

Transmission Line Proliferation

The impact of data center overdevelopment



Piedmont
Environmental
Council

Loudoun is the data center capital of the world

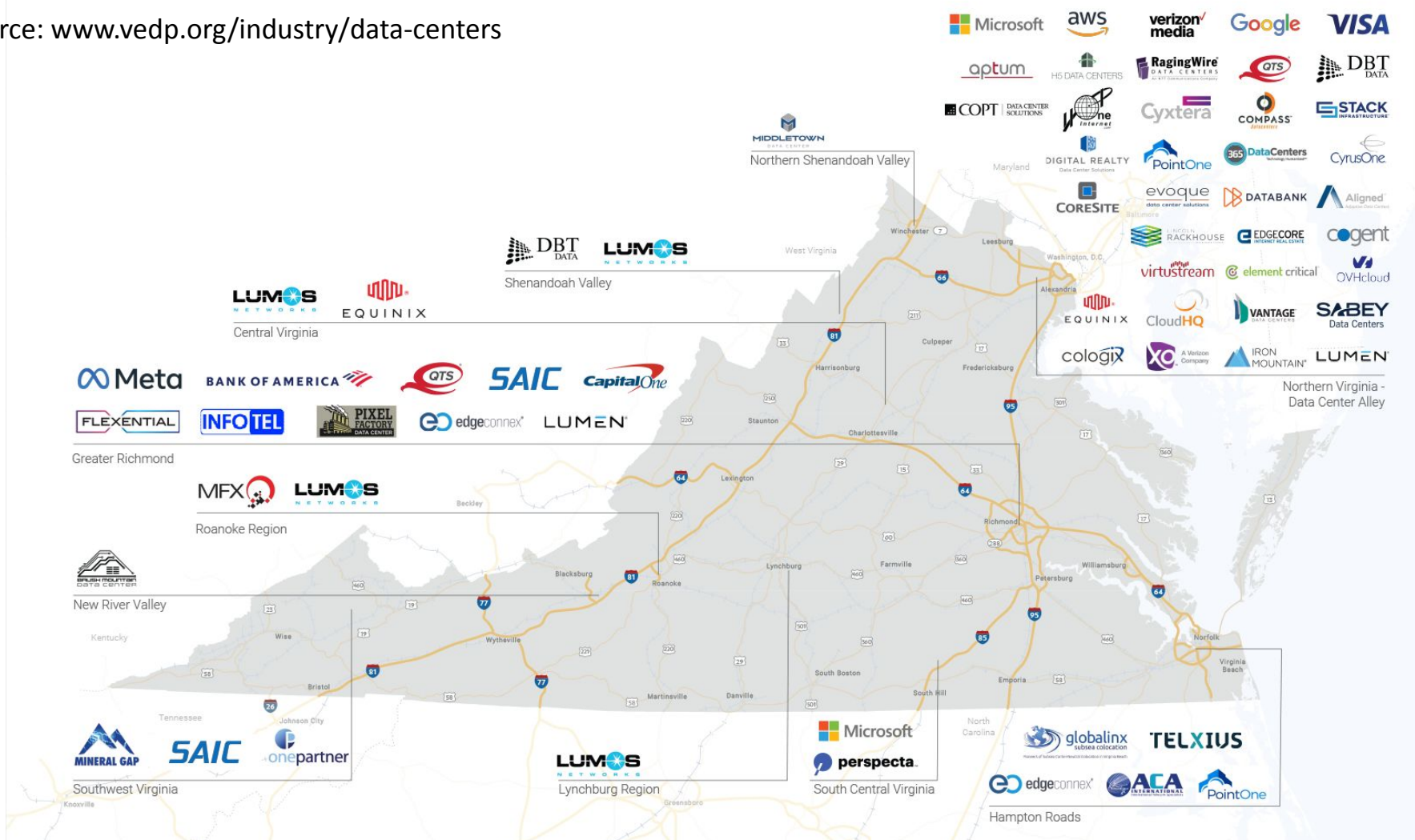


Data centers consume a huge amount of electricity



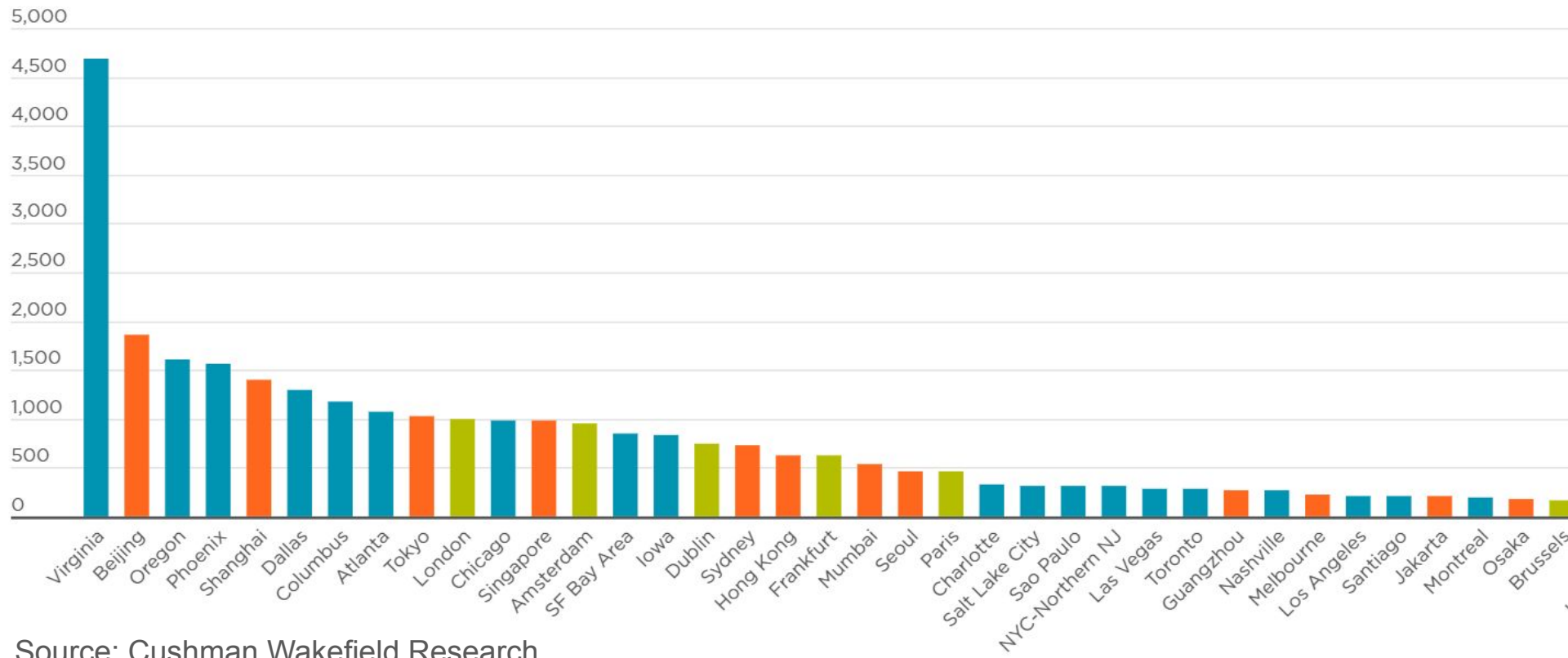
Over **60 MW per building = 15,000 homes**

Source: www.vedp.org/industry/data-centers



An aerial photograph of a large industrial complex, likely a data center or manufacturing plant, featuring long, white buildings with extensive glass facades. The facility is surrounded by greenery and residential areas in the foreground. A semi-transparent green box with white text is overlaid on the center of the image. In the background, a red construction crane and an airport control tower are visible against a clear blue sky.

**Currently 57 million square feet existing
or being constructed in the state...**

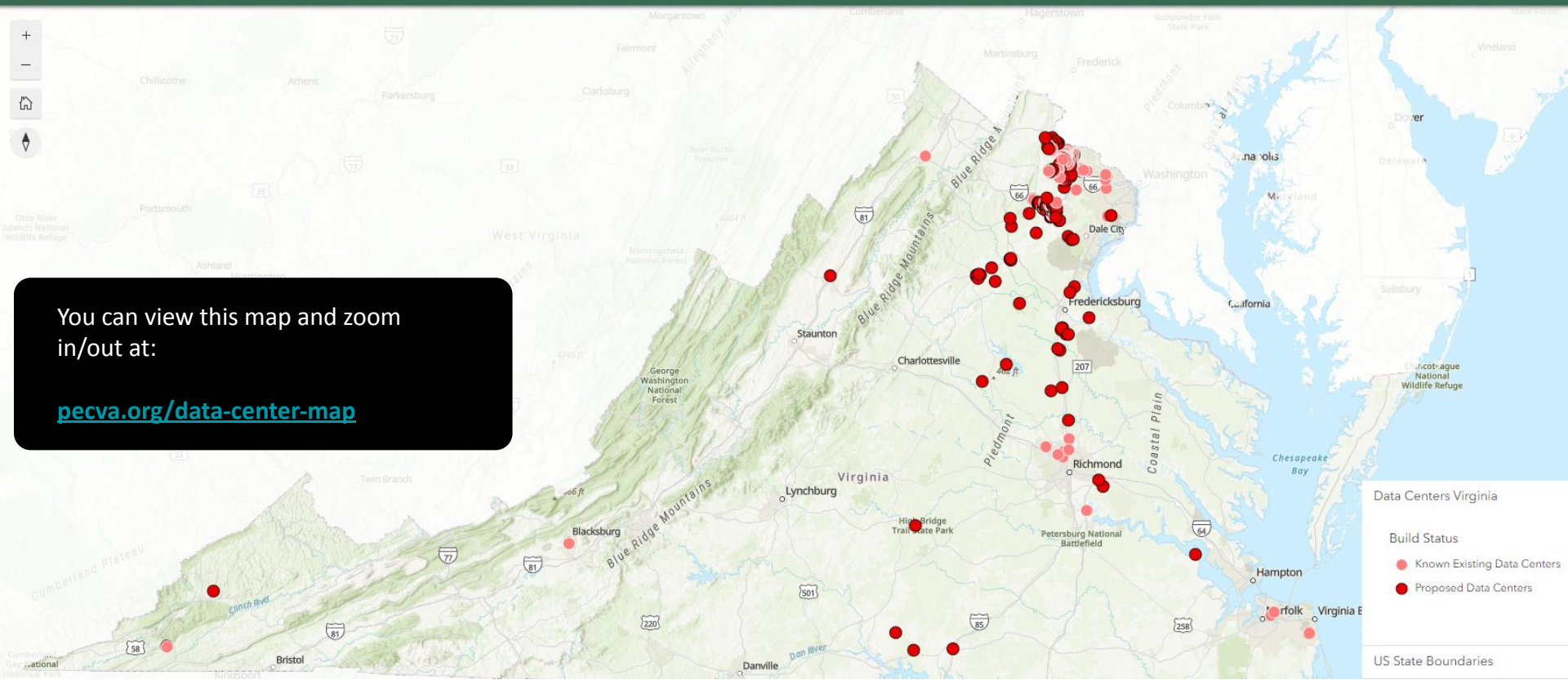
Operational IT Load (MW)


Source: Cushman Wakefield Research, datacenterHawk, DC Byte

Data center proposals keep coming...



Existing and Proposed Data Centers - A Web Map



You can view this map and zoom in/out at:
pecva.org/data-center-map

Data Centers Virginia

Build Status

- Known Existing Data Centers
- Proposed Data Centers

US State Boundaries

**There's another 180 million square feet
approved or in the pipeline...**

Buildout compared to residential load demand: 1 MW serves 250 homes...

Total Current Load From
Data Centers in VA

= 3,200 MW



800,000 homes

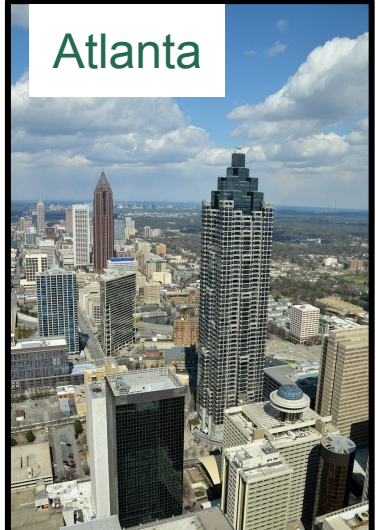
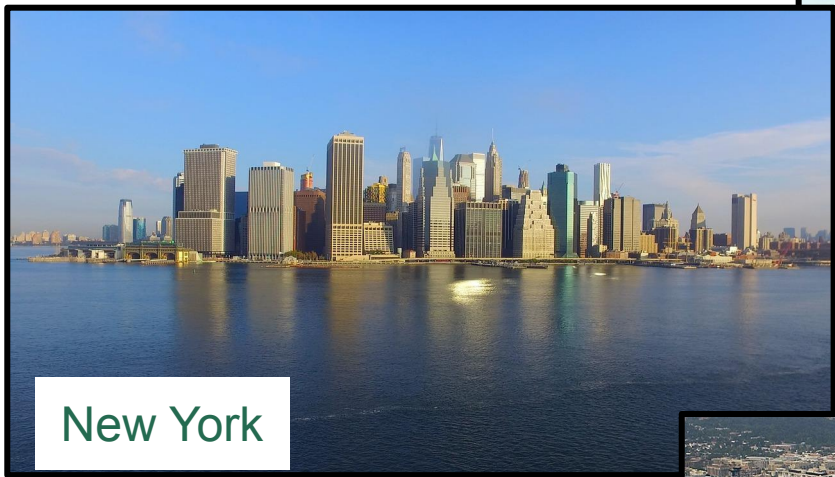
Proposed Data Centers in
the State could reach up
to...

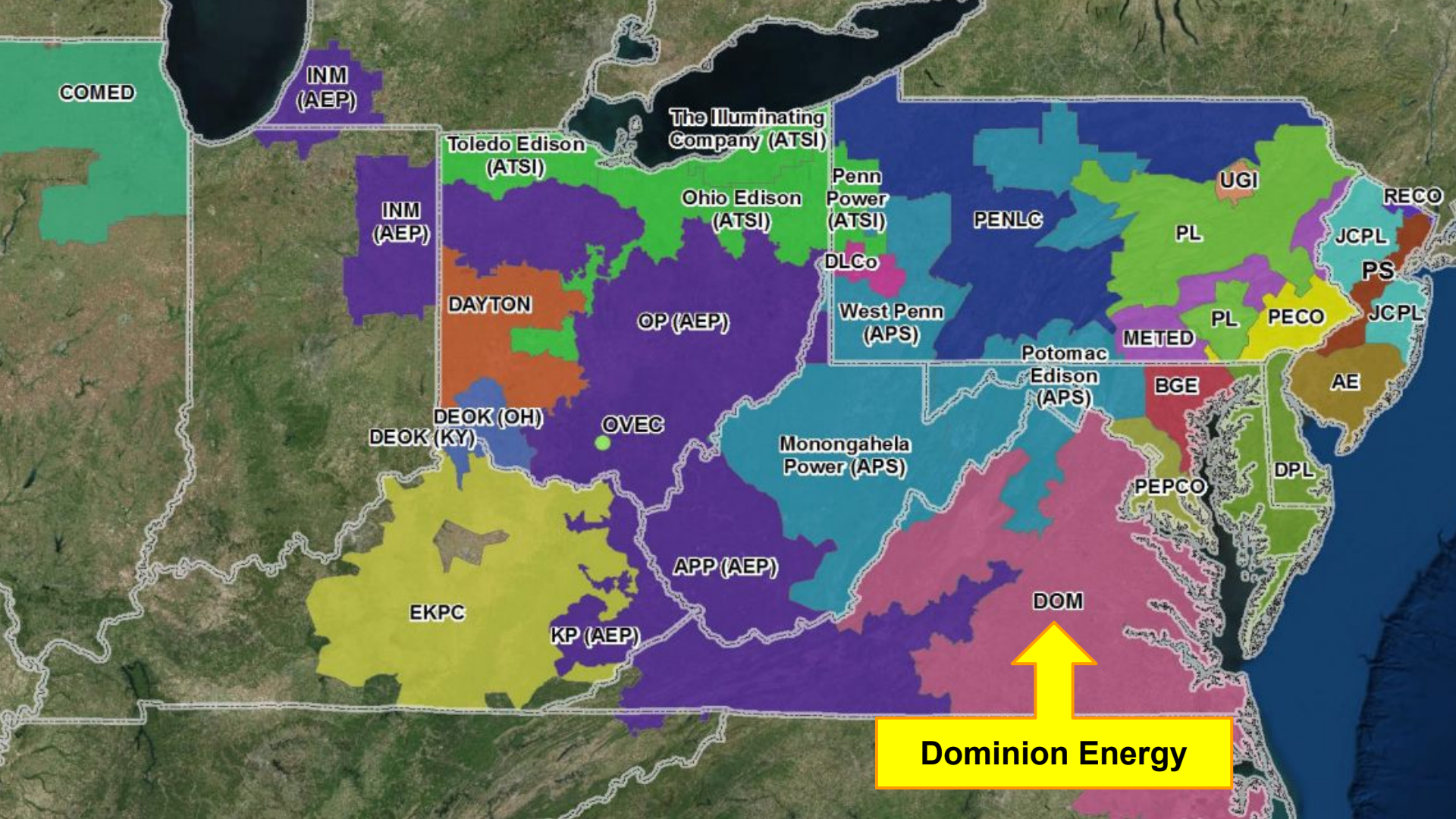
54,105 MW!



13.5 million homes!

More demand than all the homes in these cities combined:





COMED

INM
(AEP)

The Illuminating
Company (ATSI)

Toledo Edison
(ATSI)

Ohio Edison
(ATSI)

Penn
Power
(ATSI)

PENLGC

UGI

RECO

INM
(AEP)

Ohio Edison
(ATSI)

PL

JCPL

PS

DAYTON

OP (AEP)

West Penn
(APS)

PL

PECO

JCPL

DEOK (OH)

OVEC

Monongahela
Power (APS)

Potomac
Edison
(APS)

BGE

AE

DEOK (KY)

EKPC

KP (AEP)

APP (AEP)

Monongahela
Power (APS)

DOM

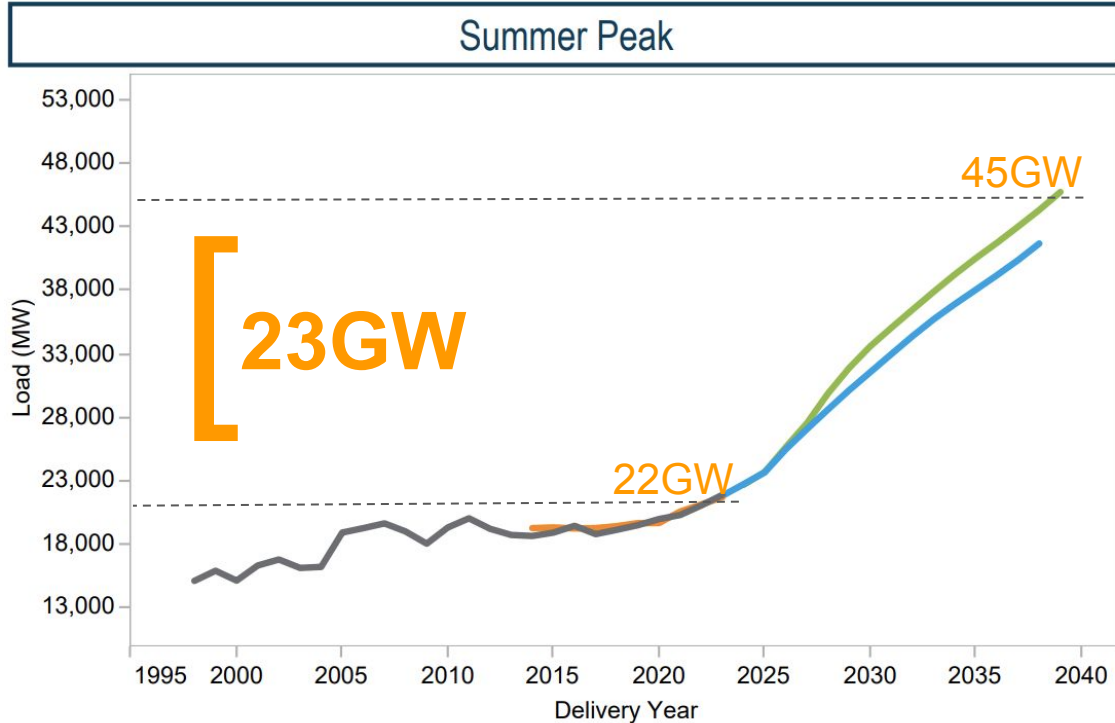
PEPCO

DPL

Dominion Energy

Skyrocketing Load Demand

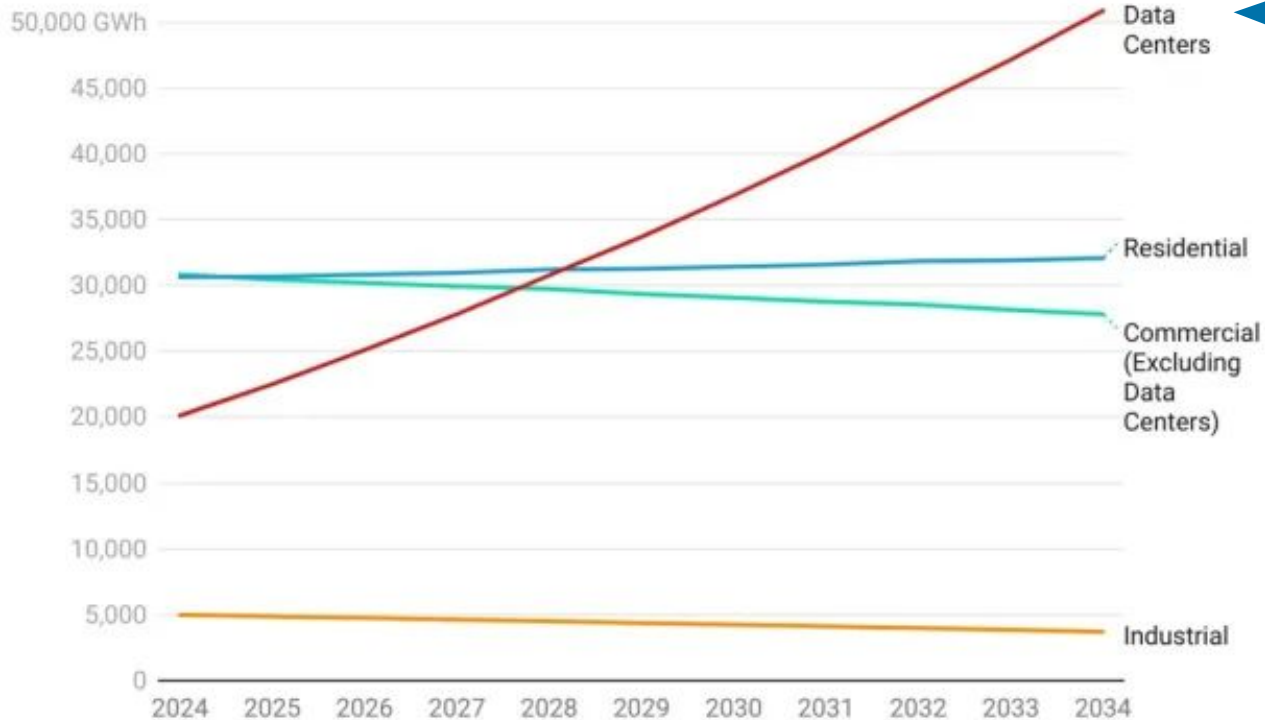
Dominion Energy



Green = 2024 projection
Blue = 2023 projection

Forecasted Dominion Energy annual electricity sales

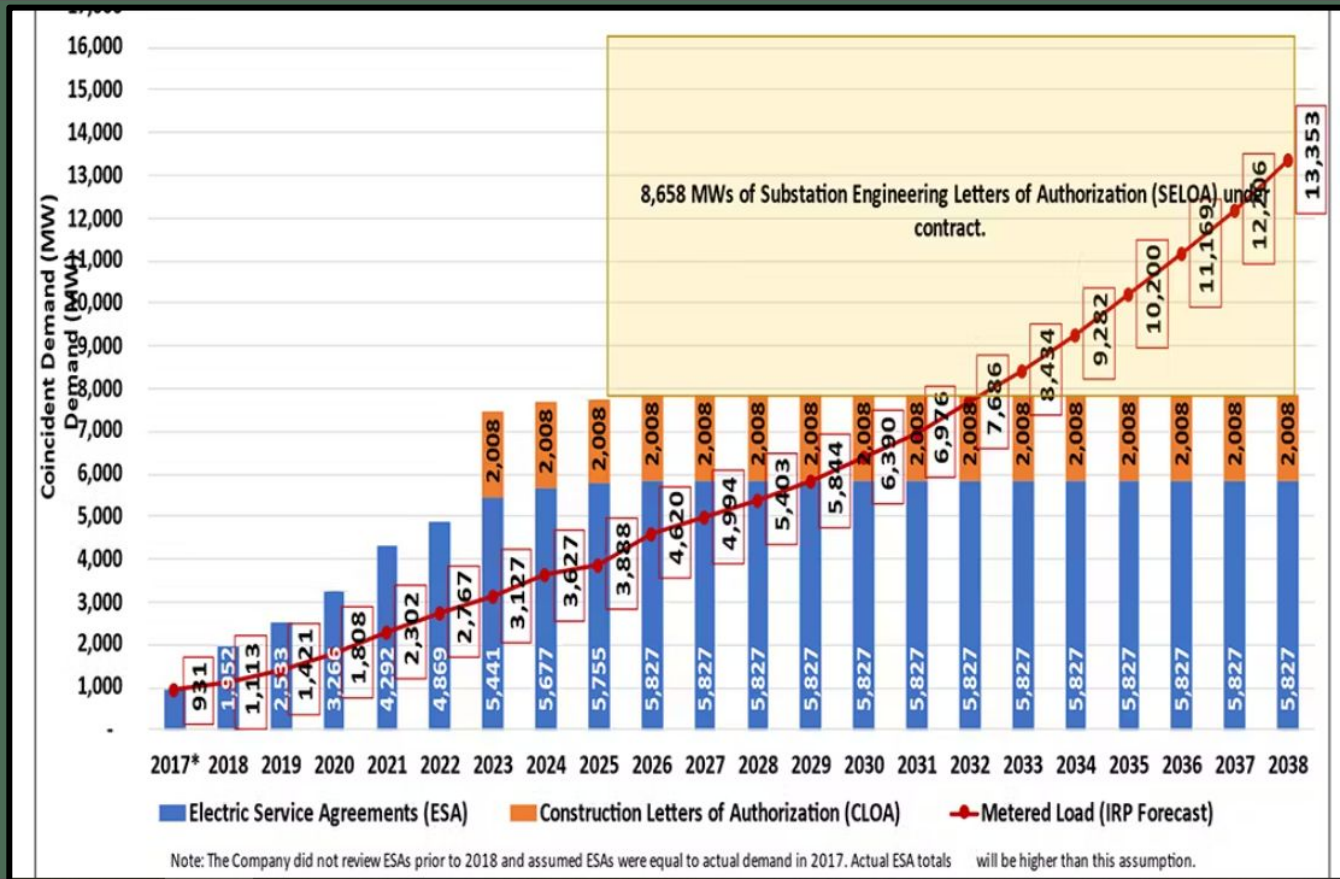
Data center electric sales will increase by 152% in the next decade, while others sectors remain mostly the same.



The overall increase in electricity sales is forecasted to be 32% over 10 years. That accounts for increased energy efficiency among other sectors. The forecast does not include projected electricity demand from electric vehicles.

Chart: Emily Richardson/VCU Capital News Service • Source: The Energy Transition Initiative at the Weldon Cooper Center for Public Service. • Created with Datawrapper

Dominion Energy and data center companies are making major power agreements without any oversight or planning...



More data centers need **more** power and transmission lines



The cost to build these will be **passed on to ratepayers**



Our bills to **double** in 11 years

“...the Company projects the monthly bill of a Virginia residential customer using 1,000 kilowatt hours (“kWh”) per month to be \$243.20 by 2035, an increase of **\$127.02** over the May 1, 2020 level...”

- Dominion legal notice Oct. 25, 2023

LEGAL NOTICES

ADVERTISEMENT

NOTICE TO THE PUBLIC OF RENEWABLE PORTFOLIO STANDARD (RPS) FILING BY VIRGINIA ELECTRIC AND POWER COMPANY DBA DOMINION ENERGY VIRGINIA CASE NO. PUR-2023-00142

- Virginia Electric and Power Company d/b/a Dominion Energy Virginia (“Dominion”) has filed the 2023 Renewable Portfolio Standard (“RPS”) filing (“2023 RPS Filing”) with the Public Service Commission (“PSC”) on October 25, 2023. The 2023 RPS Filing includes Dominion RPS Development Plan and requests for approval to construct or acquire and operate four new utility-scale projects and to enter into three power purchase agreements.
- Dominion requests approval of several RPS CE with a resource requirement of 41,642.6 MW over the rate year beginning May 1, 2024, and commencing April 30, 2025. According to Dominion, this resource would increase a typical residential customer’s bill using 1,000 kWh/month from per month by \$1.4.
- A Hearing Exemption requested by the Commission will hold a telephone hearing in this case on January 30, 2024, at 9 a.m. for the receipt of public witness testimony.
- An evidentiary hearing will also be held on January 30, 2024, at 9 a.m. at the conclusion of the public witness portion of the hearing, whenever a date, at the Commission’s second floor conference room located at the Tyler Building, 1300 East Main Street, Richmond, Virginia 23219, to receive the testimony and evidence of Dominion, its proponents and intervenors.

*Further information about this case is available on the SCC website at: www.psc.state.va.us/cases/LandAdministration.

During its 2023 Session, the Virginia General Assembly enacted Chapters 1103 (HB 1526) and 1184 (SB 851) of the 2023 Virginia Act of Assembly. These duplicate Acts of Assembly, known as the Virginia Clean Economy Act (“VCEA”), became effective on July 1, 2023. The VCEA, in part, establishes a mandatory renewable energy portfolio standard (“RPS”) program (“RPS Program”) for Virginia Electric and Power Company (“Dominion” or “Company”) in § 56-585.5 of the Code of Virginia (“Code”). Subdivision (1) of Code § 56-585.5 states that Dominion shall submit to the State Corporation Commission (“Commission”) plans and petitions for approval of new solar and offshore wind generation capacity (“RPS Filing”). The Commission must determine whether the RPS Filing is reasonable and prudent, giving due consideration to the following factors: (i) the RPS and certain climate resilience requirements in Code § 56-585.5; (ii) the promotion of new renewable generation and energy storage resources within the Commonwealth, and associated economic development; and (iii) the benefits projected to be achieved by the RPS.

- On October 3, 2023, Dominion submitted its annual RPS Filing to the Commission (“2023 RPS Filing” or “RPS Filing”). The 2023 RPS Filing requests the Commission:
- (i) Approve the Company’s annual plan for the development of new solar, offshore wind, and energy storage resources (“RPS Development Plan”) in connection with the mandatory RPS Program pursuant to Code § 56-585.5 (1);
 - (ii) Grant certification of public convenience and necessity (“CPCN”) and approval to construct or acquire and operate four utility-scale projects totaling approximately 325 megawatts (“MW”) of solar pursuant to Code § 56-581.0;
 - (iii) Approve to recover through the Rider CE rate adjustment clause the costs of (a) five utility-scale solar projects, totaling approximately 334 MW, and related interconnection facilities (“utility-scale CE-4 Projects”) and (b) a distributed solar project, totaling approximately 2 MW, and related interconnection facilities (“CE-4 Distributed Solar Project”) pursuant to Code § 56-585.1 A, B;
 - (iv) Approve an update to Rider CE for recovery of costs associated with the previously approved CE-1, CE-2, and CE-3 projects, the CE-2 and CE-3 distributed solar projects, and related interconnection facilities;
 - (v) Make a purchase determination for the Company to enter into 13 power purchase agreements (“PPAs”) for solar resources, totaling approximately 435 MW, (collectively, “CE-4 PPAs”) pursuant to Code § 56-585.1 A;
 - (vi) Approve recovery through Rider CE of the costs of the CE-4 PPAs pursuant to Code § 56-585.1 A, 5; and
 - (vii) Approve the Company’s request to consolidate Rider CE and Rider PPA pursuant to Code § 56-585.1 A T, resulting in: (a) the recovery of costs associated with the CE-1, CE-2, and CE-3 PPAs through Rider CE, and (b) the end of Rider PPA as of April 30, 2024.

RPS Development Plan
Dominion states that its RPS Development Plan reports on the Company’s progress toward meeting the solar, offshore wind, and energy storage development targets outlined in the VCEA and presents the Company’s development plan for solar, offshore wind, and energy storage facilities through 2035. The Company’s RPS Development Plan calls for additional investment in solar, offshore wind, and energy storage through 2035.

The Company also provides a consolidated bill analysis calculating the projected monthly bill through 2035 for residential, small general service, and large general service customers for each alternative rate presented in the Company’s 2023 Integrated Resource Plan. For Alternative Plan B, for example, the Company projects the monthly bill of a Virginia residential customer using 1,000 kilowatt hours (“kWh”) per month to be \$243.20 by 2035, an increase of \$127.02 over the May 1, 2020 level of \$116.18, using the methodology approved by the Commission in Case No. PUR-2023-00134. The Company’s bill projections are not final and all customer bills are subject to regulatory approval.

*Further, the Company also presents its 2023 RPS Program Compliance Report in the Petition, certifying compliance with the RPS Program for compliance year 2022.

ADVERTISEMENT

CE-4 Projects

Dominion seeks CPCNs and approval to construct or acquire and operate four utility-scale projects, totaling approximately 325 MW of solar. In addition to these four projects, Dominion intends to acquire and operate one additional “CE-4 Project,” a 2 MW solar facility (“Piggopton”). However, the Company asserts that, consistent with the Commission’s prior determination that projects of the MW or less do not require a CPCN, and Rule 19 of the Commission’s Filing Requirements in Support of Applications for Authority to Construct and Operate an Electric Generating Facility, Piggopton does not require a CPCN.

The name, site, location, interconnection and projected commercial operation date (“COO”) for each of the CE-4 Projects is provided below:

Project	Site (MW)	Locality	Interconnection	COO
Dublin	57	Powhatan County	Transmission	2029
Blue Ridge	95	Pittsylvania County	Transmission	2026
Boydton Hill	127	Richmond County	Transmission	2024
Michael	58	Henry/Pittsylvania County	Transmission	2026
Piggopton	2	Waynes County	Distribution	2024

The Company asserts that the CE-4 Projects are needed to comply with the VCEA and to serve customers’ capacity and energy needs. According to the Company, the total estimated costs for the CE-4 Projects are approximately \$65.3 million, excluding financing costs, or approximately \$2.62 per kilowatt (“kW”) at the total 334 MW (nominal AC) rating.

Rider CE

In this proceeding, Dominion makes four requests related to Rider CE. First, the Company seeks to update Rider CE for the recovery of costs associated with the CE-1, CE-2, and CE-3 projects, the CE-2 and CE-3 distributed solar projects, and related interconnection facilities, which have previously been approved by the Commission.

Second, Dominion requests recovery through Rider CE of the costs of the CE-4 Projects and CE-4 Distributed Solar Project, as well as the related interconnection facilities. The Company has discussed in more detail above, the CE-4 Distributed Solar Project consists of one distributed solar project totaling approximately 2 MW and related interconnection facilities.

The Company asserts that the CE-4 Distributed Solar Project is needed to comply with the VCEA and to serve customers’ capacity and energy needs. According to the Company, the total estimated costs for the CE-4 Distributed Solar Project are approximately \$10.3 million, excluding financing costs, or approximately \$3.04 per kW at the total 3 MW (nominal AC) rating.

Third, the Company seeks to consolidate Rider CE and Rider PPA. Rider PPA was approved by the Commission pursuant to Code § 56-585.1 A 5 for the recovery of costs associated with the CE-1, CE-2, and CE-3 PPAs. The Company asserts that the consolidation of Rider CE and Rider PPA is in the interest of judicial economy because the Commission already considers the prudence of PPA in the annual RPS Filing proceedings, and the consolidation would allow the Commission to consider associated cost recovery issues simultaneously. Such a consolidation would result in the recovery of costs associated with the previously approved CE-1, CE-2, and CE-3 PPAs through Rider CE. Consolidation would also result in the end of Rider PPA as of April 30, 2024.

Fourth, the Company seeks to recover the costs of the CE-4 PPAs through Rider CE.

Dominion asks the Commission to approve revised Rider CE for the rate year beginning May 1, 2024, and ending April 30, 2025 (“Rate Year”). The Company is requesting a total revenue requirement of \$158,478.68 in Rider CE for the Rate Year. If the proposed total revenue requirement for the Rate Year is approved, the impact on customer bills would depend on the customer’s rate schedule and usage. According to Dominion, implementation of its revised Rider CE as of May 1, 2024, would increase the monthly bill of a residential customer using 1,000 kWh per month by approximately \$1.54 when compared to the combined total residential rates in the current Rider CE and Rider PPA.

CE-4 PPAs

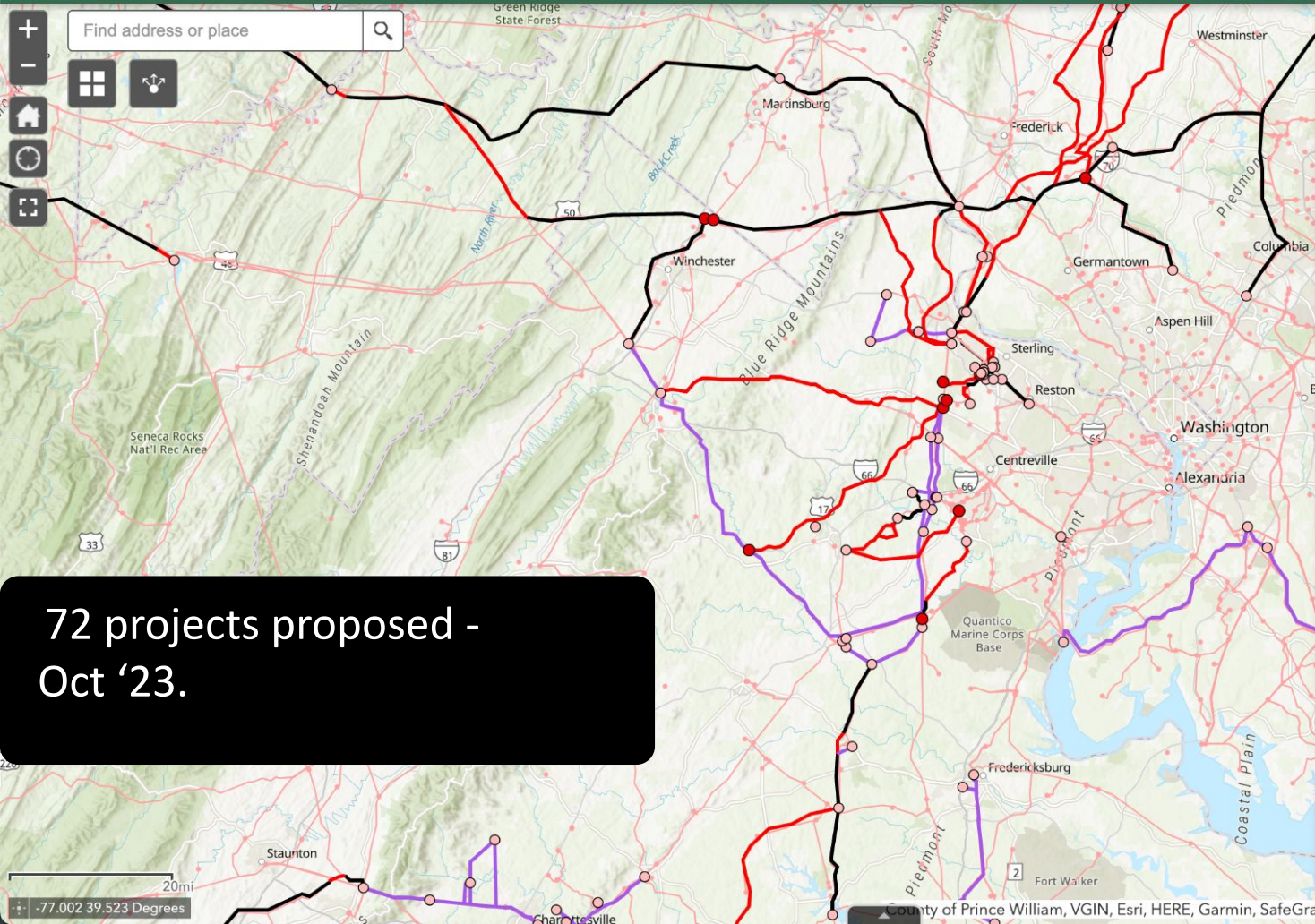
In its 2023 RPS Filing, Dominion also seeks a purchase determination for the CE-4 PPAs. The Company’s request is for (i) eight PPAs for utility-scale solar generating facilities totaling approximately 420 MW and (ii) five PPAs for distributed solar generating facilities totaling approximately 10 MW.

Dominion asserts that the CE-4 PPAs are needed to comply with the VCEA and to serve customers’ capacity and energy needs. As noted above, the Company seeks approval to recover the costs of the CE-4 PPAs through Rider CE, in addition to the costs of the CE-1, CE-2 and CE-3 PPAs previously approved by the Commission.

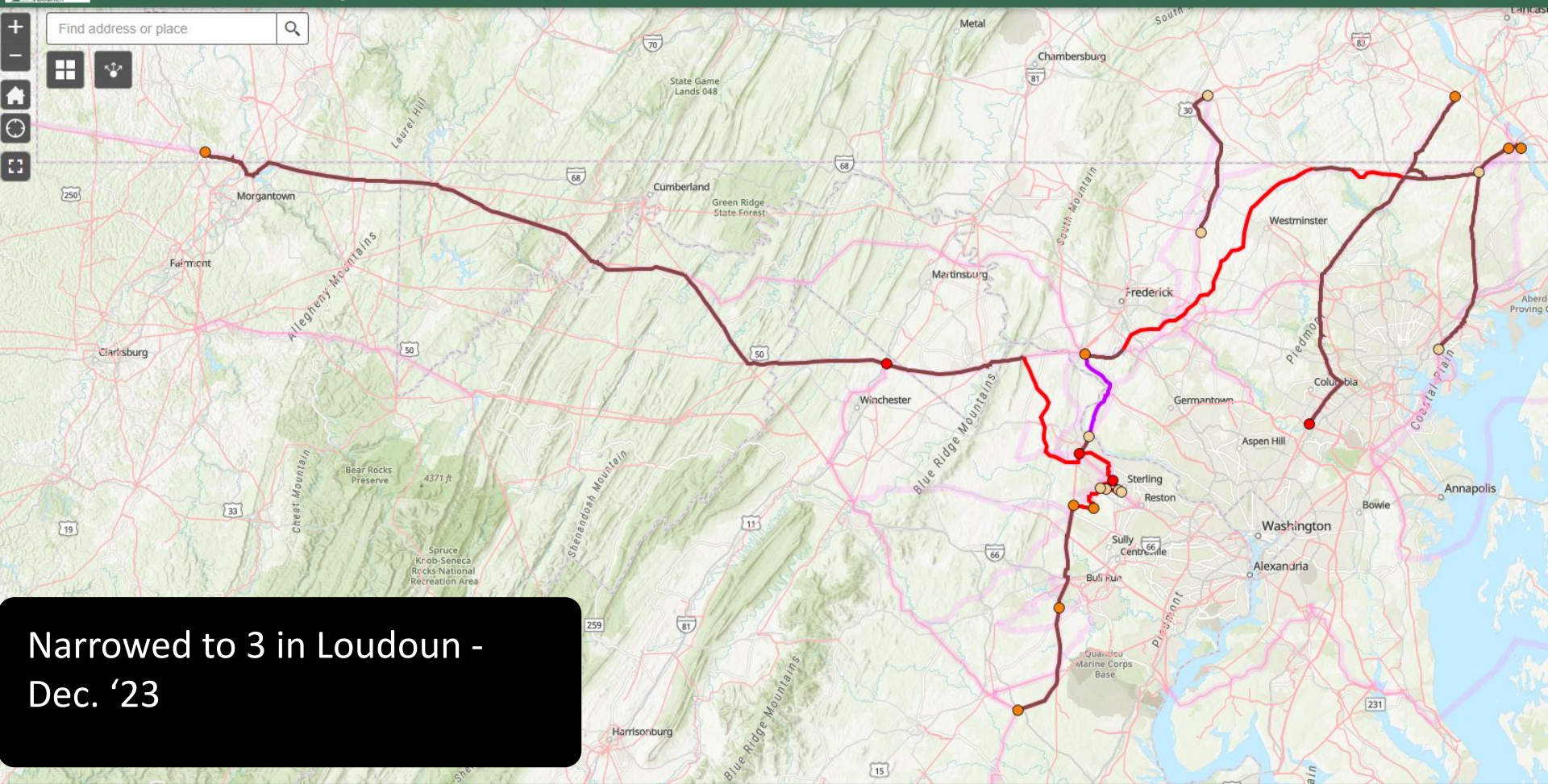
Interested parties are encouraged to review Dominion’s Petition and supporting documents in full for details about these and other proposals.

TAKE NOTICE that the Commission may approve revenues among customer classes and/or direct rates in a manner differing from that shown in the Petition and supporting documents and thus may adopt rates that differ from those appearing in the Company’s Petition and supporting documents.

The Commission entered an Order for Notice and Hearing in this proceeding that, among other things, scheduled public hearings on Dominion’s Petition. A hearing for the receipt of testimony from public witnesses on the Company’s Petition shall be conducted electronically at 10 a.m. on January 18, 2024. On or before January 3, 2024, any person desiring to offer testimony as a public witness shall provide to the Commission (a) their name, and (b) the telephone number they wish the Commission to call during the hearing to receive their testimony. This information may be provided to the Commission in three ways: (i) by filing out a form on the Commission’s



72 projects proposed - Oct '23.



Narrowed to 3 in Loudoun -
Dec. '23

Transmission Line Proposals to Serve Data Center Load Growth

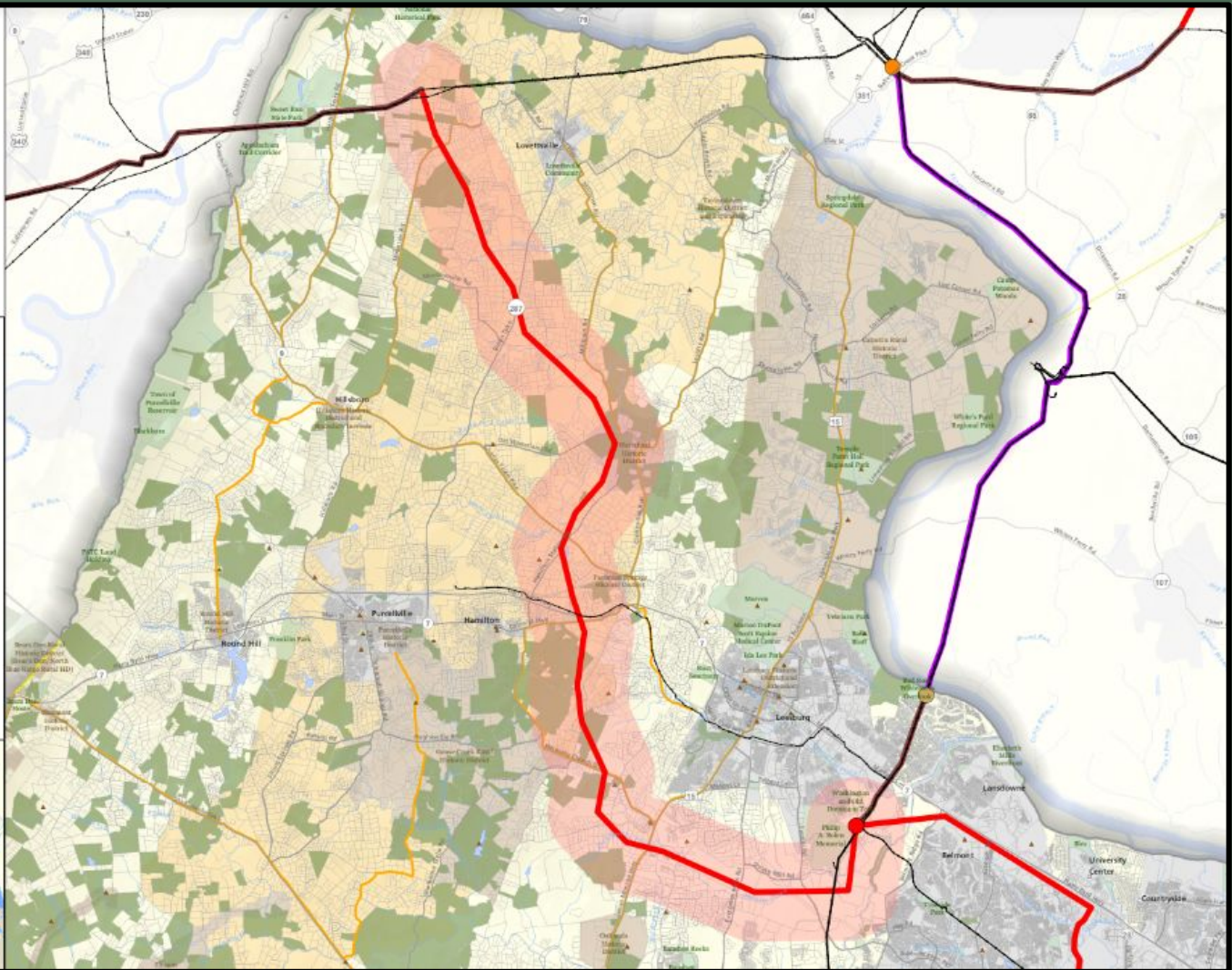


- Property Lines
- Publicly Owned
- Conservation
- Historic Districts
- Middleburg Viticultural Area
- Electric Transmission Lines
- Virginia Scenic Roads
- 1 mile buffer Proposed

PJM 2022 Window 3: Preferred Transmission and Substation Proposals

- New Transmission Line (Route to)
- Expand Existing Right of Way
- Rebuild in Existing Right of Way
- New Substation 500 kV
- Upgrade Substation 500 kV
- Upgrade Substation 230 kV

0 1.5 3 Miles



3 Part Eastern Loudoun loop

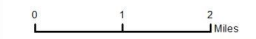
For **existing** data centers.

Not for approved-but-not-built or new applications.

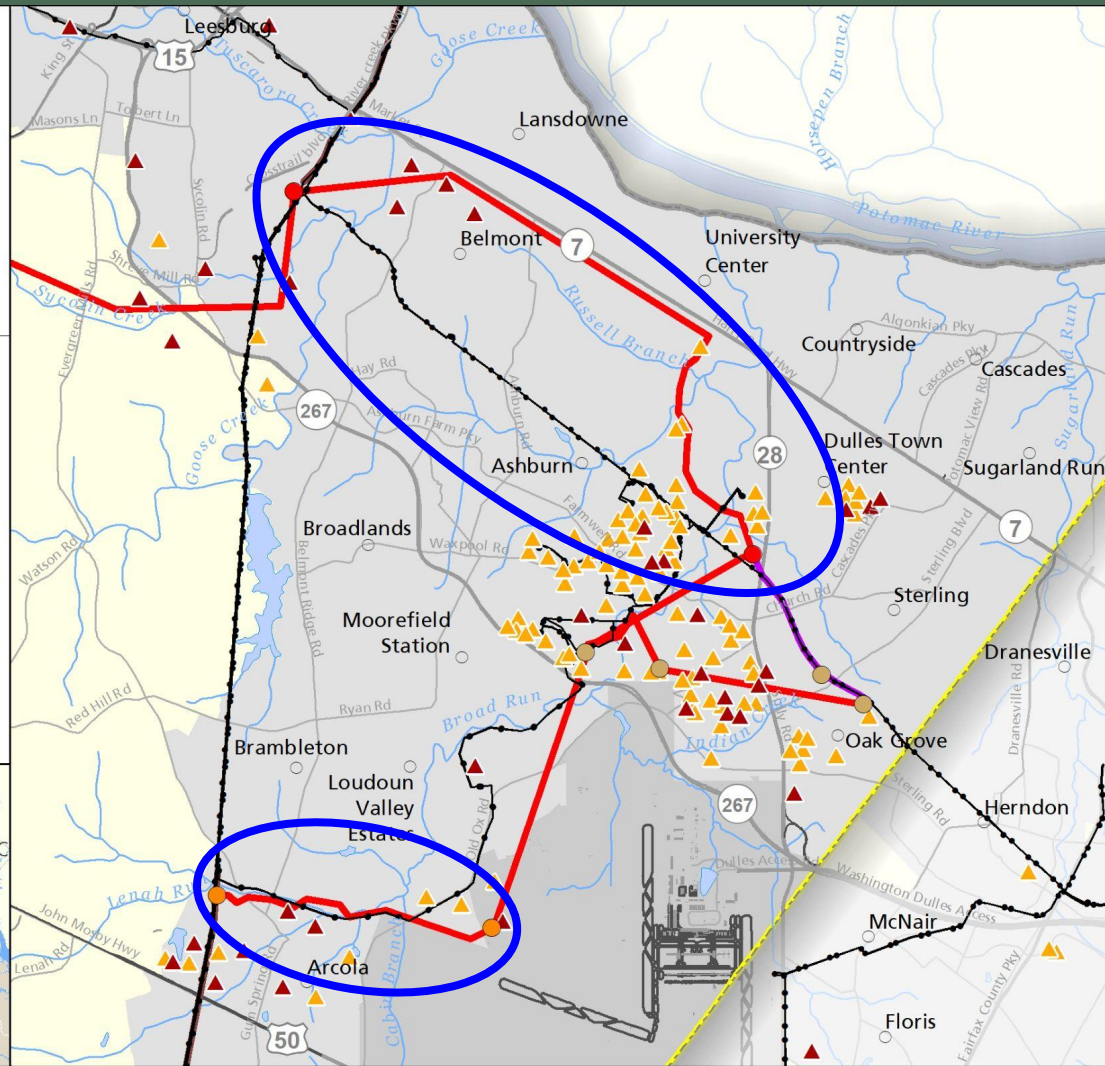
Transmission Line Proposals to Serve Data Center Load Growth



- New Substation 500 kV
 - Upgrade Substation 500 kV
 - Upgrade Substation 230 kV
 - ▲ Future Data Centers
 - ▲ Existing Data Centers
 - Electric Transmission Lines
- PJM 2022 Window 3: Preferred Transmission and Substation Proposals (from 10/31/23)
- New Transmission Line (Route to be determined by utility)
 - Expand Existing Right of Way
 - Rebuild in Existing Right of Way



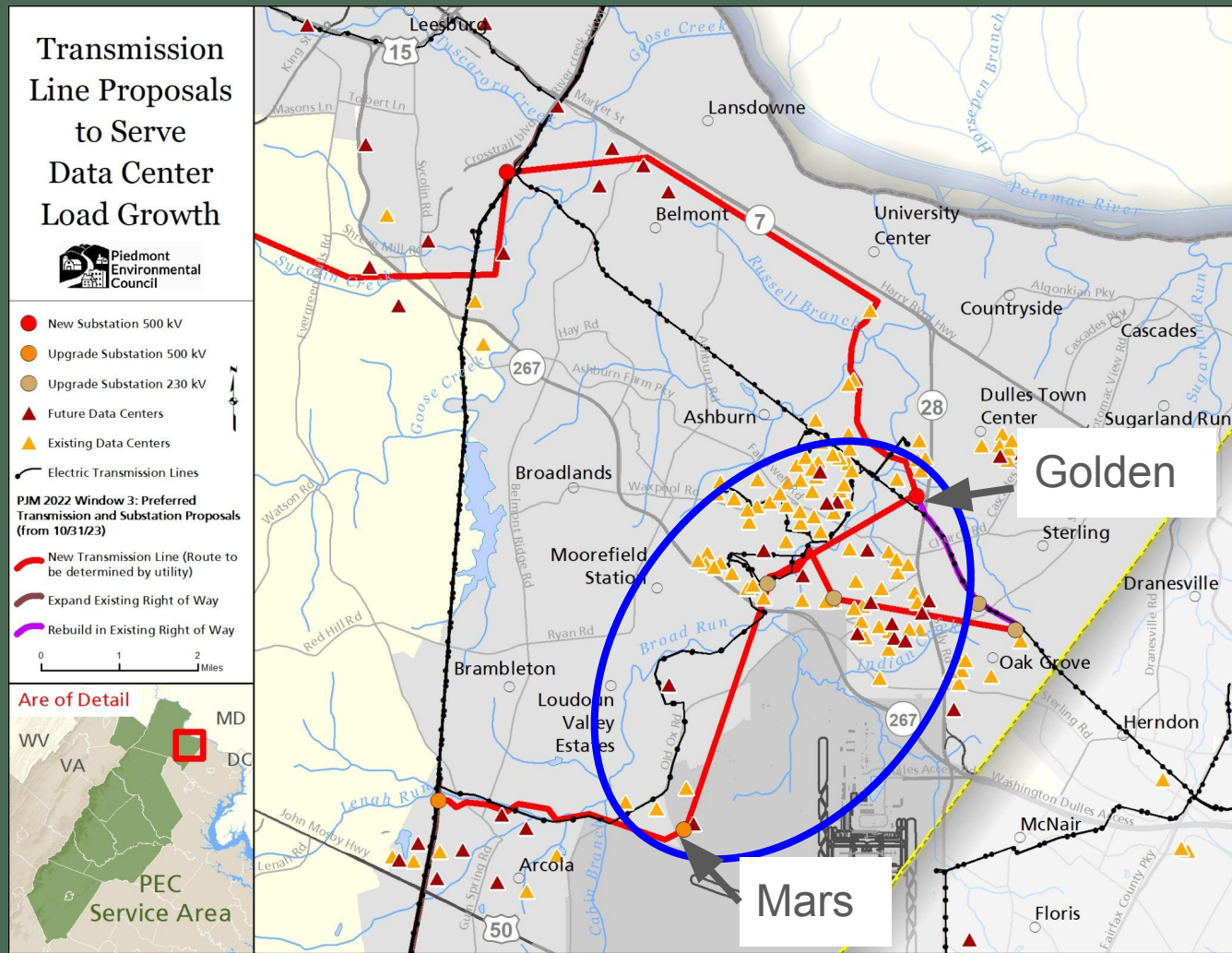
Area of Detail



The Connecting Link

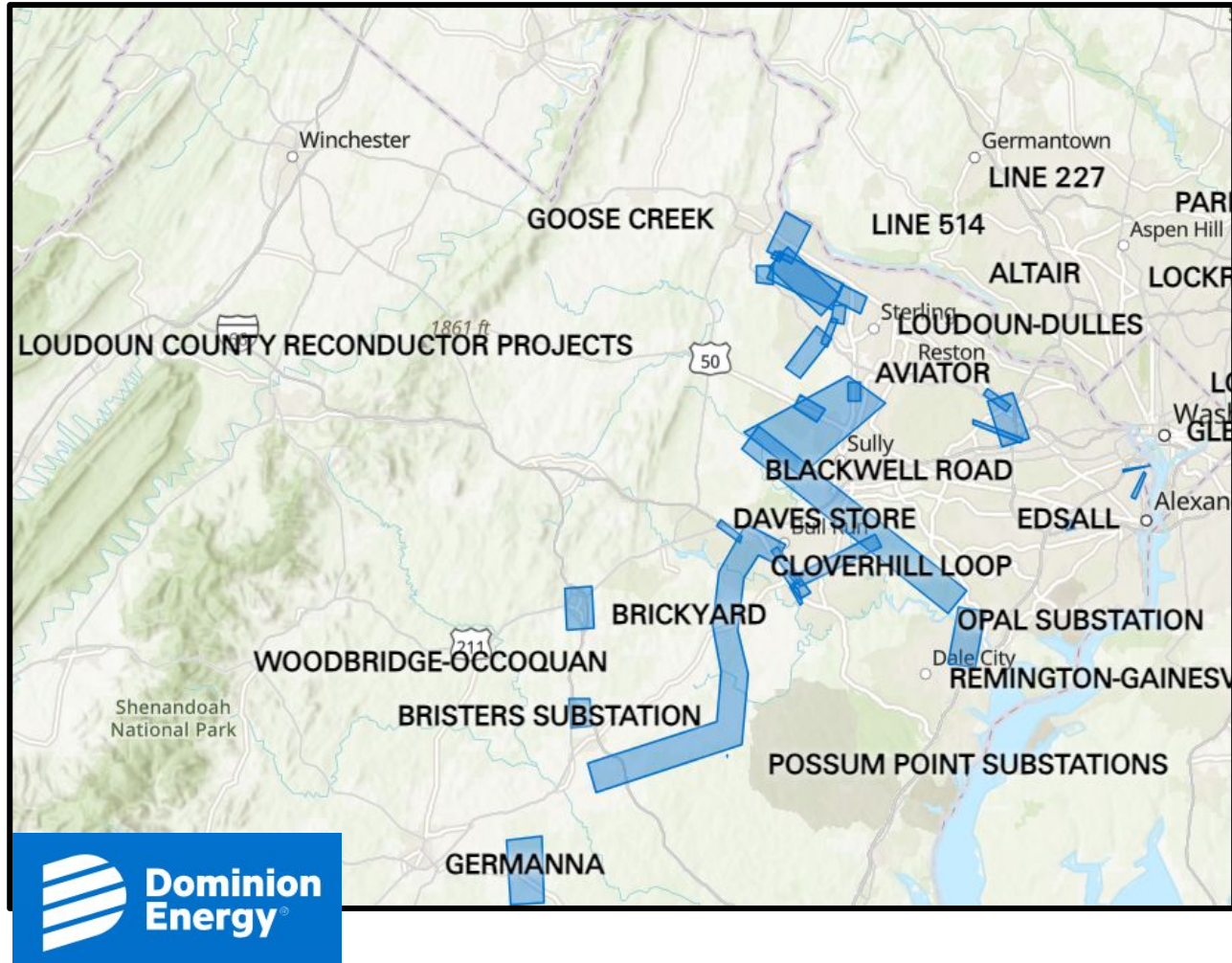
- Dominion is working on alternatives to propose to the public.
- Mailers to go out in mid-June.
- Open houses (virtual and in-person) expected end of July/early August.

ROUTE has yet to be determined.



Other Northern VA Dominion Energy Projects

- Twin Creeks to Apollo
- Aviator to Takeoff
- Reconductoring projects
- Line 514



What is NIETC?

The Federal Power Act authorizes the Secretary of Energy to designate any geographic area as a **National Interest Electric Transmission Corridor (NIETC)** if the Secretary finds that consumers are harmed by a lack of transmission in the area and that the development of new transmission would advance important national interests in that area, such as increased reliability and reduced consumer costs.

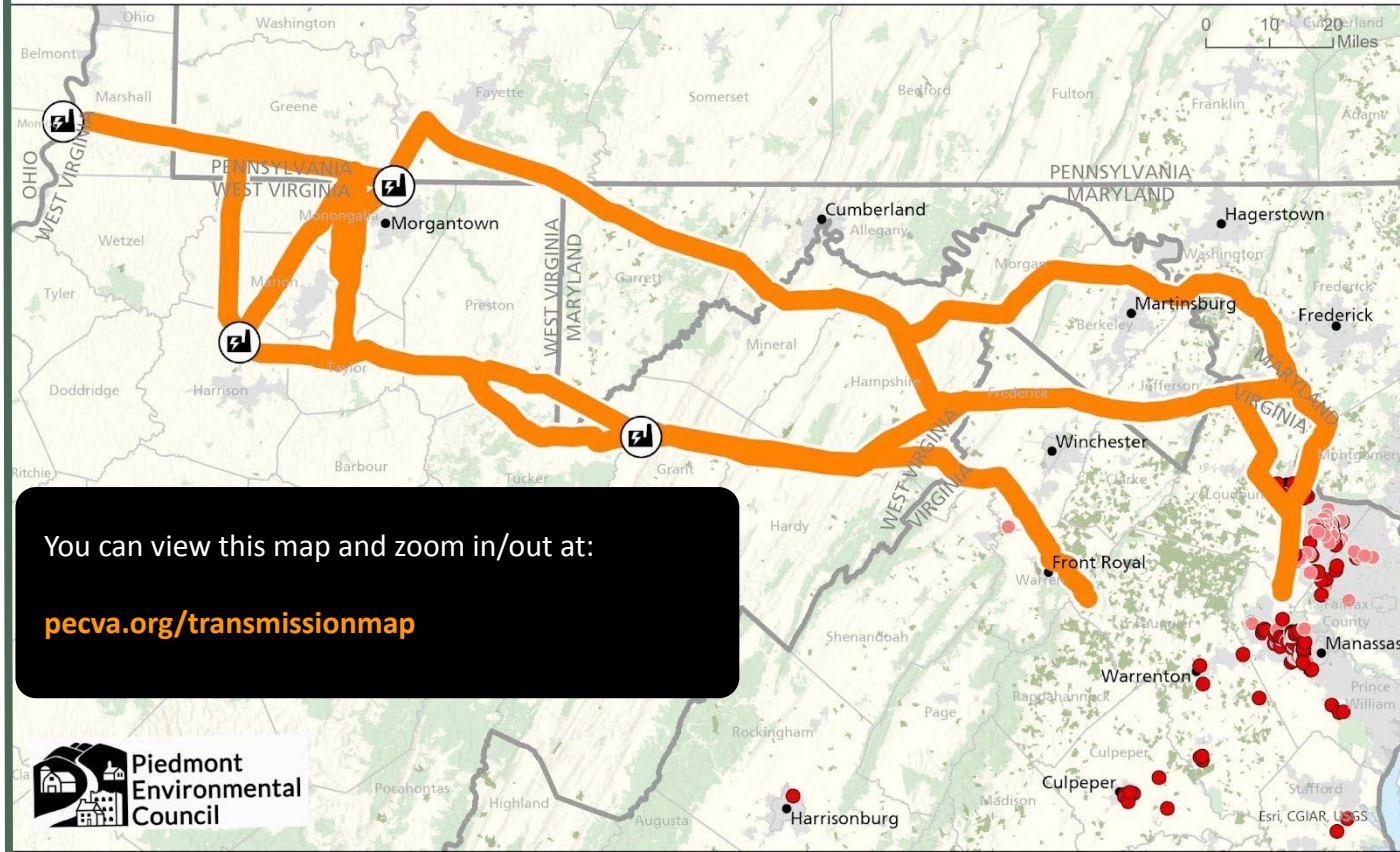
4 Phase process which began in February



**Preliminary List of Potential
National Interest Electric
Transmission Corridors**

Proposed National Interest Electric Transmission Corridor (NIETC)

-  Coal Power Plants with Maximum Output over 1,000 MW
-  Proposed National Interest Electric Transmission Corridor (NIETC)
-  Publicly Owned Land
-  Conservation Easements
-  Data Centers Virginia
-  Known Existing Data Centers
-  Proposed Data Centers



You can view this map and zoom in/out at:

pecva.org/transmissionmap

A NIETC designation for the MARL line project could overrule the Virginia SCC

Threshold Need Determination

Potential NIETC	Reliability	Resilience	Congestion	Consumer Costs	Future Generation & Demand Growth	Clean Energy
New York - New England						
New York – MidAtlantic						
Mid-Atlantic – Canada						
Mid-Atlantic						
Midwest – Plains						
Northern Plains						
Delta – Plains						
Plains – Southwest						
Mountain – Plains – Southwest						
Mountain – Northwest						

Reliability = Operate transmission system elements within equipment and electric system thermal, voltage, and stability limits

Resilience = Withstand and/or recover from system disruptions or unanticipated failure of system elements, particularly extreme weather events

Congestion = Alleviate economic impacts on the users of electricity that result from a transmission constraint

Consumer Costs = Facilitate delivery of lower-cost resources to high-priced demand areas

Future Generation & Demand Growth = Accommodate likely scenarios of future power system characteristics driven by market forces and utility, state, and federal policies

Clean Energy = Interconnect clean energy resources to reduce greenhouse gas emissions

A Billion dollar investment to connect to fossil fuel plants: Fort Martin and Harrison coal-fired plants to stay open ↓ ↓





Salem Coal
1700 MW
CLOSED 2023

Cardinal Coal
1800 MW
Est. 1963,67,77

Mitchell Coal
1600 MW
Est. 1971
Long Ridge Gas
521 MW

Fayette Gas 715 MW
Hill Top Gas 664 MW
502 Jctn 687 MW
Gans Gas 687 MW
Lake Lynn Hydro 50 MW
Ft. Martin Coal 1100 MW
Extended to 2035

Long View Coal
860 MW
Est. 2011

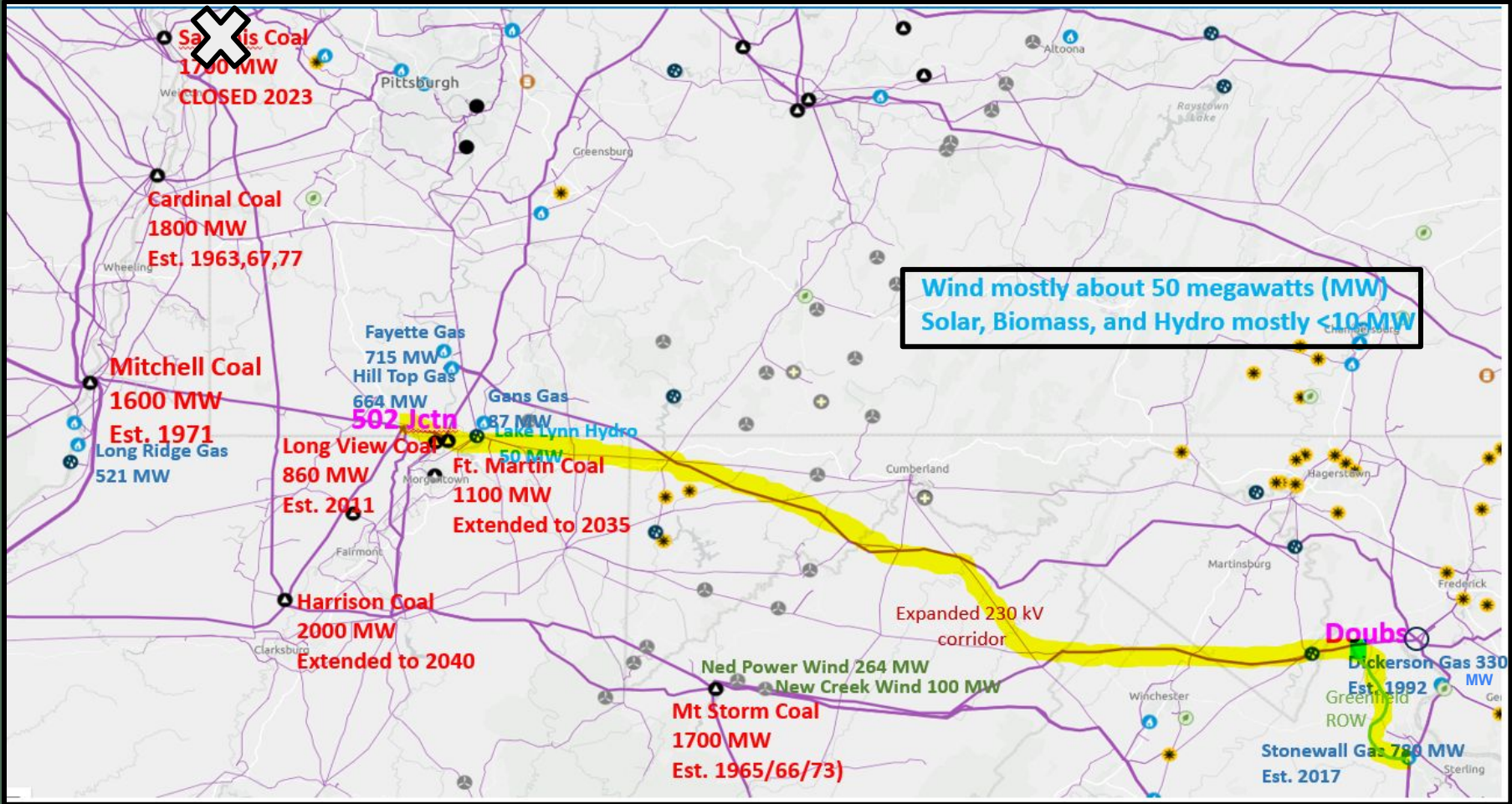
Harrison Coal
2000 MW
Extended to 2040

Ned Power Wind 264 MW
New Creek Wind 100 MW
Mt Storm Coal
1700 MW
Est. 1965/66/73)

Wind mostly about 50 megawatts (MW)
Solar, Biomass, and Hydro mostly <10 MW

Expanded 230 kV
corridor

Doubs
Dickerson Gas 330 MW
Est. 1992
Stonewall Gas 780 MW
Est. 2017



NIETC Designation Process



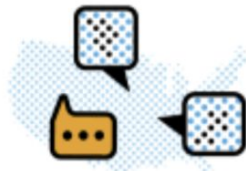
PHASE
1 Information Gathering

- Reviews National Transmission Needs Study findings
- Begins identifying potential NIETCs

DOE activities

- Submits recommendations on where to designate NIETCs and why

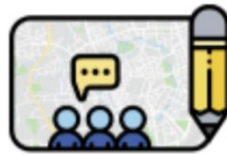
Public activities



PHASE
2 Preliminary List & Comments

- Publishes preliminary list of potential NIETCs

- Provides comments, alternatives and recommendations, and additional information



PHASE
3 Public Engagement

- Refines geographic boundaries of potential NIETCs and prepares draft report
- Conducts community engagement and any required environmental reviews

- Participates in DOE-led community engagement activities focused on potential NIETCs



PHASE
4 NIETC(s) Designated

- Issues final NIETC designation report(s) and any required environmental document(s)

- Focuses on areas of greatest transmission need
- Transmission developers in NIETCs access federal financing and siting tools



Modernizing and expanding transmission infrastructure helps **increase reliability, resilience, and access to clean, affordable electricity**

We Are Here

What can you do on transmission line proposals?

Send comments on NIETC

by **June 24**

NIETC@hq.doe.gov



United States
Department of Energy

GRID DEPLOYMENT
OFFICE

Send SCC comments:

- Aspen to Golden online comments by **September 10.**
- MARL line TBD

More info to come



What can you do to advocate for state and federal reform?

- Share information with friends, family, contacts and neighbors.
- Reach out to state elected officials and ask them to support data center reform legislation at state level
- Tell Congress to support the Artificial Intelligence Environmental Impacts Act
- Financially support the local efforts and the broader campaign needed!

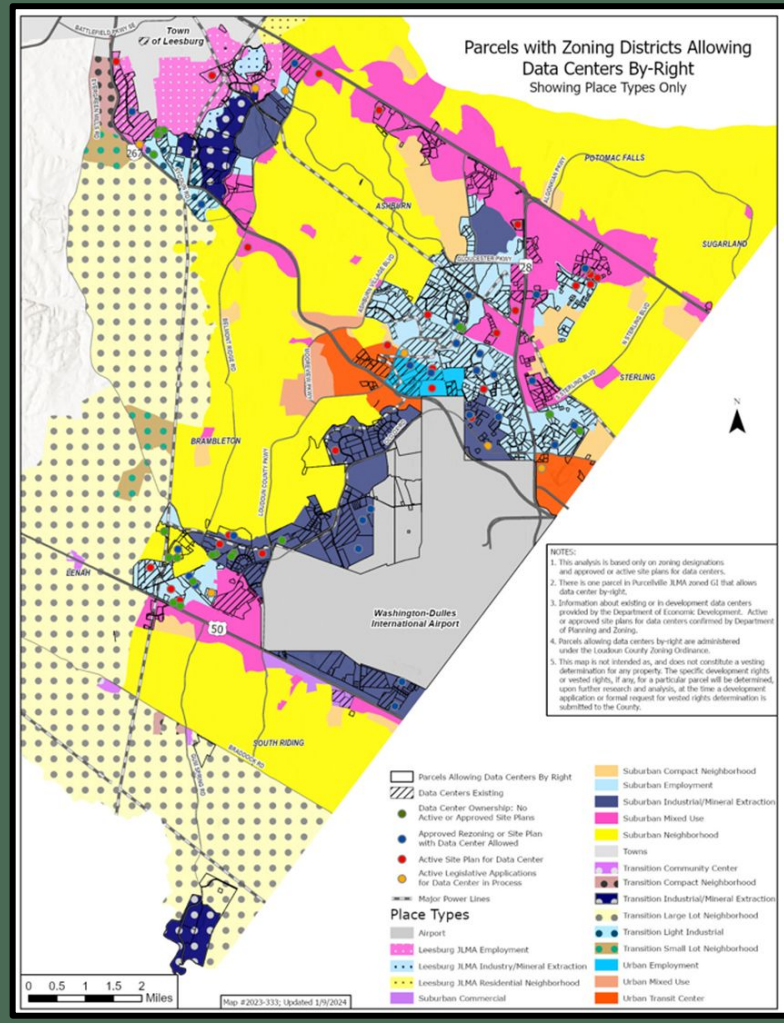
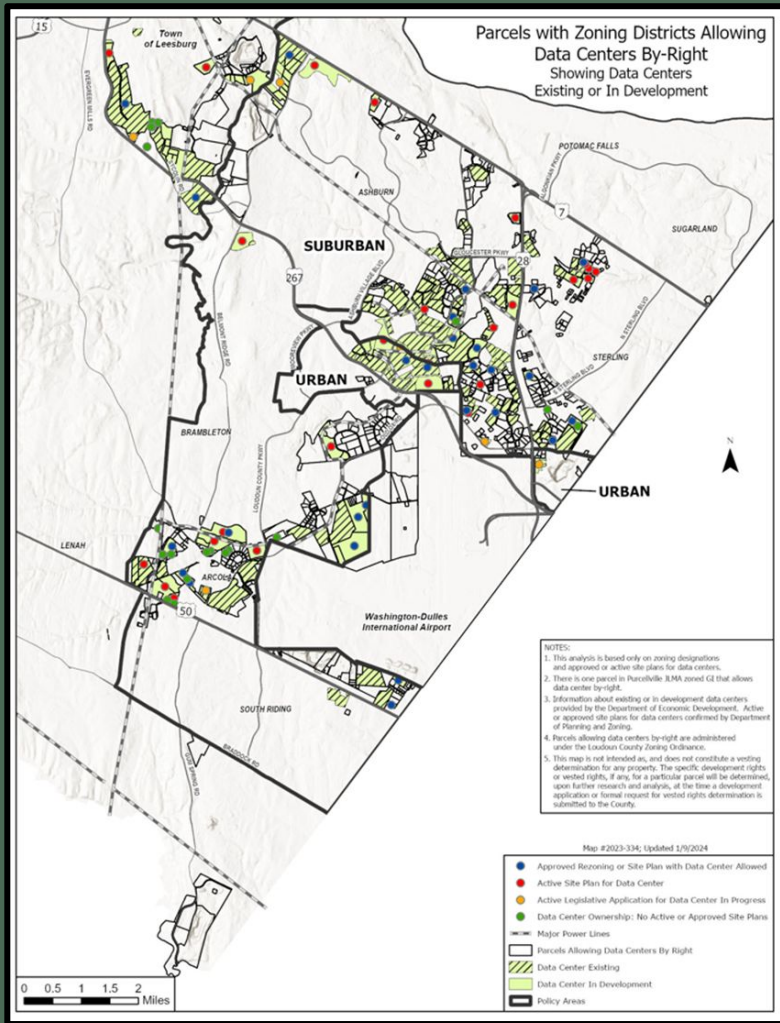


Photo Credit: Hugh Kenny, PEC



Still **Digging** the Hole Deeper





Pending Legislative Approvals

3 Applications Currently up for **Consideration**

- Orme Farm
 - BOS Public Hearing
 - BOS Vote
- Hiddenwood Assemblage
 - BOS Public Hearing
- Greenlin Park
 - Planning Commission Business Meeting

Orme Farm

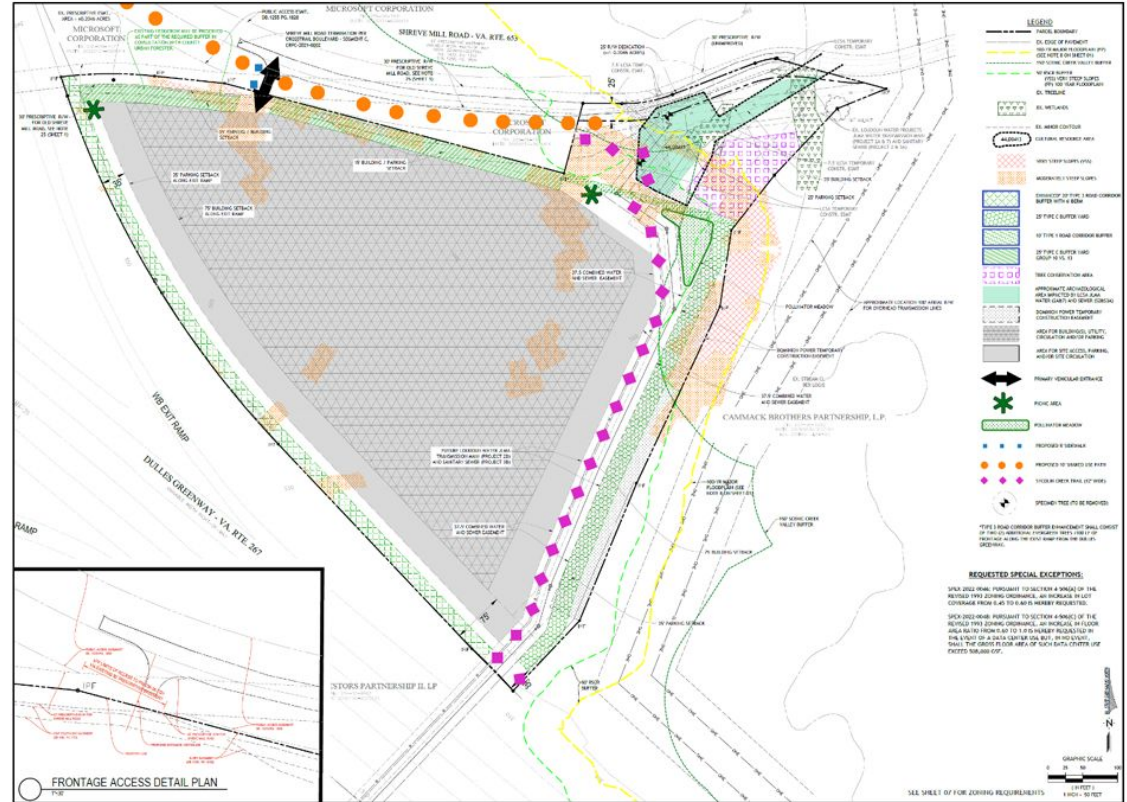
Rezoning and 2 Special Exceptions

11.7 acres from JMLA 20 to PD-IP

Increased Floor Area Ratio from 0.6 to 1.0

Increased Maximum lot coverage from 0.45 to 0.60

Figure 2: Concept Development Plan (CDP)



Hiddenwood Assemblage

Rezoning

28.92 acres from CR-1 to
PDIP

Allows for existing homes to be torn down to be replaced by a **756,024** sqft data center

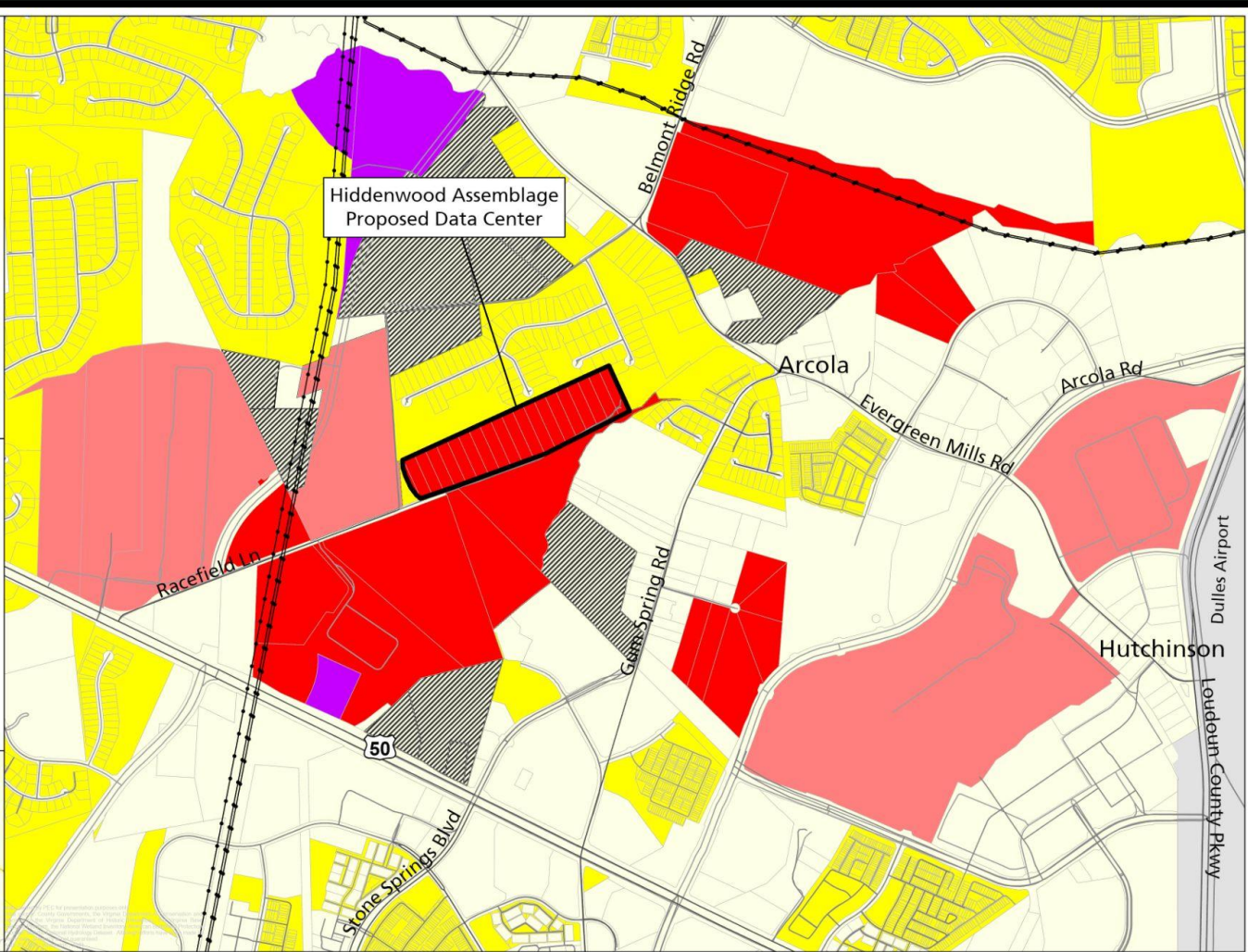
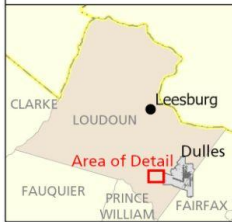


Proposed Data Centers Near Residential Parcels in Arcola



- Residential Parcels
- Existing Data Centers
- Proposed Data Centers
- Data Center Owned
- Utility-owned land
- Property Lines
- Electric Transmission Lines

0 500 1,000 Feet

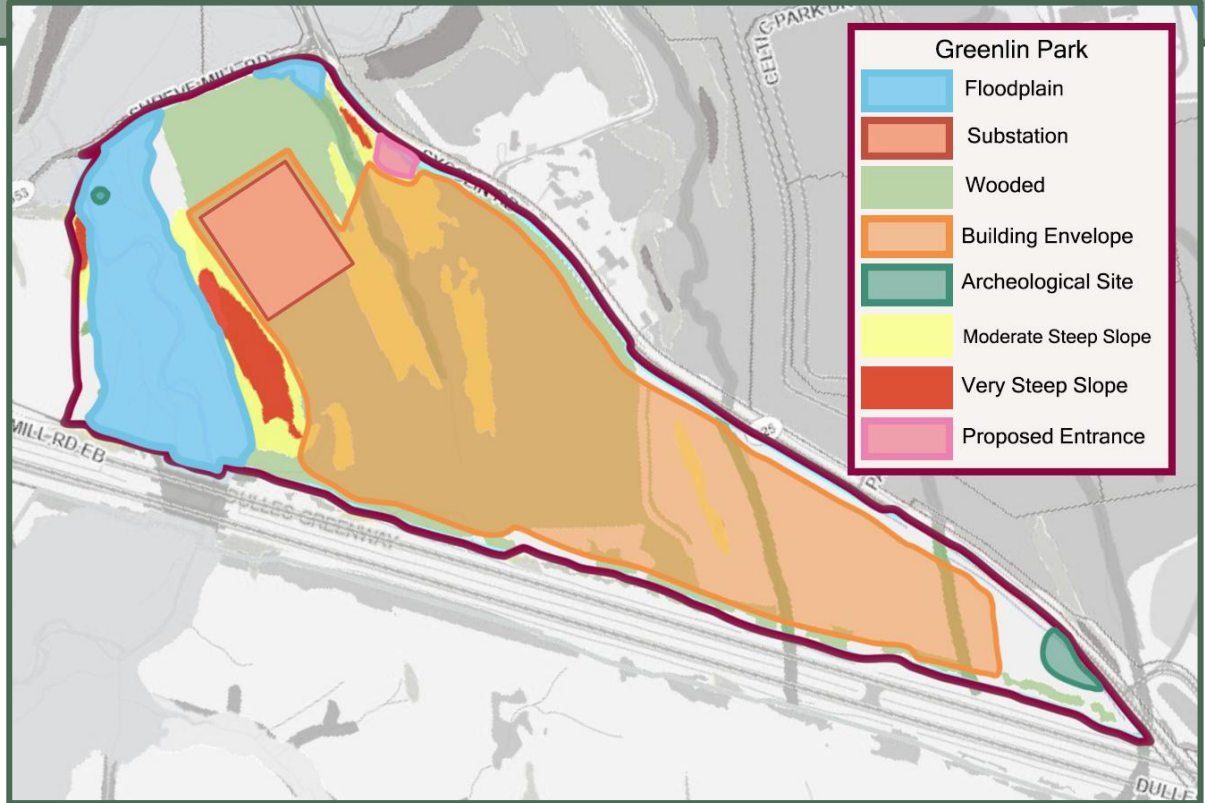


Greenlin Park

Rezoning

81.17 acres from TR-10
and JMLA-20 to **PD-IP**

Building Height increase
36' allowed, **60'**
requested by applicant



Dates to Watch

Board of Supervisors

bos@loudoun.gov

- Public Hearing 2nd Wednesday (after the first Monday)
- Business Meeting 1st Tuesday

Orme Farm July 2nd Business Meeting, final vote

Hiddenwood Assemblage July 10th Public Hearing

Greenlin Park Late Summer to Fall Public Hearing

Planning Commission

loudounpc@loudoun.gov

- Public Hearing 4th Tuesday
- Work Session 2nd Thursday

Greenlin Farm moved to **July 11th** work session



Questions?

Time to Stop Digging and demand better solutions