



PWC - DCOZOD

Prince William County - Data Center Opportunity Zone Overlay District

February 6, 2023

Introduction

Stantec was hired by the Prince William County Planning Office to undertake a study of the Data Center Opportunity Zone Overlay District. On March 2, 2021, the Board, via Directive (DIR) 21-20, requested that staff bring forward recommendations to expand and change the Data Center Opportunity Zone Overlay District (DCOZOD) to reflect increased infrastructure and new ways of developing data centers.

The scope of work to complete this assessment and recommendations included the following tasks:

- Market Demand / Capacity Analysis
- Data Center Industry Emerging Trends
- Best Practices - Local Economic Development
- Economic Impact of Data Centers
- Community and Stakeholder Engagement
- Proposed Expansions
- Land Use / Infrastructure Impacts
- Design Guidelines and Sustainability Guidelines
- Public Hearing Support

The Data Center Opportunity Zone Overlay District was created for the purpose of promoting development of data centers within areas of the County where there is existing infrastructure that could adequately support the proposed use. This district continues the County's efforts to attract and advance high-tech industrial development while limiting negative impacts to existing communities. The overlay is not intended or designed to be an exclusive area for the development of data centers in Prince William County.

A key outcome of the study was understanding areas of the County that are suitable for additional data center development based on accessibility to existing infrastructure, current and future land use policy, physical characteristics, and compatibility of adjacent land uses.

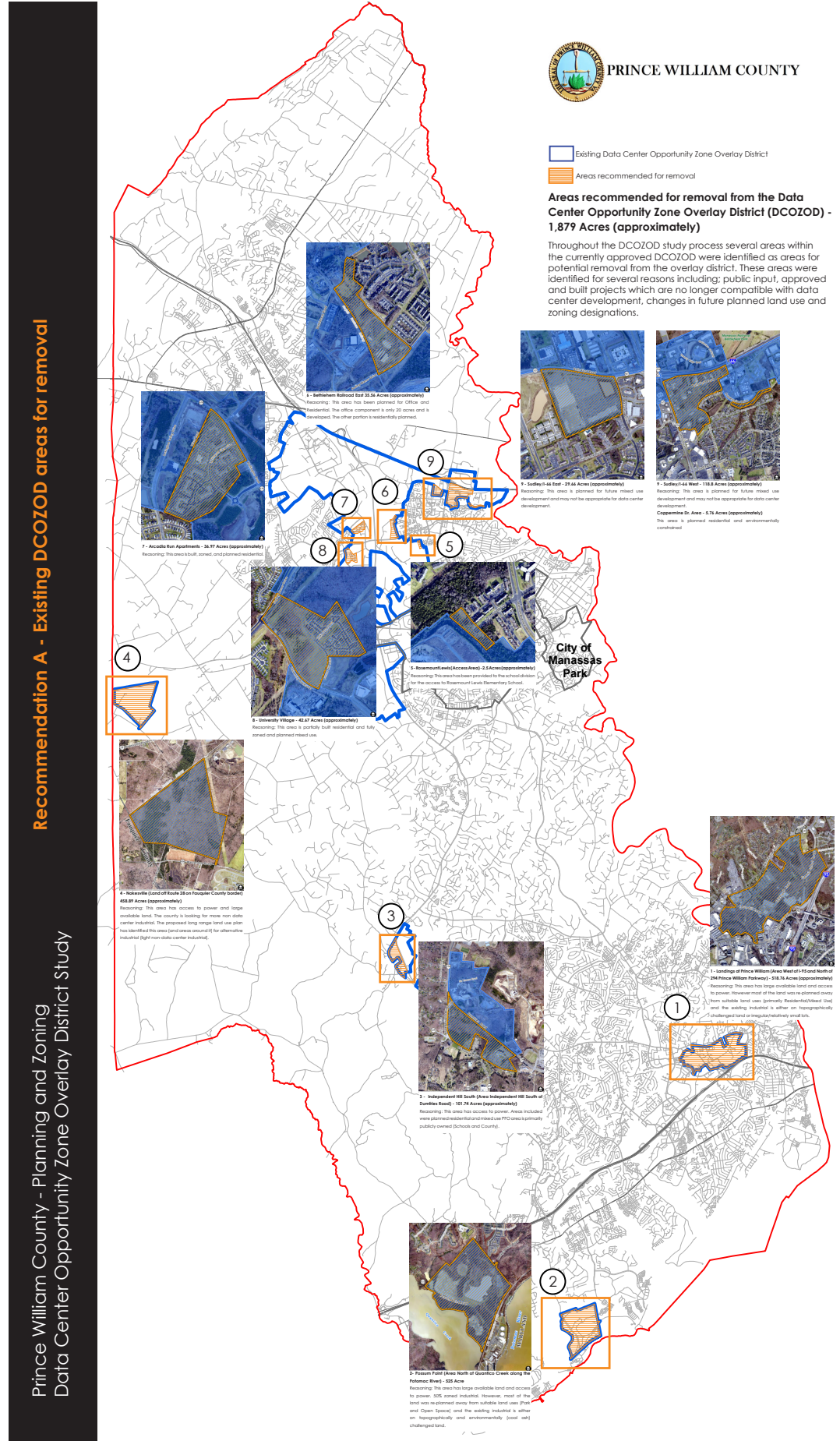


Project Approach

Options

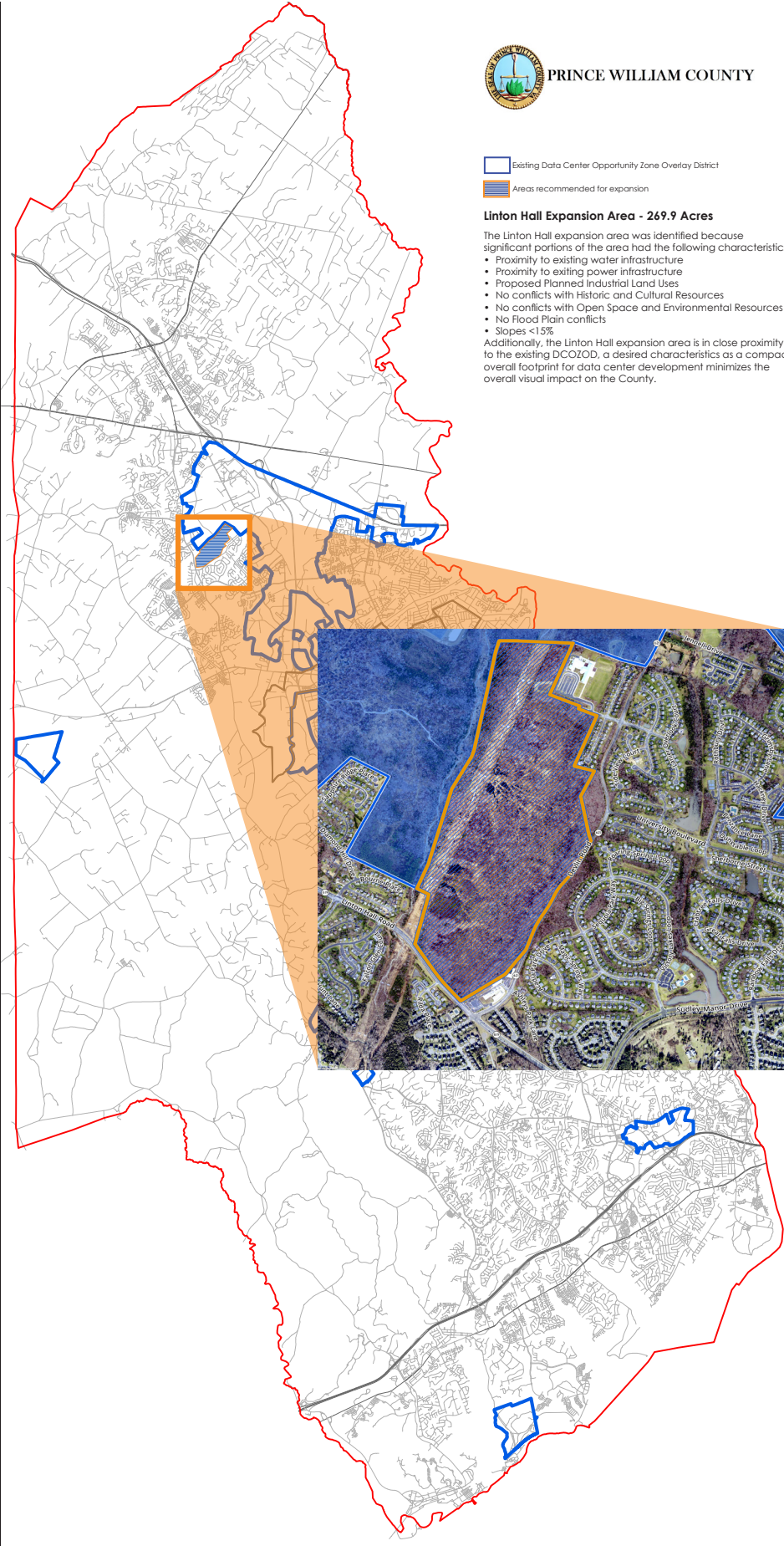
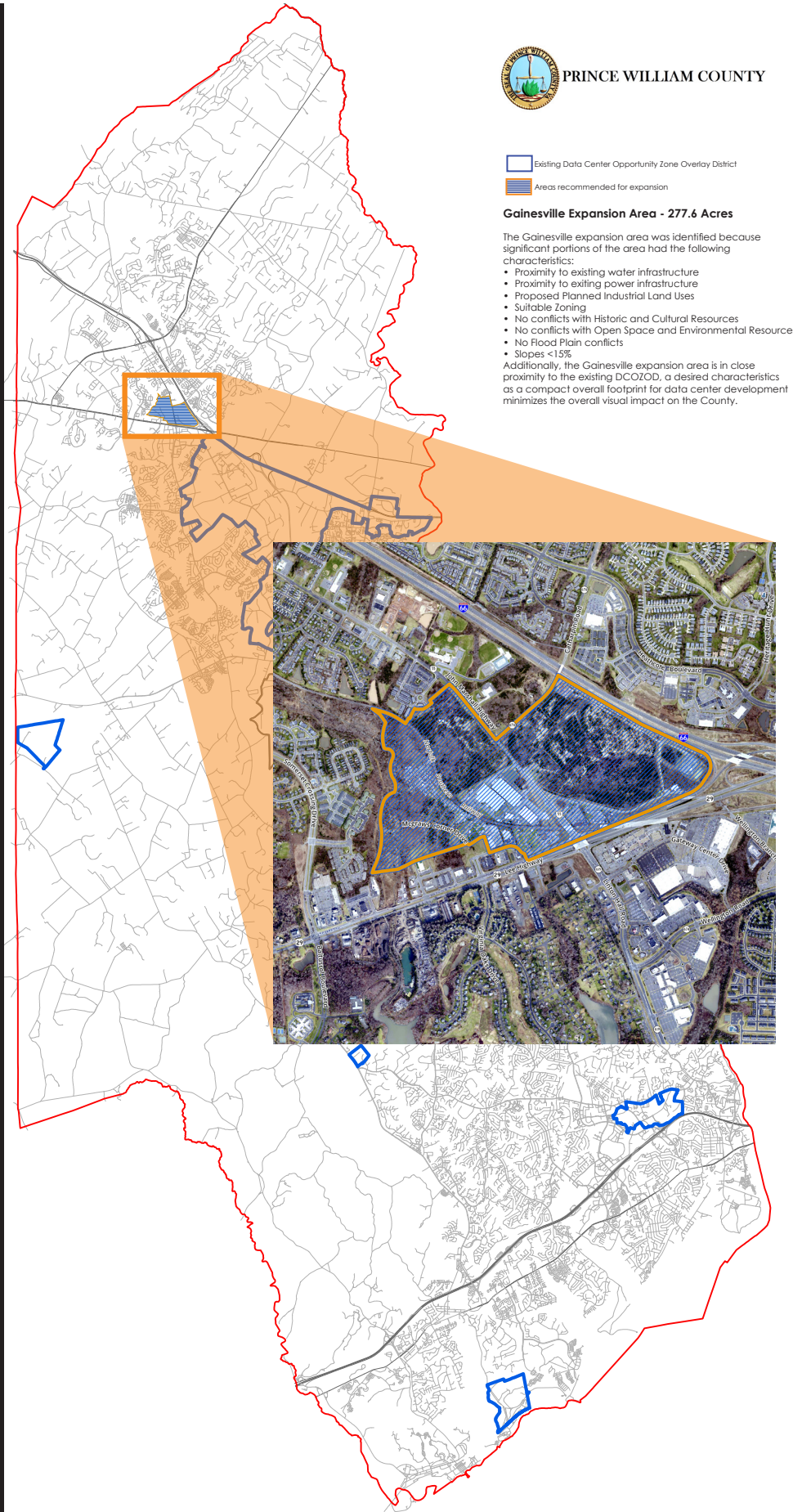
The study has culminated into the following three recommended options:

1. No Additional Expansion of DCOZOD at this time. The expansion could be reassessed in five years to determine if the market is still trending in the same direction or if demand lessens.
2. Remove areas from the current overlay district which are no longer compatible with data center development because of changes in future planned land use or zoning designations. (Recommendation A - right).
3. Pursue expanding the DCOZOD to identified through the suitability analysis which are directly adjacent to the existing boundary (recommendation B and C - (next page). The intent of this option is to keep data center development consolidated within the County, potentially lessening the impact of new infrastructure on communities. (547.5 acres)



Prince William County - Planning and Zoning Data Center Opportunity Zone Overlay District Study
Recommendation A - Existing DCOZOD areas for removal

Area #	Area Name	Reasoning
1	Landings at Prince William (Area West of I-95 and North of 294 Prince William Parkway) - 518.76 Acres (approximately)	This area has large available land and access to power. However most of the land was re-planned away from suitable land uses (primarily Residential/Mixed Use) and the existing industrial is either on topographically challenged land or irregular/relatively small lots.
2	Possum Point (Area North of Quantico Creek along the Potomac River) - 525 Acre	This area has large available land and access to power. 50% zoned industrial. However, most of the land was re-planned away from suitable land uses (Park and Open Space) and the existing industrial is either on topographically and environmentally (coal ash) challenged land.
3	Independent Hill South (Area Independent Hill South of Dumfries Road) - 101.74 Acres (approximately)	This area has access to power. Areas included were planned residential and mixed use PFO area is primarily publicly owned (Schools and County).
4	Nokesville (Land off Route 28 on Fauquier County border) 458.89 Acres (approximately)	This area has access to power and large available land. The County is looking for more non-data center industrial land. The proposed long range land use plan has identified this area (and areas around it) for alternative industrial uses (light non-data center industrial).
5	Rosemount Lewis (Access Area) - 2.5 Acres (approximately)	This area has been provided to the school division for the access to Rosemount Lewis Elementary School.
6	Bethlehem Railroad East 35.56 Acres (approximately)	This area has been planned for Office and Residential. The office component is only 20 acres and is developed. The other portion is residentially planned.
7	Arcadia Run Apartments - 36.97 Acres (approximately)	This area is built, zoned, and planned residential.
8	University Village - 42.67 Acres (approximately)	This area is partially built residential and fully zoned and planned mixed use.
9	Sudley/1-66 East - 29.66 Acres (approximately) Sudley/1-66 West - 118.8 Acres (approximately) Coppermine Dr. Area - 5.76 Acres (approximately)	This area is planned for future mixed use development and may not be appropriate for data center overlay expansion. This area is planned for future mixed use development and may not be appropriate for data center overlay expansion. This area is planned residential and environmentally constrained



Potential Data Center Development Yield

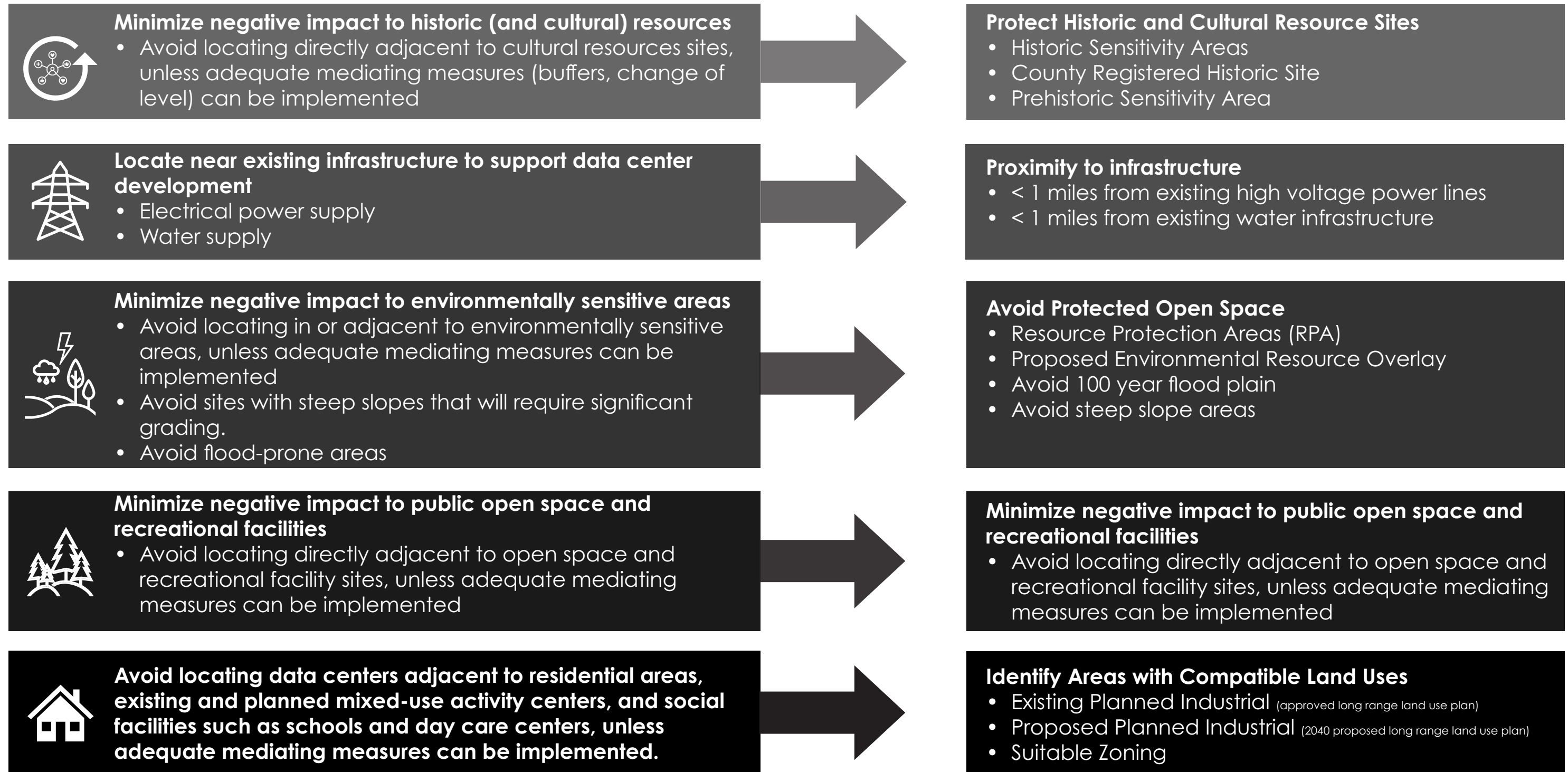
Proposed Areas	Acres	GFA @ .20	GFA @ .35	GFA @ .50	GFA @ .75
B	277.6	2,418,451	4,232,290	6,046,128	9,069,192
C	269.9	2,351,369	4,114,895	5,878,422	8,817,633
Totals	547.5	4,769,820	8,347,185	11,924,550	17,886,825

Site Selection Principles

Subsequent to collecting feedback from the community and stakeholders, the project team prepared the below site selection principles which guided the team in refining what characteristics make a site favorable or unfavorable for inclusion in the data center overlay.

Site Suitability Characteristics

The site selection principles were then translated to physical site characteristics that could be mapped throughout the County for further evaluation by the project team. The translation of the Site Selection Principles are shown below.



Site Suitability Characteristics

The site suitability characteristics were then separated into two categories; suitable site characteristics and unsuitable site characteristics. The suitable site characteristics were assigned a weight based on the desirability of that criteria for data center uses and then mapped into a heat map format to demonstrate which areas of the County could be most suitable for inclusion with the data center opportunity overlay district.

Suitability Characteristic		Measurement	Opacity (%)
Suitable Site Characteristics	Electric Utility Access		
		Distance from HV power lines	
		- < .25 mile	25
		- 0.25 - 0.5 mile	20
		- .05 - .75 mile	15
		- .75 - 1.0 mile	10
		- > 1 mile	0
	Water Access		
		Distance from water infrastructure	
		- < .25 mile	15
	- 0.25 - 0.5 mile	12	
	- .05 - .75 mile	9	
	- .75 - 1.0 mile	6	
	- >1 mile	0	
Existing Planned Industrial (Land Use Plan)			
	- FEC, Flexible Use Employment Center	15	
	- EI, Industrial Employment		
	- TF, Technology / Flex		
Proposed Planned Industrial (Long-Range Land Use Plan)			
	- I-3 Industrial	15	
	- I-4 Industrial		
Suitable Zoning			
	- M-1, Heavy Industrial	10	
	- M-2, Light Industrial		
	- M/T, Industrial Transportation		
	- PBD, Planned Business District		

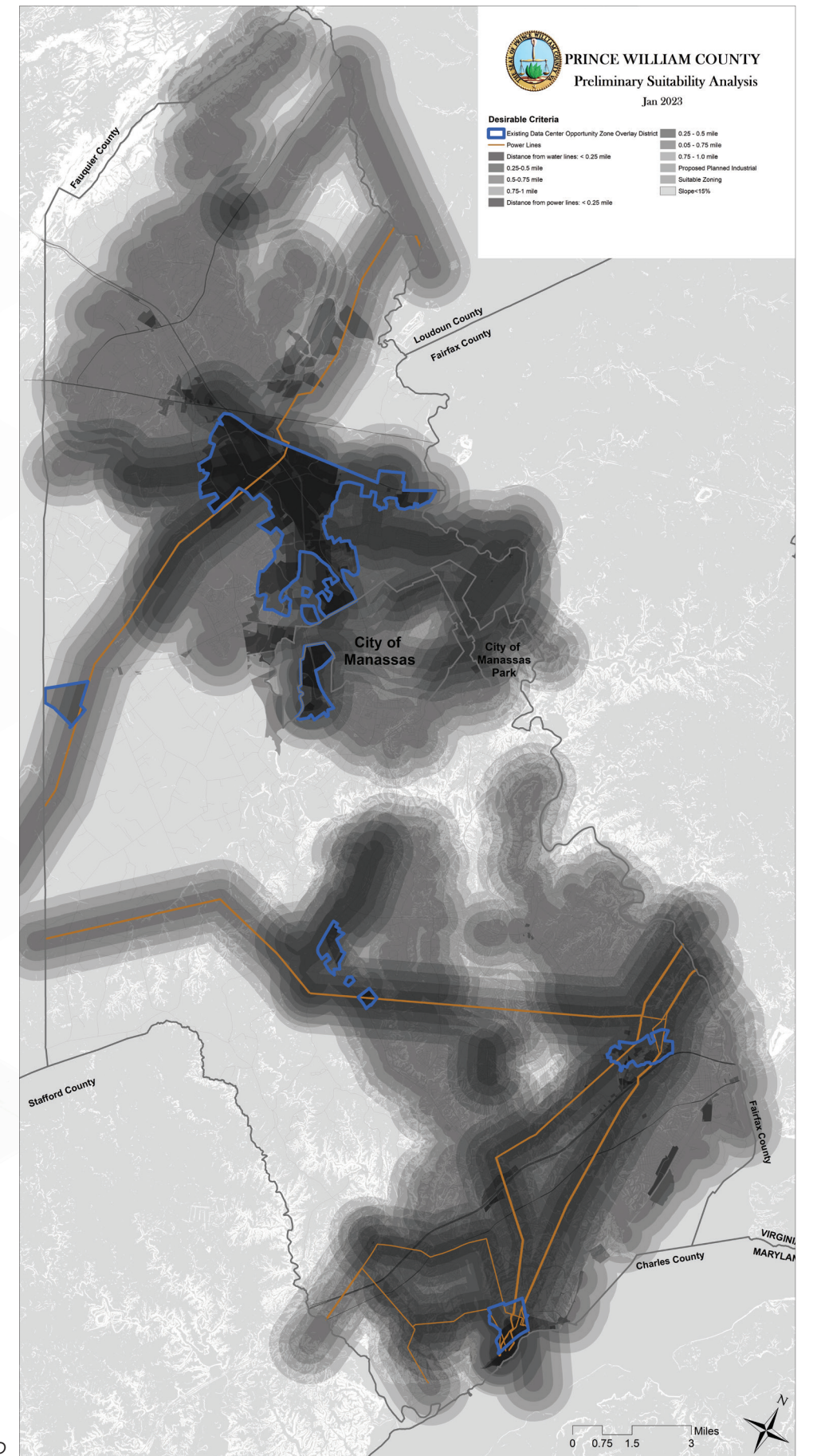
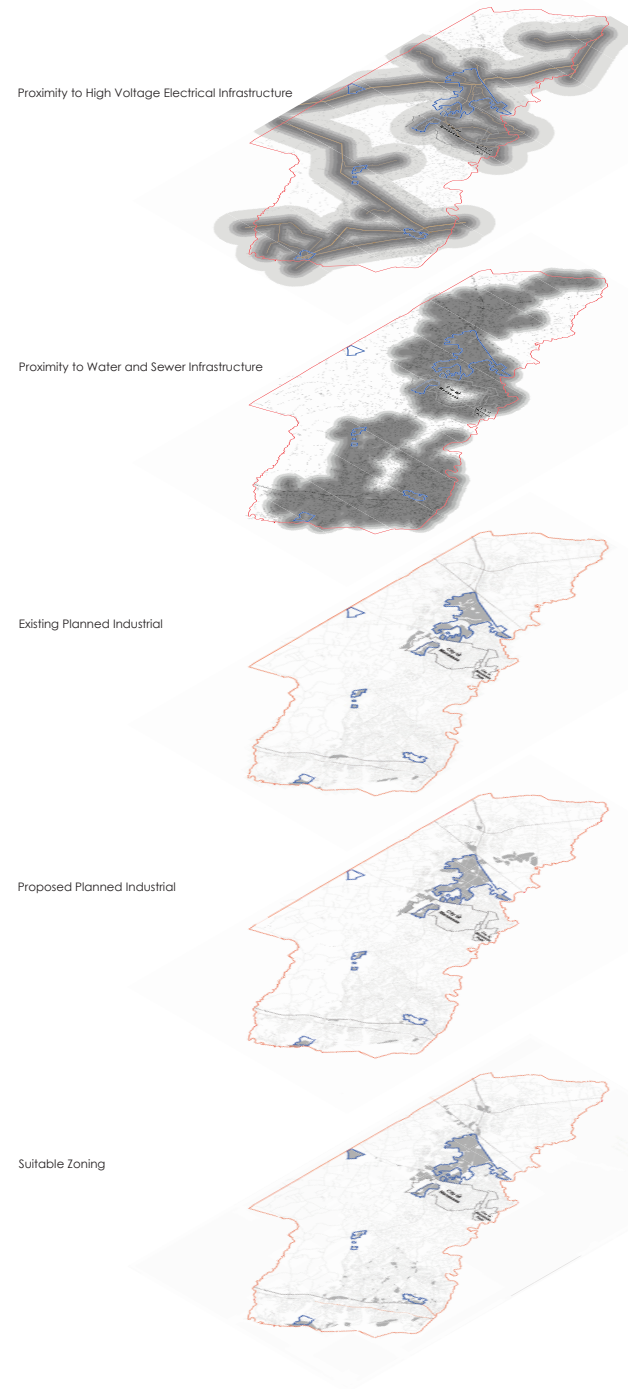
In a similar manner the unsuitable site characteristics for inclusion in the data center overlay were mapped but instead of including them in the heat map they were applied in a separate layer as areas which were deemed not suitable for data center development, unless adequate mediating measures can be implemented. While some mitigation can be accomplished through updated design standards and requirements within the Overlay, depending on the level of mitigation needed, inclusion in the Overlay might not be recommended, since by-right data center development may be permitted based on the underlying zoning district. In some instances, 0.25-0.5 mile radii (or "buffers") were applied in GIS to help graphically identify cultural, historic, or open space features throughout the County so that potential impacts could be identified on a Countywide analysis.

Suitability Characteristic		Measurement
Unsuitable Site Characteristics	Avoid Flood Hazard	Within 100-year flood plain
	Avoid Steep Slopes	Slopes > 15%
	Protect Parks & Open Spaces	Not within .25 miles of: <ul style="list-style-type: none"> - Existing Parks and Open Space - Proposed Parks and Open Spaces Not within: <ul style="list-style-type: none"> - Protected Open Space
	Protected open Space	Not within: <ul style="list-style-type: none"> - Resource Protection Area (RPA) - Propose Environmental Resource Overlay
	Protect Historic and Cultural Resources	Not within .25 mi of: <ul style="list-style-type: none"> - Historic Sensitivity Areas - County Registered Historic Site - Prehistoric Sensitivity Area Not within .5 miles of: <ul style="list-style-type: none"> - Manassas Battlefield - Bristow/Kettle Run Historic Area

Suitable Site Characteristics Mapped

The map displayed to the right (suitable site characteristics heat map) aggregates the suitable characteristics into a visual representation of the geographic areas which have the most and least suitable characteristics for inclusion in the Data Center Opportunity Zone Overlay District. The darker shaded areas indicate geographies with the most favorable characteristics for data center development per the suitability characteristics in the matrix below.

Suitability Characteristic		Measurement	Opacity (%)
Suitable Site Characteristics	Electric Utility Access		
		Distance from HV power lines	
		- < .25 mile	25
		- 0.25 - 0.5 mile	20
		- .05 - .75 mile	15
		- .75 - 1.0 mile	10
		- > 1 mile	0
	Water Access		
	Distance from water infrastructure		
	- < .25 mile	15	
	- 0.25 - 0.5 mile	12	
	- .05 - .75 mile	9	
	- .75 - 1.0 mile	6	
	- >1 mile	0	
Existing Planned Industrial (Land Use Plan)			
	- FEC, Flexible Use Employment Center	15	
	- EI, Industrial Employment		
	- TF, Technology / Flex		
Proposed Planned Industrial (Long-Range Land Use Plan)			
	- I-3 Industrial	15	
	- I-4 Industrial		
Suitable Zoning			
	- M-1, Heavy Industrial	10	
	- M-2, Light Industrial		
	- M/T, Industrial Transportation		
	- PBD, Planned Business District		

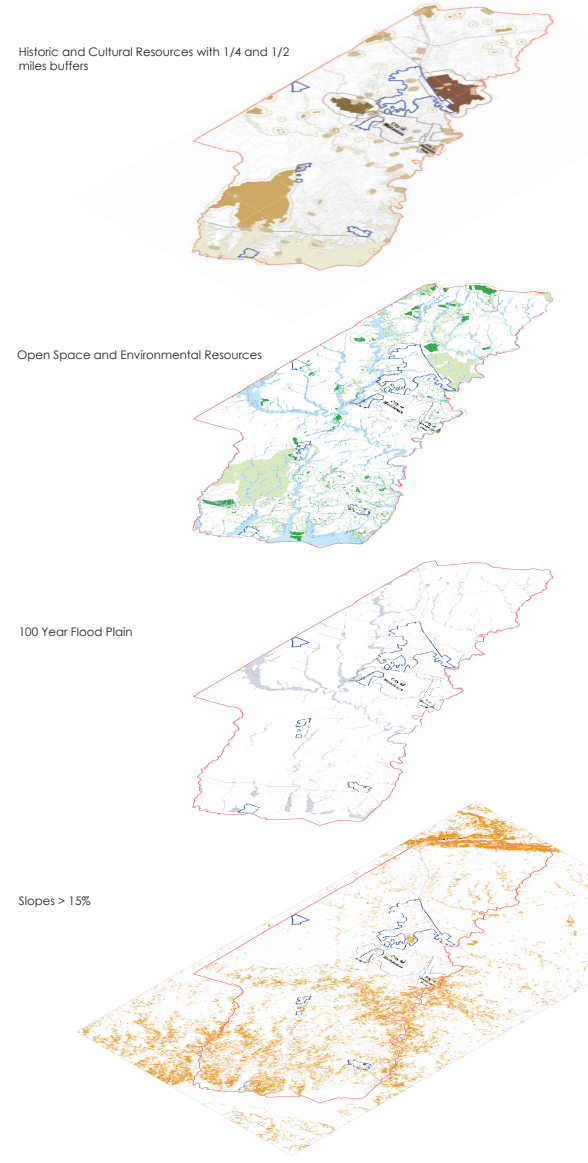


Suitable Site Characteristics Heat Map

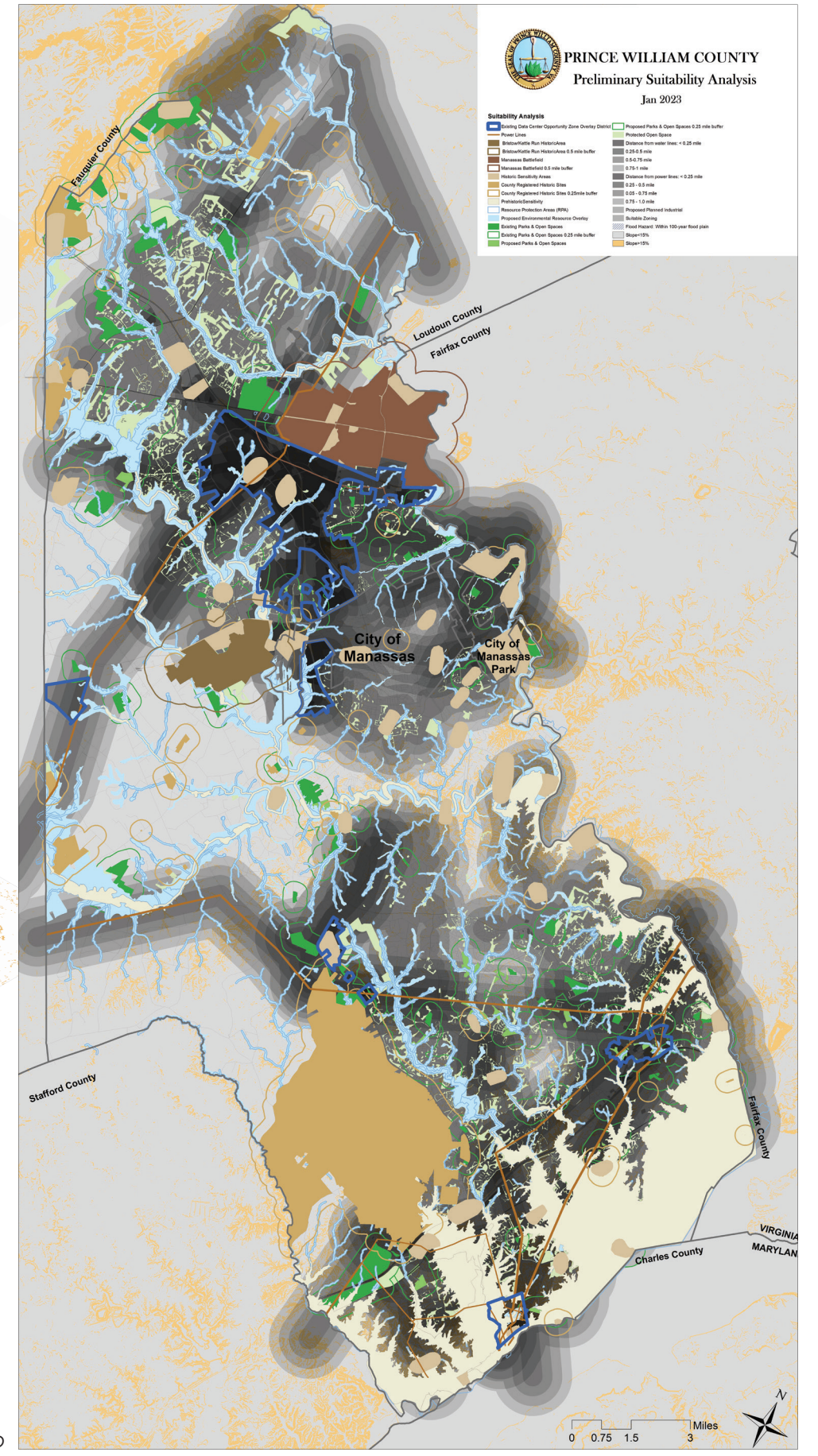
Unsuitable Site Characteristics Mapped

Once the team produced the Suitable Site Characteristics heat map an overlay of Unsuitable Site Characteristics was prepared to show the areas for the County that should be carefully considered when considering any expansion to the Data Center Opportunity Overlay District to reduce the potential of unmitigated impacts.

Suitability Characteristic		Measurement
Unsuitable Site Characteristics	Avoid Flood Hazard	Within 100-year flood plain
	Avoid Steep Slopes	Slopes > 15%
	Protect Parks & Open Spaces	Not within .25 miles of: <ul style="list-style-type: none"> - Existing Parks and Open Space - Proposed Parks and Open Spaces Not within: <ul style="list-style-type: none"> - Protected Open Space
	Protected open Space	Not within: <ul style="list-style-type: none"> - Resource Protection Area (RPA) - Proposed Environmental Resource Overlay
	Protect Historic and Cultural Resources	Not within .25 mi of: <ul style="list-style-type: none"> - Historic Sensitivity Areas - County Registered Historic Site - Prehistoric Sensitivity Area Not within .5 miles of: <ul style="list-style-type: none"> - Manassas Battlefield - Bristow/Kettle Run Historic Area



Unsuitable Site Characteristics Map



Data Center Site Characteristics Mapping Analysis

After completing the mapping exercise the team analyzed the mapping results to determine which areas of the County would be most suitable for data center. Focusing on the areas of the heat map with the highest scores (>40) the team looked at seven areas outside the existing DCOZOD to determine if they should be considered for inclusion in the DCOZOD.

Area	Area Name	Average Relative Score	Comments	Yes/No
0	Haymarket - Southeast of I-66/RT 15	40	No power nearby, would require additional infrastructure, adjacent to the Proposed Environmental Resource Overlay, also within .25 mi. Parks and Open Space make this area not suitable for inclusion.	No
1a	Gainesville (west) - South of I-66 and North of 29	55-70	Complimentary adjacent land uses, adjacent to power and water infrastructure, suitable zoning and land use make this area a suitable area for additional data center development.	Yes
1b	Gainesville (east)- South of 29 and North of I-66	40-55	Complimentary adjacent land uses, proximity to Manassas Battlefield is not favorable and therefore this area is not deemed suitable for inclusion in the overlay, because additional site specific mitigation may be needed.	No
2	Linton Hall	55	Directly adjacent to power and water infrastructure, and proposed planned land uses in the Comprehensive Plan update make this area suitable for additional data center development.	Yes
3	Sudley Road (east)	50	Non compatible adjacent land uses, within .25 mil Park and Open Space, within .25 mi. County Registered Historical Site make this site unsuitable for inclusion within Overlay. Site specific mitigation may be needed.	No
4	Bristow - Northwest of Manassas Regional Airport	55	Complimentary adjacent land uses, and proposed land use compatibility make this site score well but it's also within .5 mi. of Bristow/Kettle Run Historic Area and partially impacted by a flood plain which make this area unsuitable for inclusion within the Overlay, since site specific mitigation may be needed.	No
5	Innovation Park	50	This area has compatible land use designations, access to power and water. However, the area has been identified as an important growth area for other uses important to the community and therefore this area is not ideal for further expansion of the overlay.	No
6	Van Buren	65	This area is adjacent to available power and water. However, the future proposed land uses in the Comprehensive Plan update for this area does not recommend data centers. This area should be considered for other industrial uses to ensure the uses/services are accessible to residents.	No
7	Marmusco	55	This areas has compatible land uses but is not adjacent to power and would require additional power infrastructure to support the development of data centers. Most importantly, this area should be considered for other industrial uses to ensure the uses/services are accessible to residents.	No

