

# **EXECUTIVE BRIEF ELECTRIC UTILITY MEETING**

**AGENDA DATE:** April 27, 2021

**TITLE:**

Task Order No. 5 with Power Engineers, Inc. to complete engineering design and support during construction for the new Canal 8-Bay Distribution Substation

**SUMMARY:**

Task Order No. 5 authorizes Power Engineers Inc., to complete engineering design for the new Canal 8-Bay Distribution substation including support during construction in the amount not to exceed \$746,977. This project has been identified as an element of the City's electric utility System Hardening and Reliability Improvement Project and for which bonds were sold in November 2020.

**BACKGROUND AND JUSTIFICATION:**

City issued a Request for Qualifications (RFQ 18-303) to provide letters of interest and Professional Qualifications from consulting companies/firms for civil engineering, geotechnical engineering, surveying, architecture, hydrogeological services, energy management and engineering services. Power Engineers Inc., was one of three firms selected under the Energy Management category for the Continuing Contracts for Professional Services.

The existing Canal Distribution Substation, which is believed to have been placed in service circa 1980, is equipped with a single 138kV to 26kV step-down power transformer, a single 26kV to 4kV power transformer, a 4-bay distribution bus with associated breakers, and ancillary components. The Canal Distribution Substation provides electric power directly to approximately 5,800 customers via three 26kV circuits (6001, 6003 and 6004), which are currently undergoing significant upgrades for reliability improvements, are among the City's electric utility's top 10 poorest performing circuits. The Canal Distribution Substation also serves as Palm Beach State College's alternate source of 4kV electric power supply, which is soon to be converted to 26kV as well. This project has been identified as an element of the City's electric utility System Hardening and Reliability Improvement Project and for which bonds were sold in November 2020.

The Canal Distribution Substation also serves as a back-up via an "express feeder" linking it to the 26kV Main Yard Substation on College Street, thereby carrying an additional 8,552 residents and business owners when needed in the event of an emergency or during planned maintenance on the system. The "express feeder" serves to move electric power from east to west, or west to east in our service territory in the event of an outage on a portion of the 138kV transmission system and has been utilized in this manner multiple times over recent years.

In order to provide for improved reliability to customers within the City, the neighboring Village of Palm Springs, and in un-Incorporated areas of Palm Beach County served by our electric utility, construction of the new Canal 8-Bay Distribution Substation will included provisions for an additional 138kV to 26kV step-down power transformer providing for redundancy in the event of a failure of the existing single transformer or periodic maintenance without pushing equipment

to critical limits. Moving to an 8-Bay design will decrease the number of customers being served on any one circuit by distributing them over multiple smaller circuits so that fewer customers are affected when outages occur. Our system operators will also be able doubled up or cross-connect circuits during operating contingencies, thereby providing greater reliability of service.

Given the age and condition of the equipment at the existing Canal Distribution Substation, the lack of component redundancy, susceptibility to single-point failures, and limitations on reliability inherent in its original design, the need to upgrade and harden the circuits it feeds, and it's critical role in the provision of electric service to many thousands of our customers both in the western and eastern portions of our service territory, it's replacement at this time is imperative.

The Scope of Work under Power Engineers Task Order No. 5, will be to complete engineering design for the new Canal 8-Bay Distribution Substation including but not limited to civil engineering, permitting, protection & control, and provide engineering support during construction. The new 8-Bay Substation is to be designed in a manner such as to coordinate with the new adjacent 138kV Switchyard design which is also currently underway. Power Engineers will develop the engineering documents and provide technical specifications for major material purchases to be made directly by the City, prepare construction specifications, and provide assistance during the bidding phase, and provide engineering support during construction.

The time-line for design and construction is approximately 17 months with a targeted in-service date of September 2022. The costs associated with this Task Order No. 5 are not to exceed \$746,977.

**MOTION:**

Move to approve/disapprove Task Order No. 5 to Power Engineers, Inc., to complete engineering design for Canal 8-Bay Distribution Substation and provide engineering support during construction in the amount not to exceed \$746,977 for Fiscal Years 2021 and 2022.

**ATTACHMENT(S):**

Fiscal Impact Analysis  
Task Order 5

**FISCAL IMPACT ANALYSIS**

**A. Five Year Summary of Fiscal Impact:**

<b>Fiscal Years</b>	<b>2021</b>	<b>2022</b>	<b>2023</b>	<b>2024</b>	<b>2025</b>
Capital Expenditures	\$746,977	0	0	0	0
Operating Expenditures	0	0	0	0	0
External Revenues	0	0	0	0	0
Program Income	0	0	0	0	0
In-kind Match	0	0	0	0	0
<b>Net Fiscal Impact</b>	<b>\$746,977</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
No. of Addn'l Full-Time Employee Positions	0	0	0	0	0

**B. Recommended Sources of Funds/Summary of Fiscal Impact: Funds have been identified in account No. 421-6034-531-63.15, Project No. SH2113.**

Account Number	Account Description	Project Number	FY21 Budget	Current Balance	Agenda Expenditure	Balance
421-6034-531-63.15	Improve Other than Build / Infrastructure	SH2113	\$6,500,000	\$6,500,000	-\$746,977	\$5,753,023