

STAFF REPORT UTILITY MEETING

AGENDA DATE: January 31, 2023

DEPARTMENT: Electric Utility

TITLE:

Discussion of grant opportunities - Bi-partisan Infrastructure law Topic Area 1 (Grid Resilience) and Topic Area 2 (Smart Grid)

SUMMARY:

The City of Lake Worth Beach Electric Utility is to inform the City Commission of the various grant funding opportunity and direction concerning to applying for Department of Energy (DOE) Grid Deployment Office (GDO) Office of Clean Energy Demonstrations (OCED) Grid Resilience and Innovation Partnerships for Topic Area 1 Grid Resilience Grants, and for Topic Area 2 Smart Grid Grants, both under Funding Opportunity Announcement Number: DE-FOA-0002740.

This funding opportunity has **historical significance** as the first Bi-Partisan Infrastructure Law (BIL) of its kind and is described by GDO as a once in a generation investment in infrastructure for Disadvantaged Communities (DACs).

BACKGROUND AND JUSTIFICATION:

The Department of Energy DOE Grid Deployment Office (GDO), in conjunction with the Office of Clean Energy Demonstrations (OCED), issued a Funding Opportunity Announcement (FOA). Awards made under this FOA will be funded, in whole or in part, with funds appropriated by the Infrastructure Investment and Jobs Act1 (IIJA), also more commonly known as the Bipartisan Infrastructure Law (BIL). The BIL is a once-in-a-generation investment in infrastructure, designed to modernize and upgrade American infrastructure to enhance U.S. competitiveness, driving the creation of good-paying union jobs, tackling the climate crisis, and ensuring stronger access to economic, environmental, and other benefits for disadvantaged communities (DACs).

The DOE grant funding, if awarded, presents an opportunity for the City of Lake Worth Beach to supplement the existing Bond funds to continue the System Hardening and Reliability Infrastructure project. Additionally, the associated grant funding could reduce the need and/or frequency of future bond fund requests.

Topic Area 1 funding will be used to supplement the replacement of aging grid infrastructure that is vulnerable to the increasing frequency of extreme weather events is leading to energy supply disruptions that threaten the economy, put public health and safety at risk, and can devastate affected communities all over the country. Climate change is increasing the threats to our power system infrastructure. Disruptive weather events are more intense in terms of temperature extremes and precipitation and are becoming broader in scope and affecting larger areas at a time. Other climate impacts like droughts are long-lasting, compounding the potential impact of disruptive events and increasing other threats such as wildfires, floods, and mudslides have the potential to damage the aging grid infrastructure. Previous methods and approaches to prepare or disruptions are no longer sufficient to meet the increasing threats to the power system due to climate change. Increasing interdependencies between critical infrastructure systems will continue to impact our power system. The cost match for eligible entity that sells not more than 4,000,000 megawatt hours of electricity per year shall be 1/3 of the grant. City of Lake Worth Beach has 455,554 MWH in electric sales annually.

Topic Area 2 funding will be used to supplement the replacement of aging grid infrastructure that is vulnerable to the increasing frequency of extreme weather events is leading to energy supply disruptions that threaten the economy, put public health and safety at risk, and can devastate affected communities

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As part of the Bipartisan Infrastructure Law, DOE expects to make a total of approximately \$3.9 Billion of federal funding, available for new awards, subject to the availability of appropriated funds. DOE anticipates making approximately 40-100 awards under this funding opportunity.

Topic Area 1 Grid Resilience Grants seeks to award \$918 Million with a performance period of 60 months.

A Topic Area 2 Smart Grid GRANT would support a series of seven (7) infrastructure upgrade initiatives designed to transform the community's electrical grid and reduce its vulnerability to climate change. These initiatives have been coordinated and assembled into a cohesive strategy for funding and executing these upgrades. Each of the initiatives has an existing scope and timing prior to the GRIP funding, but with GRIP funding we will be able to increase the pace and scope of each initiative beyond what we could have accomplished without it. Each of the initiatives below is an eligible project and cost under the GRIP funding opportunity.

- **Increasing transmission capacity** and operational transfer capacity. to provide more robust connections to our single radial transmission line tap by adding a new interconnection to the statewide high voltage transmission grid with improved protection capabilities, redundant power flow paths, and backup autonomous switching for power restoration. Currently, our sole transmission line tap, which is 50 years old, puts the city at much greater overall risk of experiencing an outage, and recent storms have caused city-wide problems precisely because there is only a single line.
- **Improving the visibility of the electrical system and recover autonomously.** The City plans to add 60+ reclosers and other sectionalizing devices, including load flow sensors, to autonomously rebalance the electrical system. This will drastically improve the reliability and timing of outages for customer through minimization of distribution system segment lengths and exact data return from the field for the system operators. This will also improve response time to identify and reach the exact area of problem.
- **Enhance secure communication and data flow between distribution components.** The City will add utility-owned dedicated fiber to/from each of our stations and remote line devices to enhance the reliability and security of the data in our system, as primary data to operations will change from radio to fiber optic.
- **Anticipate and mitigate the impacts of extreme weather or natural disaster on grid resiliency.** In light of our significant storm risk, the City plans to prevent hurricane and tropical storm damage by upgrading our existing 1970's radial transmission line to meet newer Category 5 storm wind loading requirements, and add animal protection on a large scale to prevent vegetation, bird, iguana, and other animal related outages, especially at substations.
- **Integration of distributed energy resources and devices to provide system benefits** such as renewable energy resources and electric vehicle charging infrastructure. Our Integrated Resource Plan (IRP) calls for us to consider a large battery storage facility to provide the ability to deliver night-time power using our growing solar portfolio while also serving to reduce and one day eliminate generating electricity from fossil fuels during the day.
- **Improve grid visibility and condition** to facilitate more efficient and accurate system-related decisions. To better enable grid operators to regulate the system, we plan to install an Advanced Metering Infrastructure (AMI) System across the entire service territory. Grid Benefit: The AMI

System would improve outage identification and restoration times, while providing customers with real-time consumption data to aid in energy conservation measures. In our current system, due to the unreliable technology and limited functionality, system operations are frequently impacted by weather events, outages, or partial outages and technicians cannot always determine quickly which customers have had electricity service restored. With new technology to identify and isolate faults, grid operators will be able to facilitate a quick response.

- **Improve grid-related decision making based upon historical and real-time system data.** The City will also install a Meter Data Management (MDM) System to collect, organize and retain all valuable data points well beyond current archival/retention capabilities to facilitate more efficient and accurate grid-related decisions and energy usage analysis. Grid Benefit: System events could be easily categorized, analyzed, and retained for continuous improvement processes related to reliability and system operation. We envision this as a significant future benefit in understanding and managing our community's power usage.

Projects Total

The projects which will be submitted for consideration under Topic Area 1 total **\$70 Million** and will be selected from City's list of projects contemplated under its System Hardening and Reliability Improvement Program (SHRIP). City has matching funds available from bond proceeds derived from the Series 2020 and 2022 Consolidated Utility Revenue Bonds.

The seven projects which will be submitted for consideration under Topic Area 2 total **\$50 Million** and will be include the City's list of projects areas described above. The City has matching funds available from bond proceeds derived from the Series 2020 and 2022 Consolidated Utility Revenue Bonds, although additional funding beyond what we currently have in bind funds may be required.

Cost Match Example:

- o Topic Area 1 requires small utilities to match 33% of the amount awarded.
- o **Example:** \$30 Million is awarded.
- o The City cost match amount would be \$10 Million to be contributed incrementally throughout the performance period of 60 months.
- o For Topic Area 2, the cost share must be at least 50% of the total project costs.
- o **Example** \$50 Million is awarded.
- o The City cost share amount would be \$25 Million to be contributed incrementally throughout the performance period of 60 months.

Cost Matching:

DOE requires prime recipients to contribute the cost share amount incrementally over the life of the award. Specifically, the prime recipient's cost share for each billing period must always reflect the overall cost share ratio negotiated by the parties (i.e., the total amount of cost sharing on each invoice when considered cumulatively with previous invoices must reflect, at a minimum, the cost sharing percentage negotiated).

Application Deadline: For Topic Area 1 the deadline for submittal of applications under this grant is April 6, 2023. For Topic Area 2 the deadline for submittal of applications under this grant is March 17, 2023. City has already taken the non-binding first step of submitting a Concept Paper to DOE for both Topic Areas in anticipation of applying for the grants. If this item is approved, the City will engage its grant consultant, Grant Management Associates ("GMA"), to prepare all the application documentation. GMA has provided a quote of \$39,784.50 for Topic Area 1 and \$44,268.00 for Topic Area 2 to complete the grant application by the application deadline.

MOTION:

Move to approve/disapprove the preparation and submittal of City's application to the Department of Energy (DOE) Grid Deployment Office (GDO) Office of Clean Energy Demonstrations (OCED) Funding Opportunity for Grid Resilience and Innovation Partnerships (GRIP) Topic Area 1 (Grid Resilience) and to approve the application for Department of Energy, Grid Deployment Office (GDO) Funding Opportunity Announcement Grid Resilience and Innovation Partnerships (GRIP) Topic Area 2 (Smart Grid).

ATTACHMENT(S):

Fiscal Impact Analysis - N/A
Topic Area 1 Concept Paper
Topic Area 2 Concept Paper