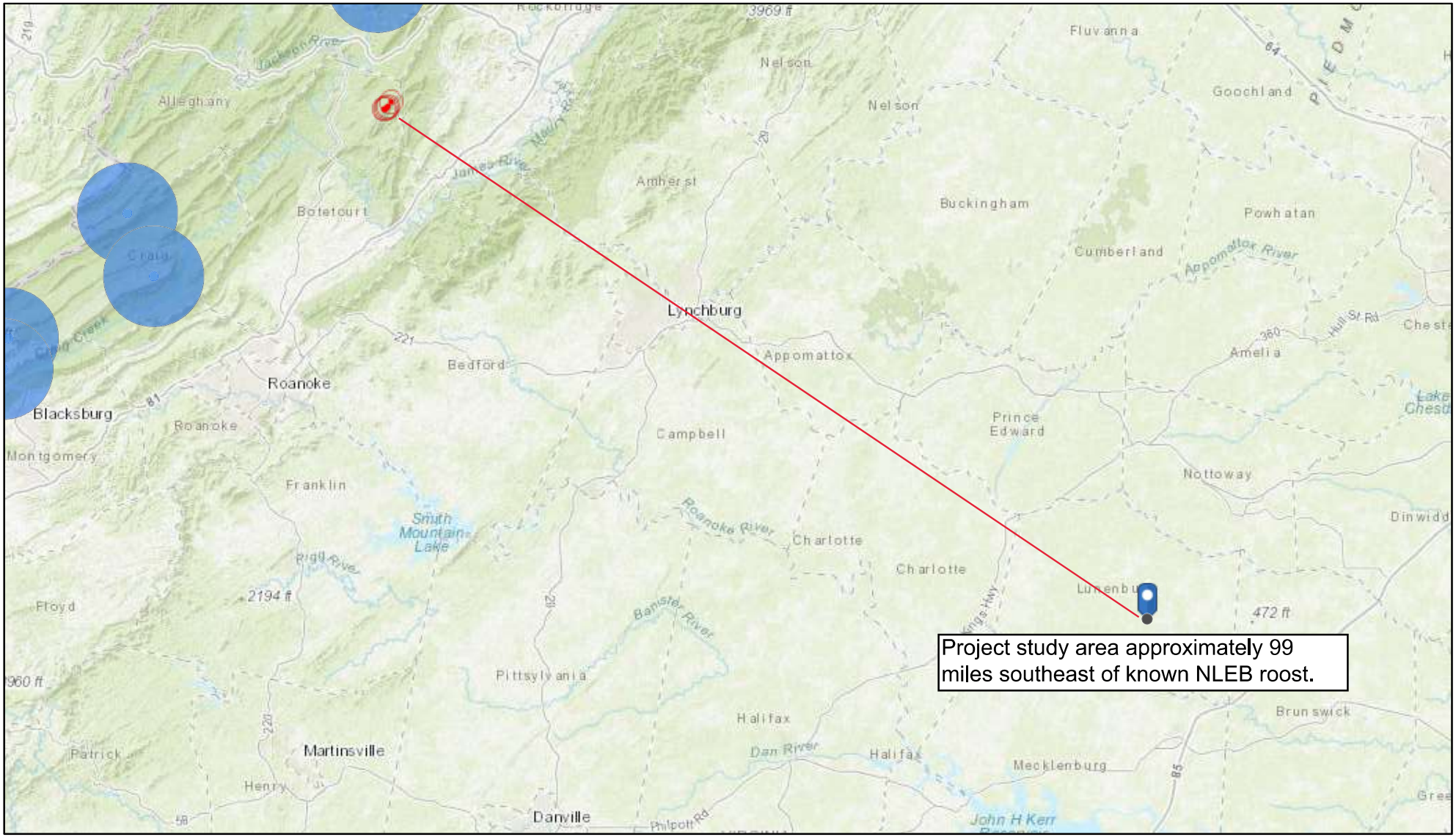
ATTACHMENT B: STATE LISTED SPECIES INFORMAL REVIEW

NLEB Locations and Roost Trees



12/1/2021, 6:08:29 AM

NLEB Known Occupied Maternity Roost (Summer Habitat)

NLEB Hibernaculum 5.5 Mile Buffer

NLEB Hibernaculum Half Mile Buffer

1:1,155,581

0 5 10 20 mi

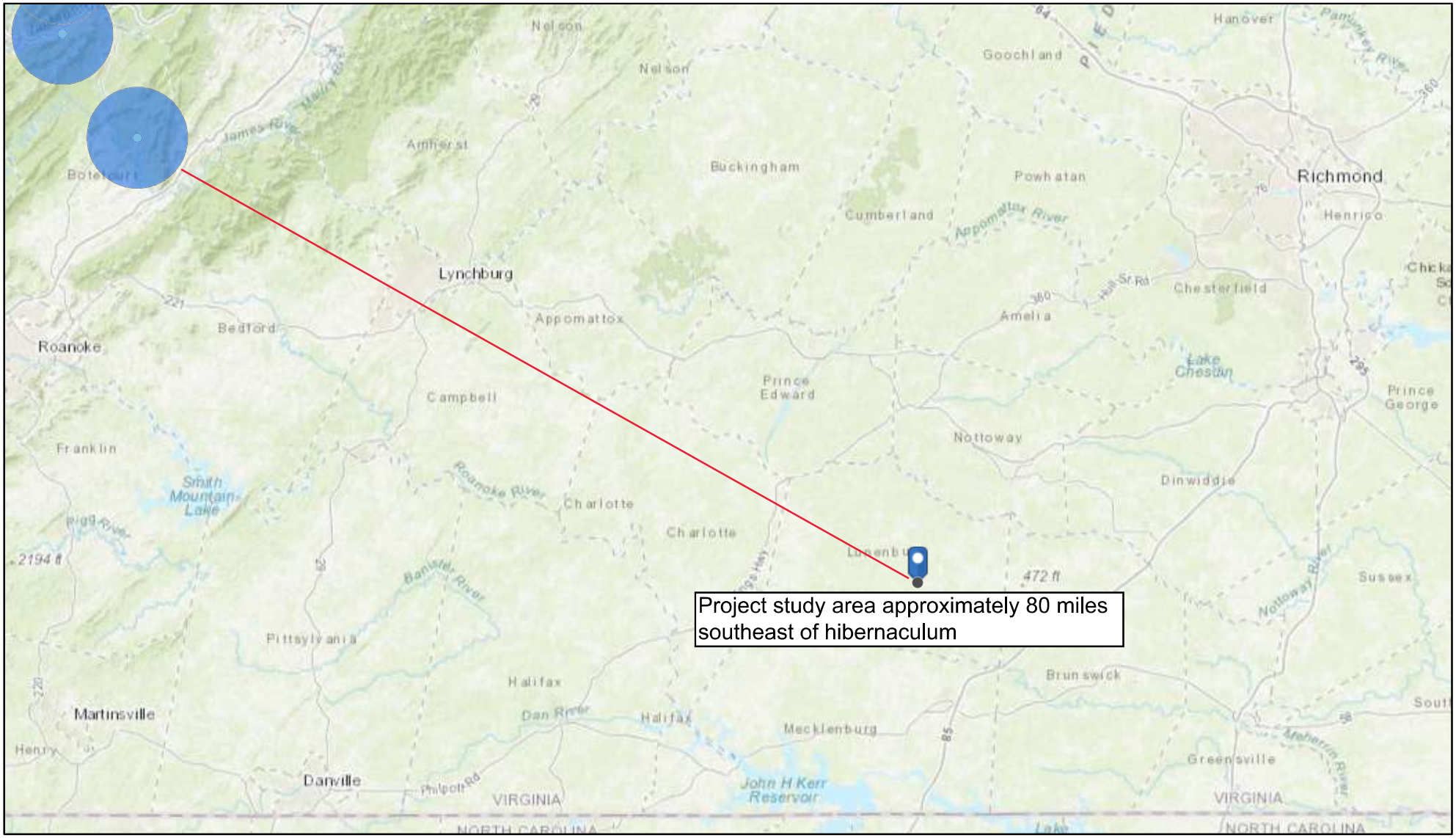
0 12.5 25 50 km

Esri, HERE, Garmin, FAO, USGS, NGA, EPA, NPS

VA Dept. Game & Inland Fisheries

Esri, HERE, Garmin, FAO, USGS, NGA, EPA, NPS |

Tri-colored and Little Brown Bat



12/1/2021, 6:12:09 AM

Tri-colored and Little Brown Hibernaculum Half Mile Buffer

Tri-colored and Little Brown Hibernaculum 5.5 Mile Buffer

1:1,155,581

0 5 10 20 mi

0 12.5 25 50 km

Esri, HERE, Garmin, FAO, USGS, NGA, EPA, NPS

Dept. Game and Inland Fisheries

Esri, HERE, Garmin, FAO, USGS, NGA, EPA, NPS |

VaFWIS Initial Project Assessment Report Compiled on 1/5/2022, 11:27:33 PM

Help

Known or likely to occur within a **2 mile buffer around polygon; center 36,54,56.0 -78,10,26.0** in **111 Lunenburg County, VA**

View Map of Site Location

395 Known or Likely Species ordered by Status Concern for Conservation
(displaying first 21) (21 species with Status* or Tier I** or Tier II**)

BOVA Code	Status*	Tier**	Common Name	Scientific Name	Confirmed	Database(s)
060003	FESE	Ia	Wedgemussel, dwarf	Alasmidonta heterodon		BOVA
010214	FESE	IIa	Logperch, Roanoke	Percina rex		BOVA
050022	FTST	Ia	Bat, northern long-eared	Myotis septentrionalis		BOVA
060173	FTST	Ia	Pigtoe, Atlantic	Fusconaia masoni		BOVA,Habitat
060029	FTST	IIa	Lance, yellow	Elliptio lanceolata		BOVA
050020	SE	Ia	Bat, little brown	Myotis lucifugus		BOVA
050027	SE	Ia	Bat, tri-colored	Perimyotis subflavus		BOVA
060006	SE	Ib	Floater, brook	Alasmidonta varicosa		BOVA
040293	ST	Ia	Shrike, loggerhead	Lanius ludovicianus		BOVA
040385	ST	Ia	Sparrow, Bachman's	Peucaea aestivalis		BOVA
060081	ST	IIa	Floater, green	Lasmigona subviridis		BOVA
010070	ST	IIc	Shiner, whitemouth	Notropis alborus		BOVA
040292	ST		Shrike, migrant loggerhead	Lanius ludovicianus migrans		BOVA
030063	CC	IIIa	Turtle, spotted	Clemmys guttata		BOVA
010174		Ia	Bass, Roanoke	Ambloplites cavifrons		BOVA,Habitat
020002		IIa	Treefrog, barking	Hyla gratiosa		BOVA
040052		IIa	Duck, American black	Anas rubripes		BOVA
040320		IIa	Warbler, cerulean	Setophaga cerulea		BOVA
040140		IIa	Woodcock, American	Scolopax minor		BOVA
060071		IIa	Lampmussel, yellow	Lampsilis cariosa		BOVA
040105		IIb	Rail, king	Rallus elegans		BOVA

To view **All 395 species** View 395

*FE=Federal Endangered; FT=Federal Threatened; SE=State Endangered; ST=State Threatened; FP=Federal Proposed; FC=Federal Candidate; CC=Collection Concern

**I=VA Wildlife Action Plan - Tier I - Critical Conservation Need; II=VA Wildlife Action Plan - Tier II - Very High Conservation Need; III=VA Wildlife Action Plan - Tier III - High Conservation Need; IV=VA Wildlife Action Plan - Tier IV - Moderate Conservation Need
Virginia Widlife Action Plan Conservation Opportunity Ranking:
a - On the ground management strategies/actions exist and can be feasibly implemented.; b - On the ground actions or research needs have been identified but cannot feasibly be implemented at this time.; c - No on the ground actions or research needs have been identified or all identified conservation opportunities have been exhausted.

Bat Colonies or Hibernacula: **Not Known**

Anadromous Fish Use Streams

N/A

Colonial Water Bird Survey

N/A

Threatened and Endangered Waters

N/A

Managed Trout Streams

N/A

Bald Eagle Concentration Areas and Roosts

N/A

Bald Eagle Nests

N/A

Habitat Predicted for Aquatic WAP Tier I & II Species (3 Reaches) View Map Combined Reaches from Below of Habitat Predicted for WAP Tier I & II Aquatic Species

Stream Name	Tier Species						View Map
	Highest TE*	BOVA Code, Status*, Tier**, Common & Scientific Name					
Crooked Creek (03010204)	FTST	060173	FTST	Ia	Pigtoe, Atlantic	Fusconaia masoni	Yes
Flat Rock Creek (03010204)	FTST	010174		Ia	Bass, Roanoke	Ambloplites cavifrons	Yes
		060173	FTST	Ia	Pigtoe, Atlantic	Fusconaia masoni	
tributary (03010204)		010174		Ia	Bass, Roanoke	Ambloplites cavifrons	Yes
tributary (03010204)		010174		Ia	Bass, Roanoke	Ambloplites cavifrons	Yes

Habitat Predicted for Terrestrial WAP Tier I & II Species

N/A

Public Holdings:

N/A

Compiled on 1/5/2022, 11:27:33 PM | I156083.0 | reports=PA | searchType= P | dist= 3218 poi= 36.54,-56.0 -78,10.36,0 siteDD= 36.9363611 -78.1465832;36.9367222 -78.1574721;36.9251389 -78.1568332;36.9270833 -78.1581943;36.9266111 -78.1644165;36.9238888 -78.1638887;36.9243333 -78.1693887;36.9294722 -78.1737221;36.9198611 -78.1865832;36.9209444 -78.1866387;36.9210277 -78.1991387;36.9103888 -78.1940832;36.9087777 -78.2043332;36.9058888 -78.2038332;36.9068888 -78.1768054;36.8958055 -78.1775554;36.8943333 -78.1755554;36.8958055 -78.1628610;36.8987222 -78.1662499;36.8992500 -78.1690554;36.9045277 -78.1680832;36.9101666 -78.1595832;36.9115833 -78.1632499;36.9210555 -78.1594443;36.9210833 -78.1526387;36.9287777 -78.1515276;36.9290000 -78.1465554;36.9363611 -78.1465832;

PixelSize=64; Anadromous=0.022343; BECAR=0.020683; Bats=0.019899; Buffer=0.176827; County=0.068899; Impediments=0.02198; Init=0.219707; PublicLands=0.028893; SppObs=0.316101; TEWaters=0.030385; TierReaches=0.069425; TierTerrestrial=0.133065; Total=1.159496; Tracking_BOVA=0.177934; Trout=0.026451

Site Location

36,54,56.0 -78,10,26.0
is **the Search Point**

Show Position Rings
(•) Yes ( ) No
1 mile and 1/4 mile at the **Search Point**

Show Search Area
(•) Yes ( ) No
2 Search distance miles buffer

Search Point is at map center

Base Map Choices
Topography

Map Overlay Choices
Current List: Position, Search, BECAR, BAEANests, TEWaters, TierII, Habitat, Trout, Anadromous

Map Overlay Legend

T & E Waters
Federal
State

Predicted Habitat WAP Tier I & II
Aquatic
Terrestrial

Trout Waters
Class I - IV
Class V - VI

Anadromous Fish Reach
Confirmed
Potential

123 Impediment

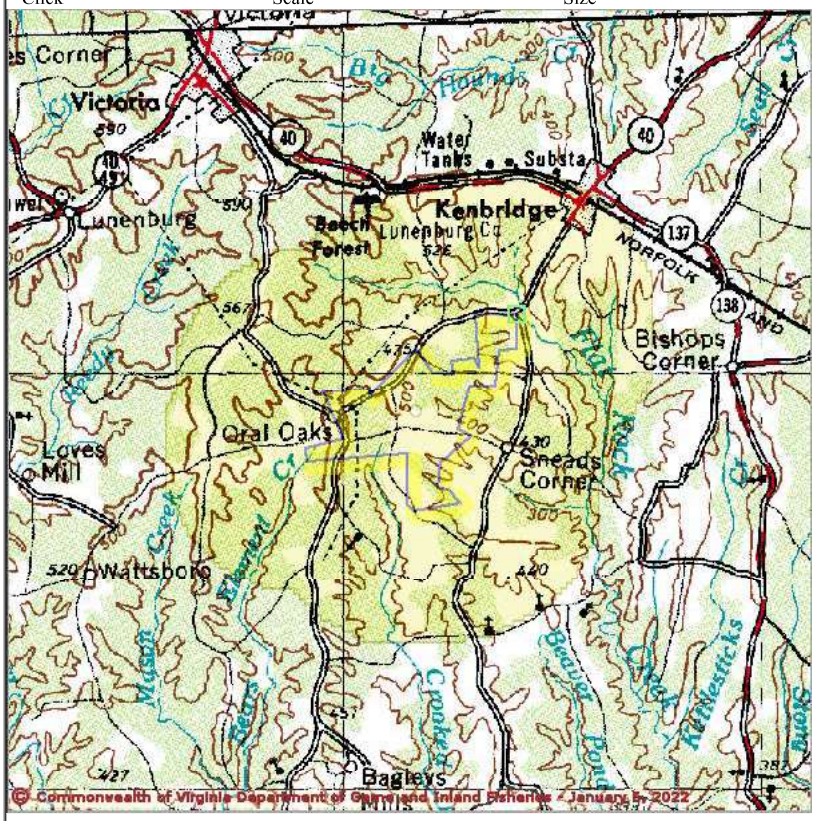
Position Rings 1 mile and 1/4 mile at the Search Point

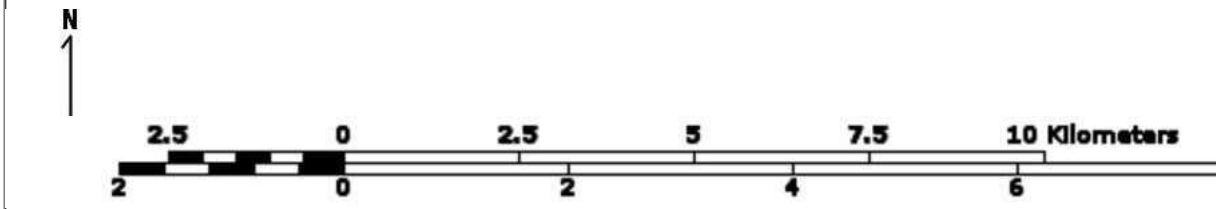
2 mile radius Search Area

Bald Eagle Concentration Areas and Roosts

Refresh Browser Page

Map Click Pan Id M Map Scale In Zoom Out Screen Size Small Size Big Help





Point of Search 36,54,56.0 -78,10,26.0
Map Location 36,54,56.6 -78,10,32.0

Select **Coordinate System:**
(•) Degrees,Minutes,Seconds Latitude - Longitude
( ) Decimal Degrees Latitude - Longitude
( ) Meters UTM NAD83 East North Zone
( ) Meters UTM NAD27 East North Zone

Base Map source: USGS 1:250,000 topographic maps (see Microsoft terraserver-usa.com for details)

Map projection is UTM Zone 17 NAD 1983 with left 742013 and top 4098852. Pixel size is 19. . Coordinates displayed are Degrees, Minutes, Seconds North and West. Map is currently displayed as 600 columns by 600 rows for a total of 360000 pixles. The map display represents 19200 meters east to west by 19200 meters north to south for a total of 368.6 square kilometers. The map display represents 63002 feet east to west by 63002 feet north to south for a total of 142.3 square miles.

Topographic maps and Black and white aerial photography for year 1990+-
are from the United States Department of the Interior, United States Geological Survey.
Color aerial photography aquired 2002 is from Virginia Base Mapping Program, Virginia Geographic Information Network.
Shaded topographic maps are from TOPO! ©2006 National Geographic http://www.national.geographic.com/topo
All other map products are from the Commonwealth of Virginia Department of Game and Inland Fisheries.

map assembled 2022-01-05 23:27:40 (qa/qc March 21, 2016 12:20 - tn=1156083.0 dist=3218 I)
$poi=36.9155556 -78.1738889

Natural Heritage Resources

Your Criteria

Taxonomic Group: Select All

Global Conservation Status Rank: Select All

State Conservation Status Rank: Select All

Federal Legal Status: Select All

State Legal Status: Select All

County: Lunenburg

Watershed (8 digit HUC): 03010204 - Meherrin River

Subwatershed (12 digit HUC): CM08 - Meherrin River-Mason Creek,CM09 - Meherrin River-Crooked Creek,CM10 - Flat Rock Creek

Search Run: 12/5/2021 9:00:46 AM

Result Summary

Total Species returned: 2

Total Communities returned: 0

Click scientific names below to go to NatureServe report.

Click column headings for an explanation of species and community ranks.

Common Name/Natural Community	Scientific Name	Scientific Name Linked	Global Conservation Status Rank	State Conservation Status Rank	Federal Legal Status	State Legal Status	Statewide Occurrences	Virginia Coastal Zone
Lunenburg								
Meherrin								
Flat Rock Creek								
BIRDS								
Loggerhead Shrike	Lanius ludovicianus	Lanius ludovicianus	G4	S1B,S2N	None	LT	40	N
Meherrin River-Mason Creek								
BIVALVIA (MUSSELS)								
Atlantic Pigtoe	Fusconaia masoni	Fusconaia masoni	G1	S2	PT	LT	29	N

Note: On-line queries provide basic information from DCR's databases at the time of the request. They are NOT to be substituted for a project review or for on-site surveys required for environmental assessments of specific project areas.

For Additional Information on locations of Natural Heritage Resources please submit an information request.

To Contribute information on locations of natural heritage resources, please fill out and submit a rare species sighting form.

ATTACHMENT C: CULTURAL RESOURCES DESKTOP REVIEW MEMO

Cultural Resources Desktop Review

Laurel Branch Solar Project Switchyard and Substation

August 16, 2022

Prepared for

Dominion Energy®

600 E Canal Street
Richmond, VA 23219

Prepared by

TETRA TECH

4101 Cox Road, Suite 120
Glen Allen, VA 23060

Table of Contents

List of Tables

List of Figures

1.0 INTRODUCTION

This report provides a summary of the cultural resource management events registered at the Virginia Department of Historic Resources (VDHR) through May 2022 that have taken place to date within the proposed Laurel Branch Solar Project Switchyard and Substation area. Additionally, all previously identified architectural resources and archaeological sites located within the project area, as well as within 0.5 mile of the project area, are provided. Information on previously conducted surveys and previously identified resources and sites were accessed through VDHR's Virginia Cultural Resources Information System (VCRIS) on May 17, 2022. The memo was drafted based off the current Laurel Branch Solar Project Switchyard and Substation boundary.

2.0 PREVIOUS SURVEYS RELEVANT TO THE PROJECT AREA

Research undertaken through VDHR's VCRIS demonstrated that no Phase I archaeological surveys have been conducted within 0.5 mile of the project area (Figure 1).

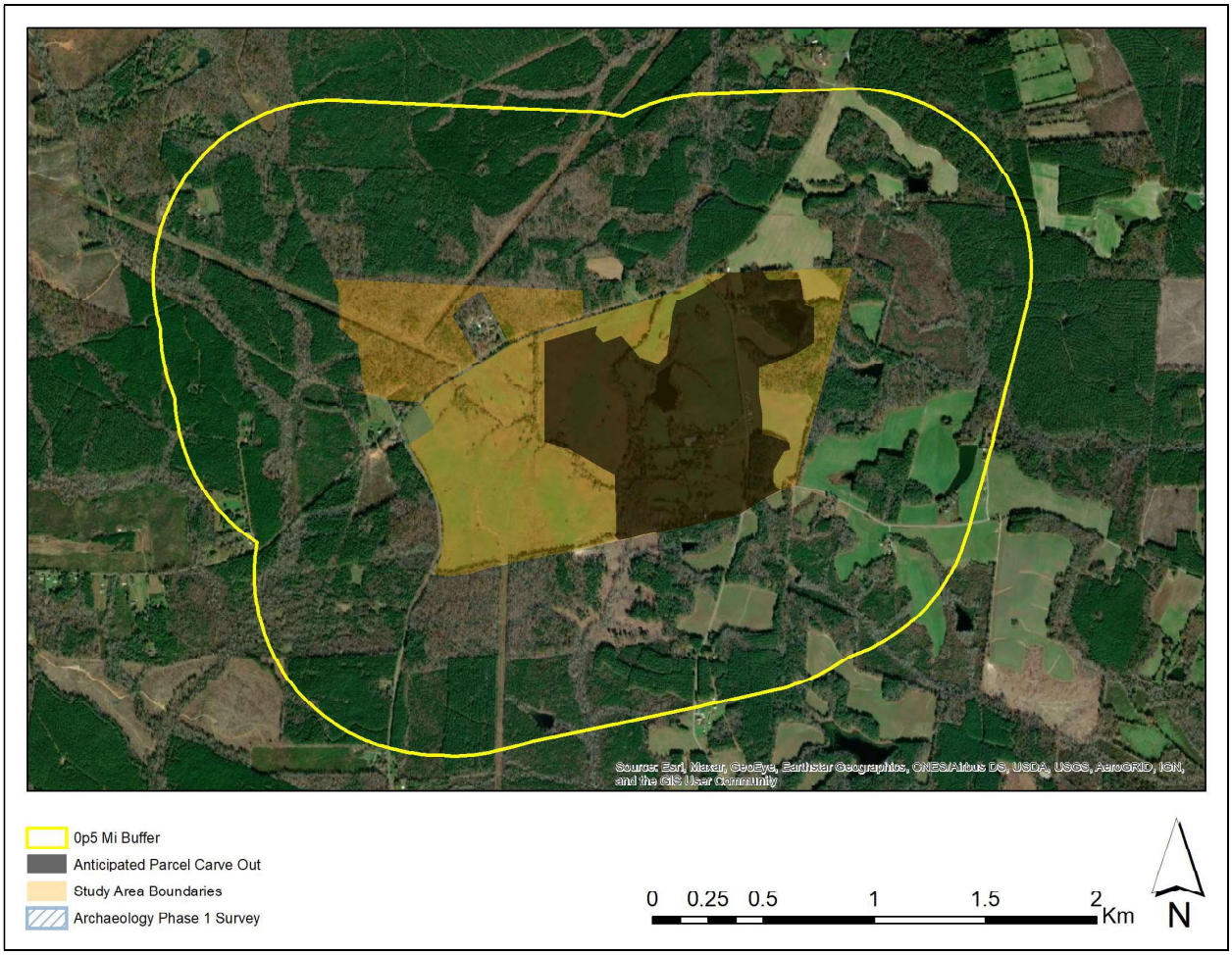


Figure 1. Previous surveys (gray) conducted in relation to the 0.5-mile buffer (yellow) around the project area (orange). Source: VCRIS 2022

3.0 PREVIOUSLY IDENTIFIED ARCHAEOLOGICAL SITES WITHIN 0.5 MILE OF THE PROJECT AREA

There are no previously recorded archaeological sites located within 0.5 mile of the project area (Figure 2). No archaeological sites are located within the project area.

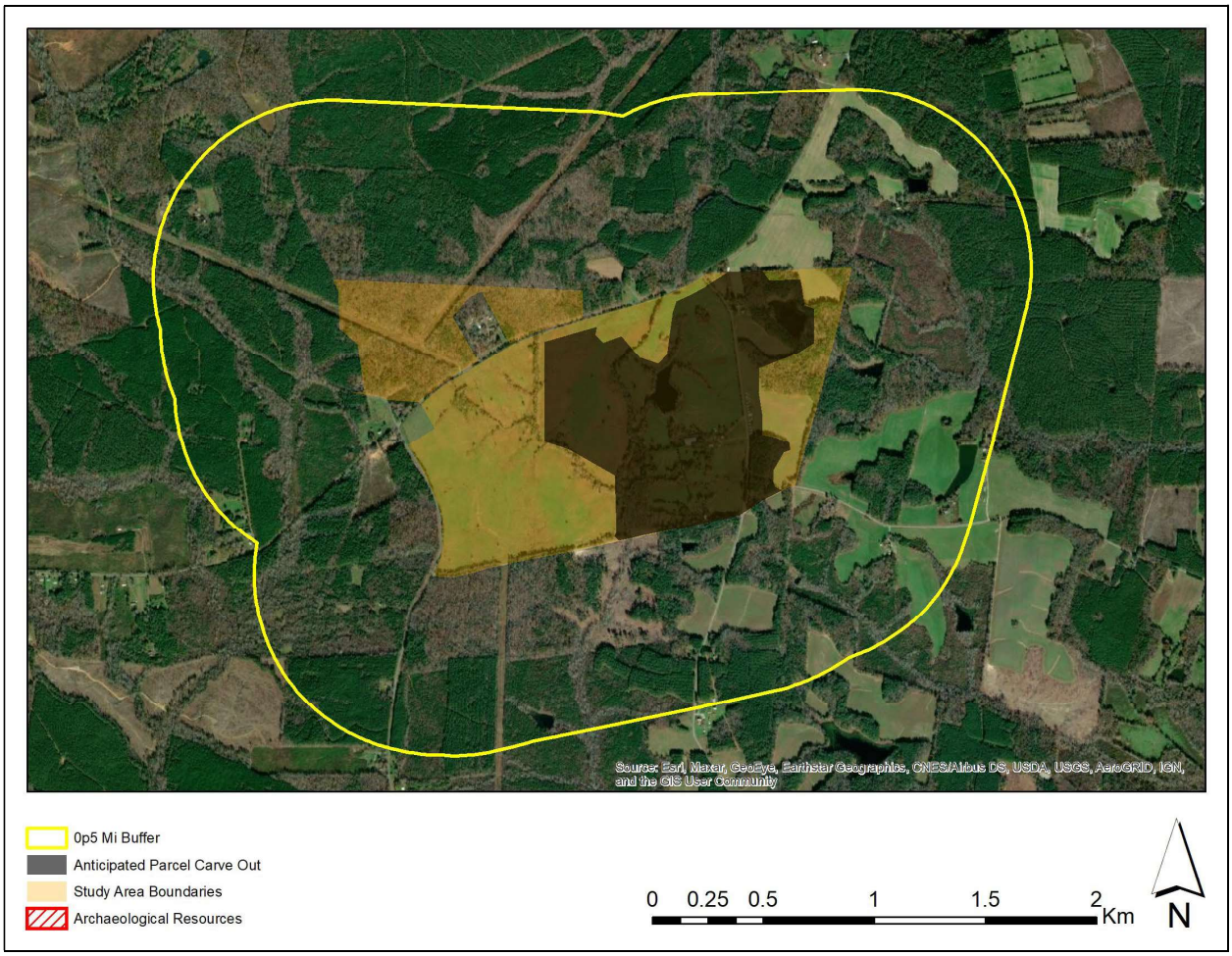


Figure 2. Archaeological resources (red) in relation to the 0.5-mile buffer (yellow) around the project area (orange). Source: VCRIS 2022.

4.0 PREVIOUSLY IDENTIFIED ARCHITECTURAL RESOURCES WITHIN 0.5 MILE OF THE PROJECT AREA

Review of VDHR VCRIS records identified six previously recorded architectural resources within 0.5 mile of the project area (Figure 3, Table 1). Among the resources are four dwellings, a wagon shed, and a church/chapel. The resources range in date from the early nineteenth century to the mid-twentieth century. VDHR #055-5132 (Good Hope Christadelphian Chapel) has been determined to be eligible for inclusion in the NRHP.

Two resources are located partially within the project area. These resources include: VDHR #055-5132 (Good Hope Christadelphian Chapel) and VDHR #055-5138 (Samuel A. Wallace, Jr. House). As mentioned above, VDHR #055-5132 (Good Hope Christadelphian Chapel) has been determined to be

eligible for inclusion in the NRHP and VDHR #055-5138 has been determined to not be eligible for inclusion in the NRHP.

As demonstrated in Figure 4, the project area excludes the majority of VDHR #055-5132 and VDHR #055-5138 (Figure 4). Likewise, VDHR #055-0117 is located within a parcel which is excluded from the project area, as shown in Figure 5.

Table 1. Previously identified architectural resources located within 0.5 mile of the project area.[1]

VDHR ID#	Property Name	NRHP Eligibility Status	Type	Year
055-0117	Oral Oaks (Historic/Current)	<Null>	Single Dwelling	1840
055-5132	**Good Hope Christadelphian Chapel (Historic)**	**DHR Staff: Eligible**	**Church/Chapel**	**1825Ca**
055-5133	House on Route 655 (Function/Location), Wathall House (Historic)	DHR Staff: Not Eligible	Single Dwelling	1860Ca
055-5138	**Samuel A. Wallace, Jr., House (Current)**	**DHR Staff: Not Eligible**	**Single Dwelling**	**1953**
055-5139	Charles E. Wallace House (Current)	DHR Staff: Not Eligible	Single Dwelling	1955a
055-5140	Wagon shed (Descriptive)	DHR Staff: Not Eligible	Wagon Shed	1925Ca

1 Resources highlighted in orange are eligible for listing in the NRHP or have a NRHP and VLR listing. Bolded resources are partially within the project area boundary.

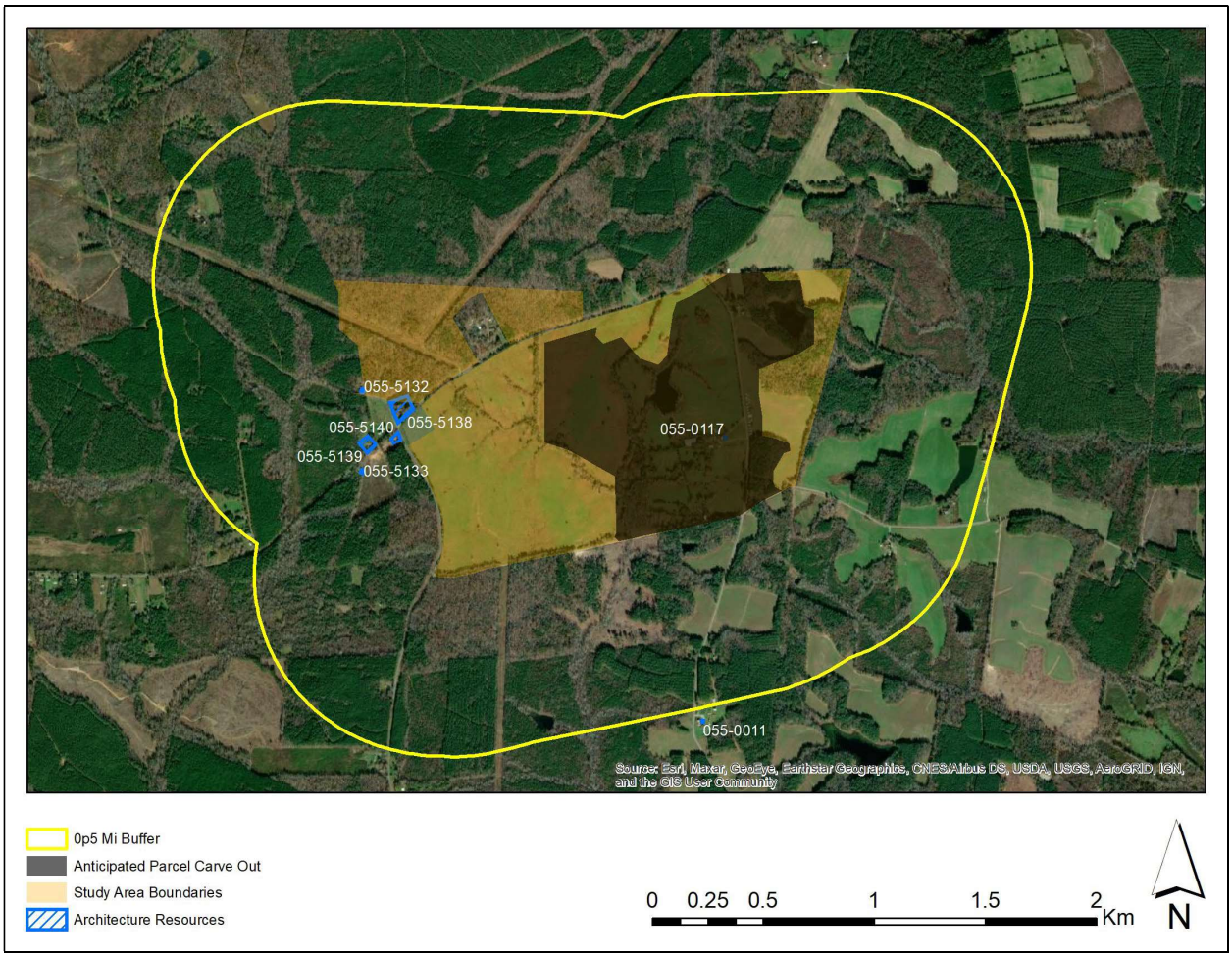


Figure 3. Map detailing all architectural resources (blue hatched) within 0.5 mile (yellow) of the project area (orange). Source: VCRIS 2022

Figure 4. Detail of architectural resources (blue hatched) which are partially within the project area (orange). Source: VCRIS 2022

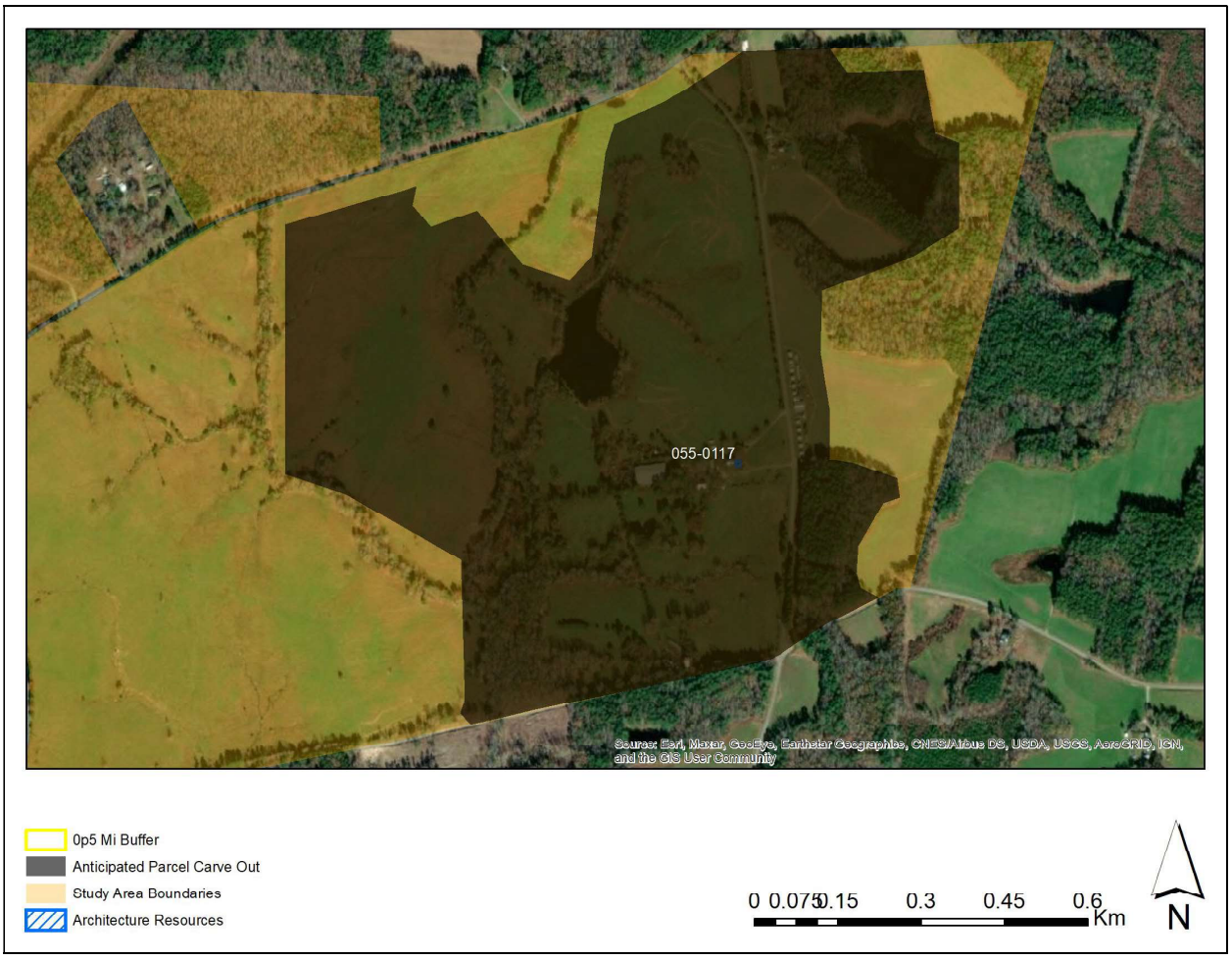


Figure 5. Detail of the proposed carved out area in which VDHR #055-0117 is located. The anticipated parcel carveout area is not included within the project area. Source: VCRIS 2022

5.0 RECOMMENDED NEXT STEPS

Preparation of a Phase IA cultural resources assessment (Phase IA), including a research design to guide a subsequent Phase I identification survey, is recommended for the Laurel Branch Solar Project Switchyard and Substation area. The Phase IA should include further consideration of site soils, historic maps, and existing field conditions and result in the development of a stratified testing strategy for identifying archaeological resources within the project area. The completed Phase IA should be submitted to the VDHR for review and comment prior to initiation of Phase I identification survey of the site in accordance with the recommended testing strategy.

TAB G

Preliminary Site Plan

LAUREL BRANCH SWITCHYARD AND SUBSTATION PROJECT CONDITIONAL USE PERMIT SITE PLAN PRELIMINARY - NOT FOR CONSTRUCTION

LUNENBURG COUNTY, VIRGINIA

AUGUST 2022

SHEET No.	DRAWING TITLE
CP000	COVER SHEET
CP100	EXISTING CONDITIONS INDEX SHEET
CP200	POST-DEVELOPMENT CONDITIONS INDEX SHEET
CP300	ADJACENT PARCEL INFORMATION SHEET
CP301	LANDSCAPE BUFFER SHEET
CP302	DESKTOP EVALUATION UTILITY MAP
CP303	DRAFT GRADING PLAN SHEET
CP401	METES AND BOUNDS INDEX SHEET
CP402	METES AND BOUNDS

PREPARED BY:

TETRA TECH

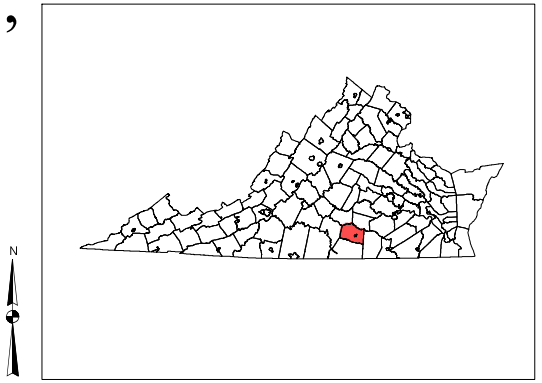
complex world | CLEAR SOLUTIONS™

4104 COX ROAD - SUITE 120, GLEN ALLEN, VA 23060
TEL: (804) 290-4321 | FAX: (804) 270-2739

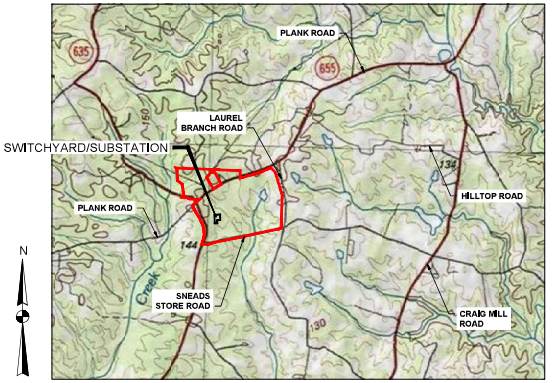
PREPARED FOR:

Dominion Energy®

600 E CANAL STREET, RICHMOND, VA 23219



STATE VICINITY MAP
LAUREL BRANCH SWITCHYARD AND SUBSTATION PROJECT
LUNENBURG COUNTY , VIRGINIA



COUNTY VICINITY MAP
DISTRICT: COLUMBIAN GROVE
CASE NUMBER: CUP 2-22

Dominion Energy®

TETRA TECH
TETRA TECH, INC.
4101 COX ROAD;
SUITE 120
GLEN ALLEN, VA 23060
TEL: (804) 290-4321
FAX: (804) 270-2739

STAMP:

COMMONWEALTH OF VIRGINIA
MICHAEL K. SHORT
Lic. No. 047828
08/19/2022
PROFESSIONAL ENGINEER

LAUREL BRANCH SWITCHYARD AND SUBSTATION PROJECT
DOMINION ENERGY VIRGINIA
LUNENBURG COUNTY
VIRGINIA

PROJECT NUMBERS:
194-1058-0025

SHEET TITLE:
COVER SHEET

SHEET SIZE: ARCH "D"
24" X 36" (610 x 914)
0 ½" 1"

NO.	REVISION	DATE	INIT.

va811.com Dig With CARE

DATE:	08/19/2022
DRAWN BY:	GR
ENGINEER:	MS
APPROVED BY:	EO

PROJECT PHASE:
CONDITIONAL USE PERMIT SITE PLAN

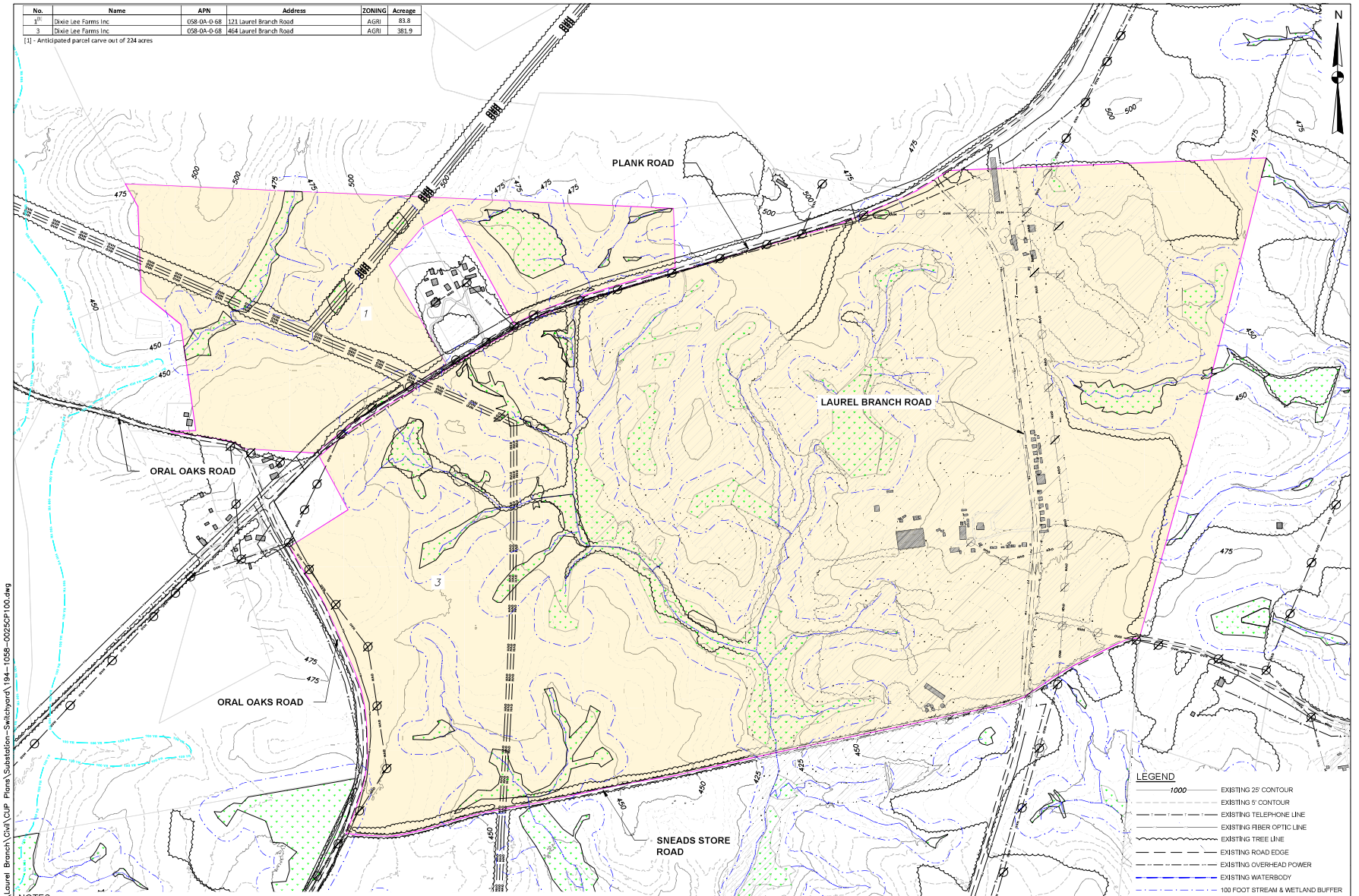
SCALE:
N/A

SHEET NO.:
CP000

X:\CADD_Virginia\Dominion\Laurel Branch\Civil\CUP Plans\Substation-Switchyard\194-1058-0025CP000.dwg

No.	Name	APN	Address	ZONING	Acreage
1[1]	Dixie Lee Farms Inc	058-0A-0-68	121 Laurel Branch Road	AGRI	83.8
3	Dixie Lee Farms Inc	058-0A-0-68	464 Laurel Branch Road	AGRI	381.9

[1] - Anticipated parcel carve out of 224 acres



NOTES:

1. LIDAR OBTAINED FROM VGIN VIRGINIA LIDAR INVENTORY WEB MAPPING. SUBJECT AND ADJOINING PROPERTY LINES ARE SOURCED FROM HTTPS://VGIN.ARCGIS.COM/APPS/MEWER/INDEX/HTML.
2. IMAGERY OBTAINED FROM HTTPS://VGIN.MAPS.ARCGIS.COM/APPS/MEWER/INDEX.HTML
3. AQUATIC RESOURCES (I.E., STREAMS AND WETLANDS) AS SHOWN WERE ESTIMATED/OBTAINED VIA DESKTOP REVIEW. FIELD DELINEATIONS OF AQUATIC RESOURCES WILL BE COMPLETED AT A LATER DATE PRIOR TO FINAL DESIGN.
4. UTILITY LOCATIONS AS SHOWN WERE OBTAINED VIA DESKTOP REVIEW AND, THEREFORE, ARE APPROXIMATE. FIELD SURVEY IS REQUIRED IN ORDER TO OBTAIN EXACT LOCATIONS.
5. VA MISS TICKET NUMBER REQUESTS FOR EXISTING UTILITIES: A115300567-00A, A115203624-00A, B115202802-00B
6. FLOODPLAIN DATA OBTAINED FROM HTTPS://HAZARDS-FEMA.MAPS.ARCGIS.COM/APPS/WEBAPPVIEWER/INDEX.HTML?ID=88D0ADB51996444D4879338B529AA9CD. THE FLOODPLAINS SHOWN ARE FEMA ZONE A BASED ON PANEL NUMBER 5111C0175B, EFFECTIVE DATE 07/20/2009.
7. FOR ADJACENT PARCEL INFORMATION, SEE SHEET CP300.
8. ALL EXISTING RESIDENTIAL STRUCTURES WILL RETAIN A 400' BUFFER, NON-RESIDENTIAL STRUCTURES WILL RETAIN A 30' BUFFER. ALL STRUCTURES ARE SUBJECT TO THESE BUFFERS UNLESS OTHERWISE AGREED UPON WITH RESPECTIVE LANDOWNERS. STRUCTURE(S) TO BE DEMOLISHED ARE STILL BEING DETERMINED AND LANDOWNER APPROVAL WILL BE OBTAINED PRIOR TO DEMOLITION.
9. ANTICIPATED PARCEL CARVE OUT AREAS ARE NOT ASSOCIATED WITH THE OVERALL PROJECT BOUNDARY AND MAY BE SUBJECT TO CHANGE UPON AGREEMENT WITH LANDOWNER.

X:\CADD_Virginia\Dominion\Laurel Branch\Civil\CUP Plans\Substation-Switchyard\194-1058-0025CP100.dwg

Dominion Energy

TETRA TECH

TETRA TECH, INC.
4101 COX ROAD,
SUITE 120
GLEN ALLEN, VA 23060
TEL: (804) 290-4321
FAX: (804) 270-2739

STAMP:

COMMONWEALTH OF VIRGINIA
MICHAEL K. SHORT
Lic. No. 047828
08/19/2022
PROFESSIONAL ENGINEER

LAUREL BRANCH SWITCHYARD AND SUBSTATION PROJECT
DOMINION ENERGY VIRGINIA
LUNENBURG COUNTY
VIRGINIA

PROJECT NUMBERS:
194-1058-0025

SHEET TITLE:
EXISTING CONDITIONS INDEX SHEET

SHEET SIZE: ARCH "D"
24" X 36" (610 x 914)
0 ½" 1"

NO.	REVISION	DATE	INIT.

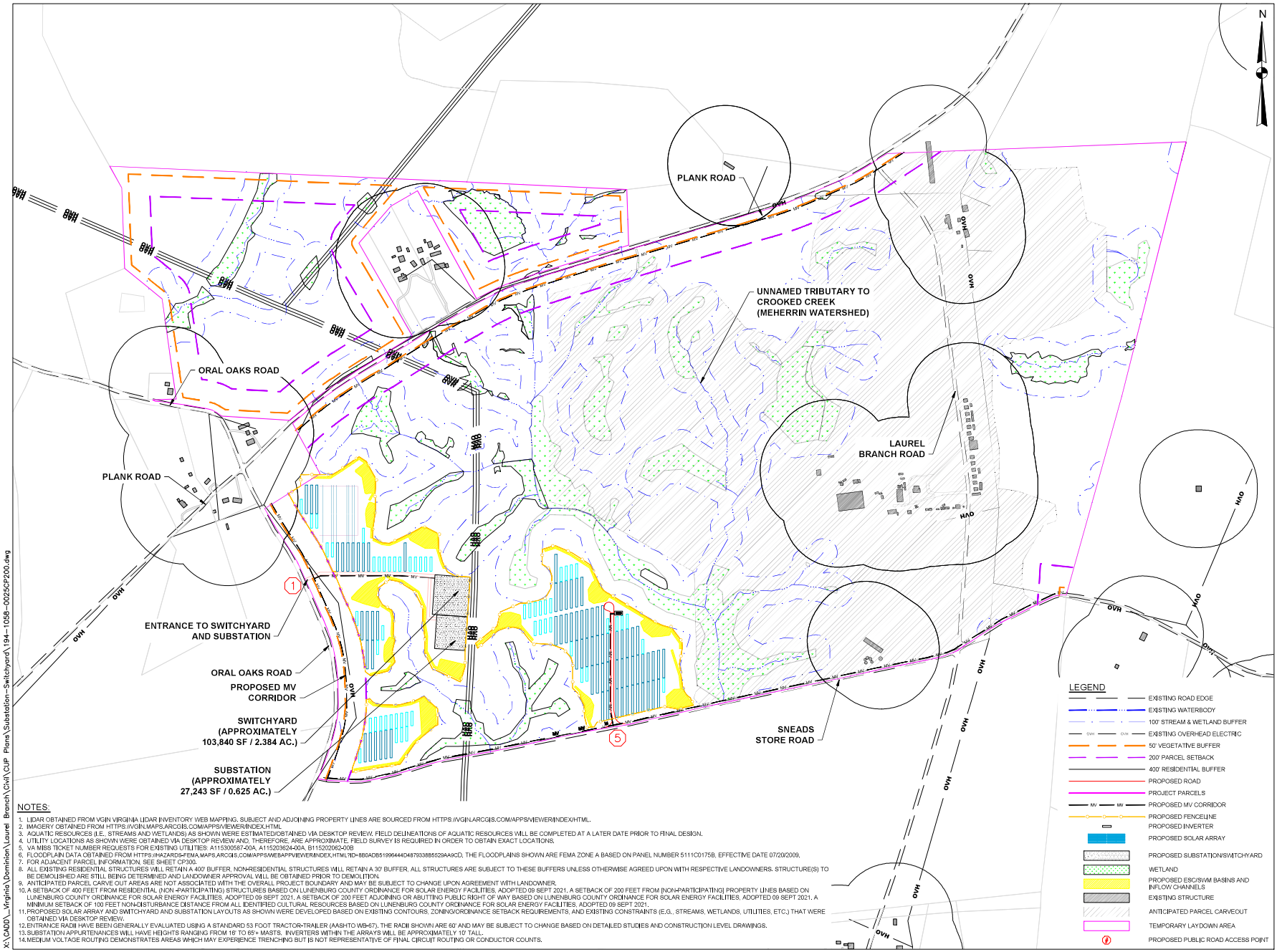
va811.com Dig With CARE

DATE:	08/19/2022
DRAWN BY:	GR
ENGINEER:	MS
APPROVED BY:	EO

PROJECT PHASE:
CONDITIONAL USE PERMIT SITE PLAN

SCALE:
1" = 300'

SHEET NO.:
CP100



NOTES:

1. LIDAR OBTAINED FROM VGIN VIRGINIA LIDAR INVENTORY WEB MAPPING. SUBJECT AND ADJOINING PROPERTY LINES ARE SOURCED FROM HTTPS://VGIN.ARCGIS.COM/APPS/VIEWER/INDEX/HTML.
2. IMAGERY OBTAINED FROM HTTPS://VGIN.MAPS.ARCGIS.COM/APPS/VIEWER/INDEX.HTML
3. AQUATIC RESOURCES (I.E., STREAMS AND WETLANDS) AS SHOWN WERE ESTIMATED/OBTAINED VIA DESKTOP REVIEW. FIELD DELINEATIONS OF AQUATIC RESOURCES WILL BE COMPLETED AT A LATER DATE PRIOR TO FINAL DESIGN.
4. UTILITY LOCATIONS AS SHOWN WERE OBTAINED VIA DESKTOP REVIEW AND, THEREFORE, ARE APPROXIMATE. FIELD SURVEY IS REQUIRED IN ORDER TO OBTAIN EXACT LOCATIONS.
5. VA MISS TICKET NUMBER REQUESTS FOR EXISTING UTILITIES: A115300587-00A, A115203624-00A, B115202062-00B
6. FLOODPLAIN DATA OBTAINED FROM HTTPS://HAZARDS-FEMA.MAPS.ARCGIS.COM/APPS/WEBAPPVIEWER/INDEX.HTML?ID=88DADB51996444D487933B85529AA9CD. THE FLOODPLAINS SHOWN ARE FEMA ZONE A BASED ON PANEL NUMBER 5111C0175B, EFFECTIVE DATE 07/20/2009.
7. FOR ADJACENT PARCEL INFORMATION, SEE SHEET CP300.
8. ALL EXISTING RESIDENTIAL STRUCTURES WILL RETAIN A 400' BUFFER. NON-RESIDENTIAL STRUCTURES WILL RETAIN A 30' BUFFER. ALL STRUCTURES ARE SUBJECT TO THESE BUFFERS UNLESS OTHERWISE AGREED UPON WITH RESPECTIVE LANDOWNERS. STRUCTURE(S) TO BE DEMOLISHED ARE STILL BEING DETERMINED AND LANDOWNER APPROVAL WILL BE OBTAINED PRIOR TO DEMOLITION.
9. ANTICIPATED PARCEL CARVE OUT AREAS ARE NOT ASSOCIATED WITH THE OVERALL PROJECT BOUNDARY AND MAY BE SUBJECT TO CHANGE UPON AGREEMENT WITH LANDOWNER.
10. A SETBACK OF 400 FEET FROM RESIDENTIAL (NON -PARTICIPATING) STRUCTURES BASED ON LUNENBURG COUNTY ORDINANCE FOR SOLAR ENERGY FACILITIES, ADOPTED 09 SEPT 2021. A SETBACK OF 200 FEET FROM (NON-PARTICIPATING) PROPERTY LINES BASED ON LUNENBURG COUNTY ORDINANCE FOR SOLAR ENERGY FACILITIES, ADOPTED 09 SEPT 2021. A SETBACK OF 200 FEET ADJOINING OR ABUTTING PUBLIC RIGHT OF WAY BASED ON LUNENBURG COUNTY ORDINANCE FOR SOLAR ENERGY FACILITIES, ADOPTED 09 SEPT 2021. A MINIMUM SETBACK OF 100 FEET NON-DISTURBANCE DISTANCE FROM ALL IDENTIFIED CULTURAL RESOURCES BASED ON LUNENBURG COUNTY ORDINANCE FOR SOLAR ENERGY FACILITIES, ADOPTED 09 SEPT 2021.
11. PROPOSED SOLAR ARRAY AND SWITCHYARD AND SUBSTATION LAYOUTS AS SHOWN WERE DEVELOPED BASED ON EXISTING CONTOURS, ZONING/ORDINANCE SETBACK REQUIREMENTS, AND EXISTING CONSTRAINTS (E.G., STREAMS, WETLANDS, UTILITIES, ETC.) THAT WERE OBTAINED VIA DESKTOP REVIEW.
12. ENTRANCE RADII HAVE BEEN GENERALLY EVALUATED USING A STANDARD 53 FOOT TRACTOR-TRAILER (AASHTO WB-67). THE RADII SHOWN ARE 60' AND MAY BE SUBJECT TO CHANGE BASED ON DETAILED STUDIES AND CONSTRUCTION LEVEL DRAWINGS.
13. SUBSTATION APPURTENANCES WILL HAVE HEIGHTS RANGING FROM 16' TO 65'+ MASTS. INVERTERS WITHIN THE ARRAYS WILL BE APPROXIMATELY 10' TALL.
14. MEDIUM VOLTAGE ROUTING DEMONSTRATES AREAS WHICH MAY EXPERIENCE TRENCHING BUT IS NOT REPRESENTATIVE OF FINAL CIRCUIT ROUTING OR CONDUCTOR COUNTS.

X:\CADD_Virginia\Dominion\Laurel Branch\Civil\CUP Plans\Substation-Switchyard\194-1058-0025CP200.dwg

Dominion Energy®

TETRA TECH

TETRA TECH, INC.
4101 COX ROAD,
SUITE 120
GLEN ALLEN, VA 23060
TEL: (804) 290-4321
FAX: (804) 270-2739

STAMP:

COMMONWEALTH OF VIRGINIA
MICHAEL K. SHORT
Lic. No. 047828
08/19/2022
PROFESSIONAL ENGINEER

LAUREL BRANCH SWITCHYARD AND SUBSTATION PROJECT
DOMINION ENERGY VIRGINIA
LUNENBURG COUNTY
VIRGINIA

PROJECT NUMBERS:
194-1058-0025

SHEET TITLE:
POST-DEVELOPMENT CONDITIONS INDEX SHEET

SHEET SIZE: ARCH "D"
24" X 36" (610 x 914)
0 ½" 1"

NO.	REVISION	DATE	INIT.

va811.com Dig With CARE

DATE:	08/19/2022
DRAWN BY:	GR
ENGINEER:	MS
APPROVED BY:	EO

PROJECT PHASE:
CONDITIONAL USE PERMIT SITE PLAN

SCALE:
1" = 300'

SHEET NO.:
CP200

No.	Name	APN	Address	Zoning
2	DIXIE LEE FARMS INC	058-0A-0-69	NULL (OWNER ADDRESS: 464 LAUREL BRANCH ROAD)	AGRI
4	CAMPBELL, JAMES M. AND WANDA S.	058-0A-0-5A	NULL (OWNER ADDRESS: 10663 PLANK ROAD)	AGRI
5[2]	DIXIE LEE FARMS INC	058-0A-0-54	NULL (OWNER ADDRESS: 464 LAUREL BRANCH ROAD)	AGRI
7	DIXIE LEE FARMS INC	046-0A-0-20	NULL (OWNER ADDRESS: 464 LAUREL BRANCH ROAD)	AGRI
10	LONG, JOHNNY L.	058-0A-0-67	NULL (OWNER ADDRESS: 3502 LAUREL BRANCH ROAD)	AGRI
100	CLEMONS LUCIOUS HENRY JR &, FAYE C.JOHNSON	046-0A-0-28	NULL (OWNER ADDRESS: 1600 LAKESIDE AVENUE, HENRICO, VA 23228)	AGRI
101	CAMPBELL, JAMES M. AND WANDA S.	046-0A-0-40	NULL (OWNER ADDRESS: 10663 PLANK ROAD)	RES
102	CAMPBELL, JAMES M. AND WANDA S.	046-0A-0-39	10663 PLANK ROAD	RES
103	HALL, VICKY J.	046-0A-0-38	10695 PLANK ROAD	RES
104	HALL, DERRICK S OR LUCY LAFOON	046-0A-0-26	11075 PLANK ROAD	AGRI
105	DIXIE LEE FARMS INC	046-0A-0-25	112: PLANK ROAD	RES
106	BISHOP, BERNICE LEONARD	046-0A-0-24	NULL (OWNER ADDRESS: 716 EAST 6TH AVENUE)	AGRI
151	HOERAUF, DAVID S. OR TERESA M. CUMMINGS	058-0A-0-5	NULL (OWNER ADDRESS: 15200 MT. NEBO ROAD, POOLESVILLE, MD 20837)	AGRI
152	DANIEL, ROBERT C. OR CASS E E.	058-0A-0-6	10326 PLANK ROAD	RES
153	CALLAHAN, BESSIE M.	058-0A-0-70	10359 PLANK ROAD	RES
154	SMITH, DORETHA J.	058-0A-0-71A	10291 PLANK ROAD	RES
155	MACWELCH SHELA	058-0A-0-71	10241 PLANK ROAD	RES
156	GOOD HOPE CHURCH	046-0A-0-37	8510 ORAL OAKS ROAD	NG
157	ILLINOIS MUNICIPAL RETIREMENT FUND	046-0A-0-36	NULL (OWNER ADDRESS: PO BOX 1288, MOBILE, AL 36633	RES
158	ILLINOIS MUNICIPAL RETIREMENT FUND	046-0A-0-33	NULL (OWNER ADDRESS: PO BOX 1288, MOBILE, AL 36633	AGRI
159	BAUER, THEODORE	058-0A-0-65A	1202 SNEADS STORE ROAD	RES

[2] Anticipated parcel carve out of 30.7 acres

LEGEND

- EXISTING ROAD EDGE
- EXISTING OVERHEAD POWER
- ADJACENT PROJECT PARCELS
- PROJECT PARCELS
- ANTICIPATED PARCEL CARVEOUT
- EXISTING STRUCTURE
- ADJACENT PARCELS
- PROJECT INCLUDED PARCELS

N

PLANK ROAD

ORAL OAKS ROAD

LAUREL BRANCH ROAD

ORAL OAKS ROAD

SNEADS STORE ROAD

X:\CADD_Virginia\Dominion\Laurel Branch\Civil\CUP Plans\Substation-Switchyard\194-1058-0025CP300.dwg

Dominion Energy

TETRA TECH

TETRA TECH, INC.
4101 COX ROAD,
SUITE 120
GLEN ALLEN, VA 23060
TEL: (804) 290-4321
FAX: (804) 270-2739

STAMP:

COMMONWEALTH OF VIRGINIA
MICHAEL K. SHORT
Lic. No. 047828
08/19/2022
PROFESSIONAL ENGINEER

LAUREL BRANCH SWITCHYARD AND SUBSTATION PROJECT
DOMINION ENERGY VIRGINIA
LUNENBURG COUNTY
VIRGINIA

PROJECT NUMBERS:
194-1058-0025

SHEET TITLE:
ADJACENT PARCEL INFORMATION SHEET

SHEET SIZE: ARCH "D"
24" X 36" (610 x 914)
0 ½" 1"

NO.	REVISION	DATE	INIT.

va811.com Dig With CARE

DATE:	08/19/2022
DRAWN BY:	GR
ENGINEER:	MS
APPROVED BY:	EO

PROJECT PHASE:
CONDITIONAL USE PERMIT SITE PLAN

SCALE:
1" = 300'

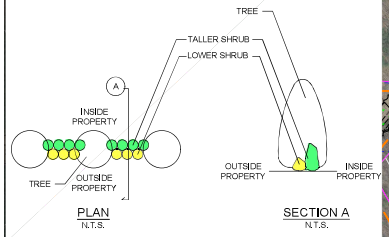
SHEET NO.:
CP300

PLANT LIST

Evergreen Tree	Eastern White Pine	Pinus strobus L.	80 Ft	Pyramidal form
	Eastern Hemlock (Spruce)	Tsuga canadensis (L.) Carr.	60-100 Ft	Broadbase, Pyramid form
	Eastern Redcedar	Juniperus virginiana L.	40-60 Ft	Dense form
	American Holly	Ilex opaca	30-50 Ft	Pyramidal form
	White Spruce	Picea glauca	30-50 Ft	Conical form
Evergreen Shrub	American Holly	Ilex opaca	30-50 Ft	Pyramidal form
	Mountain Laurel	Kalmia latifolia	5-15 Ft	Lower Shrub
	Southern Bayberry, Southern Wax Myrtle	Myrica Cerifera	15-20 Ft	Taller Shrub
	Swamp Bayberry	Myrica heterophylla	7-10 Ft	Lower Shrub
Semi-evergreen/ Deciduos sohrub	Winter Berry	Ilex verticillata	3-16 Ft	Lower Shrub Red berry in winter
	Great Rhododendron	Rhododendron Maximum	15 Ft	Taller Shrub
	Rose Azalea	Rhododendron prinophyllum	3-5 Ft	Lower Shrub

Sources:

Native Plants for Conservation, Restoration and Landscaping (virginia.gov)
Kalmia latifolia - Plant Finder (missouribotanicalgarden.org)
Evergreens | Virginia, USA | Plant NOVA Natives
Hedges and screens | Virginia, USA | Plant NOVA Natives
Native Plants for Southern Piedmont — Plant Virginia Natives
Wikipedia, the free encyclopedia



NOTES:

1. LIDAR OBTAINED FROM VGIN VIRGINIA LIDAR INVENTORY WEB MAPPING.
2. IMAGERY OBTAINED FROM HTTPS://VGIN.MAPS.ARCGIS.COM/APPS/VIEWER/INDEX.HTML?APPID=CBE6A0C1B2C440168E228EE33B89CB38.
3. AQUATIC RESOURCES (I.E., STREAMS AND WETLANDS) AS SHOWN WERE ESTIMATED/OBTAINED VIA DESKTOP REVIEW. FIELD DELINEATIONS OF AQUATIC RESOURCES WILL BE COMPLETED AT A LATER DATE PRIOR TO FINAL DESIGN.
4. UTILITY LOCATIONS AS SHOWN WERE OBTAINED VIA DESKTOP REVIEW AND, THEREFORE, ARE APPROXIMATE. FIELD SURVEY IS REQUIRED IN ORDER TO OBTAIN EXACT LOCATIONS.
5. FLOODPLAIN DATA OBTAINED FROM HTTPS://HAZARDS-FEMA.MAPS.ARCGIS.COM/APPS/WEBAPPVIEWER/INDEX.HTML?ID=88DADB51996444D4879338B5529AA9CD
6. PROPOSED LAYOUTS AS SHOWN WERE DEVELOPED BASED ON EXISTING CONTOURS, ASSUMED ZONING/ORDINANCE SETBACK REQUIREMENTS, AND EXISTING CONSTRAINTS (E.G., PROPERTY LINES, UTILITIES, ETC.) THAT WERE OBTAINED VIA DESKTOP REVIEW. ENHANCEMENTS TO THE PROPOSED SOLAR ARRAY LAYOUTS RESULTING FROM PROPOSED GRADING HAVE ALSO BEEN CONSIDERED.
7. NO CULTURAL RESOURCES WITHIN THE PROJECT AREA AS DEPICTED ON THE VCRIS MAP.
8. THE PROPERTY BUFFER SHOWN IS 200'. THE LANDSCAPE BUFFER IS 50'.
9. ALL VEGETATIVE BUFFERS DEPICTED WILL BE MAINTAINED FOR THE LIFE OF THE FACILITY.

X:\CADD_Virginia\Dominion\Laurel Branch\Civil\CUP Plans\Substation-Switchyard\194-1058-0025CP301.dwg

Dominion Energy

TETRA TECH

TETRA TECH, INC.
4101 COX ROAD,
SUITE 120
GLEN ALLEN, VA 23060
TEL: (804) 290-4321
FAX: (804) 270-2739

STAMP:

COMMONWEALTH OF VIRGINIA
MICHAEL K. SHORT
Lic No. 047828
08/19/2022
PROFESSIONAL ENGINEER

LAUREL BRANCH SWITCHYARD AND SUBSTATION PROJECT
DOMINION ENERGY VIRGINIA
LUNENBURG COUNTY
VIRGINIA

PROJECT NUMBERS:
194-1058-0025

SHEET TITLE:
LANDSCAPE BUFFER SHEET

SHEET SIZE: ARCH "D"
24" X 36" (610 x 914)
0 ½" 1"

NO.	REVISION	DATE	INIT.

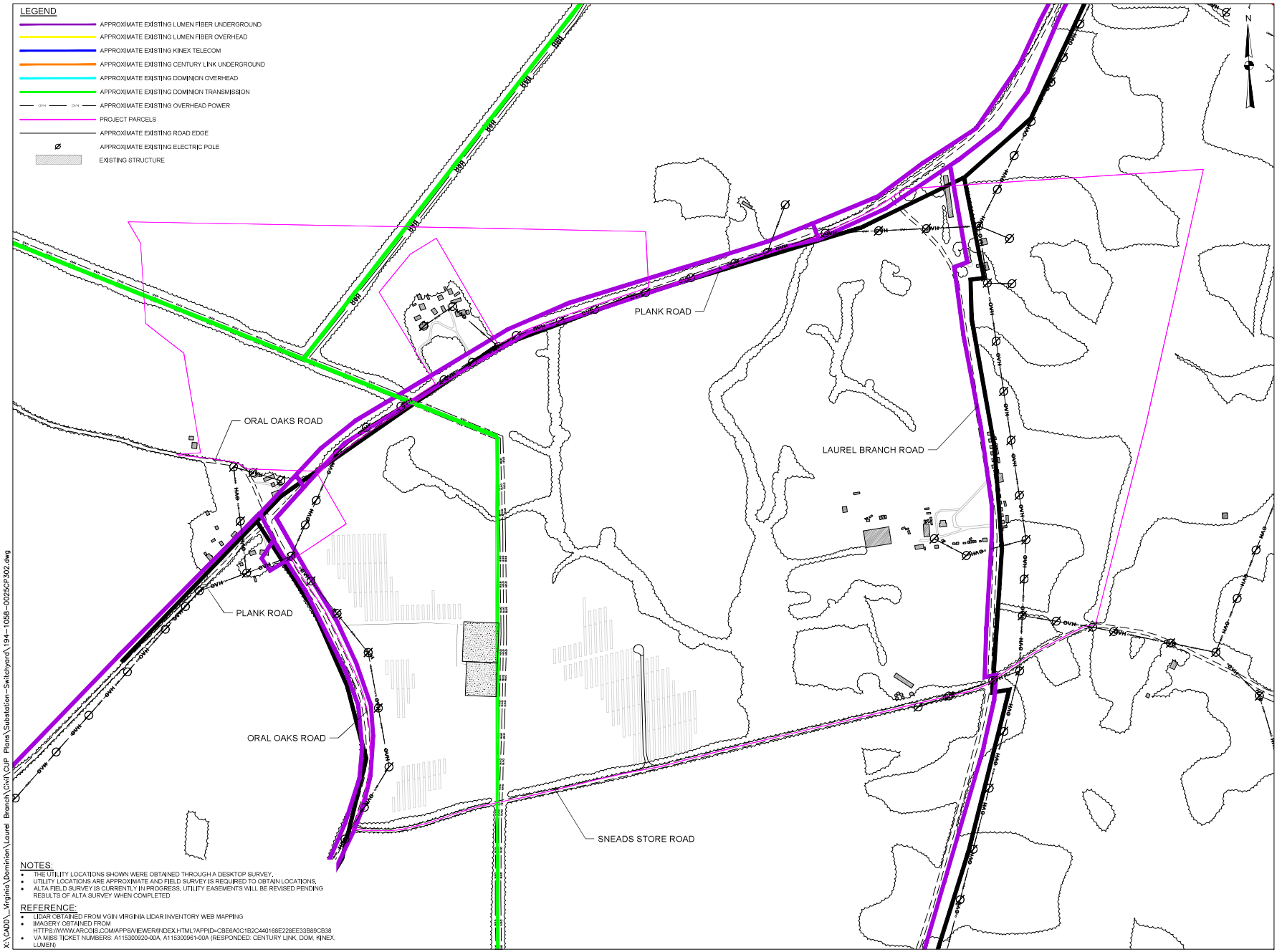
va811.com Dig With CARE

DATE:	08/19/2022
DRAWN BY:	GR
ENGINEER:	MS
APPROVED BY:	EO

PROJECT PHASE:
CONDITIONAL USE PERMIT SITE PLAN

SCALE:
1" = 300'

SHEET NO.:
CP301



NOTES:
- THE UTILITY LOCATIONS SHOWN WERE OBTAINED THROUGH A DESKTOP SURVEY.
- UTILITY LOCATIONS ARE APPROXIMATE AND FIELD SURVEY IS REQUIRED TO OBTAIN LOCATIONS.
- ALTA FIELD SURVEY IS CURRENTLY IN PROGRESS, UTILITY EASEMENTS WILL BE REVISED PENDING RESULTS OF ALTA SURVEY WHEN COMPLETED

REFERENCE:
- LIDAR OBTAINED FROM VGIN VIRGINIA LIDAR INVENTORY WEB MAPPING
- IMAGERY OBTAINED FROM HTTPS://WWW.ARCGIS.COM/APPS/VIEWER/INDEX.HTML?APPID=CBE6A0C1B2C440168E228EE33B89CB38
- VA MISS TICKET NUMBERS: A115300920-00A, A115300961-00A (RESPONDED: CENTURY LINK, DOM, KINEX, LUMEN)

X:\CADD_Virginia\Dominion\Laurel Branch\Civil\CUP Plans\Substation-Switchyard\194-1058-0025CP302.dwg

Dominion Energy

TETRA TECH

TETRA TECH, INC.
4101 COX ROAD;
SUITE 120
GLEN ALLEN, VA 23060
TEL: (804) 290-4321
FAX: (804) 270-2739

STAMP:

COMMONWEALTH OF VIRGINIA
MICHAEL K. SHORT
Lic. No. 047828
08/19/2022
PROFESSIONAL ENGINEER

LAUREL BRANCH SWITCHYARD AND SUBSTATION PROJECT
DOMINION ENERGY VIRGINIA
LUNENBURG COUNTY
VIRGINIA

PROJECT NUMBERS:
194-1058-0025

SHEET TITLE:
DESKTOP EVALUATION UTILITY MAP

SHEET SIZE: ARCH "D"
24" X 36" (610 x 914)
0 ½" 1"

NO.	REVISION	DATE	INIT.

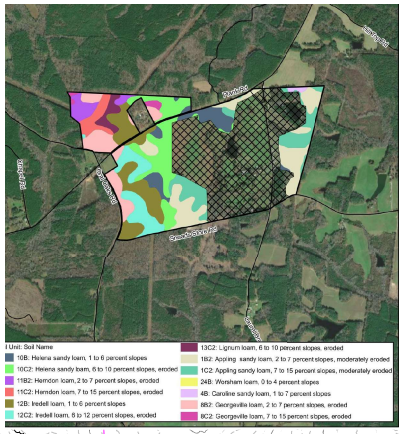
va811.com Dig With CARE

DATE:	08/19/2022
DRAWN BY:	GR
ENGINEER:	MS
APPROVED BY:	EO

PROJECT PHASE:
CONDITIONAL USE PERMIT SITE PLAN

SCALE:
1" = 300'

SHEET NO.:
CP302



NOTES:

1. IN PLACES OF CUT AND FILL, TOPSOIL SHALL BE STOCKPILED AND RE-SPREAD ONCE FINISHED ELEVATIONS ARE ACHIEVED. THE LOCATION OF SOIL STOCKPILES WILL BE DETERMINED DURING CONSTRUCTION LEVEL PLANS.
2. STEEP SLOPE AREAS REPRESENT SLOPES GREATER THAN 12% AND HAVE AN AREA OF 5,000 SQUARE FOOT OR LESS. GRADING WILL BE DETERMINED DURING CONSTRUCTION LEVEL PLANS.

X:\CADD_Virginia\Dominion\Laurel Branch\Civil\CUP Plans\Substation-Switchyard\194-1058-0025CP303.dwg

Dominion Energy®

TETRA TECH

TETRA TECH, INC.
4101 COX ROAD;
SUITE 120
GLEN ALLEN, VA 23060
TEL: (804) 290-4321
FAX: (804) 270-2739

STAMP:

COMMONWEALTH OF VIRGINIA
MICHAEL K. SHORT
Lic. No. 047828
08/19/2022
PROFESSIONAL ENGINEER

LAUREL BRANCH SWITCHYARD AND SUBSTATION PROJECT
DOMINION ENERGY VIRGINIA
LUNENBURG COUNTY
VIRGINIA

PROJECT NUMBERS:
194-1058-0025

SHEET TITLE:
DRAFT GRADING PLAN SHEET

SHEET SIZE: ARCH "D"
24" X 36" (610 x 914)
0 ½" 1"

NO.	REVISION	DATE	INIT.

va811.com Dig With CARE

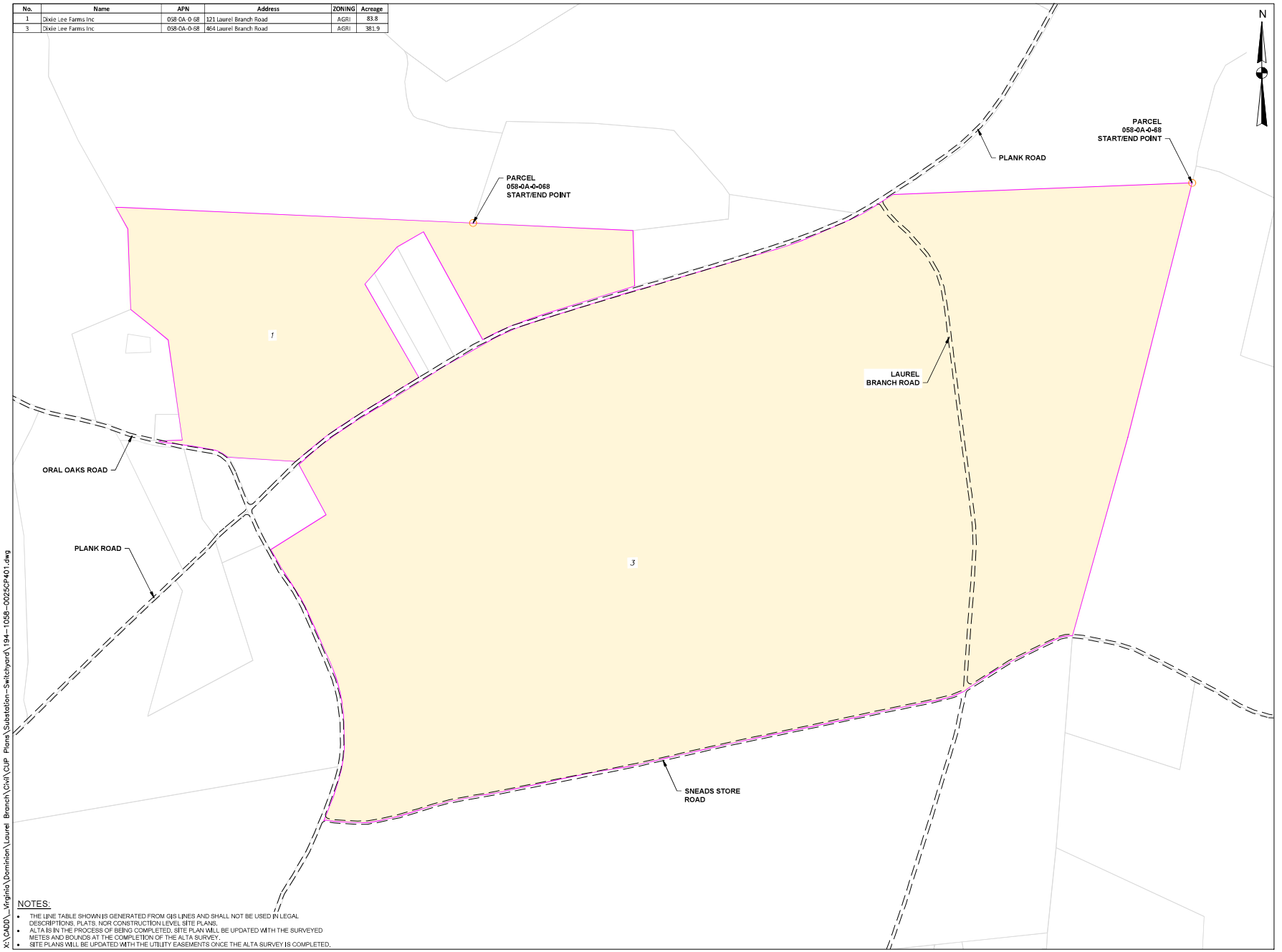
DATE:	08/19/2022
DRAWN BY:	GR
ENGINEER:	MS
APPROVED BY:	EO

PROJECT PHASE:
CONDITIONAL USE PERMIT SITE PLAN

SCALE:
1" = 300'

SHEET NO.:
CP303

No.	Name	APN	Address	ZONING	Acreage
1	Dixie Lee Farms Inc	058-0A-0-68	121 Laurel Branch Road	AGRI	83.8
3	Dixie Lee Farms Inc	058-0A-0-68	464 Laurel Branch Road	AGRI	381.9



NOTES:

- THE LINE TABLE SHOWN IS GENERATED FROM GIS LINES AND SHALL NOT BE USED IN LEGAL DESCRIPTIONS, PLATS, NOR CONSTRUCTION LEVEL SITE PLANS.
- ALTA IS IN THE PROCESS OF BEING COMPLETED. SITE PLAN WILL BE UPDATED WITH THE SURVEYED METES AND BOUNDS AT THE COMPLETION OF THE ALTA SURVEY.
- SITE PLANS WILL BE UPDATED WITH THE UTILITY EASEMENTS ONCE THE ALTA SURVEY IS COMPLETED.

X:\CADD_Virginia\Dominion\Laurel Branch\Civil\CUP Plans\Substation-Switchyard\194-1058-0025CP401.dwg

Dominion Energy

TETRA TECH

TETRA TECH, INC.
4101 COX ROAD,
SUITE 120
GLEN ALLEN, VA 23060
TEL: (804) 290-4321
FAX: (804) 270-2739

STAMP:

COMMONWEALTH OF VIRGINIA
MICHAEL K. SHORT
Lic. No. 047828
08/19/2022
PROFESSIONAL ENGINEER

LAUREL BRANCH
SWITCHYARD AND
SUBSTATION PROJECT
DOMINION ENERGY VIRGINIA
LUNENBURG COUNTY
VIRGINIA

PROJECT NUMBERS:
194-1058-0025

SHEET TITLE:
METES AND BOUNDS
INDEX SHEET

SHEET SIZE: ARCH "D"
24" X 36" (610 x 914)
0 ½" 1"

NO.	REVISION	DATE	INIT.

va811.com Dig With CARE

DATE:	08/19/2022
DRAWN BY:	GR
ENGINEER:	MS
APPROVED BY:	EO

PROJECT PHASE:
CONDITIONAL USE PERMIT SITE PLAN

SCALE:
1" = 300'

SHEET NO.:
CP401

(1) APN: 058-0A-0-68		
Line #	Length (FT)	Direction
L1	2551	N87° 28' 12"W
L2	177	S28° 55' 25"E
L3	574	S2° 04' 32"E
L4	191	S50° 54' 28"E
L5	154	S50° 28' 50"E
L6	536	S8° 01' 20"E
L7	185	S7° 58' 37"E
L8	169	S87° 27' 19"W
L9	72	S79° 00' 03"E
L10	105	S82° 33' 21"E
L11	109	S81° 22' 49"E
L12	96	S80° 12' 43"E
L13	53	S75° 02' 05"E
L14	79	S57° 12' 21"E
L15	486	S86° 34' 50"E
L16	112	N48° 39' 11"E
L17	66	N50° 43' 50"E
L18	64	N50° 45' 05"E
L19	70	N53° 02' 45"E
L20	66	N55° 21' 17"E
L21	138	N56° 19' 02"E
L22	158	N58° 32' 42"E
L23	81	N59° 47' 29"E
L24	143	N57° 32' 55"E
L25	166	N58° 00' 14"E
L26	768	N29° 57' 35"W
L27	102	N41° 01' 46"E
L28	248	N40° 46' 57"E
L29	218	N60° 04' 03"E
L30	879	S28° 41' 19"E
L31	35	N61° 43' 14"E
L32	80	N62° 58' 28"E
L33	153	N66° 18' 25"E
L34	166	N70° 48' 12"E
L35	717	N72° 41' 17"E
L36	397	N1° 38' 15"W
L37	1143	N87° 20' 03"W

(3) APN: 058-0A-0-68		
Line #	Length (FT)	Direction
L45	2135	S87° 45' 13"W
L46	318	S59° 03' 47"W
L47	305	S66° 10' 34"W
L48	295	S69° 42' 41"W
L49	452	S73° 45' 12"W
L50	523	S73° 36' 18"W
L51	791	S72° 57' 37"W
L52	165	S70° 40' 39"W
L53	150	S66° 22' 07"W
L54	79	S62° 36' 33"W
L55	252	S60° 26' 52"W
L56	276	S58° 52' 56"W
L57	202	S58° 19' 12"W
L58	143	S57° 32' 55"W
L59	80	S60° 50' 54"W
L60	157	S58° 20' 01"W
L61	138	S56° 11' 22"W
L62	66	S55° 04' 48"W
L63	65	S53° 14' 28"W
L64	66	S51° 58' 41"W
L65	66	S49° 11' 13"W
L66	111	S48° 57' 12"W
L67	408	S28° 28' 37"E
L68	466	S57° 45' 44"W
L69	198	S30° 28' 00"E
L70	284	S31° 23' 15"E
L71	198	S24° 27' 23"E
L72	231	S23° 51' 43"E
L73	113	S21° 00' 39"E
L74	134	S14° 56' 23"E
L75	193	S6° 59' 18"E
L76	182	S1° 03' 50"E
L77	113	S6° 52' 42"W
L78	104	S12° 31' 20"W
L79	106	S17° 13' 16"W
L80	84	S19° 55' 55"W
L81	136	S21° 28' 21"W
L82	76	S84° 54' 55"E
L83	166	S86° 49' 35"E
L84	94	N87° 16' 03"E
L85	139	N78° 50' 17"E
L86	442	N74° 09' 08"E
L87	220	N79° 14' 27"E
L88	271	N79° 11' 17"E
L89	745	N78° 38' 05"E
L90	1024	N77° 40' 18"E
L91	638	N78° 15' 18"E
L92	322	N77° 35' 48"E
L93	302	N78° 39' 41"E
L94	106	N76° 58' 52"E
L95	129	N69° 03' 38"E
L96	126	N55° 37' 05"E
L97	140	N56° 41' 16"E
L98	135	N60° 09' 07"E
L99	300	N63° 22' 20"E
L100	112	N68° 01' 24"E
L101	63	N85° 59' 12"E
L102	1472	N15° 35' 26"E
L157	1872	N14° 10' 34"E

NOTES:

- THE LINE TABLE SHOWN IS GENERATED FROM GIS LINES AND SHALL NOT BE USED IN LEGAL DESCRIPTIONS, PLATS, NOR CONSTRUCTION LEVEL SITE PLANS.
- ALTA IS IN THE PROCESS OF BEING COMPLETED. SITE PLAN WILL BE UPDATED WITH THE SURVEYED METES AND BOUNDS AT THE TIME OF THE COMPLETION OF THE ALTA SURVEY

X:\CADD_Virginia\Dominion\Laurel Branch\Civil\CUP Plans\Substation-Switchyard\194-1058-0025CP402.dwg

Dominion Energy

TETRA TECH

TETRA TECH, INC.
4101 COX ROAD,
SUITE 120
GLEN ALLEN, VA 23060
TEL: (804) 290-4321
FAX: (804) 270-2739

STAMP:

COMMONWEALTH OF VIRGINIA
MICHAEL K. SHORT
Lic No. 047828
08/19/2022
PROFESSIONAL ENGINEER

LAUREL BRANCH SWITCHYARD AND SUBSTATION PROJECT
DOMINION ENERGY VIRGINIA
LUNENBURG COUNTY
VIRGINIA

PROJECT NUMBERS:
194-1058-0025

SHEET TITLE:
METES AND BOUNDS

SHEET SIZE: ARCH "D"
24" X 36" (610 x 914)
0 ½" 1"

NO.	REVISION	DATE	INIT.

va811.com Dig With CARE

DATE:	08/19/2022
DRAWN BY:	GR
ENGINEER:	MS
APPROVED BY:	EO

PROJECT PHASE:
CONDITIONAL USE PERMIT SITE PLAN

SCALE:
NTS

SHEET NO.:
CP402

TAB H

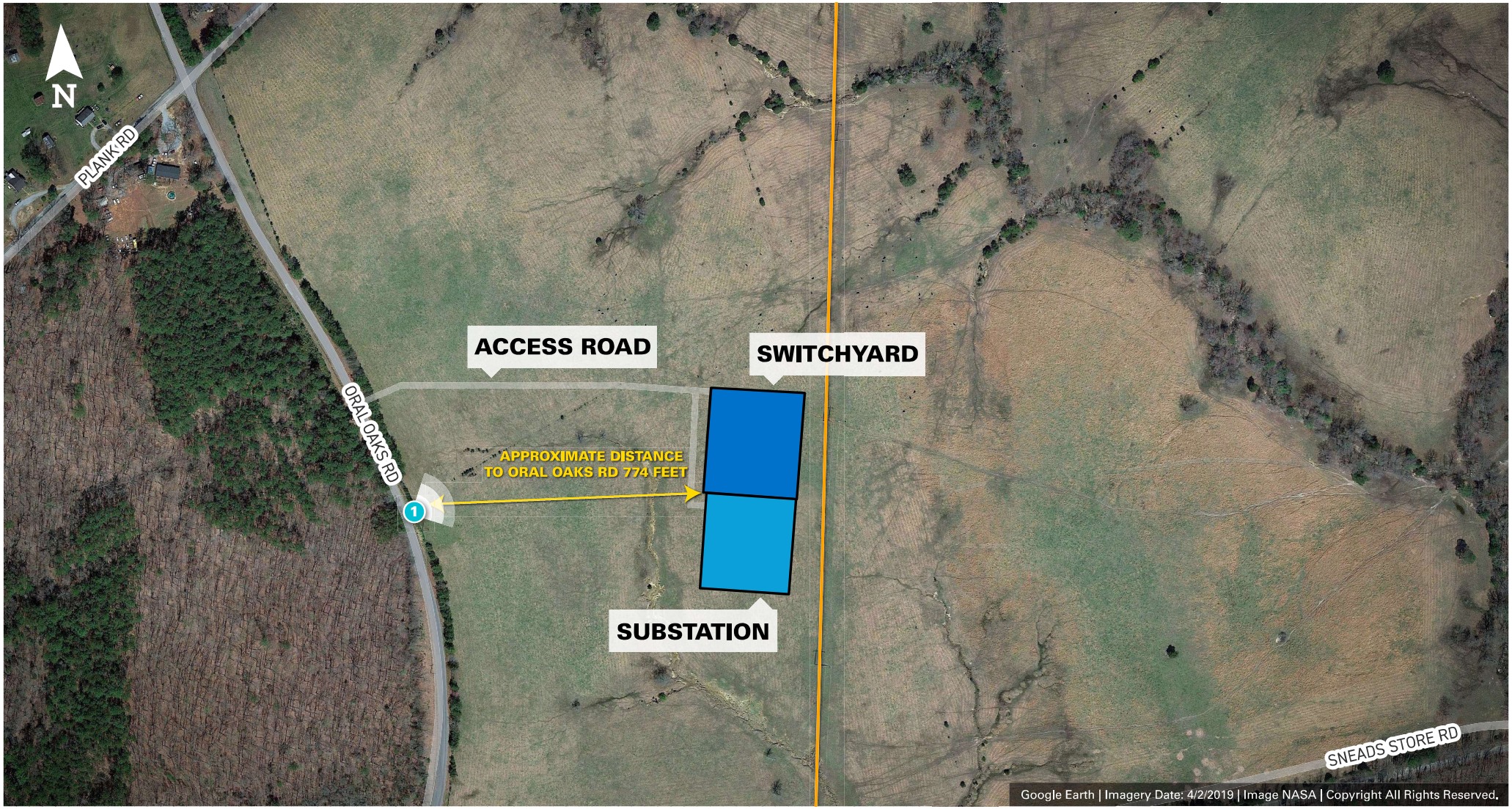
Switchyard and
Substation Design

LAUREL BRANCH
Substation/Switchyard Project

Photo Location Map

- 1 Viewpoint Location
- Switchyard Footprint
- Substation Footprint
- Existing Transmission Line

Dominion Energy®



LAUREL BRANCH

Substation/Switchyard Project

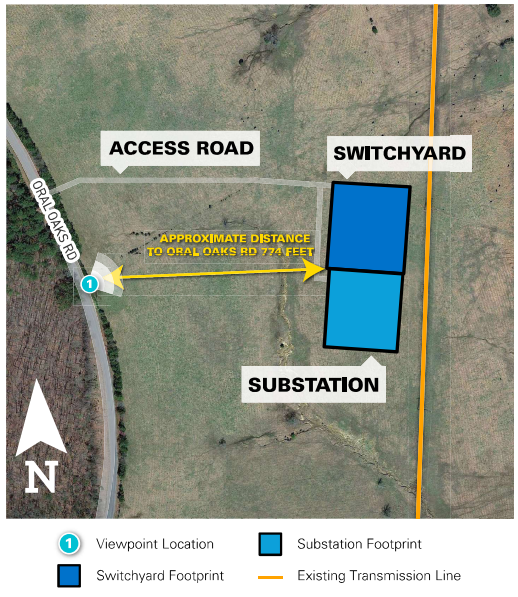
Simulation 1

Date: 01/27/2022

Time: 10:58 am

Viewing Direction:

East from Oral Oaks Rd.



Simulations are for discussion purposes only. Final design is subject to change pending public, engineering, and regulatory review.

Dominion Energy®

LAUREL BRANCH

Substation/Switchyard Project

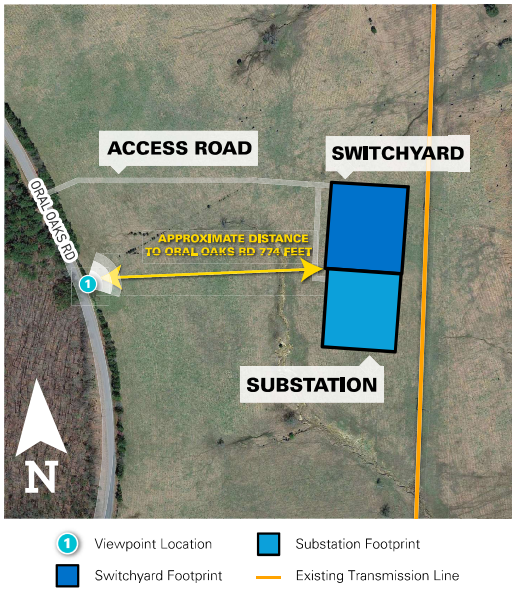
Simulation 1

Date: 01/27/2022

Time: 10:58 am

Viewing Direction:

East from Oral Oaks Rd.



Simulations are for discussion purposes only. Final design is subject to change pending public, engineering, and regulatory review.

Dominion Energy®

LAUREL BRANCH
Substation/Switchyard Project

3D Rendering 1

Simulations are for discussion purposes only. Final design is subject to change pending public, engineering, and regulatory review.

Dominion Energy®

LAUREL BRANCH
Substation/Switchyard Project

3D Rendering 1

Simulations are for discussion purposes only. Final design is subject to change pending public, engineering, and regulatory review.

Dominion Energy®

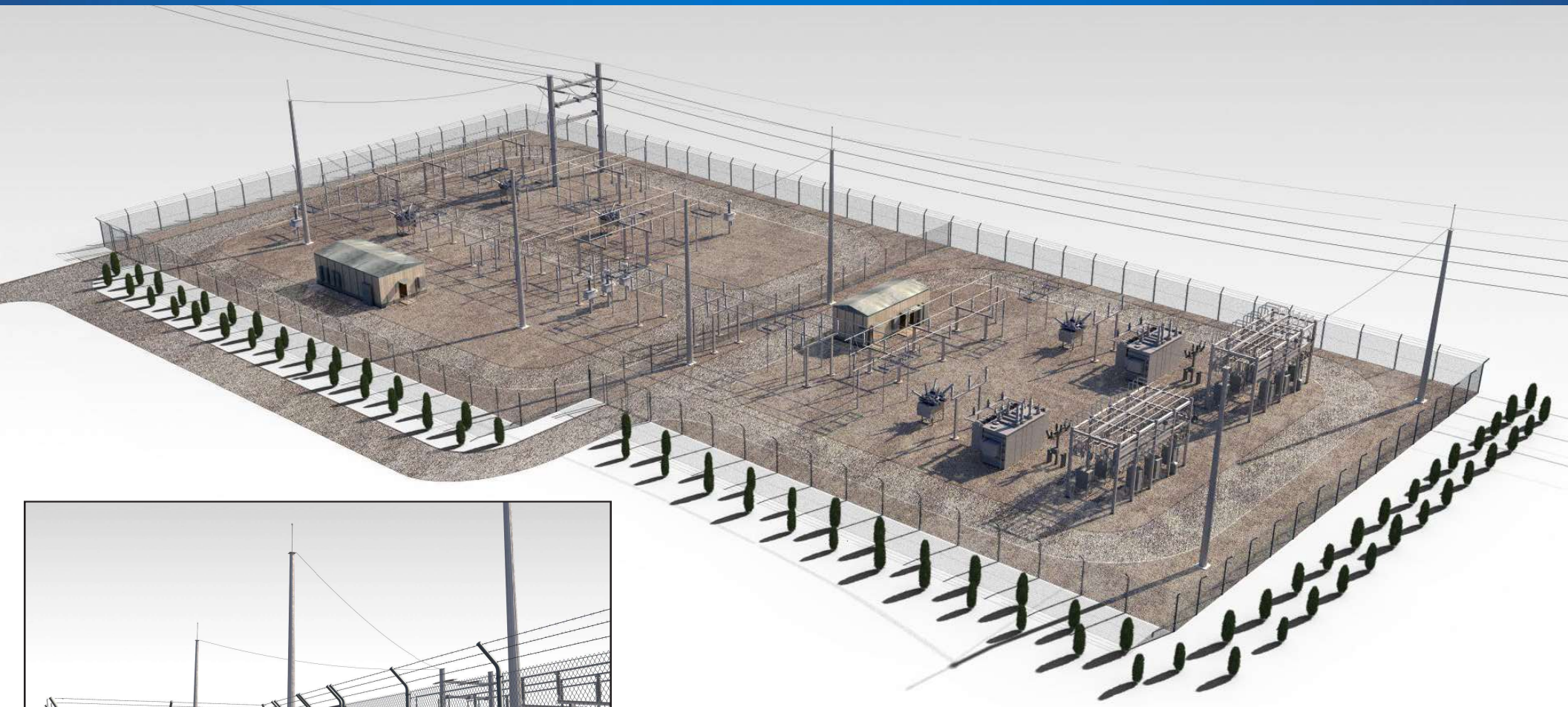
PROPOSED CONDITIONS

Included views of substation/switchyard area are meant to depict the intended materials, colors, and textures of the structures.

LAUREL BRANCH
Substation/Switchyard Project

Substation/Switchyard Detail

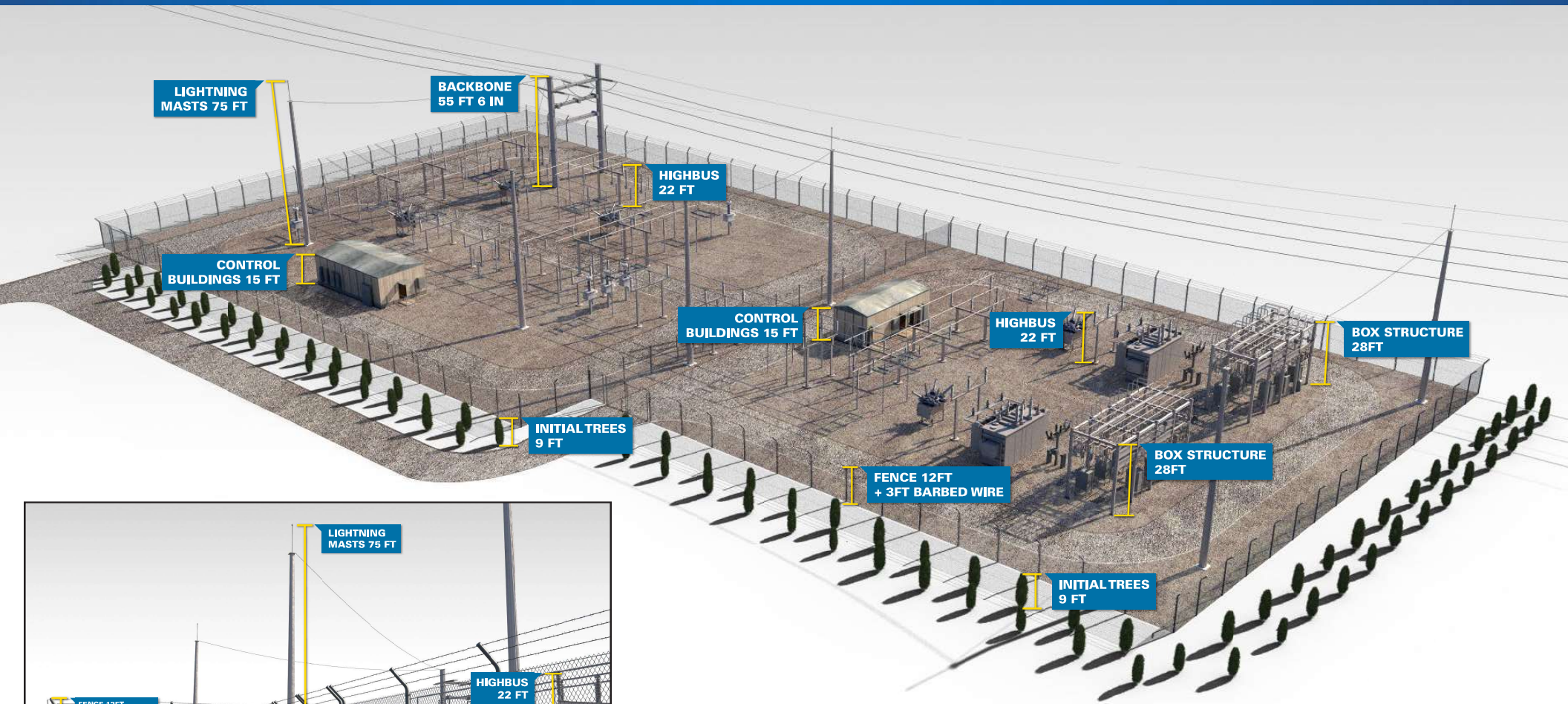
Dominion Energy®



LAUREL BRANCH
Substation/Switchyard Project

Substation/Switchyard Detail

Dominion Energy®



LAUREL BRANCH
Substation/Switchyard Project

Terrain Viewpoint Analysis

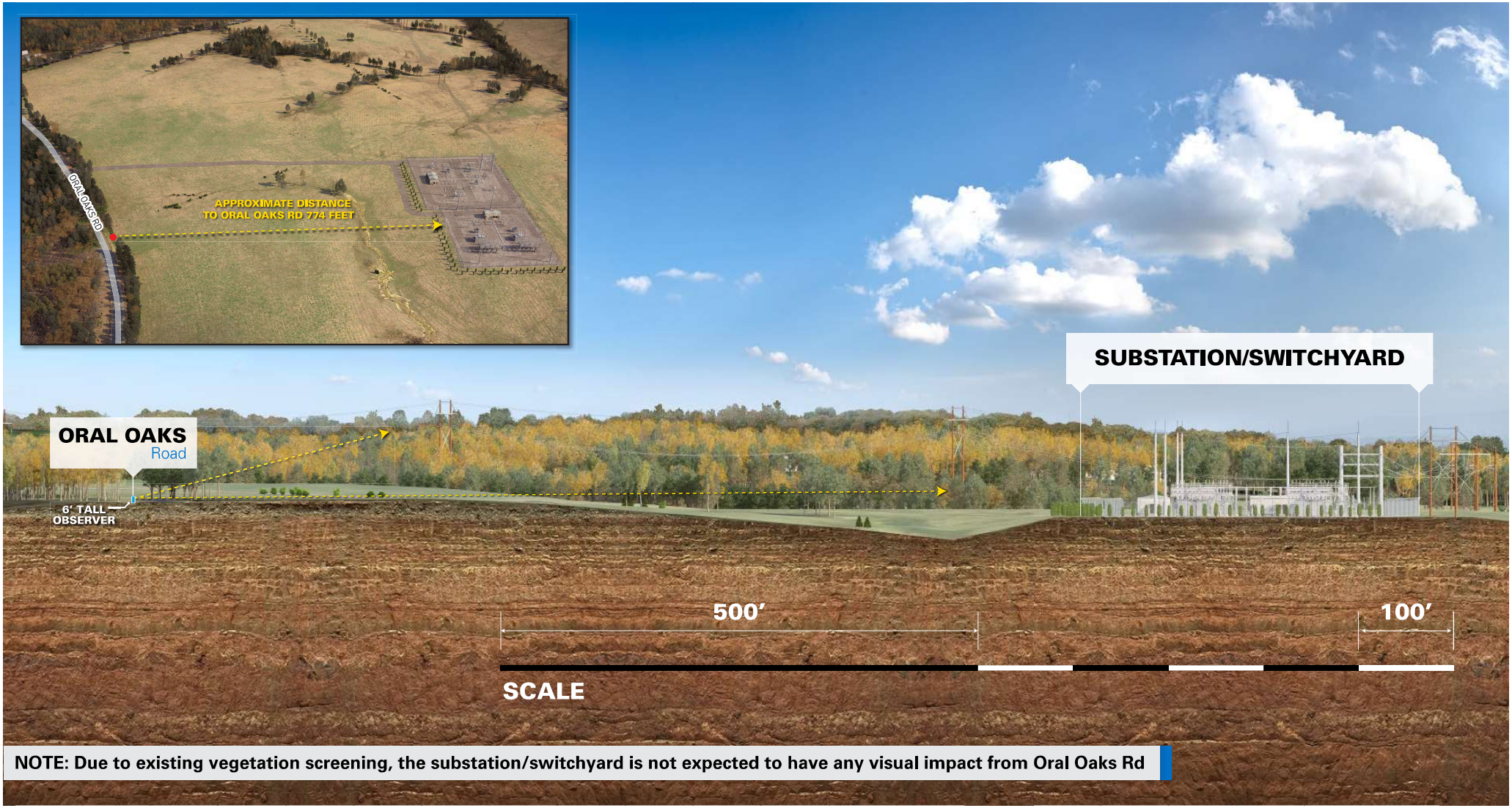
Dominion Energy®

NOTE: Due to existing vegetation screening, the substation/switchyard is not expected to have any visual impact from Oral Oaks Rd

LAUREL BRANCH
Substation/Switchyard Project

Terrain Viewpoint Analysis

Dominion Energy®



NOTE: Due to existing vegetation screening, the substation/switchyard is not expected to have any visual impact from Oral Oaks Rd

TAB I

Traffic Study

Transportation Assessment

Laurel Branch Solar Project: Switchyard and Substation

August 15, 2022

Prepared for

Dominion Energy®

600 E Canal Street
Richmond, VA 23219

Prepared by

TETRA TECH

4101 Cox Road, Suite 120
Glen Allen, VA 23060

Table of Contents

List of Tables

List of Figures

List of Appendices

Acronyms and Abbreviations

3D	three-dimensional
ADT	average daily traffic
BABS	Blackstone Area Bus System
CUP	Conditional Use Permit
GIS	geographic information system
GPS	global positioning system
KOP	key observation point
MWac	megawatts (alternating current)
O&M	operations and maintenance
Project Area	The 2,189± acres of privately-owned land where the proposed Project is located
Project	Laurel Branch Solar Project
STAA	Surface Transportation Assistance Act
VDOT	Virginia Department of Transportation
vpd	vehicles per day

1.0 OVERVIEW

Virginia Electric and Power Company (d/b/a Dominion Energy Virginia)("Dominion") is proposing a Substation and Switchyard as part of an 80 MWac utility-scale solar facility known as "Laurel Branch Solar" (the "Project") in Lunenburg County, Virginia (the "County"). The project will be located to the southwest of the Town of Kenbridge on 2,189 acres of land. Access to the site parcels is currently provided via several driveways and agricultural access ways, with the most direct access to the Substation and Switchyard located off of Oral Oaks Road. The proposed project calls for the redevelopment of existing agricultural land to support the construction of an 80 megawatt (MWac) solar photovoltaic power generation facility. Some of the existing single-family homes and several agricultural buildings on-site will be removed. As part of the project, 28 driveways will be constructed on the adjacent roadway system to provide temporary construction access and permanent operations and maintenance (O&M) access to the site.

As part of this assessment, Tetra Tech developed vehicle trip generation estimates associated with the proposed project's anticipated peak construction workforce levels (estimated at up to 150 construction workers). Tetra Tech also reviewed existing traffic volumes and public transportation in the vicinity of the project site. Potential truck haul routes were also identified between the site parcels and the regional highway system to reduce construction-related traffic impacts.

The project is anticipated to generate approximately 486 vehicle trips on a typical weekday day with 149 vehicle trips occurring during the weekday morning and weekday evening commuter peak hours. This equates to approximately two to three new vehicle trips per minute during peak commuting hours. These estimates conservatively assume that all construction workers would arrive within the same hour and depart within the same hour. Additionally, there are several routes connecting the site to the regional roadway system thereby reducing impacts to any single roadway segment or intersection. Peak construction activities are currently anticipated to occur for a period of approximately two to three months. The remainder of the construction period is anticipated to generate fewer vehicle trips. The adjacent roadways are anticipated to have ample capacity to accommodate the temporary increase in daily and peak hour traffic. These trip generation estimates assume 50 daily delivery trips and six delivery trips during each of the peak hours during the peak two to three months of construction activity.

2.0 PROJECT DESCRIPTION

The project calls for the construction of a proposed 80 MWac solar photovoltaic power generation facility to be located on Routes 635 (Oral Oaks Road), 646 (Laurel Branch Road), 647 (Sneads Store Road), 655 (Plank Road) and637 (Craig Mill Road) and Hilltop Road in Lunenburg County, Virginia. The project site location in the context of the surrounding area roadways is shown in Figure 1. The project site currently supports agricultural fields and several single-family homes. Access to the site parcels is currently provided via several driveways and agricultural access ways.

The proposed project calls for the redevelopment of existing agricultural land to support the construction of an 80 MWac solar photovoltaic power generation facility. Some of the existing single-

family homes and agricultural buildings on-site will be removed. As part of the project, 28 driveways will be constructed on the adjacent roadway system to provide temporary construction access and permanent O&M access to the site including three driveways on Oral Oaks Road, six driveways on Laurel Branch Road, three driveways on Plank Road, nine driveways on Sneads Store Road, one driveway on Craig Mill Road and six driveways on Hilltop Road.

2.1 Existing Traffic Volumes

The site parcels are accessed by Routes 635 (Oral Oaks Road), 646 (Laurel Branch Road), 647 (Sneads Store Road), 655 (Plank Road) and 637 (Craig Mill Road) and Hilltop Road. These primary roadways serving the site are under Virginia Department of Transportation (VDOT) ownership and allow for two-way travel.

The estimated Average Daily Traffic (ADT) volume estimates for the study area roadways are summarized in Table 1 based on the most recent publicly available data from VDOT. VDOT traffic volume data is provided in Appendix A.

Table 1 Estimated Average Daily Traffic (ADT) Volumes

Roadway	ADT (vehicles per day)
Route 637 (east of Route 655)	1,100
Route 655	540
Route 637 (south of Route 655)	580
Route 635 (south of Route 655)	440
Route 635 (north of Route 655)	310
Sneads Store Road (east of Route 646)	100
Route 646	70
Route 647	20
Hilltop Road	40

Source: VDOT

2.2 Vehicle Trip Generation

The project will consist of three phases: construction, O&M, and decommissioning. The highest volume of site-related trips will occur during the peak construction phase of the project. Therefore, the trip generation for the peak construction phase workforce levels were estimated for this assessment.

Vehicle trip generation estimates for the project were developed based on anticipated construction operations for the project. Construction of the proposed solar facility is expected to include grading, panel installation, inspections, and equipment deliveries. It is anticipated that, at peak operations, the site could experience construction workforce levels of up to 150 construction workers at one time. Construction hours of operation are assumed to generally be 7 AM to 5 PM with construction workers arriving prior to 7 AM and departing after 5 PM. Since the peak hours of the adjacent street traffic are expected to occur sometime during the peak commuting periods of 7 AM to 9 AM and 4 PM to 6 PM, it is expected that the majority of construction workers would be arriving and departing the site outside of the typical weekday morning and weekday evening commuter peak hours of the adjacent street.

However, to present a conservative assessment of potential traffic increases associated with the project, it is assumed that all the construction workers would arrive during the weekday morning peak hour and depart during the weekday evening peak hour. The supporting trip generation calculations and assumptions for the proposed project's peak construction workforce levels are provided in Appendix B.

The Blackstone Area Bus System (BABS) operates public transit service in nearby Lunenburg County. BABS operates the Town and Country bus service on Route 637 which travels from Kenbridge to Victoria. The site is approximately 2 miles southwest of this public transportation service with the closest stop located at the W. 7th Avenue and Broad Street intersection in Kenbridge. For the purposes of this assessment, it was assumed that no construction workers would use public transit to access the site. Public transportation information is provided in Appendix C.

It is anticipated that some construction workers would arrive and depart the site together (carpooling). For purposes of this assessment, it was assumed that 10 percent of the construction workers will carpool to travel to/from the site with two workers per vehicle. Table 1 presents a summary of the trip generation estimates for the project's peak construction workforce activities.

Table 2 Trip Generation Summary – Peak Construction Period

Time Period/ Direction	Project Trips			
	Workforce Trips[1]	Non-Heavy Vehicle Deliveries[2]	Heavy Vehicles[3]	Total
Weekday AM Peak Hour				
Enter	143	1	2	146
Exit	0	1	2	3
Total	**143**	**2**	**4**	**149**
Weekday PM Peak Hour				
Enter	0	1	2	3
Exit	143	1	2	146
Total	**143**	**2**	**4**	**149**
Weekday Daily				
Enter	218	5	20	243
Exit	218	5	20	243
Total	**436**	**10**	**40**	**486**

1 Assumed 150 construction workers per day. Conservatively assumed trips overlap with adjacent street peaks. Peak construction activities are currently anticipated to occur for a period of approximately two to three months. The remainder of the construction period is anticipated to generate fewer vehicle trips.
2 Assumed 5 deliveries per day with 40 percent of trips occurring during peak hours.
3 Assumed 20 deliveries per day spread evenly throughout day.

As shown in Table 1, the peak construction activity for the proposed solar facility is expected to generate 486 new vehicle trips (243 entering and 243 exiting) on a typical weekday, with approximately 149 new vehicle trips (146 entering and 3 exiting) during the weekday morning peak hour and 149 new vehicle trips (3 entering and 146 exiting) during the weekday evening peak hour. These trip generation estimates assume 50 daily delivery trips and six delivery trips during each of the peak hours. The adjacent roadways are anticipated to have ample capacity to accommodate the temporary increase in daily and peak hour traffic with the project estimated to generate

approximately two to three additional trips every minute during peak hours. Additionally, there are several routes connecting the site to the regional roadway system thereby reducing impacts to any single roadway segment or intersection.

Post-Construction Conditions. Routine post-construction O&M activities at the site are not anticipated to result in a measurable increase in vehicle traffic. The number of maintenance workers traveling to the site is anticipated to be low and impacts to local traffic are not expected. The proposed solar facility will be unmanned during routine O&M and would only be inspected periodically. Therefore, the site is not expected to add a noticeable increase to existing traffic under typical O&M conditions. Personnel would be on site as necessary for any maintenance and repairs. Additionally, impacts resulting from decommissioning of the project are expected to be similar to or less than those experienced during construction.

2.3 Truck Haul Routes

The construction of the proposed solar facility will require large vehicle deliveries for a variety of materials that may include concrete, solar panels, earth materials, building materials, etc. Tetra Tech identified potential truck haul routes between the site parcels and the regional roadway system for these larger vehicles. For purposes of this assessment, it was assumed that the deliveries would originate from three primary geographical areas: Richmond, VA, Lynchburg, VA, and Raleigh, NC. Factors considered in developing potential truck haul routes are summarized below. Separate inbound and outbound travel routes are provided where appropriate.

- Prioritize designated Surface Transportation Assistance Act (STAA) truck routes from the VDOT database.
- Avoid roadway segments having bridge height and weight limitations based on a review of the VDOT database.
- Minimize impacts to schools, traffic signals, and areas with pedestrian activity.
- Minimize turns at locations with geometric limitations.

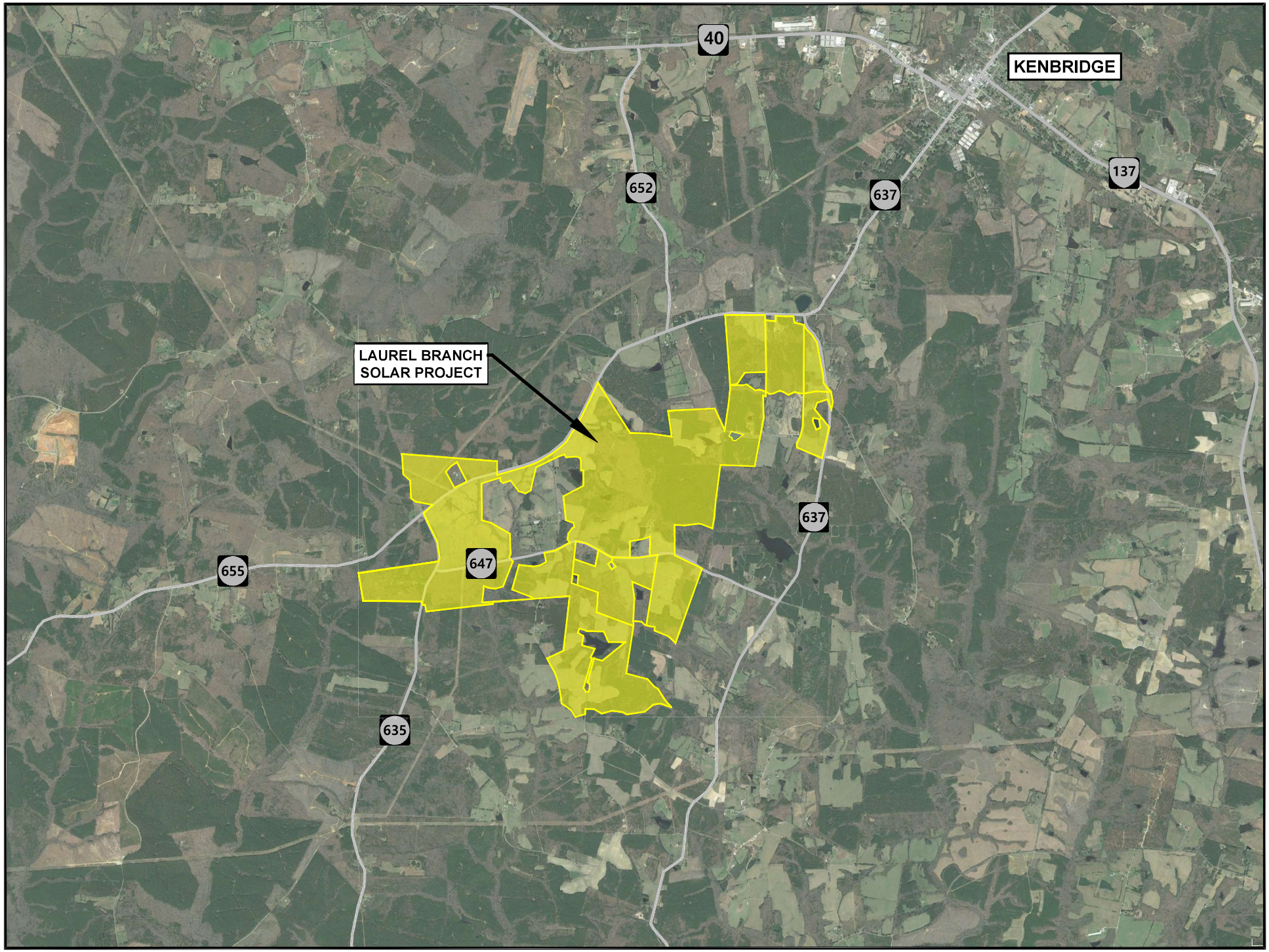
The potential regional truck haul routes are shown in Figure 2. The potential local truck haul routes to/from the proposed site driveways are shown in Figure 3. A preliminary Construction Traffic Management Plan (CTMP) has been prepared for the project and is provided in Appendix D.

3.0 CONCLUSIONS

The peak construction workforce levels for the proposed 80 MWac solar photovoltaic power generation facility is expected to generate approximately 149 trips during the weekday morning peak hour and 149 trips during the weekday evening peak hour during peak construction workforce activity. This equates to approximately two to three new vehicle trips per minute during peak hours. Peak construction activities are currently anticipated to occur for a period of approximately two to three months. The remainder of the construction period is anticipated to generate fewer vehicle trips. These trip generation estimates are conservative as the majority of peak hour trips are likely to occur outside of the typical weekday commuter peak hours of the adjacent street traffic and do not take credit for possible vehicle trip reductions associated with use of available public transportation. The

project will generate even less traffic post construction with routine inspection and maintenance of the solar panels and supporting equipment. Additionally, there are several routes connecting the site to the regional roadway system thereby reducing impacts to any single roadway segment or intersection. As part of the project, 28 driveways will be constructed to provide temporary construction access and permanent O&M access to the site from the public roadway network including three driveways on Oral Oaks Road, six driveways on Laurel Branch Road, three driveways on Plank Road, nine driveways on Sneads Store Road, one driveway on Craig Mill Road and six driveways on Hilltop Road. The adjacent roadways are anticipated to have ample capacity to accommodate the temporary increase in daily and peak hour traffic with existing daily traffic volumes of 20 vehicles per day (vpd) to 1,100 vpd. Potential truck haul routes were identified between the site parcels and the regional highway system to reduce construction-related traffic impacts.

FIGURES

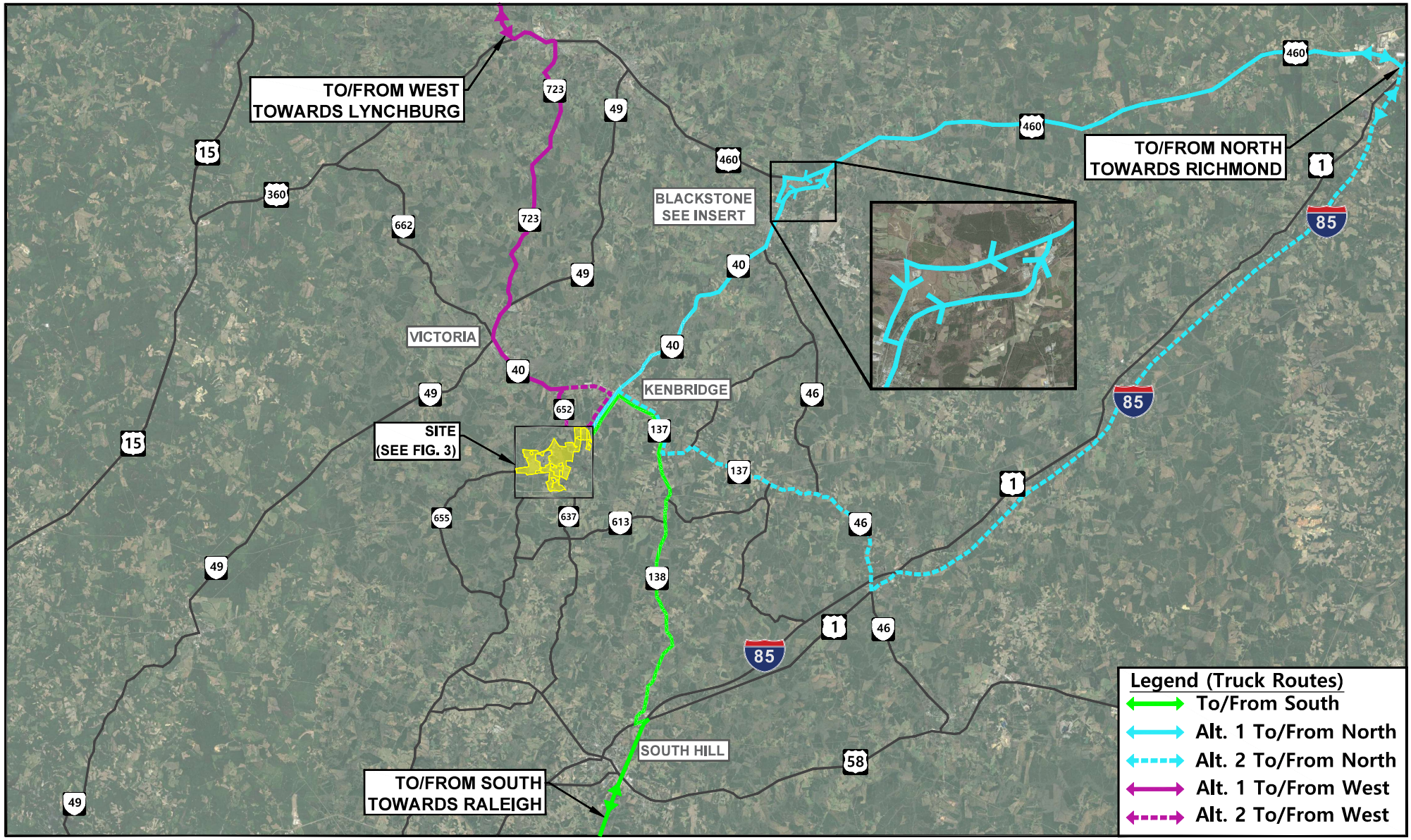


TETRA TECH

Laurel Branch Solar Project
Lunenburg County, Virginia

SITE LOCUS

FIGURE
1

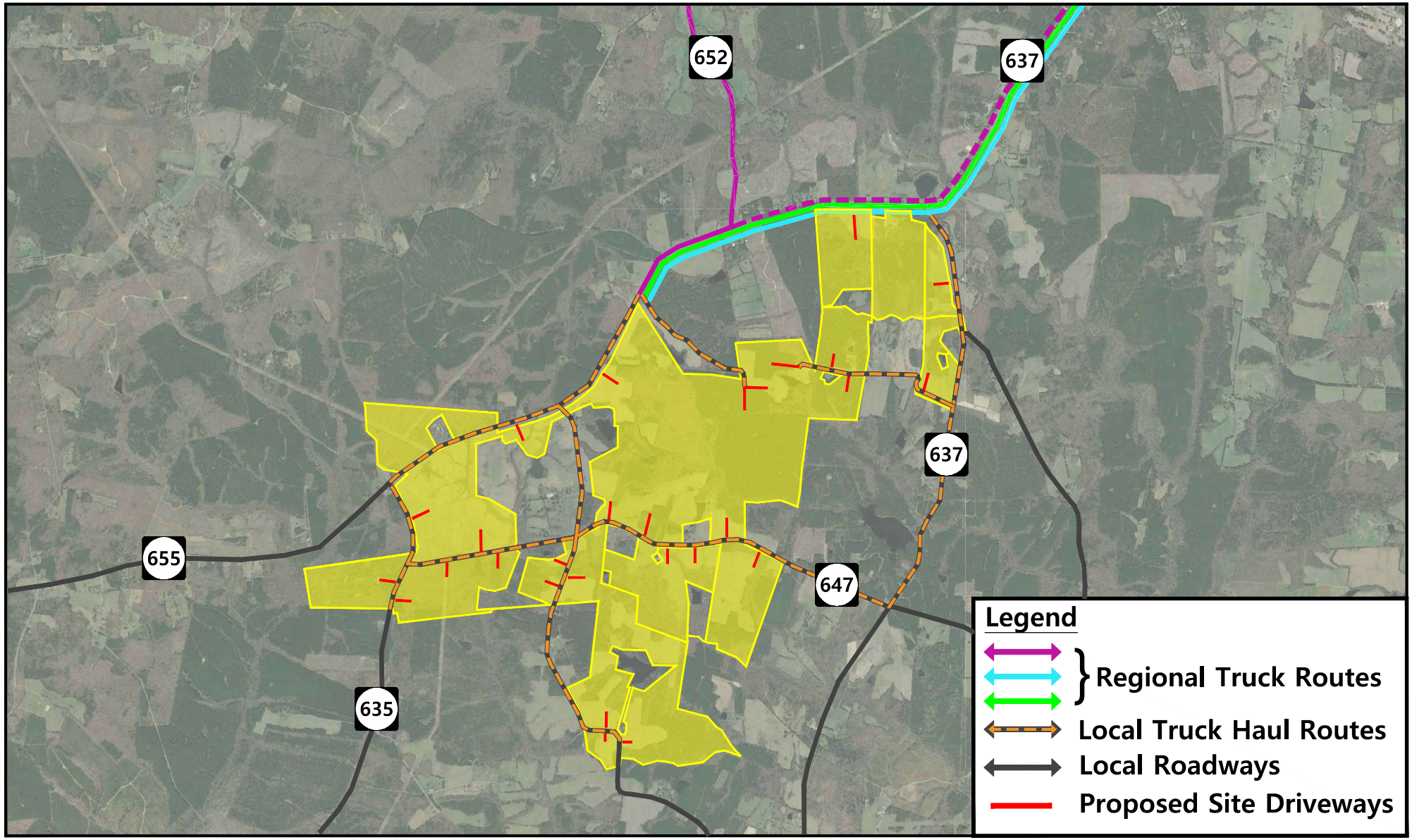


TETRA TECH

Lunenburg County, Virginia

Laurel Branch Solar
Potential Regional Truck Haul Routes

FIGURE
2

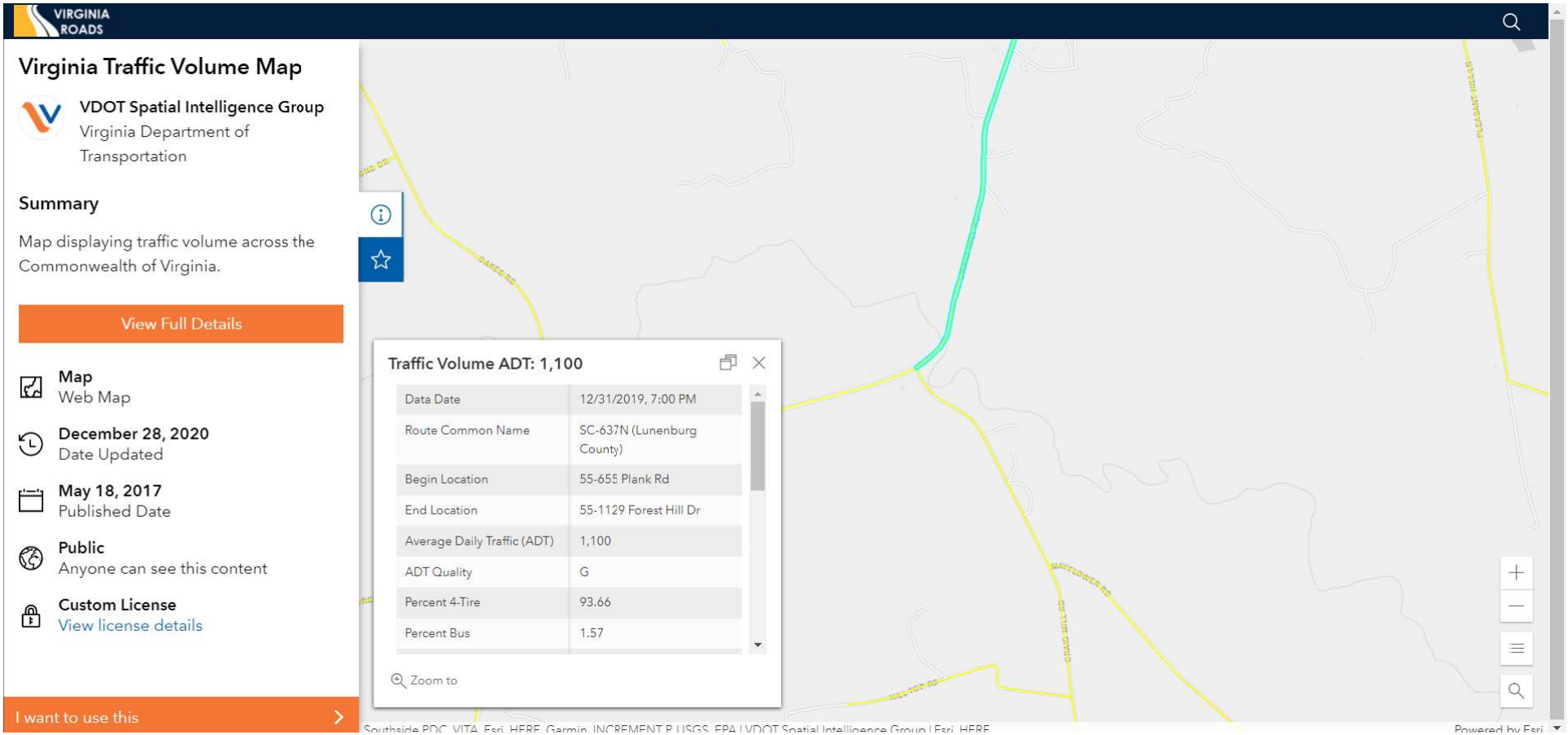


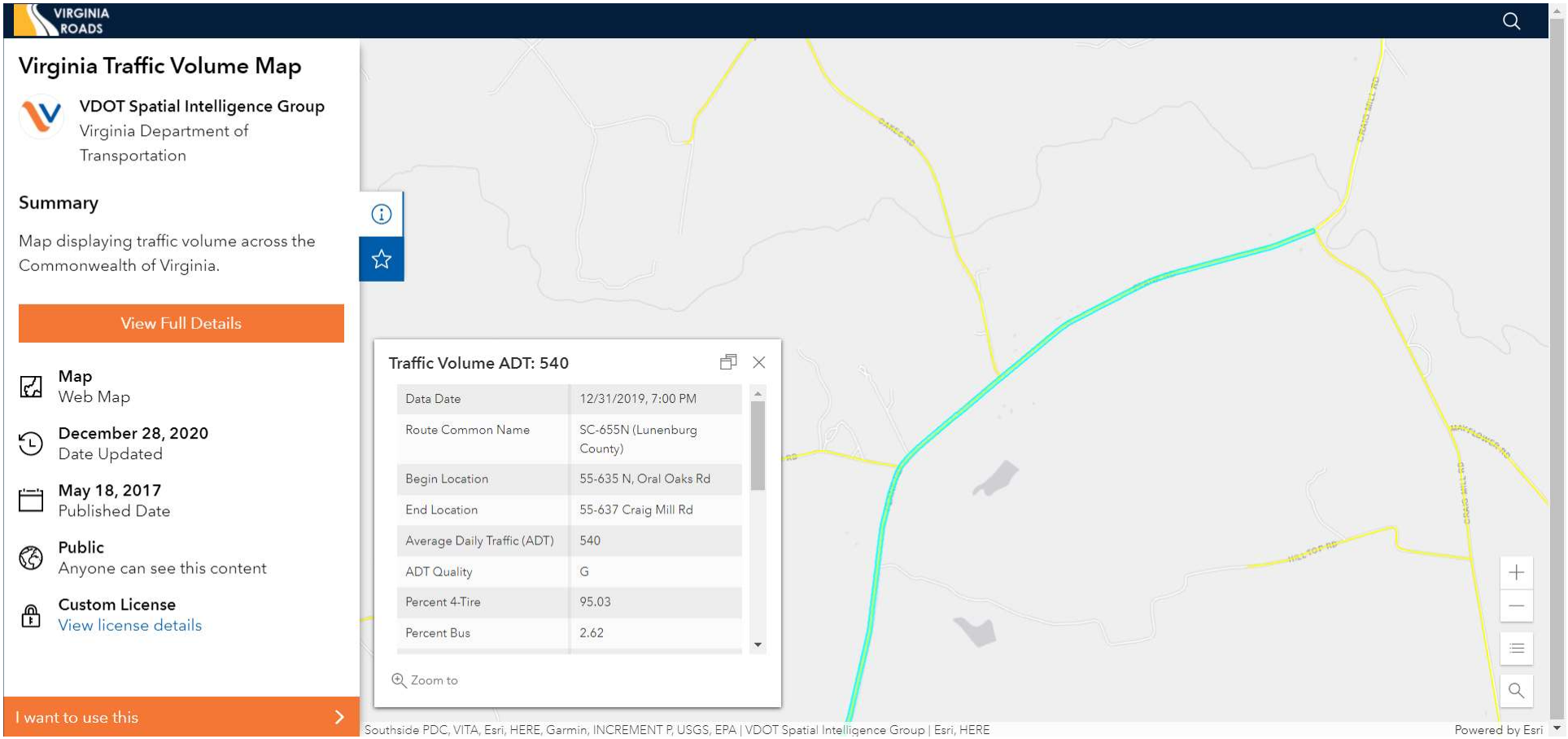
TETRA TECH

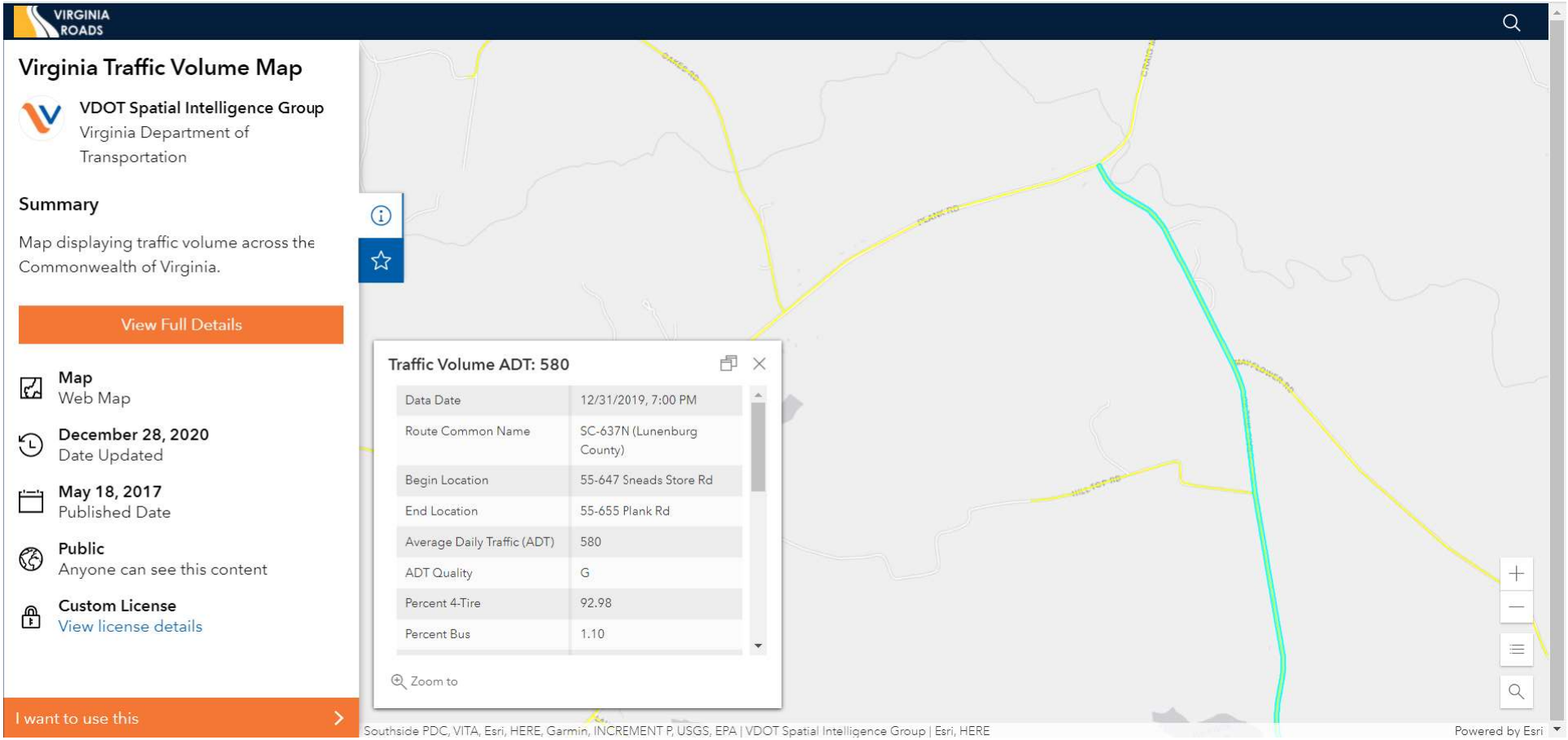
Lunenburg County, Virginia
Laurel Branch Solar
Potential Local Truck Haul Routes

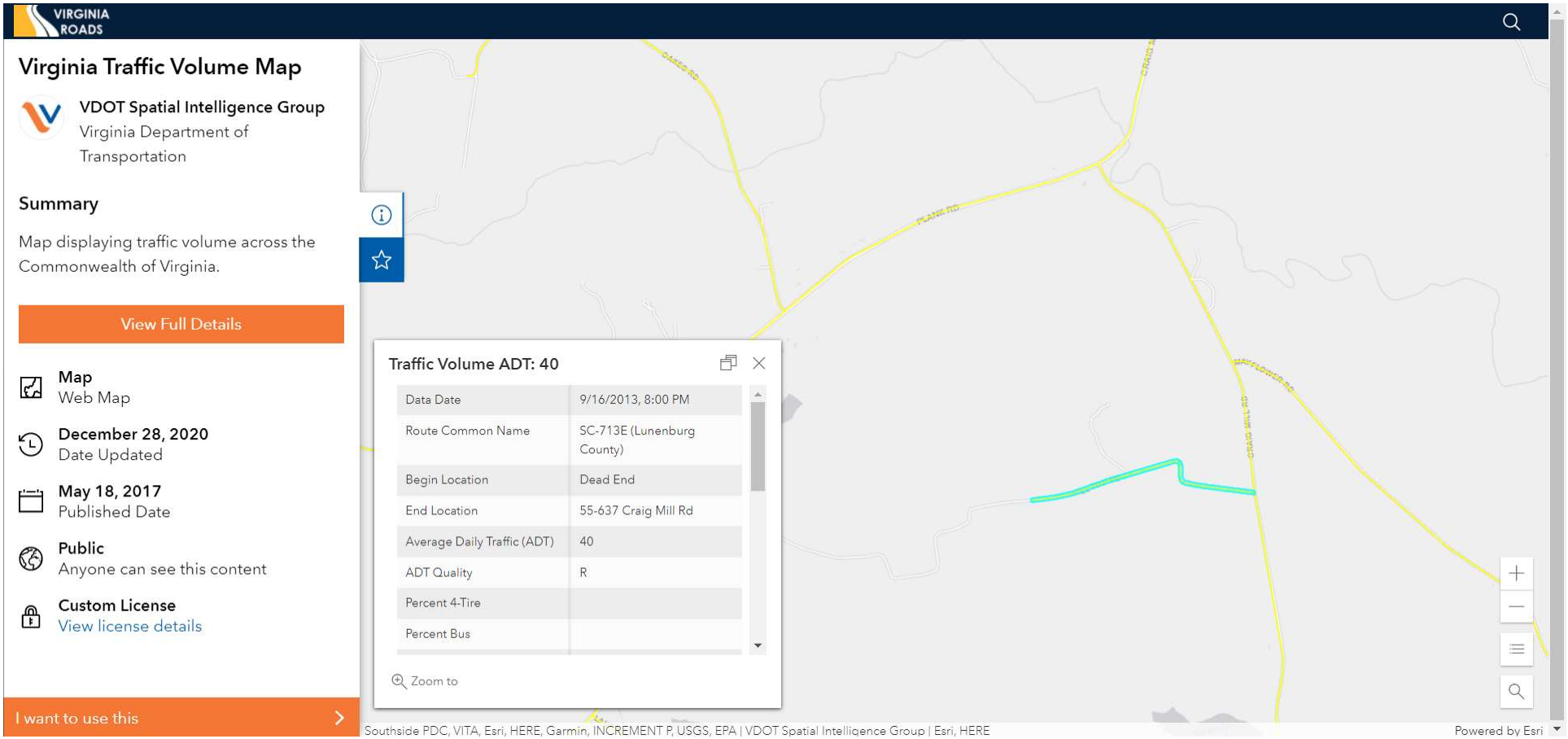
FIGURE
3

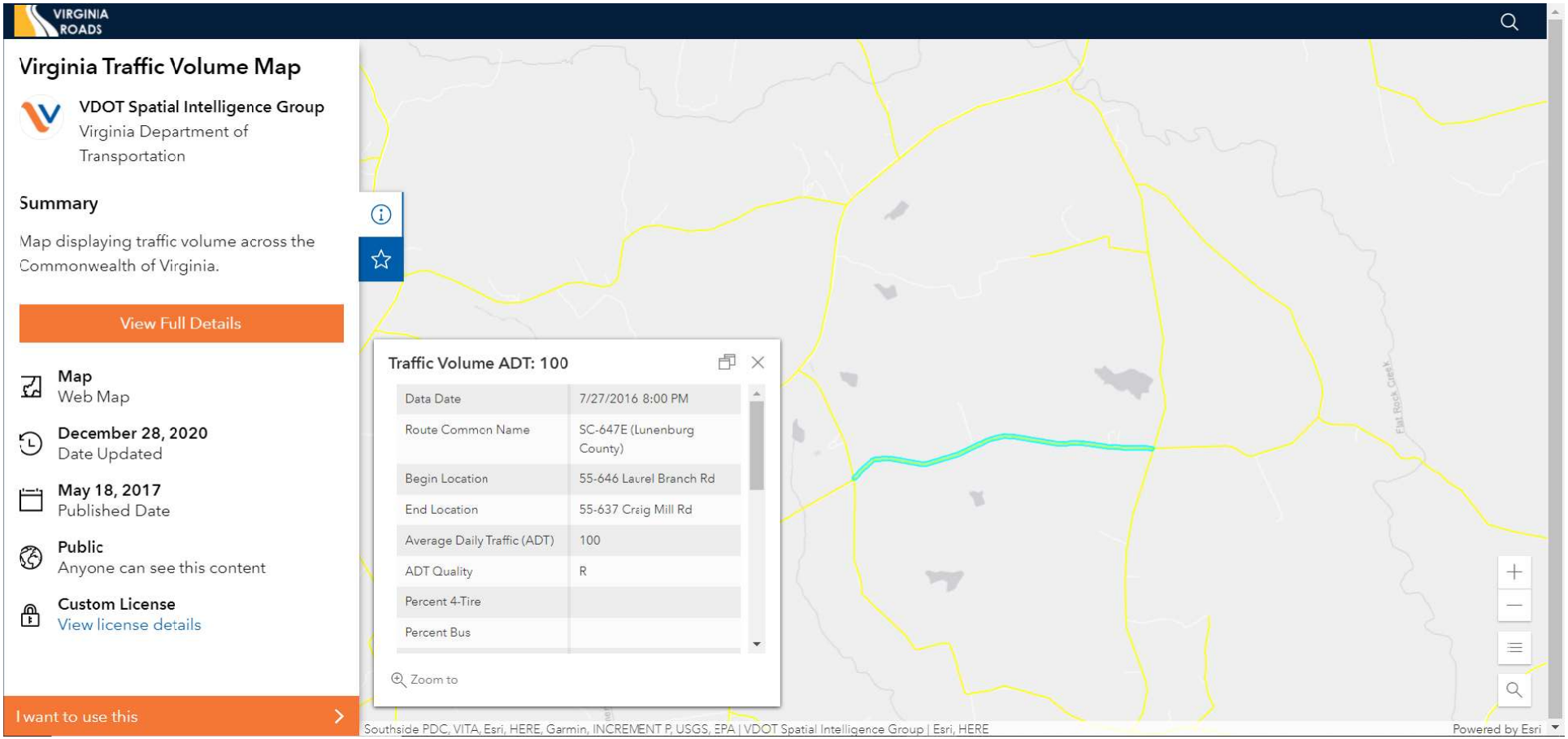
APPENDIX A: VDOT TRAFFIC VOLUME DATA

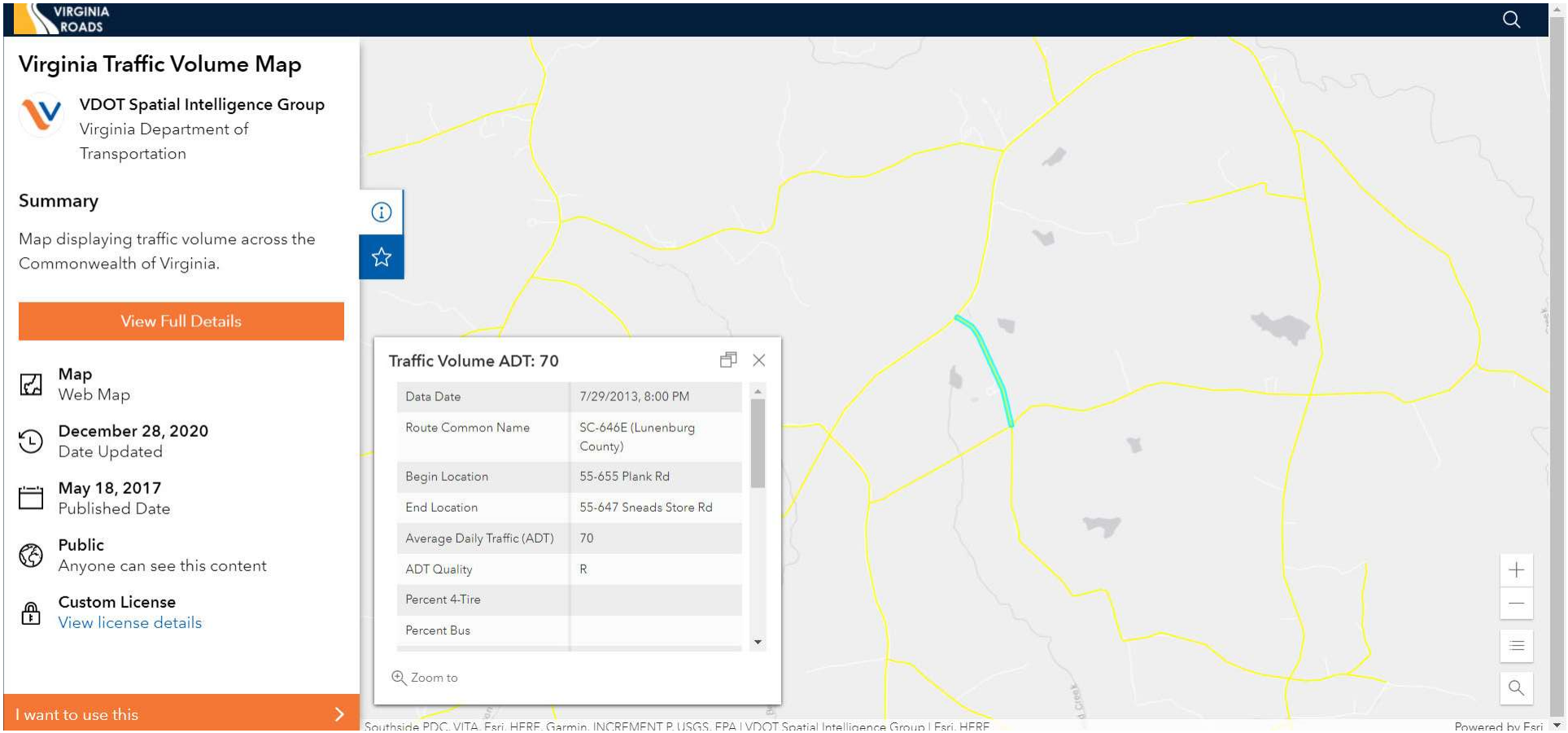

VIRGINIA ROADS
Virginia Traffic Volume Map
VDOT Spatial Intelligence Group
Virginia Department of Transportation
Summary
Map displaying traffic volume across the Commonwealth of Virginia.
View Full Details
Map
Web Map
December 28, 2020
Date Updated
May 18, 2017
Published Date
Public
Anyone can see this content
Custom License
View license details
I want to use this
Traffic Volume ADT: 1,100
Data Date 12/31/2019, 7:00 PM
Route Common Name SC-637N (Lunenburg County)
Begin Location 55-655 Plank Rd
End Location 55-1129 Forest Hill Dr
Average Daily Traffic (ADT) 1,100
ADT Quality G
Percent 4-Tire 93.66
Percent Bus 1.57
Zoom to
Powered by Esri

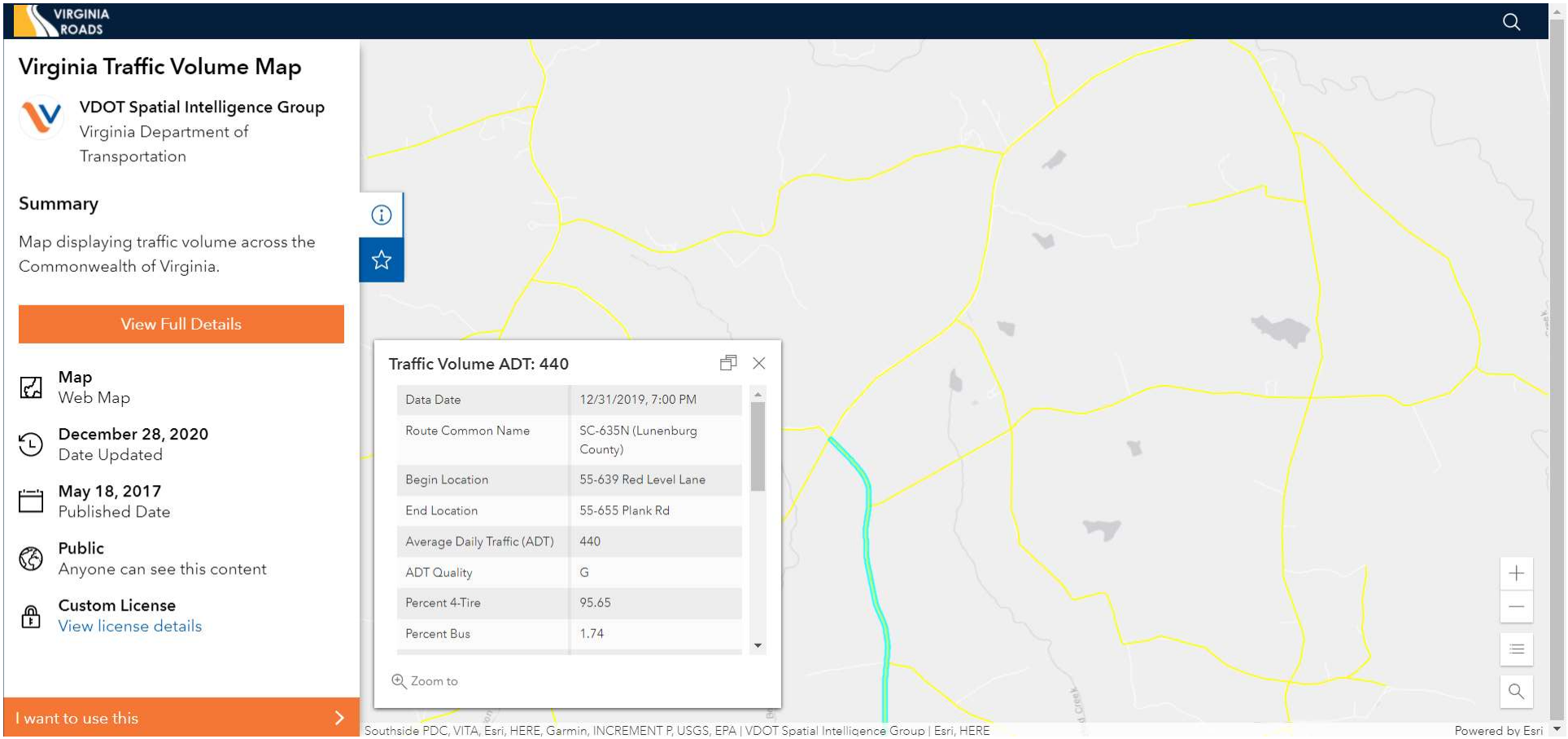

VIRGINIA ROADS
Virginia Traffic Volume Map
VDOT Spatial Intelligence Group
Virginia Department of Transportation
Summary
Map displaying traffic volume across the Commonwealth of Virginia.
View Full Details
Map
Web Map
December 28, 2020
Date Updated
May 18, 2017
Published Date
Public
Anyone can see this content
Custom License
View license details
I want to use this
Traffic Volume ADT: 540
Data Date 12/31/2019, 7:00 PM
Route Common Name SC-655N (Lunenburg County)
Begin Location 55-635 N, Oral Oaks Rd
End Location 55-637 Craig Mill Rd
Average Daily Traffic (ADT) 540
ADT Quality G
Percent 4-Tire 95.03
Percent Bus 2.62
Zoom to
Southside PDC, VITA, Esri, HERE, Garmin, INCREMENT P, USGS, EPA | VDOT Spatial Intelligence Group | Esri, HERE
Powered by Esri

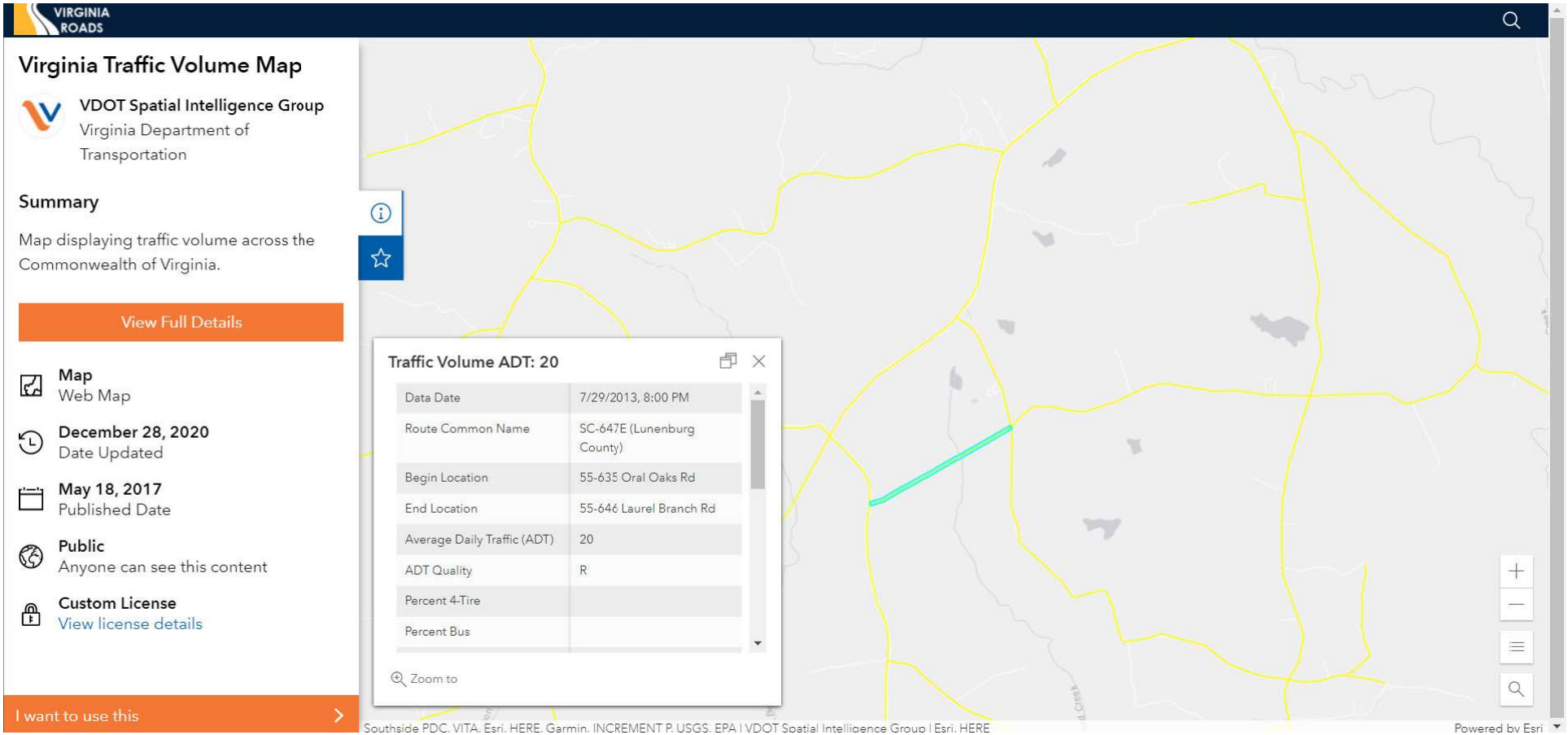

VIRGINIA ROADS
Virginia Traffic Volume Map
VDOT Spatial Intelligence Group
Virginia Department of Transportation
Summary
Map displaying traffic volume across the Commonwealth of Virginia.
View Full Details
Map
Web Map
December 28, 2020
Date Updated
May 18, 2017
Published Date
Public
Anyone can see this content
Custom License
View license details
I want to use this
Traffic Volume ADT: 580
Data Date 12/31/2019, 7:00 PM
Route Common Name SC-637N (Lunenburg County)
Begin Location 55-647 Sneads Store Rd
End Location 55-655 Plank Rd
Average Daily Traffic (ADT) 580
ADT Quality G
Percent 4-Tire 92.98
Percent Bus 1.10
Zoom to
Southside PDC, VITA, Esri, HERE, Garmin, INCREMENT P, USGS, EPA | VDOT Spatial Intelligence Group | Esri, HERE
Powered by Esri

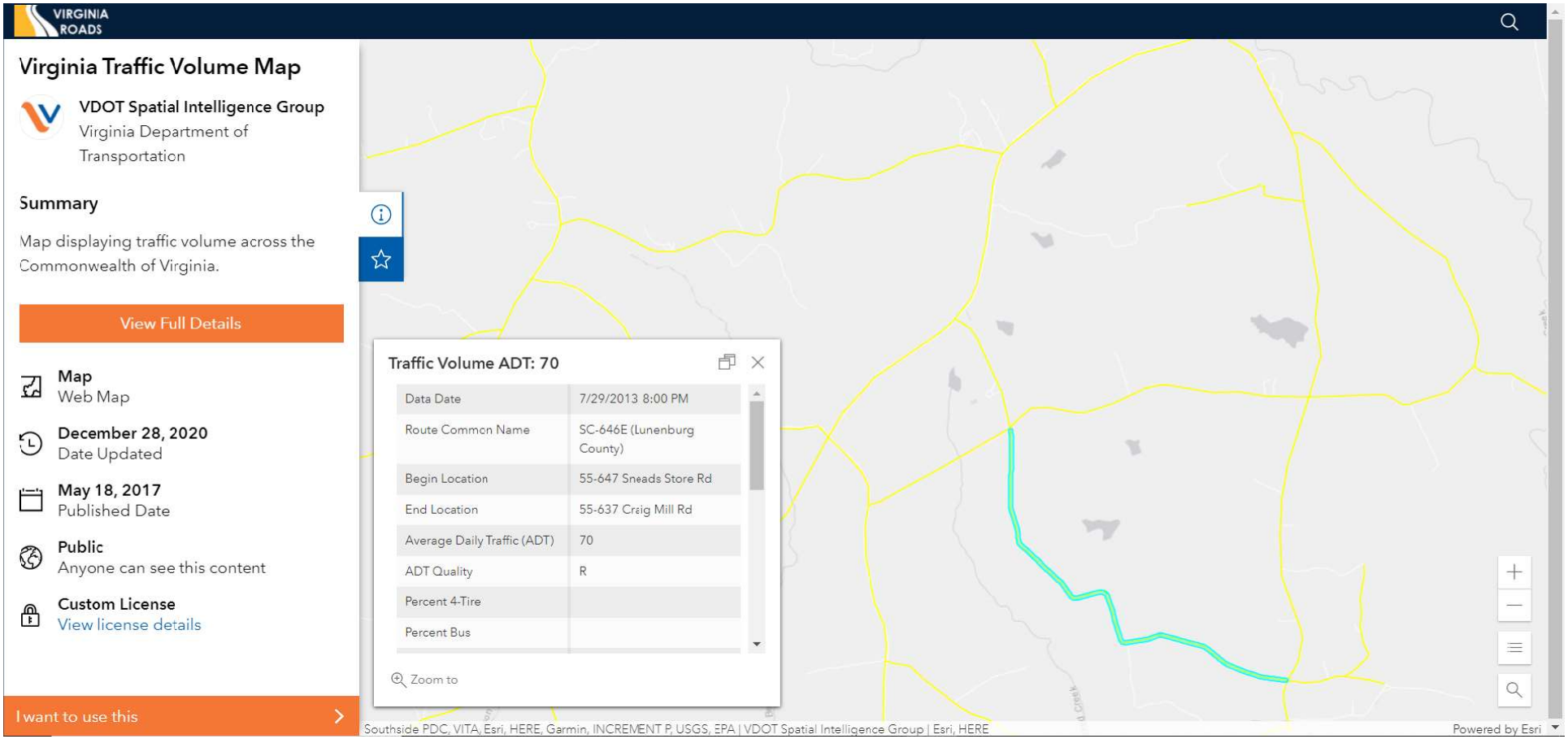

VIRGINIA ROADS
Virginia Traffic Volume Map
VDOT Spatial Intelligence Group
Virginia Department of Transportation
Summary
Map displaying traffic volume across the Commonwealth of Virginia.
View Full Details
Map
Web Map
December 28, 2020
Date Updated
May 18, 2017
Published Date
Public
Anyone can see this content
Custom License
View license details
I want to use this
Traffic Volume ADT: 40
Data Date 9/16/2013, 8:00 PM
Route Common Name SC-713E (Lunenburg County)
Begin Location Dead End
End Location 55-637 Craig Mill Rd
Average Daily Traffic (ADT) 40
ADT Quality R
Percent 4-Tire
Percent Bus
Zoom to
PLANK RD
CRAIG MILL RD
Southside PDC, VITA, Esri, HERE, Garmin, INCREMENT P, USGS, EPA | VDOT Spatial Intelligence Group | Esri, HERE
Powered by Esri

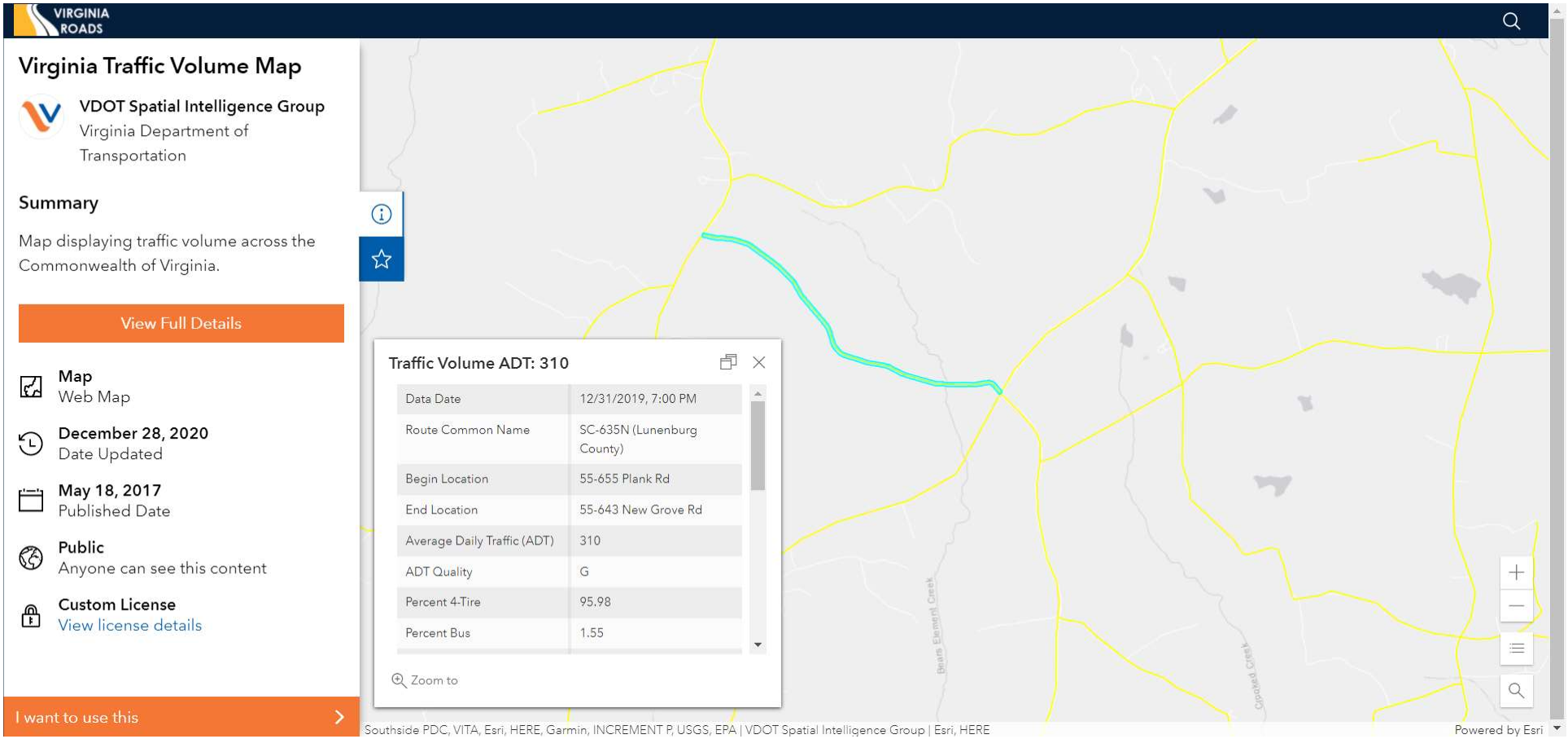

VIRGINIA ROADS
Virginia Traffic Volume Map
VDOT Spatial Intelligence Group
Virginia Department of Transportation
Summary
Map displaying traffic volume across the Commonwealth of Virginia.
View Full Details
Map
Web Map
December 28, 2020
Date Updated
May 18, 2017
Published Date
Public
Anyone can see this content
Custom License
View license details
I want to use this
Traffic Volume ADT: 100
Data Date 7/27/2016 8:00 PM
Route Common Name SC-647E (Lunenburg County)
Begin Location 55-646 Laurel Branch Rd
End Location 55-637 Craig Mill Rd
Average Daily Traffic (ADT) 100
ADT Quality R
Percent 4-Tire
Percent Bus
Zoom to
Flat Rock Creek
Southside PDC, VITA, Esri, HERE, Garmin, INCREMENT P, USGS, EPA | VDOT Spatial Intelligence Group | Esri, HERE
Powered by Esri


VIRGINIA ROADS
Virginia Traffic Volume Map
VDOT Spatial Intelligence Group
Virginia Department of Transportation
Summary
Map displaying traffic volume across the Commonwealth of Virginia.
View Full Details
Map
Web Map
December 28, 2020
Date Updated
May 18, 2017
Published Date
Public
Anyone can see this content
Custom License
View license details
I want to use this
Traffic Volume ADT: 70
Data Date 7/29/2013, 8:00 PM
Route Common Name SC-646E (Lunenburg County)
Begin Location 55-655 Plank Rd
End Location 55-647 Sneads Store Rd
Average Daily Traffic (ADT) 70
ADT Quality R
Percent 4-Tire
Percent Bus
Zoom to
Southside PDC, VITA, Esri, HERE, Garmin, INCREMENT P, USGS, EPA | VDOT Spatial Intelligence Group | Esri, HERE
Powered by Esri


VIRGINIA ROADS
Virginia Traffic Volume Map
VDOT Spatial Intelligence Group
Virginia Department of Transportation
Summary
Map displaying traffic volume across the Commonwealth of Virginia.
View Full Details
Map
Web Map
December 28, 2020
Date Updated
May 18, 2017
Published Date
Public
Anyone can see this content
Custom License
View license details
I want to use this
Traffic Volume ADT: 440
Data Date 12/31/2019, 7:00 PM
Route Common Name SC-635N (Lunenburg County)
Begin Location 55-639 Red Level Lane
End Location 55-655 Plank Rd
Average Daily Traffic (ADT) 440
ADT Quality G
Percent 4-Tire 95.65
Percent Bus 1.74
Zoom to
Southside PDC, VITA, Esri, HERE, Garmin, INCREMENT P, USGS, EPA | VDOT Spatial Intelligence Group | Esri, HERE
Powered by Esri


VIRGINIA ROADS
Virginia Traffic Volume Map
VDOT Spatial Intelligence Group
Virginia Department of Transportation
Summary
Map displaying traffic volume across the Commonwealth of Virginia.
View Full Details
Map
Web Map
December 28, 2020
Date Updated
May 18, 2017
Published Date
Public
Anyone can see this content
Custom License
View license details
I want to use this
Traffic Volume ADT: 20
Data Date 7/29/2013, 8:00 PM
Route Common Name SC-647E (Lunenburg County)
Begin Location 55-635 Oral Oaks Rd
End Location 55-646 Laurel Branch Rd
Average Daily Traffic (ADT) 20
ADT Quality R
Percent 4-Tire
Percent Bus
Zoom to
Southside PDC, VITA, Esri, HERE, Garmin, INCREMENT P, USGS, EPA | VDOT Spatial Intelligence Group | Esri, HERE
Powered by Esri


VIRGINIA ROADS
Virginia Traffic Volume Map
VDOT Spatial Intelligence Group
Virginia Department of Transportation
Summary
Map displaying traffic volume across the Commonwealth of Virginia.
View Full Details
Map
Web Map
December 28, 2020
Date Updated
May 18, 2017
Published Date
Public
Anyone can see this content
Custom License
View license details
I want to use this
Traffic Volume ADT: 70
Data Date 7/29/2013 8:00 PM
Route Common Name SC-646E (Lunenburg County)
Begin Location 55-647 Sneads Store Rd
End Location 55-637 Craig Mill Rd
Average Daily Traffic (ADT) 70
ADT Quality R
Percent 4-Tire
Percent Bus
Zoom to
Southside PDC, VITA, Esri, HERE, Garmin, INCREMENT P, USGS, EPA | VDOT Spatial Intelligence Group | Esri, HERE
Powered by Esri


VIRGINIA ROADS
Virginia Traffic Volume Map
VDOT Spatial Intelligence Group
Virginia Department of Transportation
Summary
Map displaying traffic volume across the Commonwealth of Virginia.
View Full Details
Map
Web Map
December 28, 2020
Date Updated
May 18, 2017
Published Date
Public
Anyone can see this content
Custom License
View license details
I want to use this
Traffic Volume ADT: 310
Data Date 12/31/2019, 7:00 PM
Route Common Name SC-635N (Lunenburg County)
Begin Location 55-655 Plank Rd
End Location 55-643 New Grove Rd
Average Daily Traffic (ADT) 310
ADT Quality G
Percent 4-Tire 95.98
Percent Bus 1.55
Zoom to
Southside PDC, VITA, Esri, HERE, Garmin, INCREMENT P, USGS, EPA | VDOT Spatial Intelligence Group | Esri, HERE
Powered by Esri

APPENDIX B: TRIP GENERATION CALCULATIONS

Peak Construction Workforce Trip Generation Calculations and Assumptions

Proposed Dominion Laurel Branch Solar Facility - Lunenburg County, VA

Construction Site Driveway Trips					
	Workforce Trips	Non-Heavy Vehicle Deliveries	Heavy Vehicle Deliveries	Total	CALCULATIONS
AM Peak Hour:					
Enter	143	1	2	146	(150 workers x 100% arrive x (100% - 10% carpool x 1 vehicle/2 carpool workers)) + (3 Delivery Vehicles arrive) = 146
Exit	0	1	2	3	(150 workers x 0% depart) + (3 Delivery Vehicles depart) = 3
Total	143	2	4	149	
PM Peak Hour:					
Enter	0	1	2	3	(150 workers x 0% arrive) + (3 Delivery Vehicles arrive) = 3
Exit	143	1	2	146	(150 workers x 100% depart x (100% - 10% carpool x 1 vehicle/2 carpool workers)) + (3 Delivery Vehicles depart) = 146
Total	143	2	4	149	
Weekday Daily:					
Enter	218	5	20	243	(150 workers x 100% arrive in AM x (100% - 10% carpool x 1 vehicle/2 carpool workers)) + (150 workers x 50% return from lunch/errands midday) + (25 Delivery Vehicles arrive) = 243
Exit	218	5	20	243	(150 workers x 100% depart in PM x (100% - 10% carpool x 1 vehicle/2 carpool workers)) + (35 workers x 50% leave for lunch/errands midday) + (25 Delivery Vehicles depart) = 243
Total	436	10	40	486	

Construction Assumption	AM Peak Hour	PM Peak Hour	Off-Peak	Notes
# of Peak Workers On-Site at One Time:	150	150	150	Assume 150 tradespeople per day
% Workers Arriving:	100%	0%	50%	Assumed hours of operation 7am-5pm (may be longer). Peak Hours of adjacent street traffic assumed to occur between is 7am-9am and 4pm-6pm. Therefore, the majority of construction worker traffic is likely to occur outside of the morning peak hour of adjacent street traffic and some may depart after the evening peak hour. However, as a conservative measure, assumed 100 percent of workers arrive after 7am and depart before 6pm. As a conservative measure, assumed half of workforce depart and return once during off-peak times. Assumed none of the workers get picked up/dropped off.
% Workers Departing:	0%	100%	50%	Assumed hours of operation 7am-5pm (may be longer). Peak Hours of adjacent street traffic assumed to occur between is 7am-9am and 4pm-6pm. Therefore, the majority of construction worker traffic is likely to occur outside of the morning peak hour of adjacent street traffic and some may depart after the evening peak hour. However, as a conservative measure, assumed 100 percent of workers arrive after 7am and depart before 6pm. As a conservative measure, assumed half of workforce depart and return once during off-peak times. Assumed none of the workers get picked up/dropped off.
% Carpool[1]:	10.0%	10.0%	0.0%	Assumed 10% carpooling during commuting
Carpool VOR[2]:	2.00	2.00	1.00	Assumed two workers per car during commuting
# Shuttle Trips:	0	0	0	Assumed all workers and deliveries will occur via the construction driveway; no laydown site is proposed
# Truck Deliveries:	2	2	16	Assumed worker hours of operation 7am-5pm and assumed 20 deliveries per day that would be distributed evenly throughout the day.
# Non-Truck Deliveries:	1	1	3	Occasionally, non-heavy vehicle deliveries will occur. For trip generation analysis purposes, assumed 5 deliveries per day. Conservatively assumed some occurs during peak hours of adjacent street traffic.

[1]Enter % per population - formulas above account for VOR

[2]VOR for carpoolers only

NOTE: Assumes an 80 MW AC facility with 9 months of peak construction and 2 to 3 months of ramp-up/ramp-down construction activity

Source: Tetra Tech

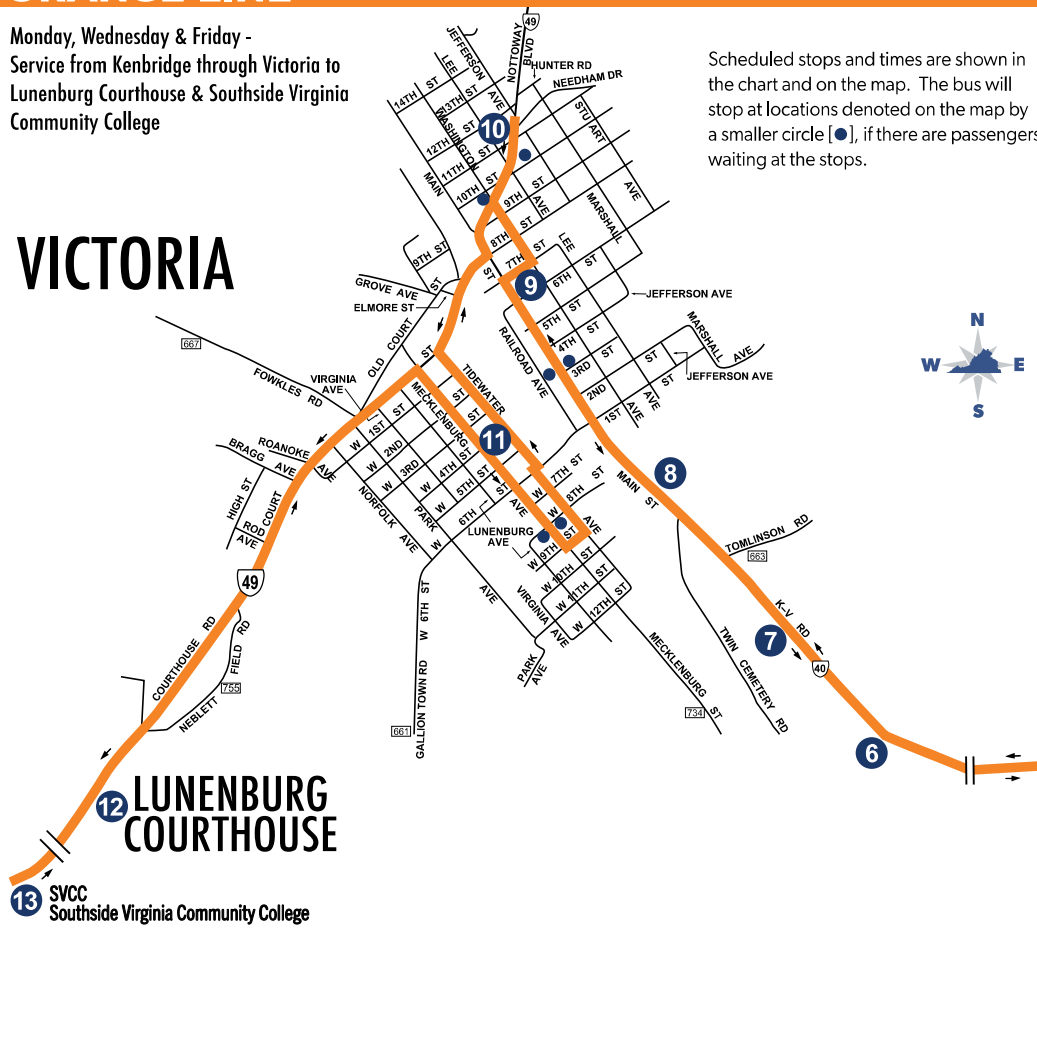
APPENDIX C: PUBLIC TRANSPORTATION INFORMATION

TOWN & COUNTY TRANSIT
ORANGE LINE

Monday, Wednesday & Friday -
Service from Kenbridge through Victoria to Lunenburg Courthouse & Southside Virginia Community College

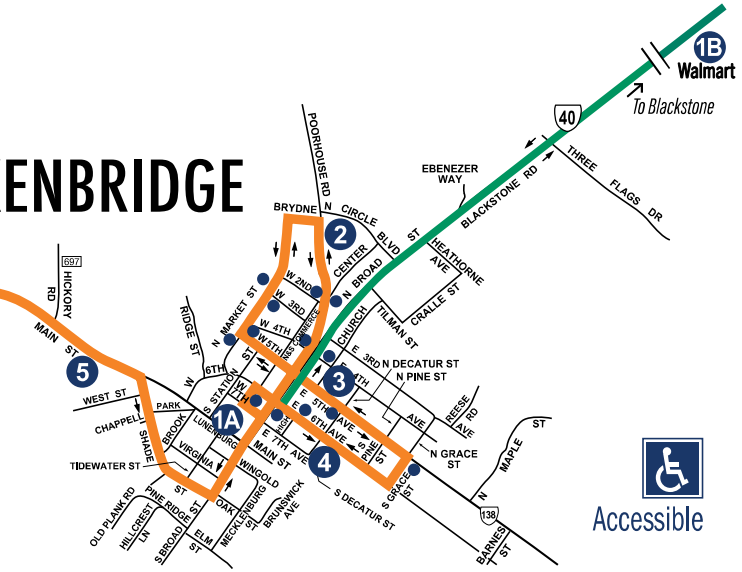
Scheduled stops and times are shown in the chart and on the map. The bus will stop at locations denoted on the map by a smaller circle [●], if there are passengers waiting at the stops.

BABS
BLACKSTONE AREA BUS SYSTEM



TOWN & COUNTY TRANSIT
GREEN LINE

Tuesday & Thursday -
Service from Lunenburg Courthouse & Southside Virginia Community College to Victoria, Kenbridge, and Blackstone. (includes Orange Line)



TOWN & COUNTY TRANSIT

Servicing the County of Lunenburg and the Towns of Kenbridge and Victoria, this route operates from 7:00 AM to 4:15 PM on Monday, Wednesday, Friday, and on Tuesday and Thursday until 4:45 PM. On Tuesday and Thursday this route travels to the Town of Blackstone.

ORANGE LINE
Mon, Wed, Fri

	AM						PM			
1A W. 7th St. & Broad St.	7:00	9:00	–	10:15	–	11:30	1:00	2:20	–	4:15
2 Kenbridge Elementary	7:02	8:53	9:02	10:13	10:17	11:27	1:02	2:13	2:22	4:13
3 Mildred's Meals	7:04	8:51	9:04	10:11	10:19	11:25	1:04	2:11	2:24	4:11
4 Kenbridge Family Practice	7:06	8:49	9:06	10:09	10:21	11:23	1:06	2:09	2:26	4:09
5 Southside Shopping Center	7:10	8:45	9:10	10:05	10:25	11:19	1:10	2:05	2:30	4:05
6 Community Health Center	7:15	8:40	9:15	10:00	10:30	11:14	1:15	2:00	2:35	4:00
7 Village Estates Apts.	7:18	8:37	9:18	9:58	10:32	11:12	1:18	1:58	2:37	3:58
8 Food Lion, Victoria	7:20	8:35	9:20	9:55	10:35	11:09	1:20	1:55	2:40	3:55
9 Victoria Public Library	7:22	8:33	9:22	9:53	10:37	11:07	1:22	1:53	2:42	3:53
10 Vaughn's Grocery	7:25	8:30	9:25	9:50	10:40	11:00	1:25	1:50	2:45	3:50
11 Victoria Place Apts.	7:28	8:27	9:28	9:47	10:43	10:59	1:28	1:47	2:48	3:47
12 Lunenburg Co. Courthouse	7:35	8:20	9:40	–	10:50	–	1:40	–	2:55	3:40
13 SVCC	8:00	–	–	–	–	–	–	–	3:25	–

GREEN LINE
Tues, Thurs

	AM						PM			
1B Walmart, Blackstone	–	–	–	10:35	–	–	–	2:35	–	–
1A W. 7th St. & Broad St.	7:00	9:00	–	10:15	10:50	12:10	1:00	2:20	2:50	4:45
2 Kenbridge Elementary	7:02	8:53	9:02	10:13	10:52	12:08	1:02	2:13	2:52	4:43
3 Mildred's Meals	7:04	8:51	9:04	10:11	10:54	12:06	1:04	2:11	2:54	4:41
4 Kenbridge Family Practice	7:06	8:49	9:06	10:09	10:56	12:04	1:06	2:09	2:56	4:39
5 Southside Shopping Center	7:10	8:45	9:10	10:05	11:00	12:00	1:10	2:05	3:00	4:35
6 Community Health Center	7:15	8:40	9:15	10:00	11:05	11:55	1:15	2:00	3:05	4:30
7 Village Estates Apts.	7:18	8:37	9:18	9:58	11:07	11:52	1:18	1:58	3:07	4:28
8 Food Lion, Victoria	7:20	8:35	9:20	9:55	11:10	11:49	1:20	1:55	3:10	4:25
9 Victoria Public Library	7:22	8:33	9:22	9:53	11:12	11:47	1:22	1:53	3:12	4:23
10 Vaughn's Grocery	7:25	8:30	9:25	9:50	11:15	11:40	1:25	1:50	3:15	4:20
11 Victoria Place Apts.	7:28	8:27	9:28	9:47	11:18	11:37	1:28	1:47	3:18	4:17
12 Lunenburg Co. Courthouse	7:35	8:20	9:40	–	11:30	–	1:40	–	3:25	4:10
13 SVCC	8:00	–	–	–	–	–	–	–	3:50	–

APPENDIX D: CONSTRUCTION MANAGEMENT PLAN

1.1 Introduction

Virginia Electric and Power Company (d/b/a Dominion Energy Virginia)("Dominion") is proposing a Substation and Switchyard as part of an 80 MWac utility-scale solar facility known as "Laurel Branch Solar" (the "Project") in Lunenburg County, Virginia (the "County"). The project will be located to the southwest of the Town of Kenbridge on 2,189 acres of land. The Substation and Switchyard is located along Routes 635 (Oral Oaks Road) in Lunenburg County, Virginia. Project construction is projected to begin the second quarter of 2024 and last approximately 12 months with nine months of typical construction and two to three months of ramp up/ramp down activity. Peak construction activity is anticipated to occur over a two to three-month period.

1.2 Construction Traffic Haul Routes

The construction of the proposed solar facility will require large vehicle deliveries for a variety of materials that may include concrete, solar panels, earth materials, building materials, etc. Tetra Tech identified potential truck haul routes between the site parcels and the regional roadway system for these larger vehicles. For purposes of this assessment, it was assumed that the deliveries would originate from three primary geographical areas: Richmond, VA, Lynchburg, VA, and Raleigh, NC. Factors considered in developing potential truck haul routes are summarized below. Separate inbound and outbound travel routes are provided where appropriate.

- Prioritize designated Surface Transportation Assistance Act (STAA) truck routes from the VDOT database.
- Avoid roadway segments having bridge height and weight limitations based on a review of the VDOT database.
- Minimize impacts to schools, traffic signals, and areas with pedestrian activity.
- Minimize turns at locations with geometric limitations.

The potential regional truck haul routes are shown in Figure 1. The potential local truck haul routes to/from the proposed site driveways are shown in Figure 2.

When accessing the site via Route 406 to the north, all construction traffic (employees, subcontractors, delivery companies, etc.) associated with the project will be instructed to use N West Avenue (Route 606) when entering the site and Cox Road when exiting the site. This will minimize disruptions to downtown Blackstone and avoid potential safety issues with the limited queue storage for Route 406 westbound left-turn movements onto Cox Road.

The final approved truck route map will be distributed to all construction employees and subcontractors to ensure the appropriate routes will be used to access the site. Signage is proposed to guide project-related traffic and make existing roadway users aware of the increased traffic levels and trucking activity during the construction phase. A preliminary signage plan is presented in the Attachments. The signage plan will be subject to review and approval by the Virginia Department of Transportation (VDOT).

1.3 Construction Office, Staging and Employee Parking

The project is currently at the conceptual level. It is anticipated that parking for the construction-related activity (employees and deliveries) will occur entirely on-site. The construction entrance to access the proposed Substation and Switchyard is located at Oral Oaks Road. Laydown yards are currently proposed, all of which will be located within the project boundaries. The laydown yards are typically dimensioned 350 feet by 55 feet. The layout and configuration of the laydown yards' appurtenances such as construction trailers, parking layout, porta johns, dumpsters, material storage and drop-off, etc. will be determined during the construction level plan preparation. The proposed signage plan will also be updated, if needed, during the development of the construction-level plans.

A central parking field is not proposed since the project will consist of numerous solar panel pods. Employees are expected to park at the pod in which they are assigned to on each day of construction. The pods will be accessed via 28 proposed driveways including three driveways on Oral Oaks Road, six driveways on Laurel Branch Road, three driveways on Plank Road, nine driveways on Sneads Store Road, one driveway on Craig Mill Road and six driveways on Hilltop Road. Delivery vehicles will also use the proposed driveways to deliver materials. The proposed signage plan provided in the Attachments includes warning signs to alert motorists of slower moving heavy vehicles in the area.

The project will consist of three phases: construction, O&M, and decommissioning. The highest volume of site-related trips will occur during the peak construction phase of the project. A Transportation Assessment was prepared as part of the Lunenburg County conditional use permit (CUP) review process which included a detailed vehicle trip generation analysis for the peak construction activity anticipated for the project. A summary of the vehicle trip generation estimates provided in the May 2022 Transportation Assessment is provided in Table 1 for reference. These estimates conservatively assume that all construction workers would arrive within the same hour and depart within the same hour. Additionally, there are several routes connecting the site to the regional roadway system thereby reducing impacts to any single roadway segment or intersection. Peak construction activities are currently anticipated to occur for a period of approximately two to three months. The remainder of the construction period is anticipated to generate fewer vehicle trips.

Table 1 Trip Generation Summary – Peak Construction Period

Time Period/ Direction	Project Trips			
	Workforce Trips[1]	Non-Heavy Vehicle Deliveries[2]	Heavy Vehicles[3]	Total
Weekday AM Peak Hour				
Enter	143	1	2	146
Exit	0	1	2	3
Total	**143**	**2**	**4**	**149**
Weekday PM Peak Hour				
Enter	0	1	2	3
Exit	143	1	2	146
Total	**143**	**2**	**4**	**149**
Weekday Daily				
Enter	218	5	20	243
Exit	218	5	20	243
Total	**436**	**10**	**40**	**486**

1 Assumed 150 construction workers per day. Conservatively assumed trips overlap with adjacent street peaks. Peak construction activities are currently anticipated to occur for a period of approximately two to three months. The remainder of the construction period is anticipated to generate fewer vehicle trips.
2 Assumed 5 deliveries per day with 40 percent of trips occurring during peak hours.
3 Assumed 20 deliveries per day spread evenly throughout day.

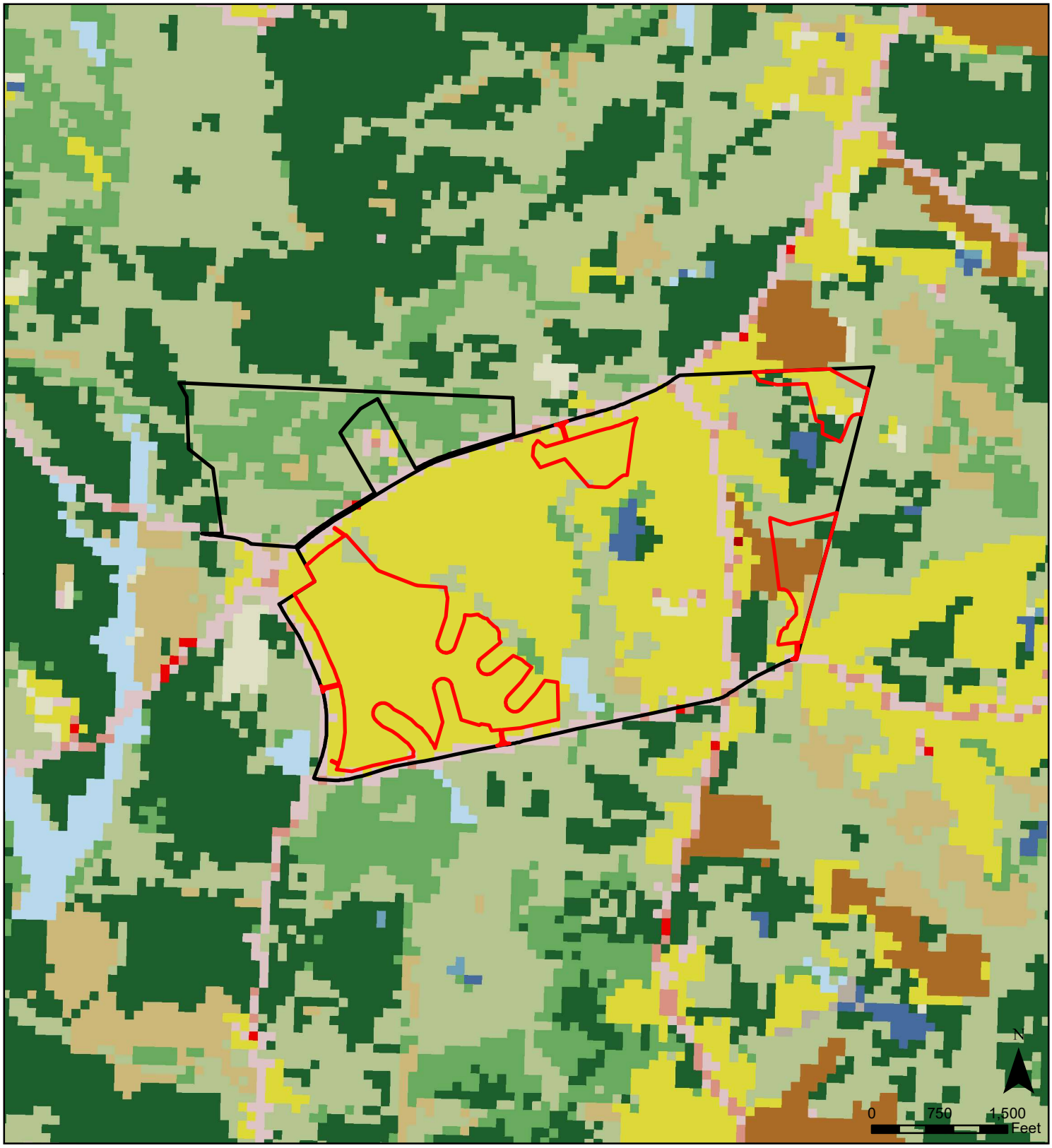
Over the course of the approximate 12-month construction schedule, the volume of daily truck counts will vary, but is anticipated to be up to 20 trucks per day during peak construction days.

1.4 Public Road Evaluation: Pre- and Post-Construction

The project commits to conducting a photographic and video evaluation of the condition of the existing secondary roadways immediately leading to the site as shown in Figure 3. The project is anticipated to begin construction during second quarter 2024. The pre-construction road evaluation on the roadways shown in Figure 3 will be conducted closer to the beginning of the project's construction activity. The specific date of the evaluation will be determined in consultation with VDOT staff during the construction plan preparation phase.

TAB J

Land Cover Map



Limit of Disturbance
Project Area

NLCD Land Cover

- Woody Wetlands
- Unclassified
- Shrub/Scrub (1.03 acres)
- Open Water
- Mixed Forest (6.95 acres)
- Herbaceous (0.86 acres)
- Hay/Pasture (94.56 acres)
- Evergreen Forest (2.77 acres)
- Emergent Herbaceous Wetlands
- Developed, Open Space (0.42 acres)
- Developed, Medium Intensity
- Developed, Low Intensity
- Developed, High Intensity
- Deciduous Forest (0.01 acres)
- Cultivated Crops (5.71 acres)
- Barren Land

Acreages in parentheses represent total acreage within the project limit of disturbance.

Source: NLCD (2016)

TETRA TECH

Figure 2
Land Cover

Laurel Branch Switchyard/Substation
Lunenburg County, Virginia

PGH P:\GIS\DOMINION\MAPDOCS\LAURELBRANCH_NLCD.MXD 08/16/22 SP