

**Warrenton Wheeler Gainesville 230 kV Reliability Project
Option A Overhead and Underground Route Alternatives
Environmental Features Comparison Table**

Environmental Features	Unit	A-1	A-2	A-3	A-3 Variation	A-4	A-5 UG
Land Use Features/Constraints							
Land Ownership Crossed (total length)	miles	8.4	8.5	9.0	8.7	11.8	7.9
Local Government Land	miles	0.6	0.2	0.3	0.2	0.4	0.2
Private Land							
Fauquier Co.	miles	7.0	7.4	7.9	7.6	8.2	6.4
Prince William Co.	miles	0.5	0.5	0.5	0.5	0.7	0.6
State Land	miles	0.0	0.0	0.0	0.0	0.0	<0.1
Virginia DOT Crossings ^a	miles	0.3	0.4	0.3	0.4	2.5	0.7
Private Parcels Crossed (total)	number	49	61	55	61	94	68
Fauquier County	number	44	56	50	56	86	61
Prince William County	number	5	5	5	5	8	7
Recreational Areas Crossed (Including Planned Areas)							
Federal, State, County or Municipal Managed Recreation Areas Crossed	miles (number)	0.1 (1)	0.0 (0)	0.1 (1)	0.0 (0)	0.1 (1)	<0.1 (1)
Golf Courses Crossed	miles (number)	0.0 (0)	0.0 (0)	0.0 (0)	0.0 (0)	0.0 (0)	0.0 (0)
Trails Crossed (Fauquier County only)	number	0	0	0	0	1	0
Virginia Birding and Wildlife Trail Crossings	number	0	0	0	0	5	1
Existing Land Use							
Open Land	miles	0.1	0.1	0.1	0.0	0.5	0.1
Cropland	miles	1.4	1.9	1.4	1.8	2.3	2.9
Forested	miles	4.8	4.5	5.8	5.1	3.9	3.5
Developed	miles	2.1	2.0	1.7	1.8	5.1	1.4
Open Water	miles	0.0	0.0	0.0	0.0	<0.1	0.0
Zoning							
Districts Crossed							
Residential	miles	1.5	1.7	2.1	2.3	4.5	1.2
Village	miles	0.0	0.5	0.0	0.4	0.0	0.4



**Warrenton Wheeler Gainesville 230 kV Reliability Project
Option A Overhead and Underground Route Alternatives
Environmental Features Comparison Table**

Environmental Features	Unit	A-1	A-2	A-3	A-3 Variation	A-4	A-5 UG
Rural Agricultural	miles	6.0	5.4	5.7	4.8	4.5	4.4
Agricultural	miles	0.5	0.5	0.5	0.5	0.8	0.7
Commercial	miles	0.0	0.0	0.0	0.0	0.5	0.0
Industrial	miles	0.0	<0.1	0.0	0.0	1.2	0.0
Planned Residential Development	miles	0.2	0.2	0.3	0.3	0.2	1.0
Planned Commercial Industrial Development	miles	0.2	0.2	0.4	0.4	0.1	0.2
Rural Crescent	miles	0.5	0.5	0.5	0.5	0.8	0.7
Residential Subdivisions							
Existing Subdivisions/Homeowners Associations Crossed	miles (number)	0 0	0.2 2	0.2 2	0.2 2	0.6 2	0.3 1
Planned Subdivisions Crossed	miles (number)	0.5 (1)	0.5 (1)	1.0 (1)	1.0 (1)	0.9 (2)	1.5 (2)
Other Land Use Constraints							
Houses within 500 feet of Centerline	number	157	162	158	172	246	148
Houses within 200 feet of Centerline	number	30	25	22	26	38	50
Houses within 100 feet of Centerline	number	6	3	1	0	10	17
Buildings within Right-of-Way	number	2	1	1	1	10	1
Houses	number	2	1	1	0	2	0
Out Buildings	number	0	0	0	1	4	0
Commercial	number	0	0	0	0	4	0
Farm Buildings	number	0	0	0	0	0	1
Cemeteries within 500 feet of Centerline	number	0	0	0	0	2	0
Churches within 500 feet of Centerline	number	0	0	1	1	2	1
Schools within 500 feet of Centerline	number	1	1	1	1	0	0



**Warrenton Wheeler Gainesville 230 kV Reliability Project
Option A Overhead and Underground Route Alternatives
Environmental Features Comparison Table**

Environmental Features	Unit	A-1	A-2	A-3	A-3 Variation	A-4	A-5 UG
Environmental Features/Constraints							
Surface Waters ^{b,c}							
Wetlands Crossed in Right-of-Way (total)	miles	0.2	0.4	0.2	0.3	1.0	0.3
	(acres)	(3.4)	(6.0)	(2.6)	(4.3)	(13.7)	(1.0)
Palustrine Emergent / Palustrine Scrub Shrub Wetlands	miles	0.0	0.1	<0.1	0.1	0.6	0.1
	(acres)	(0.0)	(1.2)	(0.2)	(1.9)	(8.7)	(0.2)
Forested Wetlands	miles	0.2	0.3	0.2	0.2	0.3	0.2
	(acres)	(2.8)	(4.2)	(2.3)	(2.3)	(4.4)	(0.7)
Freshwater Pond/Lake/Riverine Wetlands	miles	<0.1	<0.1	<0.1	<0.1	0.1	<0.1
	(acres)	(0.6)	(0.6)	(0.1)	(0.1)	(0.6)	(0.1)
Waterbody Crossings (total)	number	13	17	15	16	21	14
Perennial	number	5	4	3	3	10	6
Intermittent	number	8	12	12	13	10	7
Perennial Lake/pond	number	0	1	0	0	1	1
Section 10 Navigable	number	0	0	0	0	0	0
Major Waterbodies (100 feet or greater in crossing width)	number	0	0	0	0	1	2
VDOF High Forest Conservation Value 4	miles	0.6	0.0	<0.1	0.0	0.0	0.0
VDOF High Forest Conservation Value 5	miles	0.1	0.1	0.0	0.0	0.0	0.0
Resource Protection Areas Crossed	miles	0.0	0.0	0.0	0.0	0.1	0.1
	(number)	(0)	(0)	(0)	(0)	(1)	(1)
Sensitive Species and Habitat (note – other species to be determined)							
Threatened and Endangered Species Waters Crossed	number	0	0	0	0	0	0
Bald Eagle nests within 750 feet of centerline(Center for Biology, 2011 data)	number	0	0	0	0	0	0



**Warrenton Wheeler Gainesville 230 kV Reliability Project
Option A Overhead and Underground Route Alternatives
Environmental Features Comparison Table**

Environmental Features	Unit	A-1	A-2	A-3	A-3 Variation	A-4	A-5 UG
Bald Eagle nests within 1,320 feet of centerline (Center for Biology, 2011 data)	number	0	0	0	0	0	0
Conservation Lands/Easements^d							
Virginia Outdoors Foundation Conservation Easements Crossed	miles (number)	0.0 (0)	0.0 (0)	0.0 (0)	0.0 (0)	0.0 (0)	0.0 (0)
Fauquier County Common Open Space Easements	miles (number)	0.0 (0)	0.2 (2)	0.3 (3)	0.6 (2)	0.2 (1)	0.1 (3)
Fauquier County Non-Common Open Space Easements	miles (number)	0.7 (3)	0.5 (2)	0.7 (4)	0.4 (3)	0.0 (0)	0.5 (4)
Fauquier County Conservation Easements	miles (number)	0.3 (1)	0.3 (1)	0.1 (1)	0.1 (1)	0.0 (0)	0.3 (3)
Prince William County Permanently Protected Open Space	miles (number)	0.0 (0)	0.0 (0)	0.0 (0)	0.0 (0)	0.1 (1)	0.1 (1)
Agricultural and Forestal Lands	miles (number)	0.0 (0)	0.0 (0)	0.0 (0)	0.0 (0)	0.0 (0)	0.0 (0)
LWCF Easements	miles (number)	0.0 (0)	0.0 (0)	0.0 (0)	0.0 (0)	0.0 (0)	0.0 (0)
VDCR Conservation Lands	miles (number)	0.0 (0)	0.0 (0)	0.0 (0)	0.0 (0)	0.0 (0)	0.0 (0)



**Warrenton Wheeler Gainesville 230 kV Reliability Project
Option A Overhead and Underground Route Alternatives
Environmental Features Comparison Table**

Environmental Features	Unit	A-1	A-2	A-3	A-3 Variation	A-4	A-5 UG
Cultural Resource Features/Constraints							
Archaeology (VDHR ^e)							
Archaeological Sites Within Right-of-Way	number	1	0	1	0	0	0
Architectural Resources (VDHR)							
Architectural Resources Within Right-of-Way (Battlefields listed below)	number	2	2	2	1	4	1
National Register-Eligible and -Listed Properties, Battlefields, Historic Landscapes, and National Historic Landmarks within 0.5 mile	number	5	5	5	5	11	7
National Register-Listed Properties, Battlefields, Historic Landscapes, and National Historic Landmarks between 0.5 and 1.0 mile	number	4	5	4	7	9	6
National Historic Landmarks between 1.0 and 1.5 miles	number	0	0	0	0	0	0
Historic Districts (VDHR) Within Right-of-Way	miles (number)	0.1 (1)	0.1 (1)	0.0 (0)	0.0 (0)	0.0 (0)	0 (0)
NRHP-Listed Battlefield (VDHR) Within Right-of-Way	miles (number)	0.1 (1)	0.1 (1)	0.0 (0)	0.0 (0)	0.0 (0)	0.0 (0)
NRHP-Eligible Battlefield (VDHR) Within Right-of-Way	miles (number)	0.9 (1)	0.3 (1)	0.9 (1)	1.0 (2)	5.1 (2)	0.3 (1)
Easements (VDHR) Within Right-of-Way	miles (number)	0.0 (0)	0.0 (0)	0.0 (0)	0.0 (0)	0.0 (0)	0.0 (0)
Historic High Sensitivity Areas (PWC ^f only)	miles (number)	0.0 (0)	0.0 (0)	0.0 (0)	0.0 (0)	0.0 (0)	0.0 (0)
Battlefields (NPS ABPP ^h)							
Core Areas Within Right-of-Way	miles (number)	0.2 (1)	0.0 (0)	0.0 (0)	0.0 (0)	0.0 (0)	0.0 (0)



**Warrenton Wheeler Gainesville 230 kV Reliability Project
Option A Overhead and Underground Route Alternatives
Environmental Features Comparison Table**

Environmental Features	Unit	A-1	A-2	A-3	A-3 Variation	A-4	A-5 UG
Study Areas Within Right-of-Way	miles	6.1	3.2	3.1	2.4	9.2	2.3
	(number)	(4)	(3)	(3)	(3)	(2)	(2)
Potential NRHP Boundary Within Right-of-Way	miles	5.6	2.7	2.1	1.5	2.0	1.6
	(number)	(4)	(3)	(3)	(3)	(2)	(2)
Visual Features/Constraints							
Length Parallel to Scenic Byways	miles	0.8	0.1	0.7	0.0	2.3	0.0
Engineering Features/Constraints Considered							
Route Length (total)	miles	8.4	8.5	9.0	8.7	11.8	7.9
Road Crossings (total)	number	14	17	19	21	30	19
U.S. or State Highways	number	0	0	0	0	4	0
County or Local Roads	number	14	16	18	21	26	19
Active Railroads Crossed	number	0	0	0	0	0	0
Existing Electric Facilities Crossed	number	1	1	1	0	7	2
Greenfield Right-of-Way	miles	5.6	6.1	7.2	7.5	5.3	1.1
Routing Opportunities							
Collocation Opportunities (total)	miles	2.8	2.4	1.8	1.2	6.6	6.9
Electric Lines	miles	1.0	1.0	0.2	0.2	2.3	0.1
Pipeline Rights-of-Way	miles	0.0	0.3	0.0	0.0	0.2	6.8
Railroads	miles	0.0	0.0	0.0	0.0	0.0	0.0
Road Corridors	miles	1.8	1.1	1.6	1.0	4.1	0.0
^a	This includes Virginia Department of Transportation right-of-way and may include state, county, and locally owned roads.						
^b	Wetland data is based on NWI, numbers will be updated for Routing Study based on desktop analysis.						
^c	For streams and rivers, the number of crossings includes each crossing of a stream or river, while in the case of lakes and ponds the number of crossings equals the number crossed.						
^d	In some cases overlapping easements may cause easement length crossing to be counted twice.						
^e	Virginia Department of Historic Resources						
^f	Prince William County						
^g	National Park Service American Battlefield Protection Program						

