"EXHIBIT A"

2.0 The Foundation for the Future

2.2 Goals, Objectives, and Policies

Policy 2.6.7. ~~Utility scale s~~Solar ~~energy facilities~~facilities and energy storage projects should avoid development of lands with prime agricultural soils that have conservation significance as identified by ConserveVirginia, significant forest tracts, and lands with limited natural buffers for screening, and/or in close proximity to residential developments and public drinking water sources.

Policy 5.5.7. ~~Utility scale s~~Solar facilities and energy storage projects ~~facilities~~ should be ~~cited~~ sited and designed ~~within one thousand (1,000) feet of major electrical transmission lines, not in close proximity to public drinking water sources, and adequate setbacks and screening should be provided to ensure compatibility with nearby agricultural viewsheds and residential uses~~ in a location and manner consistent with the recommendations established in this Plan in Chapter 3, Future Land Use, Section 3.10, Solar Energy Generation and Energy Storage Facilities.

3.0 The Land Use Plan

3.6 Future Land Use Recommendations

Business and Industry Areas

Areas of the county where large-scale business and industry activities are encouraged. These areas are to be the primary economic engines for the County. Such businesses and industries would primarily serve markets that stretch beyond the County borders. Activities will typically include retail, wholesale, corporate and professional offices, research and development, entertainment, manufacturing, distribution and transportation. Special consideration shall be given when locating heavy industrial uses in these areas. Buildings would typically be large in nature with extensive setbacks, parking and lot coverage requirements. They should be located in proximity to major transportation facilities. Residential activities in the area should be discouraged. Where such areas abut existing residential communities, berms, buffers, noise attenuation measures and additional setbacks may be necessary to minimize community conflicts.

It is noted that new and used vehicle sales, including automobiles and boats, shall also be considered in Business and Industry areas along major arterials, where compatible uses exist. This includes areas along U.S. Route 1 between Ramoth Church Road and Potomac Creek.

~~Utility scale solar energy facilities are encouraged to be located to support local businesses and industry. Siting considerations should include: proximity to high voltage electric power transmission corridors; avoidance of locations in close proximity to residential developments and public drinking water sources, where visual impacts will be minimized; be secured with fencing and other physical barriers to ensure security of the facility; and be suitable for other commercial or industrial uses once the facility has been decommissioned.~~

Agricultural/Rural Areas

Areas of the county where farming, forestry and land conservation activities are encouraged. Location of new single-family detached dwelling units are to be discouraged; however, such uses may be developed at a maximum density of one (1) unit per six (6) acres. These areas are located beyond the limits of the Urban Service Area and would have limited community services. Agricultural service establishments and community service retail establishments may be located at significant crossroads. As a means to support agriculture and the existing rural character, some of these areas are designated as sending areas in the current transfer of development rights (TDR) program. They are also the focal point for the County's purchase of development rights (PDR) programs and voluntary land conservation efforts.

To help preserve the rural character, the following design criteria for development are recommended for the Agricultural/Rural area:

- useable open space shall be preserved for agriculture, forestry, and conservation purposes
- areas containing steep slopes greater than 35%, Resource Protection Areas, and floodplains should be excluded from the developable area
- a building setback of 100 feet should be maintained from the perimeter boundary where located adjacent to existing agricultural uses
- a building setback of 100 feet to be maintained along existing state-maintained roads to help retain the scenic quality of rural county roads
- wildlife migration corridors to be maintained where identified. Connectivity of open space areas shall be considered to enhance wildlife movement
- large stands of trees shall be maintained to the greatest extent possible on forested tracts of land
- the preservation of cultural resources to be considered in accordance with the Cultural Resources Management Plan
- cluster subdivisions should be encouraged where permitted
- Low Impact Development (LID) practices should be encouraged for stormwater management
- ~~Siting of any utility scale solar facilities should account for the following design criteria:~~
  - ~~Avoid development on prime agricultural soils and significant forest tracts;~~
  - ~~Provide adequate screening and protection of viewsheds;~~
  - ~~Utilize native vegetation that supports pollinators;~~
  - ~~Where possible, utilize the site as grazing lands for sheep and other appropriate livestock;~~
  - ~~Maintain significant buffers to adjacent residential uses, and; Incorporate development techniques that can facilitate conversion of the land back to agricultural uses upon decommissioning of the facility.~~

3.10 Solar Energy Generation and Energy Storage Facilities

SOLAR ENERGY GENERATION

Solar energy generation facilities, sometimes referred to as solar farms or solar facilities, provide an expanding alternative to generation of electricity as they are becoming more cost effective. A solar facility is defined as a facility primarily consisting of activities, applications or devices designed to convert sunlight into electricity for storage and/or distribution from one property to others through the utility grid.

Solar facilities can be classified into two different types, Community Scale and Utility Scale. Both types of solar facilities are similar in design. The main defining factor is the amount of power that is generated, which correlates to the size of the project. The following defines the two types:

Community Scale: consists of a series of solar arrays, typically ground mounted, that generate up to 5 MW of electricity. Roughly 10 acres of land are needed for every 1 MW of power generation, or 50 acres of land in total, or lesser amounts under optimal site conditions. The electricity generated feeds into the local distribution lines, the lines that run along area streets to a nearby transfer station. The concept allows area residents to purchase their electricity that is generated from this community scale project.

Utility Scale: this is the largest application of solar generation that follows the same development concept as community scale projects but at a larger scale. This category includes any project that generates over 5 MW of electricity. These projects generally require more than 50 acres of land, and often require hundreds and even thousands of acres of land. Siting such large scale facility is encouraged to not exceed 300 acres. They usually connect directly into the transmission network, which are the large overhead high voltage power lines that carry electricity over long distances. The solar arrays in these projects have the same dimensions as in a community scale project. Utility scale solar is expected to be secured and screened just as community scale solar would.

As solar energy facilities are being proposed in Stafford, the following siting and design guidelines are intended to ensure that solar facilities are developed in a manner that is consistent with the goals of the community and do not negatively impact surrounding properties.

These guidelines do not apply to residential or non-residential properties containing solar technology used primarily to generate electricity for on-site use.

SOLAR ENERGY RECOMMENDATIONS:

Siting Guidelines:

The following siting guidelines are included that are specific to Utility Scale and Community Scale solar facilities, along with guidelines that apply to all solar projects, regardless of the type.

Utility scale solar facilities should conform with the following location standards:

- Located outside of the Urban Services Area.

- Located on property that is within 1,000 feet of major electric transmission lines.
- The total parcel area of a project should not exceed 300 acres.

Community scale solar projects should conform with the following location standards:

- Encouraged to be located outside of the USA.
- Consideration of projects inside the Urban Services Area under the following criteria:
    - Project areas should not exceed fifty (50) acres. Project areas are defined as the areas bounded by the fenced solar array areas and any surrounding landscape buffers.
    - Discouraged on property where future housing, commercial, or industrial development may be viewed as a better use of the land.

All solar projects should conform with these location standards:

- To reduce visual impacts, solar energy facilities are encouraged to be located on sites with established and/or preserved vegetative and/or forested buffers of enough depth or density to effectively screen the facility as determined by viewshed analysis along public roadways, nearby or adjacent residential properties, and/or significant cultural or historic resources.
- To preserve rural character and ecological integrity, avoid locating on sites with active agriculture, high levels of biodiversity, and/or mature forests.
- To minimize land use conflicts, avoid locating near and within the viewshed of dense residential developments, cultural or historic resources, and/or near public drinking water sources. For this purpose, dense residential developments are defined as any residential subdivision with typical lot sizes less than one (1) acre in size.
- In urbanized settings, encourage placement on rooftops of industrial or other large buildings.
- Encourage solar projects on land that has limited redevelopment potential, such as capped landfills, brownfield sites, abandoned industrial sites, completed and decommissioned surface mining sites near major electric transmission lines.
- Consider the placement on open water surfaces, such as decommissioned mines or other reservoirs.

Individual Site Design Criteria:

All solar facility projects should incorporate the following design features into the development of the project.

- Locate mechanical equipment such as inverters and transformers internal to the property or away from any residential or incompatible uses.
- Prioritizing retention of existing tree cover over planting of new trees; Considering berms as an additional optional means of screening.

- Provide for adequate emergency access by providing a travelway around the perimeter of each group of solar arrays and minimize fire hazards by providing adequate spacing between brush vegetation and the ground-mounted panels and equipment.
- Minimize environmental impacts by avoiding developing in environmentally sensitive areas, including Critical Resource Protection Areas, wetlands, and floodplains, while retaining existing trees outside of the project area and preserving stream drainage channels and associated wetlands that may run through a site.
- Maintain wildlife corridors by providing separate fence enclosures for each group of solar arrays and consider fence design to allow passage of smaller wildlife.
- Where possible, utilize the site as grazing lands for sheep and other appropriate livestock.
- Incorporate development techniques that can facilitate conversion of the land back to agricultural uses upon decommissioning of the facility.
- Minimize impacts during the construction phase by: Placing limits on the hours of construction; Consider establishment of preferred truck delivery routes, and; Require repair of road damage after construction or decommissioning.
- Solar panels should not exceed a maximum height of 15 feet from the finished ground elevation at maximum tilt. Exceptions to this height limitation may be appropriate where complete and adequate screening from view is provided or sudden changes in topography would preclude a consistent height of adjacent solar panel arrays.
- Solar panels should retain a minimum ground clearance of 12 inches from the finished ground elevation at maximum tilt to allow for vegetation maintenance.

ENERGY STORAGE

Energy storage allows for increased effectiveness and reliability of electricity power distribution from both non-renewable and renewable energy sources, such as solar energy facilities. This is accomplished by storing energy then releasing it later when needed, such as during peak usage events (hot summer days) or during periods when solar electricity generation is diminished (nights or long periods of cloudy or snowy weather). Energy storage facilities are defined in the Code of Virginia as the energy storage equipment and technology within an energy storage project that is capable of absorbing energy, storing such energy for a period of time, and redelivering such energy after it has been stored.

The predominant form of energy storage currently is with battery energy storage systems (BESS), and specifically Lithium Ion batteries. A facility would consist of a series of lithium-ion battery banks, located within either a building, several shipping container structures, or smaller equipment cabinets. These facilities would most likely need to be sited within or in close proximity to utility transfer stations or accompany a solar energy facility.

Land Use Compatibility:

Energy storage facilities are characteristic of industrial uses, with larger cleared areas, metal structures, and void of landscaping. This type of development would not be visually compatible with most non-industrial uses. The structures that house the batteries need to be climate controlled, thus requiring the use of air conditioning units. Across a site, there may be several larger units that may generate higher levels of noise. Due to the industrial nature of the use, potential noise impacts, and fire safety concerns, these facilities should be appropriately separated and screened from incompatible land uses such as residential uses, schools, and highly visible commercial corridors.

ENERGY STORAGE RECOMMENDATIONS:

The following recommendations should be considered when considering the siting of an energy storage facility in Stafford County:

The following location siting criteria are recommended:

- The preferred location for energy storage facilities is within areas designated Business and Industry on the Future Land Use map.
- For energy storage facilities proposed within areas designated Business and Industry on the Future Land Use map, the following siting considerations include:
    - Screening from non-industrial uses should be provided.
    - Providing a connection to public water is preferred.
- If an energy storage facility is installed in conjunction with a solar facility, consider siting the energy storage facility internal to the solar panel arrays.

However, other locations may be considered appropriate based on the following criteria.

- For energy storage facilities proposed within areas designated Agricultural / Rural on the Future Land Use map, the facility should be adequately set back from adjacent properties.
- Should a facility be proposed in the vicinity of an electricity transfer station within a designated Suburban area on the Future Land Use map, the following siting criteria are recommended:
    - Locations adjacent to higher density residential development or other incompatible uses are discouraged.
    - The facility should be appropriately screened from view with a combination of existing trees, new vegetation, opaque fencing, and/or berms.
    - Providing a connection to public water is preferred.

Fire Safety:

Energy Storage Facilities are not free from fire and explosion hazards and risks. The primary concern with energy storage units usually involves thermal runaway of the battery cells and units. The by-products of this thermal runaway include toxic and flammable gasses and ultimately risk of explosion

or deflagration. As such, incidents at these facilities are essentially hazardous material incidents that require a long-duration incident with specialized resources. Currently, those specialized hazardous materials response resources would come from the Virginia Department of Emergency Management for incidents in Stafford County. The following are location, design, and operation recommendations for fire safety at energy storage facilities:

Location and Design:

1) Provide adequate water for fire protection by limiting future facility locations to the urban services area where a water supply is available or require adequate setback from buildings and property lines.

Operations:

2) Ensure access to battery management system information by providing a separate facility for battery management system information and hazardous gas monitoring display for first responders.

3) Ensure site management coordination by posting facility operator information as well as 24-hour emergency contact information at the entrance to the facility.

4) Provide an emergency response plan and associated training for first responders that is site-specific.