# TECHNICAL MEMORANDUM

**Date:** September 3, 2015

**To:** Dave Phillips, Apex Clean Energy, Inc. (Apex)

**From:** Karen Tyrell, PhD, Western EcoSystems Technology, Inc. (WEST)

**Subject:** Aerial Nest Survey Results for the Rocky Forge Wind Project

## INTRODUCTION

The purpose of this memorandum is to summarize and present results of a 2015 aerial raptor nest survey conducted for the proposed Rocky Forge Wind Project (Project) located in Botetourt County, Virginia. The objective of the survey was to locate bald eagle (*Haliaeetus leucocephalus*) nests and other raptor nests in or within 4 miles of the Project (hereafter assessment area, Figure 1) to assess potential effects of the Project on breeding eagles and other raptors. The Project boundary was later expanded slightly to the west to include an additional ridgeline as shown in Figure 1.

## STUDY SITE

The survey area is characterized by steep rolling hills and mountains, narrow riparian corridors, and limited water resources. The forest is primarily secondary growth deciduous forest with conifers occurring along riparian corridors. Within the survey area, the habitat is characterized by rolling hills, some agricultural land and a section of the James River.

## METHODS

The survey area was evaluated from a Robinson R44 helicopter by two qualified WEST biologists (one positioned in front and one in rear) on April 1, 2015 (Figure 1). The survey was timed to occur before deciduous tree leaf-out and to coincide with the time that bald eagles are likely incubating eggs or tending young, based on chronology for nesting bald eagles in the region (USFWS 2007) and when other local raptor species were likely to be nesting.

Pre-flight planning included relevant background review of previously recorded nest locations provided by the Center for Conservation Biology's (CCB) Virginia Bald Eagle Nest Locator (CCB 2015), a review of topographic maps and aerial photographs, and the creation of mobile Geographic Information Systems (GIS) files for conducting the surveys. GPS positions of all

nests detected were recorded, and datasheets were used to document nest attribute data including species, nest type, nest status, nest condition, nest height, substrate, substrate height, and nest aspect.

Transects were flown within the survey area in areas of suitable eagle nesting habitat and structure (i.e., tall sturdy trees, especially those near water bodies). When potentially suitable bald eagle nesting habitat was identified, the helicopter was positioned to allow thorough visual inspection of the area. In some areas, multiple passes were needed to thoroughly cover potential nesting habitat. Generally, the altitude of this survey was 150 to 200 ft above ground level. Airspeed in potentially suitable habitat was approximately 50 miles per hour. Nest evaluations were performed at lower speeds, or while the helicopter was hovering.

## RESULTS

No bald eagle nests or nests of other raptor species were observed during the survey and no bald eagle nests were documented within 10 miles of the proposed Project during the desktop review. The habitat within the survey area is of low suitability for nesting bald eagles based upon the size of trees and location to foraging resources such as water. The most suitable bald eagle nesting habitat occurs along the James River, but the river corridor is narrow in this portion of the survey area, limiting suitable bald eagle nest habitat quality.

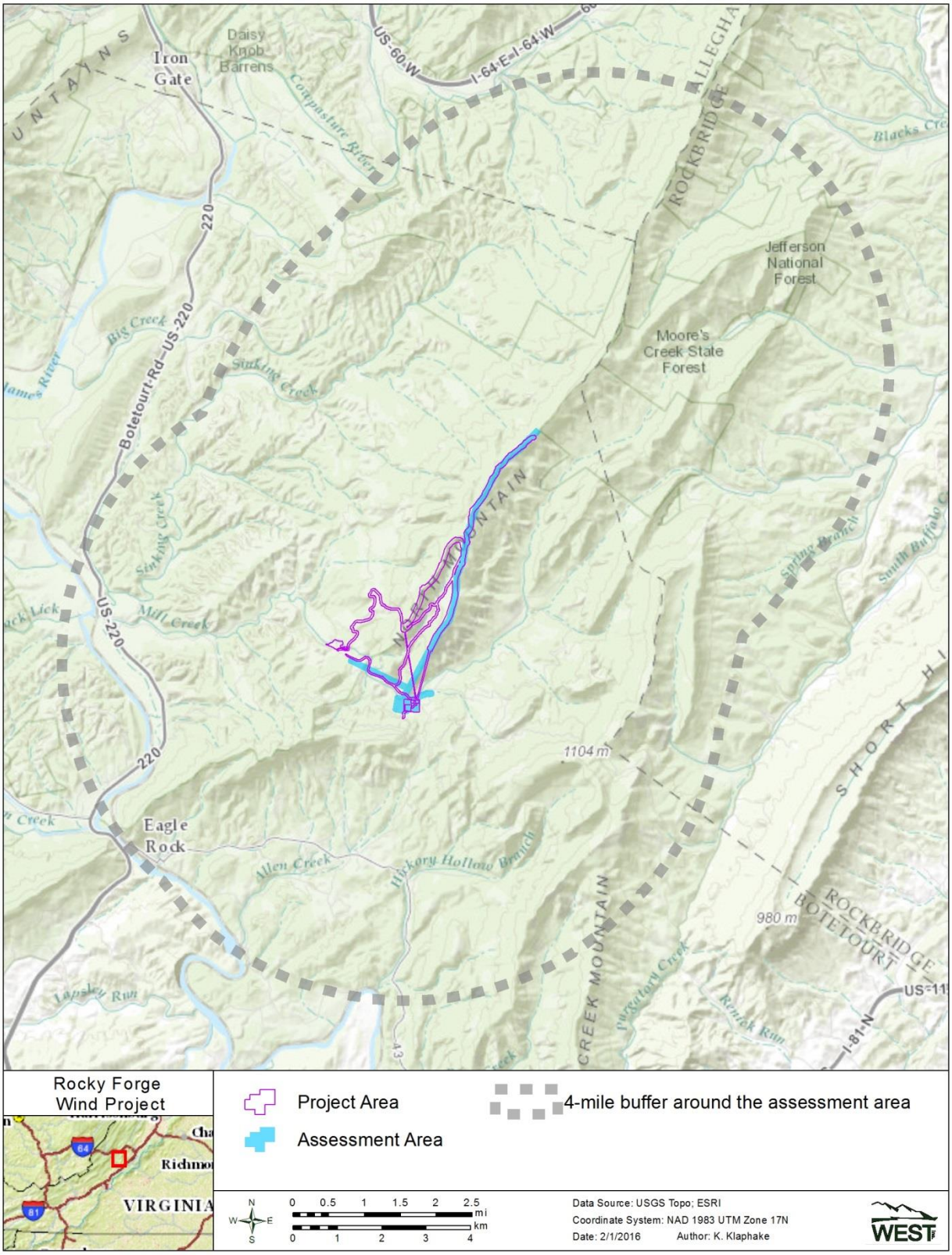


Figure 1. Rocky Forge Wind Project aerial raptor nest Survey Area.

## REFERENCES

CCB. 2015. Virginia Bald Eagle Nest Locator. Accessed March 31, 2015 at http://www.ccbbirds.org/what-we-do/research/species-of-concern/virginia-eagles/nest-locator/

USFWS. 2007. National Bald Eagle Management Guidelines. May 2007. Available online at: http://www.fws.gov/southdakotafieldoffice/NationalBaldEagleManagementGuidelines.pdf