

MEMORANDUM

TO: Planning Commission

FROM: Justin D. Sanders, Senior Planner
Jude Cochran, Planning & Zoning Administrator

DATE: August 9, 2023

RE: Proposed Amendments to the 2025 Comprehensive Plan and Zoning Ordinance Related to Large-Scale Solar Energy Systems

In April, the Board of Supervisors charged the Planning Commission and County staff to study, address, and seek community comment and input on large-scale solar energy systems in Montgomery County.

Following this resolution by the Board of Supervisors, a Solar Energy Work Group was formed, consisting of four (4) members of the Planning Commission (Commissioners Foster, Linkous, Miller, and Rice), Supervisor Fijalkowski, and members of County Staff (Mr. Cochran, Ms. Hopkins, Mr. McMahan, Mr. Sanders, and Ms. Wright). Over the past three months, this group has reviewed a variety of literature on solar energy technology and the various approaches undertaken to regulate solar energy development in localities across the Commonwealth.

The Work Group's efforts were divided into two distinct parts: updates to the County's 2025 Comprehensive Plan and updates to the Zoning Ordinance.

The County's Comprehensive Plan is an overarching set of guiding principles and policies related to land use in the County. The Comprehensive Plan is not a legally binding document, but does influence decisions and works in tandem with the Zoning Ordinance. The current Comprehensive Plan, adopted in 2004, does not address solar energy but does discuss other utilities.

The Zoning Ordinance, adopted as part of the County Code serves as the series of legally enforceable standards guiding development in the County. The Zoning Ordinance was updated in 2015 to address solar energy, defining different scales of

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solar development and specifying the Zoning Districts in which solar energy systems were permitted by-right or by Special Use Permit.

The Work Group met on several occasions to guide staff on the development of the draft language which follows. Following the drafting of the proposed amendments, a small group of community stakeholders were sent the draft for review and comment. This stakeholder group included representatives of the solar industry, a faculty member from Virginia Tech, a representative from the Virginia Farm Bureau, and an interested local resident. This first round of review was conducted prior to the release of the documents to the larger public for review and comment. Comments from these stakeholders are included as part of your packet.

Draft language has been published on the County website (www.montva.com/solar), with hard copies provided at all County libraries and at the Government Center for review. A community open house, scheduled prior to the Commission's meeting on August 9, provides another opportunity for interested citizens to learn more about the development of the proposed amendments and provide feedback. The Commission will hold a work session on August 9 to allow the full body to consider and comment on the proposed amendments. Public hearings will be scheduled following receipt and consideration of comments received from the Commission and members of the public.

Attachments: BOS Resolution
DRAFT Comprehensive Plan Language
DRAFT Zoning Ordinance Language
Stakeholder/Citizen Comments

AT A REGULAR MEETING OF THE BOARD OF SUPERVISORS OF THE COUNTY OF MONTGOMERY, VIRGINIA HELD ON THE 10th DAY OF APRIL, 2023 AT 7:00 P.M. IN THE BOARD CHAMBERS, MONTGOMERY COUNTY GOVERNMENT CENTER, 755 ROANOKE STREET, CHRISTIANSBURG, VIRGINIA:

R-FY-23-103

RESOLUTION REQUESTING THE PLANNING COMMISSION AND PLANNING STAFF TO STUDY, ADDRESS AND SEEK PUBLIC COMMENT AND INPUT ON LARGE SCALE SOLAR ENERGY SYSTEMS WHERE THE PRIMARY LAND USE IS THE CONVERSION OF SOLAR ENERGY TO ELECTRICITY AND RECOMMEND TO THE BOARD OF SUPERVISORS APPROPRIATE CHANGES TO THE COUNTY COMPREHENSIVE PLAN AND ZONING ORDINANCE

On a motion by Mary W. Biggs, seconded by Steve R. Fijalkowski and carried unanimously,

WHEREAS, Localities across Virginia and throughout the United States, have seen an increase in requests to place large scale solar energy systems where the primary land use is to convert solar energy to electricity to be sold to the electric grid; and

WHEREAS, When the Montgomery County Comprehensive Plan was developed in 2005, solar energy technology was still in its infancy stage and was not specifically addressed within the County Comprehensive Plan; and

WHEREAS, The Planning Commission and Board of Supervisors did address solar energy systems with the update to the County Zoning Ordinance in 2016 by defining solar energy systems and providing guidance on the Zoning Districts where such development would be allowed by right or by Special Use Permit; and

WHEREAS, With the increase in demand for renewable energy projects using large scale solar energy systems, the Board of Supervisors desires the Planning Commission and Planning Staff, to study, address and seek community comment and input on these particular land uses in Montgomery County and to recommend appropriate changes to the County Comprehensive Plan and County Zoning Ordinance.

NOW, THEREFORE, BE IT RESOLVED, By the Board of Supervisors of the County of Montgomery, Virginia that the Board of Supervisors hereby requests the Montgomery County Planning Commission and Planning Staff to study and address large scale solar energy systems as a land use in Montgomery County, seeking community comment and input from those in the community with an interest in this study and to recommend appropriate changes to the County Comprehensive Plan and County Zoning Ordinance to better identify where such projects should be located and to better mitigate the potential impacts from solar energy development.

The vote on the foregoing resolution was as follows:

AYE

Mary W. Biggs

Sara R. Bohn

April N. DeMotts

Steve R. Fijalkowski

M. Todd King

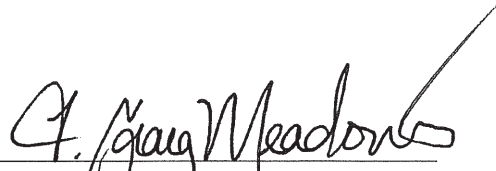
Darrell O. Sheppard

Sherri M. Blevins

NAY

None

ATTEST:



F. Craig Meadows
County Administrator

Solar Energy Systems Amendments to Comprehensive Plan - DRAFT

To be added to *Utilities: Introduction, Historic and Current Conditions and Trends*

Solar Energy Systems

Solar energy is an abundant and free natural resource that has been utilized at residential scales for decades as an alternative to energy generated by the burning of fossil fuels or other sources. New technological innovations have made the collection, processing, and storage of solar energy more efficient and have allowed for an increase in scale of collection to larger solar farms and storage facilities. The passage of the Virginia Clean Economy Act by the General Assembly in 2020 precipitated an increase in the development of large-scale solar energy systems throughout the Commonwealth.

Large scale solar energy systems not only provide an alternative energy source, but also provide commercial opportunities to developers and property owners, through land-lease programs for the installation of these systems. Advancements in the solar industry have also provided land owners the opportunity to combine solar energy systems with other agricultural uses on property to promote dual use.

At the request of the Board of Supervisors, County staff worked with members of the Planning Commission and community stakeholders to develop a comprehensive approach to address solar energy systems within the County. The Planning Commission's charge was to adopt goals and strategies to manage the development of facilities for the generation, conversion, and storage of solar energy. These goals and strategies are intended to balance the potential impacts of these types of facilities and the preservation of the natural, cultural, and scenic resources of the County's rural areas.

To be added to *Utilities: Goals*

UTL 2.4 Renewable Energy Systems. Provide opportunities for the use of residential, commercial, and utility scale renewable energy, through solar energy facilities and battery storage facilities, while minimizing the impact of such facilities on the County's view shed and natural, agricultural, cultural, and historic resources.

2.4.1 Balanced Land Uses. To ensure that solar energy facilities and battery storage facilities are part of a balanced development pattern within the County, the County desires to have no more than 1500 cumulative acres of leased area occupied by solar energy and battery storage facilities throughout the County.

2.4.2 Encourage Shared Agricultural Use. To ensure continued use of agricultural lands for farming within the County, solar energy and battery storage facilities within the County should include agri-photovoltaics (APV) and/or ground cover that facilitates habitats for non-invasive native species and native pollinators.

2.4.3 Encourage Future Agricultural Use. To ensure that agricultural lands used for solar energy and battery storage systems may be returned to an active state of agricultural use in the future, top soil should be retained on all project sites housing these systems within the County.

2.4.4 Project Scale. The size of solar energy and battery storage facilities should be carefully considered to ensure that the projects have no undue adverse impacts on nearby residential, commercial, and mixed-use properties. The County strongly discourages any project with a photovoltaic panel coverage of more than 100 acres. Projects should not be sited on parcels adjacent to previously approved or existing solar facilities.

2.4.5 Project Siting. The location of solar energy and battery storage facilities should be carefully considered to ensure that existing infrastructure resources are best utilized and that impacts to agricultural, cultural, and historic resources are minimized.

2.4.5a. Rural and Resource Stewardship Areas. Siting of projects in areas designated as Rural and Resource Stewardship within the Comprehensive Plan should consider the presence of prime farmland producing soils or other natural resources. Further, projects should be highly discouraged within Agricultural and Forestal Districts and in areas held within a Conservation Easement. Projects located outside, but adjacent to, these areas, should be evaluated for any potential visual or other impacts associated with development.

2.4.5c. Historic and Cultural Heritage Areas. Siting of projects in state or federally designated Historic Districts should be highly discouraged. Projects located outside, but adjacent to, these areas should be evaluated for any potential visual or other impacts associated with development.

2.4.5c. Growth Areas. In order to ensure existing and future planned infrastructure is utilized to facilitate planned growth within the County, siting of solar energy and battery storage facilities should be highly

discouraged within areas designated as Residential Transition, Urban Expansion, Village Expansion, and within Urban Development Areas.

2.4.5d. Utilization of Land with Limited Development Potential. Siting of projects on lands that have increased limitations for development (brownfields, reclaimed coal mining sites, abandoned industrial sites, or agricultural lands with soil classifications not conducive to active farming) should be encouraged.

2.4.5e. Resource Considerations. Projects should be designed, sited, and constructed in a manner that protects and preserves the County's natural, scenic, and cultural resources, including:

- i. Fertile Soils
- ii. View sheds
- iii. Streams, rivers, and wetlands
- iv. Natural habitats
- v. Native vegetation
- vi. Forests
- vii. Historic and archaeological resources
- viii. Parks and recreational areas
- ix. Federal lands

Solar Ordinance - Draft 1

Sec 10-21 A-1 Agricultural District

1. *Purpose.* The A-1 Agricultural District is intended to preserve and enhance the rural, low density character and natural resources of the rural portions of the county where agriculture, forest and open space uses predominate, as well as to accommodate limited amounts of low density residential development that is generally not served by public water or wastewater systems.

This district is generally intended to apply to lands designated in the comprehensive plan as rural or resource stewardship areas. Land in this district is generally not intended to be served with public water or wastewater or to be in proximity to other public services.

2. *Qualifying lands.* Lands qualifying for inclusion in the A-1 zoning district shall be those within the current A-1 district on the date of adoption of this chapter and other lands within areas mapped as rural or resource stewardship in the comprehensive plan. Qualifying lands shall generally not include those served or planned to be served by public water or sewer service. The minimum area required to create a district shall be ten (10) acres of total contiguous land.
3. *Uses permitted by right.* The following uses are permitted by right, subject to compliance with all approved plans and permits, development and performance standards contained in this chapter, and all other applicable regulations:
 - A. Agriculture.
 - B. Agriculture, intensive.
 - C. Agriculture, small scale.
 - D. Amateur Radio Tower (subject to requirements of Section 10-41(20) of County Code).
 - E. Bed and Breakfast Inn.
 - F. Camp, Day.
 - G. Cemetery.
 - H. Church.
 - I. Clean earth fill area not exceeding an aggregate volume of fifteen thousand (15,000) cubic yards (subject to the requirements of subsection 10-41(22)).
 - J. Data Pole.
 - K. Dwelling, single-family.
 - L. Farm enterprise.
 - M. Fire, police and rescue stations.
 - N. Home occupation.
 - O. Manufactured (mobile) home, Class A or B.
 - P. Natural area.
 - Q. Park, unlighted.
 - R. Pet, farm.

Draft 1

- S. Pet, household.
- T. Playground, unlighted.
- U. Public use, public facility.
- V. Public utility lines, other; and public utility lines, water and sewer.
- W. Sawmill, temporary.
- X. School.
- Y. Short-term Tourist Rental.
- Z. Telecommunications tower, attached.
- AA. Veterinary practice, animal hospital.

4. *Uses permissible by special use permit.* The following uses may be permitted by the board of supervisors as special uses, subject to the requirements of this chapter and all other applicable regulations:

- A. Accessory structures that exceed the square footage or height of the principal structure when part of an application requesting a rezoning or other use permitted by a special use permit from the board of supervisors.
- B. Boarding house.
- C. Campground.
- D. Camp, overnight.
- E. Civic club.
- F. Contractor's storage yard.
- G. Country club.
- H. Country inn.
- I. Custom meat cutting, processing and packaging.
- J. Day care center.
- K. Disposal facility, landfill.
- L. Exploratory activities associated with extractive industries.
- M. Extractive industries and accessory uses including, but not limited to, the mining of minerals and the operation of oil and gas wells.
- N. Flea market (also subject to requirements of article VI of the County Code).
- O. Game preserve.
- P. Garden center.
- Q. General store or specialty shop, provided gross floor area is two thousand (2,000) square feet or less.
- R. Golf course.
- S. Golf driving range.
- T. Grain mill, feed mill.
- U. Home business.
- V. Junkyard, automobile graveyard.
- W. Kennel, commercial (refer to use limitations in subsection (7)).
- X. Landfill (see Disposal facility).
- Y. Livestock market.
- Z. Mitigation bank.
- AA. Park, lighted.
- BB. Park and ride lot.

Deleted: <#>Solar energy system, minor: ¶

- CC. Playground, lighted.
- DD. Public utility plant, other.
- EE. Public utility substations.
- FF. Public utility plant water or sewer (not including distribution or collection lines).
- GG. Recreational vehicle park.
- HH. Recycling collection points.
- II. Repair shop, automotive (refer to use limitations in subsection (g)).
- JJ. Restaurant, provided gross floor area is two thousand (2,000) square feet or less.
- KK. Rural resort.
- LL. Sawmill.
- MM. School of special instruction.
- NN. Shooting range (as principal use or accessory to a gun shop). (Refer to use limitations in subsection (7)).
- OO. Slaughterhouse.
- PP. [Solar energy system, community scale.](#)
- QQ. [Solar energy system, utility scale.](#)
- RR. Solid waste collection point.
- SS. Stable, commercial.
- TT. Stone engraving and sales.
- UU. Structures, nonresidential, totaling in excess of twenty thousand (20,000) gross square feet.
- VV. Structures over forty (40) feet in height.
- WW. Telecommunications facility, micro wireless.
- XX. Telecommunications facility, small cell.
- YY. Telecommunications tower, freestanding.
- ZZ. Transition house.

Deleted: Solar energy system, major.

Special uses. The following uses may be permitted by the board of zoning appeals as special uses, subject to the requirements of this chapter and all other applicable regulations:

- AAA. Accessory structures that exceed the square footage or height of the principal structure.
 - BBB. Farm enterprise with less than forty (40) feet of public road frontage subject to the requirements of section 10-41(18)(g) of this Zoning Ordinance.
5. *Lot requirements.*
- A. *Minimum lot area.* One (1.0) acre.
 - B. *Density.* In addition to the minimum required lot area defined above, the maximum gross density (total number of lots per parent parcel after subdividing) for residential development in the A-1 district shall be in accord with the following sliding scale:

<i>Parent Parcel Area</i>	<i>Total Lots Permitted on Parent Parcel</i>
Less than 1.0 acre	0 lots
Less than 2.0 acres	1 lot
Less than 3.0 acres	2 lots
3.0 to 10.0 acres	Up to 3 lots
More than 10.0 acres up to 30.0 acres	Up to 4 lots
More than 30.0 acres up to 50.0 acres	Up to 5 lots
More than 50.0 acres up to 70.0 acres	Up to 6 lots
More than 70.0 acres up to 90.0 acres	Up to 7 lots
More than 90.0 acres up to 110.0 acres	Up to 8 lots
More than 110.0 acres up to 130.0 acres	Up to 9 lots
More than 130.0 acres	One (1) additional lot for every 20 acres over 130 acres

C.

All lots in the A-1 district are subject to the above sliding scale and all applicable regulations for on-site water supply and wastewater treatment, which may limit the number of lots permitted; except for green space (open space) lots and conservation easements, public utility, telecommunications towers or public water or sewer installation lots or similar which are not for habitation and which may be a minimum of ten thousand (10,000) square feet. Moreover, the board of supervisors may authorize the issuance of a special use permit for more lots than the total permitted by the sliding scale in situations where a family subdivision conflicts with the sliding scale.

- D. *Clustering of permitted lots between parent parcels.* A landowner with several contiguous parent parcels may cluster the number of permitted lots from any one parent parcel to any other contiguous parent parcel provided the landowner merges the two (2) contiguous parent parcels into one (1) parcel by vacating the boundary line and all other lot requirements under this subsection (5) are met.

- E. *Lot access.* Lots shall be accessed from a road in the Virginia Department of Transportation (VDOT) system or from a hard-surfaced private street designed by a professional engineer to meet current VDOT subdivision street requirements with one exception. Under the exception, one lot divided from any parent parcel may be served by a private access easement at least forty (40) feet in width.
 - F. *Maximum coverage.* No more than twenty (20) percent of any lot shall be covered by buildings and no more than thirty (30) percent of any lot shall be covered by impervious surfaces.
 - G. *Minimum width.* One hundred twenty (120) feet at the minimum setback line of the front yard. Frontage requirements for family subdivisions and public utility or public water or sewer installation lots shall be in accord with the Montgomery County Subdivision Ordinance.
 - H. *Maximum length/width ratio.* Five to one (5:1) for any lot less than twenty (20) acres in area.
6. *Building requirements.*
- A. *Minimum yards:*
 - I. *Front.* Forty (40) feet (also refer to additional setback requirements pertaining to residential uses near intensive agricultural operations, section 10-41(16)).
 - II. *Side.* Fifteen (15) feet for each principal structure.
 - III. *Rear.* Forty (40) feet.
 - IV. *Accessory buildings.* No accessory building may be located closer than ten (10) feet to a side or rear lot line.
 - B. *Maximum building height.* No building or structure, except for exempted structures provided for in section 10-2(5)(b) of this chapter, shall exceed forty (40) feet in height, as defined, except by special use permit and that for every one (1) foot above forty (40) feet, the building or structure shall be set back an additional two (2) feet up to a maximum of one hundred (100) feet.
7. *Use limitations.*
- A. *Repair shop, automotive.* All work must be conducted within a completely enclosed building and the shop shall be at least three hundred (300) feet from any residential zoning district or existing dwelling, other than the owner's dwelling.
 - B. *Kennels.* No principal or accessory use or structure shall be within five hundred (500) feet of an existing dwelling, other than the owner's dwelling, nor within three hundred (300) feet of any adjacent lot.
 - C. *Shooting ranges.* Shooting ranges shall not operate between 10:00 p.m. and 7:00 a.m.

Sec 10-23 R-R Rural Residential District

- 1. *Purpose.* The R-R Rural Residential District is composed of certain quiet, low-density, residential areas with a rural character, plus certain open areas where similar residential development appears likely to occur. The regulations for this district are designed to stabilize and protect the essential characteristics of the district, to promote and

encourage a suitable environment for family life, to provide for an orderly transition from predominately agricultural or forestal uses to mostly rural residential uses, and to strictly limit activities of a commercial nature. To these ends, development is limited to relatively low densities and permitted uses are limited basically to single-family dwellings for the residents, home-occupation uses for compatible home-based businesses, as well as certain additional institutional uses such as schools, parks and churches that serve the residents of the district. The purpose of the R-R district is to accommodate residential development of a strictly rural nature, and therefore is generally not intended to be served with public water and wastewater services.

2. *Qualifying lands.* Lands qualifying for inclusion in the R-R zoning district shall be within areas mapped as rural, rural communities, or residential transition in the comprehensive plan. Qualifying lands shall generally not include those served or planned to be served by public water or sewer service. The minimum area required to create a district shall be five (5) acres of contiguous total land.
3. *Uses permitted by right.* The following uses are permitted by right, subject to compliance with all approved plans and permits, development standards and performance standards contained in this chapter, and with all other applicable regulations:
 - A. Agriculture, small-scale.
 - B. Amateur Radio Tower (subject to requirements of section 10-41(20) of County Code).
 - C. Bed and Breakfast Inn.
 - D. Church.
 - E. Data Pole.
 - F. Dwelling, single-family.
 - G. Home occupation.
 - H. Park, unlighted.
 - I. Pet, farm.
 - J. Pet, household.
 - K. Playground, unlighted.
 - L. Public utility lines, other; public utility lines, water and sewer.
 - M. School.
 - N. Telecommunications tower, attached.
4. *Uses permissible by special use permit.* The following uses may be permitted by the board of supervisors as special uses, subject to the requirements of this chapter and to all other applicable regulations:
 - A. Accessory structures that exceed the square footage or height of the principal structure when part of an application requesting a rezoning or other use permitted by a special use permit from the board of supervisors.
 - B. Cemetery.
 - C. Civic club.
 - D. Country club.
 - E. Country Inn.
 - F. Day care center.
 - G. Fire, police and rescue stations.

- H. Golf course.
- I. Golf driving range.
- J. Home business.
- K. Park, lighted.
- L. Park and ride lot.
- M. Playground, lighted.
- N. Public use, public facility.
- O. Public utility substations.
- P. Public utility plant, water or sewer.
- Q. Short Term Tourist Rental.
- R. [Solar energy system, community scale.](#)
- S. Stable, commercial.
- T. Structures over fifty (50) feet in height.
- U. Telecommunications facility, micro wireless.
- V. Telecommunications facility, small cell.
- W. Telecommunications tower, freestanding.
- X. Veterinary practice, animal hospital.

The following uses may be permitted by the board of zoning appeals as special uses, subject to the requirements of this chapter and all other applicable regulations:

- Y. Accessory structures that exceed the square footage or height of the principal structure.
5. *Lot requirements.*
- A. *Minimum lot area.*
 - I. For small-scale agriculture: Five (5) acres.
 - II. For all other uses: One and one-half (1.5) acres.
 - B. *Lot access.* Lots shall be accessed from a road in the Virginia Department of Transportation (VDOT) system.
 - C. *Maximum coverage.*
 - I. Buildings shall not exceed ten (10) percent of gross site area.
 - II. Impervious surfaces shall not exceed thirty (30) percent of gross site area.
 - D. *Minimum width.* One hundred twenty (120) feet at the setback line of front yard.
 - E. *Maximum length/width ratio.* Five to one (5:1) for any lot less than fifty (50) acres.
6. *Building requirements.*
- A. *Minimum yards.*
 - I. *Front.* Forty (40) feet (also refer to section 10-41(16) for setbacks from existing intensive agriculture operations).
 - II. *Side.* The minimum side yard for each main structure shall be fifteen (15) feet for each principal structure.
 - III. *Rear.* Each main structure shall have a rear yard of forty (40) feet.
 - IV. *Accessory buildings.* No accessory building may be located closer than ten (10) feet to any side or rear lot line.
 - B. *Building height.*

- I. No building shall exceed thirty-five (35) feet in height, as defined.
 - II. No structure shall exceed fifty (50) feet in height, as defined, unless authorized by special use permit.
7. *Use limitations.* [Reserved.]
8. *Compact development option.* The purpose of the compact development option is to provide flexibility in site design in order to encourage:

- Natural resource preservation.
- Pedestrian-friendly streetscapes.
- Cost-efficiency in providing infrastructure.
- Appropriate design solutions for unique site conditions.

Use of the compact development option is voluntary on the part of applicants.

The compact development option permits smaller lot sizes in return for providing permanent green space within the development, and a more compact, cost-effective network of streets and utilities. Except for modifications to the lot and building requirements defined below, all other provisions of the R-R district pertain to the compact development option.

- A. *Lot requirements for compact option.*
- I. *Minimum lot size.* One (1) acre, provided that no less than twenty-five (25) percent of the gross area parent tract is preserved in permanent green space, as defined herein.
 - II. *Minimum required green space.*
 - (1) *Minimum lot area.* Twenty-five (25) percent of the gross area parent tract. No one (1) lot of such required green space in any compact development shall be less than one and one-quarter (1.25) acres. Green space may include active or passive recreational uses, and may be held in either public or private ownership. If held in private ownership, the green space shall be held by a homeowner's association or other form of common interest private ownership comparable to a homeowner association acceptable to the zoning administrator. Green space established for purposes of meeting the requirements of this provision shall not be included as part of any residential lot, and shall be restricted from any future development by the establishment of permanent conservation easements held in perpetuity by a public or private entity acceptable to the county. Accessory structures such as picnic shelters, ball fields, nature trails and other similar recreational amenities shall be permitted within the green space. Parking areas and enclosed buildings are prohibited on the green space.

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- (2) *Maximum length/width ratio.* Five to one (5:1).
- (3) *Minimum width.* One hundred (100) feet at the setback line of the front yard.

- B. *Building requirements for compact option.* Minimum yards:
 - I. *Front.* Thirty (30) feet.
 - II. *Side.* Ten (10) feet for each principal structure.
 - III. *Rear.* Thirty (30) feet.
 - IV. *Accessory buildings.* No less than ten (10) feet to side or rear lot line.

Sec 10-28 GB General Business

1. *Purpose.* This district covers that portion of the community intended for the conduct of general business to which the public requires direct and frequent access. It is intended for the orderly growth of business within the unincorporated territory of the county and most often abuts the incorporated urban areas along primary highways. Activities in GB districts shall have limited traffic and other impacts on uses in other districts through proper location on major streets, preference for locations adjoining concentrations of existing commercial or industrial uses and zoning, and provision of space and physical buffers as prescribed. Areas designated for commercial use are best suited for rezoning to this district.
2. *Qualifying lands.* Lands qualifying for inclusion in the district shall be those within the current GB district on the date of adoption of this chapter, or other lands within areas mapped as village, village expansion, or urban expansion in the comprehensive plan which are served by or planned for connections to public sewer and water. The minimum area required to create a district shall be five (5) acres of total contiguous land.
3. *Uses permitted by right.* The following uses are permitted by right, subject to compliance with all approved plans and permits, development standards and performance standards contained in this chapter and with all other applicable regulations:
 - A. Amateur Radio Tower (subject to requirements of Section 10-41(20) of County Code).
 - B. Apartment as accessory use, maximum of two (2) per business structure.
 - C. Assembly of electrical, electronic devices, less than three thousand (3,000) square feet floor area.
 - D. Automotive, light truck, sales, service, rental and repair, excluding motor fuel sales.
 - E. Building material sales.
 - F. Business or trade school.
 - G. Cabinet shop, furniture, upholstery, craft industry of less than three thousand (3,000) square feet.
 - H. Cemetery.
 - I. Church.
 - J. Civic club.
 - K. Community center.
 - L. Conference or training center.

- M. Crematorium.
 - N. Custom meat cutting, processing and sales (excluding slaughtering).
 - O. Data Pole.
 - P. Day care center.
 - Q. Equipment sales and service.
 - R. Farm machinery sales and service.
 - S. Financial services.
 - T. Fire, police, rescue facility.
 - U. Funeral home.
 - V. Garden center.
 - W. General store, convenience store without motor fuel sales.
 - X. Homeless shelter.
 - Y. Hotel, motel.
 - Z. Laundromat.
 - AA. Library.
 - BB. Medical care facility.
 - CC. Motor vehicle rentals.
 - DD. Office, administrative, business or professional.
 - EE. Park.
 - FF. Park and ride lot, of fifty (50) or fewer spaces.
 - GG. Pet, household.
 - HH. Post office.
 - II. Printing service.
 - JJ. Public use, public facility.
 - KK. Public utility lines, other distribution or collection facility.
 - LL. Public utility lines, water or sewer.
 - MM. Radio station; excluding tower.
 - NN. Restaurant.
 - OO. Retail sales and services.
 - PP. School.
 - QQ. School of special instruction.
 - RR. Shopping center.
 - SS. Telecommunication tower, attached.
 - TT. Veterinary practice, animal hospital.
4. *Uses permissible by special use permit.* The following uses may be permitted by the board of supervisors as special uses, subject to the requirements of this chapter and with all other applicable regulations:
- A. Assembly of electrical, electronic devices, greater than three thousand (3,000) square feet floor area.
 - B. Boarding house.
 - C. Building greater than fifty (50) feet in height.
 - D. Contractors service establishment.
 - E. Feed and seed store and mill.
 - F. General store, convenience store with motor fuel sales.

- G. Golf driving range, miniature golf and similar outdoor recreation.
- H. Kennel, commercial.
- I. Livestock market.
- J. Mini-warehouse.
- K. Night club.
- L. Outpatient mental health and substance abuse center.
- M. Park and ride lot of more than fifty (50) spaces.
- N. Public utility plant, other.
- O. Public utility substation.
- P. Public utility plant, water or sewer.
- Q. Recreation establishment.
- R. Recycling facility.
- S. Service station.
- T. Shooting range, indoor.
- U. [Solar energy system, community scale.](#)
- V. Stone engraving and sales.
- W. Telecommunication tower, freestanding.
- X. Telecommunications facility, micro wireless.
- Y. Telecommunications facility, small cell.
- Z. Transition house.
- AA. Travel Center.
- BB. Truck, trailer, heavy equipment sales, service, rental and repair.

5. *Lot requirements.*

- A. *Minimum lot area.* Twenty thousand (20,000) square feet for lots sharing access with another lot, one (1) acre otherwise, except for public utility or public water or sewer installations which shall be in accordance with the Montgomery County Subdivision Ordinance.
- B. *Lot access.* Lots shall be accessed from a shared access drive connected to a road in the VDOT system wherever possible. Access roads shall be hard-surfaced roads designed by a professional engineer to accommodate projected volumes, loads and vehicle types and approved by the zoning administrator and the fire marshall. Lot access for GB uses shall avoid impacting residential subdivisions with primary access and through traffic.
- C. *Minimum width.* Seventy-five (75) feet for lots sharing access with another lot, one hundred fifty (150) feet otherwise. Width requirements for public utility or public water or sewer installations which shall be in accordance with the Montgomery County Subdivision Ordinance.
- D. *Maximum floor area ratio.* 0.40.
- E. *Maximum coverage by buildings.* Forty (40) percent.
- F. *Total impervious surface.* The total impervious surface located on a lot shall not exceed eighty-five (85) percent of the gross site area.

6. *Building requirements.*

- A. *Minimum yards.*

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- I. *Front*. Fifty (50) feet when opposing street frontage is residential district; thirty-five (35) feet otherwise.
 - II. *Side*. Forty (40) feet when adjacent lot is residential district; ten (10) feet otherwise.
 - III. *Rear*. Forty (40) feet when adjacent lot is residential district; ten (10) feet otherwise.
- B. *Maximum building height*. Fifty (50) feet (reference subsection (4) for exception).
7. *Use limitations*.
- A. *Screening and landscaping*. Notwithstanding other buffer, landscaping and screening requirements of this chapter, outside storage areas for materials, equipment or trash are accessory uses, may not exceed forty (40) percent of building area, must be located in side or rear yards adjacent to building, and must be screened from view of adjacent streets or adjacent land.
 - B. *Off-street parking and loading*.
 - I. Off-street parking permitted in required setback.
 - II. Must be provided in accordance with section 10-44.
 - C. *Indoor/outdoor operations*. All repair and service operations must take place within a completely enclosed building, unless permission for outside operations is specifically granted by the board of supervisors in a special use permit.

Sec 10-30 M-1 Manufacturing

- 1. *Purpose*. This district is established to provide for economic development and job opportunities by accommodating a mix of industrial uses and industrial-related business uses. Activities in M-1 districts shall have limited traffic and other impacts on uses in other districts through proper location on major streets, adherence to ordinance performance standards and provision of space and physical buffers as prescribed.
- 2. *Qualifying lands*. Lands qualifying for inclusion in the district shall be those within the current M-1 district on the date of adoption of this chapter, or other lands within areas mapped as urban expansion in the comprehensive plan which are served by or planned for connections to public sewer and water, or other lands concurrently rezoned and granted a special use permit for either natural resource extraction or processing in any area of the county. The minimum area required to create a district shall be five (5) acres of total contiguous land.
- 3. *Uses permitted by right*. The following uses are permitted by right, subject to compliance with all approved plans and permits, development standards and performance standards contained in this chapter and with all other applicable regulations:
 - A. Assembly of electrical appliances, electronic instruments and devices, radios and phonographs, including the manufacture of small parts.
 - B. Automobile or mobile home assembling, painting, public garages, upholstering repairing, rebuilding, reconditioning, truck repairing or overhauling and tire retreading or recapping.

- C. Cabinets, furniture and upholstery shop.
 - D. Civic club.
 - E. Contractor service establishment.
 - F. Crematorium.
 - G. Custom meat cutting, processing and sales.
 - H. Data Pole.
 - I. Day care center.
 - J. Equipment sales and service.
 - K. Feed and seed store and mill.
 - L. Fire, police, rescue facility.
 - M. Fruit processing and storage.
 - N. Laboratory.
 - O. Laundry, dry cleaning plant.
 - P. Manufacture of musical instruments, toys, novelties, rubber and metal stamps.
 - Q. Manufacture of pottery and figurines or other similar ceramic products, using only previously pulverized clay and kilns fired only by electricity or gas.
 - R. Manufacturing, compounding, assembling or treatment of articles of merchandise from the following previously prepared materials: bone, cellophane, canvas, cloth, cork, feathers, felt, fiber, fur, glass, hair, horn, leather, paper, plastic, rubber, precious or semiprecious metals or stones, shell, straw, textiles, tobacco, wood, yarn and paint.
 - S. Manufacturing, compounding, processing, packaging or treatment of such products as bakery goods, candy, cosmetics, dairy products, drugs, perfumes, pharmaceuticals, perfumed toilet soap, toiletries, food and tobacco products.
 - T. Monument stone works.
 - U. Park and ride lot, of fifty (50) or fewer spaces.
 - V. Pet, household.
 - W. Public use, public facility.
 - X. Public utility lines, other.
 - Y. Public utility line, water or sewer.
 - Z. Railroad facility.
 - AA. Recycling facility.
 - BB. Retail sales and service incidental to any other permitted use.
 - CC. Telecommunication tower, attached.
 - DD. Truck terminal.
 - EE. Welding or machine shop.
 - FF. Wholesale business, storage warehouse.
 - GG. Wood preserving operation.
4. *Uses permissible special use permit.* The following uses may be permitted by the board of supervisors as special uses, subject to the requirements of this chapter:
- A. Airport.
 - B. Building material sales yard.
 - C. Cement manufacturing, concrete mixing plant, block plant and production of other concrete and asphaltic products.

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- D. Contractor service establishment with permitted outdoor storage of equipment and/or materials.
 - E. Contractors' storage yard and/or rental of equipment commonly used by contractors.
 - F. Extractive industries and accessory uses including, but not limited to, the mining of minerals, the operation of oil and gas wells, and exploratory activities associated with extractive industry.
 - G. Fertilizer manufacturing.
 - H. Junkyards and automobile graveyards, provided the use is not within three hundred (300) feet of an existing dwelling.
 - I. Kennel, commercial.
 - J. Park and ride lot of more than fifty (50) spaces.
 - K. Public utility plant, other.
 - L. Public utility substation.
 - M. Public utility plant, water.
 - N. Refining, processing or distribution of petroleum, petroleum products, natural gas and other forms of liquid fuel, aboveground.
 - O. Sawmill and planing mill, coal and wood yard.
 - P. Solar energy system, community scale.
 - Q. Solar energy system, utility scale.
 - R. Slaughterhouse.
 - S. Storage of bulk petroleum products.
 - T. Telecommunications facility, micro wireless.
 - U. Telecommunications facility, micro cell
 - V. Telecommunication tower, freestanding.
 - W. Travel center.
 - X. Use listed in subsection (3), if a manufacturing process is to take place outside.
 - Y. Use similar to (1) through (16) above.
5. *Lot requirements.*
- A. *Minimum lot area.* Three (3) acres except for public utility or public water or sewer installations which shall be in accordance with the Montgomery County Subdivision Ordinance.
 - B. *Lot access.* Lots shall be accessed from a road in the VDOT system or from a hard-surfaced road designed by a professional engineer to accommodate projected volumes, loads and vehicle types and approved by the zoning administrator and the fire marshal. Lot access for M-1 uses shall avoid impacting residential subdivisions with primary access and through traffic.
 - C. *Minimum width.* Seventy-five (75) feet for lots sharing access with another lot, one hundred fifty (150) feet otherwise. Width requirements for public utility or public water or sewer installations which shall be in accordance with the Montgomery County Subdivision Ordinance.
 - D. *Maximum coverage by buildings.* Seventy (70) percent.
 - E. *Total impervious surface.* The total impervious surface located on a lot shall not exceed eighty-five (85) percent of the gross site area.

Deleted: Solar energy system, major.

6. *Building requirements.*
 - A. *Minimum yards.*
 - I. *Front.* Seventy-five (75) feet when opposing street frontage is residential district; thirty-five (35) feet otherwise.
 - II. *Side.* Thirty-five (35) feet when adjacent lot is residential district; ten (10) feet otherwise.
 - III. *Rear.* Thirty-five (35) feet when adjacent lot is residential district; ten (10) feet otherwise.
 - B. *Maximum building height.* Fifty (50) feet.
7. *Use limitations.*
 - A. *Screening and buffering.* Notwithstanding other buffer, landscaping and screening requirements of this chapter, outside storage areas for materials, heavy equipment or trash must be screened from adjacent streets or from adjacent land not zoned for industrial use. The purpose of such screening shall be to substantially reduce, but not necessarily eliminate, public views of outside storage areas. Acceptable screening shall be approved by the zoning administrator.
 - B. *Off-street parking and loading.*
 - I. Off-street parking permitted in front yard.
 - II. Must be provided in accordance with section 10-44.
 - C. *Indoor/outdoor operations.* All manufacturing operations must take place within a completely enclosed building, unless permission for outside operations is specifically granted by the board of supervisors in a special use permit.
 - D. *Separation of certain uses.* Junkyards and automobile graveyards must be one thousand (1,000) feet from the nearest edge of the right-of-way of any interstate or primary highway or five hundred (500) feet from the nearest edge of the right-of-way of any other highway or street, unless the facility is screened so as to be not visible from the main-traveled way of the highway or street.

Sec 10-31 M-L Manufacturing-Light

1. *Purpose.* This district is established to provide for economic development and job opportunities by accommodating a mix of light industrial and business uses and related uses in settings outside of industrial parks but designated for industrial use in the comprehensive plan. Activities in M-L districts shall have limited traffic and other impacts on uses in other districts through proper location on major streets, adherence to ordinance performance standards and provision of space and physical buffers as prescribed. Areas designated for industrial uses in the comprehensive plan are best suited for rezoning to this district.
2. *Qualifying lands.* Lands qualifying for inclusion in the district shall be lands within areas mapped as urban expansion, village, or village expansion in the comprehensive plan which are served by or planned for connections to public sewer and water.
3. *Uses permitted by right.* The following uses are permitted by right, subject to compliance with all approved plans and permits, development standards and performance standards contained in this chapter and with all other applicable regulations:

- A. Assembly of electrical appliances, electronic instruments and devices, radios and phonographs, including the manufacture of small parts.
 - B. Business or trade school.
 - C. Cabinets, furniture and upholstery shop.
 - D. Civic club.
 - E. Conference or training center.
 - F. Contractor's service establishment.
 - G. Crematorium.
 - H. Data Pole.
 - I. Day care center.
 - J. Equipment sales and service.
 - K. Financial services.
 - L. Fire, police, rescue facility.
 - M. Flex-industrial use.
 - N. Homeless shelter.
 - O. Hotel, motel.
 - P. Laboratory.
 - Q. Laundry, dry cleaning plant.
 - R. Manufacture of musical instruments, toys, novelties, rubber and metal stamps.
 - S. Manufacture of pottery and figurines or other similar ceramic products, using only previously pulverized clay and kilns fired only by electricity or gas.
 - T. Manufacturing, compounding, processing, packaging or treatment of such products as bakery goods, candy, cosmetics, dairy products, drugs, perfumes, pharmaceuticals, perfumed toilet soap, toiletries, food and tobacco products.
 - U. Monument stone works.
 - V. Offices, administrative, business or professional.
 - W. Park and ride lot.
 - X. Pet, household.
 - Y. Post office.
 - Z. Printing service.
 - AA. Public use, public facility.
 - BB. Public utility lines, other.
 - CC. Public utility lines, water or sewer.
 - DD. Research, experimental, testing or development activity.
 - EE. Retail sales and service incidental to any other permitted use.
 - FF.  Deleted: Solar energy system, minor.
 - GG. Telecommunication tower, attached.
 - HH. Veterinary service; animal hospital.
 - II. Wholesale business, storage warehouses.
4. *Uses permissible by special use permit.* The following uses may be permitted by the board of supervisors as special uses, subject to the requirements of this chapter and with all other applicable regulations:
- A. Airport.

- B. Contractor's service establishment with permitted outdoor storage of equipment and/or materials.
- C. Farm machinery sales and service.
- D. Feed and seed stores and mill.
- E. Kennel, indoor.
- F. Mini-warehouse.
- G. Motor vehicles rentals.
- H. Recreation establishment.
- I. Recycling facility.
- J. Park and ride lot of more than fifty (50) spaces.
- K. Public utility plant, other.
- L. Public utility substation.
- M. Public utility plant, water or sewer.
- N. Shooting range, indoor.
- O. Solar energy system, community scale.
- P. Solar energy system, utility scale.
- Q. Telecommunications facility, micro wireless.
- R. Telecommunications facility, small cell.
- S. Telecommunication tower, freestanding.
- T. Travel center.
- U. Use listed in subsection (3), if a manufacturing process is to take place outside.
- V. Use similar to (1) through (14) above.

5. *Lot requirements.*

- A. *Minimum lot area.* One (1) acre for lots sharing access with another lot, two (2) acres otherwise, except for public utility or public water or sewer installations which shall be in accordance with the Montgomery County Subdivision Ordinance.
- B. *Lot access.* Lots shall be accessed from a shared access drive connected to a road in the VDOT system wherever possible. Access drives or roads shall be a hard-surfaced road designed by a professional engineer to accommodate projected volumes, loads and vehicle types and approved by the zoning administrator and the fire marshal. Lot access for M-L uses shall avoid impacting residential subdivisions with primary access and through traffic.
- C. *Minimum width.* Seventy-five (75) feet for lots sharing access with another lot, one hundred fifty (150) feet otherwise. Width requirements for public utility or public water or sewer installations shall be in accordance with the Montgomery County Subdivision Ordinance.
- D. *Maximum floor area ratio.* 0.40.
- E. *Maximum coverage by buildings.* Fifty (50) percent.
- F. *Total impervious surface.* The total impervious surface located on a lot shall not exceed eighty (80) percent of the gross site area.

6. *Building requirements.*

- A. *Minimum yards.*
 - I. *Front.* Fifty (50) feet when opposing street frontage is residential district; thirty-five (35) feet otherwise.

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- II. *Side*. Thirty-five (35) feet when adjacent lot is residential district; ten (10) feet otherwise.
- III. *Rear*. Thirty-five (35) feet when adjacent lot is residential district; ten (10) feet otherwise.
- B. *Maximum building height*. Fifty (50) feet.
- 7. *Use limitations*.
 - A. *Screening and buffering*. Notwithstanding other buffer, landscaping and screening requirements of this chapter, outside storage areas for materials, equipment or trash must be screened from adjacent streets or from adjacent land not zoned for industrial use. The purpose of such screening shall be to substantially reduce, but not necessarily eliminate, public views of outside storage areas. Acceptable screening shall be approved by the zoning administrator.
 - B. *Off-street parking and loading*.
 - I. Off-street parking permitted in required front yard.
 - II. Must be provided in accordance with section 10-44.
 - C. *Indoor/outdoor operations*. All manufacturing operations must take place within a completely enclosed building, unless permission for outside operations is specifically granted by the board of supervisors in a special use permit.

Sec 10-33 PIN Planned Industrial

1. *Purpose*. This district is established to provide for economic development and job opportunities by accommodating certain light industrial and business uses and related uses with limited environmental and visual impact that wish to locate in an area of like uses, all to be developed and operated according to standards that will ensure maintenance of a park-like atmosphere. Activities in PIN districts shall have limited traffic and other impacts on uses in other districts through proper location on major streets, adherence to ordinance performance standards and provision of open space and physical buffers as prescribed.
2. *Qualifying lands*. Lands qualifying for inclusion in the PIN zoning district shall be PIN on the date of passage of this chapter, or other lands within areas mapped as urban expansion, urban development area, or village expansion in the comprehensive plan which are served by or planned for connections to public sewer and water. The minimum area required to create a district shall be five (5) acres of total contiguous land.
3. *Uses permitted by right*. The following uses are permitted by right, subject to compliance with all approved plans and permits, development standards and performance standards contained in this chapter:
 - A. Animal hospital.
 - B. Assembly of electrical appliances, electronic instruments and devices, radios and phonographs, including the manufacture of small parts.
 - C. Business or trade school.
 - D. Cabinets, furniture and upholstery shop.
 - E. Cemetery, mausoleum or memorial park.
 - F. Civic club.

- G. Conference or training center.
- H. Crematorium.
- I. Day care center.
- J. Equipment sales and service.
- K. Financial services.
- L. Fire, police, rescue facility.
- M. Flex-industrial uses.
- N. Homeless shelter.
- O. Hotel, motel.
- P. Laboratory.
- Q. Laundry, dry cleaning plant.
- R. Manufacture of musical instruments, toys, novelties, rubber and metal stamps.
- S. Manufacture of pottery and figurines or other similar ceramic products, using only previously pulverized clay and kilns fired only by electricity or gas.
- T. Manufacturing, compounding, processing, packaging or treatment of such products as bakery goods, candy, cosmetics, dairy products, drugs, perfumes, pharmaceuticals, perfumed toilet soap, toiletries, food and tobacco products.
- U. Mini warehouse.
- V. Monument stone works.
- W. Office, administrative, business or professional.
- X. Park and ride lot, of fifty (50) or fewer spaces.
- Y. Pet, household.
- Z. Post office.
- AA. Printing service.
- BB. Public use, public facility.
- CC. Public utility lines, other.
- DD. Public utility lines, water or sewer.
- EE. Public utility substation.
- FF. Research, experimental, testing or development activity.
- GG. Retail sales and service incidental to any other permitted use.
- HH. Storage warehouse.
- II. Telecommunication tower, attached.
- JJ. Veterinary service.
- KK. Wholesale business.

4. *Uses permissible by special use permit.* The following uses may be permitted by the board of supervisors as special uses, subject to the requirements of this chapter:

- A. Airport.
- B. Farm machinery sales and service.
- C. Feed and seed store and mill.
- D. Kennel, indoor.
- E. Motor vehicles rentals.
- F. Park and ride lot of more than fifty (50) spaces.
- G. Public utility plant, other.
- H. Public utility plant, water or sewer.

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- I. Recreation, commercial.
 - J. Recycling facility.
 - ~~K. Shooting range, indoor.~~
 - L. [Solar energy system, community scale.](#)
 - M. [Solar energy system, utility scale.](#)
 - N. Telecommunication tower, freestanding.
 - O. Use listed in subsection (c), if a manufacturing process is to take place outside.
 - P. Uses similar to (1) through (12) above.
5. *Lot requirements.*
- A. *Minimum lot area.* One (1) acre except for public utility or public water or sewer installations which shall be in accordance with the Montgomery County Subdivision Ordinance.
 - B. *Lot access.* Lots shall be accessed from a road in the VDOT system or from a hard-surfaced road designed by a professional engineer to accommodate projected volumes, loads and vehicle types and approved by the zoning administrator and the fire marshal. Lot access shall avoid impact on residential subdivisions from primary access and through traffic.
 - C. *Maximum coverage by buildings.* Fifty (50) percent.
 - D. *Minimum width.* One hundred (100) feet. Width requirements for public utility or public water or sewer installations which shall be in accordance with the Montgomery County Subdivision Ordinance.
 - E. *Total impervious surface.* The total impervious surface located on a lot shall not exceed seventy-five (75) percent of the gross site area.
6. *Building requirements.*
- A. *Minimum yards.*
 - I. *Front.* Fifty (50) feet when opposing street frontage is residential district; thirty-five (35) feet otherwise.
 - II. *Side.* Thirty-five (35) feet when adjacent lot is residential district; ten (10) feet otherwise.
 - III. *Rear.* Thirty-five (35) feet when adjacent lot is residential district; ten (10) feet otherwise.
 - B. *Maximum building height.* Fifty (50) feet. (7)
7. *Use limitations.*
- A. Notwithstanding other buffer, landscaping and screening requirements of this chapter, outside storage areas for materials, equipment or trash must be screened from adjacent streets or from adjacent land not zoned for industrial use. The purpose of such screening shall be to substantially reduce, but not necessarily eliminate, public views of outside storage areas. Acceptable screening shall be subject to approval by the zoning administrator.
 - B. Off-street parking and loading must be provided in accordance with section 10-44.
 - C. All manufacturing operations must take place within a completely enclosed building, unless permission for outside operations is specifically granted by the board of supervisors in a special use permit.

Deleted: Solar energy system, major.

All performance standards of this chapter shall be met by the owner, applicant or user.

Sec 10-34 PUD-COM Planned Unit Development-Commercial District

1. *Purpose.* This district is established to provide for the development of planned commercial areas that incorporate a variety of commercial uses as well as residential development. This district is intended to allow greater flexibility than is generally possible under conventional zoning district regulations. The PUD-COM district encourages ingenuity, imagination, and high quality design on the part of the developer. It is intended that multiple access to existing public roads be discouraged and that development and access be oriented toward an internal road system that has carefully planned intersections with existing public roads. PUD-COM districts should result in well planned unit developments that contain a mix of commercial and residential development that is harmonious with existing site conditions, adjacent land uses, well landscaped, and safe and efficient for pedestrians and vehicles.
2. *Qualifying lands.* Lands qualifying for inclusion in the district shall be PUD-COM on the date of passage of this chapter, or other lands within areas mapped as village, village expansion or urban expansion in the comprehensive plan which are served by or planned for connections to public sewer and water. The minimum area required to create a district shall be five (5) acres of total contiguous land.
3. *Uses permitted by right.* The following uses are permitted by right, subject to compliance with all approved plans and permits, development standards and performance standards contained in this chapter and with all other applicable regulations:
 - A. Apartment as accessory use.
 - B. Assembly of electrical, electronic devices, less than three thousand (3,000) square feet floor area.
 - C. Automotive, light truck, sales, service, rental and repair.
 - D. Building material sales.
 - E. Business or trade school.
 - F. Cabinet shop, furniture, upholstery, craft industry of less than three thousand (3,000) square feet.
 - G. Cemetery.
 - H. Church.
 - I. Civic club.
 - J. Conference or training center.
 - K. Convenience store, without motor fuel sales.
 - L. Crematorium.
 - M. Custom meat cutting, processing and sales (excluding slaughtering).
 - N. Day care center.
 - O. Equipment sales and service.
 - P. Financial services.
 - Q. Fire, police, rescue facility.
 - R. Funeral home.
 - S. General store, convenience store without motor fuel sales.

- T. Homeless shelter.
- U. Hospital, medical center, emergency care.
- V. Hotel, motel.
- W. Library.
- X. Medical care facility.
- Y. Motor vehicle rentals.
- Z. Movie theater.
- AA. Office, administrative, business or professional.
- BB. Park.
- CC. Park and ride lot, of fifty (50) or fewer spaces.
- DD. Pet, household.
- EE. Post office.
- FF. Printing service.
- GG. Public use, public facility.
- HH. Public utility lines, other.
- II. Public utility lines, water or sewer.
- JJ. Radio station, excluding tower.
- KK. Recreation club.
- LL. Recreation establishment.
- MM. Recycling collection point.
- NN. Restaurant.
- OO. Retail sales and services.
- PP. School.
- QQ. Senior living facilities.
- RR. Shopping center.
- SS. Telecommunication tower, attached.
- TT. Veterinary practice, animal hospital.

4. *Uses permissible by special use permit.* The following uses may be permitted by the board of supervisors as special uses, subject to the requirements of this chapter and with all other applicable regulations:
- A. Assembly of electrical, electronic devices, greater than three thousand (3,000) square feet floor area.
 - B. Building greater than fifty (50) feet in height.
 - C. Convenience store with gasoline sales.
 - D. Dwelling unit.
 - E. General store, convenience store with motor fuel sales.
 - F. Golf driving range, miniature golf and similar outdoor recreation.
 - G. Kennel.
 - H. Mini-warehouse.
 - I. Mitigation bank.
 - J. Mobile home, Class A or B.
 - K. Motor vehicles rentals.
 - L. Park and ride lot of more than fifty (50) spaces.
 - M. Public utility plant, other.

Deleted: <#>Solar energy system, minor.¶

- N. Public utility plant, water or sewer.
- O. Public utility substation.
- P. Public water or sewer treatment plant.
- Q. Recycling facility.
- R. Service station.
- S. [Solar energy system, community scale.](#)
- T. [Telecommunication tower, freestanding.](#)
- U. Other use types that are not listed above and that are determined to be appropriate and compatible with the proposed development and surrounding uses may be specifically approved in concurrent rezoning and special use permit applications or in a subsequent special use permit application.

5. *Lot requirements.*

A. *Minimum lot area, density.*

- I. Lot area shall be determined by designation of one (1) or more base district (article II) designations from the GB or an R district on each land bay in the approved concept development plan. Variations from base district lot area may be permitted by the board of supervisors in cases where amenities and landscaping/open space quantities in excess of zoning ordinance minimum requirements are provided as part of approval of the concept development plan.
- II. Density on nonresidential portions of the project shall be a maximum of 0.40 floor area ratio in urban expansion areas and 0.25 floor area ratio in village or village expansion areas. Density on residential portions of the project shall not exceed six (6) dwelling units per net acre in urban expansion areas and three (3) dwelling units per acre in village or village expansion areas.

B. *Lot access.* Lots shall be accessed from a road in the VDOT system or from a hard-surfaced road designed by a professional engineer to accommodate projected volumes, loads and vehicle types and approved by the zoning administrator and the fire marshall. For additional standards see subsection (g).

C. *Maximum coverage by buildings.* Seventy (70) percent.

D. *Minimum width.* Width shall be determined by designation of a base district designation from the GB or an R district on each land bay in the approved concept development plan.

E. *Maximum coverage of impervious surface.* The maximum coverage of impervious surface on a lot shall be determined as part of the approved concept development plan.

6. *Building requirements.*

A. *Minimum yards.* Yards shall be determined by designation of a base district designation from the GB or an R district on each: land bay in the approved concept development plan

B. *Maximum building height.* Fifty (50) feet.

C. *Variations permissible.* Variations from base district width, setbacks and/or yards may be permitted by the board of supervisors with reference to subsection (g) in

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cases where amenities and landscape/open space quantities in excess of minimum zoning ordinance requirements are provided as part of approval of the concept development plan.

7. *Use limitations.*

- A. *Public water and wastewater service.* Public water and wastewater services are required for all development in the PUD-COM district.
- B. *Area for residential use.* The maximum area for residential uses shall be twenty-five (25) percent of the net area of the project.
- C. *Off-street parking and loading.* Off-street parking and loading must be provided in accordance with section 10-44.
- D. *Commercial and/or office criteria.*
 - I. Commercial and office uses shall be screened and landscaped as for base districts in accord with the buffer/landscape matrix.
 - II. Safe and convenient pedestrian access is required between the residential, commercial, and office uses within the project.
 - III. Commercial and office uses shall be oriented away from adjoining residential uses and access shall not be provided through residential areas.
 - IV. Lighting shall be designed and arranged to be oriented away from adjacent residential uses.
- E. *Width, setbacks and yards.* Minimum requirements for width, setbacks and/or yards other than as for base districts, and as established in subsection (f), shall be specifically established during the review and approval of the concept development plan. The following guidelines shall be used in establishing any width, setback and/or yard building spacing variations from requirements of subsection (f). Variations shall not:
 - I. Impair safety from the standpoint of fire and rescue access to properties;
 - II. Increase danger or probability of accidents involving vehicles and/or pedestrians;
 - III. Be done with the major purpose to decrease development costs;
 - IV. Be done when the effect is to decrease privacy, adequacy of light and air, or buffering beyond base district regulations' effects; and
 - V. Abrogate the principal that sides of structures located on and backing up to the outer perimeter of the project shall conform to the setback and yard requirements of the adjoining district or the setbacks established in the project, whichever is greater.
- F. *Streets.*
 - I. Streets serving dwellings shall be subject to the standards of the PUD-RES district.
 - II. Public streets shall be designed and constructed in accordance with the minimum standards of the Virginia Department of Transportation.
 - III. Privately owned and maintained streets may be approved, provided:
 - (1) All required parking is off-street and designated areas of off-street parking are provided that are in excess of and complementary to private driveways;

- (2) A plan is submitted and approved for emergency access, snow clearance;
- (3) The private streets are not through streets;
- (4) The private streets are developed to a pavement section equal to VDOT standard for the projected traffic volume and to a geometric standard meeting county requirements;
- (5) The minimum width of the streets is eighteen (18) feet or wider exclusive of any on-street parking based on the projected vehicle trips per day for the streets;
- (6) The right-of-way for all private streets shall be dedicated to the PUD property owners association; and
- (7) Deeds for property abutting the private street must state that the street is private and will not be maintained by the state or county. If the property owners association officially petitions to dedicate the necessary right-of-way to the state or county it must be at no cost to the state or county and the associations shall pay the full cost to bring the street up to state standards.

G. *Commercial open space.* A minimum of fifteen (15) percent of the net area of the nonresidential portions of the development, including all required landscape and buffer areas, shall be permanently reserved as common open space

H. *Residential open space.* If the PUD-COM district contains a residential component, open space and recreation facilities shall be provided as for PUD-RES with the exception that required contiguous open space can be reduced relative to the scale of the residential component.

Sec 10-35 PUD-RES Planned Unit Development-Residential District

1. *Purpose.* This district is established to provide for the development of planned residential communities that incorporate a variety of housing options as well as commercial and office uses. This district is intended to allow greater flexibility than is generally possible under conventional zoning district regulations. This district is intended to encourage ingenuity, imagination, and high quality design on the part of the developer. The end result of design is to support a superior neighborhood environment and promote a sense of community. The protection of important natural and cultural resources is to be accomplished in exchange for development flexibility and economies. Design must have equal or less impact on surrounding areas than a standard residential district.
2. *Qualifying lands.* Lands qualifying for inclusion in the district shall be PUD-RES on the date of passage of this chapter, or other lands within areas mapped as village, village expansion, urban development area, or urban expansion in the comprehensive plan which are served by or planned for connections to public sewer and water. The minimum area required to create a district shall be ten (10) net acres of total contiguous land in the urban expansion area and five (5) net acres in the village or village expansion area.

3. *Uses permitted by right.* The following uses are permitted by right, subject to compliance with all approved plans and permits, development standards and performance standards contained in this chapter:
- A. Bed and Breakfast Inn.
 - B. Cemetery.
 - C. Church.
 - D. Civic club.
 - E. Conference or training center.
 - F. Congregate care facility.
 - G. Convenience store, without motor fuel sales.
 - H. Day care center.
 - I. Dwelling, multifamily (apartment).
 - J. Dwelling, single-family.
 - K. Dwelling, single-family attached (townhouse).
 - L. Dwelling, two-family (duplex).
 - M. Financial services.
 - N. Fire, police and rescue station.
 - O. Funeral home.
 - P. Golf course.
 - Q. Home occupation (new).
 - R. Library.
 - S. Medical care facility.
 - T. Mobile home, Class A.
 - U. Nursing home.
 - V. Office, administrative, business or professional.
 - W. Park, lighted or unlighted.
 - X. Park and ride lot, of fifty (50) or fewer spaces.
 - Y. Pet, household.
 - Z. Playground, lighted or unlighted.
 - AA. Post office.
 - BB. Public utility lines, other.
 - CC. Public utility lines, water or sewer.
 - DD. Recreation establishment.
 - EE. Recycling collection point.
 - FF. Restaurant with gross floor area of less than two thousand (2,000) square feet.
 - GG. Retail sales and services.
 - HH. School.
 - II. Senior living facility.
 - JJ. Telecommunication tower, attached.
 - KK. Urban agriculture (subject to the requirement of section 10-41(19) of the county zoning ordinance).
4. *Uses permitted by special use permit.* Other use types that are not listed above and that are determined to be appropriate and compatible with the proposed development and

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surrounding uses may be specifically approved in concurrent rezoning and special use permit applications or in a subsequent special use permit application.

- A. Park and ride lot of more than fifty (50) spaces.
- B. Mitigation bank.
- C. Public use, public facility.
- D. Solar energy system, community scale.

5. Lot requirements.

- A. *Minimum lot area, density.*
 - I. Lot area shall be determined by designation of one (1) or more base district (article II) designations on each land bay in the approved concept development plan. Variations from base district lot area may be permitted by the board of supervisors in cases where amenities and open space quantities in excess of zoning ordinance minimum requirements are provided as part of approval of the concept development plan.
 - II. Density shall be a maximum of four (4) dwelling units per net residential acre in urban expansion areas and three (3) dwelling units per net residential acre in village or village expansion areas.
- B. *Lot access.* Lots shall be accessed from a road in the VDOT system or from a hard-surfaced road designed by a professional engineer to accommodate projected volumes, loads and vehicle types and approved by the zoning administrator and the fire marshal. For additional standards see subsection (g).
- C. *Maximum coverage by buildings.* Twenty (20) percent.
- D. *Minimum width.* Minimum width shall be determined by designation of a base district designation on each land bay in the approved concept development plan.
- E. *Maximum coverage of impervious surface.* The maximum coverage of impervious surface on a lot shall be determined as part of the approved concept development plan.

6. *Building requirements.*

- A. *Minimum yards.* Yards shall be determined by designation of a base district designation on each land bay in the approved concept development plan.
- B. *Maximum building height.* Thirty-five (35) feet in height unless authorized by special use permit.
- C. *Variations permissible.* Variations from base district width, setback and or yards may be permitted by and at the sole discretion of the board of supervisors in cases where amenities and open space quantities in excess of zoning ordinance minimum requirements are provided as part of approval of the concept development plan and where intent of provisions of subsection (g) are met.

7. *Use limitations.*

- A. *Public water and wastewater service.* Public water and wastewater services are required for all development in the PUD-RES district.
- B. *Off-street parking and loading.* Off-street parking and loading must be provided in accordance with section 10-44.
- C. *Commercial and/or office criteria.*

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- I. The maximum area for commercial and/or office uses shall be ten (10) percent of the net area of the project.
- II. Commercial and office uses shall be screened and landscaped as for base districts in accord with the buffer/landscape matrix.
- III. Construction of commercial and office uses shall not begin until twenty-five (25) percent of the residential units or two hundred twenty (220) dwelling units, whichever is less, of the total project have been issued certificates of occupancy.
- IV. Safe and convenient pedestrian access is required between the residential, commercial, and office uses within the project.
- V. Commercial and office uses shall be oriented away from adjoining residential uses and access shall avoid impact on residential subdivisions from primary access and through traffic.
- VI. Lighting shall be designed and arranged to be oriented away from adjacent residential uses.

D. *Open-space criteria.*

- I. A minimum of twenty (20) percent of the total gross area of the development shall be reserved as common open space and/or recreational areas.
- II. A minimum of twenty thousand (20,000) square feet of usable, active recreation space shall be contiguous. Trails and walkways shall not be included in this calculation.
- III. Common open space shall not include existing and/or proposed street rights-of-way, parking areas as required or established under a county ordinance, driveways, or sites reserved for places of religious assembly.
- IV. Common open space shall be arranged in a fashion to allow all residential areas within the development pedestrian access to the open space.
- V. A minimum of thirty (30) percent of the common open space should be suitable for active recreational usage such as playgrounds, ballfields, bike paths, and trails. Suitable active open space should be of usable size, shape, location, and topography. A minimum of two hundred dollars (\$200.00) per dwelling unit (1997 dollars) shall be expended on active recreation facilities not including site preparation.

E. *Width, setbacks and yards.*

- I. Minimum requirements for width, setbacks and/or yards other than as for base districts, and as established in subsection (f), shall be specifically established during the review and approval of the concept development plan. The following guidelines shall be used in establishing any width, setback and/or yard building spacing variations from requirements of subsection (f). Variations shall not:
 - (1) Impair safety from the standpoint of fire and rescue access to properties;
 - (2) Increase danger or probability of accidents involving vehicles and/or pedestrians;

- (3) Be done with the major purpose to decrease development costs;
- (4) Be done when the effect is to decrease privacy, adequacy of light and air, or buffering beyond base district regulations' effects; and
- (5) Abrogate the principal that sides of structures located on and backing up to the outer perimeter of the project shall conform to the setback and yard requirements of the adjoining district or the setbacks established in the project, whichever is greater.

F. *Streets.*

- I. Streets serving single-family attached dwellings, multifamily dwellings, commercial and office uses may be dedicated to public use or may be retained under private ownership. Not more than three (3) single-family dwellings may be served by a single pipestem access easement or driveway directly connected to a public street.
- II. Public streets shall be designed and constructed in accordance with the minimum standards of the Virginia Department of Transportation.
- III. Privately owned and maintained streets may be approved, provided:
 - (1) All parking is off-street and designated areas of off-street parking are provided that are in excess of and complementary to private driveways;
 - (2) A plan is submitted and approved for school bus pick up and drop off areas for property owners abutting the private street;
 - (3) A plan is submitted and approved for emergency access, snow clearance and postal delivery for all property owners abutting the private street;
 - (4) The private streets are not through streets;
 - (5) The private streets are developed to a pavement section equal to VDOT standard for the projected traffic volume and to a geometric standard meeting county requirements.
 - (6) The minimum width of the streets is eighteen (18) feet or wider exclusive of any on-street parking based on the projected vehicle trips per day for the streets;
 - (7) The right-of-way for all private streets shall be dedicated to the PUD homeowners association; and
 - (8) Deeds for property abutting the private street must state that the street is private and will not be maintained by the state or county. If the property owners association officially petitions to dedicate the necessary right-of-way to the state or county it must be at no cost to the state or county and the association shall pay the full cost to bring the street up to state standards.

Sec 10-48 Additional Regulations For Special Uses

- 1. *Purpose and intent.* Certain land uses by their nature, may have an undue impact upon or be incompatible with other permitted uses of land within a given zoning district.

Therefore, they may be permitted in a given district only upon approval of a special use permit. Such approvals are subject to any reasonable conditions the board of supervisors may deem necessary. Further, the uses listed in this section are subject to the additional standards contained herein, in addition to others the board of supervisors may impose in granting a given special use permit.

2. *Sawmills and chipmills.*

A. *Permanent sawmills and chipmills.*

- I. No structure, nor storage of lumber, logs, timber, equipment or any other materials shall be located closer than one hundred (100) feet to any lot line. No structure housing or enclosing a sawmill shall be located closer than five hundred (500) feet to any lot line.
- II. The permit shall be granted for a period not to exceed two (2) years, upon which time it shall be reviewed by the board of supervisors and may or may not be renewed depending upon whether the operator has adhered to the conditions of the permit, and whether conditions in the area have changed so as to warrant a cessation of the use.
- III. Hours of operation shall be established by the board of supervisors.
- IV. Such uses shall have direct access to a state-maintained road, adequate in capacity to serve the traffic generated by size and type of the mill.
- V. Screening of the site shall be sufficient to ensure a minimal visual impact on adjacent uses, and the board shall impose conditions sufficient to provide such assurance, which may include, but not be limited to, fencing, preservation of existing vegetation, additional vegetation, entrance design and location, and the design, bulk and height of structures.
- VI. Noise levels produced by the operation shall conform to the performance standards contained in the county's noise ordinance, chapter 7, article IV, of the Montgomery County Code.

B. *Temporary sawmills and chipmills.*

- I. A temporary sawmill shall only process timber cut from the parcel on which the temporary sawmill is located or on immediately adjacent parcels.
- II. For periods of operation exceeding six (6) months, the operator shall be required to obtain a special use permit.
- III. A temporary sawmill shall be located at least two hundred (200) feet from any existing residence located on an adjoining or adjacent lot, and one hundred (100) feet from any lot line.
- IV. No processing, milling, finishing or artificial drying of green lumber shall be permitted on the site.
- V. The operator shall meet the requirements of subsection (2)(a)iv.

- C. The board of supervisors may establish any additional conditions on the operation of any sawmill or chipmill, depending upon specific features of the site, the subject of such conditions which may include but are not limited to periods and hours of operation, noise levels, screening, setbacks, access, storage areas, parking and loading, odors and materials storage.

3. *Slaughter houses.*

- A. No structure, nor enclosure for the keeping of animals shall be located closer than two hundred (200) feet to any lot line. No enclosed structure used for the slaughtering of animals shall be located closer than four hundred (400) feet to any lot line.
- B. The permit shall be granted for a period not to exceed five (5) years, upon which time it shall be reviewed by the board of supervisors and may or may not be renewed depending upon whether the operator has adhered to the conditions of the permit.
- C. Hours of operation shall be established by the board.
- D. Such uses shall have direct access to a state-maintained road, adequate in capacity to serve the traffic generated by the size and type of the facility.
- E. Screening of the site shall be sufficient to ensure a minimal visual impact on adjacent uses, and the board of supervisors shall impose conditions sufficient to provide such assurance, which may include, but not be limited to, fencing, preservation of existing vegetation, additional vegetation, entrance design and location, and the design, bulk and height of structures.
- F. The minimum lot size for slaughter operations shall be five (5) acres.
- G. Adequate provision, to the satisfaction of the board, shall be made for the off-site disposal of animal waste, including manure, litter, and carcasses or portions thereof.
- H. Noise levels produced by the operation shall conform to the performance standards contained in the county's noise ordinance, chapter 7, article IV, of the Montgomery County Code.
- I. The board of supervisors may establish any additional conditions on the operation of any slaughterhouse, depending upon specific features of the site, the subject of such conditions which may include but are not limited to periods and hours of operation, noise levels, screening, setbacks, access, storage areas, parking and loading, odors, waste disposal and materials storage.

4. *Landfills.*

A. *Construction debris and/or rubble landfills.*

- I. The minimum lot size for any such landfill shall be ten (10) acres.
- II. The site development and operations shall be in accord with all of the regulations of applicable agencies of the Commonwealth of Virginia, including any special conditions for landfill permits. No site development or activity of any kind related to the landfill use shall occur on the site prior to receiving all applicable state and local permits, other than sampling activities that may be running in order to prepare an application for such permit.
- III. Screening of the site shall be sufficient to ensure a minimal visual impact on adjacent uses, and the board shall impose conditions sufficient to provide such assurance, which may include, but not be limited to, fencing, preservation of existing vegetation, additional vegetation, entrance design and location, and the design, bulk and height of structures.

- IV. A master plan for the proposed use of the site shall be submitted to the county for consideration as part of the special use permit application. Such plan shall specify all physical changes and improvements to the property, including a phasing plan with time frames for the landfilling activities, methods for controlling drainage, run-off, leachate, erosion and sediment control during and after site development, groundwater protection and monitoring, site security from trespass, access from public roads, and a plan for closure and future re-use of the site.
 - V. The operator shall cause a qualified independent contractor to perform an annual environmental audit to determine the extent of compliance with all conditions of the special use permit and all other regulatory requirements. Such audit shall be formally submitted to the zoning administrator upon completion and not more than twelve (12) months after the preceding audit, and shall be made part of the public record.
 - VI. In considering a special use permit for such uses, the board may set additional standards, including but not limited to the following elements:
 - (1) Surface materials and design for access roads, on-site roads, parking and other vehicle facilities.
 - (2) Control of dust, odor and pests.
 - (3) Noise generated by the operation.
 - (4) Hours of operation.
 - (5) Limits on types of materials to be landfilled.
- B. *Sanitary landfills.*
- I. The minimum lot size for any such landfill shall be fifty (50) acres.
 - II. The provisions of subsections (d)(1)b. through f. of this section shall also be met.
5. *Junkyards, automobile graveyards.*
- A. In considering a special use permit for such uses, the board may set additional standards, including but not limited to the following elements:
 - I. Surface materials and design for access roads, on-site roads, parking and other vehicle facilities.
 - II. Control of dust, odor and pests.
 - III. Noise generated by the operation.
 - IV. Hours of operation.
 - B. Screening of the site shall be sufficient to ensure a minimal visual impact on adjacent uses, and the board shall impose conditions sufficient to provide such assurance, which may include, but not be limited to, fencing, preservation of existing vegetation, additional vegetation, entrance design and location, and the design, bulk and height of structures.
 - C. No structure, storage area or other part of the operation shall be located closer than three hundred (300) feet to any existing dwelling or residential lot line.
 - D. Such uses shall have direct access to a state-maintained road, adequate in capacity to serve the traffic generated by the operation.
 - E. No disposal of fuel, chemicals or hazardous materials is permitted.

6. *Telecommunications towers, freestanding.*
 - A. Such towers shall be maintained with a galvanized steel finish or be painted a neutral color.
 - B. Dish antennas shall be a neutral, nonreflective color.
 - C. No logos or advertising of any kind shall be permitted on towers, antennas or any accompanying structures or facilities.
 - D. A written agreement for permitting future co-locations of telecommunications facilities shall be provided tower owner and maintained to the satisfaction of the zoning administrator.
 - E. A written agreement assuring prompt removal of the tower upon abandonment, at the responsibility and cost of the tower owner or landowner shall be provided and maintained to the satisfaction of the zoning administrator.
 - F. All towers shall comply with all Federal Aviation Administration (FAA) requirements including those relating to the Virginia Tech Airport.
7. *Stone quarrying, extraction and mining.*
 - A. No permit for an extraction and mining use shall be issued for any tract of land containing less than fifty (50) acres. This requirement, however, shall not preclude the approval of a permit to enlarge or extend an existing extraction and mining use onto contiguous parcels.
 - B. All blasting shall be limited to the hours of 7 a.m. to 6 p.m. or such lesser time as may be established by special use permit.
 - C. All vehicles used to transport excavated material shall be required to be loaded in such manner that the material may not unintentionally be discharged from the vehicle. Trucks shall be cleaned of all material not in the load-bed prior to entering the public streets.
 - D. Landscaping and screening requirements. All areas within one hundred (100) feet of an adjacent public road or a zoning district or land bay allowing or planned to allow residential uses shall meet the standards of section 10-43, and shall be landscaped, bermed, screened and maintained with natural vegetation to buffer and screen such areas.
 - I. In addition to the requirements of section 10-43, existing trees and ground cover along all other boundary lines shall be preserved, maintained and supplemented by selective cutting, transplanting, and addition of new trees, shrubs and other ground cover for the depth of the setback.
 - II. The type, time of planting, design and spacing of planting screen shall be in accordance with section 10-43. Approval of maintenance of landscape areas by the zoning administrator shall be required for zoning permit extension and zoning permit renewal.
8. *Telecommunications facility, micro wireless and Telecommunications facility, small cell.*
 - A. Except for antennas completely enclosed within a structure, all antennas and their supporting mounts must be designed to match or blend with the structure on which it is mounted or provide other means of visual mitigation.

- B. Commercial advertising or signs are not allowed on any monopole, tower, antenna, antenna support structure, or related equipment cabinet or structure.
- C. If any additions, changes or modifications are to be made to these facilities, the Zoning Administrator has the authority to require proof, through the submission of engineering and structural data, that the addition, change, or modifications conforms to structural wind load and all other requirements of the Virginia Uniform Statewide Building Code.
- D. Signals, lights or illumination are not permitted unless required by federal, state, or local law.
- E. All antennas and related equipment cabinets or structures must be removed within 120 days after such antennas or related equipment cabinets or structures are no longer in use.
- F. Any antennas, equipment, and associated support structures that are clearly depicted on the Special Use Permit application may be approved as part of the wireless facility and would not be subject to separate permit approval that would otherwise be required for such installations.

9. Warehouse, mini:

- A. The owner shall provide security by means of security fencing with gated access, "Dark Sky Friendly" security lighting no higher than 15', and security cameras maintained in good working order.
- B. The owner shall post readily visible contact information, including but not limited to name and phone number, on site for appropriate personnel to be reach in case of emergency.
- C. Buildings shall be spaced a minimum of thirty (30) feet apart.
- D. No door opening for any storage unit shall be constructed facing any residentially zoned property.
- E. All outdoor storage areas shall be screened from adjoining properties by a Type 4 Buffer as outlined in Section 10-43.
- F. The following uses shall be prohibited:
 - I. Auctions by tenants, commercial wholesale or retail sales, or miscellaneous or garage sales.
 - II. The servicing, repair or fabrication of motor vehicles, boats, trailers, lawn mowers, appliances or other similar equipment.
 - III. The operation of power tools, spray-painting equipment, table saws, lathes, compressors, welding equipment, kilns, or other similar equipment.
 - IV. The storage of flammable, highly combustible, explosive, or other hazardous materials.

Add the following section

10. Solar energy system, community and utility scale

A. Application. An application for a solar energy system shall contain:

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I. Project narrative. A narrative identifying the applicant, facility owner, site owner, proposed operator, and describing the proposed facility including an overview of the facility and its location; the size of the site and the facility area; the current use of the site; the estimated time for construction and proposed date for commencement of operations; the planned maximum generated capacity of the facility identified as AC and/or DC; the approximate number, representative types and expected footprint of solar equipment to be constructed, including, without limitation, photovoltaic panels; ancillary facilities, if applicable; and how and where the electricity generated at the facility will be transmitted, including the location of the proposed electric grid interconnection; and a statement that addresses how the facility will be in compliance with the comprehensive plan. The statement shall address the following:

- (1) Why the applicant believes the proposal will not be of substantial detriment to adjacent properties.
- (2) Why the applicant believes that the character of the zoning district will not be changed by the proposed action; and
- (3) How the proposal will be in harmony with the purpose and intent of chapter 10 of the Montgomery County Code, with the uses permitted by-right in the corresponding zoning district, with additional regulations provided in Article IV of this chapter, and amendments of this chapter, and with the public health, safety, and general welfare.

II. Concept plan. The concept plan shall include the following information:

- (1) Property lines, minimum required buffer areas, and any proposed buffer areas and setback lines that exceed the minimum requirements.
- (2) An area map showing the proposed site within a five-mile radius, together with prominent landmarks, physical features, and transmission lines.
- (3) Existing and proposed buildings structures and other improvements, including preliminary location(s) of the proposed solar equipment.
- (4) Existing and proposed access roads, permanent entrances, temporary construction entrances, drives, and other areas requiring access to parking, including written confirmation from the Virginia Department of Transportation (VDOT) that all entrances satisfy applicable VDOT requirements.

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(5) Proposed locations and maximum heights of substations, electrical cabling from the solar systems to the substations, panels, ancillary equipment and facilities, buildings, and structures (including those within any applicable buffers or setbacks).

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(6) Proposed locations of delivery and parking areas.

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(7) Areas where vegetative buffering will be installed and maintained and areas where pollinator-friendly and wildlife-friendly native plants, shrubs, trees, grasses, forbs, and wildflowers will be installed and maintained following Virginia Pollinator-Smart Program best practices.

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(8) Existing wetlands, woodlands and areas containing substantial woods or vegetation.

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(9) Identification of actively cultivated lands, and predominant soil types of those lands including the identification of soils suited to farming.

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(10) Additional information may be required, as determined by the zoning administrator, such as a scaled elevation view and other supporting drawings, photographs of the proposed site, photo or other realistic simulations or modeling of the proposed solar energy facility from potentially sensitive locations as deemed necessary by the zoning administrator to assess the visual impact of the facility, aerial image or map of the site, and additional information that may be necessary for a technical review of the proposal. The planning commission or board of supervisors may also require other relevant information deemed to be necessary to evaluate the application.

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III. Generalized landscaping and screening plan. The applicant must submit a landscaping and screening plan with the location, size, and type of planting yards including the use of existing and newly installed vegetation to screen the facility. A detailed landscaping and screening plan with plant species, size, number, spacing, and height will be required at the time of site plan review.

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IV. Identification of environmental and cultural resources. The applicant must submit the following:

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(1) The location of all historical, architectural, archeological, or other cultural resources on or near the proposed facility as documented by the Virginia Cultural Resource Information

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System and the department of historic resources for the department of environmental quality.

(2) The location of all wildlife and wildlife habitats documented by the department of wildlife resources.

(3) The location of airports within a mile of the proposed development.

Detailed reports of environmental and cultural resources will be required as part of the site plan review.

V. Performance standards. The application shall comply with the following criteria:

1. Solar energy system, community scale

(1) Lot requirements. Solar energy systems must meet the following lot requirements:

a. Solar energy system development areas shall not exceed 50 acres within a lot.

b. Solar facilities shall not be located within one (1) mile of an airport unless the applicant submits, as part of its application, written certification from the Federal Aviation Administration that the location of the facility poses no hazard for, and will not interfere with, airport operations. The applicant must also provide a glint and glare study that demonstrates that the panels will be sited, designed, and installed to eliminate glint and glare effects on airport operations. The study must be conducted by qualified individuals using appropriate and commonly accepted software and procedures

(2) Setbacks. The facility area shall be set back a distance of at least a minimum seventy-five (75) feet from all property lines and public rights of way. Increased setbacks over seventy-five (75) feet and additional buffering may be included in the conditions for a permit as required to reduce the visual impact of the facility. Access, erosion and stormwater structures, and interconnection to the electrical grid may be made through setback areas if such are generally perpendicular to the property line or underground.

a. The planning commission or board of supervisors may require increased setbacks in situations where solar

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energy system developments are located on lots near or adjacent to residential districts, agriculture and forestal districts (AFD's), lands under a conservation easement, or historic districts registered through the National Register of Historic Places or the Virginia Landmarks Register.

(3) Height. Ground-mounted solar energy generation facilities shall not exceed a height of fifteen (15) feet, which shall be measured from the highest natural grade below each solar panel to the highest point of the panel at its tallest position. This limit shall not apply to utility poles and the interconnection to the overhead electric utility grid that meet state corporation commission requirements.

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(4) Visibility.

a. Visual impacts. The solar facility shall minimize impacts on view sheds, including from residential areas and areas of scenic, historical, cultural, archeological, and recreational significance. The facility shall utilize only panels that employ anti-glare technology, antireflective coatings, and other available mitigation techniques, all that meet or exceed industry standards, to reduce glint and glare.

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(5) Vegetative buffer.

a. A vegetative buffer sufficient to mitigate the visual impact of the facility as approved by the zoning administrator is required. The buffer shall consist of a landscaping strip at least fifty (50) feet wide, shall be located within the setbacks, and shall run around the entirety of the area proposed for development. The buffer shall consist of existing vegetation and as needed, an installed landscaped strip consisting of multiple rows of staggered trees and other vegetation. This buffer should include vegetation a minimum of six (6) feet high at planting and reasonably expected to grow to full maturity within three (3) years. The planning commission or board of supervisors may require increased setbacks and additional or taller vegetative buffering in situations where the height of structures or topography affects the visual impact of the facility. Non-invasive plant species and pollinator-friendly and wildlife-friendly native plants, shrubs, trees, grasses, forbs, and wildflowers must be

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used in the vegetative buffer following Virginia Pollinator-Smart Program best practices. Screening and/or buffer creation requirements may be waived or altered for alternative designs such as landscaped berms, existing wetlands, or woodlands, if the berms, wetlands, or woodlands are permanently protected and maintained for use as a buffer. Existing trees and vegetation must be maintained within such buffer areas except where dead, diseased or as necessary for development or to promote healthy growth, and such trees and vegetation may supplement or satisfy landscaping requirements as applicable and approved by the zoning administrator. If existing trees and vegetation are disturbed, new plantings shall be provided for the buffer at least six (6) feet tall at planting. The vegetative buffer shall be maintained for the life of the facility.

- i. The planning commission or board of supervisors may require an increased buffer in situations where solar energy system developments are located on lots near or adjacent to residential districts, agriculture and forestal districts (AFD's), lands under a conservation easement, or historic districts listed in the Virginia Landmarks Register/National Register program.

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(6) Fencing. The facility area shall be enclosed by security fencing not less than eight (8) feet in height. The height and/or location of the fence may be altered in the conditions for a particular permit. Fencing must be installed on the interior of the vegetative buffer required so that it is screened from the ground level view of adjacent property owners. The fencing shall always be maintained while the facility is in operation. and posted with appropriate safety messaging.

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(7) Pollinator habitats. The facility area shall be seeded promptly with pollinator-friendly vegetation following completion of construction in such a manner as to reduce invasive weed growth and trap sediment within the facility area. At the beginning of the next planting season the facility area, setbacks and buffers will be overseeded with appropriate pollinator-friendly native plants, shrubs, trees, grasses, forbs, and wildflowers following Virginia Pollinator-Smart Program best practices. Once these pollinator habits are established,

maintenance of the site shall follow Virginia Pollinator-Smart Program best practices unless Agrivoltaics (APV) are employed.

(8) *Lighting.* Lighting shall be limited to the minimum reasonably necessary for security purposes and shall be designed to minimize off-site effects. Lighting on the site shall be dark sky compliant.

(9) *Safety standards.* Solar energy systems must meet the following safety standards:

a. Facilities shall comply with generally accepted national environmental protection and product safety standards for the use of solar panels and battery technologies for solar photovoltaic (electric energy) facilities, such as those developed for existing product certifications and standards including the National Sanitation Foundation/American National Standards Institute No. 457, International Electrotechnical Commission No. 61215-2, Institute of Electrical and Electronics Engineers Standard 1547, and Underwriters Laboratories No. 61730-2. A site development plan or building permit application shall refer to the specific safety and environmental standards complied with.

b. Ensure site management coordination by posting facility operator information as well as 24-hour emergency contact information at all entrances of the facility.

(10) *Approved solar components.*

a. *Electric solar energy system components must have a UL or equivalent listing and solar hot water systems must have an SRCC rating.*

(11) *Building code.*

a. *All solar energy systems shall meet approval of local building code officials, consistent with the State of Virginia Building Code, and solar thermal systems shall comply with HVAC-related requirements of the Energy Code.*

(12) *Utility notification.*

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- a. All grid-intertie solar energy systems shall comply with the interconnection requirements of the electric utility. Off-grid systems are exempt from this requirement.

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- 2. Solar energy system, utility scale

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 - (1) Lot requirements. Solar energy systems must meet the following lot requirements:

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 - 1. Solar energy system development areas shall not exceed 100 acres within a lot.

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 - 2. Solar facilities shall not be located within one (1) mile of an airport unless the applicant submits, as part of its application, written certification that the location of the facility poses no hazard for, and will not interfere with, airport operations. The applicant must also provide a glint and glare study that demonstrates that the panels will be sited, designed, and installed to eliminate glint and glare effects on airport operations. The study must be conducted by qualified individuals using appropriate and commonly accepted software and procedures.

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 - 3. Utility-scale solar generation facilities shall be excluded from designated growth areas (DGA).

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 - (2) Setbacks. The facility area shall be set back a distance of at least a minimum one hundred fifty (150) feet from all property lines and public rights of way. Increased setbacks over one hundred fifty (150) feet and additional buffering may be included in the conditions for a permit as required to reduce the visual impact of the facility. Access, erosion and stormwater structures, and interconnection to the electrical grid may be made through setback areas if such are generally perpendicular to the property line or underground.

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 - 1. The planning commission or board of supervisors may require increased setbacks in situations where solar energy system developments are located on lots near or adjacent to residential districts, agriculture and forestal districts (AFD's), lands under a conservation easement, or historic districts registered through the National Register of Historic Places or the Virginia Landmarks Register.

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(3) Height. Ground-mounted solar energy generation facilities shall not exceed a height of fifteen (15) feet, which shall be measured from the highest natural grade below each solar panel to the highest point of the panel at its tallest position. This limit shall not apply to utility poles and the interconnection to the overhead electric utility grid that meet state corporation commission requirements.

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(4) Visibility.

1. Visual impacts. The solar facility shall minimize impacts on view sheds, including from residential areas and areas of scenic, historical, cultural, archeological, and recreational significance. The facility shall utilize only panels that employ anti-glare technology, antireflective coatings, and other available mitigation techniques, all that meet or exceed industry standards, to reduce glint and glare.

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2. A vegetative buffer sufficient to mitigate the visual impact of the facility as approved by the zoning administrator is required. The buffer shall consist of a landscaping strip at least seventy-five (75) feet wide, shall be located within the setbacks, and shall run around the entirety of the area proposed for development. The buffer shall consist of existing vegetation and as needed, an installed landscaped strip consisting of multiple rows of staggered trees and other vegetation. This buffer should include vegetation a minimum of six (6) feet high at planting and reasonably expected to grow to full maturity within three (3) years. The planning commission or board of supervisors may require increased setbacks and additional or taller vegetative buffering in situations where the height of structures or topography affects the visual impact of the facility. Non-invasive plant species and pollinator-friendly and wildlife-friendly native plants, shrubs, trees, grasses, forbs, and wildflowers must be used in the vegetative buffer following Virginia Pollinator-Smart Program best practices. Screening and/or buffer creation requirements may be waived or altered for alternative designs such as landscaped berms, existing wetlands, or woodlands, if the berms, wetlands, or woodlands are permanently protected and maintained for use as a buffer. Existing trees and vegetation must be maintained within such buffer areas except where dead,

diseased or as necessary for development or to promote healthy growth, and such trees and vegetation may supplement or satisfy landscaping requirements as applicable and approved by the zoning administrator. If existing trees and vegetation are disturbed, new plantings shall be provided for the buffer at least six (6) feet tall at planting. The vegetative buffer shall be maintained for the life of the facility.

1. The planning commission or board of supervisors may require an increased buffer in situations where solar energy system developments are located on lots near or adjacent to residential districts, agriculture and forestal districts (AFD's), lands under a conservation easement, or historic districts listed in the Virginia Landmarks Register/National Register program.

(5) Fencing. The facility area shall be enclosed by security fencing not less than eight (8) feet in height. The height and/or location of the fence may be altered in the conditions for a particular permit. Fencing must be installed on the interior of the vegetative buffer required so that it is screened from the ground level view of adjacent property owners. The fencing shall always be maintained while the facility is in operation, and posted with appropriate safety messaging.

(6) Pollinator habitats. The facility area shall be seeded promptly with pollinator-friendly vegetation following completion of construction in such a manner as to reduce invasive weed growth and trap sediment within the facility area. At the beginning of the next planting season the facility area, setbacks and buffers will be overseeded with appropriate pollinator-friendly native plants, shrubs, trees, grasses, forbs, and wildflowers following Virginia Pollinator-Smart Program best practices. Once these pollinator habits are established, maintenance of the site shall follow Virginia Pollinator-Smart Program best practices unless Agrivoltaics (APV) are employed.

(7) Lighting. Lighting shall be limited to the minimum reasonably necessary for security purposes and shall be designed to minimize off-site effects. Lighting on the site shall be dark sky compliant.

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(8) Safety standards. Solar energy systems must meet the following safety standards:

1. Facilities shall comply with generally accepted national environmental protection and product safety standards for the use of solar panels and battery technologies for solar photovoltaic (electric energy) facilities, such as those developed for existing product certifications and standards including the National Sanitation Foundation/American National Standards Institute No. 457, International Electrotechnical Commission No. 61215-2, Institute of Electrical and Electronics Engineers Standard 1547, and Underwriters Laboratories No. 61730-2. A site development plan or building permit application shall refer to the specific safety and environmental standards complied with.
2. Ensure site management coordination by posting facility operator information as well as 24-hour emergency contact information at all entrances of the facility.

(9) Approved solar components.

1. Electric solar energy system components must have a UL or equivalent listing and solar hot water systems must have an SRCC rating.
2. Panel materials. Applications shall describe all materials included in the proposed solar panels for the facility. All solar energy facility structures, racks and associated facilities shall have a non-reflective finish or appearance.

(10) Building code.

1. All solar energy systems shall meet approval of local building code officials, consistent with the State of Virginia Building Code, and solar thermal systems shall comply with HVAC-related requirements of the Energy Code.

(11) Utility notification.

1. All grid-intertie solar energy systems shall comply with the interconnection requirements of the electric utility. Off-grid systems are exempt from this requirement.

3. Battery energy storage system.

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(1) A Battery energy storage system shall meet the required setbacks of the Solar energy system, utility development of which it is located within.

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(2) Should a development contain a Battery energy storage system, the vegetative buffer requirement shall be increased to a minimum of one hundred (100) feet.

(3) The developer shall provide an emergency response plan and associated training for first responders that is equipment and site specific.

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IV. The provisions of this section may be varied or modified as part of a master plan or proffered condition.

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B. Processing and approval standards.

I. Community meeting. A public meeting shall be held prior to the public hearing with the planning commission to give the community an opportunity to hear from the applicant and ask questions regarding the proposed facility. The meeting shall be held under the following guidelines:

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(1) The applicant shall inform the zoning administrator and adjacent property owners in writing of the date, time, and location of the meeting, at least fourteen (14) days in advance of the meeting.

(2) The date, time and location of the meeting shall be advertised in a newspaper of record in the county by the applicant, at least seven (7) but no more than fourteen (14) days, in advance of the meeting date.

(3) The meeting shall be held within the county, at a location open to the public with adequate parking and seating facilities that will accommodate persons with disabilities.

(4) The meeting shall give members of the public the opportunity to review application materials, ask questions of the applicant and provide feedback.

(5) The applicant shall provide to the zoning administrator a summary of any input received from members of the public at the meeting.

(6) The applicant shall make available to the public information about materials and components used for the construction, maintenance, and decommissioning of solar panels.

II. Review of application and site plan. Applications for solar energy systems will be reviewed by the County's development review team as well as third party consultants with expertise and experience in solar energy development and storm water management. Third party consultants will be chosen at the sole discretion of the County. The cost

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of the third-party consultant review will be estimated upon receipt of the application and charged to the applicant.

III. Designated growth areas. Utility-scale solar generation facilities shall be excluded from designated growth areas (DGA).

IV. Plans and studies. Staff approval of the following plans and studies is required prior to any grading, permitting or construction:

(1) Site development plan. The approval of an administrative, minor, or major site development plan (site plan) and erosion and sedimentation control plans as defined by the Zoning Code shall be required prior to any construction. All solar generation facilities shall require a site development plan and all other documentation and approvals required by law, including those provided for any special use permit. The site development plan shall include a decommissioning plan as well as other requirements stated throughout this ordinance.

(2) A detailed landscaping and screening plan with plant species, size, number, spacing, and height shall be required prior to the approval of zoning or building permits. The plan must also include and identify pollinator-friendly and wildlife-friendly native plants, shrubs, trees, grasses, forbs, and wildflowers in the facility area and in the setbacks and vegetative buffering-following Virginia Pollinator-Smart Program best practices.

(3) A lighting plan per the County Zoning Code.

(4) Maintenance of site features. All site features such as landscaping, fencing, and stormwater management facilities shall be properly maintained throughout the life of the permit. Maintenance of such features shall be guaranteed by a surety agreement as determined by an independent landscape architect or professional engineer chosen and approved by the County administrator, but paid for by applicants, owner, or lessee. Surety must be in a form acceptable to the Montgomery County attorney.

(5) A post-construction safety plan to be made available to public safety agencies to include optional training on the equipment to be located on the site.

(6) Environmental and cultural resources reports.

a. A copy of the cultural resources review conducted in conjunction with the state department of historic resources for the department of environmental quality permit by rule process This report shall be in addition to the report required in subsection (1) above and shall further identify historical, architectural, archeological, or other cultural resources on or abutting the proposed site.

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- b. A report on potential impacts on pollinators and pollinator habitats at the site, including but not necessarily limited to the submission of a completed solar site pollinator habitat assessment as required by the zoning administrator.
- c. The applicant shall be responsible for submitting an environmental impact report (EIR) prepared by a certified environmental professional [see academy of board-certified environmental professionals] or other source with comparable qualifications. The EIR shall address the potential impacts on the human environment, beneficial and negative, of the following over the projected lifespan of the proposed facility:
 - i. Soil, including erosion, siltation, toxicity, productivity, and suitability for agriculture.
 - ii. Water, including quantity, quality, and flow of streams, and groundwater.
 - iii. Wildlife, including aquatic and terrestrial, as well as subsurface, and addressing habitats, alteration of migration patterns, with particular attention to birds.
 - iv. Economic, including opportunities forgone, property values, etc.
 - v. Wetlands.
 - vi. Noise.
 - vii. Vegetation regime identifying alterations temporary and long-term.
 - viii. Visual.
 - ix. Impacts on pollinators and pollinator habitats at the site, including but not necessarily limited to the submission of a completed solar site pollinator habitat assessment as required by the zoning administrator.
 - x. Suggested remediation measures to be employed at decommissioning.

For each likely significant negative impact, the report should identify actions which could mitigate the impact.

C. Decommissioning.

- I. The site development plan for a solar energy system shall include a detailed decommissioning plan that provides the following:

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- (1) Procedures and requirements for removal of all solar energy infrastructure, equipment, facilities, or devices of the solar energy generation facility and its various structures and foundations at the end of the useful life of the facility or if it is deemed abandoned.
- (2) Provisions for the restoration and regeneration of soil and vegetation with a description of pre-construction and desired post- construction conditions including productivity goals for agricultural viability. (Description is provided at the time of the concept plan.)
- (3) The anticipated life of the facility.
- (4) The estimated overall cost of decommissioning the facility in current dollars and the methodology for determining such estimate, and;
- (5) The way the facility will be decommissioned including a plan for the disposal of each component material type above and below ground.
- (6) The decommissioning plan and the estimated decommissioning cost will be updated upon the request of the zoning administrator or as provided in the agreement.

II. Surety. Unless the solar energy system is owned by a public utility within the Commonwealth of Virginia, the owner, lessee, or developer shall provide financial assurance of decommissioning in the form of certified funds, cash escrow, bond, letter of credit, or parent guarantee, based upon an estimate of a professional engineer licensed in the Commonwealth, who is engaged by the applicant, with experience in preparing decommissioning estimates and approved by Montgomery County. Such estimate shall include one hundred (100) percent of the total projected cost of decommissioning, including the removal of all net salvage value of solar energy infrastructure, equipment, facilities, or devices, plus a reasonable allowance for estimated administrative costs related to a default of the owner, lessee, or developer, and an annual inflation factor. The surety shall be posted prior to the facility receiving its certificate of completion, or equivalent, from Montgomery County to operate the use. If an adequate surety is required, the cost estimates of the decommissioning shall be updated at least every five (5) years by the applicant, owner, or operator, and provided to the County. "Gross costs" shall not include a deduction for salvage value.

III. Applicant, facility owner, and property owner obligation. Within six (6) months after the cessation of use of the utility-scale solar generation facility for electrical power generation or transmission, the applicant or its successor, at its sole cost and expense, shall decommission the utility-scale solar generation facility in accordance with the decommissioning plan approved by the County. If the applicant or its

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successor fails to commence decommissioning in a timely manner so that decommissioning may be completed within six (6) months of the facility becoming an inactive utility scale solar energy generation facility, the property owner shall conduct the decommissioning in accordance with the plan and may use bonded resources to do so, as approved and released by the County. Following completion of decommissioning of the entire utility scale solar energy generation facility, the bond shall be released and, if the County has called upon the bond and taken control of bond resources, any remaining resources held by the County shall be refunded to the surety.

IV. Applicant, owner default; decommissioning by the County.

- (1) If the applicant, its successor, and the property owners fail to decommission the solar energy facility within six (6) months, the County shall have the right, but not the obligation, to commence decommissioning activities and shall have access to the property, access to the full amount of the decommissioning surety, and the rights to the solar energy equipment and materials on the property. The applicant, and property owners, or successors, shall be responsible for reimbursing the County for all costs and expenses of decommissioning in excess of the decommissioning surety, and all such excess amounts shall attach to the real estate as a tax lien until paid in full.
- (2) Any excess decommissioning surety funds shall be released to the surety after completion of decommissioning.
- (3) Prior to the issuance of any permits, the applicant and the property owners shall deliver a legal instrument to the County granting the County the right to access the property and the solar energy facility equipment and materials so the County can complete the decommissioning, should it choose to do so, upon the applicant's and property owner's default. Such instrument shall bind the applicant and property owners and their successors, heirs, and assigns. Nothing herein shall limit other rights or remedies that may be available to the County to enforce the obligations of the applicant, operator, or property owner, including remedies under the County's zoning powers.

V. Equipment, structure and building removal. Unless otherwise approved by the County, all physical improvements, materials, and equipment related to solar energy generation, both surface and subsurface components, regardless of depth underground, shall be removed in the removal process to a site located outside the county and within ninety (90) days of decommissioning.

VI. Infrastructure removal. A reclamation plan will be required as a part of the site plan approval for all large solar facilities. This plan will be used

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to assist with the cost estimate for the decommissioning bond. The reclamation plan shall include, at a minimum:

- (1) All above ground and underground infrastructure shall be removed and recycled or reused, unless a written request is received from the then current property owner proposing the retention of any infrastructure, and the request is approved by the County.
- (2) Final land surface conditions, including but not limited to grass, trees, cropland, pasture, including the status of on-site gravel roads if such roads remain on the property.
- (3) Provisions for the restoration and regeneration of soil and vegetation with a description of pre-construction and desired post- construction conditions including productivity goals for agricultural viability.
- (4) Final contours and grades; and
- (5) A plan for the disposal of each component material type outside the County.

VII. Partial decommissioning. Any reference to decommissioning the utility-scale solar generation facility shall include the obligation to decommission all or a portion of the solar energy facility, whichever is applicable with respect to a particular situation. If decommissioning is triggered for a portion, but not the entire solar energy facility, then the partial decommissioning shall be completed in accordance with the decommissioning plan and this section for the applicable portion of the utility scale solar energy facility.

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Sec 10-61 Definitions

Add the following new definitions:

Battery energy storage system: A electrochemical device or system of devices that are charged via a solar energy system in which the energy is temporarily stored and discharged at a later time to provide electricity to a distribution network as needed. Such use shall be limited as an accessory use to a solar energy system, utility scale.

Solar energy system, community scale: A ground mounted solar energy system that connects to a distribution network which has the capacity to produce five or less megawatts.

Solar energy system, utility scale: A ground mounted solar energy system that connects to a distribution network which has the capacity to produce more than five megawatts.

Delete the following definitions:

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Solar energy system, minor: A facility for the conversion of solar energy to electricity that are the primary land use for the parcel on which it is located. Such facilities utilize no more than fifty (50) percent of the parcel size or one (1) acre (whichever is less) and shall meet all other base district regulations including height restrictions.

Solar energy system, major: A facility for the conversion of solar energy to electricity that are the primary land use for the parcel on which it is located. Such facilities utilize more than fifty (50) percent of the parcel size or greater than one (1) acre in project area.

Solar Energy Systems Amendments to Comprehensive Plan - DRAFT

To be added to Utilities: Introduction, Historic and Current Conditions and Trends

Solar Energy Systems

Solar energy is an abundant and free natural resource that has been utilized at residential scales for decades as an alternative to energy generated by the burning of fossil fuels or other sources. New technological innovations have made the collection, processing, and storage of solar energy more efficient and have allowed for an increase in scale of collection to larger solar farms and storage facilities. The passage of the Virginia Clean Economy Act by the General Assembly in 2020 precipitated an increase in the development of large-scale solar energy systems throughout the Commonwealth.

Large scale solar energy systems not only provide an alternative energy source, but also provide commercial opportunities to developers and property owners, through land-lease programs for the installation of these systems. Advancements in the solar industry have also provided land owners the opportunity to combine solar energy systems with other agricultural uses on property to promote dual use.

At the request of the Board of Supervisors, County staff worked with members of the Planning Commission and community stakeholders to develop a comprehensive approach to address solar energy systems within the County. The Planning Commission's charge was to adopt goals and strategies to manage the development of facilities for the generation, conversion, and storage of solar energy. These goals and strategies are intended to balance the potential impacts of these types of facilities and the preservation of the natural, cultural, and scenic resources of the County's rural areas.

To be added to Utilities: Goals

UTL 2.4 Renewable Energy Systems. Provide opportunities for the use of residential, commercial, and utility scale renewable energy, through solar energy facilities and battery storage facilities, while minimizing the impact of such facilities on the County's view shed and natural, agricultural, cultural, and historic resources.

2.4.1 Balanced Land Uses. To ensure that solar energy facilities and battery storage facilities are part of a balanced development pattern within the County, the County desires to have no more than 1500 cumulative acres of leased area occupied by solar energy and battery storage facilities throughout the County.

Commented [BB1]: How is this defined? The fenced perimeter? I believe this is the lowest number of allowed acres I have seen when enunciated by a VA county—even 1% cap on county acreage would be meaningfully greater.

2.4.2 Encourage Shared Agricultural Use. To ensure continued use of agricultural lands for farming within the County, solar energy and battery storage facilities within the County should include agri-photovoltaics (APV) and/or ground cover that facilitates habitats for non-invasive native species and native pollinators.

Commented [BB2]: Thoughts on acres that maintain or even add to the agricultural use in the county (i.e. barren land converted to grazing pasture as a part of a project) to get credit against the overall acreage cap?

2.4.3 Encourage Future Agricultural Use. To ensure that agricultural lands used for solar energy and battery storage systems may be returned to an active state of agricultural use in the future, top soil should be retained on all project sites housing these systems within the County.

2.4.4 Project Scale. The size of solar energy and battery storage facilities should be carefully considered to ensure that the projects have no undue adverse impacts on nearby residential, commercial, and mixed-use properties. The County strongly discourages any project with a photovoltaic panel coverage of more than 100 acres. Projects should not be sited on parcels adjacent to previously approved or existing solar facilities.

Commented [BB3]: Is this determined by the array's fenced perimeter? This could read as the literal acres underneath the panels, something like 20-35% of the fenced perimeter.

2.4.5 Project Siting. The location of solar energy and battery storage facilities should be carefully considered to ensure that existing infrastructure resources are best utilized and that impacts to agricultural, cultural, and historic resources are minimized.

2.4.5a. Rural and Resource Stewardship Areas. Siting of projects in areas designated as Rural and Resource Stewardship within the Comprehensive Plan should consider the presence of prime farmland producing soils or other natural resources. Further, projects should be highly discouraged within Agricultural and Forestal Districts and in areas held within a Conservation Easement. Projects located outside, but adjacent to, these areas, should be evaluated for any potential visual or other impacts associated with development.

Commented [BB4]: This is probably my strongest pushback. Does Montgomery County have another development type that has to satisfy the conservation constraints of unrelated parcels?

2.4.5c. Historic and Cultural Heritage Areas. Siting of projects in state or federally designated Historic Districts should be highly discouraged. Projects located outside, but adjacent to, these areas should be evaluated for any potential visual or other impacts associated with development.

2.4.5c. Growth Areas. In order to ensure existing and future planned infrastructure is utilized to facilitate planned growth within the County, siting of solar energy and battery storage facilities should be highly

Commented [BB5]: I would revise this to something like "Projects should satisfy the applicable state and federal agencies with regards to avoiding and mitigating impact to potential historic and cultural areas." Without some reasonable path to expert validation, this language subjects any project to the whims and feelings of the involved few rather than an objective evaluation.

discouraged within areas designated as Residential Transition, Urban Expansion, Village Expansion, and within Urban Development Areas.

2.4.5d. Utilization of Land with Limited Development Potential. Siting of projects on lands that have increased limitations for development (brownfields, reclaimed coal mining sites, abandoned industrial sites, or agricultural lands with soil classifications not conducive to active farming) should be encouraged.

2.4.5e. Resource Considerations. Projects should be designed, sited, and constructed in a manner that protects and preserves the County's natural, scenic, and cultural resources, including:

- i. Fertile Soils
- ii. View sheds
- iii. Streams, rivers, and wetlands
- iv. Natural habitats
- v. Native vegetation
- vi. Forests
- vii. Historic and archaeological resources
- viii. Parks and recreational areas
- ix. Federal lands

Commented [BB6]: I think this makes sense but I wonder if there is some benefit to adding language encouraging projects to be sited along the existing electrical grid infrastructure? This would minimize disturbance (i.e. new lines, poles, etc being built out).

Commented [BB7]: There's nothing wrong with this. But I'm certain that MontCo can't decarbonize its grid on these sites alone.

Commented [BB8]: Do projects get benefit from dual ag use with regard to fertile soils? Would a roughly farmed parcel that uses pesticides, fertilizers, etc and has shallow root crops be preferred to a sustained solar prairie with 6ft deep roots from native vegetation?

Commented [BB9]: What is reasonable from a view shed standpoint? Obviously my project informs my perspective here but we had public speakers who were residents of a different county speak about a view shed when our project was 350+ft from the road and behind mature treeline.

Commented [BB10]: Agreed with all of this and I think deferring to the agency experts would give local leaders political cover as well as reasonably satisfy folks who are looking for a reason to say no with hypotheticals.

Commented [BB11]: Agreed that the best projects don't have to clear trees. How do we think about commercial timber? Monocultural, rough on the land, often has its own clearing schedule.

Buzz Becker (Pivot Energy) Comments on Montgomery County Solar Ordinance Draft Revision

Sec 10-48-10-A-I-3: “How the proposal will be in harmony...”

- Which of the often contrasting by-right uses within a zoning district will be the criteria for this analysis? If the zoning of the proposed host parcel differs from the adjacent or surrounding parcels, how will that analysis be conducted? This is a very unique provision that would require a ton of staff guidance to applicants, education for all stakeholders, etc.

Sec 10-48-10-A-II-2: Area Map

- Why 5 miles? What is the current maximum radius for an area map of any other type of development? Seems like this map would allude to greater developmental impact than actual given the radius. Also, with a 100 acre project cap, you won't be dealing with transmission/utility scale (as industry defines) projects. You want to map your distribution lines here.

Sec 10-48-10-A-II-5: Proposed locations and max heights

- I would avoid using “substations” as that often references facilities such as [this](#) which are not a part of sub 100 acre projects. I think having this requirement as more general “equipment” or “facilities” achieves what you seek here.

Sec 10-48-10-A-II-8: “Existing wetlands...”

- What is the criteria for woods or vegetation to be “substantial”

Sec 10-48-10-A-II-9: Cultivated lands/soils

- Would the inverse be identified? i.e. proposed project on land that is not actively farmed? If so, would the project get favorable evaluation based on this?

Sec 10-48-10-A-V-1-2-A: Increased setbacks

- I understand “adjacent” to mean abutting. How is “near” defined? Does it make sense for a commercial timber property that is placed in an AFD to potentially assert greater setbacks on an unrelated property? I appreciate the conservation language may be resulting from the Kumis experience, but I can't imagine a precedent existing for land in a conservation easement to impose development restrictions on an unrelated parcel. That seems like a textbook example of neighbors using private agreements to exert control over property they don't own.

Sec 10-48-10-A-V-1-5-A: Vegetative buffer

- How is full maturity defined? I have less expertise here but 3 years seems very fast for a tree to get to full maturity. I do agree with 6ft at planting.

Sec 10-48-10-A-V-1-5-A-i: Increased buffer

- Same note on “near” as earlier

Sec 10-48-10-B-II: Review of application

- Probably good for all parties to have third party verify relative quality of an application—any idea the expected expense? This type of consultant review is typically after land use permit. This provision alone would make applying for a solar permit in MontCo one of the most expensive prospects in Virginia.

Sec 10-48-10-B-IV-6-C: EIR

- I'm not saying anything is bad here, but this is a level of diligence and cost that does not exist for DG projects in Virginia. I think this section alone could ward off many interested developers. I'd be curious if any other development type has to deliver this in MontCo.

Sec 10-48-10-B-IV-6-C-iv: Economic EIR

- Surely no reasonable economic report can imagine all opportunity costs for a property. Reasonable version would be an economic analysis of the current use versus the proposed use over the life of the proposed project.

-

WILLIAMS MULLEN

Direct Dial: 434.951.5728
Ischweller@williamsmullen.com

July 28, 2023

VIA ELECTRONIC MAIL (mcplan@montgomerycountyva.gov)
AND U.S. MAIL

Montgomery County
Planning and GIS Services
755 Roanoke Street, Suite 2A
Christiansburg, VA 24073

**Re: Amendments to Montgomery County Comprehensive Plan and Zoning Ordinance
Concerning Large-Scale Solar Energy Systems**

Dear Planning Commissioners, Supervisors, and Planning Staff:

On behalf of Invenergy LLC, we respectfully submit the following comments to Montgomery County regarding the proposed amendments to the County Comprehensive Plan and Zoning Ordinance in relation to utility-scale solar facilities:

Acreage Cap and Development Restrictions

1. The 1,500 maximum aggregate acreage for solar projects in the County (approximately 1% of total available county land) proposed to be added to the Comprehensive Plan establishes a *de facto* moratorium on large-scale solar projects.
2. A single utility-scale project of 150 MW nameplate capacity, which is small for a utility-scale project, could easily exceed the county-wide maximum of 1,500 acres.
3. A total acreage cap based on 1% of available land is very restrictive. A better means of achieving distribution and separation of utility-scale solar projects is through density-based restrictions. For example, Halifax County permits 5% of the acreage within a five-mile radius (i.e., a 2,513-acre circle) of an existing solar facility to be developed in solar. This measure achieves the desired result of avoiding concentration of solar facilities while still permitting commercially viable development to proceed.
4. The maximum development area restriction of 100 acres per lot would provide enough land for only 5-10 MW, depending on the topography. It is not economical to develop a utility-scale solar project of such small size.
5. Applied together, the 1,500-acre cap and the 100 acre/lot restriction place an effective prohibition on development of utility-scale solar projects in Montgomery County.

Policy Considerations

1. Utility-scale solar projects help to fulfill the mandates of the Virginia Clean Economy Act (2020), can be a significant source of revenue to the county, and preserve land in a non-invasive use for future agriculture or other development.
2. An effective prohibition on utility-scale solar deprives county residents of the short- and long-term direct economic benefits of development. A typical 150 MW solar project employs approximately 700 workers during construction, creates 2-4 well-paying permanent positions, continues to source materials and services locally for the life of the facility, and may contribute millions in additional tax revenue during operations.

3. Utility-scale solar projects are only possible through close cooperation and agreement with individual landowners. Overly restrictive land use controls unduly deprive landowners of agency in determining the best use of their property and rob them of potential income opportunities, which may enable them to fund agricultural operations otherwise economically untenable.
4. The statutory option for a Siting Agreement affords the opportunity for negotiation of additional revenue due to the County resulting from the utility-scale solar project.
5. Please consider whether the proposed restrictions bear a reasonable relation to public health, safety, or general welfare. A well-sited and constructed project would have no negative impact on the community and would provide increased taxes, revenue from siting agreements, and other benefits.

Concerns Addressed

We understand that the proposed Comprehensive Plan and Zoning Ordinance amendments are driven by concerns about the potential impact of utility-scale solar projects on the existing rural character, natural landscape, and agricultural economy of the County. We believe that these concerns can be addressed without resorting to restrictive land use controls.

1. Viewshed Concerns:

- a. Depending on the location, topography, existing vegetation, and planted buffers, a project could be largely or completely screened from view of neighbors and motorists on a scenic road.
- b. Careful site design, incorporation of topography and existing vegetation, and installation of new landscaping where needed can ensure that even large solar projects respect the area character and blend into the existing landscape of the County.

2. Agricultural Land Concerns:

- a. Like other uses (residential and commercial development, power plants, golf courses), a solar development may use land previously farmed for agricultural production, though many projects use land with soils not suitable for farming.
- b. Unlike other uses, however, a utility-scale solar development is a temporary use that preserves the land. After decommissioning, the land can be repurposed, restored, and returned to agricultural production, if needed.
- c. Utility-scale solar projects are designed to be a transient interim use from initial layout and planning through final decommissioning. Future use of the property post-decommissioning is considered during the planning and installation phases of the project, based on an understanding that the facility will ultimately be removed, and the underlying land returned to agricultural production or used for other purposes.
- d. Land used for large solar developments rests fallow during the lifespan of the project, potentially rendering the property better suited for agricultural production than conditions prior to installation of the solar facility.

Importance of Flexibility

1. It is important to have flexibility in the performance standards since location and siting affect potential impacts on the surrounding community. For example, whereas a 150'

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Page 3

setback may be appropriate in some locations, a lesser setback may be adequate in others and could help to preserve useable area where karst terrain prohibits development.

2. Through waivers, exceptions, and conditions, the Board should be able to approve variations in required setbacks and other performance standards based on the facts of each particular site for which a special use permit is sought.

Invenergy considers itself to be a partner of all communities in which it pursues investment through development of renewable energy facilities. We greatly appreciate the opportunity to comment on the draft amendments. We look forward to a long and productive partnership with Montgomery County through implementation of sound, reasonable, and sensible development standards for utility-scale solar projects.

Please do not hesitate to contact me at 434-951-5728 with any questions or to discuss these comments.

Very truly yours,

A handwritten signature in blue ink that reads "Lori H. Schweller". The signature is fluid and cursive, with the first letters of the first and last names being capitalized and prominent.

Lori H. Schweller

cc: Invenergy LLC

From: [Bruce Stanger](#)
To: [Justin D. Sanders](#)
Subject: [EXTERNAL] Solar installations
Date: Friday, July 28, 2023 7:18:28 AM

Justin, Thanks for asking for my input. I have looked over the information you sent, and I don't see anything I would change. To me it looks like the concerns we had have been addressed. Thanks for your efforts in addressing the problems that could arise with these installations.

Sent from my iPad

Justin D. Sanders

From: mcplan
Sent: Monday, July 31, 2023 8:57 AM
To: Brea G Hopkins; Justin D. Sanders; Jude A. Cochran
Subject: FW: [EXTERNAL]

From: Thomas Turner <thomas@cleanenergyconservatives.com>
Sent: Friday, July 28, 2023 4:24 PM
To: mcplan <mcplan@montgomerycountyva.gov>
Subject: [EXTERNAL]

July 27, 2023

Montgomery County Virginia Board of Supervisors

To the Board of Supervisors:

My name is Thomas Turner and I serve as Virginia State Director at Conservatives for Clean Energy. My organization serves as a resource for the public and decision-makers on the economic benefits of clean energy and advocates for continued investments. I write today because the proposed solar ordinance establishing a county-wide acreage cap and size limit on solar generation would significantly hinder investment opportunities for Montgomery County.

I appreciate your service and leadership in supporting economic growth and increased job growth in Virginia. With a current annual economic contribution of \$16 million in landowner payments and \$12 million in state and local taxes, solar generation provides significant benefits to Virginia landowners and localities. As part of the Commonwealth's diverse power generation fleet, solar also helps secure the resilience and reliability of our energy grid, currently providing enough energy to power 484,000 Virginian homes.

Establishing an acreage cap in Montgomery County would limit opportunities for interested landowners to participate in solar projects and enjoy these economic benefits. Likewise, a limit on the size of projects would send investment to other counties where full-scale projects can take advantage of economies of scale to provide lower-cost energy to the grid.

Renewable energy projects drive economic growth, create hundreds of construction jobs, and enhance the tax base which will provide revenue to make critical improvements to local schools and infrastructure, and improve environmental outcomes. Moreover, these projects, like other investments across the state, are safe for the local community and the families and businesses that reside there. For all these reasons, Conservatives for Clean Energy respectfully oppose the proposed Montgomery County Solar Ordinance Draft establishing an acreage cap and size limit for solar energy and encouraging policies that will encourage responsible solar development in Virginia.

Sincerely,

Thomas Turner
Virginia State Director, Conservatives for Clean Energy

mcplan

From: Suzanne Munson <suzmunson01@gmail.com>
Sent: Wednesday, August 2, 2023 1:25 PM
To: mcplan
Subject: [EXTERNAL] Proposed Montgomery County Solar Ordinance

Follow Up Flag: Follow up
Flag Status: Completed

Categories: Shelly

August 2, 2023

Ms. Brea Hopkins
Director of Planning and GIS
Montgomery County, Virginia
755 Roanoke St. Ste. 2A
Christiansburg, VA 24073-3177

Dear Ms. Hopkins:

As a landowner in Montgomery County with a commitment to an Invenergy LLC solar project there, I'd like to address the new county proposed ordinance that will adversely affect the project's future.

My farm on the Mudpike Road has been in our family for three generations. When I inherited it from my father in 1983, I resisted all offers to develop the property, as I loved it the way it was. I understand the efforts of officials in Montgomery County to protect the rural character of the area.

I also understand that the Farm Bureau has expressed concerns about solar development. I am a long-time member of the Farm Bureau and plan to maintain my membership in the future. With the solar installation, my land will not be lost to farming, as there is a plan to graze sheep on the property, to keep the ground clean beneath the solar panels.

My family and I have done due diligence on the track record of Invenergy, including hiring attorneys knowledgeable about the solar industry. We believe this to be a reputable company, one that will treat the land with respect. As you know, this is a different entity from the one that has established solar farms in Pulaski.

My two children, husband, and I are all signers of the contract with Invenergy for our farm. The following are our concerns about the proposed ordinance:

Specifically, the limit of 100 acres for any single utility-scale solar system is too restrictive. Our contract with Invenergy involves leasing more than that number. This seems like an unnecessary restriction, especially since most utility-scale are larger than more than 100 acres.

Additionally, there also appears to be a county-wide limit of 1,500 acres for solar energy and battery storage facilities. While I appreciate the effort to place reasonable limitations on these sites, this acreage cap represents roughly 0.6 percent of the county land base. Other counties have much less restrictive ordinances, providing for 3 percent or more of the land base for solar. Given the economic value of these projects to landowners and the county, this restriction seems short-sighted.

Finally, the terrain in Montgomery County is hilly, and much of the available land is on inclines. We agree that buffers and setbacks are important considerations, but entirely protecting the viewshed may be impossible. I believe these allowances should be made on a site-by-site basis.

Thank you again for your work. A number of Montgomery County residents believe that solar development is good for the county and the Commonwealth. From the standpoint of tax revenues to the county, these will be substantially higher from Invenegy for the next 30 years than from the current use of the property for agricultural purposes.

We hope the Planning Commission and staff will consider these and other changes to the ordinance before any public hearing.

Sincerely,
Suzanne Munson

DRAFT
Solar Energy Systems Amendments to Comprehensive Plan

The following are comments relative to the DRAFT document distributed on July 12, 2023, which addresses both the Comprehensive Plan and the Solar Ordinance. Whether a policy question, addition or something as mundane as a typo, the comments are presented in the sequence of the pages (numbered and unnumbered) rather they trying to group the comments by category.

Comprehensive Plan

Utilities: Goals **UTL 2.4 Renewable Energy Systems.** (First unnumbered page)

The section is entitled “Renewable Energy Systems” (plural), but the narrative speaks only to solar energy facilities. The discussion is silent on other renewable energy systems that might be considered in Montgomery County such as wind, biomass, and even geothermal and hydroelectric. Is this an intentional omission or should the Comprehensive Plan narrative be narrowed to incorporate only “solar” rather than the broader renewable energy “systems”? Perhaps simply change the word “renewable” to “solar”?

Utilities: Goals **UTL 2.4.1 Balanced Land Uses.** (First unnumbered page)

“...County desires to have no more than 1500 cumulative acres...” should read “1,500” to be consistent with other narrative in this document. **Typo**

Solar Ordinance

Additional Uses Incorporated

<u>Section</u>	<u>Name</u>	<u>Reference</u>	<u>Page</u>
10-21	Slaughterhouse	4 OO	3
10-23	Short Term Tourist Rental	4 Q	7
10-28	Shooting Range, Indoor	4 T	11
10-30	Sawmill and planing mill, ...	4 O	14
10-31	Re-identify @ FF and subsequent	3	16 Typo
10-31	Shooting Range, Indoor	4 N	17
10-33	Shooting Range, Indoor	4 K	20
10-34	Service Station	4 R	23
10-38	Public Use, Public Facility	4 C	27

Section 10-48 Additional Regulations for Special Uses

10. Solar energy system, community and utility scale

Page 35

A. *Application.*

I. Project Narrative.

“...proposed operator, and describing the proposed facility including an overview of the facility and its location; ...”

It would seem that some clarification needs to be made between a ‘description’ of the proposed facility and an ‘overview’ of the proposed facility.

In addition, the term “facility” used in this context should be added and defined in section 10-61. “Decommissioning” might be another term that should be added to section 10-61.

A. *Application.*

V. Performance standards.

1. Solar energy system, community scale

(4) *Visibility.*

It seems clear from the following sub-sections (5) *Vegetative buffer* and (6) *Fencing* that the intent of these requirements is that the facility be mostly hidden from public view. Sub-sections (5) and (6) of the proposed ordinance additions, however, address an “on-grade” view of the facility (vegetation, fencing, height of solar panels, and the like). The terrain in Montgomery County is such that a potential facility could be sited (under this proposed ordinance addition) at a location (steep incline) where conformance of sub-sections (5) and (6) could leave the facility visible to public view.

I would renew my previous suggestion that consideration be given to language, perhaps even as a new section A., V., 1., (4), b., that defines a maximum slope or gradient, expressed as a percentage, for the siting of a project so that the positive aspects of sub-sections (5) and (6) are not nullified.

A. *Application.*

V. Performance standards.

1. Solar energy system, community scale

(5) *Vegetative buffer.*

“This buffer should include vegetation at a minimum of six (6) feet high at planting and reasonably expected to grow to full maturity within three (3) years.”

The proposed growth combination (six feet of height and three years to maturity) simply cannot be met. If the goal is to have a vegetative buffer higher than the eight-foot fence (sub-section (6)) or the height of the solar panels (sub-section (3) *Height* above), trees will not grow from six feet at planting to fifteen feet in height (theoretical maturity) in only three growing seasons.

What’s the more important criteria? Fifteen feet of vegetative height or three years to maturity? Fast growing trees (Leyland Cypress or Bradford Pear, for example) may not be the best choice for a vegetative buffer; but even Leyland Cypress and Bradford Pear will not mature within three years.

Given the long life-span of these proposed projects, I would suggest that the narrative be expressed in terms of height (six feet at planting and taller than fifteen feet at maturity) rather than time to the vegetative maturity.

A. *Application.*

V. Performance standards.

1. Solar energy system, community scale

(7) *Pollinator habitats.*

As written, planting ‘pollinator-friendly vegetation’ must occur promptly “following completion of construction”. There may be other times during the construction process when planting can or should occur based on the size of the project, terrain or season. In my view, more flexibility should be incorporated into the language to allow for planting prior to project completion.

The proposed Ordinance language allows pollinator-friendly vegetation within the project’s perimeter on page 40, but states “pollinator-friendly and wildlife-friendly native plants, scrubs, trees, grasses, forbs, and wildflowers will be installed and maintained following Virginia Pollinator-Smart Program best practices” on page 36. The language should be consistent.

In addition, the proposed language does not allow for any other type of agricultural “crop”, such as grasses for grazing sheep. Is it the intent of this proposed language to only allow pollinator and wildlife-friendly plants in lieu of other vegetative options? Is there flexibility to choose the agricultural “crop” based on the solar panel mounted height?

The foregoing comments also apply to the narrative of:

Application. V. Performance standards.

2. Solar energy system, utility scale

Pages 42 and 43

10. Solar energy system, community and utility scale

Page 47

B. Processing and approval standards.

IV. Plans and studies.

(6) Environmental and cultural resources reports.

c. ii. Water, including quantity, quality, and flow...

The Smith Mountain Lake Association is referenced in this section. Montgomery County, however, sits astride the Eastern Continental Divide. It would seem that if downstream locations are relevant, other downstream locations should be considered such as the Roanoke Valley or toward Giles County (New River). It may be better to remain silent on specific organizations unless there is some legal reason for noting the Smith Mountain Lake Association.

Alternatively, the narrative of this section could be a too literal lifting from the Franklin County, Virginia Ordinance.

10. Solar energy system, community and utility scale

Pages 48 & 49

C. Decommissioning.

II. Surety.

“...with experience in preparing decommissioning estimates and approved by Montgomery County. Such estimate shall include **one hundred (100) percent** of all total projected costs of decommissioning, including...” “... the cost estimates of the decommissioning shall be updated at least **every five (5) years** by...”

Emphasis mine.

The proposed language does not take into consideration the negative effect of inflation over time. It is a point that cannot be stressed seriously enough.

The issue (simplistically) that derives from the proposed language is that immediately after a decommissioning value is calculated (now Day 2), the forecasted decommissioning cost will become greater than the surety amount; the cost of decommissioning will continue to rise due to inflation while the surety amount will remain fixed. Inflation creates a Surety shortfall that only grows over time as inflation is compounded on previous inflation.

While inflation is a significant factor, a second very critical element is time. Naturally, the shortfall becomes a liability to the project developer, or to the County taxpayers should the developer walk away. The rhetorical question should always remain: “What can go wrong?”

An attached spreadsheet exhibits inflationary effects on the cost of decommissioning over time. Three scenarios are presented, assuming a project that costs \$2 million, decommissioning at 15% of the original cost, inflated at 3%, 4% and 5%. These are hypothetical only. The scenarios are:

- #1 – 100% Surety for Five years (proposed formula)
- #2 – 115% Surety for Three and Five years
- #3 – 120% Surety for Three and Five years

In all cases, the effect of inflation produces a widening difference as the costs of decommissioning grow and the amount of the Surety remains constant. In Scenario #1, the deficiency begins immediately and grows over the five-year period. At the end of five years, the potential shortfall the taxpayers would be required to cover is a large amount, even at 3% inflation.

In Scenario #2, requiring 115% Surety coverage of the decommissioning estimate as a starting point produces a near-breakeven financial situation after three years, but becomes a negative amount by the fifth year. In Scenario #3, requiring 120% Surety coverage leaves the County in the best position although a potential shortfall is projected if the rate of inflation bumps up to the 4% to 5% range. As time passes between ‘Day 1’ and the current date, a five-year update interval will obviously produce a greater shortfall than a three-year update interval.

Labor is the most significant factor affecting decommissioning costs. Unfortunately, there is no good index produced to measure wage inflation that can be used to project decommissioning costs. Over time, however, the increase in wage inflation tends to outstrip the Consumer Price Index (CPI). Forecasting in this situation should err on the side of caution, just as the project manager will desire to have the lowest possible Surety dollar amount.

In my view, the County Ordinance should establish a surety level that sufficiently anticipates the negative effects of inflation between scheduled decommissioning cost assessment intervals. To that end, deliberation should be given to a 115% or 120% Surety requirement in order to create a buffer against inflation, as well as a revaluation period of three (3) years. If it is important to have a five-year interval between cost assessments, a higher surety level can mitigate the effect of inflation.

Finally on this point, the County should require that the Surety be based on the ‘gross’ decommissioning costs, never the ‘net’ amount. There may be recyclable materials in the solar energy facility, but the County should not take on the risk of trying to assess the market value of those recyclable materials 35 years hence. The County should be primarily concerned with the taxpayers; any recyclable materials windfalls (or shortfalls) can then accrue to the project manager. Using the “gross” amount provides the best protection to the taxpayers and should be so stated in the Ordinance.

General and Editorial Comments:

The reality of Montgomery County’s terrain and geology suggest that projects which come forward will be “community scale” as the relatively-flat space requirements for a “utility scale” project overwhelm our county’s ability to accommodate them. The difficult aspect is that the proposed

Ordinance, as named, must address all forms of Renewable Energy Systems while recognizing that much of the narrative is not realistic in Montgomery County.

The following thoughts are offered for consideration as these comments are not incorporated in this draft version of the Ordinance additions and changes.

1. The necessity of linking a project’s output to transmission lines suggests there should be language that speaks to the maximum distance of a proposed project from the transmission line to which it will connect. Is the connection to be above ground or underground?
2. The maximum amount of impervious surface for a project can be inferred based on the zoning of the project parcel(s). The proposed ordinance would make community scale projects eligible in eight zoning districts and utility scale projects in three zoning districts. The following information is relative to each of those eight districts:

<u>District</u>	<u>% Buildings</u>	<u>% Impervious</u>	<u>Eligible Project Type</u>
A-1	20%	30%	Community & Utility
RR	10%	30%	Community
GB	40%	85%	Community
M-1	70%	85%	Community & Utility
M-L	50%	80%	Community & Utility
PIN	50%	75%	Community
PUD-COM	70%	TBD	Community
PUD-RES	N/A	N/A	Community

Given that the amount of impervious coverage varies based on the zoning district, it may be that a specific impervious percentage for solar projects should be stated for clarity? Perhaps 25% or 30%?

3. The Louisa County Ordinance might be instructive for “utility scale” narrative, particularly with respect to the emphasis on using websites as much as possible. Tom Egeland discussed having a separate Community Development website for their efforts when he spoke at the APA Virginia Chapter Conference in Roanoke. Mr. Egeland also offered many good comments including:
 - a. Every site has a conflict.
 - b. Louisa County allows for part of their buffers to be in pollinators and other native vegetation.
 - c. Louisa County has set caps for both total acreage used and MW produced within the county.
 - d. A surety bond should be required for both the construction and the decommissioning.
4. Speaking of the APA Virginia Chapter Conference, the session on Solar Energy projects was particularly good. A woman from the DEQ (last name of Foster; no relation) had good information and would be a good resource to cultivate whether there was an issue to address or not.
5. As an unrelated consideration, the Solar Project session incorporated discussion of “biodiversity” and the need for more pollinators. Should greater emphasis on pollinators and native plantings become a goal for the County, locations such as the MVP right-of-way, electric transmission pathways, public areas (offices, parks, fire stations, etc.), and even private residences, suggest that there may be an opportunity to encourage more planting of native pollinators, grasses, and plant material across Montgomery County through a project that is not linked with a renewable energy project.

Decommissioning Surety Calculations

Hypothetical Amounts & Inflation Rates

Decommissioning Cost Assumed to be 15% of the Project Cost

EXAMPLE #1: \$2 Million Project at Alternative Rates of Inflation - 100% Surety for 5 years

Year	Surety Amount	Inflation Rate	Decomm. Cost	Inflation Rate	Decomm. Cost	Excess/ (Shortfall)
Day 1	300,000	3.00%	300,000	4.00%	300,000	0
1	300,000	3.00%	309,000	4.00%	312,000	(9,000)
2	300,000	3.00%	318,270	4.00%	324,480	(18,270)
3	300,000	3.00%	327,818	4.00%	337,459	(27,818)
4	300,000	3.00%	337,653	4.00%	350,958	(37,653)
5	300,000	3.00%	347,782	4.00%	364,996	(47,782)

Year	Surety Amount	Inflation Rate	Decomm. Cost	Inflation Rate	Decomm. Cost	Excess/ (Shortfall)
Day 1	300,000	5.00%	300,000	5.00%	300,000	0
1	300,000	5.00%	315,000	5.00%	315,000	(15,000)
2	300,000	5.00%	330,750	5.00%	330,750	(30,750)
3	300,000	5.00%	347,288	5.00%	347,288	(47,288)
4	300,000	5.00%	364,652	5.00%	364,652	(64,652)
5	300,000	5.00%	382,884	5.00%	382,884	(82,884)

EXAMPLE #2: \$2 Million Project at Alternative Rates of Inflation - 115% Surety for 3 and 5 years

Year	Surety Amount	Inflation Rate	Decomm. Cost	Inflation Rate	Decomm. Cost	Excess/ (Shortfall)
Day 1	345,000	3.00%	300,000	4.00%	300,000	45,000
1	345,000	3.00%	309,000	4.00%	312,000	36,000
2	345,000	3.00%	318,270	4.00%	324,480	26,730
3	345,000	3.00%	327,818	4.00%	337,459	17,182
4	345,000	3.00%	337,653	4.00%	350,958	7,347
5	345,000	3.00%	347,782	4.00%	364,996	(2,782)

Year	Surety Amount	Inflation Rate	Decomm. Cost	Inflation Rate	Decomm. Cost	Excess/ (Shortfall)
Day 1	345,000	4.00%	300,000	4.00%	300,000	45,000
1	345,000	4.00%	312,000	4.00%	312,000	33,000
2	345,000	4.00%	324,480	4.00%	324,480	20,520
3	345,000	4.00%	337,459	4.00%	337,459	7,541
4	345,000	4.00%	350,958	4.00%	350,958	(5,958)
5	345,000	4.00%	364,996	4.00%	364,996	(19,996)

EXAMPLE #3: \$2 Million Project at Alternative Rates of Inflation - 120% Surety for 3 and 5 years

Year	Surety Amount	Inflation Rate	Decomm. Cost	Inflation Rate	Decomm. Cost	Excess/ (Shortfall)
Day 1	360,000	3.00%	300,000	4.00%	300,000	60,000
1	360,000	3.00%	309,000	4.00%	312,000	51,000
2	360,000	3.00%	318,270	4.00%	324,480	41,730
3	360,000	3.00%	327,818	4.00%	337,459	32,182
4	360,000	3.00%	337,653	4.00%	350,958	22,347
5	360,000	3.00%	347,782	4.00%	364,996	12,218

Year	Surety Amount	Inflation Rate	Decomm. Cost	Inflation Rate	Decomm. Cost	Excess/ (Shortfall)
Day 1	360,000	5.00%	300,000	5.00%	300,000	60,000
1	360,000	5.00%	315,000	5.00%	315,000	45,000
2	360,000	5.00%	330,750	5.00%	330,750	29,250
3	360,000	5.00%	347,288	5.00%	347,288	12,713
4	360,000	5.00%	364,652	5.00%	364,652	(4,652)
5	360,000	5.00%	382,884	5.00%	382,884	(22,884)