PRC Meeting
November 7, 2024
Presentations

Item #1
Teen Programs

Teen Commission, Youth Activity Board, and Recreation Event Volunteers

November 7, 2024

Parks and Recreation Commission

CUPERTINO

Agenda

- Teen Commission
- Teen Commission Participation
- Youth Activity Board (YAB)
- YAB Programs and Events
- Recreation Event Volunteers (REV)
- REV Events

Teen Commission

Formal Commission comprised of nine resident teens

Advise City Council and staff on issues and projects important to youth

Participate in programs as speakers, moderators, judges, and Masters of Ceremony

Teen Commission Participation

Pizza and Politics

Monster Mash

Spelling Bee

Big Bunny 5K

Teen Resource Fair

HACK

Recognizing Youth Led Organizations

- Receive presentations
- Spread the word about Youth Led Organizations (YLO's)

Youth Activity Board

Created in 2018 to further engage Cupertino teens and address the growing teen stress epidemic

13 teen volunteers create/plan events

YAB Events

Speaker Series
Pizza and Politics
Spelling Bee
Teen Resource Fair
HACK
Cupertino Café
Movie Nights

Recreation Event Volunteers

- September 2024
- Created to deepen the relationship between Cupertino Parks and Recreation and their teen volunteers
- Year-round event volunteers

REV Events

Monster Mash
Tree Lighting
Breakfast with Santa
Big Bunny 5K
Earth Day Celebration
July 4th Celebration

Questions?

CUPERTINO

PRC Meeting
November 7, 2024
Presentations

Item #4
Capital Improvement Program Photovoltaic Systems Design and Installation project

CAPITAL IMPROVEMENT PROGRAMS

Photovoltaic Systems Design & Installation Project

Parks and Recreation Commission Meeting

November 7, 2024

CUPERTINO

Tonight's Action

Subject

Capital Improvement Programs' Photovoltaic Systems Design and Installation project

Recommended Action

Recommend that City Council approve the Capital Improvement Programs' Photovoltaic Systems Design and Installation project's conceptual design for five City facilities:

- Cupertino Library
- Community Hall
- Cupertino Sports Center
- Blackberry Farm
- Quinlan Community Center

Photovoltaic Systems Design & Installation project - AGENDA

1. Background Information
2. Review project site conceptual design
3. Costs & Savings projections
4. Next Steps

Background Information

- FY24-25 CIP project, funded for $6.3M
- Submitted interconnection applications to grandfather NEM 2.0 rates for 5 sites in 2023. NEM 2.0 provides 80% better buy-back rates for electricity. These sites must be activated by April 2026
- The savings in utility costs are projected to be $500,000 annually, and $26.5M over a 30yr lifespan if all five sites are implemented
- Inflation Reduction Act (IRA)/Direct Pay program offers rebate of 40% of costs for PV systems
- Installing photovoltaic systems at these sites does trigger code requirements to improve accessibility and EV charging stations

Background Information

Sustainability Commission voted unanimously to recommend to City Council:

a. Approve the Installation Project's Conceptual Design for five City of Cupertino facilities: Quinlan Community Center, Community Hall, Cupertino Sports Center, Blackberry Farm, and Cupertino Library.
b. If the above recommendation is not fully approved by the City Council due to budget constraints, then the Sustainability Commission recommends the installation of the Photovoltaic Facilities in order of preference: Quinlan Community Center, Cupertino Sports Center, Community Hall, Cupertino Library, and Blackberry Farm.
c. The Commission also requests that the City of Cupertino pursue a funding agreement with Santa Clara County Library District for that facility's portion of the project.

Proposed Site Conceptual Designs

Sports Center

PV systems kWh generation	322,104
PV systems annual savings*	$93,047
PV systems lifecycle savings***	$4,511,620
Construction Cost - Total (PV+EV)	**$1,962,300**
Direct Payback (IRA) funding (40%, PV only)	$724,920
City Funding	$1,237,380
Payback period (years, discounted cash flow)	11.06

- The proposed locations have optimized west and south facing solar access, providing shade for some parking spaces and spectator areas.
- The northern array is split to allow for pedestrian and operational access to the courts.

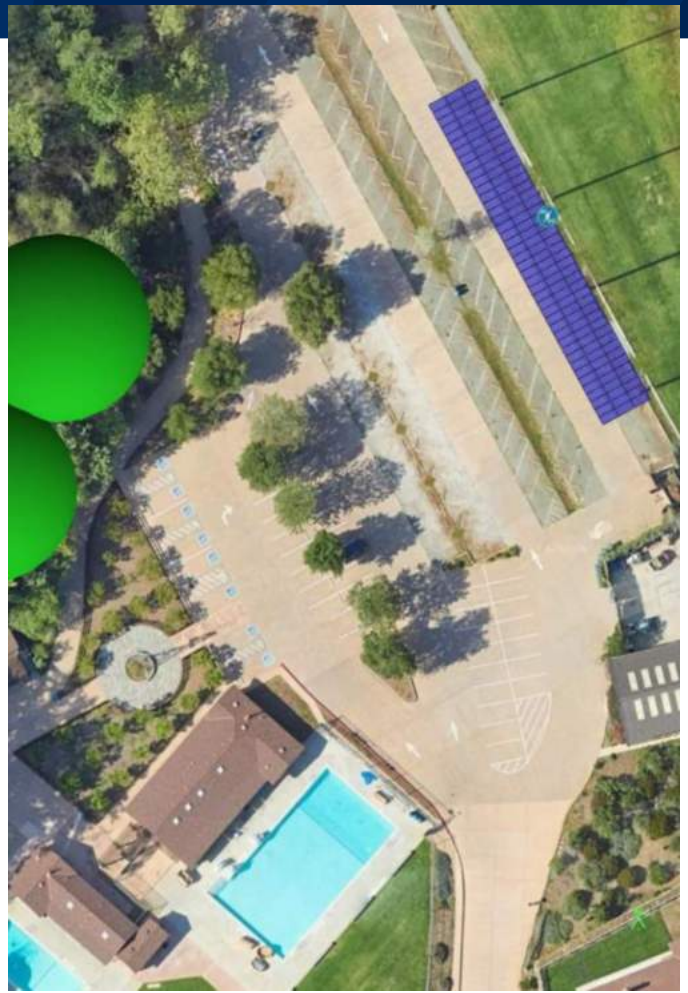
Community Hall

PV systems kWh generation	66,784
PV systems annual savings*	$29,441
PV systems lifecycle savings***	$1,336,267
Construction Cost - Total (PV+EV)	**$376,950**
Direct Payback (IRA) funding (40%, PV only)	$150,780
City Funding	$226,170
Payback period (years, discounted cash flow)	7.13

Ideally oriented system with rooftop racking. Roof penetrations will not be required, as system will be able to clamp to standing seam roof profile.

Blackberry Farm

PV systems kWh generation	110,428
PV systems annual savings*	$38,253
PV systems lifecycle savings***	$1,587,032
Construction Cost - Total (PV+EV)	**$1,055,500**
Direct Payback (IRA) funding (40%, PV only)	$382,200
City Funding	$673,300
Payback period (years, discounted cash flow)	13.99



- Single continuous system that requires fewer trenching/ boring paths from various points on site, mitigating costs.
- Proposed kWh generation slightly exceeds usage
- The system is far enough from trees that tree trimming will not be needed to ensure solar access, and the existing netting system will protect the array from golf balls.
- With system shading parking stalls, proportional shade coverage will need to be provided on ADA parking stalls.

Library

PV systems kWh generation	1,048,978
PV systems annual savings*	$202,501
PV systems lifecycle savings***	$11,701,727
Construction Cost - Total (PV+EV)	**$4,101,000**
Direct Payback (IRA) funding (40%, PV only)	$1,520,400
City Funding	$2,580,600
Payback period (years, discounted cash flow)	10.65

- Modules are ideally 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.
- Some trees will need to be removed or significantly trimmed to support carport installation.
- SCCLD pays electrical bill for the next 20 years, so direct benefit to the City will be long term.

Quinlan Community Center

PV systems kWh generation	383,109
PV systems annual savings*	$154,217
PV systems lifecycle savings***	$7,398,086
Construction Cost - Total (PV+EV)	**$2,491,500**
Direct Payback (IRA) funding (40%, PV only)	$936,600
City Funding	$1,554,900
Payback period (years, discounted cash flow)	8.85

- Utilizes existing roof areas with the most effective solar orientation to maximize profit and mitigate the costs of the system.
- Freestanding arrays provide shaded parking and significant shaded picnic area. Northern carport will require some tree trimming 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).
- Preserving significant trees and working within the aesthetics of the park were high priorities.

Costs & Savings

Costs & Savings: Implement all Five Sites

*Annual savings includes 5% utility escalation, Year 1

**The costs (B) are offset by the kWh savings (E), resulting in lowered electrical bill (F)

***Lifecycle Savings (30yrs) includes: 5% utility escalation, 0.4% module degradation, 30 years, NEM3 Included

****Discounted cashflow methodology includes: 5% utility escalation, 0.4% module degradation, 30 years, NEM3

	A	B	C	D	E	F	G	H	I	J	K	L	M
Facility	kWh	kWh Cost	cost per kWh (ave.)	PV systems kWH generation	PV systems annual savings*	PV systems annual electrical bill**	PV systems lifecycle savings***	Constrn Cost: PV only	Constrn Cost: EVCS only	Constrn. Cost (PV + EV)	IRA funding (40% of PV only)	City Funding	Payback Period (years) ****
formula			*A/B*			*B - E*				*H + I*	*H * 40%*	*J - K*	
Library (1932850108)	1,048,978	$322,517	$0.31	621,477	$202,501	$120,016	$11,701,727	$3,801,000	$300,000	$4,101,000	$1,520,400	$2,580,600	10.65
BBF (114315284)	110,428	$32,539	$0.29	110,948	$38,253	-$5,714	$1,587,032	$955,500	$100,000	$1,055,500	$382,200	$673,300	13.99
Quinlan Community Center (0116367009-116367840)	383,109	$121,336	$0.32	453,795	$154,217	-$32,881	$7,398,086	$2,341,500	$150,000	$2,491,500	$936,600	$1,554,900	8.85
Sports Center (0116367009-116971849)	329,369	$108,143	$0.33	322,104	$93,047	$15,096	$4,511,620	$1,812,300	$150,000	$1,962,300	$724,920	$1,237,380	11.06
Community Hall (0116367009-116367449)	114,600	$39,810	$0.35	66,784	$29,441	$10,369	$1,336,267	$376,950	$0	$376,950	$150,780	$226,170	7.13
		$624,345			**$517,459**	**$106,886**	**$26,534,732**	**$9,287,250**	**$700,000**	**$9,987,250**	**$3,714,900**	**$6,272,350**	**10.28**
					decreased by:	517,459		*with 20% contingency*		$11,984,700			

- Annual Cost Savings: **$517,459** projected, with **$26.5M** 30-year lifecycle savings
- Cost of Design and Construction ($10M to $12M) exceeds $6.3M project budget. **This option requires Council's approval to increase the project budget by ~$6M.**
- BBF has higher costs compared to utility reduction benefit, resulting in a longer payback period.
- Library tenant (SCCLD) will reap the benefit of a reduced electrical bill for the duration of their lease (~20 years). The City's benefit will be the increased resilience of the Cooling Center once battery back-up systems are installed in conjunction.

Costs & Savings: Four Sites (Eliminate BBF)

*Annual savings includes 5% utility escalation, Year 1

**The costs (B) are offset by the kWh savings (E), resulting in lowered electrical bill (F)

***Lifecycle Savings (30yrs) includes: 5% utility escalation, 0.4% module degradation, 30 years, NEM3 Included

****Discounted cashflow methodology includes: 5% utility escalation, 0.4% module degradation, 30 years, NEM3

	A	B	C	D	E	F	G	H	I	J	K	L	M
Facility	kWh	kWh Cost	cost per kWh (ave.)	PV systems kWH generation	PV systems annual savings*	PV systems annual electrical bill**	PV systems lifecycle savings***	Constrn Cost: PV only	Constrn Cost: EVCS only	Constrn. Cost (PV + EV)	IRA funding (40% of PV only)	City Funding	Payback Period (years) ****
formula			*A/B*			*B - E*				*H + I*	*H * 40%*	*J - K*	
Library (1932850108)	1,048,978	$322,517	$0.31	621,477	$202,501	$120,016	$11,701,727	$3,801,000	$300,000	$4,101,000	$1,520,400	$2,580,600	10.65
Quinlan Community Center (0116367009-116367840)	383,109	$121,336	$0.32	453,795	$154,217	-$32,881	$7,398,086	$2,341,500	$150,000	$2,491,500	$936,600	$1,554,900	8.85
Sports Center (0116367009-116971849)	329,369	$108,143	$0.33	322,104	$93,047	$15,096	$4,511,620	$1,812,300	$150,000	$1,962,300	$724,920	$1,237,380	11.06
Community Hall (0116367009-116367449)	114,600	$39,810	$0.35	66,784	$29,441	$10,369	$1,336,267	$376,950	$0	$376,950	$150,780	$226,170	7.13
		$591,805			**$479,206**	**$112,599**	**$24,947,700**	**$8,331,750**	**$600,000**	**$8,931,750**	**$3,332,700**	**$5,599,050**	**9.98**
					decreased by:	479,206		*with 20% contingency*		$10,718,100			

- Annual Cost Savings: **$479,206** projected, with **$25M** 30-year lifecycle savings. Cost benefit is slightly lessened from 5-site option, but not significantly.
- Cost of Design and Construction ($9M to $11M) exceeds $6.3M project budget. **This option requires Council's approval to increase the project budget by ~$5M**.
- Library tenant (SCCLD) will reap the benefit of a reduced electrical bill for the duration of their lease (~20 years). The City's benefit will be the increased resilience of the Cooling Center once battery back-up systems are installed in conjunction.

Costs & Savings: Four Sites (Eliminate Library)

*Annual savings includes 5% utility escalation, Year 1

**The costs (B) are offset by the kWh savings (E), resulting in lowered electrical bill (F)

***Lifecycle Savings (30yrs) includes: 5% utility escalation, 0.4% module degradation, 30 years, NEM3 Includeo

****Discounted cashflow methodology includes: 5% utility escalation, 0.4% module degradation, 30 years, NEM3

	A	B	C	D	E	F	G	H	I	J	K	L	M
Facility	kWh	kWh Cost	cost per kWh (ave.)	PV systems kWH generation	PV systems annual savings*	PV systems annual electrical bill**	PV systems lifecycle savings***	Constrn Cost: PV only	Constrn Cost: EVCS only	Constrn. Cost (PV + EV)	IRA funding (40% of PV only)	City Funding	Payback Period (years) ****
formula			*A/B*			*B - E*				*H + I*	*H * 40%*	*J - K*	
BBF (114315284)	110,428	$32,539	$0.29	110,948	$38,253	-$5,714	$1,587,032	$955,500	$100,000	$1,055,500	$382,200	$673,300	13.99
Quinlan Community Center (0116367009-116367840)	383,109	$121,336	$0.32	453,795	$154,217	-$32,881	$7,398,086	$2,341,500	$150,000	$2,491,500	$936,600	$1,554,900	8.85
Sports Center (0116367009-116971849)	329,369	$108,143	$0.33	322,104	$93,047	$15,096	$4,511,620	$1,812,300	$150,000	$1,962,300	$724,920	$1,237,380	11.06
Community Hall (0116367009-116367449)	114,600	$39,810	$0.35	66,784	$29,441	$10,369	$1,336,267	$376,950	$0	$376,950	$150,780	$226,170	7.13
		$301,828			**$314,958**	**-$13,130**	**$14,833,005**	**$5,486,250**	**$400,000**	**$5,886,250**	**$2,194,500**	**$3,691,750**	**10.28**
					decreased by:	314,958		*with 20% contingency*		$7,063,500			

- Annual Cost Savings: **$314,958** projected, with **$15M** 30-year lifecycle savings. **Cost Benefit is notably lessened from 5-site option.**
- Cost of Design and Construction ($6M to $7M) exceeds $6.3M project budget. **This option requires Council's approval to increase the project budget by less than $1M**.
- BBF has higher costs compared to utility reduction benefit, resulting in a longer payback period.

Costs & Savings: Three Sites (Eliminate BBF and Library)

*Annual savings includes 5% utility escalation, Year 1

**The costs (B) are offset by the kWh savings (E), resulting in lowered electrical bill (F)

***Lifecycle Savings (30yrs) includes: 5% utility escalation, 0.4% module degradation, 30 years, NEM3 Included

****Discounted cashflow methodology includes: 5% utility escalation, 0.4% module degradation, 30 years, NEM3

	A	B	C	D	E	F	G	H	I	J	K	L	M
Facility	kWh	kWh Cost	cost per kWh (ave.)	PV systems kWH generation	PV systems annual savings*	PV systems annual electrical bill**	PV systems lifecycle savings***	Constrn Cost: PV only	Constrn Cost: EVCS only	Constrn. Cost (PV + EV)	IRA funding (40% of PV only)	City Funding	Payback Period (years) ****
formula			*A/B*			*B - E*				*H + I*	*H * 40%*	*J - K*	
Quinlan Community Center (0116367009-116367840)	383,109	$121,336	$0.32	453,795	$154,217	-$32,881	$7,398,086	$2,341,500	$150,000	$2,491,500	$936,600	$1,554,900	8.85
Sports Center (0116367009-116971849)	329,369	$108,143	$0.33	322,104	$93,047	$15,096	$4,511,620	$1,812,300	$150,000	$1,962,300	$724,920	$1,237,380	11.06
Community Hall (0116367009-116367449)	114,600	$39,810	$0.35	66,784	$29,441	$10,369	$1,336,267	$376,950	$0	$376,950	$150,780	$226,170	7.13
		$269,289			**$276,705**	**-$7,416**	**$13,245,973**	**$4,530,750**	**$300,000**	**$4,830,750**	**$1,812,300**	**$3,018,450**	**9.46**
					decreased by:	276,705		*with 20% contingency*		$5,796,900			

- Annual Cost Savings: **$276,705** projected, with **$13.2M** 30-year lifecycle savings. **Cost benefit is significantly lessened from 5-site option.**
- Cost of Design and Construction ($5M to $6M) is within the $6.3M project budget.

Next Steps

Objectives & Next Steps

- Present preferred option to City Council on December 3 (TU)
- Negotiate terms with Design/Build Entity (Competitive process is underway) and return to Council in January 2025 to award contract.
- Initiate design process, including procurement, in January 2025. Completion required by April 2026.

Tonight's Action

Subject

Capital Improvement Programs' Photovoltaic Systems Design and Installation project

Recommended Action

Recommend that City Council approve the Capital Improvement Programs' Photovoltaic Systems Design and Installation project's conceptual design for five City facilities:

- Cupertino Library
- Community Hall
- Cupertino Sports Center
- Blackberry Farm
- Quinlan Community Center

Thank You!

PRC Meeting
November 7, 2024
Presentations

Staff and Commission Reports

Liaison's Update

Parks and Recreation Commission

November 7, 2024

CUPERTINO

Cupertino Community Service Awards

- Saturday, November 16
- 6 p.m. (Doors open 5:30 p.m.)
- Residence Inn San Jose Cupertino

Parks and Recreation Events

Holiday Events

Tree Lighting

- Friday, December 6
- 6 p.m. at Quinlan

Breakfast with Santa

- Saturday, December 7
- 8:30 to 11:30 a.m. at Quinlan

Parks and Recreation Events

Holiday Events

Santa Visits Your Home

- Friday through Sunday
- December 13 to 15 and 20 to 22
- 5:30 to 8:30 p.m.

Signing Santa

- Saturday, December 14
- 2 to 4 p.m. at Quinlan

Reminders

Parks and Recreation Winter 2025 Recreation Guide

- Resident Registration Open Now
- Activities start January 2
- cupertino.gov/recreation

City Offices and Facilities Closed

- Monday, November 11 in observance of Veteran's Day
  - *Normal Operating Hours – BBF Golf Course & Sports Center*
- Thursday, November 28 and Friday, November 29 in observance of Thanksgiving
  - **Adjusted Operating Hours Thursday – BBF Golf Course & Sports Center (Normal Hours on Friday)*

Liaison's Update

Parks and Recreation Commission

November 7, 2024

CUPERTINO