CITY OF CUPERTINO

PUBLIC WORKS DEPARTMENT

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SUSTAINABILITY COMMISSION STAFF REPORT

Meeting: October 17, 2024

Subject

Capital Improvement Program Photovoltaic Systems Design and Installation project

Recommended Action

Recommend that City Council approve the Capital Improvement Program Photovoltaic Systems Design and Installation project's conceptual design for five City facilities: Cupertino Library, Community Hall, Cupertino Sports Center, Blackberry Farm, and Quinlan Community Center.

Executive Summary

This report provides scope and fiscal information on each proposed site of the Photovoltaic Systems Design and Installation (PV) Capital Improvement Program (CIP) project.

Background Information

The PV project was approved by the City Council as part of the Fiscal Year (FY) 24-25 annual budget. The PV project description included in the budget adoption and meeting details is attached (Attachment A).

The Net Energy Metering (NEM) program is administered by the California Public Utilities Commission and provides credits to a building's utility bill for producing excess on-site clean energy over a 20-year period. In 2023 PG&E announced a rate decrease for electricity generated by photovoltaic (PV) systems (NEM 3) but provided a window to allow grandfathering the more economically attractive NEM 2.0 rates if interconnection applications were successfully submitted and corresponding systems operational by 2026.

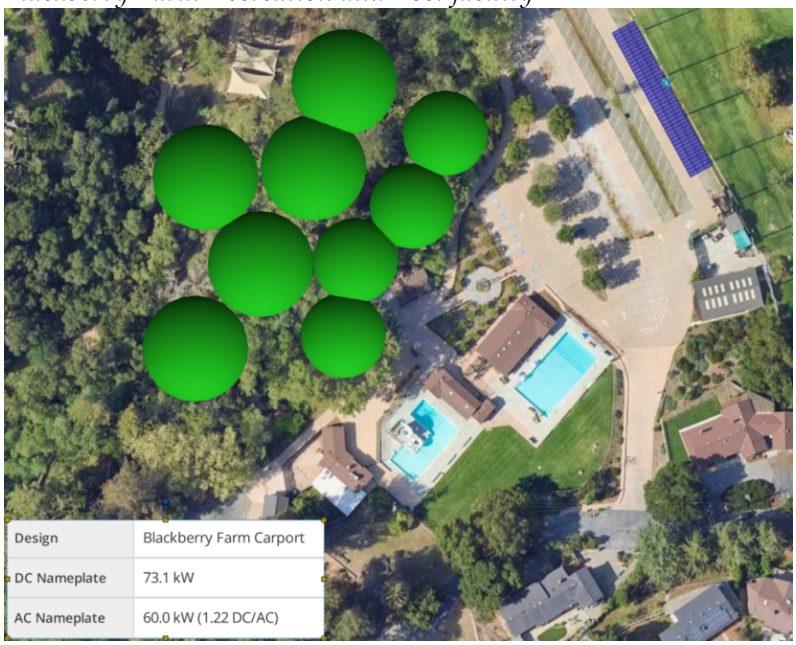
Reasons for Recommendation

NEM 2.0 Interconnection Applications were successfully submitted to PG&E for five Cupertino facilities: Blackberry Farm Recreation and Pool facility, Community Hall, Cupertino Library, Quinlan Community Center, and Cupertino Sports Center. This Project aims to design and build PV systems at all five locations.

NEM 2.0 projects must be completed by April 15, 2026 to receive the incentive. Otherwise, the NEM 3.0 program, that offers reduced incentives/savings, would need to be pursued. NEM 2.0 provides 75 - 80% greater compensation than NEM 3 rates for electricity that is fed back into the electrical system. The savings in utility costs are projected to be $500,000 annually, and $17.8M over a 30yr lifespan.

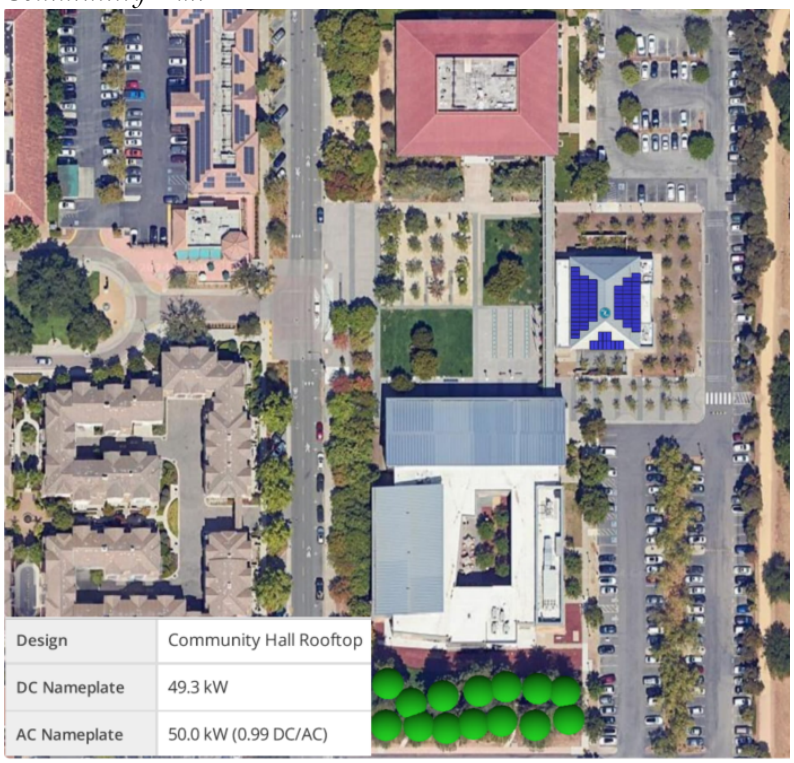
The City CIP staff is compiling a Conceptual Design Report that includes technical and cost analysis data for each site. The following illustrations depict the proposed layouts at each site.

Blackberry Farm Recreation and Pool facility



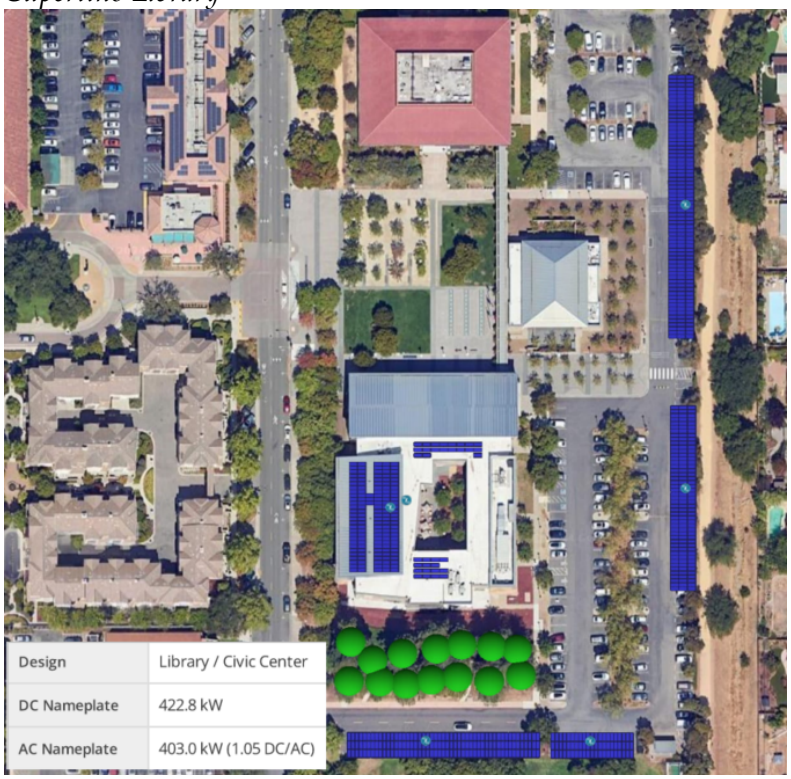
A number of options were considered for this site. The building roof locations are too small for a simple installation, and the solar orientation is not ideal. The proposed layout is a single continuous system that requires fewer trenching/ boring paths to the electrical point of interconnection. The installation is far enough from trees that tree trimming will not be needed to ensure solar access, and existing netting system will protect array from golf balls. With system shading parking stalls, proportional shade coverage will need to be provided on ADA parking stalls. The State and Cupertino green energy code for EV parking requirements are under review and may be substantial.

Community Hall



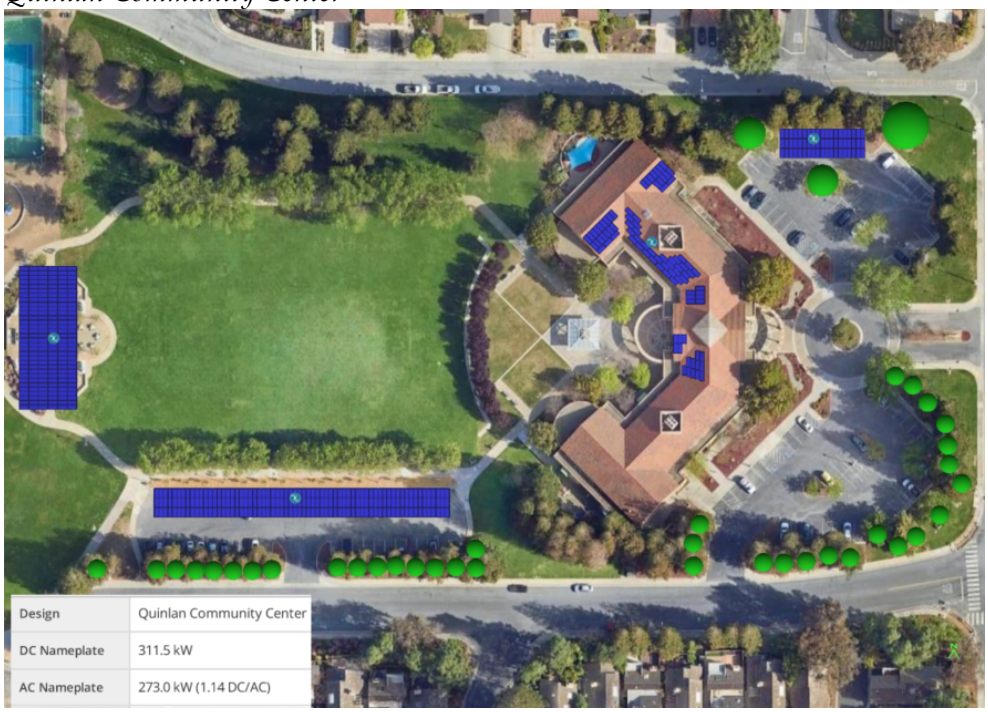
This is an ideally oriented system with rooftop racking. Roof penetrations will not be required, as the system will be able to clamp to the existing standing seam roof profile.

Cupertino Library



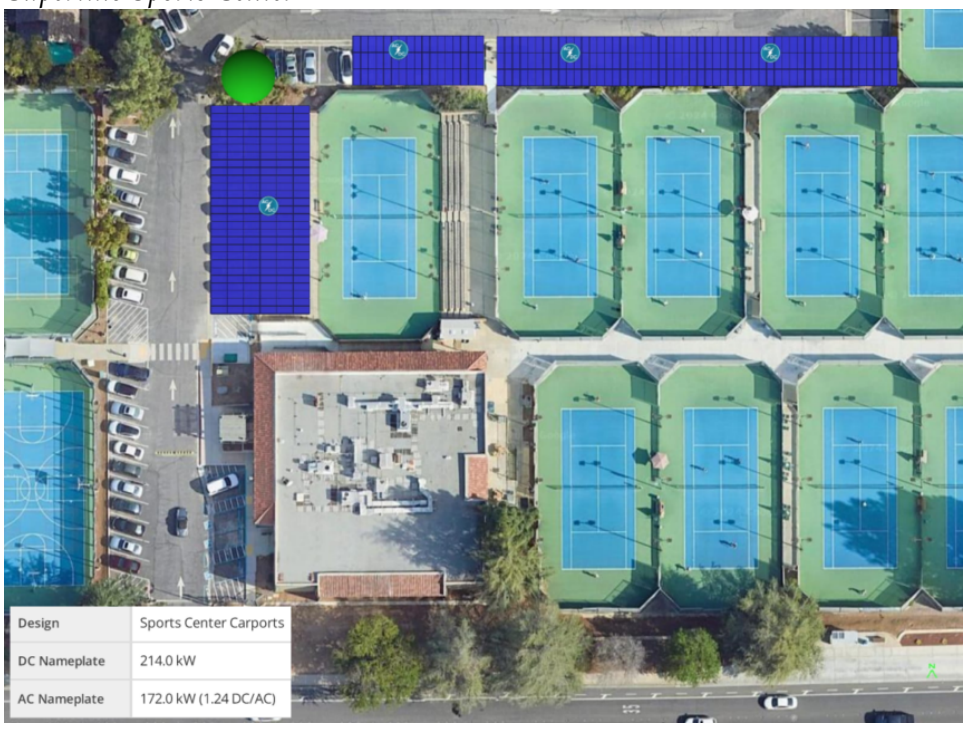
A number of options were considered for this site. The Library roof locations have an advantageous size, but only one of the large roofs is well-oriented to the west or south. Standing seam rooftops (supporting the two largest rooftop arrays) are ideal for supporting solar, as racking can be clamped to the standing seams as opposed to penetrating the roof surface. Long trenching/boring routes will be required to consolidate generation at point of interconnection. While the proposed carport locations took the trees into consideration, some smaller trees will need to be removed or significantly trimmed to support the installation.

Quinlan Community Center



A number of options were considered for this site. Preserving significant trees and working within the aesthetics of the park were high priorities. This layout provides maximal shaded parking and significantly shaded picnic area. Utilizes existing roof areas, mitigating overall costs of the system. Northern carport will require some tree trimming (overall tree health will not be compromised, however) to maintain solar access and may require shade be provided for some existing ADA stalls. The picnic area structure will be designed to respond architecturally to the layout of the picnic area (rather than one large single shed roof as shown in the illustration).

Cupertino Sports Center



This system is well-aligned to the west and south-facing solar access. The northern array is split around north-south site access path to allow for any traffic which could interfere with the carport array.
The tree in the corner between the two arrays would ideally be slightly trimmed to ensure maximum solar access, and trees under the northern arrays would need to be removed.

The next steps for the project, pending Council's approval of the design-build project delivery method, are:

1. Review of the photovoltaic systems for the five City facilities with Parks and Recreation Commission (11/07/24), and the Community (10/29/24).
2. City Council meeting in December 2024 for approval of the design intent for each facility.

Sustainability Impact

No sustainability impact.

Fiscal Impact

The Photovoltaic Systems Design and Installation (budget unit 420-99-274) was approved as part of the FY 2024-25 Budget at $6,300,000. There are no recommended changes to the budget.

California Environmental Quality Act

The Project is Categorically Exempt as Class 1, Existing Facilities Under the California Environmental Quality Act (CEQA) Guidelines Section 15301 and on a Separate and Independent Basis is Exempt as Class 3, Construction of Small Structures, Under CEQA Guidelines Section 15301.

Prepared by: Susan Michael, Capital Improvement Program Manager
Reviewed by: Chad Mosley, Director of Public Works

Attachments:
A – FY 24-25 CIP Project Narratives Excerpt