

LEE COUNTY UTILITIES GENERATOR UPGRADES PROJECT DESCRIPTION (LeeCountyPD_CFHP_5)

1. (A.) PROJECT PURPOSE

Lee County proposes to install an emergency power generator system at five well sites that serve the critical Green Meadows Water Treatment Plant. This facility and its wells process 14 million gallons of drinking water daily. Green Meadows provides water to south Lee County neighborhoods and businesses, Southwest Florida International Airport, Florida Gulf Coast University, Golisano Children's Hospital, Health Park Hospital, Gulf Coast Hospital, and the Town of Fort Myers Beach. Service to the international airport and the university in particular make this a critical, high-impact project.

To serve southern Lee County, Green Meadows receives water from well sites within a remote woodland area. This wellfield is a critical facility with large industrial electrical equipment that is susceptible to power outages during natural disasters, including floods, storms, and fires. During seasonal thunderstorms, frequently falling tree branches damage overhead power lines and disrupt electrical power to the wells. This limits drinking water production multiple times per year and is dependent on the frequency and severity of storms.

Considering underground aquifer characteristics and facility expansion from population projections, five specific well sites have been identified to benefit the local residents from a quantifiable resilience improvement project. Well Sites 6, 7, 10, 12 and 13 each have one source of power, which are overhead electrical lines that are vulnerable to the elements. Providing emergency power generators as a redundant electrical source will ensure each wellsite is always available and online.

With CDBG-MIT funding, Lee County will install an emergency power generator system at all five of these well sites. Electrical work will be performed by local contractors together with County utilities personnel. The funding requested would be used to fully fund the project. The emergency power generation would safeguard drinking water production during seasonal weather storms and severe hurricanes.

Shortly before Hurricane Irma, Lee County Utilities – a County-owned enterprise operation funded by rate payers – invested \$75.4 million in an update and expansion plan that provided a weather-hardened, secure facility. The capital improvement reduced treatment costs per thousand gallons by 60% and delivered approximately \$11 million in savings from facility and process updates. These included implementation of state-of-the-art ion exchange and reverse osmosis systems.

While the plant itself is powered by a 1.5 megawatt emergency power generator, Lee County's intention to provide generators for the well sites has been delayed by Hurricane Irma and flooding in 2017. Associated costs to all departments and the strain on County reserves have made it difficult to find fiscal resources to address back-up power for the well fields that draw water for the plant from three different aquifers.

In addition, the County already has invested in surface water controls to mitigate potential flooding and roadway accessibility of the wellfield's property limits. Locating grant funds to address the unmet mitigation measures for redundant electrical sources to well fields is a targeted strategic element of Lee County's resiliency planning.

Assuring power back up for the Green Meadows wellfields also protects an important regional resource. Green Meadows can be pressed into emergency production to compensate for damage or power interruptions at other facilities.

HUD and Florida DEO acknowledged Hurricane Irma’s impact on Lee County, which they designated as most-impacted (MID).

Lee County estimates this project will cost \$2,367,922.26. The bulk of the spending is for acquisition of the five generators and fuel tanks -- \$860,720 -- and for electrical labor -- \$200,000. This expense will offset the costs incurred when the plant loses power.

In June 2018, FEMA’s Federal Insurance and Mitigation Administration reported that every dollar invested to harden facilities will return \$5 in future cost savings.

1. (B.) DESCRIPTION OF THE CRITICAL FACILITY

The Green Meadows Water Treatment Plant is a 21.6 acre facility on a campus in south Lee County that includes the treatment plant, water storage tanks, retention lakes and ample parking that can be used as a staging area for water supplies in a state of emergency. As part of its ongoing maintenance and mitigation efforts, Lee County is demolishing structures on the campus to make more room available for staging.

Note that this critical facility is the supplier of water for other critical facilities including Southwest Florida International Airport; two of Lee County’s general population shelters – Alico Arena and South Fort Myers High School, and three major hospitals – Gulf Coast Hospital, Health Park Hospital and Golisano Children’s Hospital, as well as other medical facilities and food and water providers.

Green Meadows is located at 13001 Alico Road, Fort Myers FL 33913. The wellfields are indicated on a map included in the Community Value images and can be found at:

Well	Easting	Northing
GMS-06	753,824.49	791,919.34
GMS-07	756,342.29	791,962.26
GMS-10	764,371.05	791,993.10
GMS-12	769,686.91	791,903.24
GMS-13	772,323.38	791,938.12

For security purposes, detailed information about the wellfields will not be shared here. The wellfield includes 10 well sites, each with multiple wells, extending along a line for five miles from the plant with well sites spaced every half mile.

The plant and all wellfield operations are located in the FEMA X Zone, outside the Special Flood Hazard Area.

2. RISK MITIGATION

Wellfield generators are a strategic element of Lee County's continuing implementation of resiliency measures to mitigate future risk of storm and other hazard damage. Addressing this urgent need for unmet mitigation measures for redundant well site electrical sources complements Lee County's previous efforts to harden the Green Meadows plant, install the permanent back-up generator there and upgrade surface water controls for the wellfields and their access roads.

Loss of power to the wellfields could potentially interrupt the supply of drinking water for approximately 21,562 residential and 4,268 commercial accounts in unincorporated Lee County, the Town of Fort Myers Beach and Florida Gulf Coast University.

Lee County must ensure continuing and safe water for one of the Green Meadows most critical customers – the Southwest Florida International Airport (RSW). In states of emergency, the airport is a critical link for the delivery of critical resources, including first responders, food, water and medical supplies. The airport must be available as a staging area, and its supply of potable water is vital. The airport's ability to accommodate travelers inbound, outbound and stranded at the airport during emergency declarations requires a functioning water supply.

The university's Alico Arena is an important shelter site for not only Lee County but also for all of Southwest, South and Southeast Lee County and the Keys. The arena has been used to shelter as many as 1,500 people during a hurricane. It was used as a host shelter for non-county residents for hurricanes Matthew in 2016 and Jeanne in 2004.

The Green Meadows operation also provides the water supply for the South Fort Myers High School which becomes a shelter for evacuees during emergency declarations.

For Lee County's low- and moderate-income residents, an affordable water supply is crucial. LMI populations are more likely to be economically impacted by the need to purchase water if tap service is not available. In Lee County – a HUD-designated MID community – 276,873 people, nearly 42% of the population, qualify for HUD's LMI category.

3. WORK COMPLETION AND MANAGEMENT TEAM

Grant-supported work to complete the hardening will be overseen by the Lee County Utilities Department which will appoint a Project Manager to work with an Emergency Power Generation Team. Lee County Procurement will select a Design Professional and General Contractor through established Lee County Competitive Negotiation protocols and in compliance with all federal guidelines outlined in the Federal Register Notice 84 FR 45838 and Florida DEO requirements.

When final design has been completed, the Design Professional will provide an Opinion of Probable Cost which will be the basis of review for the establishment of the construction bid from the selected General Contractor. The General Contractor will be selected by a competitive bid process.

4. DETERMINATION OF PROJECT FUNDING REQUIREMENTS

The estimate of funds required for this proposal were drawn from similar recent projects and supplier information.

5. ANTICIPATED OUTCOMES

This proposal to install an emergency power generator system at five well sites that serve the critical Green Meadows Water Treatment Plant will:

- Protect the safe and continuous processing of 14 million gallons of drinking water daily for residential and commercial uses in Lee County;
- Provide additional back-up in the event of disaster damage to other regional wellfields or water plants;
- Protect the water supply for other critical facilities, including Southwest Florida International Airport, Florida Gulf Coast University, Alico Arena and South Fort Myers High School general population shelters and other key providers of emergency services during disasters.

6. MAINTENANCE

Because the Lee County Utilities wells provide critical, daily service to Lee communities, the County will continue maintaining the improvements as part of their normal maintenance program. The emergency power generation system would be maintained through the existing Lee County Utilities Generator Group.