TETRA TECH

June 5, 2018

Subject: Grassland Breeding Bird Survey Site-Specific Work Plan for
High River Energy Center, LLC's proposed
High River Energy Center Solar Project
Town of Florida, Montgomery County, New York

INTRODUCTION

High River Energy Center, LLC proposes to construct a solar energy center in the Town of Florida, Montgomery County, New York (see Figure 1, Regional Project Location). The solar energy center will have a generating capacity of 90 megawatts located on land either leased or purchased from owners of private property. The following work plan describes the approach for determining presence and site use by state-listed threatened/endangered and rare grassland bird species during the breeding season. The methodology proposed here follows protocols described in New York State Department of Environmental Conservation (NYSDEC) Draft Survey Protocol for State-listed Breeding Grassland Bird Species (2015). This protocol addresses rare, threatened, and endangered (RTE) and special concern (SC) grassland nesting birds in New York State including: Northern Harrier (T), Upland Sandpiper (T), Short-Eared Owl (E), Henslow's Sparrow (T), Sedge Wren (T), Grasshopper Sparrow (SC), Vesper Sparrow (SC), and Horned Lark (SC).

This Site-Specific Work Plan was submitted to NYSDEC on May 14, 2018 and comments were received on May 23, 2018. Revisions to the original Work Plan based upon input from NYSDEC are indicated in 'track changes'.

PROJECT INFORMATION AND EXISTING SETTING

High River Energy Center, LLC is currently evaluating an approximately 1,115-acre project area for placement of permanent project facilities (solar arrays, inverters, access roads, collection lines) including a proposed collection substation and interconnection facilities. Preliminary assessments indicate ~~Land~~ land cover in the project area consists primarily of agricultural land (approximately 708 acres), with portions of forestland, successional old-field, aquatic habitat, and rural residential properties making up the remaining approximately 407 acres of the project area. The agricultural land onsite consists entirely of grasslands such as hayfields and pasture. Actual land cover will be field verified and documented. Accordingly, High River Energy Center, LLC plans to conduct grassland breeding bird surveys to evaluate State-listed bird use at the site.

A review of the NYSDEC New York Nature Explorer online mapping system indicates that no records of potential species are found on the proposed project site. Nature Explorer also indicates that Henslow's Sparrow has been documented as being located in Montgomery County; therefore, evening surveys will be conducted ~~during each survey period~~ as outlined below (NYSDEC Nature Explorer).

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METHODS

Surveys will be conducted ~~four times~~once a week during the breeding season (20 May through 20 July) ~~with one survey period in late May, two in June, and one in July~~. It is anticipated that at least one survey period will be completed before any haying or mowing is done at the site. During each survey period, the study area will be surveyed once in the morning ~~and once in the evening~~. Two evening surveys targeting Henslow's sparrows will be conducted during the middle and/or later portions of the survey period.

Survey of breeding grassland birds will consist of point counts and meander surveys. Point count surveys will be conducted at 17 observations points placed in suitable grassland habitat. Suitable grassland sites were defined as areas ("patches") larger than 12 acres that are dominated by grasses and forbs. A total of 708 acres of suitable grassland habitat was determined to be present at the Site. Potential sampling areas were first identified by applying a 100-meter buffer around obstructions such as forests, hedgerows, large roads, and developed areas. A total of 140 acres of sampling area remained after applying obstruction buffers (See Attachment A).

Each point count location consists of a 100-meter radius plot centered on the observation point with a minimum distance of 250 meters between observation points. Survey points were randomly selected from all possible points in the sampling area placing at least 1 point per 25 acres. Meander surveys will be conducted between points to help ensure that the most suitable habitats for RTE grassland birds have been adequately covered.

Morning surveys will be conducted starting at a half hour before sunrise until no later than 10:30 AM. Evening surveys will be conducted one hour before sunset until two hours after sunset. The order in which points are surveyed will be reversed during each count, so that the same point is not always surveyed during the same time period. Surveys will not be conducted during inclement weather, including precipitation, fog, or strong winds (i.e., greater than 10 – 12mph).

Point counts will to be conducted for five minutes after an initial 1 – 2 minutes of silence after arriving at the point to allow birds to recover from any disturbance. All birds observed within approximately 100 meters of points will be recorded, and birds observed beyond 100 meters from the point and during meander surveys (while walking between points) will be recorded in a separate column on the data sheet.

Data recorded for each survey point will include: date; observer name(s); site name; patch name; point number; start and end time of observation period; survey period; and weather information (including temperature, wind speed and direction, precipitation and cloud cover) (see Attachment B). During the five minute point count, species identification, number of individuals per species (<5, 6 – 10, or > 10, but if possible actual number), behavior (nesting, flying, perching, singing, etc.) and the "highest" behavior code will be recorded for each species. Also recorded will be species heard or seen while doing meander surveys or walking between points and flyover species.

Site description information will be collected on a separate data sheet after the point counts are complete during each survey period and will include information such as: patch size, habitat type, distance from a trail or road, distance from hedgerow or wood line and vegetation measurements within 25 meters of the survey point.

Vegetation measurements to be recorded will include: Percent cover of each vegetation type (i.e., grass, forb, woody, etc.); dominant grass and forb; percent bare; average vegetation height; litter depth; and nearest shrub above vegetation height. A robel pole will be used to determine average height and density measured from four

cardinal directions and then averaged. The presence of invasive species, and any recent management practices will also be documented. Vegetation measurements will be conducted ~~during the May survey~~ weekly.

A final report will be submitted to NYSDEC at the conclusion of the 2018 survey year. Final reports will include: data sheets; maps (ideally recent aerial photographs) and shapefiles; summaries of all observations (including species location on the landscape and movements) of grassland birds (and any other state - listed species observed); and a conclusion regarding whether more comprehensive studies may be necessary to assess the potential for the project to negatively affect endangered or threatened grassland nesting species. Field verification of actual agricultural land cover (i.e. grassland versus row crops) will be documented.

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FIGURE 1

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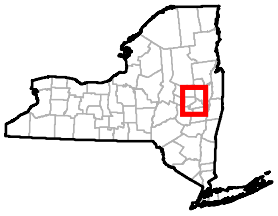
Project Area

N

0 1 2 3 4 5 Miles

Base Map: USGS National Map, 2018

MAP LOCATION



High River Energy Center, LLC

REGIONAL PROJECT LOCATION

HIGH RIVER ENERGY CENTER
TOWN OF FLORIDA, NY

FIGURE 1	APRIL 2018

Map Produced by TRC

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ATTACHMENT A

Tetra Tech, Inc.

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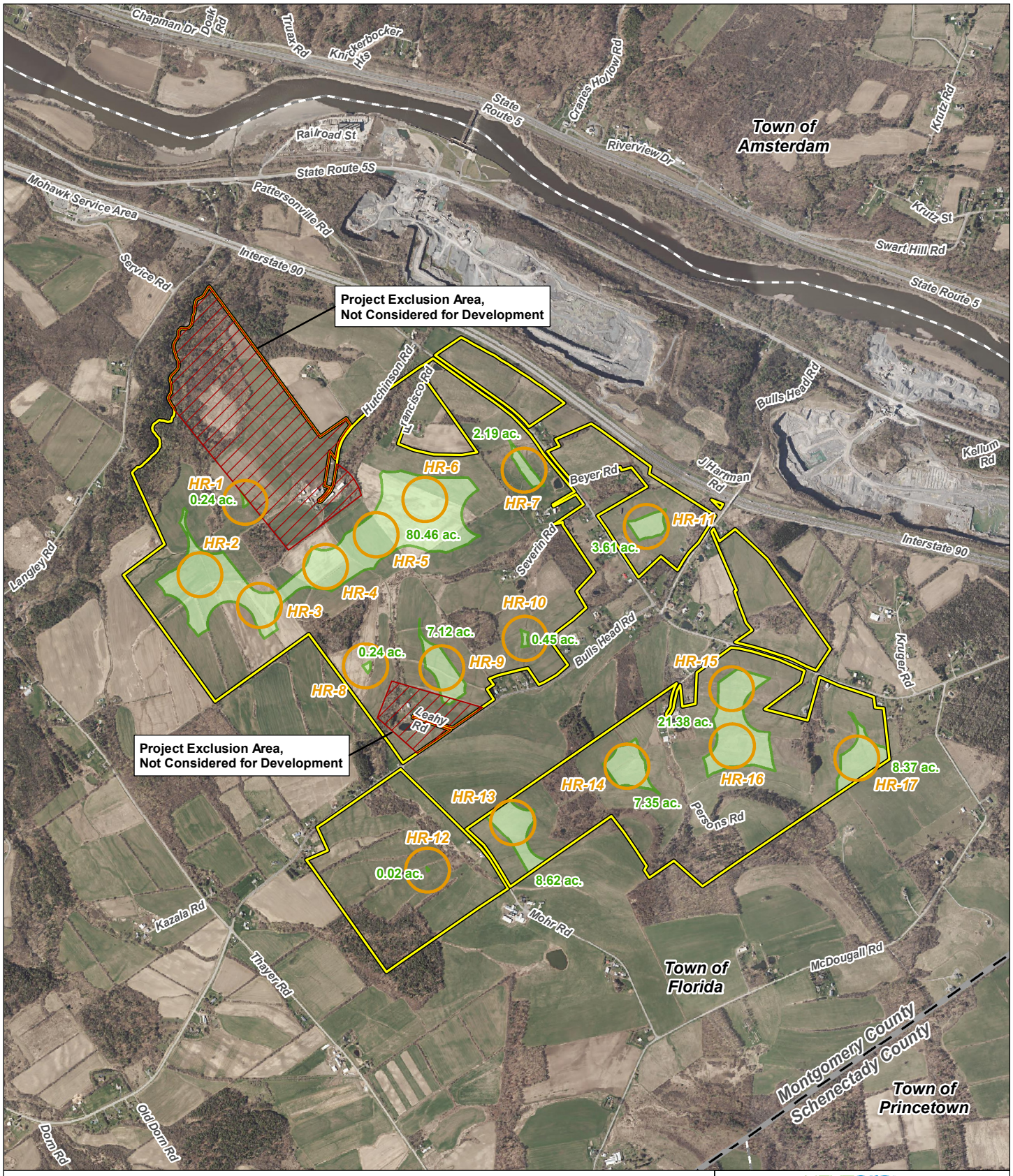
Project Exclusion Area, Not Considered for Development
Project Exclusion Area, Not Considered for Development
HR-1
0.24 ac.
HR-2
HR-3
HR-4
HR-5
80.46 ac.
HR-6
HR-7
2.19 ac.
HR-8
0.24 ac.
HR-9
7.12 ac.
HR-10
0.45 ac.
HR-11
3.61 ac.
HR-12
0.02 ac.
HR-13
8.62 ac.
HR-14
7.35 ac.
HR-15
21.38 ac.
HR-16
HR-17
8.37 ac.
Town of Amsterdam
Town of Florida
Town of Princetown
Montgomery County
Schenectady County
Chapman Dr
Doak Rd
Truax Rd
Knickerbocker Hts
State Route 5
Cranes Hollow Rd
Railroad St
Riverview Dr
Kruitz Rd
State Route 5S
Mohawk Service Area
Pattersonville Rd
Interstate 90
Service Rd
Swart Hill Rd
Hutchinson Rd
Landsco Rd
Bulls Head Rd
Kellum Rd
Beyer Rd
J Hartman Rd
Severin Rd
Langley Rd
Leahy Rd
Kruger Rd
Persons Rd
Kazala Rd
Thayer Rd
Mohr Rd
McDougall Rd
Dorn Rd
Old Dorn Rd
Project
Grassland Sampling Area (100-Meter Offset from Obstructions)
Observation Points
Project Exclusion
Municipal Boundary
County Boundary
N
0
2,000
Feet
Data: NYS GIS Program Office
Base Map: NYS GIS Program Office, 2016
NEXTera ENERGY
GRASSLAND BREEDING BIRD SURVEY LOCATIONS
HIGH RIVER ENERGY CENTER
TOWN OF FLORIDA, NY
ATTACHMENT A
MAY 2018
Map Produced by TRC

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ATTACHMENT B

Tetra Tech, Inc.

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Grassland Bird Survey
Point Count Data Sheet

Date: _____ **Observer:** _____

Point #: _____ **Site Name:** _____

Wind Speed: 0-3 / 4-6 / 7-10 mph **Cloud Cover**: 0 / ≤ 25 / ≤ 50 / ≤ 75 / >75% **Temperature**: _____°F / °C

Start Time: _____ (end count after 5 minutes) **Replicate:** 1 / 2 / 3 / evening

SPECIES	CODE	# of Males Singing or visual ID	# of Females Visual ID	# of Unknown Sex (not singing, sexes alike)	Behavior Code record highest code if observed	Number Observed >100 m from points	Number Observed	
							Between Points	Flyover Species
Bobolink *	BOBO							
Eastern Meadowlark	EAME							
Savannah Sparrow	SAVS							
Grasshopper Sparrow	**GRSP**							
Henslow's Sparrow	**HESP**							
Vesper Sparrow	**VESP**							
Upland Sandpiper	**UPSA**							
Sedge Wren	**SEWR**							
Northern Harrier	**NOHA**							
American Kestrel	AMKE							
Short-eared Owl	SEOW							
Horned Lark	HOLA							
Golden-winged Warbler	GWWA							

Behavior codes:

N=Carrying nesting material
DD=Distraction display
FL=*Recently* fledged young
ON=Going into nest box
FS=Adult carrying fecal sac
FY=Adult with food for young (carrying food or feeding young)
NE/NY=Nest with eggs/nest with young
MF=Mixed flock of adults & juveniles

Note: Loggerhead Shrike and Dickcissel should be noted if present.

***May use categories instead of exact count if >5 individuals: 6-10 or >10 (if desired).**

Beaufort Wind Scale

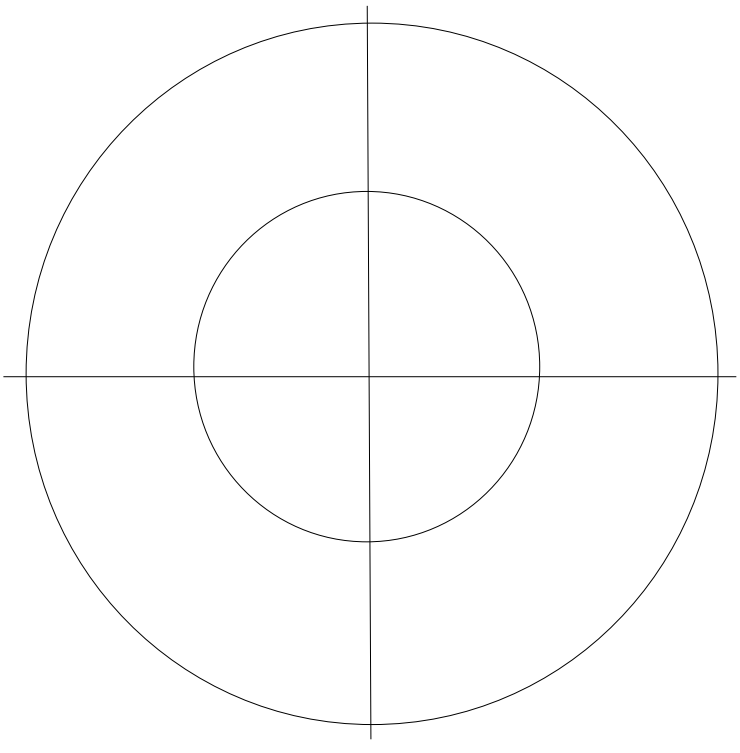
0-3 mph:
Calm/smoke rises vertically (0 mph) or Smoke drift indicates wind direction/still wind vanes (1-3 mph).

4-6 mph:
Wind felt on face, leaves rustle, vanes begin to move.

7-10 mph:
Leaves & small twigs constantly moving, light flags extended.

Comments:

100 Meters



BBP 5/12/2016

Date: _____ **Observer:** _____

Site Name: _____ **Patch Name:** _____

Point #: _____ **Replicate:** 1 / 2 / 3 / evening

Habitat Type (check one):

	Warm-season grass		Mixed warm/cool		Wet Meadow		Fallow Row Crop		Hay
	Cool-season grass		Old Field		Pasture		Row Crop		Other (describe)

Other: _____

Distance from trail/road: _____ **Distance from Hedgerow/Woods:** _____

Within 25 m radius of survey point:

% Grass:		Dominant grass	
% Forb:		Dominant Forb	
% Bare:		Est. Veg. Height (average)	
% Woody:		Litter depth (cm)	
Total =	100%		

Invasive Species present:

Species	% Cover	Type of Distribution (small/large patch, single/few plants, scattered throughout, etc.)

Distance to Nearest Shrub (above veg. ht.):_____

Average height/density:

Robel pole (nearest 0.5 decimeter)	N	S	E	W	Avg.

Estimated Vegetation Density (check one)		**Rank**=ground not visible through base of stems at ground level, cannot easily push hand through the stems.
		Moderate=anything that falls between these two extremes.
		Sparse=ground easily visible through the bases of widely scattered stems.

Management (describe site management/land use): **# of Years since last mowed/burned:** ____

_____

_____

Sketch of site if needed: