

# DRAFT

**Petition No. 1533  
ReNew Developers, LLC  
42 Old Amston Road  
Colchester, Connecticut  
Staff Report  
October 7, 2022**

## **Introduction**

On July 29, 2022, the Connecticut Siting Council (Council) received a petition from ReNew Developers, LLC (ReNew) for a declaratory ruling, pursuant to Connecticut General Statutes (CGS) §4-176 and §16-50k, for the installation of a customer-side 4.99 megawatt (MW) fuel cell facility and associated equipment to be constructed concurrently with a data center (Connecticut Data Park) at 42 Old Amston Road in Colchester, Connecticut (Petition or Project).

ReNew has kept the Town apprised of the Project. In May 2022, the Town of Colchester (Town) and CMMD, LLC, an abutter to the Project site, wrote correspondence addressed to the Council in support of granting permits and easements to facilitate development of the Project.<sup>1</sup> On July 28, 2022, ReNew provided notice of the Petition to abutting property owners, Town officials, required state agencies and officials, and the Town of Hebron, which has boundaries within 2,500 feet of the proposed facility. No comments were received.

On August 1, 2022, the Council sent correspondence to the Town and the Town of Hebron stating that the Council has received the Petition and invited the municipalities to contact the Council with any questions or comments by August 28, 2022. No comments were received.

Also on August 1, 2022, pursuant to Regulations of Connecticut State Agencies (RCSA) §16-50j-40, the Council notified all state agencies listed therein, requesting comments regarding the proposed Project be submitted to the Council by August 28, 2022. The Council on Environmental Quality<sup>2</sup> and the Department of Energy and Environmental Protection (DEEP)<sup>3</sup> submitted comments on August 25, 2022 and August 31, 2022, respectively, related to wetlands, wildlife and fire safety.

While the Council is obligated to consult with and solicit comments from state agencies by statute, the Council is not required to abide by the comments from state agencies.<sup>4</sup>

The Council issued interrogatories to ReNew on August 25, 2022. ReNew provided responses to the Council's interrogatories on September 9, 2022.

Pursuant to CGS §4-176(e) of the Uniform Administrative Procedure Act, an administrative agency is required to take action on a petition within 60 days of receipt. On September 15, 2022, pursuant to CGS §4-176(e), the Council voted to set the date by which to render a decision on the Petition as no later than January 4, 2023, which is the 180-day statutory deadline for a final decision under CGS §4-176(i).

## **Public Benefit**

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<sup>1</sup> Renew considered construction of a fuel cell facility that could support a community microgrid, which is referenced in the Town's May 14, 2022 correspondence.

<sup>2</sup> [Council on Environmental Quality Comments](#)

<sup>3</sup> [Department of Energy & Environmental Protection Comments](#)

(DEEP noted the ban on fire suppression materials using PFAS under Public Act 21-191)

<sup>4</sup> *Corcoran v. Connecticut Siting Council*, 284 Conn. 455 (2007)

The Project would be a “customer-side distributed resources” facility, as defined in CGS § 16-1(a)(49). CGS § 16a-35k establishes the State’s energy policy, including the goal to “develop and utilize renewable energy resources...to the maximum practicable extent.” The proposed facility is a distributed generation resource and will contribute to fulfilling the State’s Renewable Portfolio Standard as a low emission Class I renewable energy source. The facility would be installed, maintained and operated by Bloom Energy (Bloom) under a 25-year contract with ReNew.

The Project is not proposed to be undertaken by state departments, institutions or agencies, and is not to be funded in whole or in part by the state through any contract or grant. Neither Bloom nor ReNew participated in any state or utility-sponsored renewable energy procurement programs for the Project. It is a privately funded Project.

### **Project Site**

The proposed facility is to be located on a 1.15-acre parcel in the Town’s Suburban Zoning District. It is part of a remediated brownfield that was formerly used as an automotive salvage yard. The fuel cell facility would be installed with frontage on Old Amston Road to the east of the data center building and west of the Air Line State Park Trail.

The surrounding area consists of vacant land with residential development, the Colchester Dog Park, the Air Line State Park Trail and an existing fuel cell facility<sup>5</sup> to the east. Eversource’s Judd Brook Substation is located on the adjacent parcel to the east of the proposed facility site. The Colchester Fish and Game Club is located to the west of the proposed facility site. The nearest residential property line from the proposed facility is approximately 900 feet to the west.

### **Proposed Project**

The facility would consist of twelve 325-kW, two 300-kW and two 250-kW Bloom Energy ES-5 solid oxide fuel cell Energy Servers and associated equipment, including water deionizers, telemetry cabinets, disconnect switches, two step-up transformers and utility cabinets. The energy servers comprising the fuel cell facility would be installed on individual prefabricated concrete pads in a two-row linear arrangement within the approximately 104-foot long by 117-foot wide gravel surfaced compound. The height of the energy servers would not exceed 7.5 feet.

The facility would be installed within a 12,219 square foot (.69 acre) area enclosed by an 8-foot tall chain link fence to the east of the proposed data center (see Figure 2 Site Overview). Access to the facility would extend from Old Amston Road via an existing gravel drive located on the adjacent parcel to a proposed 15-foot wide gravel access road on the Project site. A 6-foot wide double swing access gate would be installed at the northeastern end of the compound.

The natural gas interconnection would extend underground from a proposed gas meter on a concrete pad to a gas main located about 175-feet east of the interconnection point. Electrical utility connections would extend underground to a newly proposed utility pole north of the facility on Old Amston Road. A water connection would extend underground from a water service box to a water main located about 265-feet east of the water interconnection point. The facility would utilize the same water and gas mains used by the existing adjacent fuel cell facility at 160 Old Amston Road and would not impair supply to either facility.

The proposed facility would be a customer-side, distributed resources project, designed only to provide electricity. The proposed facility would operate in parallel with the utility grid and provide about 99 percent

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<sup>5</sup> The Council approved Bloom Energy’s 10 megawatt fuel cell facility at 160 Old Amston Road in Petition No. 1387.

of the data center's base load. Capacity from the fuel cell facility would be used to provide uninterrupted power to the data center. The facility would not operate as an emergency generating device or as part of a demand response program. ReNew proposes to interconnect the fuel cell facility to Eversource's Judd Brook Substation for emergency backup power generation. The interconnection application was submitted to Eversource on April 11, 2022 for review.

The proposed Bloom fuel cell units are designed to optimize the electrical efficiency alone rather than operate as combined heat and power units. Heat generated by the proposed facilities is used internally to increase the electrical efficiency of the fuel cells, and consequently there is no useful waste heat generated.

The fuel cell facility would have an operational life of 25 years. The solid oxide fuel cell media would be changed at five-year intervals. At the end of the 25-year contract, ReNew may renew the contract or terminate. If the contract is terminated, the fuel cell units and associated equipment and components, concrete pads, gravel and fencing would be dismantled and removed. All utility connections would be disconnected and the site would be restored as nearly as practicable to its original condition.

ReNew anticipates construction to start in the last quarter of 2022 and would occur over a nine-month period. Construction hours would be Monday-Friday, 7AM – 7 PM. ReNew intends to commence construction of the data center at the same time as the proposed fuel cell facility.

The estimated cost of the facility is approximately \$20,000,000.

### **Environmental Effects and Mitigation**

The fuel cell facility would comply with all applicable DEEP water quality standards as no water would be consumed or discharged once the facility is operational. The proposed fuel cell facility would operate without water discharge under normal operating conditions. Water consumption of about 1,536 gallons would only occur at system start and restart operations.

The ground water classification at the site is designated as GA/GAA<sup>6</sup>. Class GA/GAA designated uses are for existing private and existing or potential public or private water supplies suitable for drinking without treatment. The nearest mapped surface waterbody is Judd Brook located approximately 370-feet west of the Project area<sup>7</sup>.

Air emissions produced during fuel cell operation would not trigger any regulatory thresholds and are shown below.

Fuel Cell Facility	
Compound	lbs/MWh
NOx	0.01
CO <sub>2</sub> *	679-833

\*DEEP amended its regulations in 2016 to eliminate the CO2 permit requirements from the New Source Review and Title V Programs as a result of a United States Supreme Court decision that overturned states' regulatory CO2 permit requirements (*Utility Air Regulatory Group v. U.S. Environmental Protection Agency*, 573 U.S. 302 (2014))

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<sup>6</sup> According to DEEP classifications groundwater within the area may be degraded and not meet current standards.

<sup>7</sup> DEEP classifies Judd Brook as a Class A waterbody with designated uses which include potential drinking water supply, fish and wildlife habitat, recreational use, agricultural and industrial supply and other legitimate uses including navigation.

The proposed facility would emit no methane (CH<sub>4</sub>), sulfur hexafluoride (SF<sub>6</sub>), hydrofluorocarbons (HFCs) or perfluorocarbons (PFCs), which are greenhouse gases defined in RCSA §22a-174-1(49), and would emit negligible amounts of sulfur oxides, volatile organic compounds and particulate matter.

The fuel cell desulfurization system would remove sulfur that is used as an odorant in natural gas because it is a fuel cell system contaminant. Sulfur compounds would be collected within a desulfurization unit (desulf unit) using a filter media – a composite copper catalyst. The U.S. Department of Transportation has certified the desulf unit as an acceptable form of transport for the desulfurization material that meets hazardous waste shipment standards. When a desulf unit is taken out of service, it is transported by a Bloom contractor to an out of state facility where the composite copper catalyst within the unit is removed, and the copper is used for other products. The empty desulf units are the refurbished for reuse at other Bloom fuel cell locations.

No trees would be removed to construct the facility. Visual impact from the proposed Project would be minimal. Views of the facility would be limited to the immediate vicinity from Old Amston Road just north of the site parcel. Views of the facility from the east, west and south would be screened by existing trees and vegetation. There would be no significant change in the character of existing views from the Air Line State Park Trail.

The proposed site is not located within a DEEP-designated Aquifer Protection Area.<sup>8</sup> No wetlands, forest or prime farmland soils would be disturbed by the proposed Project. Erosion and sedimentation controls for the proposed facility would comply with the *2002 Connecticut Guidelines for Soil Erosion and Sediment Control*.

The nearest wetland is located 87-feet south of the fenced compound on the adjoining parcel that extends west from an existing culvert located southeast of the facility and drains into Judd Brook. The northern edge of the wetland shows signs of previous disturbance. The nearest construction activity would be about 47-feet from the wetland. ReNew would implement a Resource Protection Plan that includes contractor education for wetlands, wildlife habitats and species of concern; installation of erosion controls; petroleum materials storage and spill prevention; herbicide, pesticide, and salt restrictions; and reporting.

Development of the proposed Project area is less than one acre and therefore would not require a DEEP General Permit for Discharge of Stormwater and Dewatering Wastewaters for Construction Activities. ReNew would install a grass-lined stormwater management basin on the western and southern boundaries of the fenced compound to manage stormwater runoff from the Project area. The stormwater management system would require periodic maintenance, including annual mowing and outlet functionality inspections.

The site is not within a Federal Emergency Management Agency-designated flood zone. The site is located within a DEEP Natural Diversity Database buffer area. In a determination letter dated May 12, 2022, DEEP provided recommendations and mitigation measures to protect two state listed species of special concern – the Spotted Turtle (*Clemmys Gutata*) and the wood turtle (*Glyptemys Insculpta*) which may occur within the proposed Project area. A United States Fish and Wildlife Services determination letter dated March 29, 2022, indicates that there are no critical habitats located within the Project area.

The site is previously disturbed and not expected to impact cultural resources. A State Historic Preservation Office determination letter dated May 17, 2022, indicates that no historic properties will be affected by the proposed Project. The nearest property listed on the National Register of Historic Places is Zagary Sawmill located about 2,400 feet northwest of the proposed facility.

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<sup>8</sup> The project area is located within a Town designated aquifer protection zone, however the Project does not constitute a “regulated activity” under the Town’s regulations.

### **Public Safety**

Before commissioning the proposed facility, Bloom would use nitrogen as pipe cleaning media in accordance with Public Act 11-101, An Act Adopting Certain Safety Recommendations of the Thomas Commission.

The fuel cell facility has internal and remote 24/7 operational monitoring. Abnormal operation would cause the facility to automatically shut down. The facility can also be shut down through a remote operations center as well as manually. The fuel cell facility is designed in accordance with American National Standards Institute and Canadian Standards Association (ANSI/CSA) America FC 1-2004 and the National Fire Protection Association, Inc. Standard 853 for stationary fuel cell power systems and includes extensive safety control systems, including both automatic and manual shutdown mechanisms that comply with pertinent engineering standards.

The facility would be enclosed by an 8-foot tall chain link fence with anti-climb features and the gate would be locked with a Knox padlock. Access would be restricted to authorized personnel only. An emergency response plan (ERP) for the facility is included within the Petition. ReNew would submit the ERP to the Colchester Fire Marshal and would provide on-site training to local officials. The fuel cells are tamper proof and can only be accessed by essential personnel with a unique access key. Site lighting would be used at night for security purposes.

The fuel cell system is controlled electronically and has internal sensors that continuously measure system operation. If safety circuits detect a condition outside normal operating parameters, the fuel supply is stopped, and individual system components are automatically shut down. In addition, manual emergency shut down push buttons would be located at the site.

Noise associated with the construction of this Project would be temporary and exempt from DEEP Noise Control Regulations. Operation of the facility is expected to produce noise emissions no greater than 60 dBA at the property boundaries and no greater than 35 dBA at the nearest residential receptor located approximately 900 feet to the west of the site, and would comply with DEEP Noise Control Regulations. The fuel cells would have a noise dampening foam material at the doors and exhaust of the fuel cell to lower its noise emissions by up to 5 dBA.

### **Conclusion**

The Project is a distributed energy resource with a capacity of not more than sixty-five megawatts, meets air and water quality standards of the DEEP, and would not have a substantial adverse environmental effect. It would reduce the emission of air pollutants that contribute to smog and acid rain, and to a lesser extent, global climate change, and furthers the State's energy policy by developing and utilizing renewable energy resources and distributed energy resources.

If approved, staff recommends the following conditions:

1. Approval of any Project changes be delegated to Council staff;
2. Provide final plans for the location of the facility interconnection point and new utility pole prior to the commencement of construction;
3. Provide plans for emergency backup power generation from Eversource's Judd Brook Substation and/or other sources, as applicable;
4. Provide contact information for the spill response contractor prior to the commencement of construction;

5. Implement the protection measures for the wood turtle and the spotted turtle listed in the DEEP NDDDB Determination letter dated May 12, 2022, if construction occurs during the turtles' active season;
6. Provide a copy of the Fuel Cell Emergency Response Plan to local emergency responders prior to facility operation, and provide emergency response training;
7. Comply with the state ban on the use of Class B firefighting foam containing perfluoroalkyl or polyfluoroalkyl substances (PFAS) under Public Act 21-191;
8. The Council shall be notified in writing at least two weeks prior to the commencement of site construction activities; and
9. Within 45 days after completion of construction, the Council shall be notified in writing that construction has been completed.



Figure 1: Site Location and surrounding features

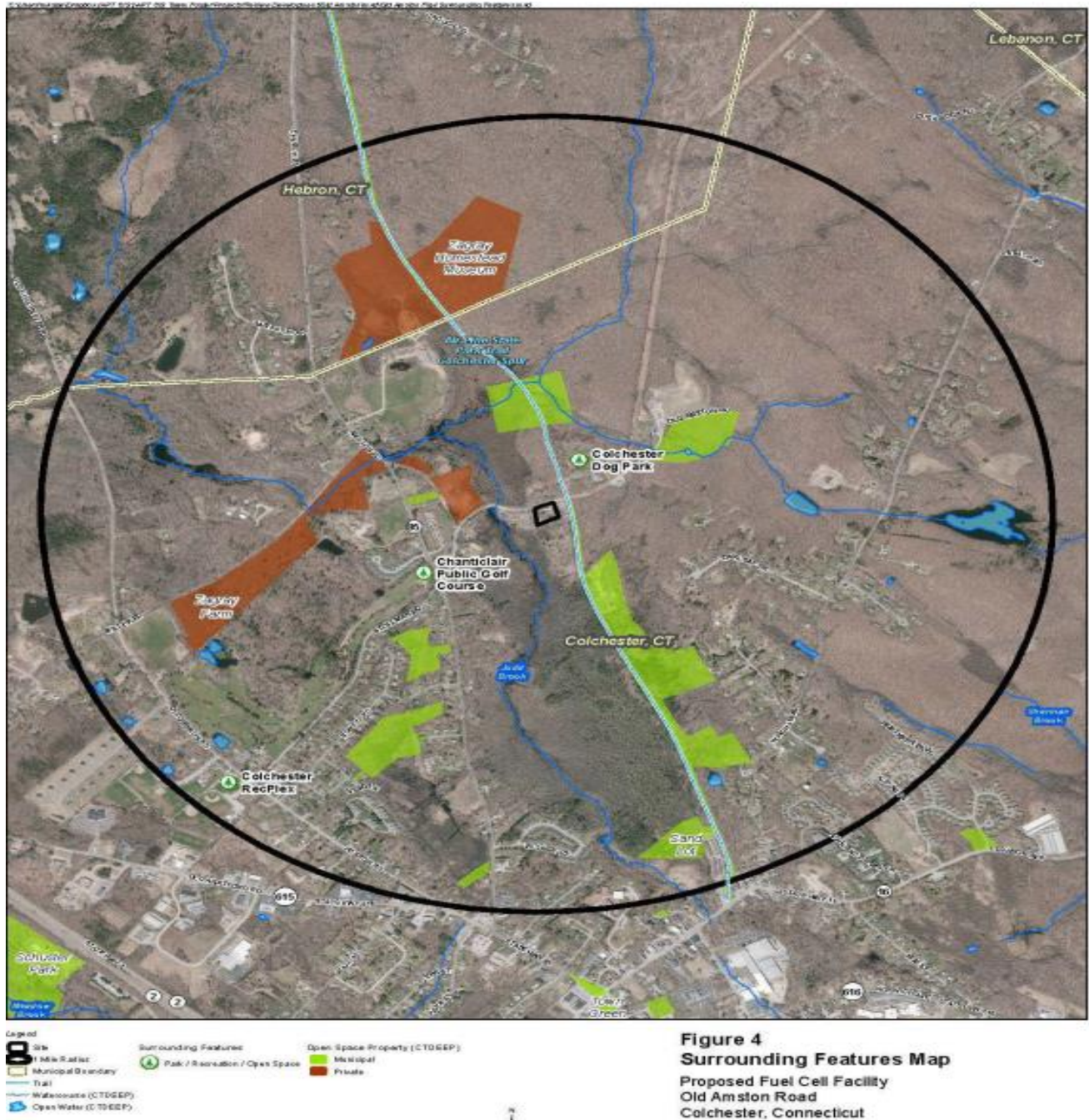
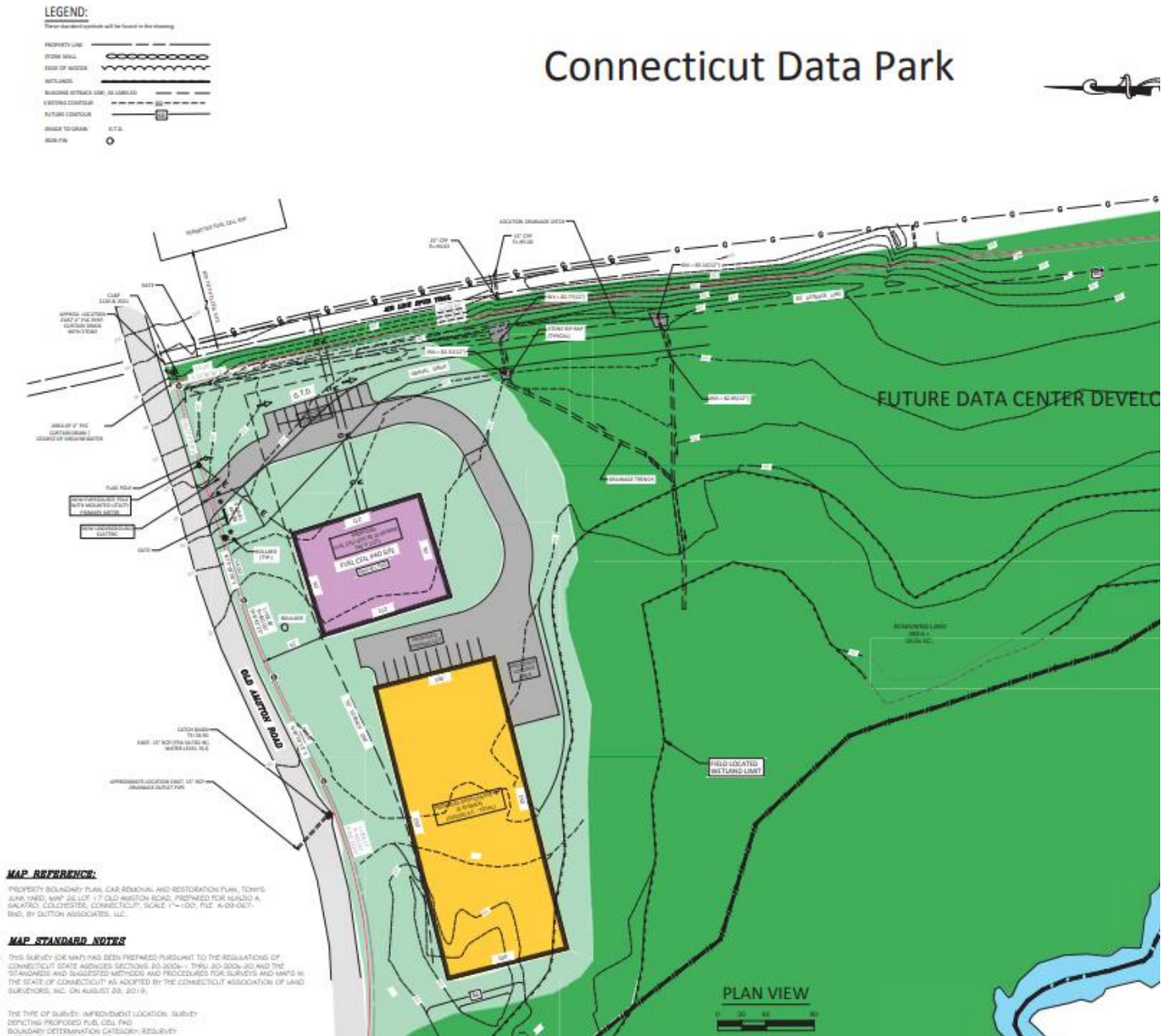
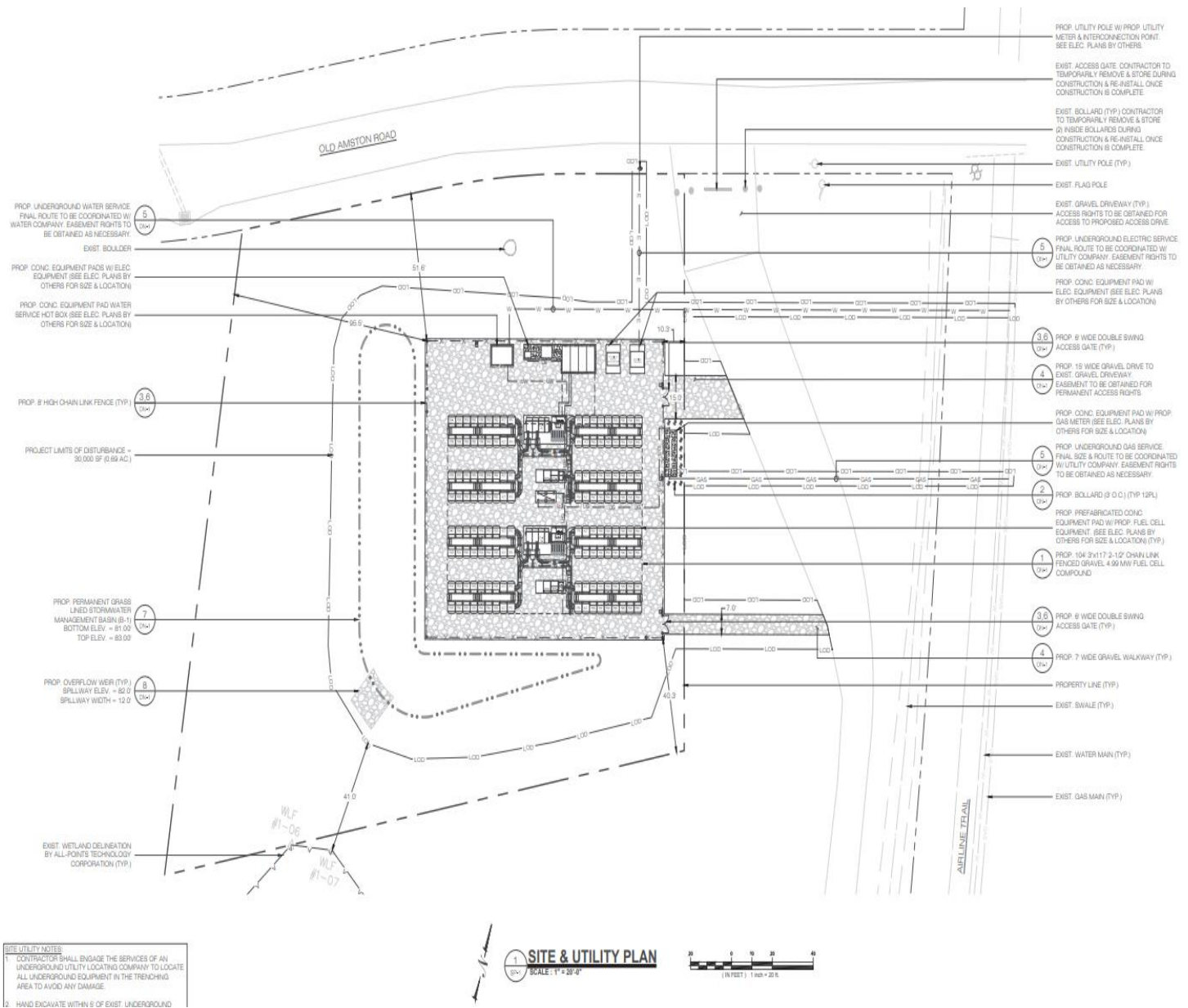


Figure 2: Site Overview





### Figure 3: Site Plan



**Figure 4: Existing Site Conditions**



**EXISTING**

PHOTO

1

LOCATION

OLD AMSTON ROAD

ORIENTATION

NORTH



Figure 5: Proposed Site Conditions



**PROPOSED**

PHOTO	LOCATION	ORIENTATION
1	OLD AMSTON ROAD	NORTH



Figure 6: Proposed Conditions

