PRELIMINARY ASSESSMENT OF THREATENED AND ENDANGERED SPECIES

Project: **Spotsylvania Solar Energy Center**
Spotsylvania, VA

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1. BACKGROUND

The proposed project consists of the construction of a ±500 MW solar photovoltaic (PV) Generation Facility on approximately 6,350 acres in Spotsylvania County, VA. The proposed project is generally located between W. Catharpin Road and Orange Plank Road to the east of the intersection of W. Catharpin Road and Post Oak Road as shown in Figures 1 through 3 within Attachment A.

Kimley-Horn conducted a preliminary review of readily available database and agency information regarding potential occurrences of federal and state listed threatened and endangered (T&E) species within the proposed assessment area or a 2-mile radius of the assessment area. Although the project site consists of approximately 6,350 acres, approximately 7,000 acres were reviewed as part of this assessment and is referred to herein as the assessment limits or assessment area. The assessment area is larger than the project area as a result of defining sufficient developable uplands. The following presents a summary of the review for threatened and endangered species.

2. ASSESSMENT OBJECTIVES

The purpose of this preliminary assessment of T&E species is to review available GIS data and databases to identify known T&E species occurrences within the vicinity of the assessment area and summarize the identified species and habitats with the potential to occur on site. This assessment can serve as a basis or in support of the desktop study for the presence of wildlife, natural heritage resources, and T&E.

3. METHODS

The preliminary assessment of T&E species was based on a review of readily obtainable GIS data and database information and limited site reconnaissance. Kimley-Horn reviewed background mapping associated with the wetland assessment and performed limited site reconnaissance to document the general habitat/land cover onsite. In addition, Kimley-Horn reviewed the Virginia Department of Game and Inland Fisheries (VDGIF) Virginia Fish and Wildlife Information Service (VaFWIS), VDGIF's Wildlife Environmental Review Map Service (WERMS), VDGIF's Northern Long-Eared Bat (NLEB) Winter Habitat and Roost Trees Application, VDGIF's Little Brown Bat (MYLU) and Tri-colored (PESU) Bat Winter Habitat and Roosts Application, Department of Conservation and Recreation (DCR) Natural Heritage Data Explorer (NHDE), and US Fish and Wildlife (USFWS) Information for Planning and Conservation (IPAC) databases to determine whether known or suspected federal and state T&E species, state-listed plants or insects, or natural heritage resources have been identified within the assessment area or a two-mile radius of the assessment area, unless otherwise noted. The Center for Conservation Biology (CCB) VaEagles Nest Locator was also reviewed.

4. PROPERTY DESCRIPTION AND CURRENT LAND COVER

The assessment area consists of approximately 7,000 acres and is generally located between W. Catharpin Road and Orange Plank Road to the east of the intersection of W. Catharpin Road and Post Oak Road as shown in Figures 1 through 3 within Attachment A. In general, the assessment site is primarily undeveloped and consists of recently logged areas with the exception of a residential and/or agricultural structures and agricultural fields. Wooded areas still exist along stream tributaries and limited portions of the assessment area. Unimproved access roads (logging roads) are present throughout and a power transmission line bisects the central portion of the assessment area. The U.S.G.S. topographic mapping depicts the assessment area as ranging in elevation between 330 and 430 feet. Several stream and wetland systems were identified during the preliminary wetland assessment. Below is a summary of identified wetlands and streams based on a review of the background material and site reconnaissance. For summary purposes, the assessment area has been divided into the area to the north of W. Catharpin Road (Area 1), the area to the south of W. Catharpin Road and west of Post Oak Road (Area 2), and the area to the south of W. Catharpin Road and east of Post Oak Road (Area 3).

- **Area 1 - North side of W. Catharpin Road:**
  - McCracken Creek, Robertson Run and several associated unnamed tributaries were identified within the western portion. The drainage area of the eastern portion of Robertson Run within the wetland assessment area exceeds 5 square miles.
  - Shanty Bridge Creek, Norton Prong and several unnamed tributaries were identified within the central area. The drainage area of the southern portion of the North Prong within the wetland assessment area exceeds 5 square miles.
  - Whitehall Creek, an unnamed tributary to Greenfield Creek, and several unnamed tributaries were identified within the northeastern portion.
  - Smaller pockets of wetlands were identified within the areas of higher elevations.
- **Area 2 - South side of W. Catharpin Road and west of Post Oak Road:**
  - Plentiful Creek and several unnamed tributaries were identified within the central and eastern portions of this area of the wetland assessment. These streams do not have a minimum contributing drainage area of 5 square miles.
- **Area 3 - South side of W. Catharpin Road and east of Post Oak Road:**
  - Catharpin Run and unnamed tributaries were identified bisecting several areas within this wetland assessment area. These streams do not have a minimum contributing drainage area of 5 square miles.

Fringe or floodplain wetlands are associated with the majority of the intermittent and perennial streams identified throughout the wetland assessment area. All of the wetlands and streams identified are non-tidal and are jurisdictional to the US Army Corps of Engineers (USACE) and Virginia Department of Environmental Quality (VDEQ). In addition, the streams with a minimum drainage area of 5 square miles are also jurisdictional to the Virginia Marine Resources Commission (VMRC). A copy of the preliminary wetland assessment figures is provided in Attachment B.

5. GIS AND DATABASE FINDINGS

A summary of the reviewed GIS data and databases maintained by the VDGIF, DCR, USFWS, CCB and VDEQ is presented below:

5.1. Department of Game and Inland Fisheries

A summary of the VDGIF database results is presented below. A copy of the VDGIF database results are contained in Attachment B.

5.1.1. VDGIF VaFWIS Search Report

VDGIF's VaFWIS database and WERMS GIS data are a collection of spatial datasets which provide information on critical wildlife resources for environmental review processes. The Species Observation Database ("SppObs") contained within these data is a single database structure storing all observation data from more than two dozen other datasets including: Wildlife Management Area (WMA) Bird Surveys; Rarebird; Bald Eagle Nest Database; VDGIF staff incidental observations (ObsBook); VDGIF Scientific Collections, TE, and Salvage permit data (Collections); Colonial Waterbird Locations (CWB), CWB2003, and CWB2008; PEFAnests; Caves; Incidentals; Survey Specific Databases; Aquatics; and Others. In addition to the Species Observation Database, the VaFWIS database and/or WERMS GIS data contain the locations of known NLEB roost trees and hibernacula, Breeding Bird Atlas, Christmas Bird County and Colonial Water Bird Survey.

VDGIF Virginia Fish and Wildlife Information Service (VaFWIS) Search Report dated July 14, 2017; updated March 13, 2018, and the Wildlife Environmental Review Map Service (WERMS) database (reviewed July 14, 2017; updated March 13, 2018) identified the below listed occurrences. The WERMS database results are shown in Figure 1 of Attachment B.

- Loggerhead shrike (*Lanius ludovicianus)* state listed as threatened – this occurrence was identified by the Rarebirds Sightings database and is located ±3,000 feet north of Assessment Area A. According to the Species Observation Report, the occurrence consisted of a single bird along a fence line. According to the VDGIF's Biota of Virginia (BOVA) Booklet, this species prefers areas of grassland that are grazed or mowed with an abundance of perching sites. This species usually nests in eastern red cedar or hawthorne. Given that the occurrence consisted of a single bird, it is not anticipated that the proposed project would adversely impact this species.

- Dwarf wedgemussel (*Alasmidonta heterodon*) federally and state listed as endangered – these occurrences are located downstream from Assessment Area A and are associated with the Po River. According to the VDGIF's BOVA Booklet, this species is usually found in sand, firm muddy sand, and gravel bottoms in rivers of varying sizes with slow to moderate current. They need silt-free, stable stream bed and well-oxygen water, which is free of pollutants, to survive.

- McCracken Creek – was identified as a "Threatened and Endangered Species Water" for dwarf wedgemussel.

5.1.2. VDGIF NLEB Application

VDGIF's Northern Long-Eared Bat (NLEB) Winter Habitat and Roost Trees Application was reviewed to identify winter habitat within 0.25 mile of the assessment area or known maternity roost trees within 150 feet of the assessment area (accessed August 22, 2017; updated March 13, 2018). No known NLEB winter hibernaculum or maternity roost trees were identified within the assessment area, referenced ranges or 2-mile radius.

5.1.3. VDGIF MYLU & PESU Application

VDGIF's Little Brown Bat and Tri-colored Bat Winter Habitat and Roosts Application was reviewed to identify little brown bats (MYLU) and tri-colored bats (PESU) hibernaculum within 0.25 mile of the

assessment area and known roost trees within 150 feet of the assessment area (accessed August 22, 2017; updated March 13, 2018). No known MYLU or PESU winter hibernaculum or maternity roost trees were identified within the assessment area, referenced ranges or 2-mile radius.

5.2. Department of Conservation and Recreation

The assessment area was submitted to DCR through the Virginia Natural Heritage Data Explorer (NHDE) to identify natural heritage resources within the vicinity of the assessment area. Natural heritage resources are defined by DCR as "the habitat of rare, threatened, or endangered plant and animal species, unique or exemplary natural communities, and significant geologic formations." DCR also typically provides comments regarding anticipated negative impacts and recommendations to avoid, minimize or mitigate impacts. The following listed items were identified in the correspondence received from DCR, dated June 15, 2017. A copy of the correspondence is contained in Attachment C.

- Po River at Corbin Bridge Stream Conservation Unit (SCU) – this SCU is located to the east of Assessment Area A. Dwarf wedgemussel (*Alasmidonta heterodon*) is associated with this site. In addition, the Po River has been designated by VDGIF as a "Threatened and Endangered Species Water" for this species. DCR recommends strict adherence to erosion and sediment control/stormwater management regulations and laws.

- Plentiful Creek SCU – this SCU is located ±1 mile south of Assessment Area B. Plenitful Creek SCU has been given a biodiversity ranking of B4, moderate significance. This stream is a grade B and holds a healthy stream designation. Threats to this system include water quality degradation related to point and on-point pollution, water withdrawal, and introduction of non-native species.

- Small whorled pogonia (*Isotria medeoloides*) federally listed as threatened and state listed as endangered – This species is a perennial orchid that tends to favor mid-aged woodland habitats on north or northeast facing slopes. Additional coordination was conducted with DCR. Based on this coordination, DCR recommends an inventory for this species within the central portion of Assessment Area A.

- Fragmentation – DCR indicated that the site will fragment C2 and C4 core areas, which consist of unfragmented natural cover of at least 100 acres of interior condition and provide habitat for a range of species. Core areas are ranked with 5 being the least ecological value. It should be noted that a large portion of the assessment area has been logged and used in the past for silviculture. The exact acreage of tree clearing will be determined upon finalization of the site plan.

5.3. US Fish and Wildlife Service (USFWS)

The USFWS Official Species List, dated July 14, 2017; updated March 13, 2018, documented the following listed species that may occur within the vicinity of the assessment area. A copy of the Official Species List is contained in Attachment D.

- Northern long-eared Bat (*Myotis septentrionalis*), federally listed as threatened – Although this species was identified as potentially occurring within the assessment area vicinity, no known NLEB winter hibernaculum or maternity roost trees were identified within the assessment area, above referenced ranges, or a 2-mile radius of the project site on VDGIF's NLEB Winter Habitat and Roost Trees Application.

Yellow Lance (*Elliptio lanceolata*), federally proposed as threatened – According to the USFWS species information this species is a bright yellow mussel. Yellow lance are found in medium-sized river to smaller stream and depends on clean, moderate flowing water.

- Critical Habitat – no critical habitat was identified.

5.4. CCB VaEagles Nest Locator

The CCB VaEagles Nest Locator was reviewed (accessed July 14, 2017; updated March 13, 2018) to identify known active bald eagles nests within the assessment area. No nests were identified on the application within 660 feet of the project site. A copy of the mapping is contained in Attachment E.

6. AVOIDANCE MEASURES

The following is a brief summary of measures undertaken to avoid and minimize potential impacts to threatened and endangered species:

- To avoid and minimize potential impacts to dwarf wedgemussel and yellow lance, the limits of disturbance have been configured to avoid impacts to streams except for road and electric conduit crossings for construction, maintenance and access activities. Where feasible road crossings will be temporary for construction access purposes. The temporary construction access crossings will be removed and restored upon construction completion. In addition, crossings will be located at existing crossings where practicable. Where new crossings are proposed, the crossings will be located at the narrowest/least impactful stream and wetland area. Both temporary and permanent crossings will span the stream bed and bank if feasible. In addition, interconnection of the different sections of solar arrays will be achieved via directional drill from uplands to uplands crossing under perennial streams. All crossings will be coordinated with the USFWS and VDGIF through the wetland permitting process.
- Encroachment within, under or over waters jurisdictional to the VMRC will be avoided.
- A habitat survey for small whorled pogonia for the area identified by DCR will be conducted and coordinated with DCR.
- A 100-ft buffer adjacent to all wetlands and waters will be observed.
- The project's limits of disturbance will be developed with the goal of providing connective corridors to allow migration between fragments.
- An invasive species management plan will be developed as part of the project.
- Planting of native pollinators in buffer areas will be reviewed and implemented if practicable.
- Erosion and sediment controls will be utilized and maintained throughout construction.
- A stormwater management plan will be developed in accordance with State laws and requirements.

Attachment A: Assessment Location Figures
Attachment B: Preliminary Wetland Assessment Figures
Attachment C: VDGIF Information
Attachment D: DCR Information
Attachment E: USFWS Information
Attachment F: CCB Mapping