County of Fairfax, Virginia
Planning Commission Meeting
February 25, 2026
Planning Commission Action

PROPOSED ZONING ORDINANCE AMENDMENT – LARGE-SCALE BATTERY ENERGY STORAGE SYSTEMS
(Countywide)

PLANNING COMMISSION RECOMMENDATIONS:
On February 25, 2026, the Planning Commission voted 10-0 (Commissioner Hancock was absent from the meeting. Commissioner Sargeant recused himself from the discussion and vote.) to recommend to the Board of Supervisors the following actions:

- Adoption of the proposed Zoning Ordinance Amendment for Large-Scale Battery Energy Storage Systems as set forth in the Staff Report dated January 13, 2026, with an amendment to re-letter new standard 8101.3.D(14)(e) to 8101.3.D(14)(f) and delete “and approved by” in subsection 4102.X98(d) so that the sentence reads: A final decommissioning plan with all information required by subsections 8100.7.F and 8101.3.D(14)(f)2 must be submitted to the Director prior to site plan approval; and

- That the amendment become effective at 12:01 a.m. the day following adoption.

ATTACHED DOCUMENTS:
Staff Report dated January 13, 2026

CD

FAIRFAX COUNTY

PROPOSED ZONING ORDINANCE AMENDMENT

STAFF REPORT

Large-Scale Battery Energy Storage Systems

January 13, 2026

Hearing Dates
Planning Commission: February 25, 2026 @ 7:30 p.m.
Board of Supervisors: March 17, 2026 @ 4:00 p.m.

Staff Contact
Jacqui Kamp, AICP, Principal Planner

Americans with Disabilities Act (ADA): Reasonable accommodation is available upon 48 hours advance notice. For additional information on ADA call 703-324-1334 or TTY 711 (Virginia Relay Center).

PLANNING & DEVELOPMENT

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Table of Contents

Introduction 2
Background 2
Proposed Changes 6
Community Outreach 11
Summary 12
Proposed Text 13

Introduction

The Battery Energy Storage System (BESS) Zoning Ordinance Amendment was a Priority 1 topic first introduced in the FY 2025-2026 Zoning Ordinance Work Program and carried over to the FY 2026-2027 Work Program approved by the Board on July 15, 2025. BESS facilities use rechargeable batteries to store energy from various sources, such as the electrical grid and renewable energy sources like solar or wind power, then provide that power back to a use or the grid when needed, such as during peak demand or when there is a power outage. BESS can help reduce energy waste and improve grid efficiency, which, over the long term, can translate into lower electricity rates for customers.

Background

In addition to its benefits for the electrical grid, BESS facilities also support clean energy incentives and decarbonization goals. The 2020 Virginia Clean Economy Act set a renewable portfolio standard of 100 percent carbon-free energy by 2050 for its two largest investor-owned utilities, Dominion Energy and Appalachian Power. Most Fairfax County residents are served by Dominion Energy. The Act sets energy storage targets to be achieved by the end of 2035; Dominion's target is to construct or acquire 2,700 megawatts (MW) of energy storage capacity by 2035, including an additional mandate that at least 35% of the energy storage facilities be purchased from a private entity that sells its capacity to the utility.

Fairfax County does not currently have any large-scale BESS facilities. In 2024, a pre-application was submitted by a private utility for a proposed 20 MW BESS project; however, the application has not progressed past the pre-application phase. Loudoun County approved at least one 20 MW BESS facility in 2024 and Fauquier County approved their first BESS, a 100 MW facility, in September 2025.

Battery Energy Storage System (Dominion Energy 20 MW/80 MWh)



Credit: Dominion Energy

Current Regulations

Zoning Ordinance: By zoning interpretation, a battery energy storage system that is a principal use, and not accessory to another principal use of the property, is considered a type of light utility facility, which includes facilities for the distribution or collection of utility services or products, rather than production of those products or services. Under current zoning regulations, a battery energy storage system would be allowed in almost all zoning districts as follows:

- By right: I-3, I-4, I-5, and I-6
- Special exception (SE): residential districts, commercial districts, I-2
- SE, or if shown on the development plan: planned districts
- Not allowed: R-A, I-I, PCC

The light utility facility use-specific standards are in subsection 4102.4.X; the standards that currently apply to a battery energy storage system are summarized below.

- Light utility facilities (except electrical substations that have setback requirements) are not subject to lot size or bulk regulations of the zoning district where they are located. Bulk regulations include setbacks, floor area ratio, and building height.
- Except in I-5 and I-6, light utility facilities are prohibited from storing materials or equipment, repairing or servicing vehicles, and parking vehicles (except for employees connected with the immediate facility).
- If a light utility facility is proposed to be located in an R district (residential districts and residential areas of planned districts) by special exception, the Board must find that either the proposed location is a co-location or expansion of an existing facility and would minimize adverse effects on the R district; or there is no alternative site in a commercial or industrial district within 500 feet for all light utility facilities, except an electrical substation which requires one mile.

In addition, a 35-foot-wide transitional screening yard (Type 2) and a six-foot-high solid wall or fence (Barrier D or E) are required for light utility facilities abutting or across the street from residential uses.

2232 Process: BESS facilities are typically subject to 2232 review in accordance with Virginia Code Sect. 15.2-2232 to determine whether the general or approximate location, character, and extent of the proposed facility is in substantial accord with the Comprehensive Plan.[1] An accessory BESS (developed with and accessory to a principal use, such as a hospital) would not require a 2232 approval. Additional details about the process is available online. When both a 2232 and an SE are required, the applications are usually processed concurrently.

Other County Reviews: BESS facilities are also subject to site plan review (subsection 8100.7) through the Department of Land Development Services. This includes review for access to the site, transitional screening, tree preservation, water availability, stormwater management systems, and other site requirements. Building permits are issued for certain structures and a Nonresidential Use Permit (NonRUP) is required upon completion and inspection of the improvements.

State and Other Reviews: BESS facilities with a rated capacity not exceeding 150 MW are eligible for the Virginia Department of Environmental Quality's Small Energy Storage Permit by Rule regulation. Projects that are not eligible for permit-by-rule, either because they are too large or because they do not meet the definition in the legislation, are required to apply for a permit with the State Corporation Commission. Per 9VAC15-100-20 of the Code of Virginia, the application requires BESS projects to submit a certification by the County that they comply with all applicable land use ordinances. The permit also requires review and coordination with the regional transmission organization or transmission owner, by requiring a copy of an interconnection agreement between the project and the regional transmission organization or transmission owner, or both.

Related County Goals/Policies

This Zoning Ordinance Amendment helps promote other County initiatives, including the Community-wide Energy and Climate Action Plan and Resilient Fairfax. The Community-wide Energy and Climate Action Plan (CECAP), accepted by the Board on September 14, 2021, is a community driven greenhouse gas emissions reduction plan that provides recommendations and strategies with a goal to be carbon neutral by 2050. The CECAP Implementation Plan, presented to the Board on December 13, 2022, details actionable steps that can be taken. Strategies include increasing the amount of renewable energy in the electric grid and increasing production of onsite renewables to help curtail consumption of fossil fuels with a recommended action to increase grid-scale and onsite battery storage technologies to support the growth of renewable electricity. This Zoning Ordinance amendment is connected to supporting the strategies for the growth of renewable energy by providing for BESS development while ensuring compatibility with surrounding uses and protecting public safety.

[1] Under Virginia Code Sect. 15.2-2316.9, a BESS facility is deemed to be substantially in accord with the comprehensive plan, satisfying the requirements of 15.2-2232, if the local governing body approves a siting agreement.

The Resilient Fairfax Climate Adaptation and Resilience Plan was officially adopted by the Board in November of 2022. It is a plan and program to help Fairfax County adapt and become more resilient to changing climate related conditions such as extreme heat, severe storms, and flooding. As energy infrastructure can be affected by climate change impacts, including extreme storms, flooding, and heat, these impacts can cause service disruptions and cascading effects across many sectors. Power outage impacts were identified as a top risk in the Resilient Fairfax Vulnerability and Risk Assessment. Resilient Fairfax includes a strategy (RIB.2a) for energy resilience which promotes battery storage at both the grid and building scale to help manage peak electricity demands and provide backup energy sources during outages. This Zoning Ordinance amendment supports the plan's goal to develop infrastructure resilience outside of County control by proposing provisions to ensure compatible and safe large-scale BESS development.

Other Jurisdictions

As BESS projects are an emerging component of the energy system infrastructure, the number of local governments that specifically regulate BESS is limited but growing. Jurisdictional research for this Zoning Ordinance amendment has included a review of Virginia jurisdictions that have incorporated standards specifically for BESS in their zoning ordinances, including Loudoun County, King George County, Hanover County, Prince George County, Albermarle County, and the City of Virginia Beach. Other resources include Dominion Energy's Model Ordinance for BESS, New York's Battery Energy Storage System Model Law, the University of Michigan's Guide for Michigan Local Governments, American Clean Power, and the Pacific Northwest National Laboratory's Energy Storage in Local Zoning Ordinances. The table below provides an overview of other Virginia jurisdictions' zoning ordinance standards for a large-scale battery energy storage system compared to the Fairfax County proposal, which is explained in more detail below.

	Loudoun County	King George County	Prince George County	Hanover County	City of Virginia Beach	Dominion Energy Model Ordinance	Fairfax County BESS Proposal
Size	>600 kWh	Not specified	>600 kWh	>600 kWh	Not specified	10 MWh	>600 kWh ***[>600 kWh-10 MWh]****
Use permissions	**SE**: PD-RDP; Commercial/Light Industry; Transition Rural; JLMA; Office Park **Minor SE:** Industrial Park; General Industry; Mineral Resource-Heavy Industry Districts	**SE:** Agriculture and Industrial Districts	**SE:** Agricultural and Industrial Districts	**SE:** Agricultural and Industrial Districts	**Conditional use:** Industrial Districts	Not specified	**SE:** Commercial, Industrial, PDC, and PTC Districts *Not allowed in Residential districts unless co-located with a substation or solar power facility*
Setbacks	50 feet to nonresidential; 100 feet to residential (unless more restrictive in underlying zoning)	100 feet to nonresidential 200 feet to residential	Underlying zoning or 100 feet (whichever is greater)	Underlying zoning district	100 feet	50 feet to nonresidential; 100 feet to residential	100 feet to non-residential ***[50-300 ft]**; 200 feet **[50-300 ft]** to residential
Noise study	Yes	No	No	No	Yes	No	Yes
Decommissioning Plan and security	Plan only	Plan and security	Plan and security	Plan and security	Plan and security	Plan and security	Plan and security

Bracketed numbers under Fairfax County proposal are the range of options for Board consideration.

Proposed Changes

While BESS facilities offer several benefits to communities, their development often raises concerns related to safety, noise, and visual impacts. Zoning and safety standards can help communities address and mitigate these concerns. Using the information provided in the resources mentioned above, as well as the use standards for other uses in the Zoning Ordinance, such as data centers and solar power facilities, the proposed permissions and standards are intended to address public safety and compatibility with surrounding uses. Except as noted below, these proposed changes will only apply to a large-scale battery energy storage system; other light utility uses will continue to be subject to the current permissions and standards. The proposed amendment would not permit a large-scale battery energy storage system in residential districts, the PDH, PRC, PRM, or PCC, unless co-located with a substation or solar power facility, and would be required to meet the Zoning Ordinance requirements for a large-scale BESS through an SE[2] approval, in addition to any other Zoning Ordinance requirements for the electrical substation or solar power facility. If a large-scale BESS project is proposed for co-location, the BESS would have to be shown on the substation or solar power facility SE approval, or an amendment to the SE would be required. An SE would be required for large-scale BESS in all commercial districts, all industrial districts, and in the PDC and PTC districts (unless shown on the development plan and subject to the large-scale BESS Zoning Ordinance requirements). It would not be allowed in the R-A or I-I districts. Proposed changes in permissions are summarized in Table 1 below.

Table 1: Proposed Battery Energy Storage System Permissions

Zoning District	Current Permission	Proposed Permission
Residential-Agricultural (R-A)	Not allowed	No change/not allowed
All other conventional R districts (R-E – R-MHP)	SE	SE, but only if co-located with an electrical substation or solar power facility
Commercial districts (C-1 – C-8)	SE	No change/SE
Industrial-Institutional (I-I)	Not allowed	No change/not allowed
I-2	SE	No change/SE
I-3, I-4, I-5, and I-6	By right	SE
PDH, PRC, PRM, and PCC	Development plan or SE	Development plan or SE, but only if co-located with an electrical substation or solar power facility.
PDC and PTC	Development plan or SE	No change/development plan or SE

[2] Per Table 8102.1 of the Zoning Ordinance, the special exception is subject to the general special exception fee.

The proposed changes in standards and definitions are summarized in Table 2 below.

Table 2: Proposed Changes to Standards and Definitions

Subsection	Proposed Change
4102.4.X(1) **Permissions**	Adds proposed permissions (as noted above) for a large-scale battery energy storage system.
New 4102.4.X(8)(a) **Setbacks**	This proposed standard requires use-specific setback requirements for large-scale BESS. One hundred feet from all property lines and 200 feet from an abutting lot line of an R district or a property developed with a residential use.
New 4102.4.X(8)(b) and 4102.7.A(7) **Fencing**	This proposed standard allows a fence or wall that is an integral part of a large-scale BESS site to exceed the maximum height allowed in the Zoning Ordinance.
New 4102.4.X(8)(c), 8101.2. E(13) and 8101.3.D(14)(e)1 **Emergency operations plan**	This proposed standard requires a preliminary emergency options plan at special exception or development plan submission and a final emergency operations plan approved by the Office of Fire Marshal (OFM) prior to issuance of a building permit.
New 4102.4.X(8)(d), 8100.7.F(5), 8101.2. E(13) and 8101.3.D(14)(e)2 **Decommissioning plan**	This proposed standard requires a preliminary plan at special exception or development plan submission and a final decommissioning plan approved by the Director, LDS, prior to site plan approval. Also, financial security would be required to ensure implementation of the plan.
New 4102.4.X(8)(e) **Noise study**	This proposed standard requires the submission of a noise study prior to site plan approval.
New 4102.4.X(8)(f) **Codes and standards**	This proposed standard requires large-scale BESS to meet all applicable codes and standards, the National Fire Protection Association 855 and the Underwriters Laboratories Standard 9540A.
Table 5108.2 **Transitional Screening and Barriers**	Adds large-scale battery energy storage system to the solar power facility use in Table 5108.2; adds requirement for transitional screening when adjacent to other public, institutional, and community uses, commercial uses, and craft beverage establishments; and requires more extensive screening (Type 3) adjacent to all residential.
New 9103.4.E **Definition**	Adds a new definition of large-scale battery energy storage system as a type of Utility Facility, Light.

Definition: The proposed amendment revises the Light Utility Facility definition to include "large-scale battery energy storage system" and adds a new sub-definition for "Battery energy storage system, Large-Scale" that would define it as a system with a maximum stored energy greater than 600 kWh *[range for consideration >600 kWh - 10 MWh]*. The proposed definition provides that a BESS may be permitted as an accessory use and subject to accessory use

standards if it (1) has a maximum stored energy of 600 kWh or less; or (2) exceeds 600 kWh of maximum stored energy but will be located within a building with a separate principal use and exclusively serves that use. Additional research and feedback found that some commercial or industrial uses, such as hospitals and data centers, may use BESS larger than 600 kWh within the building to support their energy needs. To be constructed, those buildings were subject to zoning, building, fire, and any other applicable code review and approval, including permits for electrical equipment operating within the building. Furthermore, being located within the commercial or industrial building negates any adverse noise or visual impacts related to BESS.

Watt hours versus Watts

A watt hour refers to the total amount of energy that a system can store.

1,000 kWh = 1 MWh

A watt is a unit of power. It is how much energy is produced or used at any point in time (rate of energy).

1 MW = 1,000 KW

The review of zoning ordinances with BESS standards indicates that many jurisdictions use the threshold of 600 kWh to distinguish between an accessory and principal use. The 600 kWh threshold comes from the National Fire Protection Association's standard for energy storage, NFPA 855, which requires additional safety standards, such as hazard mitigation analysis and fire and explosion testing, when a BESS site has a maximum stored energy greater than 600 kWh. Staff research has also found other thresholds, including the American Clean Energy Model Ordinance which requires zoning standards for when a system has a capacity of equal to or greater than 1,000 kilowatts (or one megawatt). King County, Washington requires zoning review for a principal use BESS with a capacity of more than two megawatts.[3] An example of a larger threshold is Dominion Energy's Model Ordinance for BESS which proposes zoning standards when a BESS has a maximum stored energy greater than 10 MWh.

New standards for BESS: While large-scale BESS facilities offer significant electric grid and community benefits, they can also pose safety, auditory, and visual impacts on the community. The requirements proposed in the draft text are intended to minimize impacts on surrounding uses and protect public safety.



BESS container (credit: Dominion Energy)

- **Applicability:** The proposed new standards would only apply to a large-scale battery energy storage system through approval of a special exception or development plan in the

[3] The American Clean Energy Model Ordinance and King County thresholds use units of watts, instead of watt hours. See explanation of watt hours versus watts in the blue box. The watt hours for a facility will be represented with a larger number than the watt rating.

specified permitted zoning districts and can be modified by the Board with approval of proffered conditions or a special exception.

- **Setbacks:**
  - From all property lines: 100 feet (range 50 – 300 feet)
  - From an R district, or a property developed with a residential use: 200 feet (range 50 – 300 feet). For the purpose of these provisions, an R district does not include a property that is developed with an international airport and its related uses.

  For large-scale BESS, the setback would be measured from the lot line to the nearest structure or piece of equipment of the BESS. The setback would not be measured to the perimeter fence or wall. As indicated above, these use-specific setbacks are intended to mitigate adverse visual and noise impacts and are similar to the County's requirement for data centers and substations, and those required by certain other local jurisdictions.

- **Fence or wall**: A fence or wall that is an integral part of a large-scale BESS would be exempt from the maximum fence or wall height limitations in subsection 4102.7.A(7)(b)5. The Zoning Ordinance currently requires a six-foot high solid fence or wall when abutting or across the street from residential uses. Otherwise, a fence or wall would be limited to four to eight feet in height, depending on the location. Feedback received noted that BESS containers can be taller than six feet with the potential for noise generating components, such as HVAC equipment, located close to the top of the container. A fence or wall that conceals the container and equipment can also mitigate noise and increase security. The special exception or development plan review process would include consideration of the appropriate fence or wall height, taking into account the equipment height and site characteristics such as topography.

- **Emergency operations plan:** An Emergency Operations Plan is required for any BESS facility to outline procedures and requirements for the safe operation of the BESS, including how equipment and systems will be safely shut down under emergency conditions; procedures to follow in case of a fire; and information related to drills and training of local first responders, among other requirements. Details such as system specifications that are needed to finalize an emergency operations plan may not be feasibly available at the time of applying for an SE. Therefore, the proposed amendment requires submission of a preliminary plan with the SE or development plan application and a final emergency operations plan to be submitted for approval by the OFM prior to issuance of a building permit.



Fire panel for BESS facility (Credit: DPD staff with permission from Dominion Energy)

- **Decommissioning plan:**
Decommissioning is the process of removing the equipment and infrastructure associated with a project and restoring the land. Since lithium-ion batteries are considered hazardous waste, the project owner is responsible for managing them appropriately. A decommissioning plan details how the project equipment will be removed and the land restored after the BESS is no longer required or desired. Local governments often require financial security to guarantee the availability of funding to implement the plan. Similar to the emergency operations plan, details such as system specifications that are needed to finalize a decommissioning plan may not be feasibly available at the time of applying for an SE. Therefore, the proposed amendment requires a preliminary plan, including how the land will be restored, with submission of the SE or development plan application, and a final decommissioning plan to be submitted for approval to the Director of LDS prior to site plan approval. The final plan would include a security fund agreement to ensure that the decommissioning plan is implemented.



Landscaped screening at BESS facility (Credit: DPD staff with permission from Dominion Energy)

- **Noise study:** The operation of BESS involves noise generated by inverters, ventilation systems, and transformers. Based on a noise study report provided to the County by an acoustical consultant, the large container units associated with BESS, and their accompanying cooling fans and condensing units, can produce noise levels exceeding 90 dBA at the source. In addition, power conversion devices, which convert direct current (DC) into alternating current (AC) for integration into the power grid, also contribute significantly to the overall noise and can exceed 80 dBA at the source. The County's Noise Ordinance provides the maximum allowed sound levels at the property boundary based on land use. The noise levels at the source provided in the consultant report exceed the maximum dBA allowed by the noise ordinance for all land uses (residential, commercial, mixed use, and industrial). Given the possibility that the noise generated by a BESS could exceed the maximum sound levels allowed under the Noise Ordinance and the many variables that affect sound propagation, appropriate setbacks and documentation (noise study) of any noise mitigation that might be needed for a proposed BESS could provide assurance for noise concerns. The proposed amendment requires a noise study acceptable to the Zoning Administrator, prior to site plan approval. Final system specifications are needed for the noise study, and those details may not be known at the time of the SE or development plan application submittal, therefore submittal with the site plan is appropriate.

- **Codes and standards:** A proposed use standard requires that a large-scale BESS is subject to the National Fire Protection Association (NFPA) 855, Standard for the Installation of Stationary Energy Storage Systems; Underwritings Laboratories (UL) 9540A, Standard for Test Method for Evaluating Thermal Runaway Fire Propagation in Battery Energy Storage Systems; and all applicable codes and standards. NFPA 855 provides guidelines and requirements for the safe design, installation, operation, and maintenance of energy storage systems. Under UL 9540A, BESS undergo thorough testing to assess fire propagation related to thermal runaway events. These large-scale fire tests ensure battery enclosures are designed and installed so that any incidents that do happen are contained and do not spread to other units. The reference to NFPA 855 and UL 9540A ensures that the facility is up to date with the most recent safety standards for the rapidly advancing technology.

- **Transitional screening and barriers:** Large-scale BESS facilities are typically housed in specially engineered containers that resemble shipping containers. These systems generally range between about eight to twelve feet in height. Currently, a large-scale BESS would need to meet the requirements in Table 5108.2 for "All Other Public, Institutional, and Community Uses" in subsection 5108.5.B, which requires Type 2 (35-foot wide) transitional screening and a six-foot high solid fence or wall (Barriers D or E) for sites adjacent to or across the street from residential uses. The proposed amendment adds Large-Scale BESS to the same use classification column and row as the Solar Power Facility use in Table 5108.2, and revises the existing standards to require a Type 3 (50-foot wide) transitional screening and Barrier D or E when a BESS or Solar Power Facility use is located adjacent to any residential use and a requirement for Type 1 (25-foot wide) transitional screening when adjacent to other public, institutional, and community uses; commercial uses; and craft beverage establishments; along with the existing requirement for a Barrier D or E. A Large-Scale BESS is a Light Utility Facility, therefore, per subsection 5180.5.A(1), is required to also provide the transitional screening across the street from the adjacent uses as noted in the table. The requirement for the screening across the street from the use would only apply to a large-scale BESS, not a solar power facility, as a solar power facility is not a Light Utility Facility. The transitional screening and barrier could be located within the required setbacks.

Water availability for firefighting: Staff considered including a standard that would have required an applicant to demonstrate that an existing public water supply was available for fire protection. After further consultation with OFM staff, it was determined that there is already a review and approval process in place for water supply requirements for all developments. During site plan review, potential water supplies are evaluated by the OFM plan reviewer based on the operational firefighting needs of the scope of work. With this information, an adequate water supply is approved based on requirements within the County's Public Facilities Manual and Insurance Services Office fire flow calculations. The most common approved water supply is an existing or proposed public utility. In addition to the OFM review, a public water supply must be reviewed and approved by the utility provider. If an adequate public water supply is

not available, a fire code modification is required to be submitted proposing alternative or additional measures to provide at least an equivalent level of fire protection. If the water supply is an alternative source, such as a river, pond, swimming pool, or tank, fire flow calculations must include a predetermined length of time for firefighting operations to extinguish the fire. Furthermore, the preferred firefighting strategy for BESS is to allow a BESS fire to burn itself out without using water directly on the structure. Rather, water will more than likely be used to protect surrounding areas from fire spread. The general SE standard in subsection 4102.1.F(2)(e) requires adequate utility, drainage, and other necessary facilities to be provided for the proposed use. Therefore, the adequacy of the water supply will be reviewed as part of the SE and the site plan review processes.

Community Outreach

In addition to meetings with Dominion Energy (including a site visit to their Dry Bridge Battery Energy Storage System) and private utility providers, the table below indicates the project's outreach initiatives. Draft text was posted in advance of the July community meetings, which were broadly advertised, and the recordings are posted on the project website. Feedback received included suggestions regarding transitional screening adjacent to residential uses, appropriate fence height, the timing for the submittal of a noise study, the emergency and decommissioning plans, the financial security for decommissioning, references to applicable codes and standards, the definition of accessory BESS, and other minor edits. Based on the input received on the initial draft and additional research, a revised draft was posted online on November 14, 2025. Staff sent an email notifying those that have expressed interest in being notified on project updates that a revised draft text was available for review and comment.

Date	Meeting/Event
Jan. 28, 2025	Board of Supervisors Land Use Policy Committee (Intro to BESS)
Jan. 30, 2025	Planning Commission Infrastructure Committee (Intro to BESS)
Feb. 20, 2025	Northern Virginia Business Industry Association (NVBIA) and NAIOP Northern Virginia (Intro to BESS)
April 7 & 8, 2025	Community Meetings (Intro to BESS)
June 11, 2025	Environmental Quality Advisory Council (Draft BESS ZOA text)
June 12, 2025	Planning Commission Infrastructure Committee (Draft BESS ZOA text)
June 17, 2025	Board of Supervisors Land Use Policy Committee (Draft BESS ZOA text)
July 21 & 22, 2025	Community Meetings (Draft BESS ZOA text)
Nov. 14, 2025	Revised draft text posted online and email notification sent
Dec. 18, 2025	Northern Virginia Business Industry Association (NVBIA) and NAIOP Northern Virginia (Updated BESS ZOA text)

Summary

Overall, the proposed permissions and standards are intended to provide for the siting of BESS, while addressing public safety and compatibility with surrounding uses. Staff recommends that the amendment become effective at 12:01 a.m. on the day following adoption.

Proposed Text

In the revisions shown below, text to be deleted is identified with strike-through and text to be added is underlined. Options for consideration are provided ***[in brackets, italics, and bold]***. The proposed changes are based on the adopted Zoning Ordinance in effect as of December 10, 2025.

INSTRUCTION: Revise the standards in subsection 4102.4.X for Utility Facility, Light, to include large-scale battery energy storage system, as shown below.

4. Public, Institutional, and Community Uses

Community, Cultural, and Educational Facilities

X. Utility Facility, Light

Standards applicable to all light utility facilities:

(1) The permissions for light utility facilities are as shown in the table below.

Light Utility Facility Permissions		
Zoning District	**Uses Permitted By Right**	**Uses Permitted By SE**
R-A	None	Telecommunication facilities Utility transmission facilities Water storage, control, and pumping facilities
All other R districts	None	All light utility facilities Large-scale battery energy storage system, but only if co-located with an electrical substation or solar power facility
Commercial districts	Telecommunication facilities	All other light utility facilities
I-I	None	Sewerage pumping facilities
I-2	Telecommunication facilities	All other light utility facilities
I-3, I-4, I-5, and I-6	All light utility facilities, except large-scale battery energy storage system	~~Not applicable, except to modify~~ Modification of standards for electrical substations Large-scale battery energy storage system

Light Utility Facility Permissions		
Zoning District	**Uses Permitted By Right**	**Uses Permitted By SE**
P districts	All light utility facilities if shown on development plan, except a large-scale battery energy storage system in PDH, PRC, PRM, and PCC, where it must be co-located with an electrical substation or solar power facility	All light utility facilities, except a large-scale battery energy storage system in PDH, PRC, PRM, and PCC, where it must be co-located with an electrical substation or solar power facility

Standards when permitted by development plan or special exception:

(8) Large-scale battery energy storage system

(a) Setbacks: The setback is measured to the nearest battery energy storage system structure or associated equipment, not a fence or wall.

1. A minimum setback of 100 feet ***[50 to 300 feet]*** is required from all lot lines.

2. A minimum setback of 200 feet ***[50 to 300 feet]*** is required from an abutting lot line of an R district or a property developed with a residential use. For the purpose of these provisions, an R district does not include a property that is developed with an international airport and its related uses.

(b) A fence or wall that is an integral part of a large-scale battery energy storage system may exceed the maximum fence or wall height in accordance with subsection 4102.7.A(7)(b)5.

(c) A final emergency operations plan with all information required by subsection 8101.3.D(14)(e)1 must be submitted to and approved by the Office of Fire Marshal prior to issuance of a building permit.

(d) A final decommissioning plan with all information required by subsections 8100.7.F and 8101.3D(14)(e)2 must be submitted to and approved by the Director prior to site plan approval.

(e) Prior to site plan approval, a noise study must be submitted to the Zoning Administrator demonstrating that the operation of the battery energy storage system will comply with the Noise Ordinance, Chapter 108.1 of the County Code.

(f) A large-scale battery energy storage system is subject to National Fire Protection Association (NFPA) 855, Standard for the Installation of Stationary Energy Storage Systems; Underwriters Laboratories (UL) 9540A, Standard for Test Method for Evaluating Thermal Runaway Fire Propagation in Battery Energy Storage Systems; in addition to all applicable codes and standards.

INSTRUCTION: Revise subsection 4102.7.A(7) to allow a fence or wall for a large-scale battery energy storage system to exceed the fence or wall height in Table 4102.4.

7. Accessory Uses

A. General Standards for Accessory Uses and Structures

(7) Fences and Walls

(b) Height

5. A fence or wall may exceed the maximum fence or wall height in Table 4102.4 above when it is an integral part of:

a. An electrical substation;

b. A wireless facility; ~~or~~

c. Screening of equipment for a data center in accordance with subsection 4102.6.A(1)~~.~~; or

d. A large-scale battery energy storage system.

INSTRUCTION: Revise Table 5108.2 to include large-scale battery energy storage system with solar power facility and revise the transitional screening and barrier requirements required when located adjacent to certain uses.

5. Transitional Screening and Barriers

TABLE 5108.2: Transitional Screening and Barrier Type Requirements

Numbers in individual cells represent transitional screening type required (1, 2, or 3)
Letters in individual cells represent barrier type required (A through E)

	Adjacent Use								
Use Classification	**Single-Family Dwelling, Attached and Detached**	**All Other Residential Uses**	**Solar Power Facility, Battery Energy Storage System, Large-scale**	**Utility Facility, Heavy**	**All Other Public, Institutional, and Community Uses**	**Vehicle Repair and Maintenance, Heavy**	**All Other Commercial Uses**	**Craft Beverage Establishment**	**All Other Industrial Uses**
Public, Institutional, and Community Uses									
Solar Power Facility, Battery Energy Storage System, Large-scale	Type 3 Barrier D or E	Type ~~2~~ 3 Barrier D or E	None	None	Type 1 Barrier D or E	None	Type 1 Barrier D or E	Type 1 Barrier D or E	None
Utility Facility, Heavy	Type 3 Barrier D or E	Type 3 Barrier D or E	None	None	Type 1 Barrier A, B, or C	None	Barrier D or E	Barrier D or E	None
All Other Public, Institutional, and Community Uses	Type 2 Barrier D or E	Type 2 Barrier D or E	None	None	None	None	None	None	None
All Other Industrial Uses	Type 3 Barrier D or E	Type 3 Barrier D or E	Barrier D or E	Barrier D or E	Type 1 Barrier D or E	Type 1 Barrier D or E	Type 1 Barrier A, B, or C	Type 1 Barrier D or E	None

INSTRUCTION: Revise subsection 8100.7 to require a development agreement for a decommissioning plan and a funding requirement to implement the plan for a large-scale battery energy storage system.

7. Site Plans and Minor Site Plans

F. Staff Review and Action

(5) Agreements and Security

(a) Except as provided below, the owner or developer must execute an agreement to construct or demolish the physical improvements shown on the plan ("development agreement") and must submit an agreement for a construction permit with the application before a construction permit will be issued for:

1. Clearing and grading;

2. The installation of the physical improvements and facilities; ~~or~~

3. ~~For the~~ The decommissioning of solar power facilities and associated equipment or devices subject to Va. Code Sect. 15.2232 shown on an approved site plan or minor site plan~~.~~; or

4. The decommissioning of a large-scale battery energy storage system and associated equipment or devices shown on an approved site plan or minor site plan in accordance with subsection 8101.3.D(14)(e)2.

(b) The development agreement must be accompanied by a fee in accordance with Section 8102 and a security package acceptable to the County in the amount of the estimated cost of construction or removal of those physical improvements that are:

1. Located within public rights-of-way or easements and the construction of which is not otherwise secured in its entirety with the Virginia Department of Transportation;

2. For vehicular ingress and egress, for public access streets, for structures necessary to ensure stability of critical slopes and for storm water management facilities;

3. Required by a proffered condition or required to be bonded by a development condition of an approved special exception, special permit, or variance. Agreements and security packages for such plans for which approvals are conditions of record plat approvals are required under Chapter 101 of the County Code, The Subdivision Ordinance; ~~or~~

4. Solar power facilities and associated equipment or devices subject to Va. Code Sect. 15.2232 to be decommissioned and required to be bonded under Va. Code Sect. 15.2-2241.2~~.~~; and/or

5. Decommissioning of large-scale battery energy storage systems and associated equipment or devices. The estimated cost of decommissioning must be guaranteed by bond, letter of credit, or other security approved by the County. The decommissioning cost guarantee must remain valid until the battery energy storage system has been fully decommissioned. The cost estimate must be recalculated every five years and the security increased

when the recalculated estimate exceeds the guarantee amount by ten percent.

INSTRUCTION: Revise subsection 8101.2 and subsection 8101.3 to add submission requirements for rezonings and special exceptions for large-scale battery energy storage systems.

2. Zoning Map Amendments (Rezonings)

E. Supporting Reports and Studies

The following additional information must be submitted:

(13) If the proposal includes a Large-scale Battery Energy Storage System, the application must include the information as required in subsection 8101.3.D(14)(e).

3. Special Exceptions, Special Permits, and Variances

D. Additional or Modified Submission Requirements for Specific Special Exception Applications

The following are additional or modified submission requirements for special exception applications for:

(14) Light Utility Facility, Heavy Utility Facility, and Wireless Facility

(a) A map showing the utility system of which the proposed use will be an integral part, together with a written statement outlining the functional relationship of the proposed use to the utility system.

(b) A statement, prepared by a certified engineer, describing in detail the technical reasons for selecting the property as the location for the proposed facility and certifying that the proposed use will meet the performance standards of the district in which located.

(c) In complying with subsections (a) and (b) above, the applicant is not required to provide any proprietary, confidential, or other business information to justify the need for the project.

(d) An application for a landfill must also include a list of the types of debris and materials proposed to be deposited on the site.

(e) An application for a large-scale battery energy storage system must also include the following:

1. A preliminary emergency operations plan that contains the following:

a. Procedures for safe shutdown, de-energizing, or isolation of equipment and systems under emergency conditions to reduce the risk of fire, electric shock, and personal injuries, and for safe start-up following cessation of emergency conditions;

b. Procedures for inspection and testing of associated alarms, interlocks, and controls;

c. Procedures to be followed in response to notifications of system alarms or out-of-range conditions that could signify potentially dangerous conditions, including shutting down equipment; summoning service or repair personnel; and providing agreed-upon notification to fire department personnel, if required;

d. Emergency procedures to be followed in case of fire, explosion, release of liquids or vapors, damage to critical moving parts, or other potentially dangerous conditions;

e. Response considerations similar to a safety data sheet (SDS) that will address response safety concerns and extinguishment even if an SDS is not required by another code or standard;

f. Procedures for handling energy storage system equipment damaged in a fire or other emergency event, including contact information for personnel qualified to safely remove damaged energy storage system equipment from the facility; and

g. Procedures and schedules for conducting drills and training exercises for local first responders on the contents of the plan and appropriate response procedures.

2. A preliminary decommissioning plan that is certified by an engineer or contractor with demonstrated expertise in large-scale battery energy system removal, and contains the following:

a. The anticipated life of the project;

b. A narrative description of the activities to be accomplished, including who will perform that activity, and the timeline for complete physical removal of all components of the battery energy storage facility;

c. A description of mitigation procedures for the release of hazardous materials or other emergency events during the decommissioning process;

d. The estimated decommissioning cost in current dollars and a description of the methodology for determining such estimate;

e. A listing of any contingencies for removing intact operational battery energy storage systems or individual components and for removing a battery energy storage system that has been damaged by a fire or other event;

f. A statement that the owner or operator of the facility will notify the Zoning Administrator at least 60 days prior to the planned date of discontinued operations; and

g. In addition to the special exception plat requirements of subsection 8101.3.B, a plan for the restoration of the site, prepared by an engineer or surveyor licensed by the State.

INSTRUCTION: Revise subsection 9103 to add large-scale battery energy storage facilities to the light utility facility definition and include a new definition for battery energy storage facility, large-scale.

9103. Uses

4. Public Institutional and Community Uses

E. Utilities

Utility Facility, Light

A structure or facility generally related to the distribution or collection of utility products or services, rather than the production of those products or services, that needs to be in or near the neighborhood or near utility consumers. Examples of light utility facilities include water and sewage pump stations, telecommunication facilities, water storage facilities, large-scale battery energy storage systems, and electrical substations. This use does not include (1) ordinary distribution facilities for delivery of utilities to customers that are in the public right-of-way or in easements or strips of property owned in fee simple not more than 25 feet in width; or (2) transmission lines approved by the State Corporation Commission.

Battery energy storage system, Large-Scale

An energy storage facility consisting of rechargeable batteries typically enclosed in a physical container, capable of collecting and storing electrical energy from the grid or energy generation facility and then discharging that energy at a future time, with a maximum stored energy greater than 600 kWh ***[600 kWh - 10 MWh]***. A facility is not a large-scale battery energy storage system if it (a) has a total maximum stored energy of 600 kWh ***[600 kWh - 10 MWh]*** or less, or (b) is located inside a building with a separate principal use and primarily serves that use.