Docket 492
Gravel Pit Solar
Partial Development and Management Plan
Site Clearing, Earthwork and Horizontal Directional Drilling
South of Apothecaries Hall Road and north of South Windsor Town Line, in East Windsor
DRAFT Staff Report
May 14, 2021

On March 1, 2021, the Connecticut Siting Council (Council) issued a Certificate of Environmental Compatibility and Public Need (Certificate) to Gravel Pit Solar (GPS) for the construction, maintenance, and operation of an approximately 120 megawatt (MW) solar photovoltaic electric generating facility located generally to the east and west of Amtrak and Connecticut Rail Line, south of Apothecaries Hall Road, and north of the South Windsor town boundary in East Windsor, Connecticut and associated electrical interconnection. In its Decision and Order (D&O), the Council required GPS to submit a Development and Management (D&M) Plan. On March 31, 2021, GPS submitted the first phase of its D&M Plan (Partial D&M Plan I) for the project to perform pre-construction site preparation and installation of stormwater controls that includes, but is not limited to, site clearing and grubbing, installation of erosion and sedimentation controls; grading and earthwork; access road construction; horizontal directional drilling (HDD) under Ketch Brook and the Department of Transportation (DOT) railroad right-of-way (ROW); and pre-seeding the site in areas lacking vegetation.

Solar panels, inverters, racking, and substation/switchyard details will be submitted in Partial D&M Plan II.

The project is located on an approximately 485-acre site located on portions of eight separate parcels that total approximately 738 acres. The site parcels contain sand and gravel mining operations, agricultural fields, and wooded areas. Unimproved dirt farm roads interconnect the fields at the site and provide access to public roadways. Additionally, Eversource's electrical transmission line ROW crosses the proposed site from northwest to southeast. A DOT railroad ROW extends north-south through the center of the proposed site.

The D&O requires the following information to be included in the D&M Plan:

a) **A final site plan including, but not limited to, final facility layout, access roads, equipment pads, collector lines including crossings for Ketch Brook and Plantation Road, substation, switchyard, fence design, equipment pads, stormwater management control structures, and final site seeding;**

   Partial D&M Plan I site plans depict the site design, access drives, landscape plantings, stormwater management control structures, and fence design.

   Partial D&M Plan I includes the clearing of approximately 83 acres of forested areas along the edges of the site. See attached Tree Clearing Map. GPS will perform tree clearing, stabilization and vegetation within the growing season for 2021 prior to the installation of the solar facility. The construction sequence for Partial D&M Plan I is listed in Section (c) below.

   Partial D&M Plan I includes plans for HDD under Ketch Brook and the DOT railroad ROW on Sheet C-1.04. The originally proposed plans included two separate, non-continuous directional bore locations: one under Ketch Brook and one under the railroad ROW. The revised HDD design includes one continuous bore location which will cross beneath both Ketch Brook and the railroad ROW. This redesign reduces the need for work in the railroad ROW and results in about two acres of less tree clearing.

Bore pits of approximately 100 feet by 50 feet each will be established at each end of the HDD route. GPS will utilize a directional drilling machine which is a hydraulically-powered system to rotate, push and pull hollow drill pipe into the ground at a variable angle while delivering pressurized fluid mixture to a guidable drill (bore) head. The drilling fluid will be clear water with a non-hazardous additive.

A set of four (parallel) approximately 1,090-foot long bores will be performed. This will accommodate four 10-inch diameter high density polyethylene (HDPE) conduits installed with 10-foot center to center spacing for GPS's 34.5-kV connections between solar array areas. Each conduit will contain three conductors and an inner duct for fiber optic cable. The bores and conduits will be located at a depth of least 18 feet below Ketch Brook wetland; 35 feet below the railroad tracks; and 25 feet below the Buckeye Petroleum Pipeline.

The HDD contractor will adhere to all applicable local, state and federal safety regulations, and all operations shall be conducted in a safe manner. Railroad flagman and Buckeye Pipeline on-site inspector will be present during all active drilling.

The final plans for the Plantation Road crossing would be submitted in a future D&M Plan.

Access drives will be approximately 15 feet wide. Approximately 0.9 mile of existing access will be utilized, and approximately 4.8 miles of new access will be installed to serve all of the solar arrays, substation and switchyard.

A seven-foot high agricultural fence will be installed to enclose the solar array areas. A four to six inch gap will be maintained along alternating segments of fence or along the entirety of the undeveloped forested areas for wildlife movement. The fence will be flush to the ground along roadways and adjacent to residences, buildings, and all-terrain vehicle paths for security purposes.

Staff suggests including a condition that the final seed mix for under and around the solar panel areas be submitted to the Council.

b) **Erosion and sedimentation control plan consistent with the *2002 Connecticut Guidelines for Erosion and Sediment Control* including, but not limited to, temporary sediment basin details, site stabilization seeding/growing season details prior to the installation of post-driving/racking system, site stabilization measures during construction, inspection and reporting protocols, methods for periodic clearing of temporary sediment traps and swales during construction, and final cleaning of stormwater basins upon site stabilization;**

GPS included its erosion and sedimentation (E&S) control measures consistent with the 2002 Connecticut Guidelines for Erosion and Sedimentation Control (2002 E&S Guidelines) under Sheet Nos. C-5.0 through C-5.25 of Partial D&M Plan I. E&S control plans were submitted to DEEP as part of the pending stormwater permit review process. Pursuant to Condition No. 1 of the Council's D&O, a copy of the DEEP-issued Stormwater Permit is required to be submitted prior to commencement of any work identified in Partial D&M Plan I.

Temporary sediment traps/basins and swales will be inspected weekly (or after a ½" or greater storm event) for possible damage to side slopes, blockages, or ruts and rills. Post-construction inspections of permanent stormwater basins will be performed monthly for the first 3 months and after any storm event of ½" or greater.

c) **Site construction detail/phasing plan including, but not limited to, construction laydown area, site clearing/grubbing, site grading, excess earth material disposal locations, site stabilization seeding/growing season details, soil stockpile locations, and a fuel storage/spill plan that is protective of groundwater resources;**

GPS included its laydown/staging area, site/clearing grubbing, site stabilization seeding/growing season details in the attached drawings, and construction sequence information. Permanent soil stockpiling is not planned for this project at this time and thus was not included in Partial D&M Plan I. A Spill Prevention Control and Countermeasures Plan is included under Tab G of Partial D&M Plan I

Partial D&M Plan I construction sequence and details are identified as follows:

a) Install stabilized vehicle tracking pad at existing road intersection;
b) Survey and mark all woodland clearing limits;
c) Mark trees to be felled within 10 feet of clearing limits, and if necessary, install protection for trees to be preserved within 10 feet of clearing limits;
d) Field survey and mark boundary between clearing limits and grubbing limits;
e) As trees are cleared and grubbed, grind tops and root balls in tub grinder to create material for wood chip mulch berm;
f) As chip mulch material is produced, install mulch berm at the limits of disturbance generally in areas of cleared forest. Mulch berms will be about 1.5 to 2 feet high by 3 feet wide;
g) Install the perimeter mulch berm and install entrenched silt fence per the 2002 E&S Guidelines. Mulch berm and perimeter silt fence will be until completion of construction;
h) Address any outgoing erosion issue utilizing temporary diversions and filling and grading gullies;
i) Install stormwater basins per the Stormwater Pollution Control Plan (SWPCP) and 2002 E&S Guidelines;
j) Install other E&S controls per the 2002 E&S Guidelines;
k) Establish access roads to be used as primary access paths;
l) Perform earthwork at the site and install perimeter fence to serve as construction barrier. In areas where topsoil is present and grading will occur, topsoil will be stripped and temporarily stockpiled;
m) Upon completion of mass earthwork activities, stockpiled topsoil will be placed over regraded areas where topsoil was stripped;
n) Areas disturbed by mass earthwork shall be reseeded and stabilized as necessary;
o) Pre-seed areas that lack vegetation within the growing season of 2021, prior to 2022 construction activities; and
p) Install HDD under Ketch Brook and the DOT railroad ROW.

d) **Final Landscape Visual Mitigation Plan including, but not limited to, landscaping and other visual screening, pollinator plantings, and gate designs;**

GPS included its Final Landscape Mitigation Plan in Partial D&M Plan I. GPS will install two tiers or "modules" of landscaping for the project. See attached Landscape Mitigation Plan – Module Locations. Module 1 is intended for screening near residential areas and will be planted along both (northern and southern) sides of Plantation Road. Module 1 includes, but is not limited to, red oak; red maple "red sunset"; white spruce; shadblow serviceberry; eastern red cedar; northern bayberry; highbush blueberry; and winged sumac.

Module 2 is a seed mix for pollinator habitat and intended for areas where views of the project will generally be limited and/or fleeting. Module 2 will be planted along the northwestern portion of Parcel #16-50-001

and perpendicular to the Module 1 plantings. Module 2 includes, but is not limited to, little bluestem; sundial lupine; partridge pea; round-head bush clover; wild bergamot; butterfly milkweed; hyssop-leaved thoroughwort; showy goldenrod; gray goldenrod; blue wood (heartleaf) aster; false indigo; and New York Ironweed.

GPS evaluated the potential visual impacts associated with the use of the alternative access road off Apothecaries Hall Road. See Section (j). GPS determined that sight lines into the entrance drive were limited, and because this is an existing entrance, no additional visual mitigation is warranted at this location.

Double-swing gates will be installed on the agricultural fence for entry locations.

e) **Final DEEP NDDB Determination;**

Partial D&M Plan I includes the final DEEP Natural Diversity Database determination letter dated February 10, 2021 which includes, but not is limited to, protective measures for tree roosting bats; state-listed invertebrates; state-listed amphibians and reptiles; state-listed plant species; and state-listed bird species.

f) **Solar module specifications that indicate the selected solar module will not contain PFAS and will not be characterized as hazardous waste through TCLP testing;**

The solar modules planned for the project will not contain PFAS. TCLP testing will be conducted prior to the installation of the project modules in 2022. The TCLP test results will be included as part of Partial D&M Plan II.

g) **Final structural design for solar module racking system stamped by a Professional Engineer duly licensed in the State of Connecticut;**

The final structural design, stamped by a Connecticut-licensed Professional Engineer, will be included in Partial D&M Plan II.

h) **ISO-NE FCA #15 results specific to the project;**

The project qualified for participation in FCA #15. ISO-NE submitted the FCA #15 auction results to the Federal Energy Regulatory Commission on February 26, 2021. GPS will submit additional project-specific information related to the final auction results in Partial D&M Plan II.

i) **Consultation with the DEEP Dam Safety program regarding permitting requirements, if any, for the proposed stormwater basins prior to site construction;**

GPS has consulted DEEP Dam Safety Program regarding the project. By letter dated March 8, 2021, GPS confirmed that each of its stormwater basins would impound less than 3 acre-feet of impounded water. By email dated January 15, 2021, DEEP confirmed that a DEEP Dam Safety Permit is not required.

j) **If land control is finalized, details of the use of the secondary access road on Apothecaries Hall Road as an alternative entrance point;**

GPS has obtained a real estate option agreement from the East Windsor Sportsman's Club to purchase the existing access driveway into the north gravel pit (i.e. a 1.4-acre portion of Parcel #057-49-003). This

access point is over 600 feet west of the closest residential abutter and will be utilized by GPS to access the northern solar array area during both construction and operations.

The East Windsor Sportsman's Club parcel does not contain wetlands/watercourses or vegetated areas that contain significant wildlife habitat. The parcel also does not retain potential to yield archaeological resources.

k) **Project construction hours/days of the week; and**

Construction hours will be Monday through Friday between 7:00 a.m. and 5:00 p.m. However, GPS anticipates that weekend work and some longer hours may occur to meet critical milestones. Construction is expected to begin approximately summer/fall of 2021 and be completed by the end of 2022.

l) **Construction traffic control plan developed in consultation with the Town.**

The Traffic Management Plan (TMP), developed in consultation with the Town, is included in Partial D&M Plan I.

Personnel will arrive at the site at approximately 6:30 a.m. and depart the site at 5:00 p.m. Approximately 20 to 50 personnel per day are projected to be on-site during construction activities planned for 2021. The majority of the employees will park their personal vehicles in the designated staging areas on the site. No parking of employees will be within the ROWs of any Town-owned roadway.

Grading equipment (i.e. earth movers, bulldozers, excavators, front end loaders, sheep foot rollers) will be delivered during the 2021 construction season. Truck deliveries will be between 10 and 25 per day during the construction season. In the unanticipated event of a wide load trailer to handle a delivery, the use of escort vehicles will be employed.

The project will have five construction entrances as noted below:

a) Existing paved driveway to the Windsorville Road gravel pit from Windsorville Road located approximately 1,300 feet to the west of Wapping Road;
b) Existing paved entrance to the Windsorville Road gravel pit from Apothecaries Hall Road across from its intersection with Chamberlain Road;
c) Existing farm road entrance to the north of Plantation Road approximately 2,900 feet to the east of its intersection with Rye Street;
d) Existing paved entrance to the south of Plantation Road approximately 2,300 feet to the east of its intersection with Rye Street; and
e) Proposed access road entrance to the south of Plantation Road approximately 3,400 feet to the east of its intersection with Rye Street.

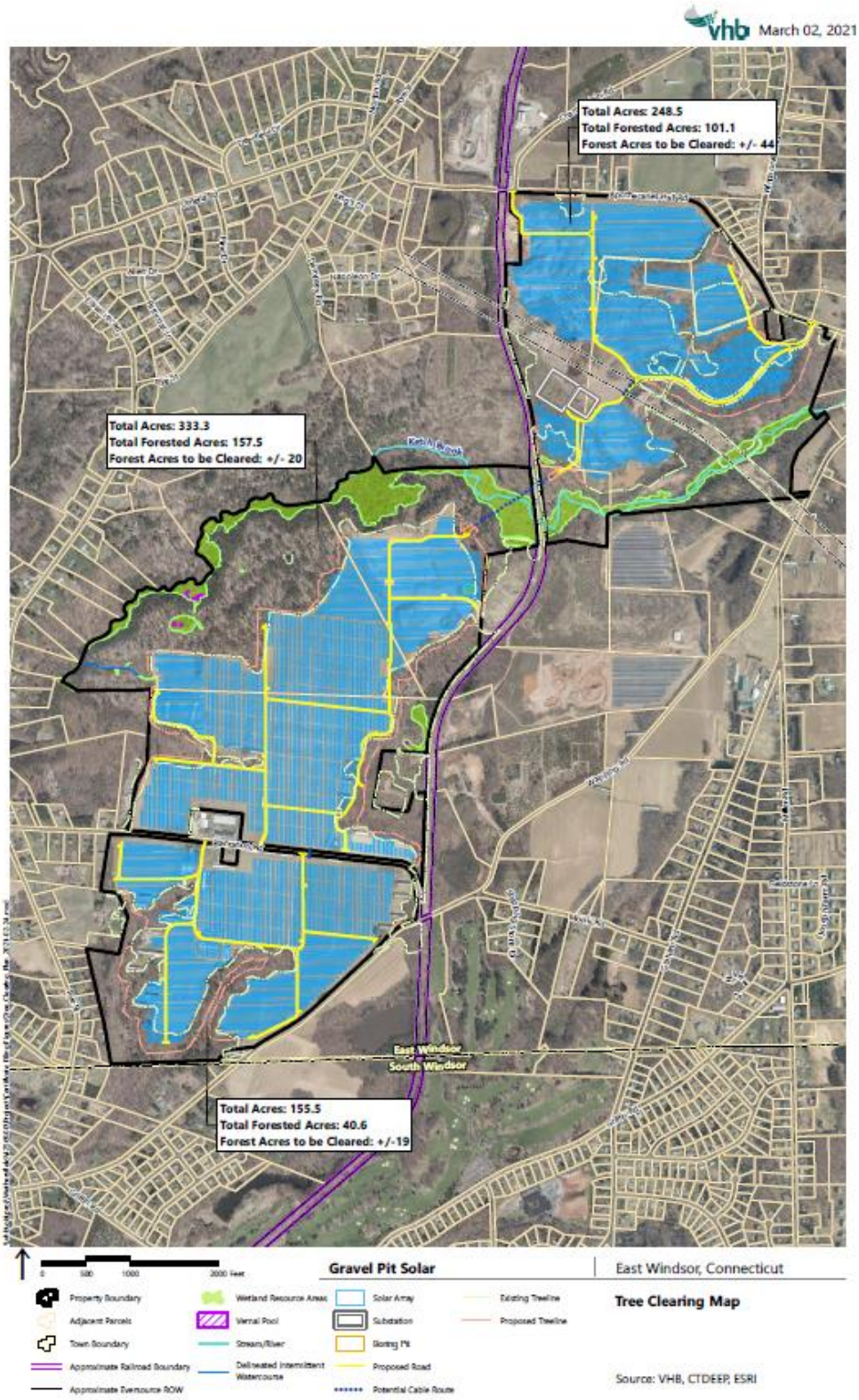
A Professional Engineer visited the site on March 5, 2021 to measure the available sight distances from the driveway locations.

Recommendations

If approved, staff recommends the following condition:

1. Submit the name(s) of the final seed mix(es) for under and around the solar panels.

Tree Clearing Map



Landscape Mitigation Plan – Module Locations