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| <p><b>PETITION NO. 1184</b> - Beacon Falls Energy Park, LLC petition for a declaratory ruling that no Certificate of Environmental Compatibility and Public Need is required for the proposed construction, operation, and maintenance of a 63.3 Megawatt AC fuel cell facility located on Lopus Road, Beacon Falls, Connecticut.</p> | <p>}<br/>}<br/>}</p> | <p>Connecticut<br/><br/>Siting<br/><br/>Council</p> |
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January 7, 2016

**Findings of Fact**

Introduction

1. Beacon Falls Energy Park, LLC (BFEP), in accordance with provisions of Connecticut General Statutes (C.G.S.) §16-50k and §4-176(a), submitted a petition (Petition) to the Connecticut Siting Council (Council) on August 31, 2015 for a declaratory ruling that no Certificate of Environmental Compatibility and Public Need (Certificate) is required for the construction, operation, and maintenance of a 63.3 megawatt (MW) fuel cell facility on Lopus Road in Beacon Falls, Connecticut. (BFEP 1, p. 1)
2. BFEP provided notice of its petition to all abutting property owners, federal, state and local officials and agencies identified in Regulations of Connecticut State Agencies (RCSA) § 16-50j-40(a). All return receipts for abutting property owners were received except for the property owner at 26 Fairfield Place. (BFEP 1, Tab L; BFEP 3, R. 3)
3. Upon receipt of the petition, on September 2, 2015, the Council sent a letter to the Town of Beacon Falls as notification that the petition was received and is being processed in accordance with C.G.S. §4-176(c). (Council correspondence of September 2, 2015)
4. The Council submitted correspondence to BFEP on September 9, 2015 indicating that notice to certain State and municipal officials, as required under RCSA § 16-50j-40, were not met. BFEP submitted correspondence on September 14, 2015 evidencing the notice requirements under RCSA § 16-50j-40 were met, enclosing a certificate of service listing the officials and agencies to whom notice was sent. (Council correspondence of September 9, 2015; BFEP 2)
5. During a regular Council meeting on October 1, 2015, the petition was deemed complete pursuant to RCSA § 16-50j-39a and a public hearing schedule for the project was approved by the Council. (Council Meeting Minutes of October 1, 2015)
6. In compliance with RCSA §16-50j-21, on October 21, 2015, BFEP installed a sign along Lopus Road that contained a brief description of the proposed project, public hearing information, and Council contact information. (BFEP 6)
7. The Council and its staff conducted an inspection of the proposed project on November 5, 2015, beginning at 2:00 p.m. (Council Petition 1184 Field Review Notice dated October 29, 2015; Transcript 2 – November 5, 2015 at 7:00 p.m. [Tr. 2], p. 5)
8. Pursuant to C.G.S. §16-50m, the Council, after giving due notice thereof, held a public hearing on November 5, 2015, beginning with the evidentiary portion of the hearing at 3:00 p.m. and continuing with the public comment session at 7:00 p.m. at the Beacon Falls Firehouse, 35 North Main Street, Beacon Falls, Connecticut. (Transcript 1 – November 5, 2015 at 3:00 p.m. [Tr. 1], p. 4; Tr. 2, p. 4)

9. Pursuant to C.G.S. §16-50m, the Council published a legal notice indicating the date and time of the November 5, 2015 public hearing and field review in the Waterbury Republican on October 6, 2015. (Record)
10. The party to the proceeding is the Petitioner. (Tr. 1, p. 5)
11. BFEP is a limited liability company based in Middletown, Connecticut. BFEP is a wholly owned subsidiary of O&G Industries, Inc., (O&G) with a principal place of business in Torrington, Connecticut. (BFEP 1, p. 2)
12. O&G, owners of the property, sought to develop the property for a renewable energy project. (BFEP 1, p. 4)
13. O&G consulted Connecticut Energy and Technology LLC, (CT-ET) for the best use of the property. CT-ET reviewed the suitability of various types of renewable energy sources, such as wind and solar, and ultimately selected a fuel cell project due to the size and characteristics of the property and the proximity of electric, natural gas, and water infrastructure to the site. (BFEP 1, p. 4)
14. The State legislature established a renewable energy policy to develop and utilize renewable energy sources, such as solar and wind, to the maximum practicable extent. (C.G.S. §16a-35k)
15. The project is considered a Class I renewable energy source. (C.G.S. §16-1(a)(20)).
16. Pursuant to C.G.S. § 16-50k(a), the Council is required to approve the project by a declaratory ruling as long as the project meets Department of Energy and Environmental Protection (DEEP) air and water quality standards. (C.G.S. § 16-50k(a); BFEP 1, pp. 1-2)

#### State Agency Comments

17. Pursuant to C.G.S. §16-50j (g), on October 2, 2015, and November 6, 2015, the following State agencies were solicited by the Council to submit written comments regarding the proposed facility: DEEP; Department of Public Health (DPH); Council on Environmental Quality; Public Utilities Regulatory Authority; Office of Policy and Management; Department of Economic and Community Development; Department of Agriculture; Department of Transportation (DOT); Connecticut Airport Authority; State Historic Preservation Office; and Department of Emergency Services and Public Protection, Department of Labor, Department of Construction Services, and the Department of Consumer Protection. (Council Correspondence dated October 2, 2015 and November 6, 2015)
18. The DOT submitted a letter indicating they had no comment. (DOT letter dated October 19, 2015)
19. DEEP submitted written comments on November 4, 2015. In its comments, DEEP reviewed the project's location as well as potential environmental impacts and indicated that the site was appropriate for the intended use. (DEEP comments dated November 4, 2015)
20. The DPH Drinking Water Section submitted comments of November 30, 2015 generally stating that the project has no effect on water supplies in the area. Further detail regarding DPH's comments is provided in Finding of Fact no. 65. (DPH comments dated November 25, 2015)
21. The Council did not receive comments from any other state agency. (Record)

### Municipal Consultation

22. Prior to the filing of the Petition, O&G and BFEP received favorable feedback from town officials regarding the construction of a renewable energy facility in the Town. (BFEP 1, p. 11)
23. BFEP met with the Board of Selectman at a public meeting on April 27, 2015 to officially announce the project. Preliminary project details were presented at that time. (BFEP 1, p. 11)
24. BFEP appeared at a public meeting of the Town Open Space and Land Use Committee on July 7, 2015. BFEP presented a detailed project plan and hosted a question and answer session for committee members and the public. Approximately 83 people attended the meeting. (BFEP 1, p. 11)
25. Richard Minnick, Land Use Steward for the Town, submitted written comment to the Council on November 1, 2015, requesting the Council consider an electric transmission route connecting the project to the Beacon Falls Substation that avoids crossing Route 8. (Town comments of November 1, 2015)
26. Michael Krenesky, Town Treasurer and Selectman-elect, submitted written comment to the Council on November 4, 2015, requesting the Council carefully review the design of the access road apron where it meets Lopus Road. (Town comments of November 4, 2015)

### Site Description

27. The proposed fuel cell facility would be located on an approximate 25-acre property owned by O&G, identified as Tax Lot Id nos. 007-002-0012 and 007-002-0021. (BFEP 1, p. 1; Tab J, p. 2)
28. The property is a former gravel extraction area that was operated by O&G. The property is located south of Lopus Road, north and west of the Metro-North Railroad and Railroad Avenue, and east of Gruber Road and Route 8 (refer to Figure 1). (BFEP 1, p. 3)
29. The site property is located in an Industrial Park District. The project conforms to Town requirements regarding lot size and dimensional requirements, setbacks, height and site use. (BFEP 1, p. 5)
30. Adjacent land use includes vacant property owned by O&G to the north, residential use along Lopus Road to the northwest, residential use along Gruber Road to the west, a railroad corridor and industrial use to the south and east. (BFEP 1, Tab F, p. 5; BFEP 5; Council Administrative Notice No. 42, p. 78)
31. Gruber Road is the nearest residential road to the site. Nine homes are located along the east side of the road, abutting the site parcel. The nearest residential property is at 38 Gruber Road approximately 270 feet west of the proposed fuel cell facility fence line. (DEEP comments of November 4, 2015; BFEP 3, p. R. 5)
32. The site property is predominately flat, although significant slopes formed from previous excavation rise from the flat area along the northern and western extent of the property. Gruber Road and Lopus Road are approximately 50 feet higher in elevation than the flat central area of the property. (BFEP 1, p. 5, Tab F, p. 2)

### Facility Description

33. BFEP would develop an eight acre area in the central portion of the property consisting of the fuel cell units, associated infrastructure, and an electrical switchyard (refer to Figure 2). An additional two acres of the project site would consist of the stormwater and waste water detention basins, and a sound mitigation barrier. (BFEP 3, R. 1; BFEP 5, Figure C-300; Tr. 1, p. 81)
34. The paved compound area would contain 21 fuel cell units, four desulfurization skids, a natural gas meter station, a nitrogen fuel station, a 27-foot tall, 250,000 gallon process water storage tank, four water treatment skids, and a control shelter. (BFEP 5, Drawing C-300; Tr. 1, p. 30)
35. The fuel cell units would be manufactured by Fuel Cell Energy, Inc. (FCE). FCE has fuel cell manufacturing facilities in Danbury and Torrington, Connecticut. (BFEP 1, p. 3)
36. The fuel cell facility would produce 63.3 MW of power and would consist of five FCE HEFC fuel cell units; each rated at 3.7 megawatts (MW) with an initial efficiency rating of 59 percent, and 16 FCE DFC3000 fuel cell units, each rated at 2.8 MW with an initial efficiency rating of 47 percent. (BFEP 1, p. 3, Tab N)
37. The fuel cell units are approximately 70 to 100 feet long depending on the type, 43 feet wide and 25.5 feet tall. (BFEP 1, Tab N)
38. BFEP is using the two types of fuel cell units for this project based on availability from FCE. The fuel cell units would be installed in four phases over a two year period, initially using the DFC3000 units then transitioning to the HEFC units towards the end of the installation period. (BFEP 1, Tab C; Tr. 1, pp. 33-34)
39. Each fuel cell unit would be constructed off-site and trucked to the site once its concrete pad and related connections are in place. Connecting the fuel cell unit to the related infrastructure would take one day. (Tr. 1, pp. 64-65)
40. The fuel cells use molten carbonate technology and would require natural gas for fuel, water for fuel processing, and nitrogen to purge gas lines when the system is not in use. (BFEP 1, pp. 8-9)
41. The fuel cells use chemical reactions to convert the incoming natural gas into electrical power. The gas enters fuel cell “stacks” located in each fuel cell unit where the chemical reactions take place, resulting in DC electric power and waste heat, water vapor and carbon dioxide. The power is converted to AC power at each fuel cell unit before transport to on-site electrical transmission equipment. (BFEP 1, p. 9)
42. The fuel cell stacks would need replacement in five to seven years. Individual fuel cell units would be shut down for stack replacement or other maintenance issues on an as needed basis. The remaining fuel cell units at the facility would continue to operate. (Tr. 1, pp. 30-31, 65)
43. The project is designed to connect to the electric grid and not as an independent operation supply power to a specific customer or area. The project cannot serve as a microgrid because it is not connected to the local distribution network (13.8 kilovolt). (Tr. 1, pp. 92-95)
44. If power to the site is interrupted for five seconds or less, the fuel cell units can regain their normal operational condition within ten minutes. (Tr. 1, pp. 55-56)

45. If power is interrupted for a period of time greater than five seconds, the fuel cell units would transfer to a standby operational mode. Once power is restored, the fuel cell units would take approximately 10 hours to regain their normal operational output. (Tr. 1, pp. 55-60)
46. The project is anticipated to be in full operation by July 1, 2017. (Tr. 1, p. 91)
47. The project has an expected life-span of 30 years. If the project were approved, BFEP would submit a decommissioning plan to the Council as part of a Development and Management (D&M) Plan for the facility. (Tr. 1, p. 31)
48. BFEP intends to begin construction in the Spring of 2016. Site construction would occur Monday through Friday with the potential to work on weekends depending on certain tasks. (Tr. 1, pp. 45-46, 91-92)
49. The project design is approximately 75 percent complete. Final details should be complete by January 2016. (Tr. 1, pp. 83, 91-92)
50. BFEP would consider installing a classroom type structure at the site for use as a fuel cell educational center. (Tr. 1, pp. 72-73)

#### Facility Access

51. Although the property has frontage along Gruber Road and Lopus Road, there is no established access into the property. A dirt road extends along the Metro-North rail line to the south end of the site but this access is across DOT property and can only be used for emergency access, per terms of an agreement between O&G and DOT. (Tr. 1, p. 27; BFEP 1, Tab F, p. 30; BFEP 5)
52. To access the site, BFEP would construct a 500-foot long paved access drive extending south from Lopus Road. The 12-foot wide access drive would descend from Lopus Road at a grade of eight percent to the fuel cell compound entrance area. (BFEP 3, R. 11; Tr. 1, p. 25)
53. The proposed access drive would cross over an underground fiber optic cable owned by AT&T. (BFEP 1, p. 35)
54. To address the Town's concerns regarding potential road safety issues at the access drive entrance on Lopus Road, BFEP may excavate an embankment on O&G property across from the access apron and remove some trees in the area to improve sight lines. The existing guardrail along Lopus Road would also be realigned to create a larger entrance apron at Lopus Road. (Town comments of November 4, 2015; Tr. 1, pp. 22-25)
55. Access into the site farther west on Lopus Road is not feasible given the 15 percent grade that would have to be overcome. Access farther east along the Metro-North line is not feasible given the amount of upslope grading that would be required and the construction of a retaining wall in an area where there is an underground AT&T fiber optic cable. Additionally, moving the road eastward could confuse drivers on Lopus Road as the driveway could appear as an extension of Lopus Road. (Tr. 1, pp. 78-81)

### Electrical Interconnection

56. A 128-foot by 172-foot electrical switchyard would be located in the northwest corner of the fuel cell compound. The substation would have a crushed stone surface with components mounted on concrete pads. Final details regarding the switchyard equipment and take-off structures are in the design phase. (BFEP 1, Drawing C-300, BFEP 2, R. 10; Tr. 1, pp. 61-62)
57. Power from the fuel cell units would be stepped up to 115-kV at the facility switchyard. The switchyard would be connected at a voltage of 115-kV to Eversource's Beacon Falls Substation on Cold Springs Road, approximately 2,500 feet northwest of the site. (BFEP 1, pp. 5, 8; BFEP 5; Tr. 1, pp. 69-70)
58. Given the relatively large amount of power generated by the project, Eversource requested that the project transmit the power to the Beacon Falls Substation at 115-kV rather than distributing the power at 13.8-kV to the local distribution network. (Tr. 1, pp. 94-95)
59. Connection to the Beacon Falls Substation may require the installation of new electric transmission towers on an adjacent parcel owned by O&G that fronts Cold Springs Road on the east side of Route 8 (O&G Lot 1). Beacon Falls Substation is located on the west side of Route 8. BFEP and Eversource are finalizing the design of the interconnection with the substation (refer to Figure 3). (BFEP 5; Tr. 1, pp. 33-36)
60. Independent System Operator New England (ISO NE) has reviewed BFEP's system feasibility study and determined that the project would have no transmission or circuit impacts. ISO NE would also review the interconnection study upon completion and prior to construction of the facility. (Tr. 1, pp. 88-89)

### Natural Gas Use

61. The project would use 7,707 cubic feet of natural gas per minute. Natural gas would be provided to the site by extending a new eight inch gas main from existing service on Pondview Circle, approximately 2,000 feet west of the site, down Lopus Road into the project gas metering station for distribution to the fuel cell units. Pondview Circle is located west of Route 8 and details of the exact route through have not been completed (refer to Figure 3). (BFEP 1, Tab F, p. 32; BFEP 5, Tr. 1, p. 22)
62. The natural gas would enter the facility regulating station at a pressure of 40 pounds per square inch (psi). The station would convert the pressure to 20-25 psi at the four desulfurization stations, before being consumed at the fuel cells. (BFEP 1, p. 8)

### Water Use

63. The project would use approximately 300,000 gallons of water per day. Water to the site would be provided from an existing Aquarion Water Company (Aquarion) water main on Railroad Avenue, immediately east of the Metro-North rail corridor and the site. (BFEP 1, Tab F, p. 31)
64. BFEP would install two water lines, a six-inch line servicing the fuel cells and an eight-inch line serving a fire hydrant proposed for the site, by boring under the rail line. BFEP would need approval from Metro-North and DOT to install the line. (BFEP 1, Tab F, p. 31)

65. The DPH reviewed the project and determined that Aquarion has sufficient capacity to supply the proposed water demand, contingent upon Aquarion renewing a water purchase agreement with the Regional Water Authority that is set to expire at the end of 2015 and that an assessment of the project's water demand be conducted. (DPH comments dated November 25, 2015)
66. Due to concerns regarding potential low water main pressure, BFEP is consulting with Aquarion for the best method of bringing water into the site. Other options include extending water service 3,600 feet from Pine Bridge Road west of the site or to utilize on-site water storage (the 250,000 gallon tank). (BFEP 1, Tab F, p. ES-3; Tr. 1, pp. 46-47)
67. The project would generate approximately 150,000 gallons of waste water per day that would be discharged to groundwater via on-site infiltration basins. The wastewater is the result of the purification of the potable water supplied to the site. A DEEP permit would be required for this discharge. (BFEP 1, Tab F, p. 24; DEEP comments dated November 4, 2015)
68. The project would be unmanned facility and does not require any sewer connection. (BFEP 1, Tab F, pp. ES-2, 3)
69. During installation of the water lines, BFEP would install an extra casing under the Metro-North rail line to enable BFEP to export waste heat generated by the facility for use as a low-grade heating source for potential customers. Currently, there is no customer that can utilize the waste heat but the surrounding area is industrially zoned and is designated as a growth area in the Town's Plan of Conservation and Development. (Council Administrative Notice No. 42, pp. 78-79; BFEP 1, p. 5; Tr. 1, pp. 95-96)

### Environmental Considerations

#### *Site Characteristics*

70. The site property is not classified as a brownfield. An old dump area was identified in the northeast corner of the property, near the limit of grading for the proposed access drive. BFEP would excavate the area to determine if any contaminants are present in the soil. (BFEP 1, Figure C-300, Tab J, p. 23; Tr. 1, p. 45)
71. The former gravel extraction area has re-vegetated with a variety of native and nonnative species. (BFEP 1, Tab F, p. 9)
72. The central portion of the property contains exposed sand intermixed with scrubby vegetation and meadow areas. A network of illegal ATV trails traverses this area. The western and northern edges of the property, not part of the extraction area, contain more mature vegetation, with evergreen predominately to the west and northwest, and hardwoods along the steep northeastern slope adjacent to Lopus Road (refer to Figure 4). (BFEP 1, Tab F, pp. 5, 9, 13-15)
73. A two-acre pond, surrounded by a deciduous woodland, is located at the south end of the site. The pond, formed by previous excavation activities, has no inlet or outlet and is supported hydrologically from groundwater. (BFEP 1, Tab F, p. 11)
74. The pond and surrounding woodland provide the highest quality wildlife habitat on the site. Construction impacts in this area would be limited to grading associated with a stormwater detention basin. (BFEP 1, p. 30, Tab F, Figures 1 & 8)

75. No other wetlands were identified on the property. (BFEP 1, Tab F, p. 11; Tr. 1, pp. 77-78)
76. The site is not located within a 100 year or 500 year flood hazard area, as designated by the Federal Emergency Management Agency. (BFEP 1, p. 21; Tr. 1, pp. 60-61)
77. Site construction would occur in the central and eastern area of the property, mostly in the extraction area. Vegetation in the extraction area consists of xeric meadow and scrub shrub species 6 to 12 feet in height. An approximate 0.9-acre mixed hardwood forest area would be cleared at the north end of the site for construction of the access drive. The trees in this area are estimated to be 50-60 years old. (BFEP 1, p. 29, Tab F, p. 13, Figures 1 and 8)

*Stormwater and Wastewater Control*

78. BFEP would be required to obtain a General Permit for Stormwater and Dewatering Wastewaters from Construction Activities permit for the three year project construction period. The permit reviews construction procedures to prevent the movement of sediments off construction sites into nearby water bodies and to address the impacts of stormwater discharges from a project after construction is complete maintain off-site water quality. (DEEP comments dated November 4, 2015)
79. Construction of the project would impact approximately 13.7 acres. (BFEP 1, R. 1; Tr. 1, p. 81)
80. The proposed access drive would be constructed with 2:1 side slopes. BFEP would provide slope stabilization details in the D&M Plan. (Tr. 1, pp. 25-26, 75-77)
81. BFEP proposes to pave the entire fuel cell compound area to facilitate maintenance activities such as snow removal. (Tr. 1, pp. 62-63)
82. Stormwater from the paved fuel cell facility compound would be collected in catch basins that discharge into three bio-infiltration basins adjacent to the compound area. During final design for the D&M Plan, BFEP may reduce the amount of paving in order to facilitate direct stormwater absorption into the underlying soil as well as to reduce compound construction costs. (BFEP 1, p. 21; BFEP 5, C-300; Tr. 1, pp. 62-63)
83. The bio-infiltration basins are designed to impound stormwater so it can infiltrate into the ground over several days. The basins would be vegetated to reduce potential erosion and scouring and each basin would have an outlet pipe that would discharge high rain event flows into a rip-rap lined splash pad. (BFEP 3, R. 9)
84. Stormwater control on the paved access drive would consist of a single catch basin at the entrance with Lopus Road that would discharge flows to a rip-rap lined channel that would terminate at the eastern infiltration basin at the base of the access road. (BFEP 1, Tab G, p. 3)
85. Runoff from non-paved areas would be minimal as site soils are highly permeable, composed of sand and gravel. (BFEP 1, Tab G, p. 2; Tr. 1, p. 62)
86. Wastewater from the fuel cell process would be discharged into two eight-foot deep infiltration basins located in the southeast portion of the site. (BFEP 1, p. 20)
87. Each of the fuel cell units has a small wastewater storage tank, referred to as a day tank. The tanks are periodically drained for maintenance and it is estimated that 50,000 gallons of wastewater from these tanks would be discharged to the infiltration basins. (BFEP 1, p. 20; Tr. 1, pp. 71-72)



88. Wastewater discharge from daily fuel cell facility operations as well as draining of the individual fuel cell tanks for maintenance would require a DEEP General Permit for the Discharge of Water Treatment Wastewater. (DEEP comments dated November 4, 2015; BFEP 1, p. 20; Tr. 1, pp. 71-72)
89. The stormwater and wastewater infiltration basin would require periodic maintenance and cleaning. BFEP intends to use a rubber track vehicle to access the basins on the south side of the site. The final design of the facility may include a rear facility compound gate to allow vehicle access to the south end of the site. Another access option for maintenance vehicles would be to use the leased access way along the Metro-North tracks. An operations and maintenance program would be developed to address inspection/maintenance frequency and access details. (Tr. 1, pp. 27-28, 82-83)

*Solid Waste*

90. The project would produce approximately 60,000 to 90,000 pounds of desulfurization media solid waste resulting from the removal of unwanted chemical components in the natural gas prior to consumption by the fuel cell. (BFEP 1, pp. 8-9)
91. The desulfurization media contains benzene and is classified as a hazardous waste. The media would be removed from the site and disposed of in accordance with federal and State regulations. (BFEP 3, R. 2)
92. The project would be classified as a small quantity generator of universal waste, primarily from spent batteries and lamps. Annual generation is expected to be less than 1,000 pounds per year. (BFEP 3, R. 2)

*Wildlife*

93. BFEP submitted a Natural Diversity Database (NDDB) review with DEEP regarding state threatened or endangered species at the site. DEEP responded to BFEP on June 15, 2015 stating three plant species (downy wood-mint, Virginia waterleaf, and Hooker's orchid), a snake (eastern hognose) and one bird (brown thrasher) listed on the NDDB have the potential to exist on or utilize the site property. DEEP also requested that any additional surveys undertaken at the site for these species be submitted to DEEP for review. (BFEP 1, Tab F)
94. BFEP performed additional field surveys in July 2015 specific for these species. (BFEP 1, Tab F, p. 16; BFEP 4; Tr. 1, pp. 23, 85)
95. None of the listed plants were identified on-site and the site does not contain suitable habitat to support populations of these plants. The downy wood-mint and Hooker's orchid are considered extinct in Connecticut. (BFEP 1, Tab F, p. 16; BFEP 4, p. 1)
96. Although the site contains suitable eastern hognose snake habitat, no eastern hognose snakes, a bimodal species that is active in the spring and fall, were found during the site surveys. Given the presence of suitable habitat for the eastern hognose snake, BFEP would implement DEEP recommended construction practices that are designed to limit potential impacts to snake populations. (BFEP 1, Tab F, p. 18; Tr. 1, pp. 49-50)

97. BFEP identified a solitary brown thrasher on the northern end of the site. Although development of the project would remove some scrub shrub habitat preferred by the thrasher, scrub shrub habitat would remain along the periphery of the site and additionally, similar habitat is also found in proximity to the site in the Naugatuck Valley. (BFEP 1, Tab F, p. 16; BFEP 4, p. 5)
98. BFEP will submit the final habitat assessment report to DEEP for further review. (Tr. 1, pp. 23, 85)

*Noise*

99. The nearest noise sensitive area in the project area is the Gruber Road residential neighborhood to the west. (BFEP 1, Tab I, p. 3-1)
100. The existing noise environment in the Gruber Road area is dominated by traffic from Route 8 which is approximately 350 feet west of Gruber Road. (BFEP 1, Tab I, p. 4-1)
101. Initial noise modeling of the project indicated that the project would exceed DEEP's noise regulatory criteria at the property line along the west side of the site, along Gruber Road. The Town's noise ordinance uses DEEP's sound level limits and restricts construction activities from 7:00 a.m. to 8:00 p.m. weekdays and Saturdays. (BFEP 1, p. 24-25, Tab I, p. 3-2)
102. To comply with DEEP's noise standards at the residential boundary, BFEP would use a "low noise option" in the design of the fuel cell units. Additionally, BFEP would construct a 12-foot tall, 900-foot long sound barrier along the west side of the site to reduce project noise. (BFEP 1, p. 25; Tr. 1, p. 42)
103. The sound barrier would be constructed of wood or composite material using CT DOT specifications and would be colored green. To construct the sound barrier, BFEP would install the barrier in between rows of existing pine trees, limiting the amount of tree clearing to the greatest extent possible. (BFEP 1, p. 25, BFEP 3, R. 7, R. 11; Tr. 1, p. 42)

*Air Quality*

104. The fuel cell is a non-combustion, electrochemical device that combines fuel with ambient oxygen to generate power. Byproducts generated by the process are primarily water and carbon dioxide with small quantities of other air pollutants including particulate matter, sulfur dioxide, nitrogen oxides, carbon monoxide, and volatile organic compounds. (BFEP 1, Tab E, p. 1)
105. With the exception of carbon dioxide, the project would not create air emissions that exceed regulatory criteria. All potential air pollutant emissions would be examined in detail as part of a DEEP Title V air permit application related to carbon dioxide emissions. (BFEP 1, Tab E, pp. 2, 6)
106. The project would emit carbon dioxide emissions of 265,372 tons per year, exceeding the DEEP air permit filing threshold of 100,000 tons per year. (DEEP Comments dated November 4, 2015; BFEP 1, Tab E, p. 10)
107. During operation, each DFC 3000 fuel cell would emit 980 lb/MWh of carbon dioxide, whereas each HEFC fuel cell would emit 740 lb/MWh of carbon dioxide. Neither model has optional carbon dioxide emission control features. (BFEP 1, Tab E, p. 1)
108. Carbon dioxide emissions from the fuel cell facility would be approximately 14 percent less than the carbon dioxide emissions from a simple cycle fossil fuel power plant (per lb/MWh using 2010 fossil fuel emission rates). (BFEP 1, Tab E, pp. 1-2)

109. BFEP would be required to file applications for a DEEP Title V air permit and a New Source Review permit for the carbon dioxide emissions. The permits require a review of alternatives that could reduce carbon dioxide emissions, including a determination if such alternatives are economically and/or operationally feasible. (DEEP Comments dated November 4, 2015; Tr. 1, pp. 70-71)
110. BFEP intends to submit the required air permit applications to DEEP by the end of 2015. (Tr. 1, pp. 70-71)

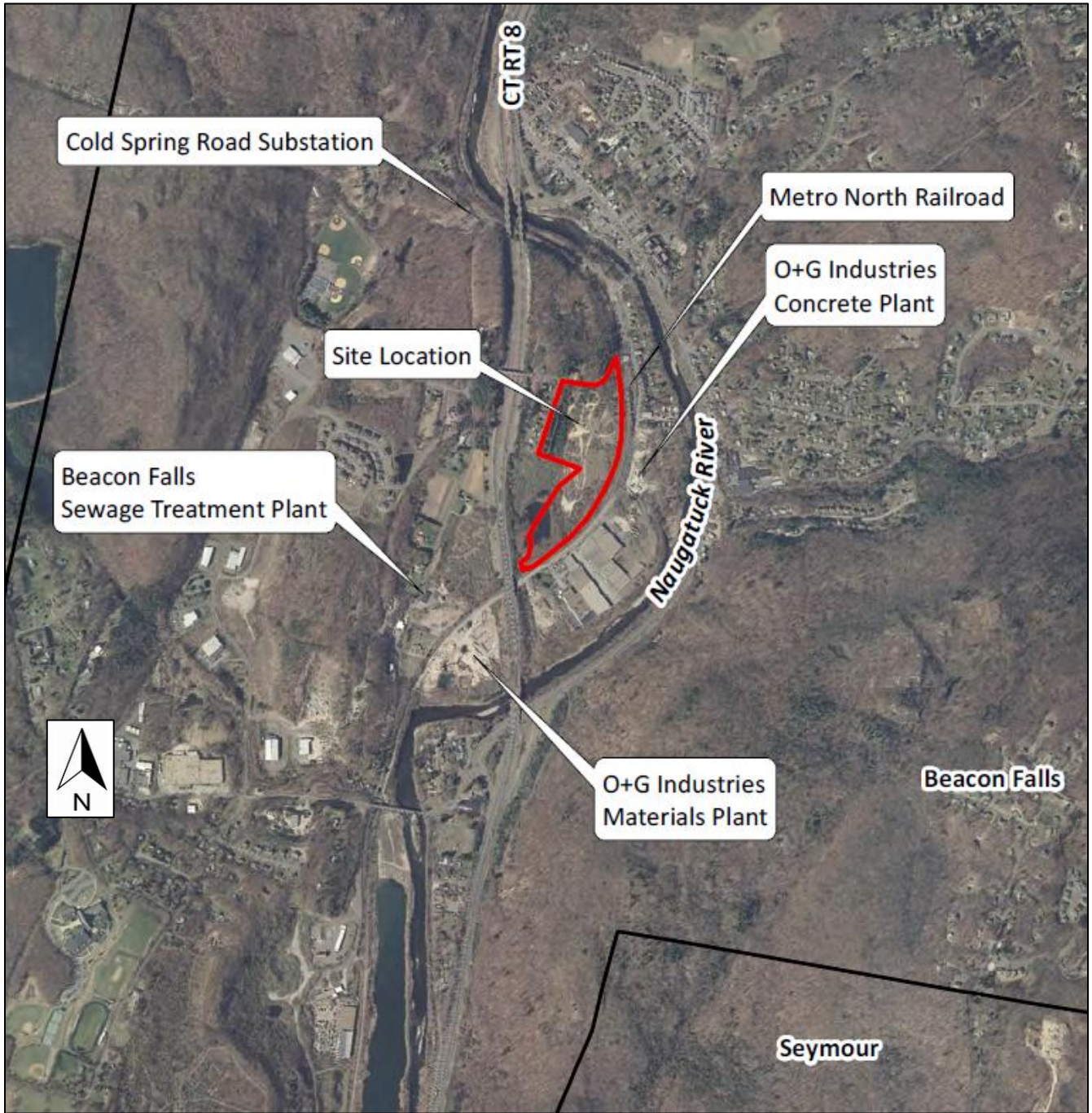
*Other Environmental Considerations*

111. The site is located in a topographically depressed area in relation to its surroundings. Given this topography, and the existing tree cover in the surrounding area, near range views of the project would be primarily limited to commercial/industrial areas along Railroad Avenue east of the site. (BFEP 1, Tab O)
112. The proposed sound mitigation barrier would be visible from Gruber Road through intervening vegetation. It would be colored green to blend in with the existing evergreens in the area. (BFEP 1, Tab O)
113. BFEP proposes to install drought tolerant landscape plantings along the perimeter of the project site. (BFEP 3, R. 11)
114. The project would have no effect on historic properties or archeological resources. (BFEP 1, p. 28, Tab F, Appendix B)

Public Safety

115. The fuel cell facility would use natural gas to generate electricity through a chemical reaction and not through combustion. (BFEP 1, p. 9)
116. Nitrogen, a stable gas, would be used to purge gas piping prior to maintenance activities or during an emergency operation sequence. Two 6,000 gallon nitrogen tanks would be located in the fuel cell compound. The tanks would have remote fill pipes so that personnel would not be required to enter the fenced compound area. (BFEP 1, p. 9)
117. If the project were approved, BFEP would submit gas pipe cleaning procedures to the Council as part of the D&M Plan for the facility. (Tr. 1, p. 39)
118. The project would comply with the National Fire Protection Associations codes and standards. (Tr. 1, pp. 38-39)
119. There are two fire hydrants on Railroad Avenue east of the site. No fire hydrants are located on Lopus Road as there is no water service. (Tr. 1, pp. 40-41)
120. BFEP would install a new fire hydrant near the fuel cell compound access gate. BFEP met with the local fire officials to discuss the location of the hydrant. (Tr. 1, pp. 40-41)

121. An emergency response plan and a fire protection plan would be developed for the project. The plans would be submitted to the Council, DEEP and the local fire department. During preparation of the plans, BFEP would review whether Metro-North would need notification in the event of an emergency. (BFEP 1, p. 13; Tr. 1, pp. 37-38, 40)
122. BFEP would provide emergency response training specific to the site to area fire responders. (Tr. 1, pp. 39-40)
123. The facility would be monitored remotely through on-site operational sensors that transmit data to a monitoring facility in Danbury. The facility can be shut down remotely if abnormal operations are detected. (BFEP 1, p. 14; Tr. 1, pp. 36-37)
124. Each fuel cell unit would have internal monitors that would shut down the unit if abnormal conditions are detected. (Tr. 1, p. 36)
125. The project would have manual shut down systems for each fuel cell unit and for the site as a whole. (BFEP 1, p. 13)
126. Physical site security would be accomplished by fencing, security cameras, and lighting. Concertina wire would be installed on top of the eight-foot high fence for additional security. Prior to construction, BFEP would examine different fence designs and mesh size for appropriate security. (BFEP 1, pp. 13-14; Tr. 1, pp. 66-68)
127. The project would be illuminated at night using Dark Sky rated light fixtures mounted on 25-foot poles in the fuel cell compound area. The Dark Sky features include lights no higher than 25 feet above ground level, a light downward tilt, and LED lighting to prevent light from straying beyond the property area. (DEEP comments dated November 4, 2015; BFEP 1, p. 14; BFEP 3, R. 4; Tr. 1, pp. 41-42, 86)



**Figure 1:** Project location. (BFEP 1, Tab F)



Figure 2: Proposed Fuel Cell Facility layout. (BFEP 5)

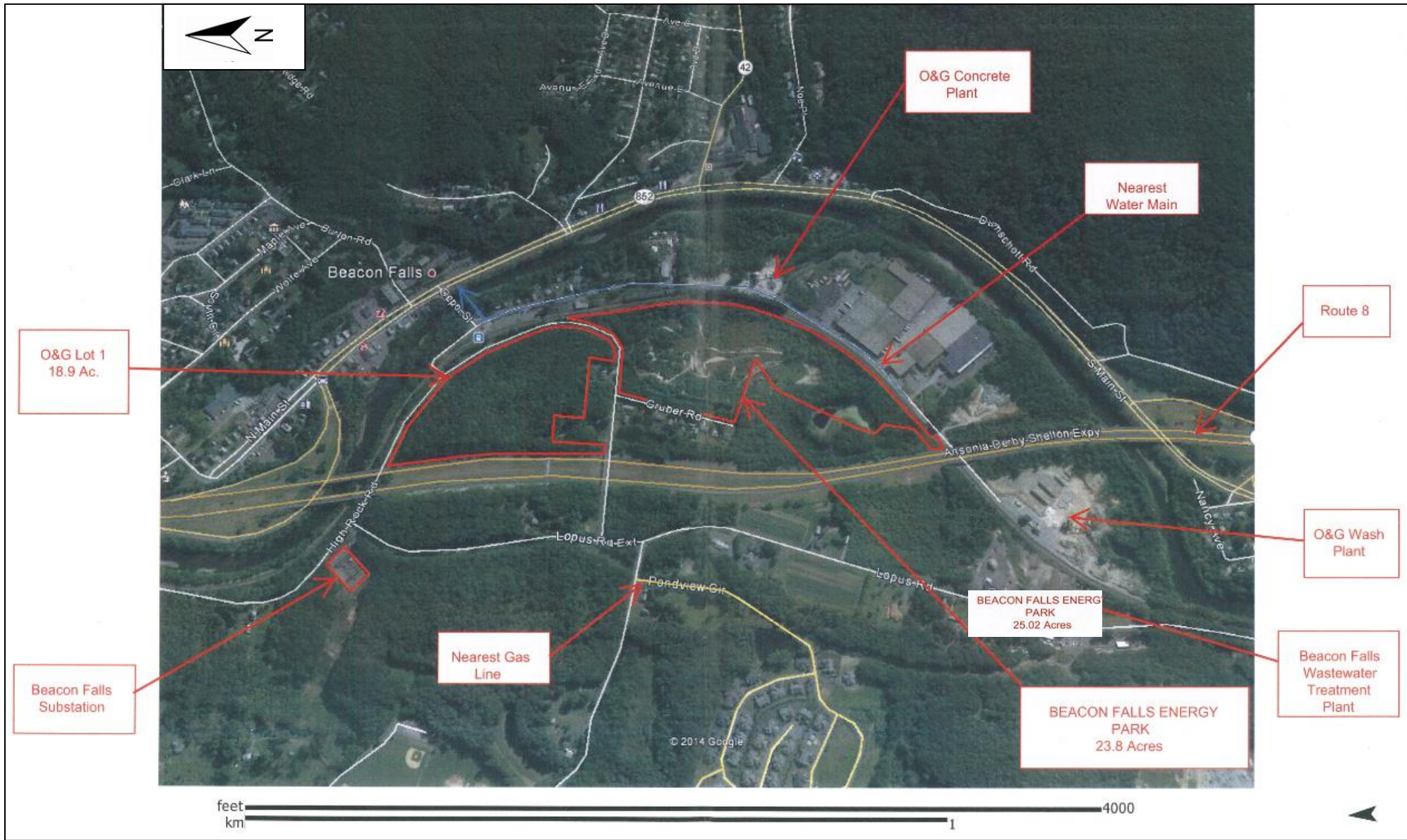


Figure 3: Site location and area utilities. (BFEP 5)



**Figure 4:** Existing habitat types. Most of the project would be developed in the Xeric Meadow and Xeric Scrub Shrub Zones. (BFEP 1, Tab F)