APPENDIX D

Prairie Dog Colony Status and Mapping Report

Prairie Dog Colony Status and Mapping

Philip Wind Project

Haakon County, South Dakota

Final Report

January to October 2022

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1 INTRODUCTION

Philip Wind Partners, LLC (Philip Wind) is proposing to construct the Philip Wind Project (Project), a wind energy generation facility, in Haakon County, South Dakota (Figure 1.1). Philip Wind contracted Western EcoSystems Technology, Inc. (WEST) to conduct a black-tailed prairie dog (*Cynomys ludovicianus*) colony mapping effort. The objective was to identify and determine colony status (active versus inactive) and map active prairie dog colonies in the March 2022 Project Area (Project Area) and the Study Area, a separate 2.0-mile (mi) buffer from the Project Area (Figure 1.1). In addition, prairie dog colonies were scanned visually for burrowing owls and swift fox.

2 PROJECT AREA

The Project is located approximately 14 mi north of the city of Philip in Haakon County, South Dakota (Figure 1.1). The Project Area encompasses approximately 68,569 acres (ac) within two level IV ecoregions: the Sub-humid Pierre Shale Plains and the Rivers Breaks (U.S. Environmental Protection Agency [USEPA] 2012). These ecoregions, historically dominated by grasslands have been extensively converted for agricultural use (e.g., row crops and livestock grazing; USEPA 2012), and contain semi-permanent and seasonal wetlands, often referred to as prairie potholes.

Topography within the Project Area is gently rolling to flat. The primary land cover within the Project Area is grassland/herbaceous and cultivated crops. Wetlands are relatively evenly dispersed throughout the Project Area and are mainly classified as freshwater emergent and freshwater pond. Topography and land cover types in the Study Area are similar to those described for the Project Area.

Prairie dogs and their colonies are found throughout the western three-fourths of South Dakota (U.S. Fish and Wildlife Services [USFWS] 2009). They are a common prey species for many mammals and raptors including badgers, coyote, black-footed ferret, and eagles (Hoogland 1995, USFWS 2009). Prairie dog colonies and the surrounding grassland landscape are important to other species including swift fox (Sasmal et al, 2021) and burrowing owls (Desmond et al. 2000). In South Dakota, the prairie dog population is considered stable (South Dakota Game, Fish, and Parks 2023) because of the successful implementation of a black-tailed prairie dog conservation and management plan (Cooper and Gabriel 2005).

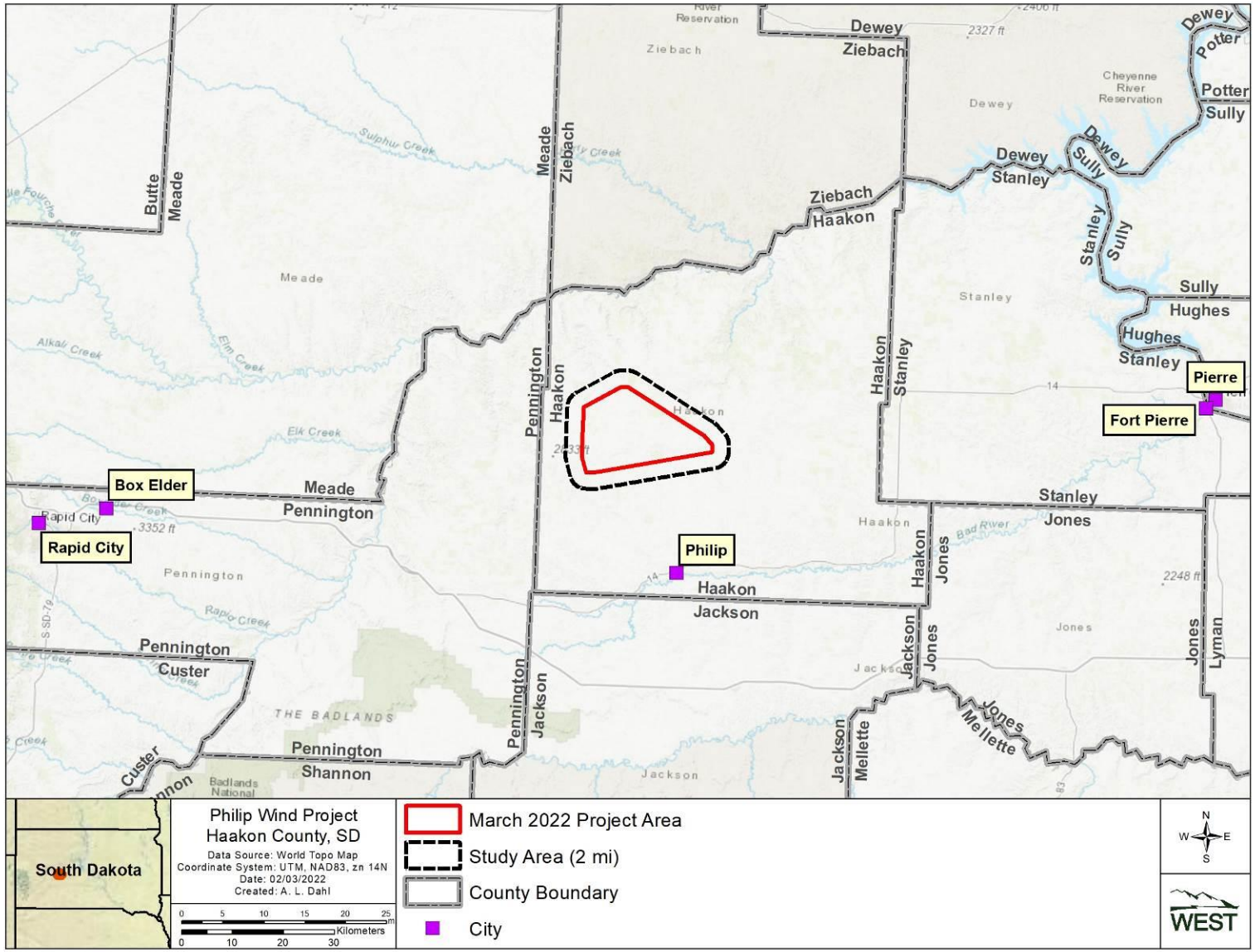

Figure 1.1 Location of the Philip Wind Project in Haakon County, South Dakota, 2022.

3 METHODS

Prairie dog colonies were identified and mapped through a desktop review and field surveys. The desktop review consisted of a data request to identify historical colonies and a review of aerial imagery to identify potential colonies. Field surveys were conducted to determine the status of identified colonies and to map active colonies. Additionally, swift fox (*Vulpes velox*) and burrowing owls (*Athene cunicularia*) were recorded incidentally, if observed during the mapping efforts within or immediately adjacent to any colony.

3.1 Desktop Review

Historical prairie dog colonies were identified and located within the Project Area and Study Area using data discussed during an agency meeting including Western Area Power Administration, U.S. Fish and Wildlife Service, and South Dakota Game Fish and Parks on August 14, 2018. No additional data on prairie dog colonies were provided in a data request for information on state or federally listed threatened and endangered species, rare species and habitats by the South Dakota Natural Heritage Database (SDNHD) on October 21, 2022. Additionally, WEST conducted a desktop review of aerial imagery using the National Agricultural Imagery Program (U.S. Department of Agriculture 2022) to identify potential prairie dog colonies within both the Project and Study areas. If a potential colony was detected, the approximate boundary was digitized using geographic information system (GIS) and the colony was given a unique ID. Maps and files showing all potential colonies, unique ID, roads, cities, and land access information were compiled for follow up field surveys.

3.2 Field Surveys and Mapping

Prairie dog colony locations were collected in conjunction with prairie grouse lek (transect surveys spaced every 400 meters; April 4-19, 20-27, 2022; Piorkowski 2022) and raptor nest surveys (combination of aerial surveys and ground verification surveys; February 24, March 19, and April 19, 2022; Piorkowski and Arellano 2023). These field-collected locations, combined with the potential prairie dog colonies from the desktop review, provided the locations to be visited for the mapping effort. All colonies were comprised of multiple locations (labelled with capital letters) – for example PD-01A, PD-01B, and PD-01C were three locations within one colony (Figure 3.1, Appendix A).

In August 2022, the Project Area was updated. Therefore, on-ground mapping was completed October 10-13, 2022 at potential colonies in areas where the August 2022 Project Area intersected the March 2022 Project Area and Study Area (Mapping Overlap; Figure 3.1). Biologist(s) visited the locations and walked the perimeter of the colony (i.e., outside edge of active burrows), recording approximate boundary using a sub-meter Global Positioning System (GPS; Trimble unit). Colony status was defined as active (presence of prairie dogs and fresh burrows, tracks and/or fecal droppings), inactive (absence of prairie dogs, old and unused

burrows), absent (no evidence remaining from a historical colony). The number of active burrows was recorded as an index to the number of prairie dogs.

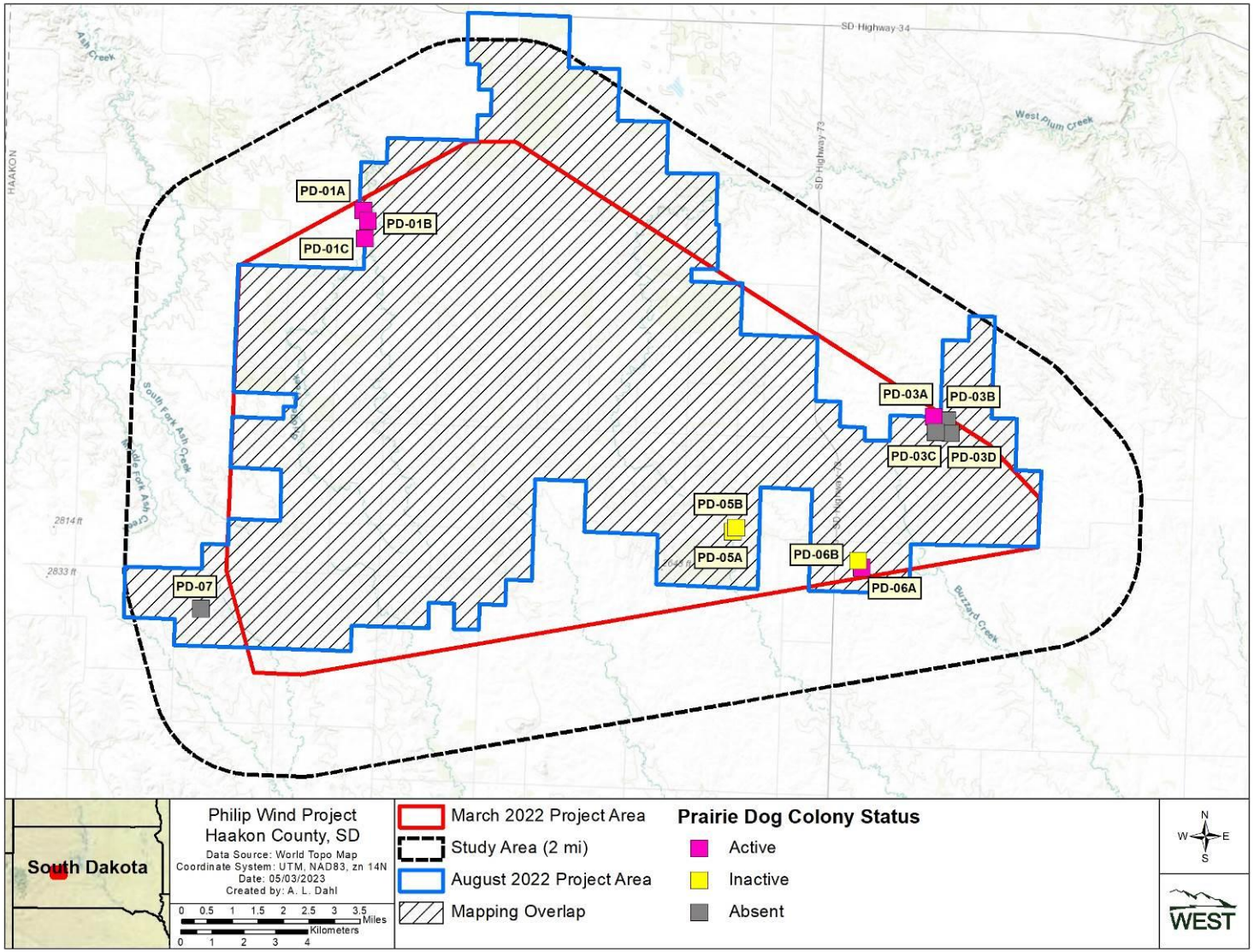

Figure 3.1. Status and location of prairie dog colonies at the Philip Wind Project in Haakon County, South Dakota, 2022.

4 RESULTS

The data discussed from the SDNHD (August 14, 2018) provided six historical prairie dog colony locations (PD-01A, 01B, 03A, 03B, 03C, and 03D) within the Project and Study areas (Table 4.1, Figure 3.1). Appendix A displays the delineated results of all active prairie dog colonies.

Twelve locations were surveyed for the presence of prairie dog colonies (Table 4.1, Figure 3.1) and include six historical and six new locations. Three active prairie dog colonies were located in the Project Area. PD-01A, PD-01B, and PD-01C are all active locations within the PD-01 colony (Appendix A). PD-03A is the only active location in the PD-03 colony, the three absent locations (PD-03B, PD-03C, and PD-03D) now experience regular agricultural practices. PD-06A is the only active location in the PD-06 colony, the one inactive location (PD-06B) also experiences regular agricultural practices.

Table 4.1. Status of historical and potential prairie dog colony locations at the Philip Wind Project in Haakon County, South Dakota, 2022.

Colony ID	Area (acres)	Colony History	2022 Status	2022 Comments
PD-01A	11.2	Historical	Active	Extends west beyond Project Area, >100 active burrows
PD-01B	10.5	Historical	Active	Extends west beyond Project Area, >100 active burrows
PD-01C	0.1	First observed in 2022	Active	Additional location near PD-01 A and B, < 10 active burrows, most of colony outside Project Area
PD-03A	4.3	Historical	Active	< 20 active burrows
PD-03B	0	Historical	Absent	Location is in crop field
PD-03C[1]	0	Historical	Absent	Location is in crop field
PD-03D[1]	0	Historical	Absent	Location is in crop field
PD-05A	0	First observed in 2022	Inactive	Old burrows present but filled in with dirt, no active burrows or prairie dog activity.
PD-05B	0	First observed in 2022	Inactive	Old burrows present but filled in with dirt, no active burrows or prairie dog activity.
PD-06A	3.3	First observed in 2022	Active	Fresh burrows present, <25 active burrows.
PD-06B	0	First observed in 2022	Inactive	Old burrows present but filled in with dirt, no active burrows or prairie dog activity.
PD-07	0	First observed in 2022 (desktop)	Absent	No colony present, no signs of old burrows or prairie dog activity

[1] Recorded as active during grassland surveys completed in 2018.

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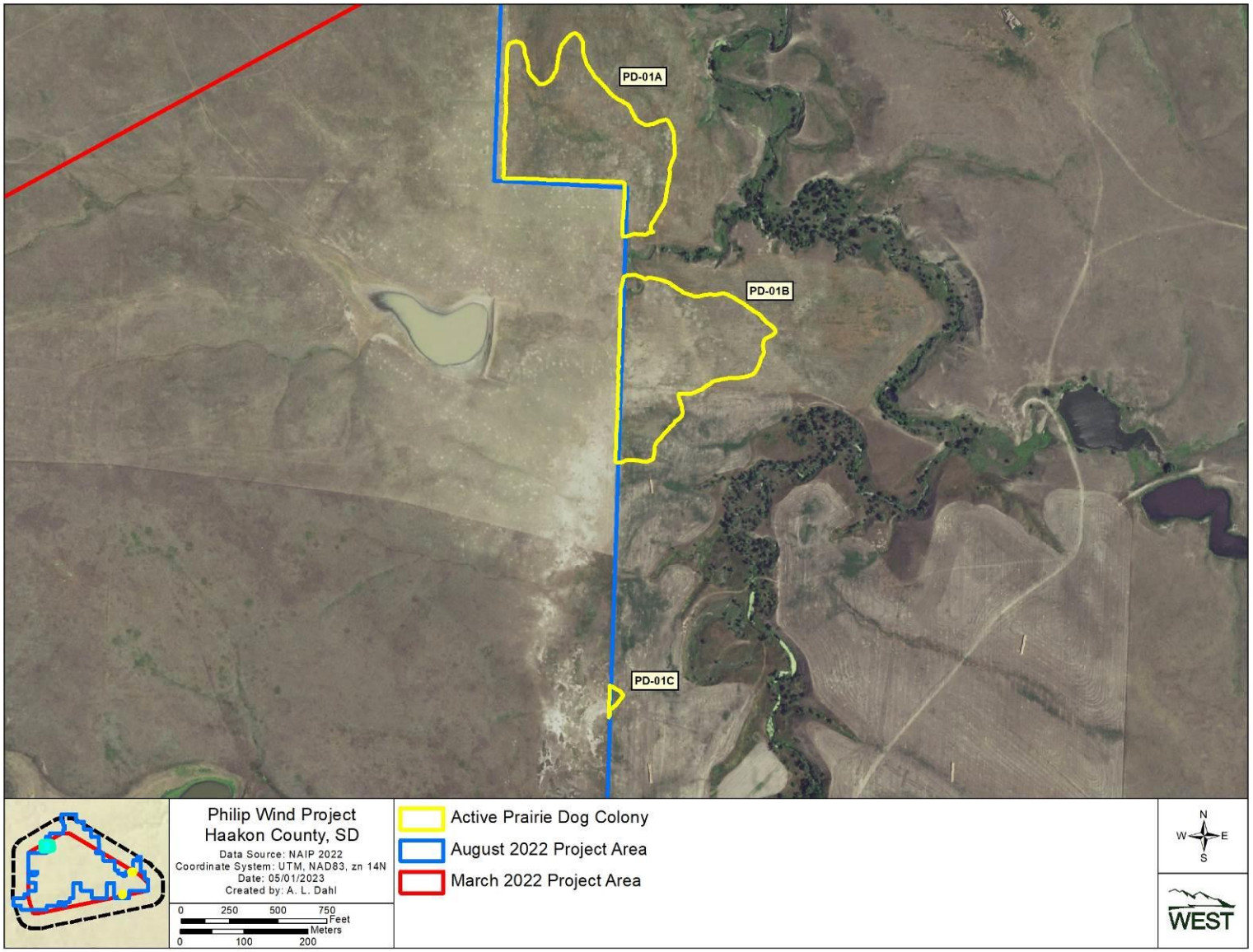
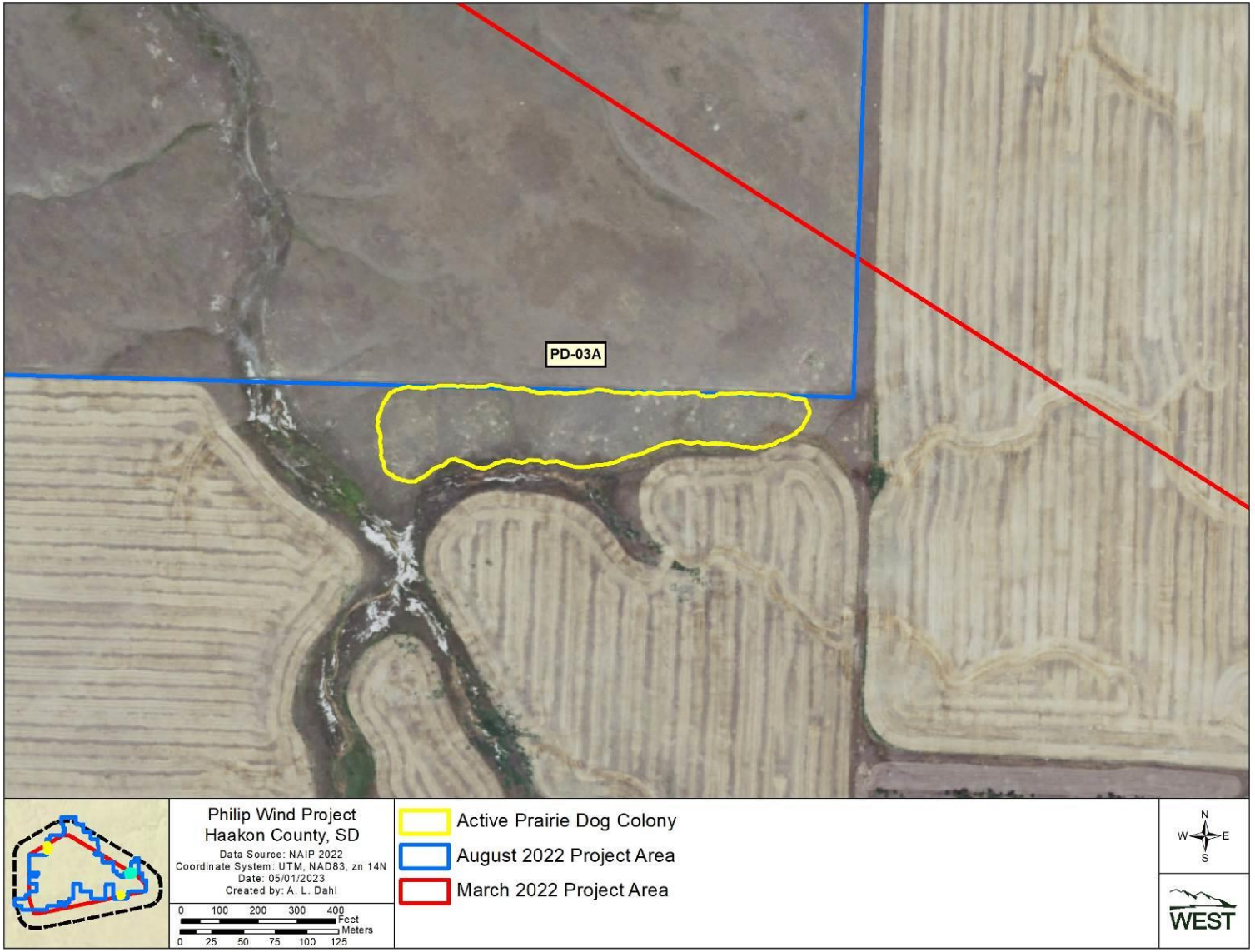
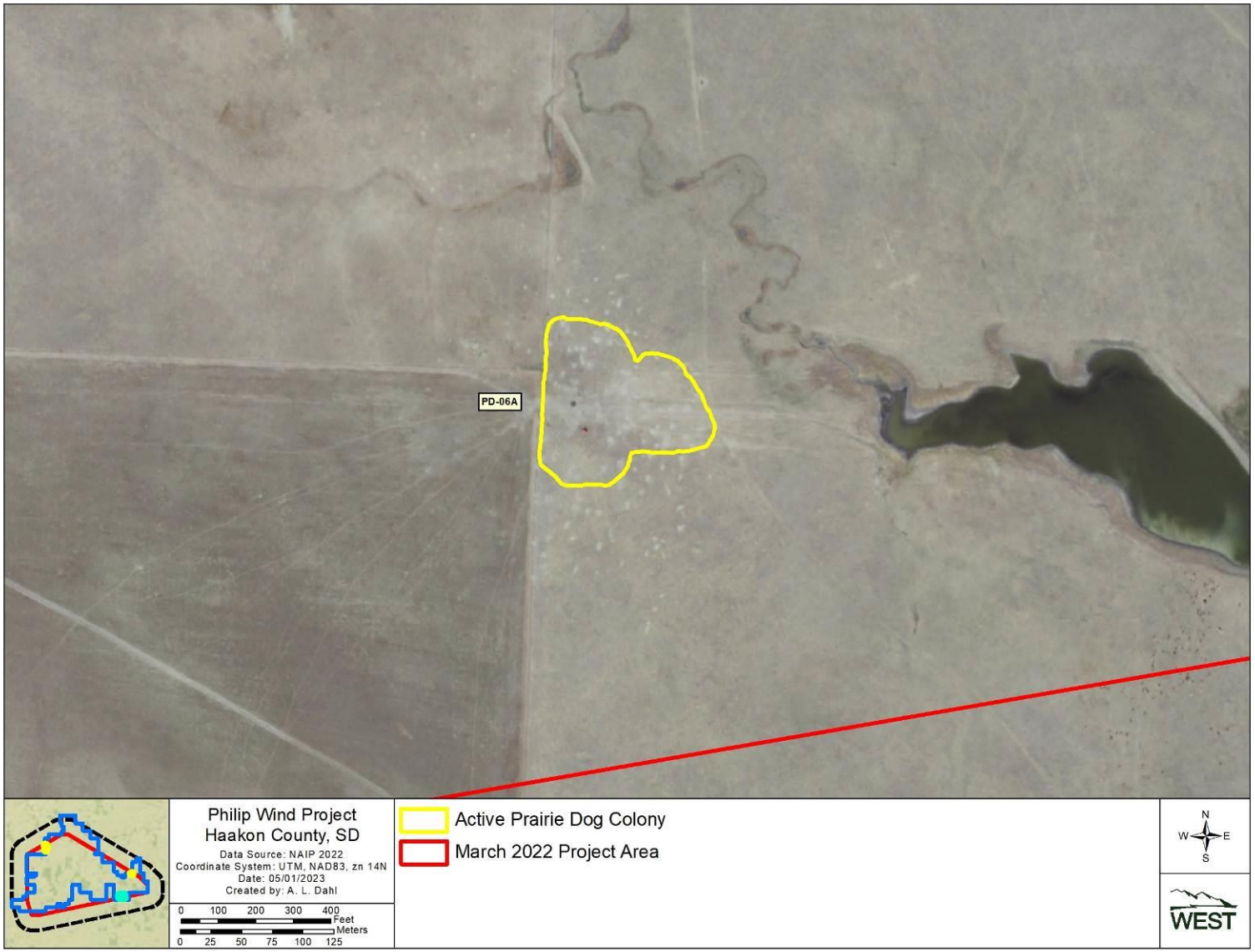
Appendix A. Delineation of Active Prairie Dog Colonies within the Philip Wind Project During 2022 Surveys, Haakon County, South Dakota.



Map A1. Active prairie dog colony PD-01 within northwestern portion of the Philip Wind Project, Haakon County, South Dakota.



Map A2. Active prairie dog colony PD-03 within eastern portion of the Philip Wind Project, Haakon County, South Dakota.



Map A3. Active prairie dog colony PD-06 within southeastern portion of the Philip Wind Project, Haakon County, South Dakota.