CITY OF CORONADO

CITY COUNCIL STAFF REPORT

Coronado Public Library Roof and Heating, Ventilation, and Air Conditioning (HVAC) Project: Approve the Roof Replacement and HVAC Replacement Option 2; Provide Direction on Solar System Integration and Potential Funding; and Appropriate up to an Additional $368,235 for the Design and Bid Phases of the Project

RECOMMENDATION

1. Receive project status update;
2. Approve the recommended roof replacement;
3. Approve Heating Ventilation Air Conditioning Replacement Option 2 (In-Kind Replacement);
4. Provide direction on a solar system in the project; if approved appropriate an additional $100,000; and
5. Appropriate up to an additional $368,235 for the design and bid phases of the Library Roof and HVAC Replacement project.

BACKGROUND

The Coronado Public Library's roof and heating, ventilation, and air conditioning (HVAC) systems were installed during the 2005 remodel and addition project. Both systems have exceeded their expected service life and need replacement. Since the 14 HVAC units are roof mounted, and the roofing and mechanical systems are interrelated, it is recommended the two projects (roof and HVAC) are combined into a single project to reduce overall cost, streamline construction, and minimize disruption to library operations. To initiate progress on the project, a comprehensive feasibility study was commissioned to evaluate existing conditions, identify replacement options, and develop preliminary cost estimates.

ANALYSIS

On June 11, 2025, Shoreline CPM, Inc. (Shoreline), one of the on-call project management firms with the City with expertise in building renovations and utility infrastructure, was retained to perform detailed assessments of the roof, HVAC systems, and related structural and electrical impacts. On March 9, 2026, Shoreline submitted their findings in the Feasibility Study Basis of Design (Attachment 1). A separate high-level solar feasibility assessment to evaluate the possibility of using solar energy to power the library was also completed and is included as Appendix E to the report.

The following is a detailed overview of the Roof, HVAC, and Solar systems analysis for the Coronado Public Library, excluding the Winn Room:

Roof

The existing roof is a low slope, single ply thermoplastic polyolefin (TPO) system installed in 2004. The roof has experienced issues related to water ponding, drainage deficiencies, and aging materials. As part of the roof replacement study, several common commercial roofing systems were considered, including modified bitumen and other single ply membrane options. These alternatives were not recommended due to their comparatively higher maintenance demands and complex detailing conditions on the library building, particularly at clerestory window interfaces and expansion joints.

Polyvinyl chloride (PVC) roofs have a strong record of performance, offer straightforward long-term maintenance, and are well suited to the library's roof conditions. As a result, they represent a practical and cost-effective solution. Based on performance, constructability, durability, and lifecycle

considerations, the project management team and staff recommend replacing the existing roof with a single ply PVC membrane system. The preliminary cost estimate for this work is approximately $1.6 million.

The proposed scope of work includes corrective adjustments to roof drains and slopes, upgraded flashings and waterproofing membranes, and replacement of the damaged skylight over the historic Spreckels Reading Room, all of which are incorporated into the associated cost estimates. These improvements will reduce water ponding and leaking and ensure reliable water management across the roof system. The project also includes all work required for a complete and code-compliant roof system, including upgrades to bring the roof hatch ladder into compliance with current safety codes, walkway pads from the roof hatch to each mechanical unit for maintenance access, roof screens consistent with those at the John D. Spreckels Center to conceal mechanical equipment, fall-protection barriers, and other related improvements.

HVAC

The Library's existing HVAC system consists of 14 rooftop packaged units (RTU's) and supplemental equipment. Due to age and deteriorating components, the system continues to experience airflow, temperature, and humidity issues. Three HVAC system replacement options were evaluated. A comprehensive HVAC options comparison, including costs, impacts, and key features is provided in Attachment 2 and summarized below:

Option 1: Consolidated RTU's ($7.0 million installed)

This option replaces 11 smaller RTU's with 3 new larger units, while replacing the remaining 3 units in kind. Consolidating the system reduces the total number of RTU's, improves overall energy efficiency, and simplifies long-term maintenance. However, this approach requires interior columns (within currently open floor space) to support the consolidated units, and introduces above ceiling water piping, roof drain reconfigurations, and concrete floor trenching, that would significantly increase the overall construction duration and disrupt library operations. In addition, because fewer units would serve larger areas of the building, this option reduces the ability to independently control temperature and humidity in individual spaces.

Option 1A: Consolidated RTU's with Variable Air Volume and Hot Water Reheat Coils ($8.5 million installed)

This option includes all components and modifications of Option 1 and replaces zone dampers with variable air volume (VAV) boxes and reheat coils, requiring a new rooftop hot water plant and supporting infrastructure. The plant consists of an air source heat pump water heater, expansion tank, hot water circulation pumps, air separator, and adding hot water supply and return piping. This additional infrastructure provides enhanced temperature and humidity control throughout the building. Each area could be adjusted more precisely for comfort or technical needs of the library. While this provides more robust environmental control, it significantly increases both installation and long-term maintenance costs. This level of control is typically associated with specialized facilities, such as laboratories or medical buildings.

Option 2: In-Kind Replacement ($5.8 million installed)

This option replaces all RTU's with new equipment of equivalent capacity. All units, except two, will remain in their existing locations reusing existing rooftop curbs and ducts where feasible. Two RTU's will be relocated to higher elevations to improve drainage away from the units and minimize water ponding which occurs at their current locations; those units will require new support curbs. This option is the most cost-effective, maintains the Library's current level of environmental control, meets all operational needs, and avoids introducing additional system complexity.

All three options include replacement of all exterior roof mounted HVAC ductwork and an additional RTU with humidity control for each of the two archival special collections storage rooms. The interior ductwork was inspected and determined to be in good condition.

HVAC Recommendation
Option 1 improves energy efficiency but reduces control. Option 1A restores that control but at a substantially higher cost than necessary for the library's use. Options 1 and 1A, while more energy efficient, would cost approximately an additional $1.2 to $2.7 million. In addition, to support the consolidated units, they require interior columns within currently open floor space which would adversely affect the aesthetic and function of the library, and introduce above ceiling water piping, roof drain reconfigurations, and concrete floor trenching, that would significantly increase the overall construction duration, disrupt library operations, and increase facilities maintenance. Option 2 provides the best balance of performance, cost, constructability, and least operational disruption. For these reasons, staff recommends Option 2.

Solar System Options
While the initial project scope did not include consideration of solar, staff asked Shoreline to acquire and incorporate high level information regarding solar into the feasibility study. Two solar options were analyzed. Additional details are provided in Attachment 1, Appendix E, (page 158).

Option 1: 5,000 Square Foot Solar Array ($825,000)
This option represents the largest solar array that can be installed with minimal electrical impacts to the existing building. The system is compatible with the current 2000A main electrical service and available roof area.

The 5,000 square foot PV system would offset approximately 30%, or an estimated $50,000, of the library's current annual electrical energy consumption.

Based upon preliminary cost estimates prepared by the consultant and a licensed electrical contractor specializing in solar installations, the project's payback period is estimated at 16.4 years (without battery storage). This estimate is based upon the following assumptions:

1. The "Monthly Bills Average" was calculated using the Library's energy bills from September 2024 to September 2025.
2. Hourly energy usage data was not available; therefore, the time-of-day energy consumption differences were not factored into the analysis.
3. The "Solar Production Offset" was based on conceptual level design. The final design may impact actual energy savings.
4. $2,000/month assumed for annual maintenance.
5. 3% of utility cost escalation assumed across the system lifetime.
6. Assumed 25-year system life.
7. 8% discount rate assumed (October 2025 market rate) for Net Present Value (NPV) calculation.
8. Additional cost of $25,000 to install solar system using a rooftop anchoring system versus ballast.

This option offers a balanced approach by providing meaningful energy offset while minimizing impacts on the building, schedule, and project risk.

Option 2: Full Solar Array ($1.8 million)
This option would use the maximum available roof area for solar panels and offset 90% of the library's current annual electrical consumption. However, implementing this option would require significant work to upgrade the SDG&E service gear and metering infrastructure. An estimate of $250,000 for this has been included in the costing. There is also a need to review the building structurally to determine if panels can be placed on each of the different roof sections of the Library.

Based upon a preliminary cost estimate of approximately $1.8 million, this option's payback period is estimated at approximately 12 years (without battery storage), using the same assumptions as noted above for the 5,000 SF Solar Array option.

While the full solar array provides greater energy offset and a shorter payback period, it introduces additional cost, complexity, and schedule risk due to the required utility and electrical infrastructure upgrades required.

Solar Recommendation

Staff is requesting City Council direction on whether to include solar into the project and if so, the preferred option. If proceeding with solar, Council is asked to allocate funding of $100,000 for additional scoping and study to include details about SDG&E service gear and metering infrastructure for the City's solar project, or to pay SDG&E if fees are required in the event SDG&E infrastructure is not sufficient, to conduct structural/seismic review of the system's impact on the roof/building and to seek grant funding opportunities. If City Council elects the 5,000 Square Foot Array, Shoreline believes coordination with SDG&E would be reduced and eliminate the need to have SDG&E upgrade their facilities. City Council may also want staff to conduct a higher level of investigation of using battery storage. If approved staff would initiate this effort immediately and return to a future City Council meeting with updated information as soon as possible. It is expected that any coordination with SDG&E would likely be the longest lead time of the tasks listed above.

Estimated Construction Schedule

Construction of the Library Roof and HVAC Replacement project is anticipated to occur in multiple phases. While three phases are currently planned, the final number and sequencing of phases will be determined during the design phase to ensure constructability and minimize impacts to the Library's operations. The overall construction period is estimated to last approximately 8 months for the roof and HVAC work, with an additional 2 months if a solar system is included. Mechanical equipment delivery is expected to require about 8 months after the order is placed, resulting in a total projected construction timeline of roughly 16 months for roof and HVAC work and 18 months with solar.

FISCAL IMPACT

In the Fiscal Year 2024-25 Capital Improvement Program, $350,000 was approved for the design of the Library Roof Replacement project and $350,000 for the design of the Library HVAC Replacement project. In Fiscal Year 2025-26, these projects were combined (Project No. 25006) with a total design budget of $700,000. The feasibility and scoping process is complete with total expenditures of $264,778 to date and $435,222 remaining.

Based upon the recommended HVAC Option 2 (In-Kind Replacement), the total estimated design cost for the base project is $1,068,235 which exceeds the current budget allocation. An additional appropriation is required to complete the design and bid phases of the project.

If Council requests staff to pursue a solar system, additional funding of $100,000 from Facilities Replacement Fund 436, not included above, is recommended to be allocated to the project to perform the tasks as described in the Solar Recommendation section above. This appropriation is not accounted for in the following project budget estimates for final design and anticipated construction costs.

Design Phase Funding Requirement

PROJECT BUDGET			
City of Coronado Design Budget	**$700,000**		
DESIGN	**ROOF and OPTION 2 (Recommended)**	**ADD 5000 SF SOLAR**	**ADD FULL SOLAR**
Feasibility Report and Scoping Document	$263,000		
Project Management Fees	$72,456	$7,195	$14,530
Design through Bid Fees	$472,568	$10,680	$15,600
Additional Expenses (printing & advertisement)	$500	$0	$0

Building Permit Fee	$167,021	$20,155	$44,770
Design Contingency 10%	$92,690	$0	$0
Total Base Design Cost Estimate	**$1,068,235**	**$1,068,235**	**$1,068,235**
Total Design Cost Estimate with Solar		**$1,106,265**	**$1,143,135**
DESIGN PHASE APPROPRIATION REQUIRED	**$368,235**	**$406,265**	**$443,135**

Project and Construction Estimates (Planning Level)

CONSTRUCTION COST ESTIMATE			
Construction Base Cost Estimate	$5,567,362	$671,839	$1,492,305
Contingency 10%	$556,736	$67,184	$149,231
Project Management Fees	$184,353	$18,305	$36,970
Design Team Construction Administration	$148,650		
Construction Soft Costs (Testing & Inspection, Commissioning, etc.)	$278,368	$30,232	$67,154
Total Base Construction Cost Estimate	**$6,735,469**	**$6,735,469**	**$6,735,469**
Total Construction Cost Estimate with Solar		**$7,523,029**	**$8,481,129**
TOTAL PROJECT COST ESTIMATE			
Total Design Cost Estimate	$1,068,235	$1,106,265	$1,143,135
Total Construction Cost Estimate	$6,735,469	$7,523,029	$8,481,129
Total Project Cost Estimate	**$7,803,704**	**$8,629,294**	**$9,624,264**

The current design cost estimate for the base project for recommended Option 2 is $1,068,235. An additional $368,235 appropriation is required to complete the design and bid phases of the project. An additional $406,265 will be required to include the 5,000 SF solar option for a total of $1,106,265 and $443,135 for the full solar option for a total of $1,143,135. The Council-approved additional appropriation would be funded from the Facilities Replacement Fund 436.

Cost estimates for construction will be established at each design phase milestone to monitor the project budget. Final construction costs will be established once design is complete and competitive bids are received. Any required construction phase appropriation request will be presented to City Council during request to award in Fiscal Year 2027-28.

Staff request authorization to proceed with the design and advertise the project for bid. A construction contract is anticipated for Council consideration to award in winter 2027, with construction beginning by the second quarter of 2028 and completing by second quarter of 2029.

ALTERNATIVE

The City Council may elect to 1) reject or amend the recommended scope, funding source, and/or amounts of the requested appropriation; 2) select an alternative HVAC or solar option; or 3) choose not to authorize proceeding with the project at this time.

CALIFORNIA ENVIRONMENTAL QUALITY ACT

These activities are exempt from environmental review pursuant to Public Resources Code section 21080.35 and CEQA Guidelines sections 15301, 15302, 15303, 15311. Installation of solar energy systems on the roofs of existing buildings is exempt from CEQA review per Public Resources Code section 21080.35. Moreover, all the activities are exempt from environmental review under the CEQA Guidelines, sections 15301, 15302, 15303, and 15311. The activities are exempt under Guidelines section 15301 because they involve repair, maintenance, and minor alteration of existing public structures, facilities, and mechanical equipment, and will result in negligible or no expansion of existing

uses. The activities are exempt under Guidelines section 15302 because they concern replacement or reconstruction of existing facilities on the same site and serving the same purpose and capacity as existing HVAC, roofing, and electrical systems. The activities are exempt from CEQA under section 15303 because they include construction of small facilities and equipment with only minor exterior modifications. Finally, the activities are exempt under Guidelines section 15311 because they would result only in construction or placement of minor structures or equipment accessory to an existing institutional facility. Furthermore, none of the activities will result in damage to scenic resources on state highways, are not on hazardous waste sites, and will not cause any environmental impacts due to cumulative impacts or unusual circumstances. And the activities will not cause any substantial adverse change to the significance of any historical resources because the activities do not involve any demolition, destruction, relocation, or alteration of historic resource or its immediate surroundings resulting in the significance of the historic resource being materially impaired. The activities will not demolish or materially alter the Library's historically significant physical characteristics, and actions that affect a historic resource but do not result in a tangible, perceptible change are not environmental impacts under CEQA. Any changes to the Library will be consistent with local, state, and federal historical preservation laws and regulations.

PUBLIC NOTICE
No notice required.

ATTACHMENTS
1. Feasibility Study Basis of Design
2. HVAC Comparative Features Summary Table

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