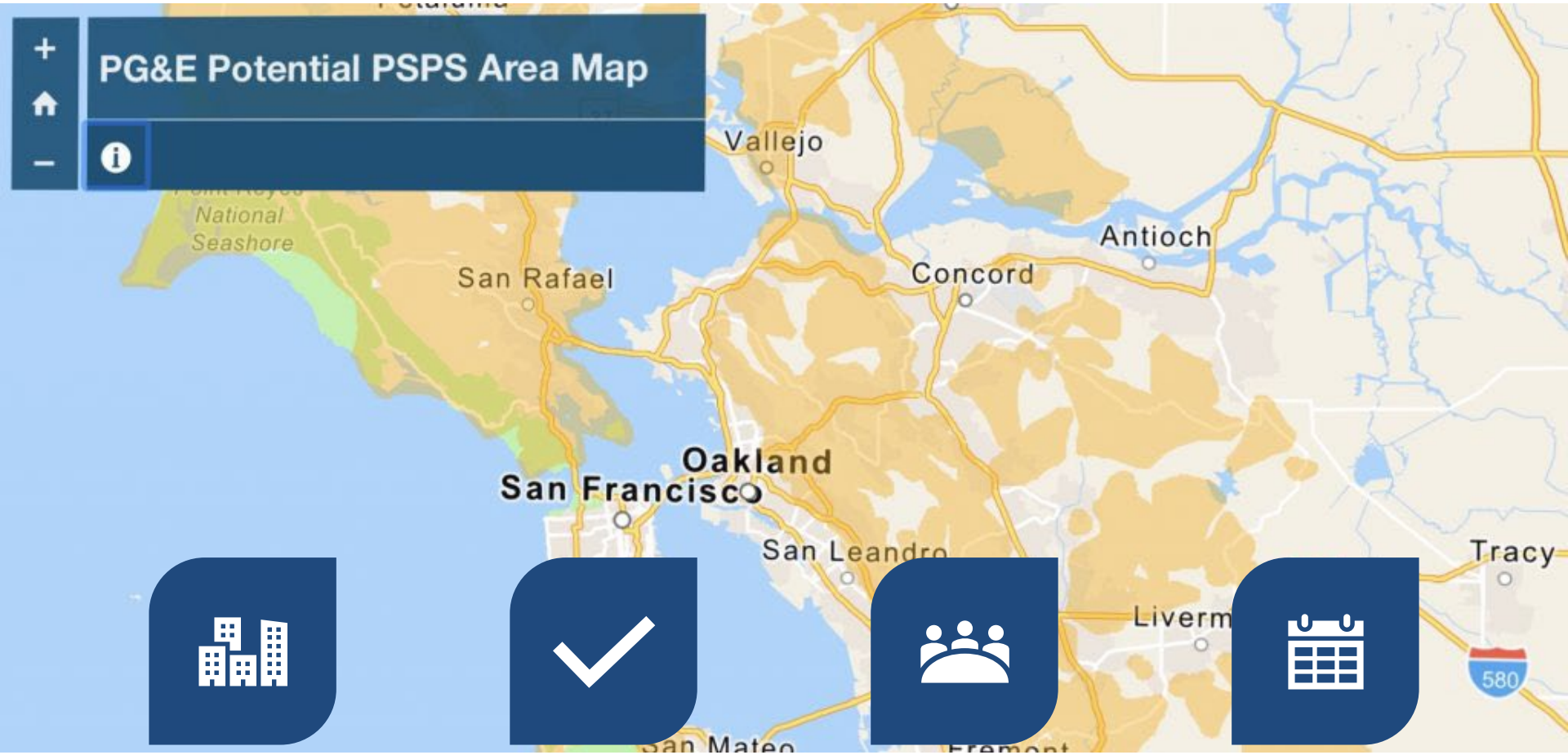
Project Update



MORAGA FACILITIES ENERGY RELIABILITY

STATUS UPDATE

TOWN COUNCIL MEETING

MARCH 26, 2025

Solar Micro-Grid System

Project Timeline

- **PG&E Public Safety Power Shutoffs (PSPS) – 2019 to Present**
- **Town Facilities Energy Generation Study Authorized – June 2021**
- **Clean Coalition Hired to Prepare Study Report – Jan 2022**

Project Timeline (Continued)

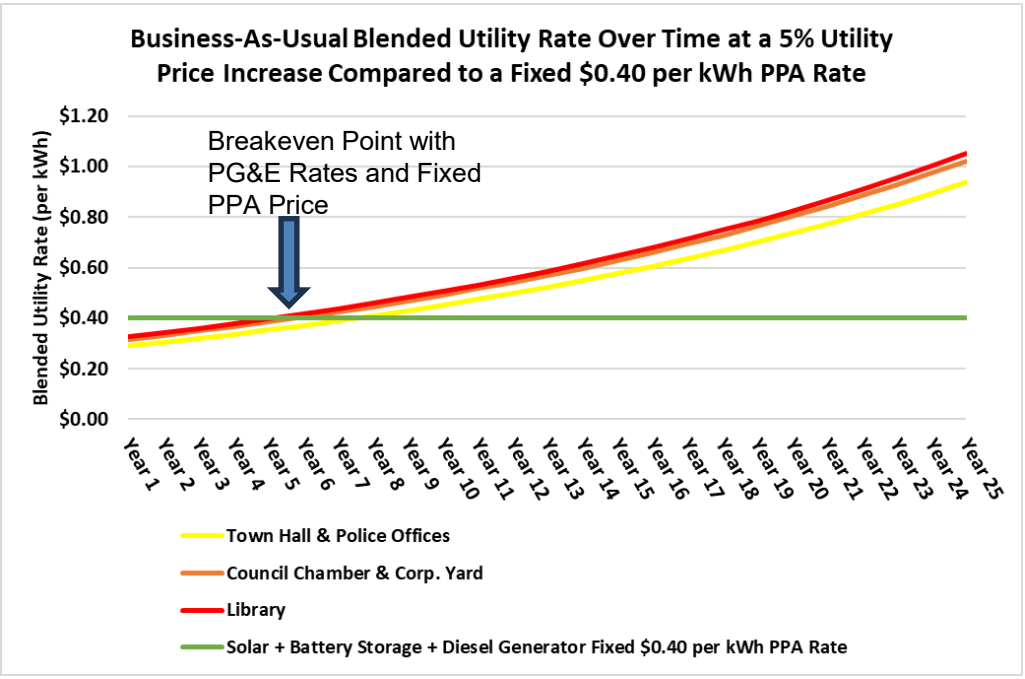
- **Study Presentation with PG&E NEM2 Utility Rates – May 2022**
- **Updated Study Presentation with PG&E NEM3 Utility Rates – June 2023**
- **Clean Coalition Contract Authorization to prepare RFP & Decision to Pursue Power Purchase Agreement (PPA) for Solar/Battery/Diesel Generator – Aug 2024**

Project Timeline (Continued)

- **Sept. 2024 to March 2025**
  - **Prepared schematic drawings for Town Hall, Council Chambers, and Library**
  - **Preparing Draft Request for Proposal (RFP)**
  - **Determined the need for Library site redesign**
  - **Issued DK Engineering Authorization to Design Town Offices (329 Rheem Blvd.) Parking Lot Improvements (ADA compliance)**

PPA Economics

Moraga PPA Economic Details									
Scenario Options	Site	Business-As-Usual Blended Utility Rate Over Time at a 5% Utility Price Increase (per kWh)			Fixed PPA Pricing (per kWh)	PPA Economic Details			
		Year 1	Year 10	Year 25		25 Year Electrical Bill Savings	25 Year PPA Cost	25 Year Net Savings	Value of Resilience (VOR)
Solar + Battery Storage + Diesel Generator	Town Hall & Police Offices	$0.291	$0.451	$0.939	$0.40	$2,275,810	($2,503,411)	($227,601)	$92,626
	Council Chamber & Corp. Yard	$0.317	$0.492	$1.022	$0.40	$1,181,890	($875,343)	$306,547	$52,612
	Library	$0.326	$0.506	$1.051	$0.40	$1,887,452	($1,671,010)	$216,442	$79,934
	Total and Averages	**$0.311**	**$0.483**	**$1.004**	**$0.40**	**$5,345,152**	**($5,049,764)**	**$295,388**	**$225,172**
Solar + Diesel Generator	Town Hall & Police Offices	$0.291	$0.451	$0.939	$0.40	$1,818,041	($1,752,388)	$65,653	$0
	Council Chamber & Corp. Yard	$0.317	$0.492	$1.022	$0.40	$689,948	($612,740)	$77,208	$0
	Library	$0.326	$0.506	$1.051	$0.40	$1,491,955	($1,169,707)	$322,248	$0
	Total and Averages	**$0.311**	**$0.483**	**$1.004**	**$0.40**	**$3,999,944**	**($3,534,835)**	**$465,109**	**$0**



Key factor from Proposals is PPA Price

Diesel Generator - Economic Analysis Results, 25 Years			
Site	Finance Option A Cash Purchase		
	Total Capex	Total 25 Year Opex	Total 25 Year Cost
Town Hall & Police Offices	($214,864)	($83,279)	($298,143)
Council Chamber & Corp. Yard	($200,680)	($83,279)	($283,959)
Library	($231,912)	($83,279)	($315,191)
Total	**($647,456)**	**($249,836)**	**($897,292)**

PPA economics and costs are based on calculations and estimates from 2023 analysis.

Diesel Generator Costs

Diesel Generator Equipment, Design, Permitting, Installation, and Main Panel Upgrade Costs									
Site	Sizing		Costs						Total Cost
	Generator Size (kW)	ATS Rating (Amps)	Generator and Fuel Tank	Add Level 2 Sound Enclosure	Service Entrance Grade ATS	Tax and Shipping	Estimated Base Design, Permitting, and Installation Cost	Additional Cost to Replace or Upgrade Main Electrical Distribution Panel	Total Project Cost W/O PG&E Costs
Town Hall And Police Offices	80	800	$40,373	$4,037	$16,000	$6,041	$119,612	$28,800	$214,864
Council Chamber & Corp. Yard	100	400	$45,405	$4,541	$9,600	$5,955	$117,900	$17,280	$200,680
Library	100	800	$45,405	$4,541	$16,000	$6,595	$130,572	$28,800	$231,912
Hacienda de las Flores Park	50	800	$30,191	$3,019	$16,000	$4,921	$97,436	$28,800	$180,367
Totals	280	2,000	$161,374	$16,137	$57,600	$23,511	$465,521	$103,680	$827,823

- Diesel generator costs per Town facility was originally presented to the Town Council at their June 14, 2023 meeting, as part of the Moraga Facilities Energy Generation Study Analysis (CIP 21-109) PowerPoint presentation. These costs estimates have not been escalated to present value.

Town Hall Site Layout

Council Chamber & Corp. Yard Site Layout

Library Initial Site Layout

Additional Moraga Library Photos

Additional Moraga Library Photos

Library Revised Site Layout

Redwood Tree Removal is necessary to allow more direct sunlight for energy generation and also to reduce maintenance costs for shedding onto panels require more cleaning.

Consider more removal to improve solar generation/ reduce number of panels needed (Another 8 more Redwood Trees)

Remove All Redwoods on southside (17 total)

Southern tree removal solar design option:

- *System size: 124.9 kWdc*
- *Total annual generation: 175,501 kWh*

Roughly the same solar generation as parking lot canopies

Examples

Roof mount solar on angled roof

Source: Pablo Davis Elder Living Center

Solar in parking lot as carport

Solar Panels with Spanish Tile

Next Steps

- **Clean Coalition & Town Staff Complete PPA RFP – April 2025**
- **PPA Negotiated Bid Selection - Public Hearing – April to May 2025**
- **PPA RFP Bid Period – April to July 2025.**
- **Clean Coalition & Town staff review PPA Proposals – Aug 2025**
- **PPA Provider Recommendation to Town Council – Oct 2025.**

Next Steps (Continued)

- **If Town Council decides to move forward, Clean Coalition and staff will negotiate with the new solar provider – Oct & Nov 2025**
- **Town Council approved solar provider contract – Dec 2025.**
- **Project design – Early 2026**
- **Construction in Mid 2026 to Mid 2027**

Next Steps (Continued)

When the Town Council evaluates the submitted PPA and Capital Investment proposal options, they will have several project aspects to consider in choosing their preferred power generating system, including the:

- **Environmental Benefits of each power generating system such as Resiliency and Sustainability benefits.**
- **Aesthetic Impacts of each system installed at Town facilities.**
- **Engineering and Facility Upgrades needed for the installation of each system on older facilities along with site constraint impacts.**
- **Investment Risks for Older Facilities may increase over time as capital and maintenance costs go up and building uses change.**
- **Project Economics along with rate of return, opportunity costs gains/losses to consider.**
- **Community Reactions to the above project aspects, impacts, costs, benefits and other considerations.**

Presentation Closing

- **Questions?**