Winter Raptor Survey Report

Grass River Solar Project

St. Lawrence County, New York

ORES File Number: 24-03061

May 2025

Prepared for

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1.0 INTRODUCTION

CS Grass River Energy, LLC (hereafter CS Energy), a subsidiary of CS Energy Devco, LLC, proposes the construction and operation of the Grass River Solar Project (Project, ORES File number 23-03061) in the Towns of Madrid and Waddington, St. Lawrence County, New York (Figure 1).

CS Energy is assessing approximately 1380 acres of private land owned by multiple participating landowners (Project Survey Area). Project facilities will be located within a portion of the Project Survey Area and will include commercial-scale solar arrays, access roads, and buried (and possibly overhead) electric collection lines. CS Energy intends to interconnect to the existing transmission line located directly adjacent to the Project via an easement on privately held land.

Based on correspondence received from the New York State Office of Renewable Energy Siting (ORES) in response to the Project's wildlife site characterization report, originally received in November 2024 and modified in December 2024, potentially occupied habitat for wintering grassland raptors was deemed to be present within the Project Survey Area. The Survey effort was specifically prescribed to assess the potential presence of two New York State-listed threatened and endangered grassland raptor species, short-eared owl (*Asio flammeus*, New York State endangered) and northern harrier (*Circus hudsonius,* New York State threatened), during the winter season. As a result, Tetra Tech, Inc. (Tetra Tech), serving as biological consultant for this Project, prepared and submitted a winter raptor survey work plan in October 2024 which was conditionally approved by ORES in correspondence dated October 30, 2024 (Appendix A).

This report addresses findings of the wintering grassland raptor surveys, which were conducted between November 2024 and April 2025 within the Project Survey Area. This winter raptor survey report has been prepared in accordance with requirements stated in the ORES and New York State Department of Environmental Conservation (NYSDEC) *Survey Protocol for State-listed Wintering Grassland Raptor Species* (August 2021).

2.0 SITE DESCRIPTION

The Project Survey Area is located south of the St. Lawrence River, approximately 5.5 miles southwest of the Village of Waddington, St. Lawrence County, New York (Figure 1). The Project Survey Area includes mixed deciduous and coniferous forest and agricultural lands with sporadic residential development. The Project Survey Area is comprised mainly of agricultural fields and rangeland interspersed with areas of scrub/shrub, native grassland, and wooded hedgerows as well as undeveloped wooded areas. Stream and wetland features are also intermittently present throughout the Project Survey Area.

As a component of developing the wintering grassland raptor survey plan, Tetra Tech evaluated the Project Survey Area for open habitat, which is defined within the NYSDEC *Survey Protocol for State-listed Winter Grassland Raptor Species* (August 2021), as consisting of agricultural fields (pasture, row crop, hay, alfalfa and other field crops), grasslands, fallow fields, early successional fields or shrubland with sparse woody growth, and wet meadows or marshland.

Based on the National Landcover Database (NLCD) and corroborated by site visits associated with this survey effort, approximately 841.95 acres (60.81%) of the Project Survey Area is potential open habitat (cultivated crops, emergent herbaceous wetlands, hay/pasture, herbaceous areas, and shrub/scrub areas) as defined by NYSDEC (Table 1).

Areas of open habitat identified via aerial imagery and the field effort described below are depicted in Figure 2. Based on ORES guidance, surveys associated with this effort focused on open habitat patches within the Project Survey Area greater than 25 acres in size. After ground-truthing open habitats delineated during the preparation of the winter raptor survey work plan, it was determined that approximately 764 acres of open habitat consisting of contiguous blocks greater than 25 acres in size are present within the Project Survey Area. This acreage is used when describing viewsheds in subsequent sections.

Table 1

NLCD Land Cover Types within the Project Survey Area

Land Cover/Vegetation Cover Type	Acres	Percent
Open Lands Subject to Survey		
Cultivated Crops	112.69	8.14%
Herbaceous	1.08	0.08%
Hay/Pasture	672.93	48.61%
Emergent Herbaceous Wetlands	47.58	3.44%
Shrub/Scrub	7.67	0.55%
Subtotal	**841.95**	**60.81%**
Lands Not Subject to Survey		
Evergreen Forest	90.07	6.51%
Mixed Forest	28.17	2.03%
Woody Wetlands	268.87	19.42%
Open Water	0	0.00%
Developed, High Intensity	0.32	0.02%
Developed, Low Intensity	5.29	0.38%
Developed, Medium Intensity	2.87	0.21%
Developed, Open Space	30.26	2.19%
Deciduous Forest	116.70	8.43%
Subtotal	**542.55**	**39.19%**
Total	**1384.50**	**100 %**

3.0 TARGET SPECIES BACKGROUND INFORMATION

As stated above, the primary purpose of this survey effort was to assess the potential presence of listed raptor species within the Project Survey Area. Based on communications with ORES, the Project Survey Area is within the St. Lawrence River Valley Grassland Focus Area 5 and recent data in eBird indicate presence of northern harrier within one mile of the Project. Thus, ORES noted the Project Survey Area

has the potential to support northern harrier and short-eared owl. A brief summary of the life history of these species and their typically selected habitat types is provided below.

The northern harrier is currently listed as threatened in the State of New York. Individuals of this species typically forage in open grassland areas, where they feed upon small mammals and passerine songbirds. While fallow agricultural areas may be traversed during dispersal movements, they are typically not preferred due to a limited ability to support a prey base. Nesting of this species typically occurs in areas of tall grass, often adjacent to wetlands. Nests are placed on the ground and thus require sufficient vegetative cover for adequate concealment.

The short-eared owl is currently listed as endangered in the State of New York. Individuals of this species can typically be observed foraging in large open areas such as grasslands, meadows, marshes, or agricultural areas. Roosting and nesting typically occur on the ground in areas of tall grass and dense vegetation, which provide sufficient cover to be camouflaged and concealed during daylight hours. Owls are most active around dusk when foraging, often maintaining foraging efforts until long after sunset.

4.0 METHODS

4.1 Desktop Review and Determination of Survey Points

Tetra Tech submitted the Project's winter raptor survey work plan to ORES in October 2024. ORES conditionally approved the winter raptor survey work plan in correspondence dated October 30, 2024. The approved survey plan is included in this document as Attachment A. In drafting the work plan, Tetra Tech assessed the Project Survey Area using geographic information systems (GIS) to examine available potential open habitat for wintering grassland raptor species and determine areas that could potentially support use by wintering grassland raptors. Given the size and topography of the original Project Survey Area, Tetra Tech proposed eleven (11) survey "Points" to sufficiently cover potential grassland habitat within the Project Survey Area. Due to land access and lease negotiation changes that occurred prior to the start of the survey period with participating landowners, the proposed number of points was then reduced to 9 in order to cover open areas within the Project Survey Area depicted in Figure 1. In communication from ORES dated October 30, 2024, ORES recommended the addition of one additional survey point and the relocation of several others totaling ten (10) recommended Points. These recommended point locations, which were used to complete the survey effort, are depicted in Figure 1.

Upon observing conditions in the field and, given observed on-the-ground conditions (i.e., topography, current condition of vegetation/trees, etc.), Tetra Tech determined that several of the original Point locations should be moved to different locations to provide a more complete viewshed of open areas at each Point. These relocations were made during Week 1 of surveys and were maintained throughout the overall survey period. Figure 1 displays the updated locations of the ten (10) recommended Points. The visible viewshed from all Points is indicated in Figure 2, which covers approximately 95% of open habitat within the Project Survey Area.

4.2 Pre-Deployment Training

Prior to deployment in the field for winter raptor surveys, surveying biologists participated in a training session conducted on November 15, 2024, prior to the commencement of the first survey period. The session was led by qualified and experienced avian biologists who provided information on target species identification, field marks, and behavior, ORES/NYSDEC survey methods and protocols, weather criteria, and more. The training included both classroom and field components. Surveying biologists were not deployed in the field unless they had either participated in this training or viewed a recording of said training.

4.3 Field Survey Methods

Winter raptor surveys were conducted in accordance with the survey protocol provided by ORES titled NYSDEC *Survey Protocol for State-listed Wintering Grassland Raptor Species* (August 2021). In the Project's approved winter raptor survey work plan, only stationary surveys were proposed given that the Project Survey Area can be adequately observed from the proposed Points. Thus, the use of daytime driving surveys was not deemed necessary for this survey effort.

Surveys were conducted weekly by a team of qualified avian biologists (individually referred to as "Survey Events") during the overall "Survey Period." Dates and specific times of Survey Events are indicated in Table 2 below. Per the protocol, the schedule below covers two (2) Survey Events in November, four (4) Survey Events in December, four (4) Survey Events in January, four (4) Survey Events in February, four (4) Survey Events in March, and two (2) Survey Events in April. Given that target species were detected at a subset of Points during the final two weeks of March, it was determined that Survey Events during the first two weeks of April were warranted at Points with direct observations and those covering open habitats within 0.5 miles of an observation. This included survey Points 1-9 (Figure 1).

A concerted effort was made not to conduct Survey Events during periods of inclement weather, with specific reference to criteria set forth in the ORES/NYSDEC protocol (i.e., heavy rain or snow, fog, or strong winds greater than 12 miles per hour (mph)). Local weather conditions were measured at the start of the survey using a Kestrel Instruments Kestrel 2000 pocket wind and temperature meter. Conditions documented during and immediately prior to each Survey Event are described in Section 5.2 below.

Table 2

Winter Raptor Survey Event Timing and Duration

Week Number	Visit Number	Date	Start time	End time	Duration (minutes)	Visit Number	Date	Start Time	End Time	Duration (minutes)
1	1	11/18/2024	1530	1713	103	2	11/19/2024	1528	1710	102
2	1	11/24/2024	1526	1721	115	2	11/25/2024	1524	1705	101
2	3	11/26/2024	1524	1710	106	4	11/27/2024	1524	1707	106
3	1	12/3/2024	1520	1705	105	2	12/4/2024	1519	1655	96
4	1	12/12/2024	1523	1710	107	2	12/13/2024	1520	1710	110
5	1	12/18/2024	1520	1653	93	2	12/19/2024	1521	1705	104

Week Number	Visit Number	Date	Start time	End time	Duration (minutes)	Visit Number	Date	Start Time	End Time	Duration (minutes)
6	1	12/22/2024	1523	1723	120	2	12/23/2024	1524	1700	96
6	3	12/24/2024	1524	1715	111	4	12/25/2024	1525	1720	115
6	5	12/27/2024	1527	1705	98					
7	1	1/6/2025	1536	1715	99	2	1/7/2025	1537	1717	100
8	1	1/13/2025	1545	1722	97	2	1/14/2025	1545	1726	101
9	1	1/20/2025	1553	1731	98	2	1/21/2025	1553	1728	95
10	1	1/30/2025	1605	1742	97	2	1/31/2025	1606	1747	101
11	1	2/4/2025	1615	1755	100	2	2/5/2025	1615	1755	100
12	1	2/11/2025	1623	1800	97	2	2/12/2025	1625	1800	95
12	3	3/25/2025**	1819	2000	101					
13	1	2/19/2025	1635	1820	105	2	2/20/2025	1636	1813	97
14	1	2/25/2025	1643	1813	90	2	2/26/2025	1644	1830	106
15	1	3/4/2025	1653	1823	90	2	3/5/2025	1654	1830	96
16	1	3/10/2025	1800	1941	101	2	3/11/2025	1801	1942	101
17	1	3/17/2025	1810	1947	97	2	3/18/2025	1811	1948	97
18	1	3/25/2025	1819	2000	101	2	3/26/2025	1820	2004	104
19	1	4/1/2025	1828	2010	102	2	4/2/2025	1830	2000	90
20	1	4/9/2025	1836	2020	104	2	4/10/2025	1838	2010	92
20	3	4/14/2025	1845	2016	91					

*Certain weeks contained multiple survey events to account for weather conditions and/or surveyor availability around holidays

**Makeup Date for missed event

Data was collected using the provided NYSDEC Wintering Raptor Stationary Survey Data Sheet. During the surveys, biologists conducted stationary surveys from one hour before sunset until it was too dark to observe flying birds (at least one half-hour, or up to one full hour if conditions allowed, after sunset). The surveys were thus, at minimum, 90 minutes long.

Avian biologists documented observations of raptors and identified individuals to species when possible. When species identification was uncertain, raptors were documented by raptor group if possible (i.e., “unidentified buteo,” “unidentified accipiter,” or “unidentified eagle”) or simply as “unidentified raptor.” Additionally, avian biologists recorded the number of individuals per species observed, individual behavior, time of first and last observation of the raptor, and location of the target species relative to the observer. Avian biologists were provided with aerial imagery field maps, where raptor observation spatial data was recorded.

If target raptor species were confirmed, additional information including specific behaviors, flight paths and height, suspected foraging locations (if applicable) was recorded. Additionally, avian biologists documented any suspected roost sites of target species, based on repeated sightings of species in suitable habitat or observations of birds entering or leaving probable roost sites.

5.0 RESULTS

Results are presented in the following section as indicated by requirements described in the NYSDEC *Survey Protocol for State-listed Wintering Grassland Raptor Species* (August 2021). A comprehensive list of wildlife species observed in the course of the Survey Period is included in Table B1 (Appendix B). Field maps and individual data sheets for each Survey Event and by Point are included in Appendix D for reference.

5.1 Survey Point Habitat Descriptions and Viewshed Analysis

Point 1

Point 1 was located adjacent to an agricultural two track road in the northwest corner of the Project Survey Area to the west of Campbell Road. The surrounding landscape located within the viewshed was an inactive cow pasture dominated by grasses, with a United States Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) Wetland Reserve Program (WRP) easement consisting of a wetland/pond feature located within the field south of the point. The field was bordered by mixed hardwood forests to the south and southwest as well as a cattle pasture located across Campbell Road to the southeast. There were agricultural fields located outside of the Project Survey Area and viewshed to the north of the tree line at Point 1.

Positioned on a topographic rise, Point 1 provided optimal visibility of the open area in this field with viewshed of the field to the south, including the wetland as shown in Figure 2. From Point 1, 68 acres of open habitat were visible within and outside of the Project Survey Area boundary. Of the 764 acres of open habitat within the Project Survey Area, 56 acres were visible from Point 1 where the observer could likely detect bird activity near ground level.

Point 2

Point 2 was located in the northernmost field west of Randall Road. The surrounding landscape located within the viewshed consisted of an active cattle pasture to the south with an herbaceous section on the far side of the pasture to the southeast, providing open habitat. Dense forest bordered the field to the north and west, with a narrow tree line separating the northern viewshed of Point 4 from the southern viewshed of Point 2.

This point provided optimal visibility of the open area to the south as shown in Figure 2. From Point 2, a total of 43 acres were visible regardless of habitat type within and outside of the Project Survey Area boundary. Of the 764 acres of open habitat within the Project Survey Area, 33 acres were visible from Point 2 where the observer could likely detect bird activity near ground level.

Point 3

Point 3 was located along Campbell Road with visible cattle pastures to the east and west of the road. The viewshed of the western cattle field was bordered by dense forest to the west. The viewshed of the eastern cattle field was bordered by a tree line separating an additional cattle pasture to the north, dense forests to the east, and a cattle barn to the south. The viewshed extended to the north along Campbell Road and a residential property and County Route 31 to the south.

Point 3 provided optimal visibility of the open habitat to the east and west of Campbell Road as seen in Figure 2. From Point 3, a total of 63 acres of open habitat were visible within and outside of the Project Survey Area boundary. Of the 764 acres of open habitat within the Project Survey Area, 39 acres were visible from Point 3 where the observer could likely detect bird activity near ground level.

Point 4

Point 4 was located within a thin tree line bisecting an agricultural field northeast of the intersection of Campbell Road and County Route 31 allowing the observer to view the eastern and western portions of the field. The Project Survey Area to the east of the tree line consisted of a seasonal pasture bordered by tree lines to the east, a hill to the north, and Randall Road to the south. No cattle were observed utilizing this area during the Survey Period. To the west of the tree line, a pasture utilized by a variety of livestock was located on the northern half of the field and a seasonal pasture was located on the southern half with visibility extending to tree lines to the north, County Route 31 to the south, and a barn located on Campbell Road to the west. No cattle were observed utilizing the southern pasture during the survey.

This point provided optimal visibility of the open habitat to the east and west of the tree line as shown in Figure 2. From Point 4, a total of 83 acres of open habitat were visible within and outside of the Project Survey Area boundary. Of the 764 acres of open habitat within the Project Survey Area, 36 acres were visible from Point 4 to the east of the tree line and 27 acres were visible to the west of the tree line where the observer could likely detect bird activity near ground level.

Point 5

Point 5 was located in an agricultural field east of Town Line Road and adjacent to an existing solar facility. The landscape around Point 5 consisted of a pasture dominated by short grasses extending west across the field to Town Line Road. Further, the visible area from this Point includes a forested area to the south, with extensive shrub-scrub habitat and small trees to the east. Open habitats on sides of the Point are visible to the adjacent tree lines and the shrub-scrub area to the south. It should be noted that Point 5 is located adjacent to an existing community solar project which is separate from the currently proposed development.

Point 5 provided optimal visibility of the open habitat to the east, south, and west of the existing solar array as shown in Figure 2. From Point 5, a total of 91 acres of open habitat were visible within and outside of the Project Survey Area boundary. Of the 764 acres of open habitat within the Project Survey Area, 89 acres were visible from Point 5 where the observer could likely detect bird activity near ground level.

Point 6

Point 6 was located to the southwest of the intersection of Campbell Road and County Route 31. The surrounding area was dominated by rangeland with residential properties to the north. The viewshed extended to an active cattle pasture to the immediate south and a shrub-scrub area approximately half a mile to the south with a stream running east to west. Tree lines bordered this area to the east and south. The viewshed continues to a topographic rise to the west.

Point 6 provided optimal visibility of the open habitat to the south of County Route 31 as shown in Figure 2. From Point 6, a total of 131 acres of open habitat were visible within and outside of the Project

Survey Area boundary. Of the 764 acres of open habitat within the Project Survey Area, 123 acres were visible from Point 5 where the observer could likely detect bird activity near ground level.

Point 7

Point 7 is located along the western edge of the Project Survey Area along Town Line Road. The Project Survey Area surrounding Point 7 is an open area comprised of fallow agricultural fields used for row crops in every direction with a residential property to the west. A stream immediately north of Point 7 runs from the west to the northeast surrounded by a mix of shrub-scrub and scattered trees. This continues to a larger scrub-shrub section that can be seen to the east with visibility extending to the tree line. The viewshed extends to tree lines to the southeast and northwest of the point.

Point 7 provided optimal visibility of the open habitat to the east and west of Town Line Road as shown in Figure 2. From Point 7, a total of 136 acres of open habitat were visible within and outside of the Project Survey Area boundary. Of the 764 acres of open habitat within the Project Survey Area, 85 acres were visible from Point 7 where the observer could likely detect bird activity near ground level.

Point 8

Point 8 was located in the east-central portion of the Project Survey Area within a tree line to the west of Jenner Road allowing for visibility to the north and south of the tree line. The Project Survey Area around Point 8 is an open area consisting of a pasture with short grass. To the north, there is a field dominated by grass with visibility extending to a tree line. A shrub-scrub area with a stream running from the southeast to the west of Point 8 was visible to the west. To the east, additional fields dominated by grasses were visible on the east side of Jenner Road bordered by dense forest. On the south side of the tree line, a field dominated by grasses with a wetland along the tree line to the west and roads to the south and east were visible.

Point 8 provided optimal visibility of the open habitat to the east and west of Jenner Road as shown in Figure 2. From Point 8, a total of 156 acres of open habitat were visible within and outside of the Project Survey Area boundary. Of the 764 acres of open habitat within the Project Survey Area, 89 acres were visible from Point 8 to the north of the tree line and 50 acres were visible to the south of the tree line where the observer could likely detect bird activity near ground level.

Point 9

Point 9 is located in the south-central portion of the Project Survey Area north of Dunbar Road. The landscape around Point 9 is an open area consisting of a pasture with short grass that was actively grazed through most of the Survey Period. To the immediate north of the point was a cow pasture with a shrub-scrub wetland located approximately 280 meters away. A shrub-scrub wetland and stream is located to the east of the point, extending from Dunbar Road to the north. The viewshed from Point 9 extended to tree lines to the north, east, and west. South of the point across Dunbar Road, additional agricultural fields were visible.

Point 9 provided optimal visibility of open habitat to the north of Dunbar Road as shown in Figure 2. From Point 9, a total of 103 acres of open habitat were visible within and outside of the Project Survey Area boundary. Of the 764 acres of open habitat within the Project Survey Area, 95 acres were visible from Point 9 where the observer could likely detect bird activity near ground level.

Point 10

Point 10 is located in the southeast portion of the Project Survey Area on a topographic rise to the west of Jenner Road. The Project Survey Area around Point 10 was predominantly open area with fallow agricultural fields on the western side with visibility extending to the tree lines bordering the field. On the eastern side of Jenner Road, there was a residential property and narrow, open fields consisting of tall grass separated by tree lines.

Point 10 provided optimal visibility of the open habitat to the east and west of Jenner Road. From Point 10, a total of 95 acres of open habitat were visible within and outside of the Project Survey Area boundary. Of the 764 acres of open habitat within the Project Survey Area, 44 acres were visible from Point 10 where the observer could likely detect bird activity near ground level.

5.2 Survey Conditions

Event 1

During the 11/18/2024 survey, the temperature was 54°F, with sustained east winds at 3 miles per hour (mph). Cloud cover was approximately 75-100%, there was no snow crust present on the ground, and no precipitation occurring. Visibility was labeled “good” for the duration of the survey and no snow was present on the ground.

During the 11/19/2024 survey, the temperature was 53°F, with northwest winds at 2 mph. Cloud cover was approximately 0-25%, there was no snow crust present on the ground, and no precipitation occurring. Visibility was labeled “good” for the duration of the survey and no snow was present on the ground.

Immediately prior to the Survey Event dates, weather conditions consisted of temperatures between 51 and 47°F, with no precipitation and wind about 5-9 mph out of the northwest.

Event 2

Due to the holiday week, Survey Event 2 was conducted over several days.

During the 11/25/2024 survey, the temperature was 40°F, with calm winds at 1 mph. Cloud cover was approximately 0-25%, there was no snow crust present on the ground, and no precipitation occurring. Visibility was labeled “good” for the duration of the survey.

During the 11/26/2024 survey, the temperature was 45°F, with sustained west winds at 6 mph. Cloud cover was 75-100%, there was no snow crust present on the ground, and light rain occurring. Visibility was labeled “good” for the duration of the survey.

During the 11/27/2024 survey, the temperature was 39°F, with sustained west winds of 9 mph. Cloud cover was 25-50%, there was no precipitation occurring. Visibility was labeled “good” for the duration of the survey.

Immediately prior to the Survey Event dates, weather conditions consisted of temperatures between 35 and 40°F, with no precipitation and light rain with wind about 8-10 mph out of the southwest or south-southwest.

Event 3

During the 12/3/2024 survey, the temperature was 33°F, with sustained west winds at 4 mph. Cloud cover was approximately 75-100%, there was no snow crust present on the ground, and light snow occurring. Visibility was labeled “good” for the duration of the survey.

During the 12/4/2024 survey, the temperature was 32°F, with sustained southwest winds at 9 mph. Cloud cover was approximately 75-100%, there was no snow crust present on the ground, and occasional light snow flurries occurring. Visibility was labeled “good” for the duration of the survey.

Immediately prior to the Survey Event dates, weather conditions consisted of temperatures between 29 and 30°F, with light snow flurries with wind about 9-13 mph out of the south.

Event 4

During the 12/12/2024 survey, the temperature was 27°F, with variable northwest winds at 5-12 mph. Cloud cover was approximately 25-50%, there was no snow crust present and no precipitation occurring. Visibility was labeled “good” for the duration of the survey.

During the 12/13/2024 survey, the temperature was 27°F, with sustained northwest winds at 3 mph. Cloud cover was approximately 75-100%, there was no snow crust present on the ground, and no precipitation occurring. Visibility was labeled “good” for the duration of the survey.

Immediately prior to the Survey Event dates, weather conditions consisted of temperatures between 24 and 29°F, with light snow flurries with wind about 6-18 mph out of the west.

Event 5

During the 12/18/2024 survey, the temperature was 33°F, with sustained southwest winds at 1.5 mph. Cloud cover was approximately 75-100%, there was no snow crust present on the ground, and light snow occurring. Visibility was labeled “good” for the duration of the survey and one inch or less of snow was present on the ground.

During the 12/19/2024 survey, the temperature was 23.7°F, with sustained north winds at 1.9 mph. Cloud cover was approximately 0-75%, there was no snow crust present on the ground, and no precipitation occurring. Visibility was labeled “good” for the duration of the survey and two inches of snow was present on the ground.

Immediately prior to the Survey Event dates, weather conditions consisted of temperatures between 33-47°F, with light rain and wind about and 12-9 mph out of the north and southwest.

Event 6

Due to the Holiday week, surveys for Survey Event 6 were conducted over multiple days.

During the 12/22/2024 survey, the temperature was 7.5°F, with sustained west winds at 2mph. cloud cover was approximately 0-25%, there was no snow crust and no precipitation occurring. Visibility was labeled “good” for the duration of the survey and two inches of snow was present on the ground.

During the 12/23/2024 survey, the temperature was 20°F, with sustained south-southeast winds at 2mph. Cloud cover was approximately 75-100%, there was no snow crust present, and no precipitation occurring. Visibility was labeled “good” for the duration of the survey and two inches of snow was present on the ground.

During the 12/24/2024 survey, the temperature was 23.6°F, with calm winds. Cloud cover was approximately 50-75%, there was no precipitation occurring. Visibility was labeled “good” for the duration of the survey and ten inches of snow was present on the ground.

During the 12/25/2024 survey, the temperature was 20.7°F, with northwest winds at 2-3mph. Cloud cover was approximately 0-25%, there was no snow crust present, and no precipitation occurring. Visibility was labeled “good” for the duration of the survey and ten inches of snow was present on the ground.

During the 12/27/2024 survey, the temperature was 26°F, with south-southeast winds at 2-3mph. Cloud cover was approximately 75-100%, there was no snow crust present, and no precipitation occurring. Visibility was labeled “good” for the duration of the survey and eight inches of snow was present on the ground.

Immediately prior to the Survey Event dates, weather conditions consisted of temperatures between 8-26°F, with light snow and wind about 0-5 mph out of the north and east.

Event 7

During the 1/6/2025 survey, the temperature was 13.1°F, with sustained west winds at 5-6 mph. Cloud cover was approximately 75-100%, there was no snow crust present, and occasional light snow occurring. Visibility was labeled “good” for the duration of the survey and there was two inches of snow present on the ground.

During the 1/7/2025 survey, the temperature was 19.5°F, with sustained winds at 11mph occasionally gusting to 15 mph. Cloud cover was approximately 75-100%, there was no snow crust present and no precipitation occurring. Visibility was labeled “good” for the duration of the survey and four inches of snow was present on the ground.

Immediately prior to the Survey Event dates, weather conditions consisted of temperatures between 12-21°F, with light snow and winds -13-15 mph out of the north.

Event 8

During the 1/13/2025 survey, the temperature was 31°F, with sustained winds at 8mph. Cloud cover was approximately 75-100%, there was no snow crust present, and light snow occurring. Visibility was labeled “good” for the entirety of the survey and approximately 4 inches of snow was present on the ground.

During the 01/14/2025 survey, the temperature was 28°F, with sustained west winds at 7mph. Cloud cover was approximately 75-100%, there was no snow crust present on the ground, and occasional light snow occurring. Visibility was labeled “good” for the duration of the survey and 3-4 inches of snow present on the ground.

Immediately prior to the Survey Event dates, weather conditions consisted of temperatures between 25-32°F with no precipitation and winds13-17 mph out of the southwest.

Event 9

During the 1/20/25 survey, the temperature was 9°F, with sustained west winds at 3.7 mph. Cloud cover was approximately 0-25%, there was snow crust present with 2-3 inches of snow present on the ground and no precipitation occurring. Visibility was labeled “good” for the entirety of the survey.

During the 1/21/2025 survey, the temperature was 13°F, with sustained southwest winds at 3 mph. Cloud cover was approximately 0-25%, there was snow crust present on the ground with a snow depth of 2 inches, and no precipitation occurring. Visibility was labeled “good” for the duration of the survey.

Immediately prior to the Survey Event dates, weather conditions consisted of temperatures between 7-14°F, with no precipitation and winds 7-10 mph out of the southeast and west.

Event 10

During the 1/30/2025 survey, the temperature was 18°F, with variable winds at 2 mph. Cloud cover was approximately 0-25%, there was no snow crust present, and no precipitation occurring. Visibility was labeled “good” for the entirety of the survey and approximately 6 inches of snow was present on the ground.

During the 1/31/2025 survey, the temperature was 28°F, with sustained northeast winds at 6 mph. Cloud cover was approximately 75-100%, there was no snow crust present on the ground, and no precipitation occurring. Visibility was labeled “good” for the duration of the survey.

Immediately prior to the Survey Event dates, weather conditions consisted of temperatures 19-26°F, with no precipitation and winds 7-10 mph out of the south and northeast.

Event 11

During the 2/4/2025 survey, the temperature was 17.3°F, with sustained west winds at 7 mph. Cloud cover was approximately 0-25%, there was snow crust present, and no precipitation occurring. Visibility was labeled “good” for the entirety of the survey and 6-12 inches of snow was present on the ground.

During the 2/5/2025 survey, the temperature was 11.8°F, with sustained south winds at 2.7 mph. Cloud cover was approximately 0-25%, there was snow crust present on the ground, with a snow depth of 10-12 inches, and no precipitation occurring. Visibility was labeled “good” for the duration of the survey.

Immediately prior to the Survey Event dates, weather conditions consisted of temperatures between 10-19 °F with no precipitation and winds 12-5 mph.

Event 12

During the 2/11/2025 survey, the temperature was 21°F, with sustained northwest winds at 7 mph. Cloud cover was approximately 75-100%, there was no snow crust present, with snow depth of 10-18 inches, and no precipitation occurring. Visibility was labeled “good” for the entirety of the survey.

During the 2/12/2025 survey, the temperature was 13°F, with sustained east-northeast winds at 10 mph. Cloud cover was approximately 75-100%, there was no snow crust present on the ground, and no precipitation occurring. Visibility was labeled “good” for the duration of the survey and there was approximately 8-14 inches of snow on the ground.

Immediately prior to the Survey Event dates, weather conditions consisted of temperatures between 13-23°F, with no precipitation and winds 10-13 mph out of the north and west.

Event 13

During the 2/19/2025 survey, the temperature was 11.3°F, with sustained west winds at 6.5 mph. Cloud cover was approximately 0-25%, there was snow crust present with a snow depth of approximately 18-24 inches, and no precipitation occurring. Visibility was labeled “good” for the entirety of the survey.

During the 2/20/2025 survey, the temperature was 19.1°F, with sustained north winds at 1.8 mph. Cloud cover was approximately 75-100%, there was snow crust present on the ground with a snow depth of approximately 18-24 inches, and no precipitation occurring. Visibility was labeled “good” for the duration of the survey.

Immediately prior to the Survey Event dates, weather conditions consisted of temperatures between 17-13°F, with no precipitation and winds 6-8 mph out of the southwest.

Event 14

During the 2/25/2025 survey, the temperature was 38°F, with sustained southwest winds at 4 mph. Cloud cover was approximately 75-100%, there was no snow crust present with a snow depth of 10-16 inches, and no precipitation occurring. Visibility was labeled “good” for the entirety of the survey.

During the 2/26/2025 survey, the temperature was 36°F, with sustained southwest winds at 2 mph. Cloud cover was approximately 0-25%, there was snow crust present on the ground with a snow depth of 10-16 inches, and no precipitation occurring. Visibility was labeled “good” for the duration of the survey.

Immediately prior to the Survey Event dates, weather conditions consisted of temperatures between 37-40°F, with light rain and winds 9-3 mph out of the southwest.

Event 15

During the 3/4/2025 survey, the temperature was 35°F, with sustained northeast winds at 2.5 mph. Cloud cover was approximately 75-100%, there was no snow crust present with a snow depth of 8-10 inches, and light rain occurring. Visibility was labeled “good” for the entirety of the survey and there was no snow present on the ground.

During the 3/5/2025 survey, the temperature was 40°F, with sustained east winds at 6 mph. Cloud cover was approximately 75-100%, there was snow crust present on the ground with a snow depth of 6-12 inches, and no precipitation occurring. Visibility was labeled “fair” for the duration of the survey due to intermittent fog.

Immediately prior to the Survey Event dates, weather conditions consisted of temperatures between 38-41°F, with light precipitation and winds 5-7 mph out of the southwest and east.

Event 16

During the 3/10/2025 survey, the temperature was 41.2°F, with sustained southwest winds at 3.5 mph. Cloud cover was approximately 75-100%, there was no snow crust present with a snow depth of 5 inches, and no precipitation occurring. Visibility was labeled “good” for the entirety of the Survey Event.

During the 3/11/2025 survey, the temperature was 46.8°F, with sustained southeast winds at 6.8 mph. Cloud cover was approximately 25-50%, there was no snow crust present on the ground with a snow depth of 3 inches, and no precipitation occurring. Visibility was labeled “good” for the duration of the survey.

Immediately prior to the Survey Event dates, weather conditions consisted of temperatures between 44-52°F, with no precipitation and winds 6-14 mph out of the southeast and west.

Event 17

During the 3/17/2025 survey, the temperature was 41.3°F, with sustained northwest winds at 1 mph. Cloud cover was approximately 75-100%, there was no snow crust present, and no precipitation occurring. Visibility was labeled “good” for the entirety of the survey.

During the 3/18/2025 survey, the temperature was 47.3°F, with sustained north winds at 2.2 mph. Cloud cover was approximately 0-25%, there was no snow crust present on the ground, and no precipitation occurring. Visibility was labeled “good” for the duration of the survey.

Immediately prior to the Survey Event, weather conditions consisted of temperatures 52-30°F, with no precipitation and winds 8-12 mph out of the north and southwest.

Event 18

During the 3/25/2025 survey, the temperature was 36°F, with sustained west winds at 5.4 mph. Cloud cover was approximately 75-100%, there was no snow crust present, no snow on the ground, and no precipitation occurring. Visibility was labeled “good” for the entirety of the survey.

During the 3/26/2025 survey, the temperature was 35°F, with sustained west winds at 1.7 mph. Cloud cover was approximately 75-100%, there was no snow crust present, no snow on the ground, and no precipitation occurring. Visibility was labeled “good” for the duration of the survey.

Immediately prior to the Survey Event, weather conditions consisted of temperatures between 37-34°F, with no precipitation and winds 9-16 mph out of the west and southwest.

Event 19

During the 4/1/2025 survey, the temperature was 32°F, with sustained west winds at 6 mph. Cloud cover was approximately 0-25%, there was no snow crust present, and no precipitation occurring. Visibility was labeled “good” for the entirety of the survey and there was no snow present on the ground.

During the 4/2/2025 survey, the temperature was 37°F, with sustained east winds at 8 mph. Cloud cover was approximately 75-100%, there was no snow crust present, and no precipitation occurring. Visibility was labeled “good” for the entirety of the survey and there was no snow present on the ground.

Immediately prior to the Survey Event, weather conditions consisted of temperatures between 33-35°F with no precipitation and winds 8-17 mph out of the north and east.

Event 20

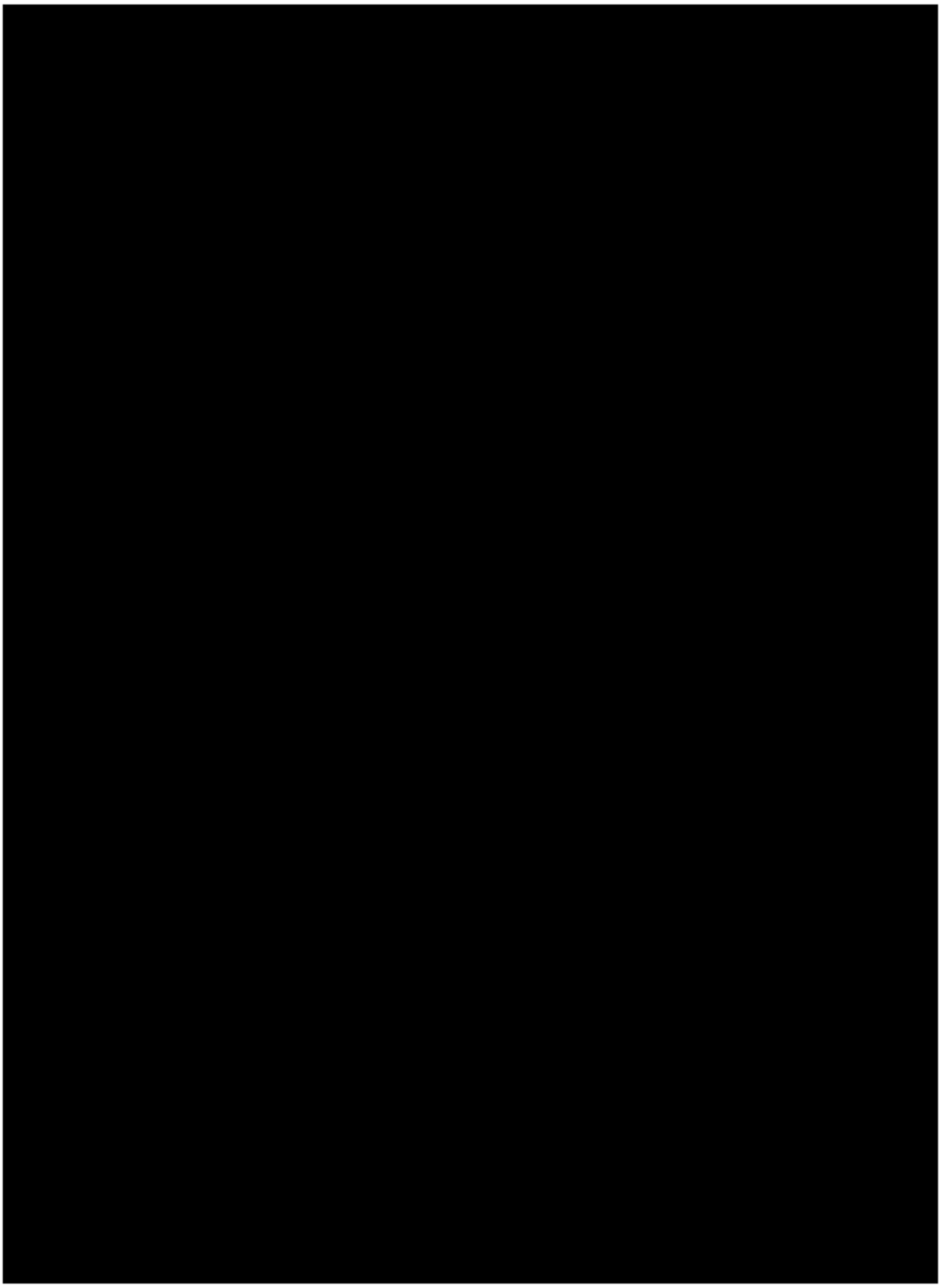
During the 4/9/2025 survey, the temperature was 36.4°F, with south winds at 8 mph. Cloud cover was approximately 0-25%, there was no snow crust present, and no precipitation occurring. Visibility was labeled “good” for the entirety of the survey and there was no snow present on the ground.

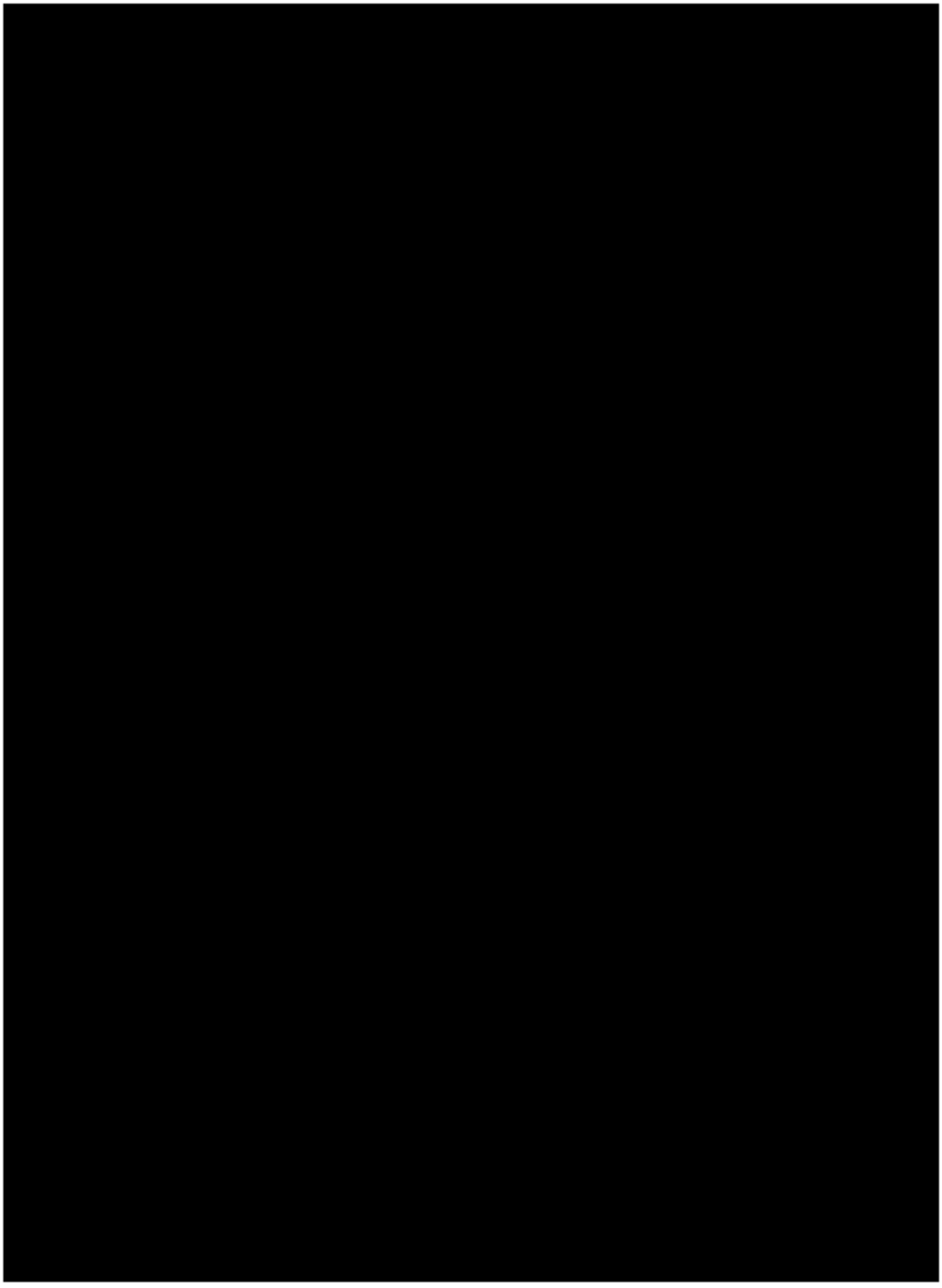
During the 4/10/2025 survey, the temperature was 43°F, with southeast winds at 4 mph. Cloud cover was approximately 75-100%, there was no snow crust present, and no precipitation occurring. Visibility was labeled “good” for the entirety of the survey and there was no snow present on the ground.

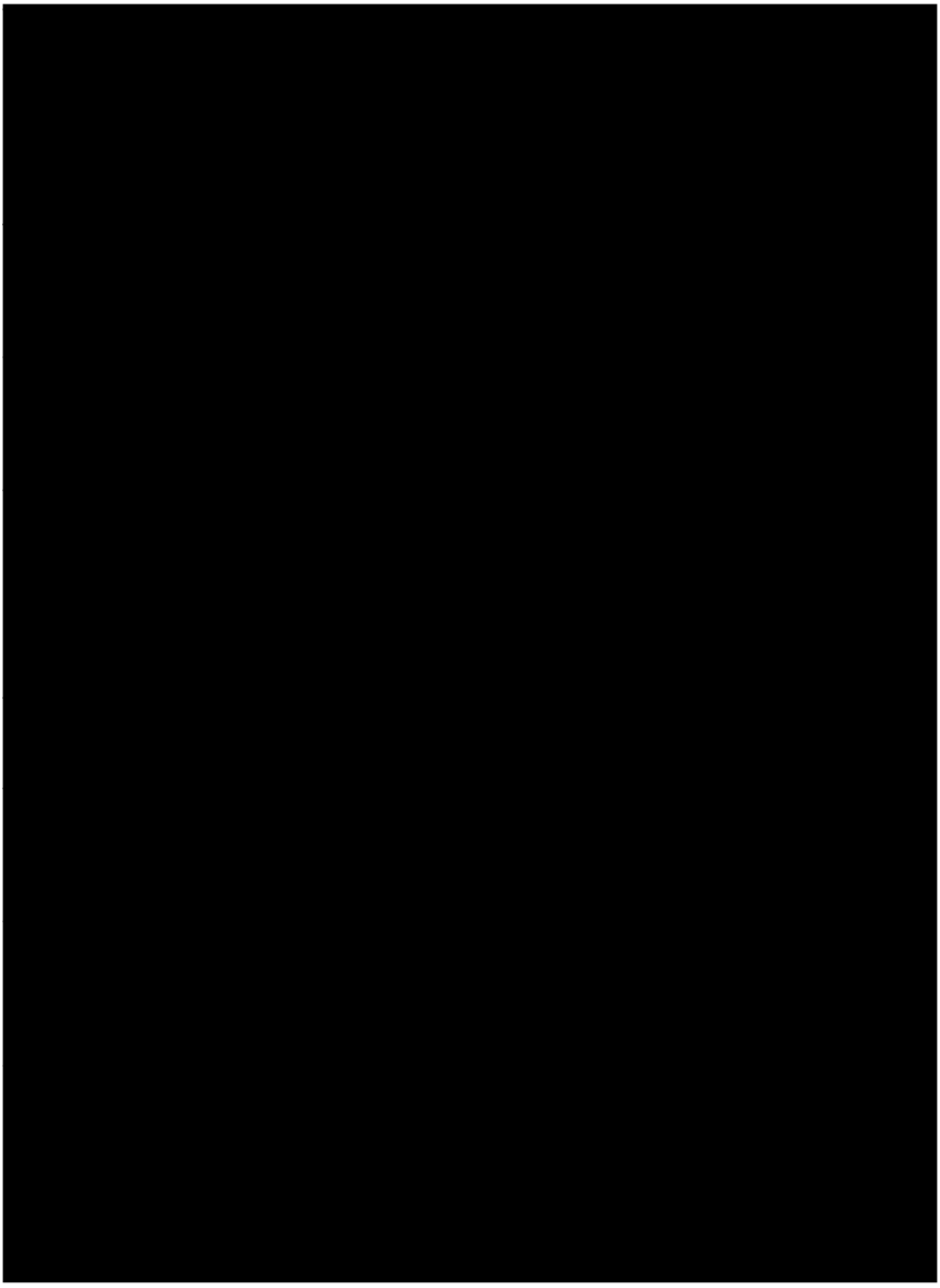
Immediately prior to the Survey Event, weather conditions consisted of temperatures between 33-45°F with no precipitation and winds 2-12 mph out of the southeast and southwest.

5.3 Raptor Species Observations by Survey Point

Observations of raptor species observed at each Point are summarized in detail below. Raptor species observed during each Survey Event are summarized in Table B2 (Appendix B). Locations of observations of State-listed or special concern species can be seen in Figures 3a-s. These figures additionally display flight paths of observed target species, providing a cursory indication of habitat usage within the Project Survey Area as well as areas within the viewshed of established Points.







[redacted]

5.4 Potential Roosting Locations

There were no probable roosting locations documented within the Project Survey Area for short-eared owl or northern harrier. Although both northern harrier and short eared owl were observed within the Project Survey Area, no probable roosts were observed and identified. Observations of both species were limited to flyovers and temporary foraging visits which were concentrated during a limited number of survey events during the early and late part of the survey period. This suggests that habitats within the site may be used as a migratory stopover, but do not appear to provide a location for winter roosting. This was corroborated by the lack of observation of any individuals or groups of individauls leaving probable roost sites in tall vegetation or dense conifers or shrubs. [redacted] No roosting behaviors were observed at this location and there is limited suitable roosting habitat available due to short, heavily grazed grass or fallow fields dominating the habitat within the open habitats within the Project Survey Area. [redacted] observations within the northern portion of the Project Survey Area were limited to only flyovers. Foraging behaviors observed within the southern portion of the Project Survey Area were recorded in the same locations as [redacted] the Project Survey Area. Given the timing of observations early and late in the Survey Period with minimal observations in between, it is likely that target species utilize the Project Survey Area as temporary roosting or stopover habitats during migratory movements. However, survey data does not suggest established roost sites within the Project Survey Area.

5.5 Potential Suitable Target Species Habitat

During the Survey Period, raptor observations indicated suitable target species habitat was present within portions of the Project Survey Area. Habitat that would provide foraging opportunities for northern harrier or short-eared owl occurs in the immediate vicinity surrounding the shrub-scrub wetland area between [redacted] observations. This patch consisted of shrub-scrub habitat, with some small trees interspersed with wetland vegetation and tall grasses and forbs, all of which provide ample cover for winter raptor prey species such as mice and voles. Additionally, this patch is surrounded by open agricultural land near points 5, 7, 8, and 9, which provided additional open habitat for foraging, albeit less optimal as these were mostly fallow agricultural fields or heavily grazed pastures with very short grass. Thus, the open habitat centered between points 5, 7, 8, and 9 seemingly provides the best available suitable foraging habitat for both target species within the Project Survey Area.

[redacted] No other observations of northern harrier or short-eared owl were observed within this portion of the Project Survey Area throughout the rest of the Survey Period, likely due to these fields providing marginal habitat because of heavy grazing. The nature of the [redacted] also indicated that the norther harrier(s) observed were likely migratory individuals briefly passing through the Project Survey Area. The fields around these points contained pastures with very short grass during the Survey Period that did not provide ideal cover for prey species or sufficient cover for roost sites. Lack of taller vegetation and grass, especially with deep snow cover during winter, effectively eliminates foraging or roosting opportunities for target species and is likely why there were minimal target observations at these fields. Lastly, while still over the 25-acre threshold for suitable habitat patch size, these fields are generally smaller and surrounded by tree lines and dense forested areas as opposed to the larger, more open fields in the central portion of the Project Survey Area. Thus, it is Tetra Tech's opinion that fields visible from Points 1, 2, 3, 4, and 6 provide minimal potential suitable target species habitat for foraging and no suitable habitat for roosting.

The remainder of open habitat in the Project Survey Area, including fields adjacent to Point 10, was comprised of fallow agricultural land and heavily grazed pastureland during the Survey Period, primarily consisting of bare ground with only corn stubble and minimal grasses or forbs to provide cover for prey items for target species. Further, the fields east of Point 10 are small, narrow and surrounded by well-established tree lines and, except for their open connection to the field on the west side of Jenner Road, are below the 25-acre threshold for suitable target species habitat. Additionally, these fields yielded no target species observations overall. Special-status raptors observed at this location were flyover observations, and appeared to be in transit between other nearby areas of suitable habitat. Thus, these fields are not considered to provide suitable foraging or roosting habitat for target species.

[redacted]

[redacted]

5.6 Incidental Observations of Non-target Species

Sixty eight (68) wildlife species were observed within the Project Survey Area during the Survey Period. A complete list of wildlife species observed incidentally during the Survey Period is included in Appendix B, which includes non-avian species observed incidentally during survey efforts. American bittern (*Botaurus lentiginosus*) and horned lark (*Eremophila alpestris*), listed as a species of special concern in New York State, were observed in the wetland by Point 1 and open agricultural areas, respectively, during the later Survey Events in early Spring. Rusty blackbird (*Euphagus carolinus*) and eastern meadowlark (*Sturnella magna*), listed as high priority species of greatest conservation need in New York State, were observed occasionally during the early Spring portion of the Survey Period. Snow bunting (*Plectrophenax nivalis*), an arctic-breeding songbird identified by the NYSDEC *Survey Protocol for State-listed Wintering Grassland Raptor Species* (August 2021) as an "other species of interest," was also observed occasionally during the Survey Period flying over, calling, and foraging in open agricultural areas. The remainder of the observed species were typical avian species observed in the winter in New York and typical forest, wetland, and open area mammal and amphibian species.

6.0 CONCLUSIONS AND RECOMMENDATIONS

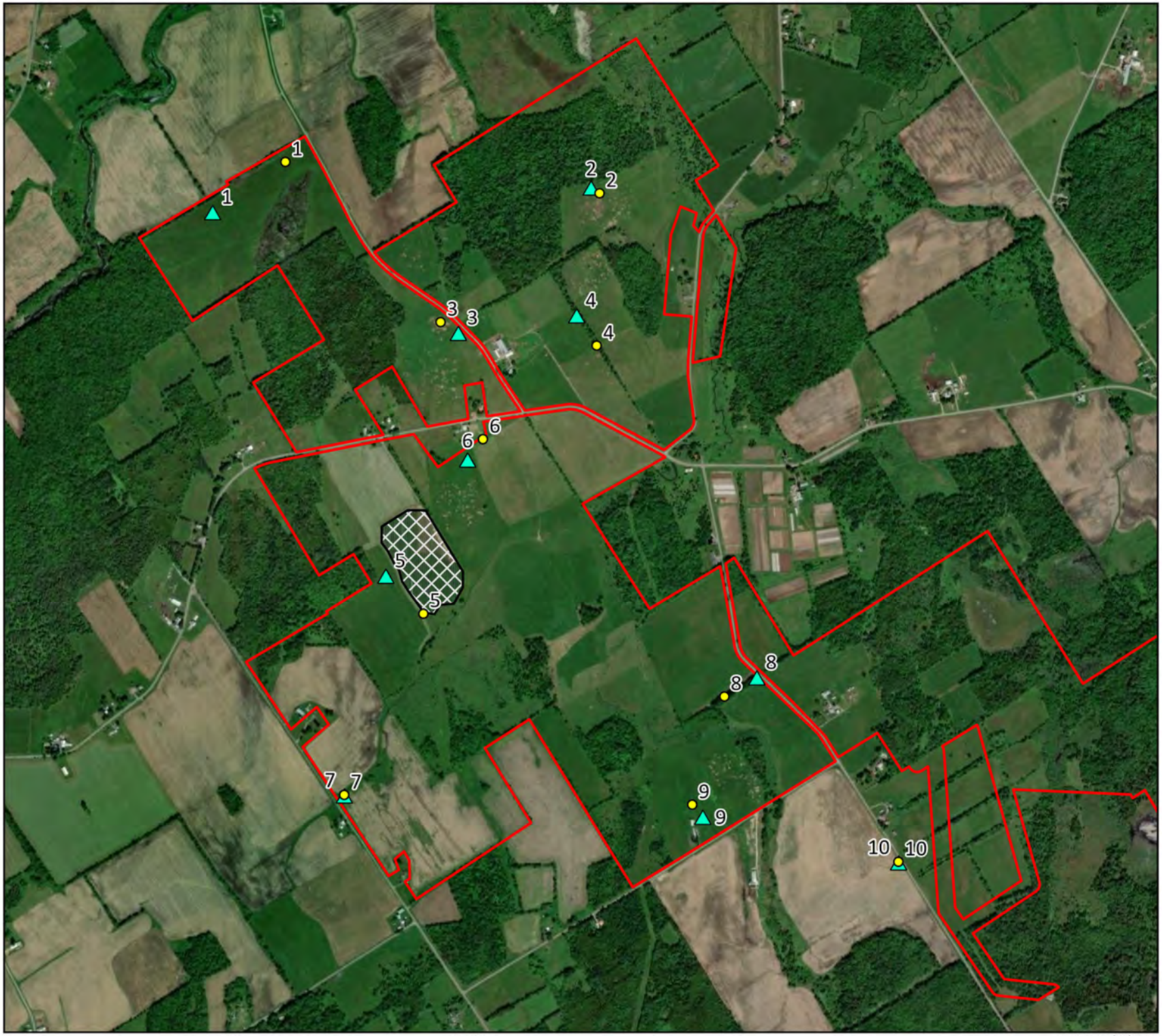
Tetra Tech conducted grassland wintering raptor surveys at the site of the proposed Grass River Solar project from November 2024 through April 2025. Based on observations made during the winter of 2024/2025, target species for this survey effort, northern harrier and short-eared owl, are periodically present in a portion of the Project Survey Area. Suitable habitat is primarily centered around the shrub- scrub area in the open habitat centered in the middle of points [redacted] This area provided for the only suitable foraging habitat for both target species and was the location of the majority of target species observations, indicating that the two species utilize the open habitat in these fields during the winter and migration seasons. Since grasses were short and did not provide cover for roosting or prey species, the open habitat around Points [redacted] had minimal suitable target species habitat. Further, based on the minimal observations of target species (and the only observations being flyovers) and lack of suitable habitat in the open habitat around Points [redacted] these portions of the Project Survey Area are not considered to provide habitat for target species. These fields were dominated by agricultural use consisting of cultivated crops and heavily grazed pasture and are unlikely to support a significant small mammal prey base nor potential roost locations for target species. Lastly, though observations of northern harrier were recorded during the additional Survey Events during the first two weeks of April, observers did not detect any breeding or roosting behavior, suggesting birds detected at this time are likely birds passing through during peak spring migration for this species. It is thus the opinion of Tetra Tech that occupied habitat of New York State-listed grassland raptor species is present within the Project Survey Area, but is limited to the fields and scrub-shrub habitat centered between [redacted]

This survey effort has served to fulfill requirements described in the NYSDEC Survey Protocol for State-listed Wintering Grassland Raptor Species. While no breeding behavior was observed, based on the observations of northern harrier during the first two weeks of April, Tetra Tech plans to conduct breeding bird surveys starting the first two weeks of May, earlier than listed in the NYSDEC Grassland Bird Survey Protocol, per ORES recommendations for capturing any potential northern harrier breeding behavior within the Project Survey Area.

7.0 REFERENCES

[NYSDEC] New York State Department of Environmental Conservation. 2021. Survey Protocol for State-Listed Wintering Grassland Raptor Species. Published August 2021. Albany, NY.

FIGURES



Grass River Solar Project
St. Lawrence County, NY

Original and Updated Survey Points

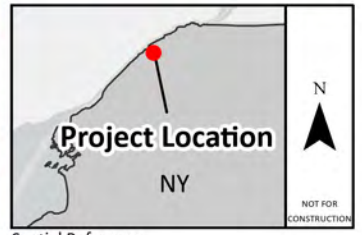
LEGEND

- ProjectArea
- Existing Solar Array
- Updated Survey Points
- Original Survey Points

Data Sources:
ESRI Imagery Basemap

Prepared by: TETRA TECH

Prepared for: CSEnergy



Updated: 5/19/2025

Spatial Reference
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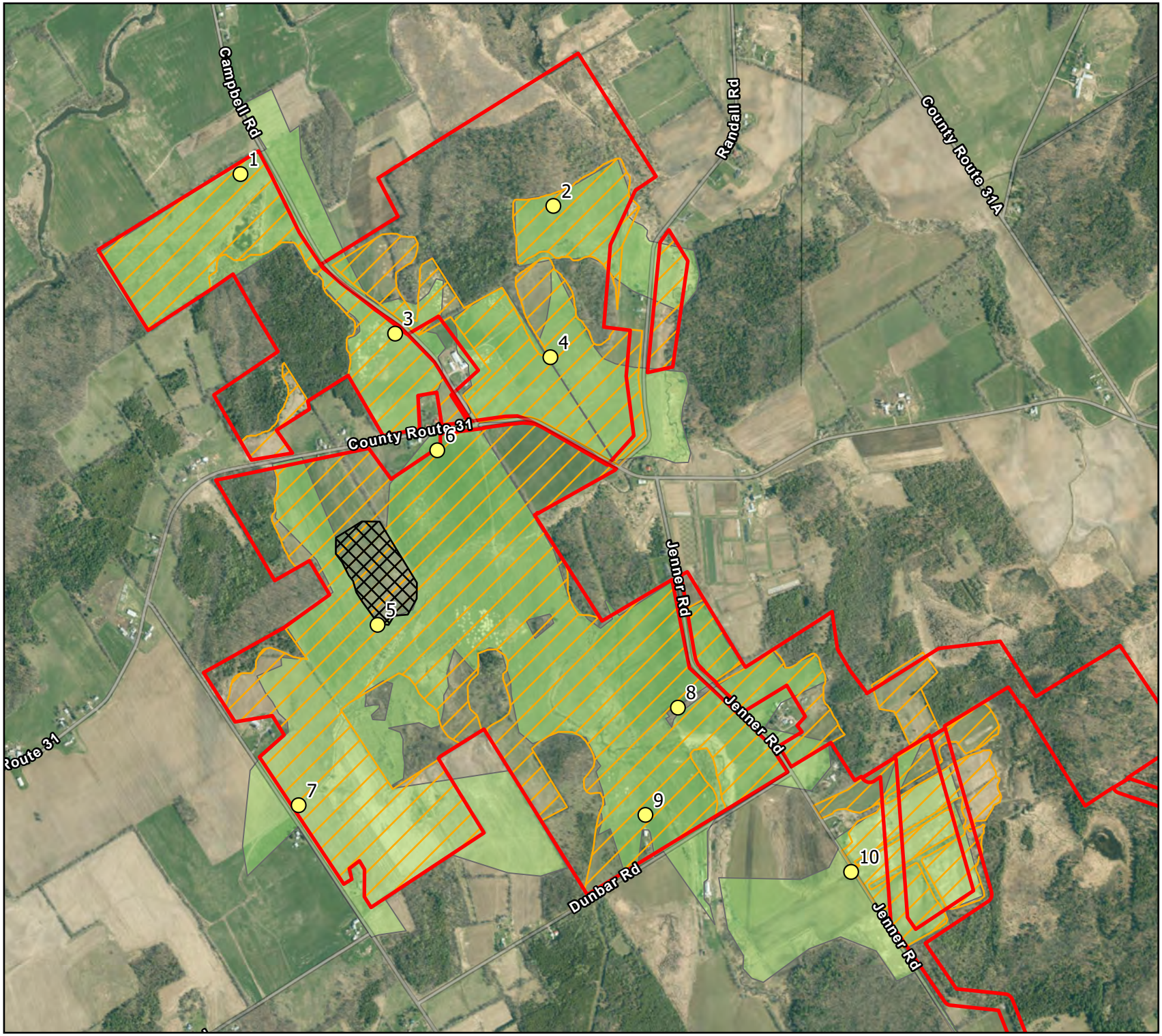


Grass River Solar Project
St. Lawrence County, NY

Survey Point Viewsheds

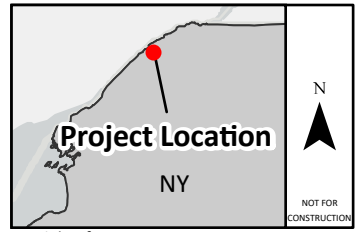
LEGEND

- Survey Points
- Survey Point Viewsheds
- Open Habitats
- Existing Solar Array
- Project Area

Data Sources:
ESRI Imagery Basemap

Prepared by: TETRA TECH

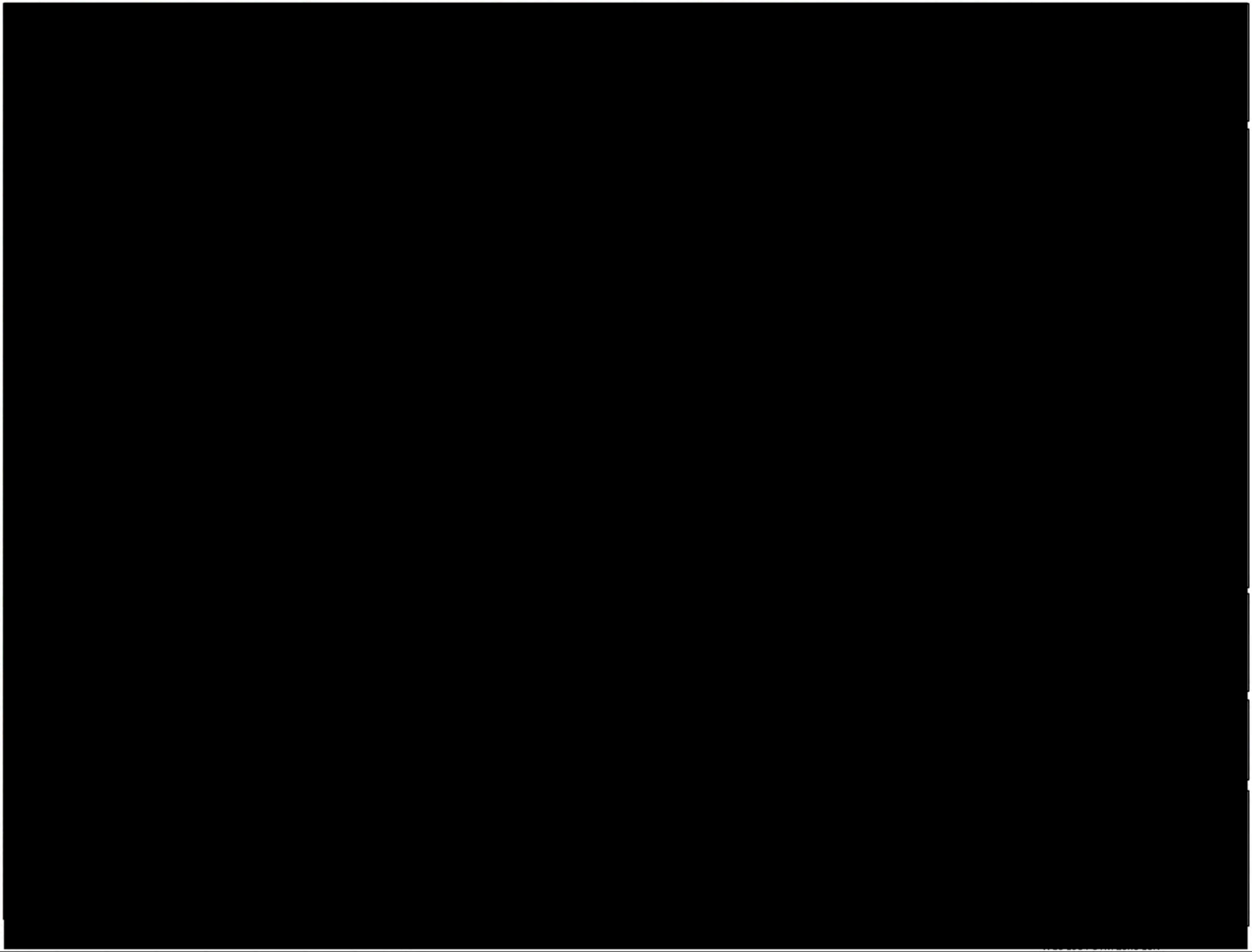
Prepared for: CSEnergy

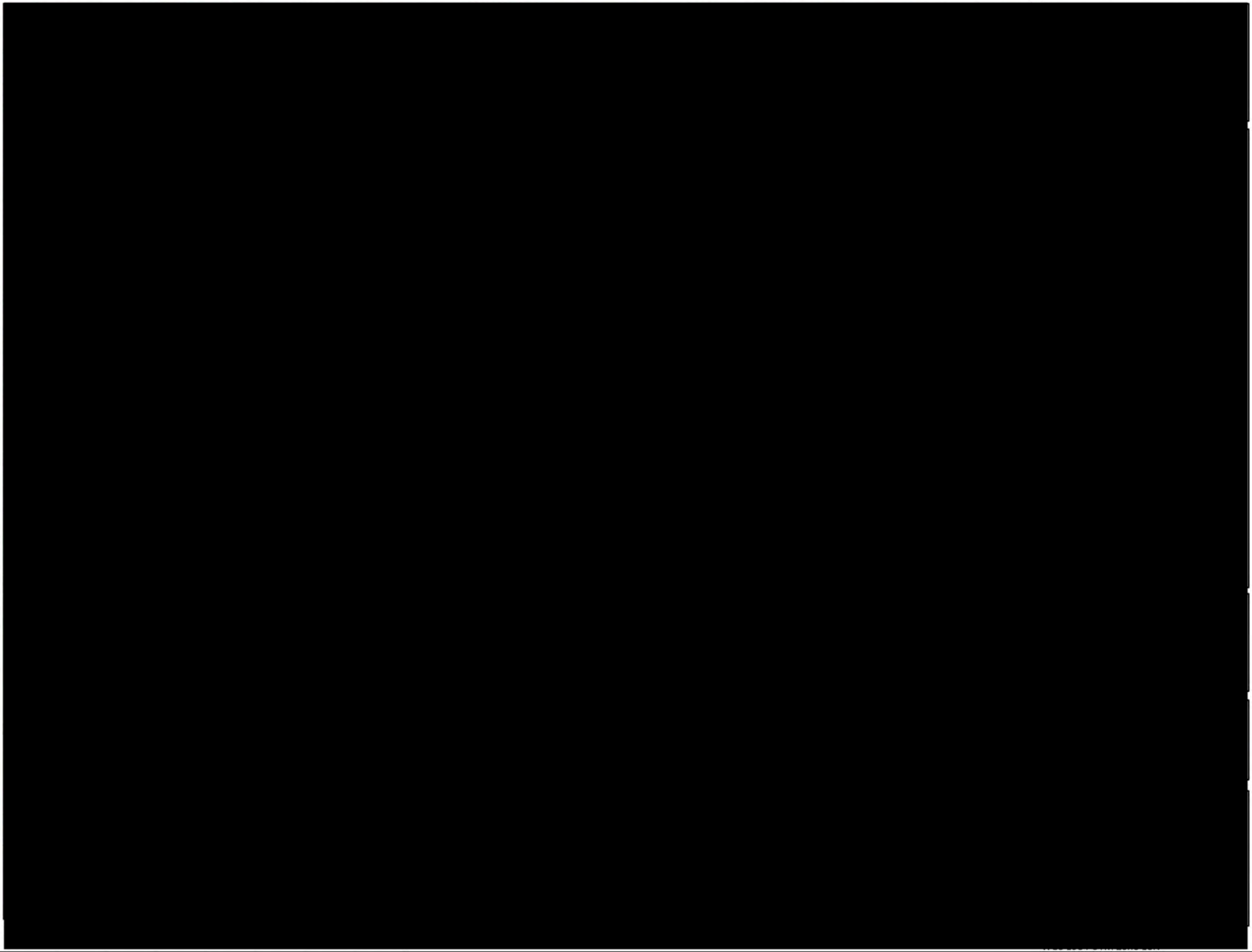


0 2,500 5,000 US Feet

Updated: 1/17/2025

Spatial Reference
WGS 1984 UTM Zone 18N





APPENDIX A: APPROVED WINTERING GRASSLAND RAPTOR SURVEY PLAN

Wintering Grassland Raptor Survey Study Plan

Grass River Solar Project

St. Lawrence County, New York

October 2024
ORES File Number: 24-03061

Prepared by:

TETRA TECH

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3136 Winton Road South, Suite 303
Rochester, NY 14623

On behalf of:

CS Energy

CS Grass River Solar, LLC
c/o CS Energy Devco, LLC
2045 Lincoln Highway
Edison, NJ 08817

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1.0 INTRODUCTION

CS Grass River Solar, LLC, a subsidiary of CS Energy Devco, LLC (hereafter, CS Energy) is proposing to develop approximately 550 acres of an overall approximately 1,450 acre area of land in the towns of Waddington and Madrid in St. Lawrence County, New York into an approximately 80 megawatt (MW) alternating current (AC) solar energy generation facility (the Project). The proposed Project is approximately centered on the GPS coordinates 75.2453458°W 44.7804237°N (Figure 1, hereafter "Project Survey Area"). The Project is currently expected to enter construction in late 2026 or early 2027 and will produce power for up to 40 years. The Project is expected to generate enough clean renewable electricity each year to power approximately 20,000 New York households. Current plans for the Project have it located across several parcels, which will either be leased or purchased by the project entity.

The facility will interconnect to the New York power grid in the Town of Madrid, tapping into the 115 kilovolt (kV) transmission line, which connects to the existing Brady and North Ogdensburg substations. The Project is sited on a mix of farmland, scrubland, and forested areas to balance the competing concerns and interests specific to each cover type.

CS Energy will develop the project and, on completion of the permitting and development, carry out the construction of the facility. The facility will consist of photovoltaic (PV) modules on single-axis tracking structures that follow the sun throughout the day, inverters that convert direct current (DC) to AC, electrical collection systems between the panel arrays, and a new substation to deliver power to the transmission line. Complimentary facility areas will include access roads, fencing, stormwater management systems, and temporary construction areas for equipment.

Based on the results of the Project's wildlife site characterization report, which was submitted by CS Energy to the New York State Office of Renewable Energy Siting and Electric Transmission (ORES) on October 3, 2024, it is assumed that potential habitat for New York State-listed threatened and endangered (T&E) grassland raptor species is likely present within the Project Survey Area. Thus, it will likely be necessary to conduct surveys for grassland raptor species during the winter season. In anticipation of this need, Tetra Tech has prepared this Wintering Grassland Raptor Survey Study Plan (Study Plan) for the Project. This Study Plan has been prepared in accordance with the New York State Department of Environmental Conservation (NYSDEC) Survey Protocol for State-listed Wintering Grassland Raptor Species, dated August 2021 (NYSDEC 2021; Appendix B).

This Study Plan describes the approach for determining the wintering grassland raptor survey protocol to be applied within the Project Survey Area, including establishing the number and location of survey points, field methods, data analysis, and reporting, as well as the schedule to complete surveys. This Study Plan will be provided to NYSDEC for review and comment prior to initiating the surveys.

1.1 Survey Objectives

This Study Plan details the approach utilized for determining presence and Project Survey Area use by two New York State-listed T&E grassland raptor species, short-eared owl (*Asio flammeus*, New York State endangered) and northern harrier (*Circus hudsonius,* New York State threatened), during the winter season. In addition, incidental observations of other New York State-listed species and/or United States Fish and Wildlife Service (USFWS) listed species observed within the Project Survey Area will be recorded during surveys. Incidental observations include, but are not limited to, bald eagle (*Haliaeetus leucocephalus*) presence, behavior, and more specifically, the identification and location of nests if present.

The objectives of the survey are to:

- Determine whether suitable or occupied habitat for target raptor species listed as T&E by New York State or the USFWS is found within the Project Survey Area;
- Collect information on the occurrence, abundance, and behavior of wintering grassland raptors in the Project Survey Area; and
- Report the baseline data resulting from these surveys.

1.2 Survey Area Setting

The Project Survey Area is located within the towns of Waddington and Madrid, approximately 3 miles southeast of the St. Lawrence River and 4.5 miles from the Town of Lisbon, within St. Lawrence County, New York (Figure 1). The Project Survey Area contains a mix of deciduous forest, agricultural lands, and rangelands; the vicinity is largely undeveloped, with anthropogenic structures being limited to residences associated with local landowners. The Project Survey Area is currently actively utilized for cattle ranching and agricultural production. The Project Survey Area is traversed by a number of streams and thus contains areas of emergent vegetation within rangeland. Many of the forested areas are indicated as being potential wetlands as well.

Tetra Tech evaluated the Project Survey Area for open habitat, which, as defined within the NYSDEC Survey Protocol for State-listed Wintering Grassland Raptor Species (August 2021), consists of agricultural fields (pasture, row crop, hay, alfalfa and other field crops), grasslands, fallow fields, early successional fields or shrubland with sparse woody growth, and wet meadows or marshland.

Land cover types within the Project Survey Area that align with these landscape characteristics were determined utilizing the National Land Cover Database (USGS 2024). Approximately 1,157.88 acres (79.85%) of the Project Survey Area is potential open habitat (cultivated crops, emergent herbaceous wetlands, hay/pasture, herbaceous areas, and shrub/scrub areas) as summarized in Table 1.

Table 1. Land Cover Types Identified within the Project Survey Area

NLCD Land Cover	Project Area	
	Acres	Percent
Open Lands Subject to Survey		
Barren Land	0	0.00%
Cultivated Crops	150.84	10.40%
Herbaceous	1.55	0.11%
Hay/Pasture	660.95	45.59%
Emergent Herbaceous Wetlands	43.22	2.98%
Shrub/Scrub	7.23	0.50%
Woody Wetlands	294.09	20.27%
Subtotal	**1157.88**	**79.85%**
Lands Not Subject to Survey		
Evergreen Forest	71.62	4.94%
Mixed Forest	34.21	2.36%
Open Water	0	0.00%
Developed, High Intensity	0.22	0.02%
Developed, Low Intensity	3.15	0.22%
Developed, Medium Intensity	1.37	0.09%
Developed, Open Space	23.63	1.63%
Deciduous Forest	157.84	10.89%
Unclassified	0	0.00%
Subtotal	**292.04**	**20.15%**
Total	**1449.92**	**100 %**

2.0 METHODS

2.1 Establishing Survey Points

Per the NYSDEC Survey Protocol for State-listed Wintering Grassland Raptor Species (NYSDEC 2021), the stationary evening survey method will be employed to determine species occurrence, abundance, and behavior within the Project Survey Area. This will entail a regimented series of evening visual scans and observations with binoculars and spotting scopes from stationary points or "stations" within suitable habitat areas throughout the Project Survey Area.

The survey will focus on open habitats as depicted on Appendix A, Figure 1. Survey stations were placed throughout the Project Survey Area in vantage points in or adjacent to open habitat and positioned such that all open habitats within the Project Survey Area are no more than 1,000-meters from the survey station. The survey stations were selected based on optimal visibility with minimal visual obstruction (i.e., structures, dense hedgerows, woodlots, steep topography, etc.). Contiguous habitat patches smaller than 25 acres will not be surveyed during this effort per the NYSDEC wintering grassland raptor survey protocol (NYSDEC 2021). Lastly, survey stations were systematically located to cover open habitat intended for development while also providing a degree of visibility to adjacent landowners' properties not included in the current development footprint.

A total of eleven (11) survey stations were selected to encompass all suitable open habitat in patches greater than 25 acres within the Project Survey Area. Survey station locations are depicted on Figure 1. Open habitats that are transected or otherwise split up by rows of large mature trees are relatively common within the Project Survey Area; in most cases, the presence of rows of mature trees breaks up open habitats into patches smaller than 25 acres in size. Thus, some areas were excluded from the survey effort due to being below the patch size considered suitable by NYSDEC for wintering raptor occupation. Figure 1 additionally denotes certain areas that are proposed for use as interconnection rights-of-way. The extent of impacts in these areas will be the placement of underground cables connecting solar panel areas to a substation. Given that this impact is temporary and does not involve the installation of significant permanent above-ground infrastructure, surveys are not proposed for open habitats traversed by potential interconnection pathways.

The use of daytime driving routes to collect supplemental survey information was not included as part of this protocol due to adequate spatial coverage of stationary survey stations within available open

habitat resources and the geographically compact nature of the Project Survey Area. A table depicting the survey station numbers and coordinates, along with an estimation of open areas visible within 1,000-meters of each survey station (including open areas within and outside of the Project Survey Area) is included within Appendix C.

2.2 Field Methods

A team of avian biologists will conduct surveys approximately weekly during the optimal survey periods when short-eared owl and northern harrier often occur at winter concentration areas. The survey periods will occur from approximately November 15, 2024, through March 31, 2025. Specifically, two (2) survey periods will be conducted in November 2024 and four (4) survey periods will be conducted in December 2024, January 2025, February 2025, and March 2025 for a total of eighteen (18) survey periods. Each survey deployment is anticipated to span approximately two to three evenings depending on week-to-week staffing. CS Energy understands this to be in line with the intention of the NYSDEC 2021 protocol, in which it is stated that each survey point is intended to be surveyed “approximately weekly” (Appendix B).

- Avian biologists will field verify survey stations and record the following data during each survey: date, observer name, point number, point location (coordinates), start and end time, survey period, and weather information (temperature, wind speed/direction, precipitation, snow depth, and cloud cover).
- At each survey station, the avian biologist will conduct stationary surveys from one hour before sunset until it is too dark to observe flying birds (at least one half-hour, or up to one full hour if conditions allow, after sunset). At a minimum, stationary survey periods will be at least 1.5 hours in duration. Data will be recorded on NYSDEC Wintering Raptor Stationary Survey Data Sheets (see Appendix D).
- Avian biologists will document all observations of raptors and identify individuals to species when possible. When species identification is uncertain, raptors will be documented by raptor group (i.e., “unidentified buteo”, “unidentified accipiter”, or “unidentified eagle”). Additionally, avian biologists will record number of individuals per species observed, individual behavior, time of first and last observation of each raptor, and the location of target species relative to the observer. When target raptor species are confirmed, additional information including specific behaviors,

flight paths, suspected roost locations, and foraging locations will be recorded.

- Avian biologists will document suspected roost areas if one or more short-eared owls are observed perching during daytime hours, or arising from the ground, hedgerows, or conifers in the evening and then begin flying or foraging activities or immediately depart the area; or when one or more northern harriers are active in an area near dusk and then observed dropping to the ground or other low feature and not returning to flight. Late winter surveys (March and April) will specifically document any breeding behavior observed from target raptor species, with the highest breeding behavior code recorded.
- Avian biologists will record observations of other non-raptor wildlife species seen or heard during all surveys, including incidental observations, on data sheets.
- An attempt will be made not to conduct surveys during inclement weather, including precipitation, fog, or strong winds (greater than 10 miles per hour). If inclement weather is encountered, survey dates may be rescheduled. This may result in slight variations of the schedule indicated in section 3.0; however, the number of survey visits at each point will be held constant at 18 visits.
- If any target wintering raptor species (northern harrier or short-eared owl) is observed during the last two survey periods in March (survey periods 17 and 18), additional surveys will occur during the first two weeks of April (survey periods 19 and 20). If either target wintering raptor species is observed during these additional April surveys, CS Energy will consult with ORES to determine if additional stationary surveys in April or beyond are required to document potential breeding activity within the Project Survey Area.

2.3 Data Analysis and Reporting

Following the survey, CS Energy will prepare a summary report describing the results of the survey, which will be used to facilitate the Article VIII permitting process and ongoing consultation with ORES. The report will include an analysis of data for each survey station, as well as summarize additional incidental observations made while traveling to the survey stations. Species composition and abundance will be calculated for each station. Survey station locations and survey periods will also be presented within the report. Any observations of federal or New York State-listed species will be described in detail through additional text and GIS figures that will describe observation location, movement patterns, behaviors, and more as needed. As required by §1100-1.3(g)(5), CS Energy, with

the assistance of Tetra Tech, will provide the draft report and relevant GIS shape files to ORES and NYSDEC within 6 weeks (i.e., 45 days) of completion of the final prescribed survey, the date of which will vary depending on survey outcomes.

3.0 SURVEY SCHEDULE

The wintering raptor stationary surveys will occur over eighteen (18) deployments, with two (2) additional deployments potentially occurring in early April if target wintering raptor species are detected during the last two weeks of March. As previously mentioned, deployments will span a sufficient number of days to ensure that each survey station is adequately surveyed approximately weekly during the optimal survey season. The preliminary schedule in Table 2 is subject to change if unfavorable survey conditions arise but is representative of the approximate survey schedule that will be adhered to.

Table 2. Wintering Grassland Raptor Stationary Survey Schedule

Wintering Grassland Raptor Surveys	Date
Surveys 1 and 2	November 15 – 30, 2024
Surveys 3 – 6	December 1 – 31, 2024
Surveys 7 – 10	January 1 – 31, 2025
Surveys 11 – 14	February 1 –28, 2025
Surveys 15 – 18	March 1 – 31, 2025
Surveys 19 and 20 (if required)[1]	April 1 – 11, 2025

[1] If either of the target wintering raptor species (northern harrier or short-eared owl) are observed during the last two survey periods (Events 17 and 18), additional survey periods will occur from April 1 – April 11, 2025. If target species are observed during additional April surveys, CS Energy will consult with ORES and NYSDEC to determine if additional early breeding season surveys are warranted beyond the first two weeks of April.

4.0 REFERENCES

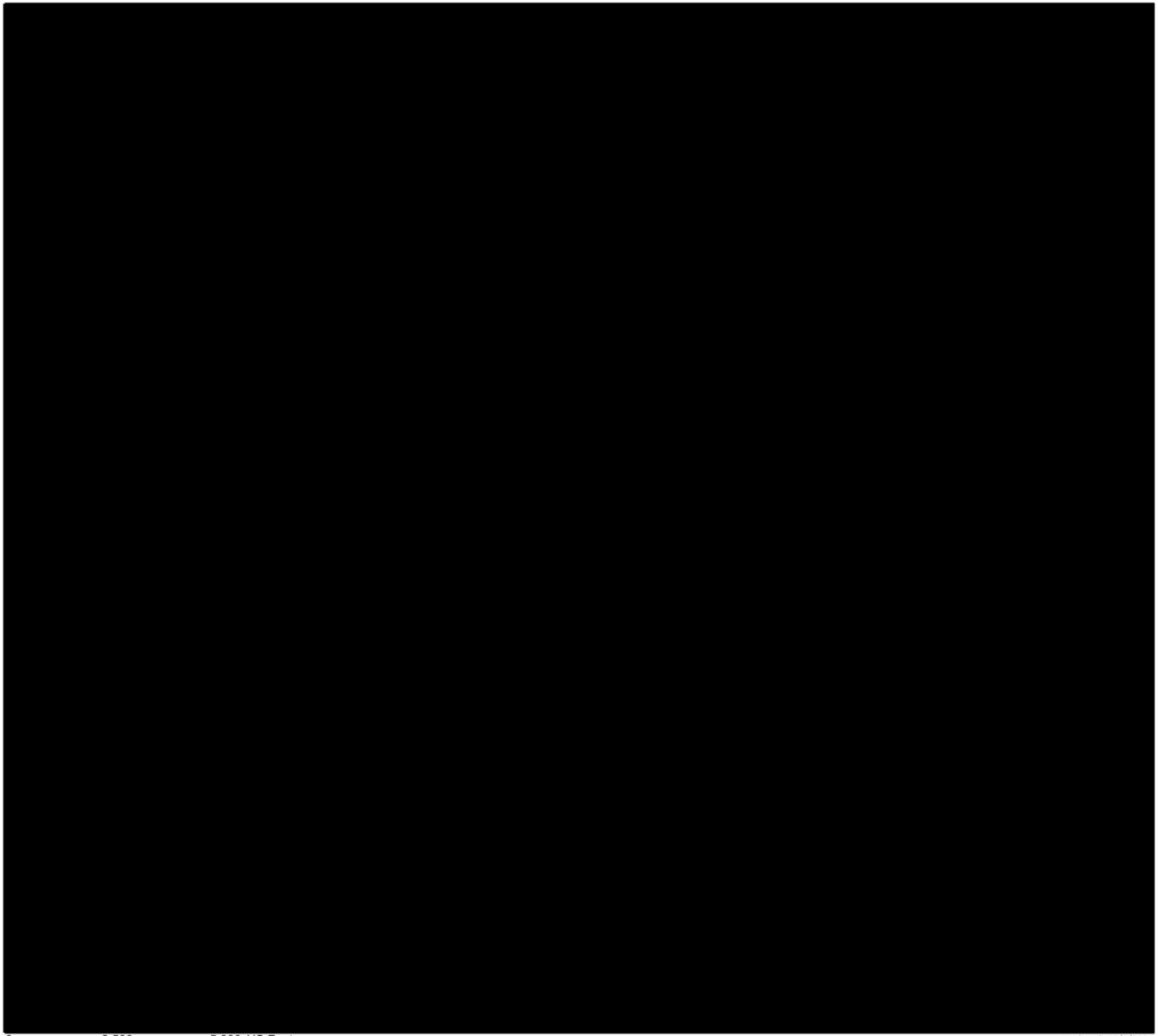
New York State Department of Environmental Conservation (NYSDEC). 2021. Survey Protocol for State-Listed Wintering Grassland Raptor Species. Published August 2021. Albany, NY.

United States Geological Survey (USGS). 2024. National Landcover Dataset (NLCD), 2019 Release. https://www.usgs.gov/data/national-land-cover-database-nlcd-2019-products. Accessed July, 2024.

ATTACHMENTS

ATTACHMENT A

Figure 1: Wintering Grassland Raptor Survey Points



Grass River Solar Project
St. Lawrence County
New York

2024 Winter Raptor Survey
Proposed Points

LEGEND

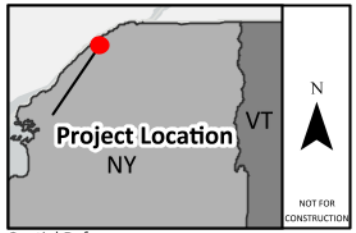
- Survey Points
- 1000m Survey Point Buffer
- Open Habitats (Over 25 Acres)

Proposed Use

- Potential Solar
- Potential Substation
- Interconnection

Prepared by: TETRA TECH

Prepared for: CS Energy



0 2,500 5,000 US Feet

Updated: 10/4/2024

Spatial Reference
WGS 1984 UTM Zone 18N

ATTACHMENT B
NYSDEC Survey Protocol for State-listed Wintering Grassland Raptor Species (August 2021)

New York State Department of Environmental Conservation
Survey Protocol for State-listed Wintering Grassland Raptor Species
August 2021

These protocols describe requirements for determining presence and site use by New York State-listed threatened and endangered (T&E) grassland raptor species during the winter season as part of the New York State Department of Environmental Conservation (NYSDEC) permit review process for a project application. These protocols specifically target the New York State-listed Short-eared Owl (*Asio flammeus*) (Endangered) and Northern Harrier (*Circus hudsonius*) (Threatened). These surveys have two primary purposes: (1) documenting the presence of the target species, and (2) recording particular areas used by the target species, such as roost sites or foraging areas, within a project area. This protocol is not intended to confirm absence of birds from a site. Information obtained from these surveys will be considered in determining the possible need for additional comprehensive studies (e.g., using radio-telemetry and/or night-vision optics), regulatory review and, if necessary, avoidance, minimization, and/or mitigation strategies pursuant to 6 New York Codes, Rules and Regulations (NYCRR) Part 182.

A detailed, site specific work plan, including survey schedule and GIS shapefiles (.shp) of a proposed project boundary, stationary survey locations, driving route stops, and estimated areas of ground visible within 1,000 meters of each stationary survey point must be developed and submitted to NYSDEC at least one month prior to the start of field work for review and written approval. NYSDEC recommends these materials be submitted at the earliest they are available prior to the one month before survey deadline. Multiple projects may be under review concurrently and earlier submission facilitates adequate time for NYSDEC to review the work plan and provide feedback. Failure to submit materials in a timely manner may result in delays in project reviews.

Target Species

Both Short-eared Owls and Northern Harriers typically roost on the ground, though Short-eared Owls may roost in conifers or thick hedgerows when snow becomes deeper than approximately 6 inches. At times, these two species may roost in close proximity to one another and Northern Harriers may be observed dropping to the ground at their nighttime roost just before dark at the same time that Short-eared Owls are leaving their daytime roost to begin foraging for the evening. The period surrounding sunset is particularly critical for the identification of likely roost locations and estimating the number of individuals using them.

Short-eared Owls are crepuscular and nocturnal hunters and while they may occasionally be active in the late afternoon, winter surveys conducted throughout New York State from 2008-2021 indicate that they often do not leave their daytime roost to begin hunting until sunset or later, and sometimes just 5 - 10 minutes before full dark. Northern Harriers are diurnal and crepuscular raptors and may be seen hunting throughout the day, but they are most active in the morning and late afternoon right up until sunset when they can be observed landing at their nighttime roost site.

Survey Periods

November 15 through March 31 is the primary period during which Short-eared Owl and Northern Harrier often occur at winter concentration areas in New York, and surveys must be conducted during this season. Conduct surveys approximately weekly at each stationary point in the study area (hereafter, a "survey period"). At a minimum, conduct two survey periods in November (survey periods 1 and 2), and four survey periods each in December (survey periods 3-6), January (survey periods 7-10), February (survey periods 11-14) and March (survey periods 15-18), for a total of eighteen survey periods during the course of the winter season. Additional surveys are required in April if Short-eared Owl and/or Northern Harrier are present at the project site during the last two weeks of March (survey periods 17 or 18). If either species is documented during surveys in early April, applicants should discuss with NYSDEC the possible need for early breeding season surveys.

Stationary Evening Surveys

The primary survey method for wintering Short-eared Owl and Northern Harrier is a regimented series of evening visual scans and observations with binoculars and a spotting scope from one or more stationary points or "stations" within a project area. Conduct surveys from at least one hour before sunset until it is too dark to observe flying birds (at least one-half hour, or up to one hour after sunset). On many nights, especially those with clear, moonlit skies, and on days with complete snow cover, birds are frequently seen well before or after the official time of sunset. Therefore, the entire length of the survey must be at least 1.5 hours, but on some evenings could be as long as 2.5 hours or more, depending on the start time, environmental conditions and bird activity.

The total number of stations required depends on the size of the project area, the amount of open habitat within the project area, and the visibility of that habitat from survey station(s). "Open habitat" and "field" refer to all fields, including those in pasture, row crop, hay, alfalfa, or other field crop the previous growing season; grasslands; fallow fields; early successional fields or shrubland with sparce woody growth; and wet meadows or marsh land. Position survey stations in or near open habitat at vantage points with clear visibility in all directions, or most directions if stations are from roadside locations or edges of fields. Make observations from within or next to a blind if the station is away from the roadside and within a field. When the station is at the edge of the habitat, the observer(s) should be backed up to a hedgerow or other background feature at the edge of the field, or within or next to a vehicle.

Survey stations must not be more than 1,000 meters apart within open habitat, and the total number of stations must allow for full visual coverage of all open habitats at ground level within the entire project site. When visibility is obstructed (e.g., by hills, vegetation, infrastructure, etc.), survey stations must be sited less than 1,000 meters apart and close enough to allow for the accurate detection and identification of the target species in all

open habitats. Any ground-level portion of the 1,000-meter viewshed that is not visible from a survey station must be clearly noted.

Include some stationary points within or adjacent to the project area to cover areas not intended for development. Data on bird use of such areas provide information on potential siting options that may avoid or minimize impacts to T&E species, and areas that could serve as mitigation parcels (if needed), and/or be used as reference areas for post-construction monitoring.

Daytime Driving Routes

Daytime driving routes are an additional survey method that may be utilized for detecting foraging areas of Northern Harrier and other diurnal raptors. **Driving routes are not suitable for detecting Short-eared Owls or roosting Northern Harriers.** Due to the short time period during which Short-eared Owls are active and visible before dark, driving surveys are considered a supplemental effort, and **cannot** replace a full stationary evening survey effort or be the sole survey method at a project site.

These surveys consist of driving between a series of roadside stops adjacent to open habitat and conducting 5-10 minute observations at each stationary, roadside stop. The driving route for a site should be surveyed weekly, and include all roads within the project site from which open habitat can be easily viewed. Driving route surveys may take place at any time during daylight hours, and can be done on the same days as stationary surveys. The total number and distribution of roadside stops are based on the length and distribution of roads in the project area, and what areas are visible from the roadside. Stops located approximately a half mile apart will typically allow for sufficient coverage, however, the distance between stops may need to be shorter, depending on obstructions of ground-level views at the site.

The overall survey effort should be focused on ensuring maximum spatial coverage is achieved by siting evening stationary surveys across the entire site, with driving routes serving to gather supplemental information on daytime use of the area by Northern Harriers. If resources are limited, focus should be placed on conducting stationary surveys, even if at the expense of driving surveys.

Conducting Surveys

Surveys should not be conducted during inclement weather, including precipitation, fog, or moderate to strong winds (i.e., wind greater than 10-12 mph, or Beaufort Scale 3). Due to survey time constraints, an observer can only cover one stationary point per evening. Multiple observers surveying concurrently at different stations and/or multiple evenings are needed to sufficiently cover most project sites for a given week (stationary survey period). Repeated trips on additional evenings may be necessary to adequately confirm species presence and document foraging and roost areas. Both Northern Harriers and Short-eared Owls may fly considerable distances from roost sites to foraging areas.

Appropriately stationing observers on subsequent nights farther out along these flight paths may be necessary to identify important foraging areas.

For both stationary evening surveys and driving route stops, scan the available open habitat throughout the course of the survey period. Pay particular attention to birds perching on fence posts, utility poles, and hay bales, coursing low over the ground, or perching on the ground. Observers should also listen for the bark-like call of the Short-eared Owl and rapid series of *kek* calls of the Northern Harrier.

While one observer may be sufficient for conducting stationary surveys at a given station, two observers are recommended during driving routes. At each stop, the observer(s) should get out of the vehicle and scan the surrounding open habitat in all directions for the observation period. If a raptor is observed while driving between stops, record the observation location and data upon reaching the next survey point.

Recording Data

For each survey, record the following data: date; observer(s) name(s); site name; point number; point location (coordinates); start and end time of observation at that point; survey period; whether stationary point or driving stop; and weather information, including temperature, wind speed and direction, precipitation, snow depth, and cloud cover. During each driving stop and stationary survey, record the following: species identification; number of individuals per species (actual number or > 20 if large numbers); individual behavior (perching, foraging, interacting with other birds, high flyover, coming/going from suspected roost, etc. See below.); time each raptor is first observed; time each raptor is last observed; and the location of target species relative to observer. Record Northern Harriers as male or female/juvenile, if possible.

Document all observations of raptors and identify individuals to species. When species identification is uncertain, record “unidentified raptor”, although “unidentified buteo”, “unidentified eagle” or “unidentified accipiter” is preferable when possible. Where raptors fly into or out of an area of visibility, indicate direction and height of flight on the maps. Show clearly on maps any suspected or confirmed foraging and roost areas, as defined below. For every individual Short-eared Owl and Northern Harrier detected in the project area, including those detected outside of regular survey times or locations (i.e. incidental observations), record the date, time, age/sex if possible, and behavior observed, and map on aerial photographs perch locations, potential or confirmed roost locations, foraging areas, flight paths, and flight height.

Specific behaviors to note for Short-eared Owl and Northern Harrier include:

- foraging (defined as hovering, flying low over vegetation, flying over fields in a back and forth or circular pattern at any height, or dropping to or toward the ground in an attempt to capture prey, at least once during the observation period);
- perching (on the ground or on elevated perches such as fence posts, utility poles, hay bales, tree branches);

- fly-through (i.e., straight-line, direct high flight such as when relocating between roosting and foraging areas, with no indication of foraging behavior or interacting with other individuals);
- interacting with other individuals (e.g., chasing, displacing, displaying, counter-calling, food exchange, etc.); and
- roosting (see below).

Document suspected roost areas when one or more Short-eared Owls are observed perched during the day, or arising from the ground, hedgerows, or conifers in the evening and then beginning flying and foraging activities or immediately departing the area; or where one or more Northern Harriers are active in an area near dusk and are then observed dropping to the ground, hedgerow, or other low feature, but not coming back up as it gets dark, or otherwise not seen again. Concentrated activity of either or both species in an area at or near dusk and interactions between Short-eared Owls and Northern Harriers are also indicators of a likely roost nearby. Late winter surveys (March and April) should specifically document any breeding behavior observed, with the "highest" behavior code recorded (for descriptions of breeding codes, see: https://ebird.org/atlasny/about/breeding-codes).

Record observations of other species seen or heard during all surveys, as well as incidentally while in the project area (i.e., outside of the survey period or in areas not targeted for survey), on data sheets. Other species of interest include all state-listed T&E and special concern species; all raptors (owls, hawks, falcons, eagles, osprey); shrikes; and arctic-breeding songbirds such as snow buntings, larkspurs, and pipits.

NYSDEC recommends that all data collected be entered into eBird, and for data collected prior to January 1, 2025, entered into eBird under the New York State Breeding Bird Atlas portal. For more information, see: https://ebird.org/atlasny/about/

Reporting Requirements

A detailed, site specific work plan, including survey schedule and GIS shapefiles (.shp) of a proposed project boundary, stationary survey locations, driving route stops, and estimated areas of ground visible within 1,000 meters of each stationary survey point must be developed and submitted to NYSDEC at least one month prior to the start of field work for review and written approval. A final report must be submitted to NYSDEC as soon as possible after the conclusion of each survey season. Final reports must minimally include the following:

- the overall survey period, and dates, times, and durations of surveys conducted at each stationary point and driving stop;
- description of habitat surrounding each point, noting any changes during the survey period;
- number of species observed overall;
- total number of individuals of each species observed at each point, overall and by date;

- summaries of the number and behavior of birds seen, and whether any Short-eared Owl or Northern Harrier roosts were observed or suspected;
- for all T&E species, whether any behaviors designated as "probable" or "confirmed" breeding were observed, following Breeding Bird Atlas codes;
- a list or table of all species with all dates and points where they were observed;
- the point(s) with the highest and lowest: number of species, species diversity, frequency, and abundance;
- a description of weather conditions during and immediately prior to survey days;
- a description of any disruptions and/or distractions that occurred during each survey that may have precluded an adequate survey;
- a detailed discussion of all methods and results;
- one or more maps, as needed, which display all observations of all individuals of T&E and SC species, and any other species targeted at the site, indicating observation date and behavior code;
- photographs of the habitat taken from survey points;
- copies of all data sheets, as a separate appendix or attachment to the report; and
- viewshed analysis from each survey point that clearly defines what areas of ground were visible within 1,000 meters, and which areas were obstructed from view (e.g., due to vegetation, topography, infrastructure, or other obstructions).

For all individuals of T&E species documented while in the project area, clearly show on the map(s), or otherwise make available in the report detailed information on the location, method of detection, behavior, flight paths, foraging areas, and all other relevant data. Along with the report, provide GIS shapefiles (.shp) depicting the survey point locations, polygons showing all visible open habitat at ground level within 1,000 meters of each point, and date, time, location, flight paths, flight height and behavior of each individual T&E species documented on site.

Also include in the report a discussion and conclusion regarding whether more comprehensive studies may be necessary to adequately assess the potential for the project to negatively affect endangered or threatened winter raptor species.

ATTACHMENT C
Grass River Solar Project Wintering Grassland Raptor Stationary Survey Point Data Table

Appendix C – Grass River Solar Project Wintering Grassland Raptor Stationary Survey Point Data

Open Habitat ID Name	Point Number	Latitude	Longitude	Estimated Visible Open Habitat Acreage within Project Survey Area (acres)	Additional Estimated Open Habitat Visible outside of Project Survey Area (acres)	Estimated Total Open Habitat Visible within 1,000-meters (acres)
A	[redacted]			58.91	14.04	72.95
C				39.58	5.53	45.11
A, B				43.17	3.29	46.46
B				70.99	0	70.99
D				100.56	4.02	104.58
D				110.76	4.77	115.53
D				88.53	39.00	127.53
D				77.90	0	77.9
D				83.81	21.09	104.9
E				51.16	0	51.16
F				61.44	0	61.44

ATTACHMENT D
Wintering Raptor Stationary Survey Data Sheets

New York State Department of Environmental Conservation

Wintering Raptor Stationary Survey Data Sheet

Observer: _____ Date: _____
Site Name: County:

Time Start: _____ Time End: _____

Assigned Survey Location: _____
_____
_____
_____

Total SEOW: _____
Total NOHA: _____
Additional observations (such as horned larks, snow buntings, etc.) _____

Weather
Wind Speed: _____
Direction: _____
Temperature: _____
% Cloud cover: _____
Snow Depth: _____ inches
Snow Crust: *Yes* *No*
Precipitation: (*circle one*)
Snow *Rain* *None*

Visibility: (*circle one*)
Good *Fair* *Poor*
Reason: _____
(i.e. fog, no moon, snow etc.)

Mark the observation location and location of each owl and hawk observed with a unique identification number on the aerial site map and below on this datasheet. See additional instructions on Survey Guidelines sheet.

Owl/Hawk Species *Enter one bird per line. For harriers, note sex/ age*	**Bird ID#** *As referenced on aerial map*	**First Time Bird Seen**	**Last Time Bird Seen**	**Activity Observed** *Perched, foraging, flyover (note height), feeding, going to likely roost, leaving probable roost, interacting with other birds, etc.*	**Notes** *Include amount of time bird spent at site. If it left site, note flight direction. Note whether bird was seen or heard, approximate distance, if prey capture attempts successful, other behaviors*

Wintering Raptor Stationary Survey Data Sheet – Page 2

Date_____ Site Name_____ Observer _____

Owl/Hawk Species *Enter one bird per line. For harriers, note sex/ age*	**Bird ID#** *As referenced on aerial map*	**First Time Bird Seen**	**Last Time Bird Seen**	**Activity Observed** *Perched, foraging, fly over (note height), feeding, going to likely roost, leaving probable roost, interacting with other birds, etc.*	**Notes** *Include amount of time bird spent at site. If it left site, note flight direction. Note whether bird was seen or heard, approximate distance, if prey capture attempts successful, other behaviors*

APPENDIX B: DATA SUMMARY TABLES

Table B1. Incidental wildlife species observations within the Project Survey Area for the Grass River Solar Project

Common Name	Scientific Name	NYS Listing Status
American Black Duck	*Anas rubripes*	High Priority Species of Greatest Conservation Need
American Bittern	*Botaurus lentiginosus*	Special Concern
American Crow	*Corvus brachyrhynchos*	None
American Goldfinch	*Spinus tristis*	None
American Herring Gull	*Larus smithsonanus*	None
American Robin	*Turdus migratorius*	None
American Wigeon	*Mareca americana*	None
American Woodcock	*Scolopax minor*	None
Bald Eagle	*Haliaeetus leucocephalus*	Threatened
Barred Owl	*Strix varia*	None
Black-capped Chickadee	*Poecile atricapillus*	None
Blue Jay	*Cyanocitta cristata*	None
Brown Creeper	*Certhia americana*	None
Brown-headed Cowbird	*Molothrus ater*	None
Blue-winged Teal	*Spatula discors*	None
Cackling Goose	*Branta hutchinsii*	None
Canada Goose	*Branta canadensis*	None
Common Grackle	*Quiscalus quiscula*	None
Common Raven	*Corvus corax*	None
Coyote	*Canis latrans*	None
Dark-eyed Junco	*Junco hyemalis*	None
Downy Woodpecker	*Dryobates pubescens*	None
Eastern Bluebird	*Sialia sialis*	None
Eastern Meadowlark	*Sturnella magna*	High Priority Species of Greatest Conservation Need
European Starling	*Sturnus vulgaris*	None
Golden-crowned Kinglet	*Regulus satrapa*	None
Great Blue Heron	*Ardea herodias*	None
Great Horned Owl	*Bubo virginianus*	None
Green-winged Teal	*Anas crecca*	None
Hairy Woodpecker	*Dryobates villosus*	None
Hooded Merganser	*Lophodytes cucullatus*	None
Horned Lark	*Eremophila alpestris*	Special Concern
House Finch	*Haemorhous mexicanus*	None
House Sparrow	*Passer domesticus*	None
Killdeer	*Charadrius vociferus*	None

Common Name	Scientific Name	NYS Listing Status
Lapland Longspur	*Calcarius laponicus*	None
Long-eared Owl	*Asio otus*	None
Mallard	*Anas platyrhynchos*	None
Mourning Dove	*Zenaida macroura*	None
Muskrat	*Ondatra zibethicus*	None
North American Porcupine	*Erethizon dorsatum*	None
Northern Cardinal	*Cardinalis cardinalis*	None
Northern Flicker	*Colaptes auratus*	None
Northern Mockingbird	*Mimus polyglottos*	None
Northern Pintail	*Anas acuta*	None
Pileated Woodpecker	*Dryocopus pileatus*	None
Red-bellied Woodpecker	*Melanerpes carolinus*	None
Red-tailed Hawk	*Buteo jamaicensis*	None
Red-winged Blackbird	*Agelaius phoeniceus*	None
Ring-billed Gull	*Larus delawarensis*	None
Ring-necked Duck	*Aythya collaris*	None
Rock Pigeon	*Columba livia*	None
Rough-legged Hawk	*Buteo lagapus*	None
Rusty Blackbird	*Euphagus carolinus*	High Priority Species of Greatest Conservation Need
Sandhill Crane	*Antigone canadensis*	None
Savannah Sparrow	*Passerculus sandwichensis*	None
Snow Bunting	*Plectrophenax nivalis*	None
Snow Goose	*Anser caerulescens*	None
Song Sparrow	*Melospiza melodia*	None
Spring Peeper	*Pseudacris crucifer*	None
Striped Skunk	*Mephitis mephitis*	None
Trumpeter Swan	*Cygnus buccinator*	None
White-breasted Nuthatch	*Sitta carolinensis*	None
White-tailed Deer	*Odocoileus virginianus*	None
Wild Turkey	*Meleagris gallopavo*	None
Wilson's Snipe	*Gallinago delicata*	None
Wood Duck	*Aix sponsa*	None
Yellow-bellied Sapsucker	*Sphryapicus varius*	None

Table B2. Raptor observation summary by Point and Survey Event for the Grass River Solar Project.

Survey Event	# of Individuals										
	AGOS	AMKE	BAOW	BAEA	GHOW	NOHA	RLHA	RTHA	SEOW	TUVU	Unidentified Raptor
	Point 1										
Event 1								2			
Event 2											
Event 3								1			
Event 4											1
Event 5				1							1
Event 6				1							
Event 7											
Event 8											
Event 9											
Event 10								1			
Event 11											
Event 12											
Event 13											
Event 14											
Event 15											
Event 16			1	1							
Event 17								1			
Event 18			1		1	1					
Event 19											
Event 20											
POINT TOTAL			**2**	**3**	**1**	**1**		**5**			**2**

# of Individuals											
Survey Event	**AGOS**	**AMKE**	**BAOW**	**BAEA**	**GHOW**	**NOHA**	**RLHA**	**RTHA**	**SEOW**	**TUVU**	**Unidentified Raptor**
	Point 2										
Event 1											
Event 2											
Event 3							1				
Event 4											
Event 5								1			
Event 6											
Event 7											
Event 8											
Event 9											
Event 10				1							
Event 11											
Event 12											
Event 13											
Event 14											
Event 15											
Event 16											
Event 17			1								
Event 18											
Event 19			1								
Event 20											
POINT TOTAL			**2**	**1**			**1**	**1**			

# of Individuals											
Survey Event	**AGOS**	**AMKE**	**BAEA**	**BAOW**	**GHOW**	**NOHA**	**RLHA**	**RTHA**	**SEOW**	**TUVU**	**Unidentified Raptor**
	Point 3										
Event 1											
Event 2											
Event 3			1					1			
Event 4			2								
Event 5											
Event 6											
Event 7											
Event 8											
Event 9			2								
Event 10											
Event 11											
Event 12											
Event 13											
Event 14											
Event 15											
Event 16				1							
Event 17								1			
Event 18						1					
Event 19											
Event 20											
POINT TOTAL			**5**	**1**		**1**		**2**			

# of Individuals											
Survey Event	**AGOS**	**AMKE**	**BAEA**	**BAOW**	**GHOW**	**NOHA**	**RLHA**	**RTHA**	**SEOW**	**TUVU**	**Unidentified Raptor**
	Point 4										
Event 1											
Event 2								1			1
Event 3							1				
Event 4											
Event 5											
Event 6											
Event 7											
Event 8			1								
Event 9											
Event 10			1								
Event 11											
Event 12											
Event 13											
Event 14											
Event 15											
Event 16											
Event 17											
Event 18						1		1			
Event 19											
Event 20											
POINT TOTAL			**2**			**1**	**1**	**2**			**1**

# of Individuals											
Survey Event	**AGOS**	**AMKE**	**BAEA**	**BAOW**	**GHOW**	**NOHA**	**RLHA**	**RTHA**	**SEOW**	**TUVU**	**Unidentified Raptor**
	Point 5										
Event 1											
Event 2								1	1		
Event 3							1				
Event 4											1
Event 5			2								
Event 6											
Event 7			1					1			
Event 8								1			
Event 9											
Event 10											
Event 11											
Event 12											
Event 13			1								1
Event 14			1								
Event 15			1	2	1						
Event 16								1			
Event 17											
Event 18		1				1			1		
Event 19											
Event 20						1					
POINT TOTAL		**1**	**6**	**2**	**1**	**2**	**1**	**4**	**2**		**2**

# of Individuals											
Survey Event	AGOS	AMKE	BAEA	BAOW	GHOW	NOHA	RLHA	RTHA	SEOW	TUVU	Unidentified Raptor
	Point 6										
Event 1											1
Event 2								1			
Event 3										1	
Event 4											
Event 5											
Event 6											
Event 7			1								
Event 8											
Event 9			3								
Event 10											
Event 11											
Event 12											
Event 13											
Event 14								1			
Event 15											
Event 16											
Event 17											
Event 18											
Event 19											
Event 20						1					
POINT TOTAL			**4**			**1**		**2**		**1**	**1**

# of Individuals											
Survey Event	**AGOS**	**AMKE**	**BAEA**	**BAOW**	**GHOW**	**NOHA**	**RLHA**	**RTHA**	**SEOW**	**TUVU**	**Unidentified Raptor**
	Point 7										
Event 1											
Event 2											
Event 3						1					2
Event 4											
Event 5			1								
Event 6			2								
Event 7			1								
Event 8								1			
Event 9											
Event 10											
Event 11											
Event 12			1								
Event 13			2								
Event 14											1
Event 15											
Event 16								2			
Event 17											
Event 18									2		
Event 19											
Event 20						1					
POINT TOTAL			**7**			**2**		**3**	**2**		**3**

# of Individuals											
Survey Event	AGOS	AMKE	BAEA	BAOW	GHOW	NOHA	RLHA	RTHA	SEOW	TUVU	Unidentified Raptor
	Point 8										
Event 1											
Event 2											
Event 3						1					
Event 4			1								
Event 5											
Event 6											
Event 7											
Event 8			1								
Event 9											
Event 10											
Event 11											
Event 12			1								
Event 13											
Event 14				1							
Event 15					1						
Event 16								1			
Event 17					1						
Event 18									1		
Event 19											
Event 20								1			
POINT TOTAL			**3**	**1**	**2**	**1**		**2**	**1**		

# of Individuals											
Survey Event	**AGOS**	**AMKE**	**BAEA**	**BAOW**	**GHOW**	**NOHA**	**RLHA**	**RTHA**	**SEOW**	**TUVU**	**Unidentified Raptor**
	Point 9										
Event 1			1					1			
Event 2											
Event 3				1							
Event 4			3				1				
Event 5			1							1	
Event 6											
Event 7			5								
Event 8											
Event 9			4								
Event 10	1										
Event 11					2						
Event 12			1								1
Event 13			1								
Event 14											
Event 15			1								
Event 16											
Event 17											
Event 18											
Event 19											
Event 20											
POINT TOTAL	**1**		**5**	**2**		**1**	**1**	**2**			

# of Individuals											
Survey Event	**AGOS**	**AMKE**	**BAEA**	**PEFA**	**GHOW**	**NOHA**	**RLHA**	**RTHA**	**SEOW**	**TUVU**	**Unidentified Raptor**
	Point 10										
Event 1			1					1			
Event 2											
Event 3				1							
Event 4			3				1				
Event 5			1							1	
Event 6											
Event 7			5								
Event 8											
Event 9			4								
Event 10	1										
Event 11					2						
Event 12			1								1
Event 13			1								
Event 14											
Event 15			1								
Event 16											
Event 17											
Event 18											
Event 19											
POINT TOTAL	**1**		**18**	**1**	**2**		**1**	**1**		**1**	**1**

APPENDIX C: SELECT SITE PHOTOGRAPHS

PHOTOGRAPHIC DOCUMENTATION			
Client:	CS Grass River Solar, LLC	**ORES File No.:**	24-03061
Site Name:	Grass River Solar	**Location:**	Towns of Lisbon and Waddington, NY

Description:	Original Point 1 location facing NE

Photograph Number 1

PHOTOGRAPHIC DOCUMENTATION			
Client:	CS Grass River Solar, LLC	**ORES File No.:**	24-03061
Site Name:	Grass River Solar	**Location:**	Towns of Lisbon and Waddington, NY

Description:	Original Point 1 location facing S

Photograph Number 2

PHOTOGRAPHIC DOCUMENTATION			
Client:	CS Grass River Solar, LLC	**ORES File No.:**	24-03061
Site Name:	Grass River Solar	**Location:**	Towns of Lisbon and Waddington, NY

Description:	Original Point 1 location facing SW

Photograph Number 3

PHOTOGRAPHIC DOCUMENTATION			
Client:	CS Grass River Solar, LLC	**ORES File No.:**	24-03061
Site Name:	Grass River Solar	**Location:**	Towns of Lisbon and Waddington, NY

Description:	Updated Point 1 location facing NE.

Photograph Number 4

PHOTOGRAPHIC DOCUMENTATION			
Client:	CS Grass River Solar, LLC	**ORES File No.:**	24-03061
Site Name:	Grass River Solar	**Location:**	Towns of Lisbon and Waddington, NY

Description:	Updated Point 1 location facing NW.

Photograph Number 5

PHOTOGRAPHIC DOCUMENTATION			
Client:	CS Grass River Solar, LLC	**ORES File No.:**	24-03061
Site Name:	Grass River Solar	**Location:**	Towns of Lisbon and Waddington, NY

Description:	Updated Point 1 location facing SE.

Photograph Number 6

PHOTOGRAPHIC DOCUMENTATION			
Client:	CS Grass River Solar, LLC	**ORES File No.:**	24-03061
Site Name:	Grass River Solar	**Location:**	Towns of Lisbon and Waddington, NY

Description:	Updated Point 1 location facing SW.

Photograph Number 7

PHOTOGRAPHIC DOCUMENTATION			
Client:	CS Grass River Solar, LLC	**ORES File No.:**	24-03061
Site Name:	Grass River Solar	**Location:**	Towns of Lisbon and Waddington, NY

Description:	Point 2 facing N.

Photograph Number 8

PHOTOGRAPHIC DOCUMENTATION			
Client:	CS Grass River Solar, LLC	**ORES File No.:**	24-03061
Site Name:	Grass River Solar	**Location:**	Towns of Lisbon and Waddington, NY

Description:	Point 2 facing E

Photograph Number 9

PHOTOGRAPHIC DOCUMENTATION			
Client:	CS Grass River Solar, LLC	**ORES File No.:**	24-03061
Site Name:	Grass River Solar	**Location:**	Towns of Lisbon and Waddington, NY

Description:	Point 2 facing S

Photograph Number 10

PHOTOGRAPHIC DOCUMENTATION			
Client:	CS Grass River Solar, LLC	**ORES File No.:**	24-03061
Site Name:	Grass River Solar	**Location:**	Towns of Lisbon and Waddington, NY

Description:	Point 2 facing W

Photograph Number 11

PHOTOGRAPHIC DOCUMENTATION			
Client:	CS Grass River Solar, LLC	**ORES File No.:**	24-03061
Site Name:	Grass River Solar	**Location:**	Towns of Lisbon and Waddington, NY

Description:	Point 3 facing North

Photograph Number 12

PHOTOGRAPHIC DOCUMENTATION			
Client:	CS Grass River Solar, LLC	**ORES File No.:**	24-03061
Site Name:	Grass River Solar	**Location:**	Towns of Lisbon and Waddington, NY

Description:	Point 3 facing E

Photograph Number 13

PHOTOGRAPHIC DOCUMENTATION			
Client:	CS Grass River Solar, LLC	**ORES File No.:**	24-03061
Site Name:	Grass River Solar	**Location:**	Towns of Lisbon and Waddington, NY

Description:	Point 3 facing S

Photograph Number 14

PHOTOGRAPHIC DOCUMENTATION			
Client:	CS Grass River Solar, LLC	**ORES File No.:**	24-03061
Site Name:	Grass River Solar	**Location:**	Towns of Lisbon and Waddington, NY

Description:	Point 3 facing W.

Photograph Number 15

PHOTOGRAPHIC DOCUMENTATION			
Client:	CS Grass River Solar, LLC	**ORES File No.:**	24-03061
Site Name:	Grass River Solar	**Location:**	Towns of Lisbon and Waddington, NY

Description:	Point 4 facing N

Photograph Number 16

PHOTOGRAPHIC DOCUMENTATION			
Client:	CS Grass River Solar, LLC	**ORES File No.:**	24-03061
Site Name:	Grass River Solar	**Location:**	Towns of Lisbon and Waddington, NY

Description:	Point 4 facing E

Photograph Number 17

PHOTOGRAPHIC DOCUMENTATION			
Client:	CS Grass River Solar, LLC	**ORES File No.:**	24-03061
Site Name:	Grass River Solar	**Location:**	Towns of Lisbon and Waddington, NY

Description:	Point 4 facing S

Photograph Number 18

PHOTOGRAPHIC DOCUMENTATION			
Client:	CS Grass River Solar, LLC	**ORES File No.:**	24-03061
Site Name:	Grass River Solar	**Location:**	Towns of Lisbon and Waddington, NY

Description:	Point 4 facing W.

Photograph Number 19

PHOTOGRAPHIC DOCUMENTATION			
Client:	CS Grass River Solar, LLC	**ORES File No.:**	24-03061
Site Name:	Grass River Solar	**Location:**	Towns of Lisbon and Waddington, NY

Description:	Point 5 facing N

Photograph Number 20

PHOTOGRAPHIC DOCUMENTATION			
Client:	CS Grass River Solar, LLC	**ORES File No.:**	24-03061
Site Name:	Grass River Solar	**Location:**	Towns of Lisbon and Waddington, NY

Description:	Point 5 facing E.

Photograph Number 21

PHOTOGRAPHIC DOCUMENTATION			
Client:	CS Grass River Solar, LLC	**ORES File No.:**	24-03061
Site Name:	Grass River Solar	**Location:**	Towns of Lisbon and Waddington, NY

Description:	Point 5 facing S.

PHOTOGRAPHIC DOCUMENTATION			
Client:	CS Grass River Solar, LLC	**ORES File No.:**	24-03061
Site Name:	Grass River Solar	**Location:**	Towns of Lisbon and Waddington, NY

Description:	Point 5 facing W

Photograph Number 23

PHOTOGRAPHIC DOCUMENTATION			
Client:	CS Grass River Solar, LLC	**ORES File No.:**	24-03061
Site Name:	Grass River Solar	**Location:**	Towns of Lisbon and Waddington, NY

Description:	Point 6 facing N.

Photograph Number 24

PHOTOGRAPHIC DOCUMENTATION			
Client:	CS Grass River Solar, LLC	**ORES File No.:**	24-03061
Site Name:	Grass River Solar	**Location:**	Towns of Lisbon and Waddington, NY

Description:	Point 6 facing E

Photograph Number 25

PHOTOGRAPHIC DOCUMENTATION			
Client:	CS Grass River Solar, LLC	**ORES File No.:**	24-03061
Site Name:	Grass River Solar	**Location:**	Towns of Lisbon and Waddington, NY

Description:	Point 6 facing S.

Photograph Number 26

PHOTOGRAPHIC DOCUMENTATION			
Client:	CS Grass River Solar, LLC	**ORES File No.:**	24-03061
Site Name:	Grass River Solar	**Location:**	Towns of Lisbon and Waddington, NY

Description:	Point 6 facing W

Photograph Number 27

PHOTOGRAPHIC DOCUMENTATION			
Client:	CS Grass River Solar, LLC	**ORES File No.:**	24-03061
Site Name:	Grass River Solar	**Location:**	Towns of Lisbon and Waddington, NY

Description:	Point 7 facing N

Photograph Number 28

PHOTOGRAPHIC DOCUMENTATION			
Client:	CS Grass River Solar, LLC	**ORES File No.:**	24-03061
Site Name:	Grass River Solar	**Location:**	Towns of Lisbon and Waddington, NY

Description:	Point 7 facing E.

Photograph Number 29

PHOTOGRAPHIC DOCUMENTATION			
Client:	CS Grass River Solar, LLC	**ORES File No.:**	24-03061
Site Name:	Grass River Solar	**Location:**	Towns of Lisbon and Waddington, NY

Description:	Point 7 facing S.

Photograph Number 30

PHOTOGRAPHIC DOCUMENTATION			
Client:	CS Grass River Solar, LLC	**ORES File No.:**	24-03061
Site Name:	Grass River Solar	**Location:**	Towns of Lisbon and Waddington, NY

Description:	Point 7 facing W

Photograph Number 31

PHOTOGRAPHIC DOCUMENTATION			
Client:	CS Grass River Solar, LLC	**ORES File No.:**	24-03061
Site Name:	Grass River Solar	**Location:**	Towns of Lisbon and Waddington, NY

Description:	Point 8 facing N

Photograph Number 32

PHOTOGRAPHIC DOCUMENTATION			
Client:	CS Grass River Solar, LLC	**ORES File No.:**	24-03061
Site Name:	Grass River Solar	**Location:**	Towns of Lisbon and Waddington, NY

Description:	Point 8 facing East

Photograph Number 33

PHOTOGRAPHIC DOCUMENTATION			
Client:	CS Grass River Solar, LLC	**ORES File No.:**	24-03061
Site Name:	Grass River Solar	**Location:**	Towns of Lisbon and Waddington, NY

Description:	

Photograph Number 34

PHOTOGRAPHIC DOCUMENTATION			
Client:	CS Grass River Solar, LLC	**ORES File No.:**	24-03061
Site Name:	Grass River Solar	**Location:**	Towns of Lisbon and Waddington, NY

Description:	Point 8 facing W

Photograph Number 35

PHOTOGRAPHIC DOCUMENTATION			
Client:	CS Grass River Solar, LLC	**ORES File No.:**	24-03061
Site Name:	Grass River Solar	**Location:**	Towns of Lisbon and Waddington, NY

Description:	Updated Point 8 facing N.

Photograph Number 36

PHOTOGRAPHIC DOCUMENTATION			
Client:	CS Grass River Solar, LLC	**ORES File No.:**	24-03061
Site Name:	Grass River Solar	**Location:**	Towns of Lisbon and Waddington, NY

Description:	Updated Point 8 facing E

Photograph Number 37

PHOTOGRAPHIC DOCUMENTATION			
Client:	CS Grass River Solar, LLC	**ORES File No.:**	24-03061
Site Name:	Grass River Solar	**Location:**	Towns of Lisbon and Waddington, NY

Description:	Updated Point 8 facing S

Photograph Number 38

PHOTOGRAPHIC DOCUMENTATION			
Client:	CS Grass River Solar, LLC	**ORES File No.:**	24-03061
Site Name:	Grass River Solar	**Location:**	Towns of Lisbon and Waddington, NY

Description:	Updated Point 8 facing W

Photograph Number 39

PHOTOGRAPHIC DOCUMENTATION			
Client:	CS Grass River Solar, LLC	**ORES File No.:**	24-03061
Site Name:	Grass River Solar	**Location:**	Towns of Lisbon and Waddington, NY

Description:	Point 9 facing N

Photograph Number 40

PHOTOGRAPHIC DOCUMENTATION			
Client:	CS Grass River Solar, LLC	**ORES File No.:**	24-03061
Site Name:	Grass River Solar	**Location:**	Towns of Lisbon and Waddington, NY

Description:	Point 9 facing E

Photograph Number 41

PHOTOGRAPHIC DOCUMENTATION			
Client:	CS Grass River Solar, LLC	**ORES File No.:**	24-03061
Site Name:	Grass River Solar	**Location:**	Towns of Lisbon and Waddington, NY

Description:	Point 9 facing S

Photograph Number 42

PHOTOGRAPHIC DOCUMENTATION			
Client:	CS Grass River Solar, LLC	**ORES File No.:**	24-03061
Site Name:	Grass River Solar	**Location:**	Towns of Lisbon and Waddington, NY

Description:	Point 9 facing W

Photograph Number 43

PHOTOGRAPHIC DOCUMENTATION			
Client:	CS Grass River Solar, LLC	**ORES File No.:**	24-03061
Site Name:	Grass River Solar	**Location:**	Towns of Lisbon and Waddington, NY

Description:	Point 10 facing N

Photograph Number 44

PHOTOGRAPHIC DOCUMENTATION			
Client:	CS Grass River Solar, LLC	**ORES File No.:**	24-03061
Site Name:	Grass River Solar	**Location:**	Towns of Lisbon and Waddington, NY

Description:	Point 10 facing E

Photograph Number 45

PHOTOGRAPHIC DOCUMENTATION			
Client:	CS Grass River Solar, LLC	**ORES File No.:**	24-03061
Site Name:	Grass River Solar	**Location:**	Towns of Lisbon and Waddington, NY

Description:	Point 10 facing S

Photograph Number 46

PHOTOGRAPHIC DOCUMENTATION			
Client:	CS Grass River Solar, LLC	**ORES File No.:**	24-03061
Site Name:	Grass River Solar	**Location:**	Towns of Lisbon and Waddington, NY

Description:	Point 10 facing W

Photograph Number 47

APPENDIX D: COMPLETED DATA SHEETS