

Birch Solar 1, LLC
Case No. 20-1605-EL-BGN

Exhibit D

Vegetation Management Plan



Birch Solar Project Vegetation Management Plan

Birch Solar 1, LLC (Birch Solar) has developed a vegetation management plan for the Birch Solar Project, located in Allen and Auglaize Counties, Ohio (Project). The purpose of this plan is to ensure the vegetation within the Project area is protected during construction and operation of the Project to the extent possible and is documented per Ohio Administrative Code 4906-4-08(B)(2)(b)(v)-(vii). Further, this plan will provide guidance for how areas temporarily disturbed by construction of the Project will be stabilized and vegetation restored as quickly and effectively as possible to meet applicable Ohio environmental Protection Agency (OEPA) construction storm water permit requirements for the Project.

Project Introduction

The 300 megawatt alternating current solar energy facility is proposed to be located across approximately 2,345 acres in an agricultural landscape in Allen and Auglaize Counties, Ohio (Figure 1). The Project is approximately 3 miles southwest of the City of Lima. The footprint of the Project, where ground disturbance will occur, totals approximately 1,410 acres within the larger Project area.

Project Surveys and Vegetation Impacts

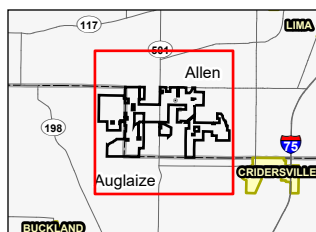
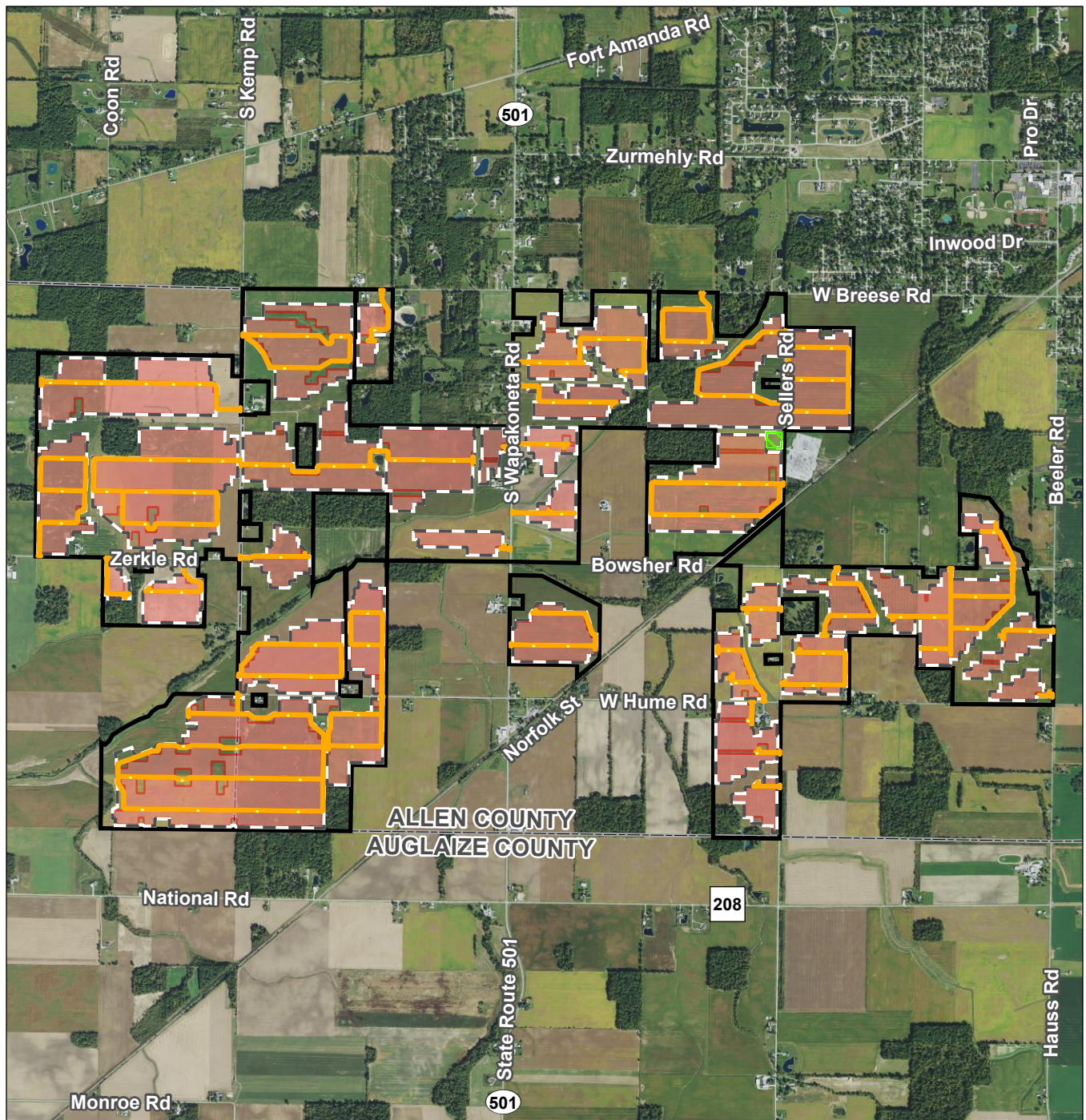
Stantec Consulting Services, Inc. (Stantec) completed wetland and stream delineation surveys for all land within the Project area over the course of three survey periods in August, September, and December 2020. The surveys resulted in the delineation of three wetlands totaling 0.5 acres and 14 streams totaling 27,007 linear feet. In addition, one pond totaling 0.69 acres was identified. Project infrastructure has been sited to avoid impacts to all wetlands, streams, and ponds within the Project area.

In addition to the wetland and stream delineation surveys, Stantec completed a habitat assessment of the vegetative communities present within the Project area. Cultivated crops comprised the majority of the Project area, totaling approximately 2,133 acres or approximately 91.0% of the overall Project area acreage. Fields were planted with corn (*Zea mays*), soybean (*Glycine max*), and winter wheat (*Triticum aestivum*). Upland forest/second growth deciduous forest was the next most common vegetation community (105.1 acres; 4.4%) followed by grassland/herbaceous – new field (70.8 acres, 3.0%). The remaining 1.6% of the Project area is composed of developed, open space – residential (17.3 acres), existing roadway (16.4 acres), scrub/shrub – old field (1.3 acres), open water (0.7 acres), palustrine forested wetland (0.5 acres), and palustrine scrub/shrub wetland (<0.1 acres).

Project Construction and Restoration Methods

Construction of the Project will include clearing and limited grading of the Project area, installation of stormwater and erosion control equipment, and installation of the Project infrastructure including racking modules, solar modules, inverters, electrical collection system, the Project substation, and perimeter fencing. The racks will be installed with pile driving and the underground electrical collection system will be installed through open-cut trenching and boring methods.

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- Notes**
1. Coordinate System:
NAD 1983 StatePlane Ohio North FIPS 3401 Feet
 2. Data Sources: Stantec, Lightsource, USGS, NADS
 3. Orthophotography: 2019 NAIP

- Legend**
- Project Area
 - Solar Array
 - Inverter
 - Substation
 - Fence
 - Access Road

0 1,500 3,000
Feet
(At original document size of 8.5x11)
1:36,000



Project Location
Allen and Auglaize Counties, Ohio

Client/Project
Lighthsource bp
Birch Solar Project

Prepared by JLH on 2021-01-21
TR by CA on 2021-01-23
IR by CMD on 2021-01-23

2028113238

Figure No.
1

Title
Project Area Location Map

Disclaimer: This document has been prepared based on information provided by others as cited in the Notes section. Stantec has not verified the accuracy and/or completeness of this information and shall not be responsible for any errors or omissions which may be incorporated herein as a result. Stantec assumes no responsibility for data supplied in electronic format, and the recipient accepts full responsibility for verifying the accuracy and completeness of the data.

It is anticipated that Project construction will take approximately 12 to 18 months. Construction of the Project will result in approximately 1,410 acres of disturbance, almost all of which will be agricultural fields (1,404.7 acres). New fields will comprise 4.8 acres and residential lawns approximately 0.7 acres.

Immediately after construction the disturbed areas will be seeded to stabilize the site. The Project will be considered stabilized when soil disturbance is finished and a uniform perennial vegetative cover with a density of 70% has been achieved in portions of the Project area where infrastructure is not located. Any seed, straw, and/or matting used within the Project area shall meet Ohio stormwater standards (OEPA 2006¹).

As discussed in more detail as part of the Project Operation, Birch Solar intends to maximize multiple land use opportunities by installing pollinator habitat throughout the Project Facility and continuing agricultural activities through a sheep grazing program that will manage vegetation. As such, the vegetation cover will consist of a curated seed mix that will be suitable for sheep, in addition to providing habitat to pollinators and other wildlife. Birch Solar will implement the pollinator habitat recommendations provided by ODNR Division of Wildlife pertaining to the Ohio Pollinator Habitat Initiative.

PROJECT OPERATION

A sheep grazing program will be implemented during Project operations to provide long term vegetation management within and around photovoltaic solar arrays. This effort aligns with the concept of “agrivoltaics”, which is a system where solar and agricultural are co-located for mutual benefit. Mechanical maintenance will be used to manage vegetation outside the perimeter fencing, as well as to complement sheep grazing, if needed, throughout the project area.

Birch Solar, working with Agrivoltaic Solutions LLC, will partner with farmers in the community, offering them diversified revenue to manage Project vegetation through sheep grazing. Rotational grazing, the recommended best practice for grazing solar arrays, will be employed at the site and managed by local farmers. Flocks will follow a planned rotation with targeted numbers of sheep that are kept moving within different sections of the array on a planned route. Flocks of sheep will move every one to four days to allow access to fresh forage, based on weather, the vegetation height, and the vegetation quality. Academic studies have documented improved soil health and water quality from properly managed animal interactions with the land.

The project is partnering with Ohio State University, College of Food, Agricultural and Environmental Sciences on research relating to honey bee foraging in the Ohio agroecosystem. Studies have shown that co-locating solar with pollinator friendly groundcover can expand habitat for the dwindling bee population and can also benefit local agriculture (DOE). This exciting work will commence following the establishment of pollinator habitat and apiaries on site which will be tailored to the needs of honey bees and native pollinators, aiming to attract both generalist and specialist bees and butterflies. Honey bee colonies will be established on the landscape through The Ohio State University and managed in collaboration with local beekeepers. Honey bee floral resource use will be identified with pollen metabarcoding analysis of collected pollen and honey samples. This will allow for the determination of the value of flowers included in the pollinator planting in the honey bee diet. In addition, we hope to

¹ OEPA. 2006. *Rainwater and Land Development, Ohio's Standards for Stormwater Management Land Development and Urban Stream Protection. Third Edition*. Columbus, Ohio. Accessed June 2020 at: <https://epa.ohio.gov/dsw/storm/rainwater>.

better understand the role of crops, particularly soybeans, as mid-season resources for bees and assess the impact of added honey bee colonies on crop yield.

MONITORING AND REPORTING

Once restoration areas have been stabilized in accordance with the SWPPP, which requires a minimum 70% vegetative cover density of erosion resistant perennial species, Birch Solar will document this, collecting photographs, and preparing a written report.

The project will be implementing an environmental management plan that lays out a structure for reporting progress and success pertaining to the sheep grazing program and the research conducted by Ohio State University.

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Summary: Application - 9 of 31 (Exhibit D – Vegetation Management Plan) electronically filed by Christine M.T. Pirik on behalf of Birch Solar 1, LLC