

Item No.: 6h_Supp
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WTCW HVAC Replacement

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Action Requested

Authorize Design and Construction funding



PIER 69

PIER 66

PROJECT
LOCATION

World Trade Center West and Vicinity

Background

- 69,507 SF, 4 story multi-tenant office building
- Tenants: World Trade Center Club, Café Opla, Columbia Hospitality, World Affairs Council and Others
- Completed construction in 1999
- Rooftop HVAC equipment is original to the building
At the end of its useful life

Project Summary

- Replace Primary HVAC Components + Kitchen HVAC
Includes cost premiums for off-hours work and temporary HVAC.
- Complete by Fall 2021
- Estimated Cost: \$3.53M



Approach

- A Pilot for the Sustainable Evaluation Framework
- Balance Cost with Increased Energy Efficiency
- Eliminate Natural Gas Use
- Consider System Design Holistically



Sustainable Design Approach Goals

- Cost effectiveness
 - *Costs balanced against environmental benefits*
- Greenhouse Gas Emission Reduction and Energy Efficiency
 - *Eliminate use of natural gas for heating*
 - *Advance efforts to achieve CA goals*
- Tenant Impacts
 - *Improve occupant comfort, minimize tenant disruption*

Alternatives Considered

- Alternative 1. In-kind system
 - Like-for-like Rooftop Unit (RTU) Replacement
- Alternative 2. State-of-the-art system
 - High-efficiency Dedicated Outdoor Air System (DOAS) Unit with Variable Refrigerant Flow (VRF) Heat Pump System with Controls and Kitchen DOAS and VRF Heat Pump
- Alternative 3. Hybrid approach
 - Like-for-like RTU Replacement **Plus** Controls Retrofit and Variable Air Volume (VAV) Box Replacement and Kitchen DOAS and VRF Heat Pump

Alternative Analysis

Cost Effectiveness		Greenhouse Gas Emission Reduction		Energy Efficiency		Impacts to Tenants			
Capital / Construction Cost	Life Cycle Cost	Maritime/EDD Building Energy Emissions Reduction (% from 2018 Emissions)	Lifetime CO ₂ avoided (Metric Tons)	Expected Energy Use Intensity (reduction compared to 2017 baseline)	Annual Energy Savings (kBtUs)	Level of Work in Tenant Spaces	Construction Time	Tenant Comfort/ Temperature Control	
Alternative 3 (Recommended)	\$3.5M/2.8M	\$4.9M	0.9%	376	60 (14%)	668,000	Medium	Medium	Medium

Alternative 3 Benefits

- Reduces 376 Mt CO₂ over project life
- Eliminates all natural gas use for heating building spaces
- Expected to reduce operating maintenance costs at WTCW
- Demonstrates innovative HVAC technology
- Provides improved tenant comfort and moderate disruption during construction
- Maximizes sustainability goals at a marginal cost increase

Contracting Method and Schedule

- Building Engineering Systems (BES) Contract
 - Based on lessons learned from other BES projects
 - Port will provide performance specs and contractor will design and construct
 - Opportunities for efficiency, quality, and innovation
 - Women and Minority Business Enterprise (WMBE) goal of 6%
- Schedule
 - Q3/2020 - Q4/2020: Advertise, award, and execute BES contract
 - Q1/2021 - Q4/2021: Design and construction
 - Q1-Q3/2022: Project closeout

Questions?