THE CITY OF KEY WEST
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EXECUTIVE SUMMARY

Date: March 21, 2022

To: Patti McLauchlin, City Manager
Todd Stoughton, Assistant City Manager
Steven McAlearney, Engineering Director

From: Karen Wilman, Sr. Construction Manager

Subject: **Solar Direction for Frederick Douglass Community Center**

ACTION STATEMENT

Staff is requesting a decision on whether to install solar equipment on the Frederick Douglass Community Center.

BACKGROUND

Resolution 19-328 requires that options for solar power components be presented to the city commission for all future city development and redevelopment projects. Building solar infrastructure limits reliance on fossil fuels, adds resiliency, and provides life-cycle energy cost savings. Drawbacks to solar infrastructure are increased up-front and maintenance costs.

A solar study/cost estimate has been prepared; see attached report. The design example is based on the estimated energy consumption of the new building based on square footage and intended use. The project is at 75% Design Development and the information provided is an educated guess for both cost and performance of the suggested solar infrastructure. If Commission directs moving forward with solar installation, more design and estimating will be done prior to purchasing the system.

PURPOSE AND JUSTIFICATION

Solar installation is in line with our City's Strategic Plan, *Key West Forward*, Priority 4, Environmental Protection, Protect the health and longevity of the island and its inhabitants. Goal 1- pursue clean energy initiatives to reduce greenhouse gas emissions and increase participation in the circular economy.

FINANCIAL IMPACT

A system of the size required to meet the needs of the community center, estimated costs range from $3.25 to $4.00 per square foot of solar panel. The below tables show an expected range of both costs to install, and years required to see a return on investment.

	Estimated Cost of Solar Installation: **At $3.25 sf**	Estimated Yearly Savings	ROI (Years)	ROI 2% increase /Yr	ROI 5% Increase /Yr
Low Roof	$130,000	$10,741	12.1 years	10.9 Years	9.6 Years
High Roof	$91,000	$4,363	21.0 years	17.5 Years	14.5 Years
Total	**$221,000**	$15,105	14.6 years	12.9 Years	11.2 Years

	Estimated Cost of Solar Installation: **At $4.00 sf**	Estimated Yearly Savings	ROI (Years)	ROI 2% increase /Yr	ROI 5% Increase /Yr
Low Roof	$160,000	$10,741	14.9 years	13.2 Years	11.5 Years
High Roof	$112,000	$4,363	25.6 years	20.9 Years	17.3 Years
Total	**$272,000**	$15,105	18.0 years	15.5 Years	13.7 Years

Based on the information reviewed during 75% Design Development, solar would be a valuable addition to the project. Depending on the size of the solar panel system and estimated costs, return on investment (ROI) would be between 10.9 years – 15.5 years, based on a conservative 2% increase of energy costs each year. Most current warranties meet or exceed 20 years.

RECOMMENDATION

Staff recommends approval to install solar infrastructure for the Frederick Douglass Community Center based on the following conditions:

1. Roof Construction will be designed for the installation of solar panels, now or in the future.
2. A solar panel system will be bid as a separate ITB project, to be advertised when the project is at 50% Construction Documents. More specific information will be available at that point regarding both expected energy requirements and building use. Bid will be brought back to Commission for final review and approval.