ATTACHMENT 2: ALTERNATIVES ANALYSIS

A. Alternatives Analysis

The purpose and need for the Project is to serve the growing regional demand for electricity in a manner consistent with regional and State energy policies. As described in the Maine Wind Energy Act, the proposed Project is located within an area designated for expedited wind permitting in the State. The Project is specifically sited to maximize energy generation while minimizing impacts to environmental resources. Selection of a viable wind energy project site is based on a multitude of factors including:

- Quality of wind resource, based on best available wind data;
- Electric transmission access and capacity, including consideration of alternative interconnection routes;
- Land ownership, including size of contiguous tracts of land, number of landowners, and compatibility with existing land uses;
- Construction-related feasibility and costs (evaluations of soils and geology, topography, accessibility, and existing infrastructure);
- Site viability, including consideration of potential impacts to wildlife and natural resources; and
- Community support, including proximity to population centers and local regulatory structure.

The highest onshore wind resources in the northwest portion of Maine are typically found along ridge lines and at higher elevations, although turbine designs have evolved to maximize production in a variety of wind regimes, including those with moderate wind speeds. In siting this Project, wind data collected from a 262-foot met tower in 2013 and 2014 was used to evaluate the productivity of the site using turbines designed to operate in moderate wind regimes. The resulting evaluation concluded that wind resources were well suited for wind energy generation in this area/terrain of the State. Additional factors favorable for wind development in the area include the site's previous development as a defense radar facility for the U.S. military (including several existing buildings that can be used for storage and/or O&M), the constructability of the site due to the presence of existing roads and its non-ridgeline location, sparse residential development, access to the electrical grid, and the relatively large percentage of uplands in the Project area.

The overall Project design objective was to maximize wind energy generation and minimize environmental impacts. The final Project size, design, and layout reflect an iterative process in which multiple locations were evaluated for siting the wind generation facilities, and alternative electrical transmission options were considered.

The Applicant acquired a significant portion of the Project area from the military in 2012. Initial development activities for a predecessor wind project were suspended in favor of a solar project lease to a different developer. However, when the solar project did not advance, in 2019 the Applicant began redevelopment efforts of the Project area as a wind facility based on fewer, but larger turbines designed for use with this type of wind resource.

The Applicant continually adjusted and redesigned the proposed Project layout as site-specific resource information became available, with the objective of avoiding and minimizing impacts to protected natural resources and land uses. The original Project design consisted of 28 turbines, with a goal of generating approximately 84 MWs of electric power. Turbines were sited in areas that satisfied the turbine selection criteria, which based on the available screening level data, such as soil survey maps, USFWS National Wetland Inventory maps and mapped SWHs, had the potential to be absent of wetlands and associated regulated resources (e.g., waterbodies, SWHs). Additionally, a transmission interconnection study was completed in 2019 to study the

alternative transmission capacity constraints within the Project area. During collection of field survey data, a number of alternative locations for turbines, collector lines, substations, transmission interconnection and roads were considered, which required adjustments to the Project design. These layout modifications ultimately reduced the number of turbines from 28 turbines producing 84.0 MWs of electric power, to 14 turbines producing about 58.8 MWs of power.

Alternative 1, No Action: Under the "no action" alternative the Applicant would not pursue construction of the Project. The Applicant's primary mission and business is the development of renewable energy projects to meet the growing regional demand for electricity in a manner consistent with regional and State energy policies. The "no action" alternative would not meet the Project purpose to generate renewable energy in support of regional and State energy policies, therefore the "no action" alternative was rejected as it was not consistent with the overall Project purpose.

Alternative 2, 28 Turbine Layout: The original Project layout included turbines in the towns of Caratunk and Moscow, Maine and was located, in part, within 8 miles of the Appalachian National Scenic Trail (AT). An evaluation of the wind energy ordinance in the Town of Caratunk determined that siting portions of the Project within this municipal jurisdiction would not be economically feasible. This fact, combined with potential visual impacts associated with siting the Project within 8 miles of the AT, had the effect of reducing the area available for siting turbines. This resulted in limiting siting options to the Town of Moscow in areas located greater than 8 miles from the AT. To find additional buildable area, the Project siting evaluation was moved south and west to commercial timber lands located adjacent to the former defense radar facility. Much of the siting work at this stage involved locating turbines to avoid conflicts with the existing natural resources within the Project area and to avoid conflicts with CMP's existing Section 222 transmission line that runs through the Project area. These constraints made the original 28 turbine layout difficult to design without significant impacts to natural resources, along with the existing land uses identified south and west of the Project.

Alternative 3, 14 Turbine Layout, Proposed Project: The Project layout as proposed minimizes wetland and other habitat impacts, is cost effective, and meets the Project purpose. The Applicant considered multiple criteria when determining turbine locations for the proposed Project, with the most important criteria being the presence of a quality wind resource. Measures were taken to reduce the impacts of construction and operation of turbines on the site. Proximity of turbines to existing infrastructure (e.g., roads, electrical interconnection) was an important factor, as it minimized the number of new roads needed for the Project and subsequently reduced the amount of disturbance required for cutting and filling. Moderate slopes were preferred and selected to minimize the amount of erosion and runoff potential, as well as to reduce cut and fill impacts. Avoiding wetlands, stream crossings, and other high-value natural resources (i.e., SWH, SVPs) was an important consideration in the siting of turbines and locations of electric transmission lines and new roads. Maintaining buffers around natural resources also was factored into the design process. Further avoidance and minimization efforts included micro-siting of turbines and using existing roads to the maximum extent practicable, installing the majority of electrical collector lines underground within existing or new roads, using existing onsite overhead distribution lines where practicable, narrowing access road footprints in some areas, adjusting turbine grading limits, and minimizing vegetative clearing. Turbine pads were sited in upland areas away from wetland boundaries as much as feasible. Footprints of some turbine pads were reshaped or reduced to avoid impacts to nearby wetlands.

Figure 2-1 illustrates the Study Area for the proposed 14 turbine layout, including alternatives for ADLS Towers, 34.5 kV electrical collector system, interconnection substation, and O&M building which represents the least environmentally damaging practicable alternative for the Project.

Figures

- Figure 2-1 Project Study Area

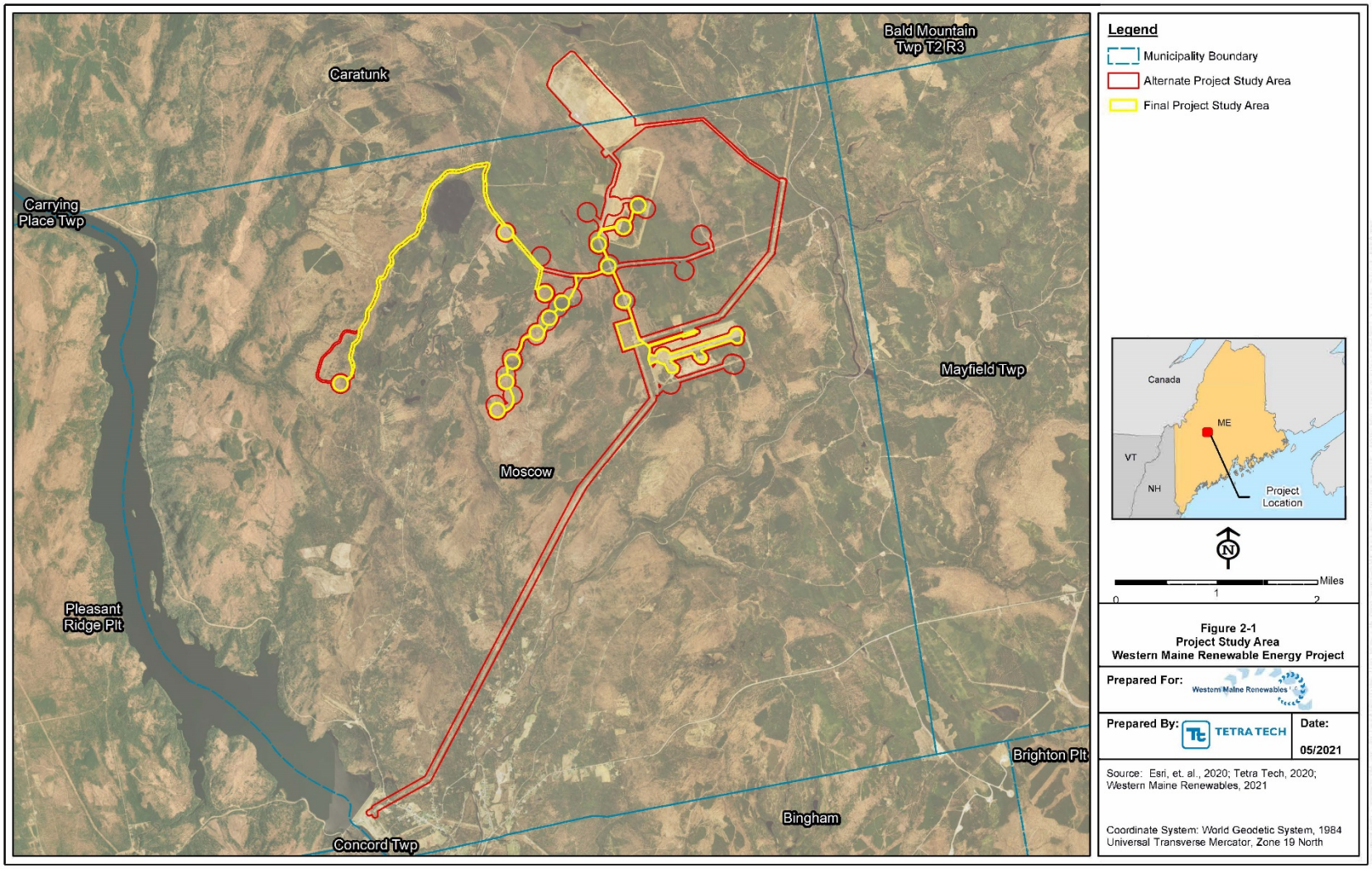

Figure 2-1 Project Study Area.

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