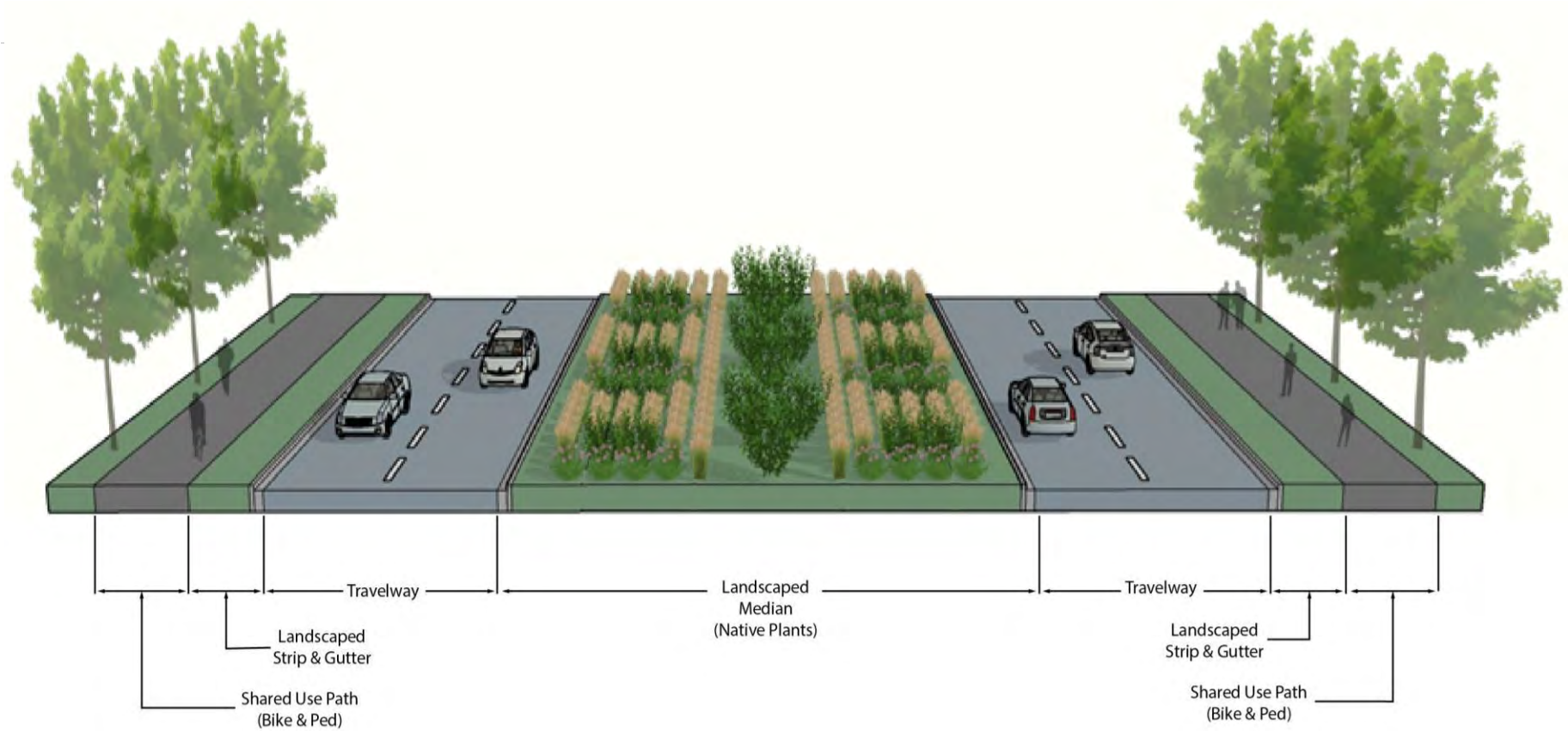

Figure 15: Pageland Lane Cross Section

WATER AND SEWER

The Sanitary Sewer and Potable Water Chapters of the Comprehensive Plan states the policies and action strategies in support of the County's goals to provide adequate potable water and wastewater treatment in a cost effective and efficient manner. The Water and Sewer component of the PW Digital Gateway Special Study Area provides additional policies and action strategies that apply specifically to Study Area.

The PW Digital Gateway Special Study Area is not currently served by public water and sewer. The following policies are provided to ensure adequate infrastructure is provided to support the proposed development in a cost effective and environmental friend manner.

DGWS Policy 1: Plan for the extension of public water and sewer service along Pageland to support the proposed development, ensuring the cost of extension of service and capacity increase needed to support the new development in Study Area are not borne by existing customers.

DGWS 1.1 Public water will be extended north along Pageland Lane from an existing main along Route 29. If determined necessary by PWCSA, the waterline may be looped back into the existing system via a connection to the existing waterline along Catharpin Road. Strongly discourage the use of wells or other groundwater sources to provide water service to data center facilities.

DGWS 1.2 Encourage efficient water usage for data center development within the Study Area, such as utilized "closed loop water" or "no water" cooling systems. Encourage development to further minimize water consumption through the use of recycling water.

DGWS 1.3 Ensure any water capacity increase need to support the proposed development will be paid for by development fees.

DGWS 1.4 Sewer will be provided to the corridor through use of gravity sewer that will be connected to a proposed pump station or stations within the corridor. The pump stations will be connected to the existing sewer system via a proposed force main running south along Pageland Lane to connect to the existing force main(s) at the intersection of Route 29 and Heathcote Boulevard, where they cross Interstate 66 within an existing tunnel. As an alternative to the gravity sewer/pump station/force main concept, a low-pressure force main system may be considered if such a system can provide the necessary capacity. Drain fields should not be used to serve data center development.

DGWS 1.5 Continue to coordinate with the Service Authority and Upper Occoquan Service Authority ("UOSA") to plan for any expansion which may be required by the UOSA Plant.

DGWS 1.6 Conduct additional planning studies as needed to determine the water and sewer transmission systems needed to serve the proposed development in conjunction with the Service Authority Master Plan.

DGWS 1.7 Require the design and construction of infrastructure necessary to serve proposed development to be borne by the proposed development.

DGWS 1.8 Strongly encourage new development to remove or abandon existing wells and septic systems, per Health Department requirements, to protect the local aquifer.

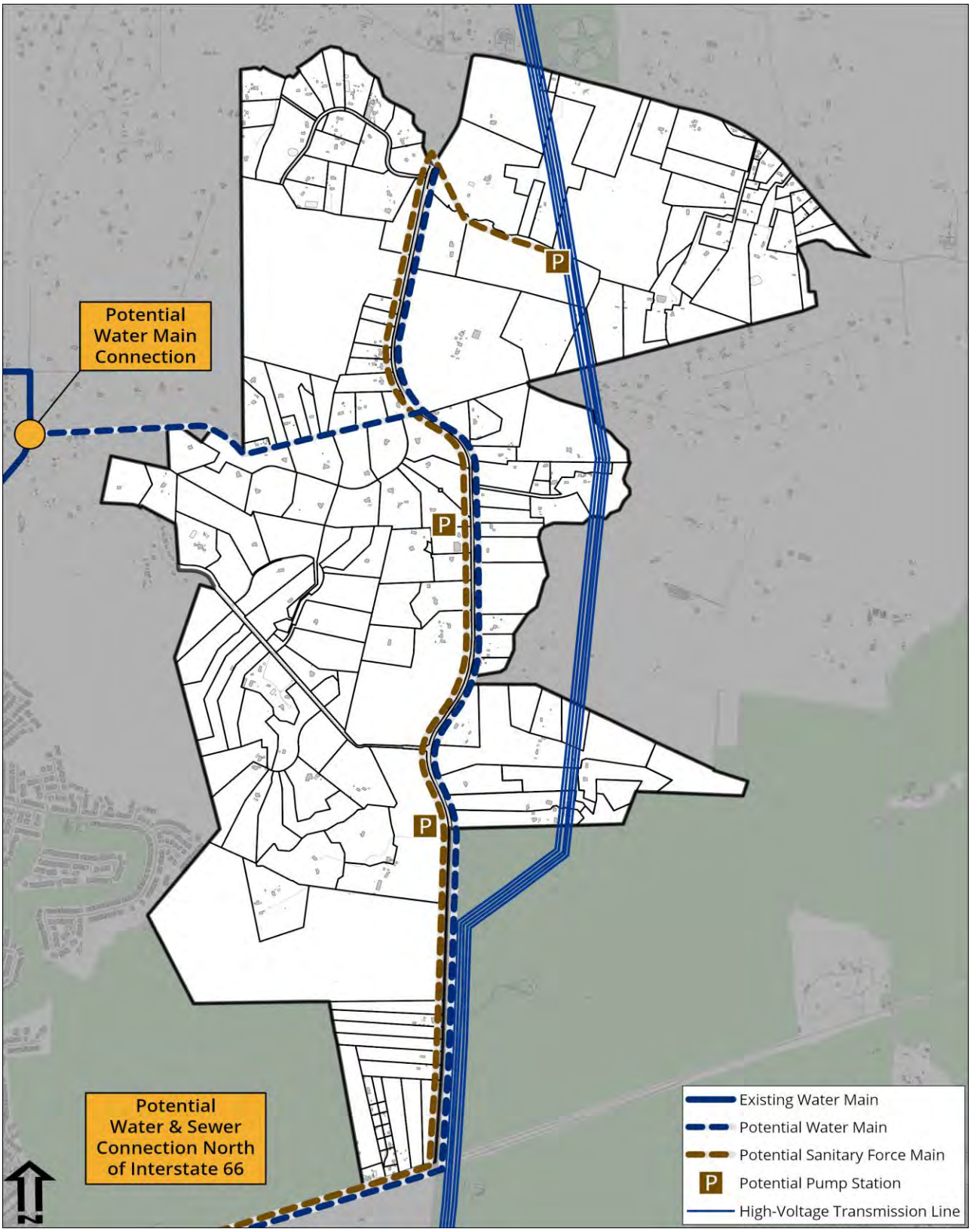

Figure 16: PW Digital Gateway Water & Sewer Map

SUSTAINABILITY

While there is no Comprehensive Plan chapter focused on sustainability, it has been identified as a focus area in the Prince William County 2021-2024 Strategic Plan. The Sustainability component of the PW Digital Gateway Special Study Area provides additional policies and action strategies that apply specifically to Study Area.

The PW Digital Gateway Special Study Area provides an opportunity to encourage development which provides world-class sustainability initiatives which prioritize the environmental, social, and fiscal impact of development.

The Board has endorsed energy goals which are significant. In order to meet those goals, the below policies are necessary mitigation of the proposed land uses. Proposed development will impact production of greenhouse gasses and the below policies are to provide mitigation of these impacts and will help the County reach the greenhouse gas emission goals endorsed by the Board.

DGSU POLICY 1: Encourage development with the Study Area to be a steward of world-class innovation and sustainability implementing a variety of sustainability initiatives aimed at environmental protection, reducing carbon emissions and energy conservation.

DGSU 1.1 Data centers are encouraged to utilize a variety of sustainability initiatives such as:

a) Reduce the heat island effect by minimizing impervious areas and providing enhanced landscaping.

b) Reduce, control, and treat surface runoff through effective storm water practices that treat the quantity and quality of runoff above minimum standards.

c) Onsite renewable energy such as solar power.

d) Aeration of water retention using solar power.

e) Apply best practices for erosion control.

f) Provide electric vehicle ("EV") charging stations in data center employee parking areas to encourage EV use.

g) Require the use of LEDs for all interior and exterior lighting.

h) Minimize land disturbance.

i) Recycle construction material waste.

j) Incorporate heat reflective roofing.

k) Use sustainable building materials in the construction of data centers.

l) Capture and use 100% of reclaimed water for non-potable use.

m) Trap and reuse heat sources to the maximum extent possible

n) Incorporate other innovative technologies to reduce power consumption.

o) Achieve LEED-Core and Shell standards.

p) Preparation of a winter management plan (e.g., SaMS toolkit) to minimize the use of sodium and chloride, and to address any impacts of their use.

DGSU 1.2 Encourage enhancement of indoor environmental quality ("IEQ") through the maximization of daylighting, ventilation and moisture control, and avoiding materials with high-VOC emissions.

DGSU 1.3 Encourage data center buildings to meet energy efficiency design and operation standards, such as the Design PUE (Power Utilization Effectiveness) or Green Globes. Individual data center buildings and/or the office components are encouraged to purse LEED-Core and/or Shell or other, similar programs related to building design and construction techniques. Equivalency to these standards is an acceptable alternative to actual certification.

LEVEL OF SERVICE

The proposed development in this Comprehensive Plan Amendment will have significant level of service needs related to transportation, trails, sidewalks, open space, access to services and mitigation of historical and cultural resources. Employment centers are filled with employees who need access to outdoor space for their health, need access to multi-modal mobility systems for bike and pedestrian commuting, and the uses must mitigate incompatibilities with buffers.

Within each section of the Study Area specific infrastructure improvements are proposed to meet the needs of the anticipated build-out proposed in the Plan. The Level of Service component provides additional policies to ensure the successful implementation of these infrastructure

improvements coincide with development and are equitably provided by each development within the Study Area where appropriate and consistent with applicable law.

The below Policy and Action Strategies are provided to help establish the necessary infrastructure, facilities, and services to meet the needs of the Study Area based on the Level of Service standards identified in the Comprehensive Plan.

DGLOS Policy: Require development applications to contribute to the overall infrastructure proposed in the Plan, where appropriate and consistent with applicable law. Contributions may be through the dedication of land, easements, or facilities, and/or monetary contributions relative to the impacts associated with their development project.

DGLOS 1.1 Study and identify a method for contribution towards the total acres of parks and open space facilities that promote environmental and cultural resource preservation, and linear miles of trails as identified within the Plan.

DGLOS 1.2 Coordinate with Prince William County Service Authority to develop and identify infrastructure and capacity improvements needed to serve the Study Area. Development should provide any cost associated with water and sewer infrastructure and proportional capacity improvements necessary to serve the development.

DGLOS 1.3 Explore funding mechanisms to fund the widening of Pageland Lane including but not limited to joint public private partnerships, Transportation Improvement Districts, or state and federal grant programs.

DGLOS 1.4 Regularly monitor the adequacy of public facilities throughout the Study Area.

IMPLEMENTATION MATRIX

The intent of this section is to identify actions that will need to be undertaken to implement the plan. The recommendations in this section include the timeframe, policy area, action, and coordinating agencies to address the goals of the plan and are organized into the following areas:

1. Land Use
2. Community Design
3. Cultural Resources
4. Economic Development
5. Green Infrastructure

6. Mobility
7. Water and Sewer Infrastructure

The Implementation Matrix identifies the need for the most significant projects associated with an assessment of near-term or longer-term needs and practical implementation schedules. The following timeframe for activation of these activities are identified and organized as follow:

- **Short-Term:** 0 - 2 years
- **Mid-Term:** 2 - 5 years
- **Long-Term:** 5 **-**10+ years
- **Ongoing:** continuous process

IMPLEMENTATION PLAN

Timeframe	Policy Section	Action Item	Responsible Party
Ongoing	Land Use	Develop and monitor an inventory of existing and planned development within the Study Area	PWC
Ongoing	Cultural Resources	Coordinate with Manassas National Battlefield Park to identify areas for reforestation/vegetation for enhanced screening	Private Partners/Manassas National Battlefield Park/PWC
Ongoing	Cultural Resources	Coordinate with private landowners to voluntary establish preservation easements on private land to protect historic; architecture, archaeology sites, landscaping, viewsheds, districts and other cultural resources.	Private Partners/Manassas National Battlefield Park/PWC
Ongoing	Cultural Resources	Encourage and facilitate private landowners to voluntarily provide public access and public trails to viewsheds and other cultural resources on private land.	Private Partners/Manassas National Battlefield Park/PWC

Short-Term	Cultural Resources	Develop a detailed history of Honeywood	PWC/Private Partners where appropriate and consistent with applicable law
Short-Term	Cultural Resources	Define the historic boundary of the "Settlement" Community and Thornton School	PWC/Private Partners where appropriate and consistent with applicable law
Short-Term	Cultural Resources	Develop an Interpretative Plan for use throughout the Study Area	PWC/Private Partners where appropriate and consistent with applicable law
Short-Term	Community Design Cultural Resources Green Infrastructure Mobility	Develop a Master Landscaping, Vegetation, Fencing, and Signage Plan	PWC/Private Partners where appropriate and consistent with applicable law

Timeframe	Policy Section	Action Item	Responsible Party
Short-Term	Economic Development	Partner with George Mason University in the creation of a Master Plan for a Center for Data Center Excellence	PWC/George Mason University
Ongoing	Economic Development	Partner with Prince William County Schools to create opportunities for ICT related internships and apprenticeships	PWC/PWCS
Ongoing	Green Infrastructure	Restore disturbed areas to native forest, wetlands, and/or meadows	PWC/Private Partners
Short-Term	Mobility	Create a Comprehensive Landscape Plan for public rights of way and private	PWC/VDOT/Private Partners where appropriate and consistent with applicable law
Long-Term	Mobility	Support Manassas National Battlefield Park's goal to Prohibit commercial truck traffic through the park	PWC/VDOT/Manassas National Battlefield Park
Ongoing	Mobility	Encourage participation in an "adopt-a-trail" program	PWC/Private Partners
Ongoing	Water & Sewer	Coordinate with the Service Authority and Upper Occoquan Service Authority to plan for	PWC/Service Authority/Upper Occoquan Service Authority

Timeframe	Policy Section	Action Item	Responsible Party
		potential expansion to the UOSA Plant	
Short-Term	Water & Sewer	Conduct Additional Studies as needed to determine the optimal water and sewer transmission systems needed to serve the proposed development	PWC/Service Authority
Short-Term	Level of Service	Create a Level of Service standard for parks and open space and trails	PWC/ Private Partners where appropriate and consistent with applicable law

INFRASTRUCTURE AND FACILITIES

Timeframe	Facility	Description	Coordinating Agency
Short-Term	Pageland Lane	Widen Pageland Lane to four lanes	Private Partners where appropriate and consistent with applicable law /PWC/VDOT
Short-Term	Pageland Lane Intersections	Intersection Improvements along Pageland Lane	Private Partners where appropriate and consistent with applicable law /PWC/VDOT
Short-Term	Pageland Lane Shared Use Paths	Construct shared use paths on both sides of Pageland Lane	Private Partners where appropriate and consistent with applicable law /PWC/VDOT
Short-Term	Catharpin Greenway Extension	Construct the Catharpin Greenway extension recreational trail from Catharpin Greenway to Featherbed Lane	PWC
Short-Term	Conway Robinson/Pageland Lane Recreational Trail	Construct a recreational trail connection between Conway Robinson State Forest and Pageland Lane	PWC
Short-Term	Wildlife/Open Space Corridor Recreational Trail	Construct recreational trails through the wildlife/open space corridors (see Figure 8)	Private Partners where appropriate and consistent with applicable law /PWC

Timeframe	Facility	Description	Coordinating Agency
Short-Term	Trailheads	Construct trailhead facilities at the locations shown on Figure 8	Private Partners where appropriate and consistent with applicable law /PWC
Short-Term	Pageland Lane/Sudley Lane Intersection	Intersection Improvements at Pageland Lane and Sudley Road	Private Partners where appropriate and consistent with applicable law /PWC/VDOT
Short-Term	Sudley Road/Sanders Lane Intersection	Intersection Improvements at Sudley Road and Sanders Lane	Private Partners where appropriate and consistent with applicable law /PWC/VDOT
Short-Term	Pageland Lane Recreational Spur Connections	Create safe bicycle and pedestrian connections to the shared use paths along Pageland Lane	Private Partners where appropriate and consistent with applicable law /PWC/VDOT
Short-Term	Route 29/Pageland Lane Intersection	Intersection Improvements at Route 29 and Pageland Lane	Private Partners where appropriate and consistent with applicable law /PWC/VDOT
Mid-Term	Sudley Road/Gum Springs Intersection	Intersection Improvements at Sudley Road and Gum Springs Road	Private Partners where appropriate and consistent with applicable law /PWC/VDOT

Timeframe	Facility	Description	Coordinating Agency
Mid-Term	Sudley Road/Catharpin Road Intersection	Intersection Improvements at Sudley Road and Catharpin Road	Private Partners where appropriate and consistent with applicable law /PWC/VDOT
Mid-Term	Sudley Road Widening	Sudley Road Widening to four lanes from Catharpin Road to Gum Springs Road	Private Partners where appropriate and consistent with applicable law /PWC/VDOT
Mid-Term	Route 29 Widening	Route 29 Widening to six lanes from Pageland Lane to University Boulevard	Private Partners where appropriate and consistent with applicable law /PWC/VDOT
Long-Term	Sudley Road Widening	Sudley Road Widening to four lanes from Route 15 to Catharpin Road	PWC/VDOT
Long-Term	Manassas Battlefield By-Pass	Construct the Manassas Battlefield By-Pass	PWC/VDOT
Long-Term	Route 29 Alternative	Construct the Route 29 Alternate	PWC/VDOT

Timeframe	Facility	Description	Coordinating Agency
Short-Term	Low Pressure Sewer force main	Construct private low pressure force main system necessary to serve initial phase of development	Private Partners
Mid-Term	Gravity Sewer and Pump Station	Construct gravity sewer system, pump station and force main to serve corridor	Private Partners where appropriate and consistent with applicable law /PWC/PWCSA
Mid-Term	Catharpin Recreational Park Sewer Line	Provide public sewer connection to Catharpin Recreational Park	Private Partners/PWC/PWCSA
Short-Term	Pageland Lane Sewer Line	Extend public water system along Pageland Lane necessary to serve initial phase of development	Private Partners/PWC/PWCSA
Mid-Term	Water Pump Stations	Construct pump(s) and/or storage tank(s) as needed to maintain adequate system pressure	Private Partners where appropriate and consistent with applicable law /PWC/PWCSA
Mid-Term	Water Extensions	Extend water system to northern end of corridor	Private Partners where appropriate and consistent with applicable law /PWC/PWCSA

Timeframe	Facility	Description	Coordinating Agency
Mid-Term	Catharpin Recreational Park Water Line	Provide public water connection to Catharpin Recreational Park	Private Partners/PWC/PWCSA
Short-Term	Southern Community Park	Community-sized park located between Manassas National Battlefield Park and Conway Robinson State Forest the southern entrance to the corridor. The proposed park should allow for both passive and active recreation including but not limited a southern trailhead providing access to the overall trail network, equestrian facilities, or interactive passive recreation such as orienteering or geocaching.	PWC/ Private Partners where appropriate and consistent with applicable law
Medium-Term	Thornton School Cultural Resource Park	A cultural resources type park providing opportunities for the education and preservation of local history including the Thornton School and the "Settlement" Community.	PWC/ Private Partners where appropriate and consistent with applicable law

Timeframe	Facility	Description	Coordinating Agency
Medium-Term	Natural Cultural Recourses Park	A cultural resources park which is intended to be primarily preserved in a natural state and allow for opportunities for passive recreation.	PWC/ Private Partners where appropriate and consistent with applicable law