

1.0 INTRODUCTION AND GENERAL INFORMATION

This site certification application (SCA) is filed by Gainesville Renewable Energy Center, LLC

(GREC LLC), the Applicant, for the proposed construction and operation of an electrical power plant within the City of Gainesville (the City) in Alachua County, Florida. The proposed facility will be known as the Gainesville Renewable Energy Center (GREC). GREC will use clean, renewable, woody biomass material as fuel to generate 100 megawatts (MW) of net electrical energy (116 MW gross). GREC will be located on approximately 131 acres of property (the Site) in northwest Gainesville that GREC LLC will lease from the City of Gainesville (d/b/a Gainesville Regional Utilities [GRU]). The GREC Site is located within the boundaries of the previously certified site for GRU's existing Deerhaven Generating Station (DGS).

GREC will provide GRU with reliable, clean electrical power, while diversifying GRU's fuel mix by using a renewable energy resource that is abundant in north-central Florida. The total electrical output of the proposed GREC will be purchased by GRU under a 30-year power purchase agreement (PPA) between the City of Gainesville (d/b/a GRU) and GREC LLC. The PPA was approved by the Gainesville City Commission on May 7, 2009.

Currently, construction of GREC is scheduled to begin in December 2010, and commercial operation is scheduled for December 2013. Achieving this schedule has significant economic consequences for GRU and its power customers. If the biomass facility begins commercial operation by January 1, 2014, GREC will be eligible to obtain the renewable energy grant from the federal government that is contained in H.R. 1 (the American Recovery and Reinvestment Act of 2009). The savings in GRU's cost of power resulting from GREC obtaining the renewable energy grant is \$8.10 per megawatt-hour (MWh), which equates to a savings of \$6.4 million per year.

The City of Gainesville's decision to enter into the PPA with GREC LLC was the result of an extensive integrated planning and public outreach process. There were 43 public meetings concerning Gainesville's energy supply strategy, including 27 meetings of the Gainesville City Commission, plus several dozen presentations to civic and community groups. A competitive procurement process was used to identify the most cost-effective proposal that satisfied the City's goals and objectives. The procurement process culminated with the City of Gainesville's selection of GREC.

This SCA has been prepared in accordance with the requirements of: (a) the Florida Electrical Power Plant Siting Act (PPSA), Sections 403.501 through 403.518, Florida Statutes (F.S.); and (b) the rules implementing the PPSA, which have been adopted by the Florida Department of Environmental Protection (FDEP) and codified in Chapter 62-17, Part I, Florida Administrative Code (F.A.C.). This SCA follows the prescribed format and informational requirements of the FDEP Application Instruction Guide: Electrical Power Plant Sites and Associated Facilities Electrical Transmission Lines (revised September 1, 2009).

This Chapter 1.0 of the SCA provides information concerning the Applicant, GREC LLC, and an overview of the proposed GREC.

1.1 APPLICANT INFORMATION

1.1.1 APPLICANT IDENTIFICATION

GREC LLC is the Applicant for the proposed GREC. Table 1.1.1-1 provides the applicant identification information that is required by FDEP's Application Instruction Guide.

1.1.2 BACKGROUND INFORMATION FOR GREC LLC

GREC LLC is a subsidiary of American Renewables, LLC (American Renewables). GREC LLC was specifically established by American Renewables to develop, construct, own, and operate the proposed GREC in Gainesville, Florida.

American Renewables is a private, for-profit renewable power producer. American Renewables develops, builds, and operates renewable energy facilities that use biomass

Table 1.1.1-1. Applicant Information

Applicant's Official Name:	Gainesville Renewable Energy Center, LLC
Address of Applicant:	75 Arlington Street, 5 th Floor, Boston, Massachusetts, 02116
Address of Official Headquarters:	75 Arlington Street, 5 th Floor, Boston, Massachusetts, 02116
Business Entity (corporation, partnership, cooperative):	Limited Liability Company
Name and Title of Chief Executive Officer:	James S. Gordon, Chief Executive Officer
Name, Address, and Telephone Number of Official Representative Responsible for Obtaining Certification:	Joshua H. Levine Director of Project Development American Renewables, LLC 75 Arlington Street, 5 th Floor Boston, Massachusetts 02116 Telephone: 617/482-6150 Fax: 617/482-6159
Site Location—County:	Alachua County
Nearest Incorporated City:	Located within the City of Gainesville
Latitude and Longitude:	Latitude: 29° 46' 03" Longitude: 82° 23' 47" (at stack)
Universal Transverse Mercators (UTM), Northerly and Easterly:	Northerly: 3,293.825 km N Easterly: 365.010 km E (at stack) North American Datum (NAD) 1983
Section, Township, Range:	Portion of Section 27, Township 8 South, Range 19 East
Location of Any Directly Associated Linear Facilities (Counties):	Linear facilities include a 138-kilovolt (kV) transmission line, sanitary wastewater and natural gas pipelines, and main and emergency access roads. All facilities will be located on or immediately adjacent to GREC Site or GRU DGS certified site in Gainesville, Alachua County, Florida.
Name Plate Generating Capacity of Proposed Unit:	100 MW (nominal net); 116 MW (nominal gross)
Additional Information:	Project Name: Gainesville Renewable Energy Center (GREC)

Source: ECT, 2009.

materials as fuel. American Renewables is jointly owned by affiliates of three companies: BayCorp Holdings, Ltd. (BayCorp); Energy Management, Inc. (EMI); and Tyr Energy, Inc. (Tyr Energy). These entities bring together successful experience and expertise in energy-related project development, operations, investment, and management.

BayCorp is a merchant energy company that owns power assets as well as natural gas and oil production and development assets. BayCorp currently owns and operates a hydro-electric generation facility and is developing additional generation in Vermont. Through its subsidiary, Great Bay Power Marketing, Inc., BayCorp supplies wholesale power in the New England power market, and through its subsidiary, BayCorp Resources, BayCorp owns and operates interests in oil and natural gas development and production projects located throughout Texas.

EMI is a privately held energy company with more than 30 years experience in energy conservation and energy development. In 1986, EMI developed, financed, and constructed a 15-MW biomass-fired electrical generating facility in Alexandria, New Hampshire. Following the Alexandria project, EMI developed six natural gas-fired electric generation projects totaling more than 860 MW of capacity, including the first independent merchant power projects in New England. EMI is also currently developing the Cape Wind Project, a 468-MW offshore wind project to be located in Nantucket Sound off the southern coast of Cape Cod, Massachusetts.

Tyr Energy is owned by ITOCHU Corporation, a \$51.6-billion international trading conglomerate and its United States-based subsidiary, ITOCHU International, Inc. Tyr Energy focuses on acquiring and owning equity interests in North American independent power assets and providing asset management services to facilities in which it is an owner. Tyr Energy's current portfolio includes interests in CalPeak Power (California), Chesapeake Commonwealth Company (Virginia), and Fox Energy Company (Wisconsin). ITOCHU also owns interests in independent power facilities in Saudi Arabia, Indonesia, and Japan. Tyr Energy's sister company, North American Energy Services Corporation, also is a subsidiary of ITOCHU International, Inc. North American Energy Service Corporation is the industry's largest independent, third-party provider of power plant operations and

maintenance services, providing services to almost 300 MW of biomass-fueled power plants across the United States.

In addition to GREC, American Renewables has other biomass energy facilities of similar 100-MW size and design in various stages of development, including the Nacogdoches Power project, which was recently sold to Southern Power, a subsidiary of Southern Company, and the Hamilton County Renewable Energy Center (HCREC). The Nacogdoches Power project is located in Sacul in eastern Texas. The project has a long-term PPA with Austin Energy, the municipal utility owned by and serving the City of Austin, Texas. The project has obtained all applicable permits. Southern Power began construction in October 2009 with commercial operation anticipated in late 2012. The HCREC project is located in Hamilton County, Florida, and is in the early stages of development.

1.1.3 BACKGROUND INFORMATION FOR GRU

GRU is a municipal electric, natural gas, water, wastewater, and telecommunications utility that is owned and operated by the City of Gainesville in Alachua County, Florida. For its electric utility services, GRU operates a vertically integrated electric power generation, transmission, and distribution system. GRU's distribution system serves a retail territory of approximately 124 square miles (mi²) and approximately 93,000 customers. In addition, GRU provides wholesale electric service to the City of Alachua and Clay Electric Cooperative, Inc. (CEC).

GRU owns and operates three existing electrical power supply facilities, including: (1) the nominal 180-MW (gross) John R. Kelly Generating Station located in southeast Gainesville near the downtown area, (2) the nominal 440-MW DGS, and (3) the nominal 4.1-MW South Energy Center, a small distributed generation unit at the new Shands at University of Florida Cancer Hospital. GRU also owns a 1.4-percent share of the Progress Energy Florida (PEF) Crystal River Unit 3 nuclear unit. These four energy supply resources provide GRU with a summer net generating capacity of approximately 608 MW. GRU also has several power purchase agreements for additional energy supplies. GRU's electric system includes: (a) 2.5 miles of 230-kilovolt (kV) and 117 circuit miles of 138-kV transmission lines; (b) distribution substations and lines; and (c) trans-

mission interconnections with PEF, CEC, the City of Alachua, and Florida Power & Light Company (FPL).

In March 2009, GRU became the first utility in the United States to offer a solar feed-in tariff program. Under this program, GRU will purchase 100 percent of the distributed solar power that is produced by any private installation and GRU will pay a fixed rate for a 20-year contract term.

Chapter 2.0 of this SCA describes GRU's need for additional power supplies. Chapter 2.0 also explains how and why GRU selected GREC as the best option for satisfying GRU's electrical supply needs. Chapter 2.0 summarizes the information presented in the Need for Power Application that was filed jointly by GRU and GREC LLC with the Florida Public Service Commission (FPSC) on September 18, 2009 (FPSC Docket No. 090451-EM).

1.2 OVERVIEW OF THE PROJECT

The following subsections provide general descriptions of the GREC Site, electrical power plant, and associated facilities. Chapters 3.0 and 4.0 of this SCA provide more detailed descriptions of the Site and the proposed GREC, respectively. Chapter 9.0 describes the directly associated linear facilities that extend outside the boundaries of the GREC Site.

1.2.1 OVERVIEW OF THE SITE

The GREC Site is located in the northwestern part of Gainesville and the north-central part of Alachua County. Figure 1.2.1-1 shows the location of the GREC Site within the state of Florida and Alachua County. Figure 1.2.1-2 is a general vicinity map that identifies the GREC Site and some of the landmarks in Gainesville and Alachua County.

The GREC Site is approximately 131 acres in size. The GREC Site is contained within an approximately 1,146-acre parcel that is owned by the City of Gainesville. The City (d/b/a GRU) uses part of the 1,146-acre parcel for the operation of the DGS. Since the GREC Site is not used actively by GRU, the City (d/b/a GRU) will lease the GREC Site to

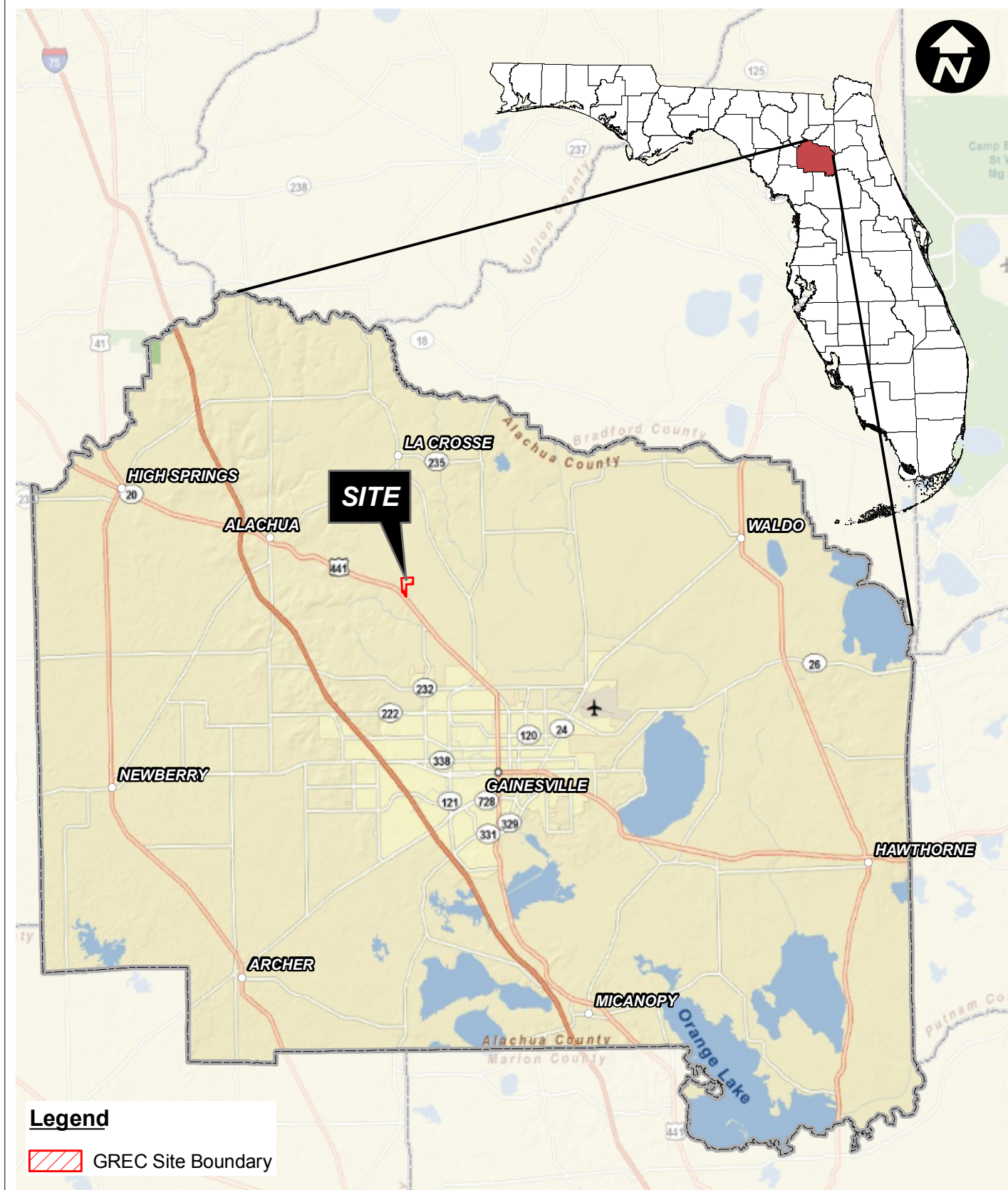
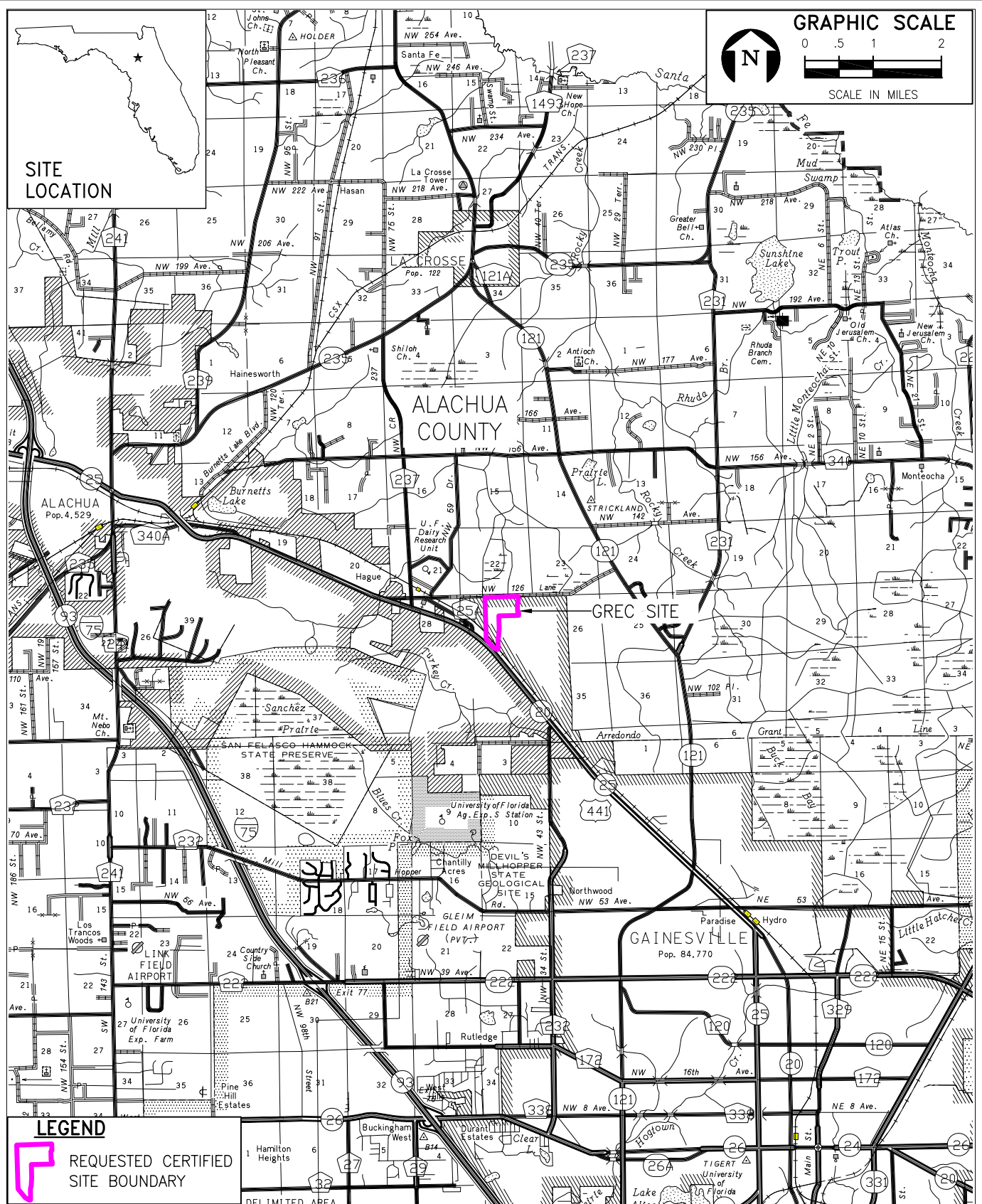


FIGURE 1.2.1-1.

GREC SITE LOCATION WITHIN FLORIDA AND ALACHUA COUNTY

Sources: ERSI, 2009; US Census, 2000; ECT, 2009.



GREC LLC for the development and operation of GREC. Figure 1.2.1-3 shows the boundaries of the 131-acre GREC Site in relation to the boundaries of the 1,146-acre DGS site. Appendix 10.10 provides a copy of the Memorandum of Lease between the City of Gainesville, d/b/a GRU, and GREC LLC, including the legal description of the GREC Site.

In May 1978, GRU's 1,146-acre parcel was certified under the PPSA for the construction and operation of DGS Unit 2. The GRU DGS site currently has a total electric generating capacity of approximately 440 MW, consisting of an 88-MW natural gas or oil-fired steam unit (Unit 1), a 235-MW pulverized coal-fired unit (Unit 2), a 76-MW natural gas or oil-fired simple-cycle combustion turbine unit (Unit 3), and two 19-MW simple-cycle combustion turbine units. The GREC Site is located northwest of the existing electrical generating facilities at the DGS. As shown in Figure 1.2.1-3, the GRU DGS facilities that are closest to the eastern boundary of the GREC Site are GRU's ash landfill and settling pond, brine landfill, wastewater treatment sludge disposal cell, and large stormwater management basin. There is an existing CSX Transportation, Inc. (CSX) rail spur just south of the southern tip of the GREC Site. The CSX rail spur is used to deliver coal to the DGS. There are no facilities associated with the operation of DGS located on the GREC Site, except for secondary access roads and unpaved trails.

In 2001 and 2002, the City of Gainesville purchased an additional 2,328 acres of timberland adjacent to the northern and eastern boundaries of the certified DGS site. This land provides an additional buffer area and/or area for potential future expansion for the DGS. This land was annexed and thus incorporated into the City in February 2007.

Based on consultations with FDEP's Siting Coordination Office, it is GREC LLC's understanding that if certification is granted for the development of GREC: (a) FDEP will administratively modify the certification for the DGS site and thus clarify that GREC LLC will be responsible for the development of GREC and the related activities on the Site, and (b) GRU will not need to abandon or decertify the portion of the GRU property that will be used for GREC. Therefore, based on this understanding, neither GREC LLC

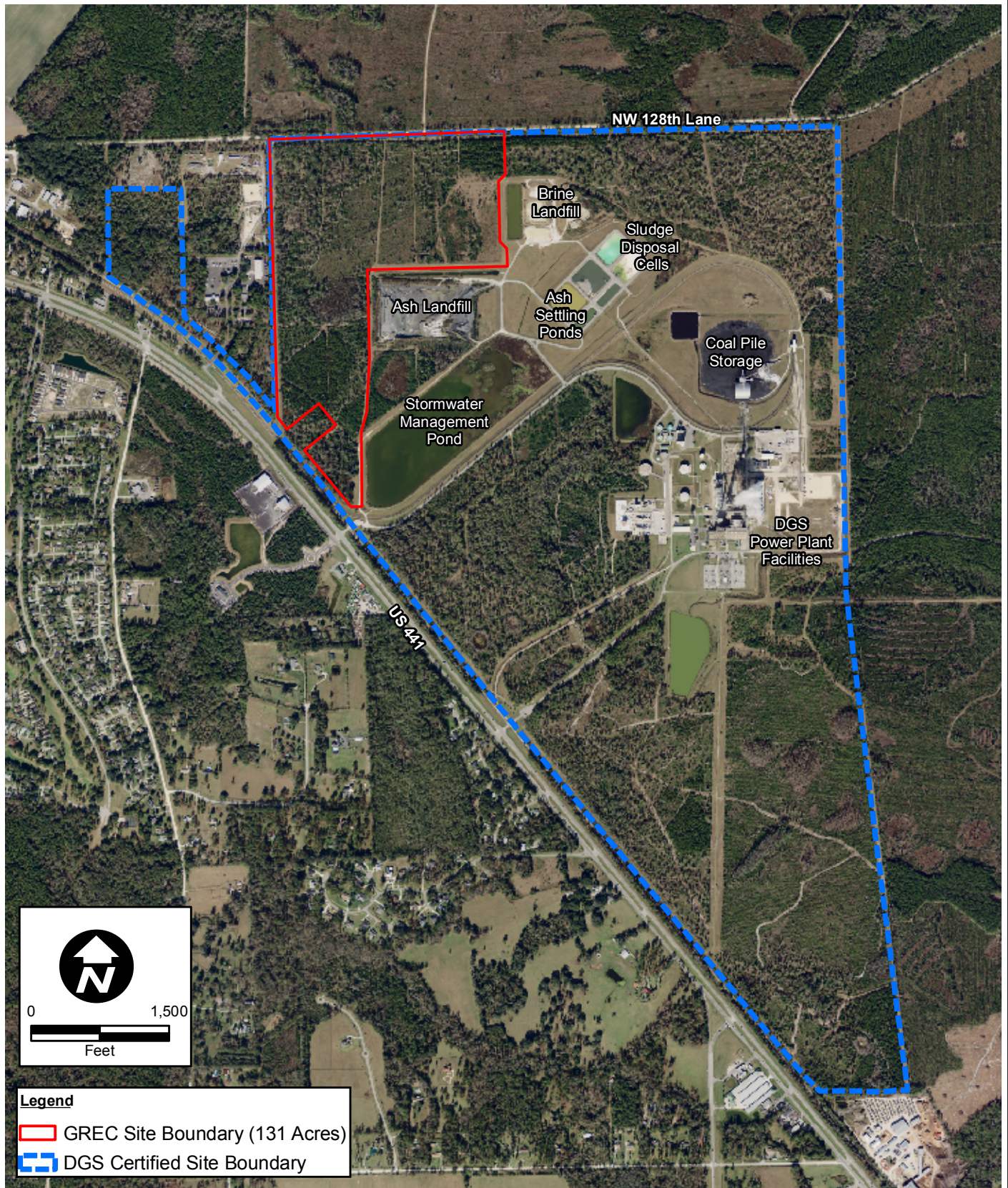


FIGURE 1.2.1-3.

GREC SITE IN RELATION TO THE GRU DGS PROPERTY AND EXISTING FACILITIES

Sources: GRU, 2009; FDOT, 2008; GENESIS, 2009; ECT, 2009.

nor GRU plan to apply to FDEP for decertification of the portion of the DGS site that will be used by GREC LLC as the Site for GREC.

As shown in Figure 1.2.1-3, the GREC Site is presently undeveloped and has historically been used for agriculture and pine silviculture. Most of the Site currently is actively managed for timber production and has been altered by land preparation (furrowing) and periodic harvesting of timber. The Site is transected by numerous unpaved roads/trails and is surrounded by manmade swales/ditches. The current land use and vegetation types on the Site consist primarily of forested communities, including pine plantations, mixed pine and hardwoods, and several wetland types. Nonforested communities include man-made swales, trails/roads, open land, and herbaceous dry prairie.

As discussed previously, the property adjacent to and east of the Site is part of the GRU DGS property. The Alachua County Public Works Department has an office and other facilities on the land adjacent to the Site's western border. A radio tower and undeveloped land also are situated west of the Site. Unpaved Northwest 128th Lane is adjacent to the north side of the Site. Undeveloped, wooded land is located north of Northwest 128th Lane. South of the Site is U.S. Highway 441 (U.S. 441), the CSX rail line and spur, and several properties that are used for commercial and retail sales.

1.2.2 OVERVIEW OF THE PROPOSED GREC FACILITIES

The main electrical generating facilities for GREC will consist of a bubbling fluidized bed (BFB) boiler and conventional steam turbine generator. The BFB boiler will be capable of accommodating a wide range of clean, woody biomass fuels. In the BFB boiler, combustion of the woody biomass will take place in the dense, fluidized sand bed located at the bottom of the furnace as well as above the bed.

GREC will use clean, chipped/ground, woody biomass material as its primary fuel. The biomass will consist of logging residue, mill residue, and urban wood waste. Urban wood waste typically consists of woody tree trimmings created by land clearing, right-of-way maintenance, and other nonforestry sources of woody debris. GREC will use limited quantities of natural gas as fuel during start-up.

GREC LLC will enter into contracts with local and regional suppliers for the procurement of approximately 1 million tons per year (tpy) of biomass fuel. The biomass fuel will typically be procured from areas within a 75-mile radius of the Site. The fuel suppliers will be required to follow strict standards that were established by GRU and GREC LLC in the PPA to protect the sustainability of regional forests. The fuel suppliers also will be given the opportunity to benefit from a forest stewardship incentive program if they exceed the minimum standards established by GRU and GREC LLC.

The biomass fuel will be prepared and chipped/ground at offsite locations to meet the design specifications established by GREC LLC for the BFB. The chipped/ground wood will be delivered to the GREC Site by truck. When the truck arrives at the Site, the truck will be weighed, and then the biomass fuel will be unloaded. The biomass will be stacked in storage piles and then reclaimed as needed. The onsite biomass fuel handling and storage systems will include truck scales, truck dumpers, screens and wood hogs, automatic and manual stacker/reclaim systems, and four fuel storage piles.

GREC will use advanced BFB boiler technology and clean burning biomass fuel to minimize its airborne emissions. Using renewable biomass fuel also will help ensure that GREC's emissions are *carbon neutral* with regard to carbon dioxide (CO₂) and other greenhouse gases (GHGs). Although the BFB boiler and clean biomass fuel will have inherently low emissions, air pollution control systems will be installed to reduce GREC's emissions even further. A selective catalytic reduction (SCR) system will be used to reduce emissions of nitrogen oxides (NO_x). A fabric filter baghouse will be used to reduce emissions of particulate matter (PM). Dry sorbent injection will be used to reduce emissions of sulfuric acid (H₂SO₄) mist, hydrogen chloride, and hydrogen fluoride. GREC will comply with the requirements concerning the use of best available control technology (BACT).

GREC will be equipped with a zero liquid discharge (ZLD) system, which will allow GREC to eliminate any discharges of industrial wastewater from the facility. The ZLD system also will allow GREC to maximize the recycling and reuse of water. The ZLD

system and other water conservation measures will be used to minimize the amount of water used by GREC. Nonetheless, GREC will need approximately 1.4 million gallons per day (MGD) of water (annual average), primarily to replace the water lost through evaporation in GREC's mechanical draft cooling tower. This need will be satisfied by using groundwater withdrawn from the Upper Floridan aquifer (UFA) through two new onsite wells. To offset this groundwater use, GRU has agreed to reduce the approved groundwater allocation for the GRU DGS by 1.4 MGD prior to the start of commercial operations of GREC.

Other GREC facilities will include an administration building, a warehouse, water (process and potable) and wastewater treatment facilities, handling and storage facilities for the sand and fly ash from the BFB boiler, two emergency diesel engines, a switchyard, and several stormwater management basins.

GREC will include several associated linear facilities that will extend from the Site onto GRU's DGS property. In some cases, the linear facilities also will extend slightly off of the DGS property. These associated linear facilities will include main access and emergency access roads; sanitary sewer and natural gas pipelines; and a 138-kV transmission line and switchyard. Section 4.10 and Chapter 9.0 of this SCA provide details on these associated facilities and their corridors.

In this PPSA proceeding, GREC is seeking certification of the construction and operation of GREC, including all of the associated linear facilities.

1.3 PURPOSE OF THE SCA

The licensing or permitting of power plants and associated facilities in Florida requires compliance with applicable federal, state, and local laws, regulations, and ordinances. The primary state law applicable to the licensing of GREC is the PPSA (Sections 403.501 through 403.518, F.S.).

The PPSA establishes the state of Florida's policy to balance the need for increased power generation facilities with the broad interests of the public, including the protection of

human health, welfare, and the environment. To implement this policy, the PPSA establishes a centrally coordinated process for the submittal, review, and approval of applications for electrical power plants. The PPSA proceedings are initiated when an applicant files an SCA with FDEP and other agencies. FDEP administers and coordinates the PPSA process with various affected agencies, governmental entities, other parties, the public, and the Applicant. The process concludes with the approval or certification of the electrical power plant and associated facilities by the Governor and Cabinet, sitting as the Siting Board, or by FDEP in certain cases. FDEP procedures for implementing the PPSA are contained in Chapter 62-17, F.A.C.

To the extent possible, the procedures for federally approved or delegated permit programs are coordinated with the state's PPSA review procedures. These federally approved or delegated permit programs include New Source Review (NSR), Prevention of Significant Deterioration (PSD), National Pollutant Discharge Elimination System (NPDES), and Underground Injection Control (UIC) programs. FDEP is required to review applications and issue permits under these federally approved or delegated programs in compliance with the specific requirements of the federal programs.

The purpose of this SCA and PPSA proceeding is to obtain site certification (approval) for the construction and operation of the proposed GREC, including the biomass-fueled electrical power plant and all of the associated facilities. This SCA demonstrates that GREC will comply with all applicable nonprocedural rules and requirements of the local, regional, and state agencies that have jurisdiction over the construction and operation of GREC.