Investment-Grade Feasibility Study (IGFS) Report

San Mateo – Foster City School District

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1. Introduction

Sage Energy Consulting was contracted by San Mateo-Foster City School District ("District") to conduct a feasibility study to assess the needs and viability of Solar Photovoltaic (PV) and Battery Energy Storage Systems (BESS) at the District's 26 school sites.

The objective of the study is to determine requirements and conceptualize the siting and optimal sizing of PV systems and BESS and estimate financial performance of these systems under various financing scenarios, including a cash purchase (Measure T), Power Purchase Agreement (PPA), a PPA with Buyout in year 7, and debt (lease structures).

Sage completed a preliminary feasibility study and presented its findings to the District's Board during its June 24th Board meeting. During this meeting, the District's Board conveyed some additional items to consider, like pursuing Net Zero Electricity (ZNE) at the District, installing Solar PV on all new construction solar-ready roofs, and using solar PV projects to generate additional savings to the District's General Fund.

Subsequently, Sage conducted the Investment Grade Feasibility Study (IGFS) to better inform cost models about current procurement market climate, site specific PV installation constraints identified during site walkthroughs and incorporate the considerations from the Board.

Sage's findings from the IGFS study are presented in this report.

2. Executive Summary

The District's primary objective for the project is to reduce operating costs while achieving zero net electricity (ZNE) at all possible District sites. The District also has ambitious district level ZNE goals and as such, is looking to install rooftop PV on all new construction solar ready roofs. This analysis identifies a portfolio of school sites that will be physically viable, fit within the available budget of approximately $10-11M Measure T funding, and yielding positive financial returns across the portfolio. Site constraints aside from budget include available open area, site gradient, shading from vegetation, solar ready roofs, easy EVA access in parking lots, planned site changes and others identified during the site visits.

Based on goals and criteria articulated above, 18 sites were identified for solar PV installations which is an increase in the number of sites from the preliminary analysis stage. For the IGFS stage, Meadow Heights, Highlands, and George Hall schools have been included but North Shoreview has been removed due to lack of open area.

Table 2-1 and Table 2-2 below summarize the key metrics of the viable solar PV and BESS project portfolio analyzed in the feasibility study. Section 4 outlines the PV systems in further detail and Attachment B provides a summary of the 25-year financial modeling analysis.

Table 2-1. Summary of Project – 18-Site Portfolio

Metric	Solar PV Only	Solar PV + BESS
Number of sites	18 PV	18 PV + 6 BESS
PV System Size	~2,540 kW_p	
Total BESS Size	-	720 kWh / 360 kW
Environmental Benefit, 25-year, Metric Tons of Carbon Dioxide (CO2e)	28,000	
Energy Consumption Offset Average	70%	
Energy Cost Offset Average	58%	

Table 2-2. 25-Year Project Financial Summary of 18 Site Portfolio

Metric	Cash Purchase[1]		PPA[2]		PPA Buyout[3]		Lease[4]	
	Solar PV Only	Solar PV + BESS	Solar PV Only	Solar PV + BESS	Solar PV Only	Solar PV + BESS	Solar PV Only	Solar PV + BESS
Solar PV System Capital Cost	$10.72M		-		-		-	
BESS System Capital Cost	-	$0.83M	-	-	-	-	-	-
Project Development Costs & Contingency (Soft Costs)	$0.86M	$0.93M	-	-	-	-	-	-
Annual Operating Costs (Year-1)	$0.14M	$0.21M	$1,250	$1,250	$1,250	$1,250	$0.14M	$0.21M
25-Year Net General Fund Savings (Nominal $)	$22.34M	$22.72M	$8.88M	$8.78M	$11.61M	$10.94M	$6.75M	$4.81M
25-Year General Fund NPV Savings (2.5% discount rate)	$15.91M	$16.21M	$6.44M	$6.33M	$6.77M	$6.28M	$3.09M	$1.54M

1. Capital cost in a Cash purchase through Measure T GO bonds is not borne by the District.
2. Project development costs are assumed to be rolled into the PPA price. Annual Operating costs are District asset management costs.
3. PPA buyout is assumed to be financed with GO bonds.
4. Project development costs are assumed to be rolled into the lease payments.

3. Key Considerations and Findings

1) The District has 26 sites that include the District office, the Maintenance & Operation (M&O) building, Children Nutrition Center (CNC) kitchen, and schools. Most sites can host enough solar PV to offset 20% to 100% of the sites' energy consumption for the District's aspirational ZNE goals.
2) Based on the above considerations, planned site changes, and anticipated build costs, 18 sites were identified for solar PV installations. The 18-site solar PV portfolio is financially and physically viable, showing positive nominal and NPV savings for all financing scenarios. This portfolio fits within the District's ~$10-11M budget for the project while achieving 100% NZE wherever possible.
3) The Measure-T bond-funded cash purchase scenario significantly outperforms other forms of financing because the District does not have to repay the capital and soft costs of the project, so all energy cost operational savings from the project, minus M&O costs, accrue to the General Fund.
4) Energy consumption changes stemming from site modernization, and other energy projects were considered in determining appropriate PV system sizes.
5) Conceptual layouts for the PV systems were created for each of the 18 sites through working meetings with the District. In addition to energy cost savings from PV, the District will gain shade for parked cars and play areas and add rooftop solar PV on all new solar-ready roofs
6) Under current tariffs, installed costs and incentives, Battery Energy Storage Systems (BESS) creates minimal to no savings at any of the sites. This could change in the future as BESS installed costs decrease. BESS could also be considered if the District identifies a need for resiliency to PG&E electrical grid outages at some of its school sites. The District could consider including as an additive-alternative to a Request for Proposals (RFP) to evaluate market pricing and determine financial viability.
7) California Public Utility Commission (CPUC) is looking to issue a final decision on Net Energy Metering (NEM) 3.0 proceedings in January 2022 which, when adopted, will significantly reduce the financial returns for future solar customers. For this project to benefit from the solar-friendly NEM 2.0 tariff, the District needs to submit interconnection applications (IA) and have them deemed complete by PG&E by January 13, 2022 (current CPUC schedule). To meet this deadline, Sage recommends submitting IAs no later than early November 2021 to allow time for PG&E processing and any changes that may be required. This will ensure that systems will be grandfathered under NEM 2.0 for 20 years from the date of initial operation, maximizing financial performance.

4. Solar PV Feasibility

4.1 Site Selection

The first step towards evaluating solar PV feasibility involved identification of sites that can situate a cost-effective system. The District's school sites were mostly within residential neighborhoods and space constrained. Since the District has an aspirational NZE goal, , the PV target was set to offset 100% of site energy consumption, wherever possible. Solar PV design options available to the District include shade structures, carport canopies and rooftop PV systems. A shortlist of the 18 sites capped by available Measure T funds as well as other considerations like sufficient site loads, available open space or roof area for PV installation, least shading from surrounding vegetation and other site modernization considerations was identified.

The District and Sage conducted a site-by-site review of the designs taking into consideration the District's keen interest in adding shade area through shade canopies as well as carport shade structures and the goal to move towards net zero energy also played a role at this stage. Carport, shade canopy, and roof PV were utilized in the designs of the systems. Table 4-1 lists the set of eighteen chosen sites. For the IGFS stage, Meadow Heights, Highlands, and George Hall schools have been included based on the District's goal to install PV on all new solar-ready roofs. North Shoreview has been removed from consideration since the site visit showed no open area for solar PV.

For the purposes of the analysis, College Park Elementary and Turnbull Preschool are evaluated as a single site under Net Energy Metering Aggregation (NEMA) considerations.

Table 4-1. Site Selection

Site #	Site Name	School Type
1	Audubon	Elementary
2	Bayside Academy	K-8
3	Beach Park	Elementary
4	Borel	Middle
5	Brewer Island	Elementary
6	Child Nutrition Center	Kitchen
7	College Park	Elementary
8	Fiesta Gardens	Elementary
9	Foster City	Elementary
10	George Hall	Elementary

Site #	Site Name	School Type
11	Highlands	Elementary
12	Laurel	Elementary
13	LEAD	Elementary
14	Meadow Heights	Elementary
15	Parkside	K-8
16	SMFC District	District Office
17	Sunnybrae	Elementary
18	Turnbull	Pre-School

4.2 4.2 Facility Energy Consumption

Tables 4-2 and 4-3 shows the utility consumption information for Calendar Year (CY) 2019. Site modernization considerations like planned new construction as well as planned new HVAC system installations have been taken into consideration to estimate final facility energy consumption that will need to be offset by PV generation.

Sage has removed the following meters from the scope of this project due to insufficient usage, cost to be offset by PV and/or unavailable space for PV:

- Abbott MS, SAID 5855922944
- Baywood ES, SAID 5855922905
- Beresford ES, SAID 5855922244
- Bowditch MS, SAID 5855922922
- Knolls ES, SAID 5853773169, 5855922573, 5855922173
- Maintenance and Operations, SAID 5855922835
- North Shoreview, SAID 5855922893
- Parkside Montessori, Secondary account - SAID 5855922374
- San Mateo Park ES, SAID 5855419226

Beach Park Elementary is a New Construction school site and as such, did not have any energy consumption in CY2019.

Table 4-2. Adjusted Annual Electric Consumption

Site	CY2019 Electric Consumption, kWh/Yr	New Construction SF[1]	Adjusted Electric Consumption, kWh/Yr[2]
Audubon	427,500		427,450
Bayside Academy	375,900		493,300
Beach Park	NA	42,500	245,950
Borel	328,800	22,500	527,950
Brewer Island	309,200		309,250
Child Nutrition Center	235,200		235,150
College Park	40,700		117,200
Fiesta Gardens	329,900		329,900
Foster City	387,600		488,450
George Hall	154,900	7,800	283,000
Highlands	199,200	6,000	234,000
Laurel	155,600		223,250
LEAD	225,900	6,000	335,200
Meadow Heights	109,800	6,000	214,700
Parkside Montessori	160,300	8,000	273,250
SMFC District	455,300		455,250
Sunnybrae	262,400	7,000	303,000
Turnbull	237,500		237,500

1. Average District level EUI of 5.79 kWh / sqft is used to calculate "New Construction" electricity use.
2. Based on Aedis Architects' report; Average classroom size (SF) times number of proposed new HVAC installs at each school was determined. This gross SF was used along with HVAC usage EUI from CBECS 2012 of 3.6 kWh/sqft for Education building type in Marine climate zone to estimate potential increase in energy consumption.

Table 4-3. Adjusted Annual Electric Consumption and Estimated Cost

Site	Adjusted Electric Consumption, kWh/Yr	Estimated Annual Electric Cost, $/Yr[1]	Estimated Average Cost of Electricity, $/kWh
Audubon	427,450	$106,500	$0.2492
Bayside Academy	493,300	$123,300	$0.2500
Beach Park	245,950	$61,150	$0.2486
Borel	527,950	$137,300	$0.2601
Brewer Island	309,250	$76,050	$0.2459
Child Nutrition Center	235,150	$53,950	$0.2294
Fiesta Gardens	329,900	$83,500	$0.2531
Foster City	488,450	$116,100	$0.2377
George Hall	283,000	$58,400	$0.2457
Highlands	234,000	$53,950	$0.2708
Laurel	223,250	$55,400	$0.2482
LEAD	335,200	$82,700	$0.2468
Meadow Heights	109,800	$54,950	$0.2560
Parkside Montessori	273,250	$69,700	$0.2550
SMFC District	455,250	$98,000	$0.2153
Sunnybrae	303,000	$87,400	$0.2885
Turnbull & College Park	354,100	$86,250	$0.2436
Total	**5,734,000**	**$1,404,650**	**$0.2485**

1. Assuming tariffs under PG&E's General Rate Case.

4.3 System Size Performance

Table 4-4 details the preliminary system sizes from the optimization analysis, expected Year-1 PV production, yield and usage offset.

Table 4-4. PV System Sizing and Expected Year-1 Production

Site	Interconnection Type	System Size KW_p	Year-1 Production, kWh	Year-1 Yield kWh/kWp	Usage Offset, %
Audubon	NEM	151	239,000	1,580	56%
Bayside Academy	NEM	320	489,000	1,530	100%
Beach Park	NEM	151	246,000	1,625	89%
Borel	NEM	234	375,000	1,600	71%
Brewer Island	NEM	161	256,000	1,595	86%
Child Nutrition Center	NEM	94	129,000	1,375	55%
Fiesta Gardens	NEM	213	330,000	1,550	100%
Foster City	NEM	189	302,000	1,595	62%
George Hall	NEM	58	91,000	1,570	32%
Highlands	NEM	45	69,000	1,535	30%
Laurel	NEM	98	160,000	1,630	72%
LEAD	NEM	142	231,000	1,620	60%
Meadow Heights	NEM	30	45000	1,520	90%
Parkside Montessori	NEM	173	273,000	1,580	58%
SMFC District	NEM	133	209,000	1,575	91%
Sunnybrae	NEM	152	229,000	1,510	81%
Turnbull & College Park	NEMA	194	299,000	1,540	84%
Total		**~2,540**	**3,972,000**	**~1,560**	**~70%**

4.4 Utility Tariff Analysis Results

Sage conducted tariff modeling using actual consumption data from PG&E, and simulated Helioscope PV production data. Table 4-5 shows the Year-1 utility savings, usage and bill offset, and value of PV energy. As noted in Table 4-4, Net Energy Metering Aggregation (NEMA) was assessed at Turnbull and College Park sites, and Net Energy Metering (NEM) at the remaining ones.

Under NEMA, a single site with multiple meters on the same property, or on the customer's adjacent or contiguous property, can use renewable energy generation to serve their aggregated load behind all eligible meters. The site with PV (generating account) produces energy for itself and the adjacent meters (load or benefitting accounts). Exported energy is allocated to all accounts in the NEMA arrangement based on the proportion of the most recent year's usage for each meter. This arrangement was considered for sites with multiple meters on same parcel of adjacent parcels, while the NEM arrangement was considered for sites with single meters. Under NEM, when a PV system produces more power than is used at the site at any instant, the excess energy is fed back into the utility system grid and the customer is credited for the cost of the excess electricity generated.

This proposed solar project would be interconnected under the NEM 2.0 tariff if the interconnection application (IA) with the utility is submitted and deemed complete before the CPUC issues a final decision in the NEM 3.0 proceedings, expected in January 2022. NEM 3.0 will result in a lower value for solar PV system generation, significantly reducing financial returns for future solar customers. However, if the IA is approved under NEM 2.0 guidelines, the system will be grandfathered for 20 years from the date of initial operation of the solar PV system.

Table 4-5. Year-1 Utility Tariff Analysis Results

Scenario	Year-1 Energy Savings	Bill Offset, %	Value of Energy, $/kWh
Solar PV Only	$801,000	57.0%	$0.2017
Solar PV & BESS	$814,000	57.9%	$0.2049

While BESS produces extra energy savings, these savings over the lifetime of the system must outweigh the costs of purchase and maintenance for the system to pencil. We detail this further in Section 5.

4.5 Financing Options

There are three primary financing types for solar PV and BESS projects considered in this evaluation:

Cash Purchase: In a Cash Purchase Agreement, the District owns the PV systems and accrues all the financial savings from them. In this case, the capital to purchase the solar PV and BESS systems would come from Measure T General Obligation (GO) bonds which are paid by district taxpayers.

Power Purchase Agreement (PPA): Financing through a Power Purchase Agreement (PPA) means that a third-party finances, owns, and operates the systems. The District purchases all the power generated by the solar PV system at a contracted price for a period of 20-25 years from the third-party owner. The District may also consider a partial pre-payment of the PPA, where the District prepays some portion of the PPA energy costs. A PPA prepayment lowers the PPA price while retaining the benefits of third-party owner maintaining and operating the

system. Prepayment options can be solicited as part of the RFP process. The District can also choose to purchase the system from the PPA owner at certain time intervals negotiated in the PPA contract. In Sage's experience, the buyout options typically become available in year 7, year 12-15, and year 20.

Tax-Exempt Municipal Lease (TEML): With a TEML, the District would be responsible to pay back the borrowed amount with interest, functioning as a standard lease-purchase. Current all-in TEML rates, including cost of issuance, are around 4.5%. The pros and cons of each financing option are detailed in Table 4-6.

Table 4-6. Financing Options, Pros and Cons

Financing Type	Pros	Cons
Cash Purchase with Measure T GO bonds	• Highest General Fund savings of all financing types	• District responsible for O&M • Federal ITC credit and MACRS not available
Power Purchase Agreement (PPA)	• No large upfront investment • No O&M burden • Predictable electricity rate • ITC and MACRS can be monetized by the developer, lowering PPA price • PV system performance guarantee from vendor	• Savings less than those available via cash purchase • Long term (20-25 year) contracts • Risk associated with changes to campuses that impact solar PV system performance
Tax Exempt Municipal Lease (TEML)	• No large upfront investment • Low interest rate • Preserves GO bond funds for other projects • Ownership at the end of the lease	• Savings typically less than available via cash purchase or PPA • Impacts District bonding capacity

4.6 Lifecycle Modeling

Sage performed 25-Year financial modeling to determine the anticipated financial performance of the solar PV project. The financial analysis evaluated financing the system via cash purchase or debt, and a PPA with a buyout option. See Attachment B for more information. Cumulative energy savings for all financing types are shown in Figure 4-1.

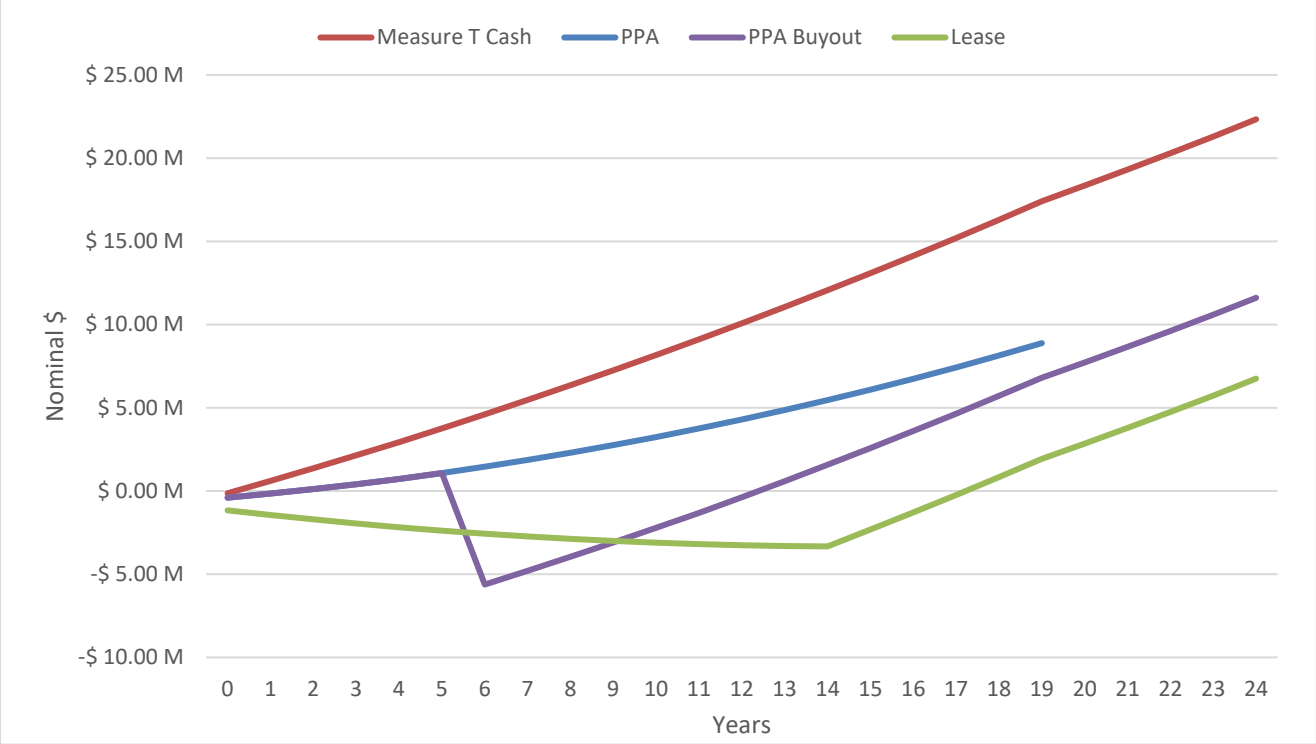


Figure 4-1. Cumulative Project Cash Flow Over Time, Nominal $

The modeling methodology and key financing assumptions have been detailed in Attachment A. Attachment B provides the 25-year financial modeling analysis summary.

For this project specifically, Sage evaluated financing the system via Measure-T bond funded cash purchase. The District does not incur the capital cost for the project even though this is a cash purchase. As such, the utility cost savings result in positive cash flow for the project almost immediately.

5. Battery Energy Storage System (BESS) Feasibility

Sage assessed multiple scenarios with varying sizes of BESS paired with solar PV and found negligible to negative annual savings over the lifetime of the system. The financial performance of a BESS can be attributed to the following reasons:

1. The primary value proposition of a BESS is demand reduction by managing demand spikes. Both before and after the installation of PV, all sites will be subscribed to a tariff that does not contain time-of-use demand-based charges. These tariffs are not well suited to extracting the best financial value from a BESS since the majority of the costs are associated with volumetric energy usage as compared to a maximum energy usage in a given 15-minute interval. Furthermore, the demand profiles at these sites exhibit peaks during the time PV is producing, in which case the solar reduces

both demand and volumetric charges (for example, Sedgwick and most other sites in the portfolio; see Figure 5-1 below). In the figure, dark blue represents the current utility data profile, green representing solar production, and light blue representing the net consumption with solar.

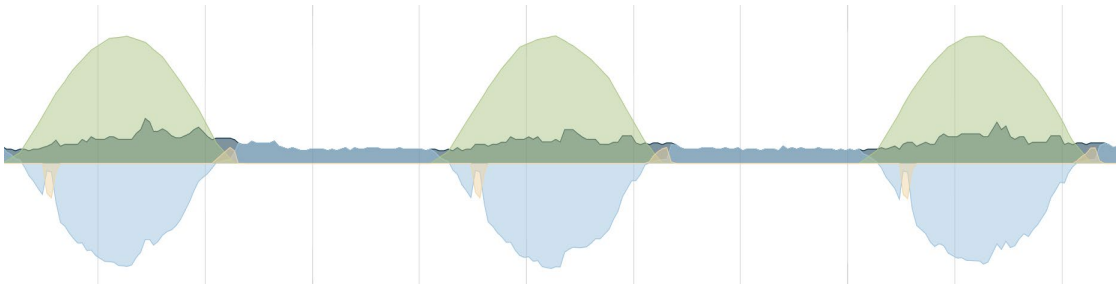


Figure 5-1. Borel Demand profile, 3 days in April 2019

2. The secondary value proposition of a BESS is energy arbitrage. Energy savings via energy arbitrage is derived by charging the battery during times of low-cost electricity and discharging during times of high-cost electricity. This is not a viable value stream for all sites in the portfolio as much of the energy usage has already been offset by the solar. Additionally, since the PG&E tariffs have flattened energy differentials, the value of solar energy and battery energy arbitrage is significantly decreased, thus the savings generated are not sufficient to recover the additional capital cost of the BESS.

The District can consider BESS in the future, when the economics are aided by the following factors:

1. Battery costs have declined by nearly 70% between 2010 and 2016 and are expected to continue declining by 30-40% over the next five years.
2. The BESS system size considerations for the projects at the District's schools are small – in the "less than 250 kW" category. These systems are currently under severe inventory shortage and have a 1-year backlog. The supply shortage has also contributed to price inflation of the smaller BESS systems.

We recommend including BESS as an Additive-Alternative (Add-Alt) in the RFP, to collect market pricing and evaluate its impact on the overall project economics. More certainty around Option S should be available at the time of project implementation and a BESS could easily be integrated if a clear financial driver is identified.

6. Other Considerations

The following section discusses important general considerations, and specific ones that may impact project schedule and costs.

6.1 Net Energy Metering (NEM) 2.0 Grandfathering

A Per the Net Energy Metering (NEM) rules, a PV system is grandfathered on the active NEM version for 20 years from the date the system is interconnected. The transition to NEM 3.0, the successor to NEM 2.0, is expected to occur after 2021. NEM 3.0 is likely to further reduce the value of solar PV generated energy.

6.2 Geotechnical

Geotechnical conditions are important for the design of the foundations for ground mount PV structures. Soil classification and geohazard zones (such as areas at risk of liquification) can increase the cost of ground mount structures.

Sage reviewed California Geologic Survey (CGS) maps to identify noted mapped geohazard zones. For sites within a CGS classified hazard zone, Sage often recommends geotechnical investigations be performed before an RFP is released to minimize risk of project feasibility. Soils reports should be included in the RFP to inform proposers' cost estimates.

6.3 Electrical Infrastructure

Generation projects need to be interconnected to the existing electrical infrastructure at the site. To complete this process, upgrades to the customer or utility-side infrastructure may be required. Sage has not reviewed the electrical infrastructure at each site as part of this study. A visual evaluation of electrical infrastructure at each site should be performed and information gathered provided in a future RFP.

6.4 Ancillary Infrastructure for Future Battery Energy Storage System (BESS) and Electric Vehicle (EV) Charging

If the District is interested in pursuing a BESS at any of the sites in the future, cost efficiencies can be gained by including spare conduits for the BESS during PV system installation; and by reserving space for the BESS as close to the main service as possible.

EV charging infrastructure is also a growing consideration for parking areas. At a minimum, Sage recommends that PV projects with structures in parking areas include spare conduits for future EV charging.

6.5 California Environmental Quality Act (CEQA)

CEQA requires state and local agencies (public agencies) to identify the significant environmental impacts of their actions and to avoid or mitigate them, if feasible. CEQA does apply to solar PV projects. There are CEQA statutory exemptions for solar PV constructed in parking lots and rooftops, which will apply to the sites outlined in this report. In most other cases, a categorical exemption would likely be pursued, since most other sites include canopies on hardscape play areas or at the edges of hardscape.

A CEQA consultant should be engaged to assess the appropriate determination for each site, prepare the necessary documentation, and oversee the process. Sage can act as or would assist CEQA consultant.

6.6 Division of State Architect (DSA) Roof Review

In Sage's recent experience, DSA review of rooftop PV projects has become increasingly cumbersome and protracted. PV roof projects are typically easier on new buildings, however there is uncertainty around the added time and cost of the DSA approval process. Also noteworthy is that ballasted racking systems are more difficult to get permitted with DSA than fully attached systems. All these were considered while developing preliminary layouts for various sites. The handful of sites with Rooftop PV design options may need a structural and roofing assessment should the District elect to move forward with a roof-mounted system at the sites.

6.7 Project Delivery

Capital improvement projects for public entities like schools are typically fall under two delivery methods Design-Bid-Build and Design-Build. The choice of the delivery method may be driven by client needs like cost performance, timelines and some by legal or statutory requirements but both delivery methods have their place in construction projects.

Design-Bid-Build: This is the more traditional project delivery method where the owner contracts a designer and a contractor separately. The designer is responsible for providing completed design documents based on which the owner solicits proposals from multiple contractors to choose one. The designer and the contractor do not have contractual obligations to one another and the risk of validating the design documents for completeness and driving a project based on this is borne by the owner. Such a delivery method may be ideal for project owners that would like to have control over the design as well as construction phase. This is more costly when compared to Design/Build.

Design / Build: The project owner hires a design/builder, a single entity that is responsible for both design and construction of the project, usually under a single contract. The design/builder may hire sub-contractors to perform work on specific scopes within the larger project (for e.g., trenching for electricals). This method typically needs higher levels of collaboration and coordination among the contracting and the sub-contracting entities with the risk borne by the design/builder contractually. Design-build delivery process typically outperforms Design-bid-build in terms of cost, schedule, quality as well as risk mitigation.

For Solar PV projects, based on Sage's experience with both delivery methods, Design/Build usually works better from the owner's standpoint.

7. Next Steps

1. Request for Proposal: Utilize an RFP to solicit competitive design-build proposals from qualified solar vendors for the project under California Government Code Section 4217.10 et seq. (allowing for a best value evaluation of proposals).
2. Proposal Evaluation: Evaluate proposals for qualitative and quantitative criteria and rank vendors with a committee of District stakeholders.
3. Contracting Approval – Board approval to enter into contract negotiations with selected vendor with the intent to bring a finalized contract to the Board for approval.
4. Contract Negotiations – Contract negotiations with selected vendor to bring a finalized contract to the Board for approval.
5. Government Code 4217 – A minimum of two weeks prior to Board approval of the contract, public notice must be given that a finding will be made under GC 4217. A formal resolution, to be prepared by the District's attorney with help from Sage, will be required for contract award.
6. Contract Award – Award contract to selected vendor upon Board approval.
7. Project Kickoff – After execution of the Contract, conduct a Project kickoff meeting to introduce all Project team members, review criteria, schedule and project design requirements, and set up regular Project meetings going forward.
8. Design – Technical oversight of the design process, with input from District staff and District representatives as needed. The selected vendor will act as designer of record and manage the AHJ process as well as any other permitting requirements.
9. Construction – Selected vendor will construct the systems. District representative to assist District staff in overseeing and coordinating construction at the individual sites.
10. Commissioning – Selected vendor will commission the systems. District representative to confirm commissioning, utility interconnection and successful startup of the systems.
11. Project Close Out – Ensure that all contract requirements are met, punch list items are adequately addressed, project training and documentation has been delivered, and the Project is closed and certified with the AHJ and all other permitting entities.
12. Performance Management – Audit system performance to ensure production guarantees and operations and maintenance requirements are being met, and determine actual realized utility savings.

Attachment A. Methodology and Assumptions

Methodology and Assumptions

Tariff Modeling

Sage performed modeling using the Energy Toolbase solar analytics program, Sage's proprietary modeling, and PG&E's proposed tariff schedules, to determine cost offsets. As previously described, the financial modeling utilized electricity consumption data from PG&E and simulated production data modeled using an industry-standard solar design software, HelioScope. The analysis was conducted using PG&E / PCE tariffs.

Lifecycle Financial Modeling (25-Year)

Utilizing the results from the tariff modeling, a 25-year cost analysis was performed. Sage assumed the project will not be grandfathered under NEM 2.0 regulations for 20 years, which govern the value of energy exported to the utility grid when PV production exceeds onsite consumption.

The solar PV financial models are greatly influenced by the assumptions. Modeling assumptions consider risks associated with changes in utility TOU schedules, rates and conditions. Sage uses conservative assumptions across the board. System pricing assumptions are based on market knowledge from other similar projects and current industry trends. Utility escalation rates are based on historical averages over the past thirty years. If utility rates increase more over time in the future due to increased regulations, demand, and finite resources, the financial performance of the systems will be affected positively. Conversely, if rates increase slower than historical averages, the financial performance will be negatively affected. This variability is assessed in Sage's sensitivity and risk analysis.

Key financial assumptions, project capital cost and soft cost assumptions in Sage's Measure T cash purchase financial modeling are shown in Tables A-1, A-2, and A-3, respectively.

Table A-1. Key Financial Modeling Assumptions

Metric	Value
Annual Utility Escalation	3%
Utility Tariff Degradation Risk	-0.10%
NEM 2.0 Export Energy Rate	Full retail rate, minus non-bypassable charges, for 20 years
NEM 2.0 Loss % (2042)	-15%
Discount Rate (for NPV calculations)	2.50%

Table A-2. Project Pricing Assumptions, PV Only

Cash Purchase	PV Only	
Design-Build Turnkey Project Cost	$10,715,900 ($4.22/W_p)[1]	
PPA		
PV PPA Price (inclusive of project development costs)	$0.1547	
BESS PPA Price (inclusive of project development costs)	-	
PPA Annual Escalator	0%	
PPA Buyout Year	7	
Debt Financing		
Bond Annual Interest Rate	4.50%	
Cash & Loan Scenario		
Project Development Soft Costs	% of Build Cost	Capital Cost Equivalent
Consulting Fees	1-2%	$150,000
Contingency	2%	$214,000
Consultant Fees	1%	~$107,000
Construction Management, Testing and Inspection Fees	1%	~$107,000
Legal and Administration Fees	2.5%	$267,000
Interconnection Fees	0.3%	$30,000
Total	**~8.3%**	**~$875,000**
PPA Scenario		
Project Development Soft Costs	% of Build Cost	Capital Cost Equivalent
Consultant Fees (Host + District)	~2-3%	~$310,000
Construction Management, Testing and Inspection Fees	1%	$107,000
Legal and Administration Fees	2%	~$214,000
Total	**~5.5%**	**~$630,000**

1. For Measure T Bond funded cash purchase, the turnkey project cost is not borne by the District.

Table A-3. Project Pricing Assumptions, PV + BESS System

Cash Purchase	PV + BESS	
Design-Build Turnkey Project Cost	$11,544,000 ($4.55/W_p)[1]	
PPA		
PV PPA Price (inclusive of project development costs)	$0.1547	
BESS PPA Price (inclusive of project development costs)	$0.0054	
PPA Annual Escalator	0%	
PPA Buyout Year	7	
Debt Financing		
Bond Annual Interest Rate	4.50%	
Cash & Loan Scenario		
Project Development Soft Costs	% of Build Cost	Capital Cost Equivalent
Consulting Fees	1-2%	$150,000
Contingency	2%	$231,000
Consultant Fees	1%	~$115,000
Construction Management, Testing and Inspection Fees	1%	~$115,000
Legal and Administration Fees	2.5%	$289,000
Interconnection Fees	0.3%	$30,000
Total	**~8.3%**	**~$930,000**
PPA Scenario		
Project Development Soft Costs	% of Build Cost	Capital Cost Equivalent
Consultant Fees (Host + District)	2-3%	~$323,000
Construction Management, Testing and Inspection Fees	1%	$115,000
Legal and Administration Fees	2%	~$230,000
Total	**~5.5%**	**~$670,000**

1. For Measure T Bond funded cash purchase, the turnkey project cost is not borne by the District.

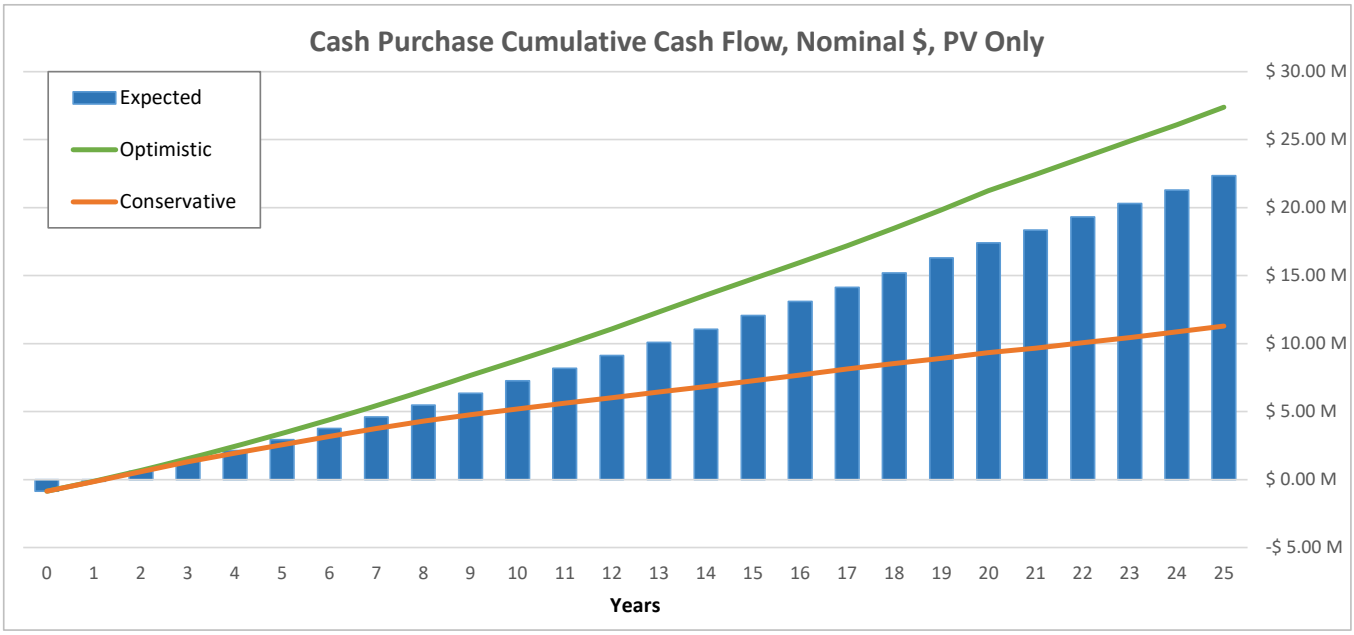
Attachment B. Cash Flow Table

Cumulative Project Cash Flow - NEM 2.0 Assumptions, Cash Financed

Savings Analysis of Solar Measure T Purchase, PV Only

San Mateo Foster City School District, 18 Sites, September 15 2021

			PV			
Year	Estimated Utility Usage (kWh)	Annual Estimated Utility Cost w/o PV	Utility Energy Cost w/PV	PV Operating Costs	Net Annual Savings	Cumulative Project Cash Flow
0	-	$ -	$ -	$ -	$ (863,000)	$ (863,000)
1	5,651,000	$ 1,447,000	$ 593,000	$ 128,000	$ 726,000	$ (137,000)
2	5,651,000	$ 1,490,000	$ 617,000	$ 130,000	$ 743,000	$ 606,000
3	5,651,000	$ 1,535,000	$ 644,000	$ 133,000	$ 759,000	$ 1,365,000
4	5,651,000	$ 1,581,000	$ 670,000	$ 135,000	$ 776,000	$ 2,141,000
5	5,651,000	$ 1,628,000	$ 698,000	$ 138,000	$ 793,000	$ 2,934,000
6	5,651,000	$ 1,677,000	$ 727,000	$ 123,000	$ 828,000	$ 3,762,000
7	5,651,000	$ 1,728,000	$ 757,000	$ 126,000	$ 845,000	$ 4,607,000
8	5,651,000	$ 1,779,000	$ 787,000	$ 128,000	$ 863,000	$ 5,470,000
9	5,651,000	$ 1,833,000	$ 820,000	$ 131,000	$ 882,000	$ 6,352,000
10	5,651,000	$ 1,888,000	$ 853,000	$ 134,000	$ 901,000	$ 7,253,000
11	5,651,000	$ 1,944,000	$ 887,000	$ 137,000	$ 920,000	$ 8,173,000
12	5,651,000	$ 2,003,000	$ 923,000	$ 140,000	$ 940,000	$ 9,113,000
13	5,651,000	$ 2,063,000	$ 960,000	$ 141,000	$ 962,000	$ 10,075,000
14	5,651,000	$ 2,125,000	$ 998,000	$ 144,000	$ 983,000	$ 11,058,000
15	5,651,000	$ 2,188,000	$ 1,037,000	$ 148,000	$ 1,003,000	$ 12,061,000
16	5,651,000	$ 2,254,000	$ 1,078,000	$ 151,000	$ 1,025,000	$ 13,086,000
17	5,651,000	$ 2,322,000	$ 1,121,000	$ 155,000	$ 1,047,000	$ 14,133,000
18	5,651,000	$ 2,391,000	$ 1,164,000	$ 159,000	$ 1,069,000	$ 15,202,000
19	5,651,000	$ 2,463,000	$ 1,209,000	$ 162,000	$ 1,091,000	$ 16,293,000
20	5,651,000	$ 2,537,000	$ 1,256,000	$ 166,000	$ 1,114,000	$ 17,407,000
21	5,651,000	$ 2,613,000	$ 1,501,000	$ 171,000	$ 942,000	$ 18,349,000
22	5,651,000	$ 2,691,000	$ 1,555,000	$ 175,000	$ 961,000	$ 19,310,000
23	5,651,000	$ 2,772,000	$ 1,611,000	$ 179,000	$ 982,000	$ 20,292,000
24	5,651,000	$ 2,855,000	$ 1,669,000	$ 183,000	$ 1,002,000	$ 21,294,000
25	5,651,000	$ 2,941,000	$ 1,730,000	$ 170,000	$ 1,042,000	$ 22,336,000

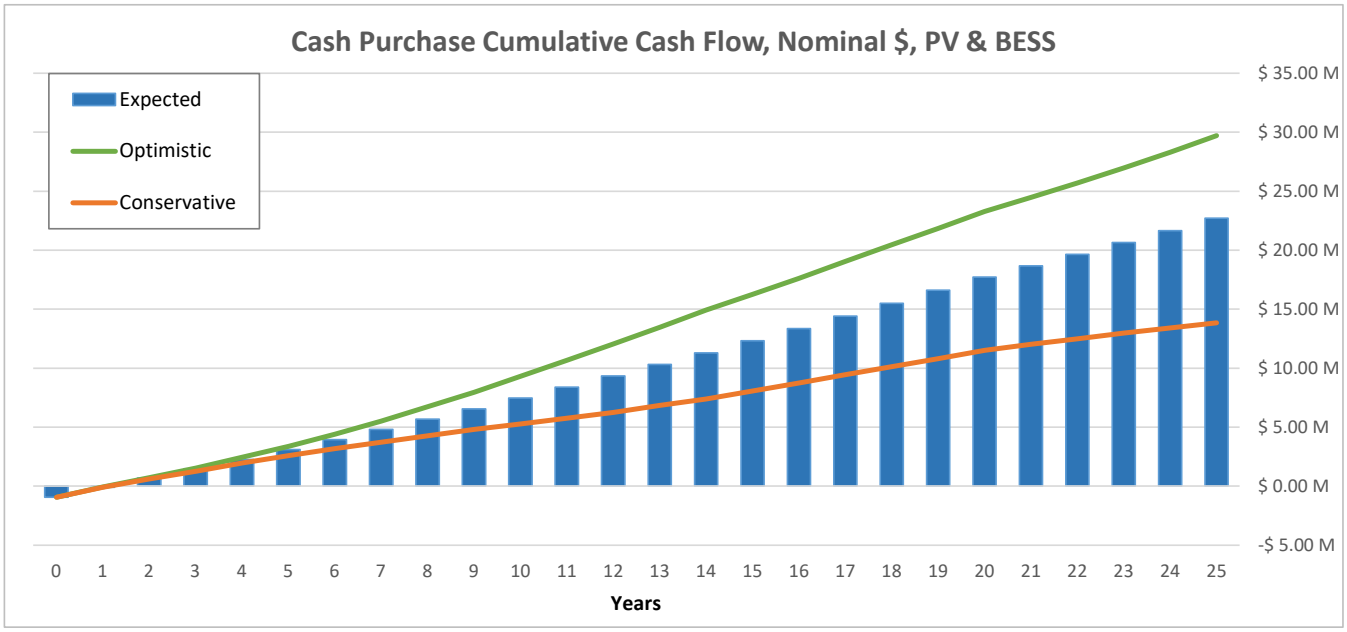


Cumulative Project Cash Flow - NEM 2.0 Assumptions, Cash Financed

Savings Analysis of Solar Measure T Purchase, PV & BESS

San Mateo Foster City School District, 18 Sites, September 15 2021

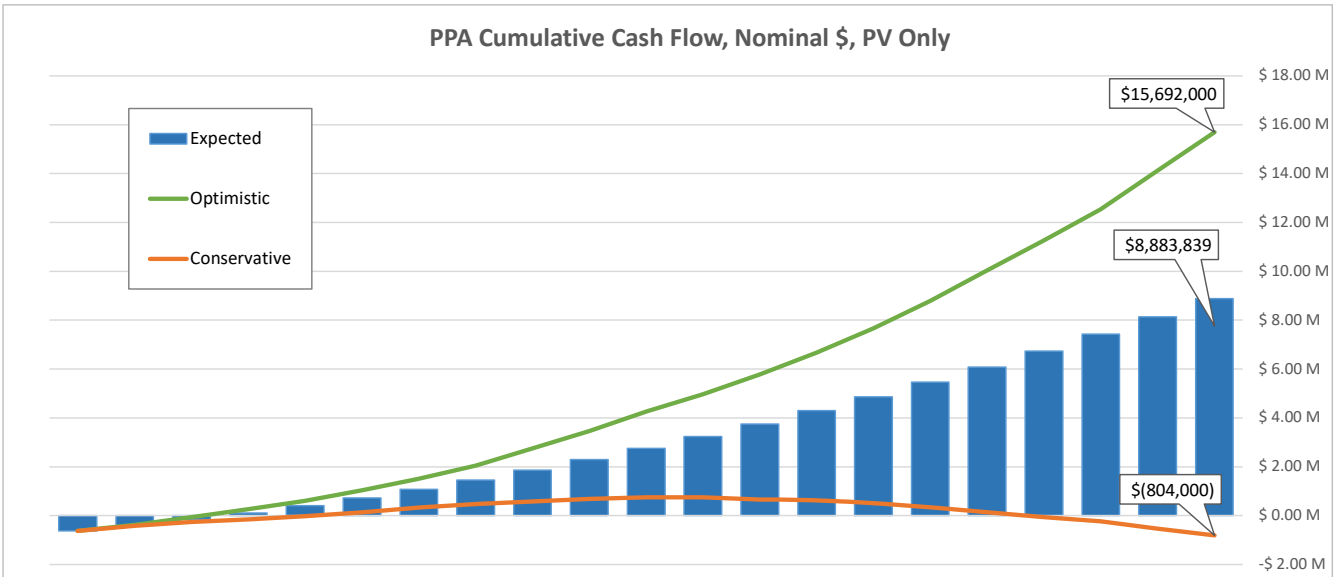
			PV & BESS			
Year	Estimated Utility Usage (kWh)	Annual Estimated Utility Cost w/o PV	Utility Energy Cost w/PV & BESS	PV & BESS Operating Costs	Net Annual Savings	Cumulative Project Cash Flow
0	-	$ -	$ -	$ -	$ (929,000)	$ (929,000)
1	5,651,000	$ 1,447,000	$ 580,000	$ 27,000	$ 840,000	$ (89,000)
2	5,651,000	$ 1,490,000	$ 604,000	$ 116,000	$ 770,000	$ 681,000
3	5,651,000	$ 1,535,000	$ 630,000	$ 119,000	$ 786,000	$ 1,467,000
4	5,651,000	$ 1,581,000	$ 657,000	$ 121,000	$ 803,000	$ 2,270,000
5	5,651,000	$ 1,628,000	$ 683,000	$ 124,000	$ 821,000	$ 3,091,000
6	5,651,000	$ 1,677,000	$ 712,000	$ 110,000	$ 855,000	$ 3,946,000
7	5,651,000	$ 1,728,000	$ 742,000	$ 134,000	$ 852,000	$ 4,798,000
8	5,651,000	$ 1,779,000	$ 772,000	$ 137,000	$ 870,000	$ 5,668,000
9	5,651,000	$ 1,833,000	$ 804,000	$ 140,000	$ 889,000	$ 6,557,000
10	5,651,000	$ 1,888,000	$ 837,000	$ 143,000	$ 908,000	$ 7,465,000
11	5,651,000	$ 1,944,000	$ 870,000	$ 147,000	$ 927,000	$ 8,392,000
12	5,651,000	$ 2,003,000	$ 906,000	$ 150,000	$ 947,000	$ 9,339,000
13	5,651,000	$ 2,063,000	$ 940,000	$ 148,000	$ 974,000	$ 10,313,000
14	5,651,000	$ 2,125,000	$ 978,000	$ 152,000	$ 995,000	$ 11,308,000
15	5,651,000	$ 2,188,000	$ 1,017,000	$ 155,000	$ 1,016,000	$ 12,324,000
16	5,651,000	$ 2,254,000	$ 1,057,000	$ 159,000	$ 1,037,000	$ 13,361,000
17	5,651,000	$ 2,322,000	$ 1,100,000	$ 163,000	$ 1,059,000	$ 14,420,000
18	5,651,000	$ 2,391,000	$ 1,142,000	$ 167,000	$ 1,082,000	$ 15,502,000
19	5,651,000	$ 2,463,000	$ 1,188,000	$ 171,000	$ 1,104,000	$ 16,606,000
20	5,651,000	$ 2,537,000	$ 1,234,000	$ 175,000	$ 1,128,000	$ 17,734,000
21	5,651,000	$ 2,613,000	$ 1,482,000	$ 180,000	$ 952,000	$ 18,686,000
22	5,651,000	$ 2,691,000	$ 1,535,000	$ 184,000	$ 972,000	$ 19,658,000
23	5,651,000	$ 2,772,000	$ 1,592,000	$ 189,000	$ 992,000	$ 20,650,000
24	5,651,000	$ 2,855,000	$ 1,649,000	$ 193,000	$ 1,012,000	$ 21,662,000
25	5,651,000	$ 2,941,000	$ 1,707,000	$ 177,000	$ 1,058,000	$ 22,720,000



Cash Flow Analysis of Solar PPA, PV Only

San Mateo Foster City School District, 18 Sites, September 15 2021

		PV					
Year	Estimated Utility Usage (kWh)	Annual Estimated Utility Cost w/o PV	Utility Energy Cost w/PV	PV Operating Costs	PPA Payments	Net Annual Savings	Cumulative Project Cash Flow
0	-	$ -	$ -	$ -	$ -	$ (621,000)	$ (621,000)
1	5,651,000	$ 1,447,000	$ 593,000	$ 633,000	$ 614,000	$ 221,000	$ (400,000)
2	5,651,000	$ 1,490,000	$ 617,000	$ 629,000	$ 610,000	$ 244,000	$ (156,000)
3	5,651,000	$ 1,535,000	$ 644,000	$ 624,000	$ 605,000	$ 267,000	$ 111,000
4	5,651,000	$ 1,581,000	$ 670,000	$ 619,000	$ 601,000	$ 291,000	$ 402,000
5	5,651,000	$ 1,628,000	$ 698,000	$ 615,000	$ 596,000	$ 315,000	$ 717,000
6	5,651,000	$ 1,677,000	$ 727,000	$ 593,000	$ 592,000	$ 357,000	$ 1,074,000
7	5,651,000	$ 1,728,000	$ 757,000	$ 589,000	$ 587,000	$ 382,000	$ 1,456,000
8	5,651,000	$ 1,779,000	$ 787,000	$ 584,000	$ 583,000	$ 407,000	$ 1,863,000
9	5,651,000	$ 1,833,000	$ 820,000	$ 580,000	$ 579,000	$ 433,000	$ 2,296,000
10	5,651,000	$ 1,888,000	$ 853,000	$ 576,000	$ 574,000	$ 459,000	$ 2,755,000
11	5,651,000	$ 1,944,000	$ 887,000	$ 572,000	$ 570,000	$ 486,000	$ 3,241,000
12	5,651,000	$ 2,003,000	$ 923,000	$ 567,000	$ 566,000	$ 513,000	$ 3,754,000
13	5,651,000	$ 2,063,000	$ 960,000	$ 563,000	$ 561,000	$ 540,000	$ 4,294,000
14	5,651,000	$ 2,125,000	$ 998,000	$ 559,000	$ 557,000	$ 568,000	$ 4,862,000
15	5,651,000	$ 2,188,000	$ 1,037,000	$ 555,000	$ 553,000	$ 596,000	$ 5,458,000
16	5,651,000	$ 2,254,000	$ 1,078,000	$ 551,000	$ 549,000	$ 625,000	$ 6,083,000
17	5,651,000	$ 2,322,000	$ 1,121,000	$ 547,000	$ 545,000	$ 655,000	$ 6,738,000
18	5,651,000	$ 2,391,000	$ 1,164,000	$ 543,000	$ 541,000	$ 685,000	$ 7,423,000
19	5,651,000	$ 2,463,000	$ 1,209,000	$ 539,000	$ 537,000	$ 715,000	$ 8,138,000
20	5,651,000	$ 2,537,000	$ 1,256,000	$ 535,000	$ 533,000	$ 746,000	$ 8,884,000

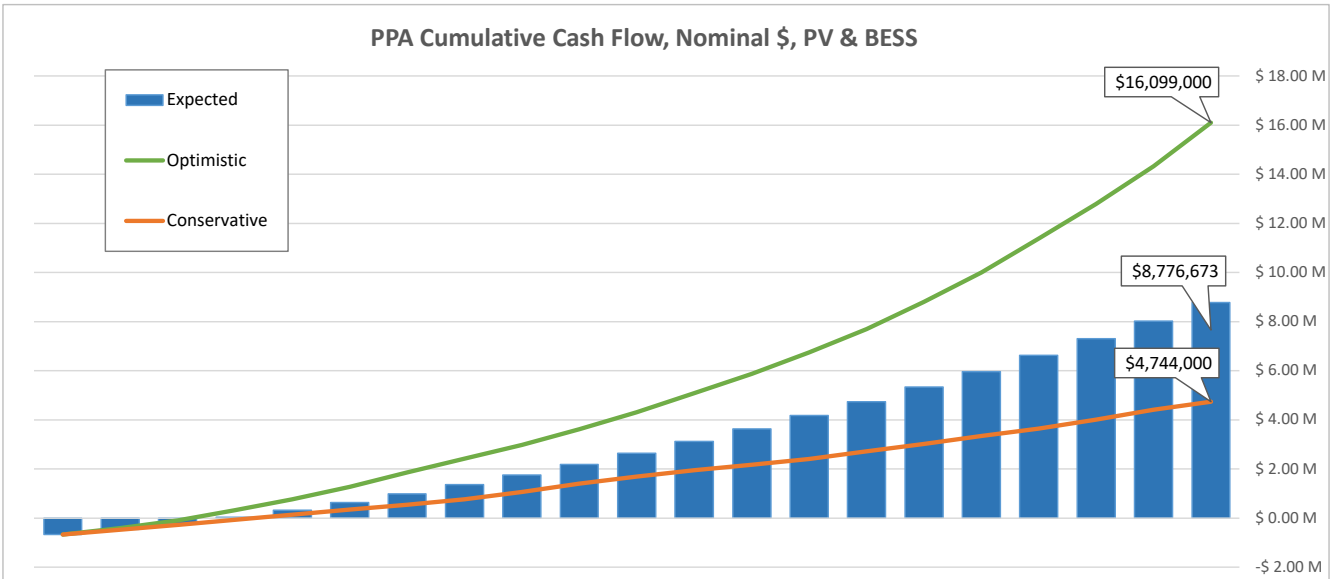


Cumulative Project Cash Flow - NEM 2.0 Assumptions, PPA Financed

Cash Flow Analysis of Solar PPA, PV & BESS

San Mateo Foster City School District, 18 Sites, September 15 2021

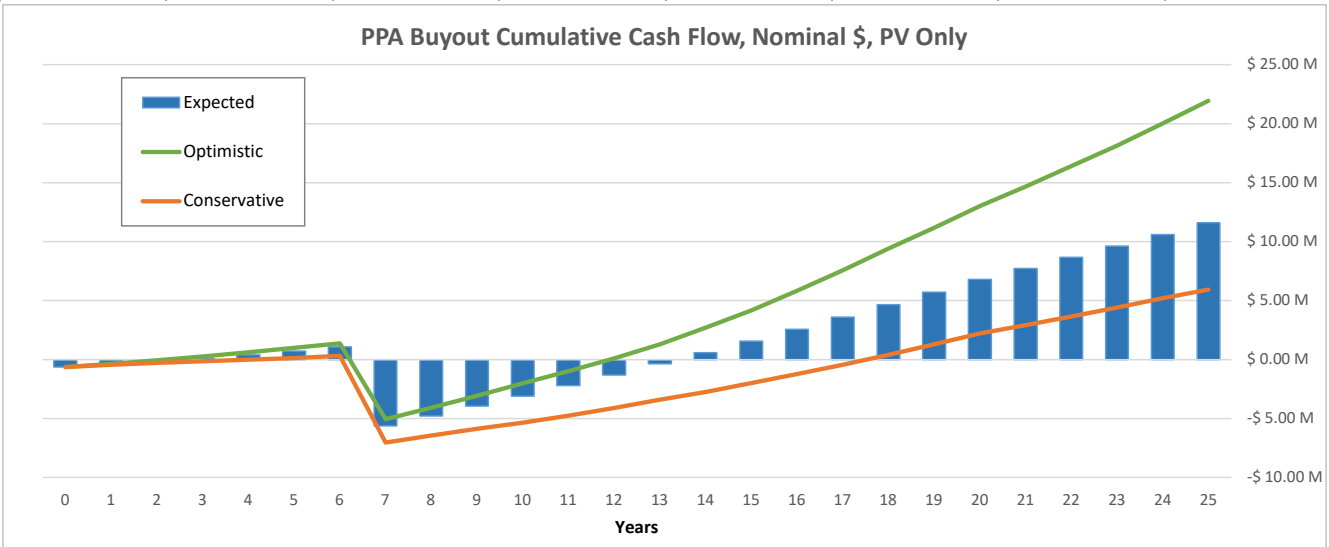
		PV & BESS					
Year	Estimated Utility Usage (kWh)	Annual Estimated Utility Cost w/o PV	Utility Energy Cost w/PV & BESS	PV & BESS Operating Costs	PPA Payments	Net Annual Savings	Cumulative Project Cash Flow
0	-	$ -	$ -	$ -	$ -	$ (669,000)	$ (669,000)
1	5,651,000	$ 1,447,000	$ 580,000	$ 655,000	$ 636,000	$ 213,000	$ (456,000)
2	5,651,000	$ 1,490,000	$ 604,000	$ 650,000	$ 631,000	$ 236,000	$ (220,000)
3	5,651,000	$ 1,535,000	$ 630,000	$ 645,000	$ 627,000	$ 260,000	$ 40,000
4	5,651,000	$ 1,581,000	$ 657,000	$ 641,000	$ 622,000	$ 284,000	$ 324,000
5	5,651,000	$ 1,628,000	$ 683,000	$ 636,000	$ 617,000	$ 309,000	$ 633,000
6	5,651,000	$ 1,677,000	$ 712,000	$ 614,000	$ 613,000	$ 351,000	$ 984,000
7	5,651,000	$ 1,728,000	$ 742,000	$ 609,000	$ 608,000	$ 376,000	$ 1,360,000
8	5,651,000	$ 1,779,000	$ 772,000	$ 605,000	$ 603,000	$ 402,000	$ 1,762,000
9	5,651,000	$ 1,833,000	$ 804,000	$ 601,000	$ 599,000	$ 428,000	$ 2,190,000
10	5,651,000	$ 1,888,000	$ 837,000	$ 596,000	$ 594,000	$ 455,000	$ 2,645,000
11	5,651,000	$ 1,944,000	$ 870,000	$ 592,000	$ 590,000	$ 482,000	$ 3,127,000
12	5,651,000	$ 2,003,000	$ 906,000	$ 587,000	$ 586,000	$ 510,000	$ 3,637,000
13	5,651,000	$ 2,063,000	$ 940,000	$ 583,000	$ 581,000	$ 540,000	$ 4,177,000
14	5,651,000	$ 2,125,000	$ 978,000	$ 579,000	$ 577,000	$ 568,000	$ 4,745,000
15	5,651,000	$ 2,188,000	$ 1,017,000	$ 574,000	$ 572,000	$ 597,000	$ 5,342,000
16	5,651,000	$ 2,254,000	$ 1,057,000	$ 570,000	$ 568,000	$ 626,000	$ 5,968,000
17	5,651,000	$ 2,322,000	$ 1,100,000	$ 566,000	$ 564,000	$ 656,000	$ 6,624,000
18	5,651,000	$ 2,391,000	$ 1,142,000	$ 562,000	$ 560,000	$ 687,000	$ 7,311,000
19	5,651,000	$ 2,463,000	$ 1,188,000	$ 558,000	$ 555,000	$ 718,000	$ 8,029,000
20	5,651,000	$ 2,537,000	$ 1,234,000	$ 554,000	$ 551,000	$ 749,000	$ 8,778,000



Cash Flow Analysis of Solar PPA Buyout, PV Only

San Mateo Foster City School District, 18 Sites, September 15 2021

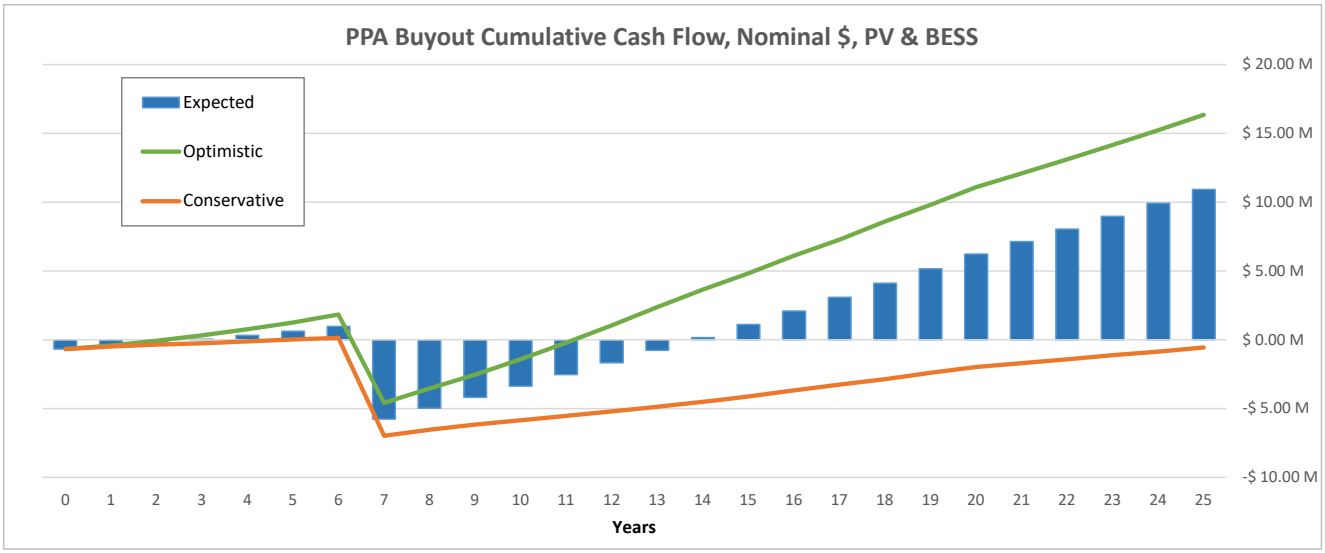
		PV					
Year	Estimated Utility Usage (kWh)	Annual Estimated Utility Cost w/o PV	Utility Energy Cost w/PV	PV Operating Costs Buyout Year-7	PPA Payments	Net Annual Savings	Cumulative Project Cash Flow
0	-	$ -	$ -	$ -	$ -	$ (621,000)	$ (621,000)
1	5,651,000	$ 1,447,000	$ 593,000	$ 633,000	$ 614,000	$ 221,000	$ (400,000)
2	5,651,000	$ 1,490,000	$ 617,000	$ 629,000	$ 610,000	$ 244,000	$ (156,000)
3	5,651,000	$ 1,535,000	$ 644,000	$ 624,000	$ 605,000	$ 267,000	$ 111,000
4	5,651,000	$ 1,581,000	$ 670,000	$ 619,000	$ 601,000	$ 291,000	$ 402,000
5	5,651,000	$ 1,628,000	$ 698,000	$ 615,000	$ 596,000	$ 315,000	$ 717,000
6	5,651,000	$ 1,677,000	$ 727,000	$ 593,000	$ 592,000	$ 357,000	$ 1,074,000
7	5,651,000	$ 1,728,000	$ 757,000	$ 7,667,000	$ -	$ (6,697,000)	$ (5,623,000)
8	5,651,000	$ 1,779,000	$ 787,000	$ 167,000	$ -	$ 825,000	$ (4,798,000)
9	5,651,000	$ 1,833,000	$ 820,000	$ 170,000	$ -	$ 843,000	$ (3,955,000)
10	5,651,000	$ 1,888,000	$ 853,000	$ 174,000	$ -	$ 861,000	$ (3,094,000)
11	5,651,000	$ 1,944,000	$ 887,000	$ 177,000	$ -	$ 880,000	$ (2,214,000)
12	5,651,000	$ 2,003,000	$ 923,000	$ 181,000	$ -	$ 899,000	$ (1,315,000)
13	5,651,000	$ 2,063,000	$ 960,000	$ 161,000	$ -	$ 942,000	$ (373,000)
14	5,651,000	$ 2,125,000	$ 998,000	$ 165,000	$ -	$ 962,000	$ 589,000
15	5,651,000	$ 2,188,000	$ 1,037,000	$ 169,000	$ -	$ 983,000	$ 1,572,000
16	5,651,000	$ 2,254,000	$ 1,078,000	$ 173,000	$ -	$ 1,003,000	$ 2,575,000
17	5,651,000	$ 2,322,000	$ 1,121,000	$ 177,000	$ -	$ 1,025,000	$ 3,600,000
18	5,651,000	$ 2,391,000	$ 1,164,000	$ 181,000	$ -	$ 1,046,000	$ 4,646,000
19	5,651,000	$ 2,463,000	$ 1,209,000	$ 185,000	$ -	$ 1,068,000	$ 5,714,000
20	5,651,000	$ 2,537,000	$ 1,256,000	$ 190,000	$ -	$ 1,091,000	$ 6,805,000
21	5,651,000	$ 2,613,000	$ 1,501,000	$ 195,000	$ -	$ 918,000	$ 7,723,000
22	5,651,000	$ 2,691,000	$ 1,555,000	$ 199,000	$ -	$ 937,000	$ 8,660,000
23	5,651,000	$ 2,772,000	$ 1,611,000	$ 204,000	$ -	$ 956,000	$ 9,616,000
24	5,651,000	$ 2,855,000	$ 1,669,000	$ 209,000	$ -	$ 976,000	$ 10,592,000
25	5,651,000	$ 2,941,000	$ 1,730,000	$ 196,000	$ -	$ 1,015,000	$ 11,607,000



Cash Flow Analysis of Solar PPA Buyout, PV & BESS

San Mateo Foster City School District, 18 Sites, September 15 2021

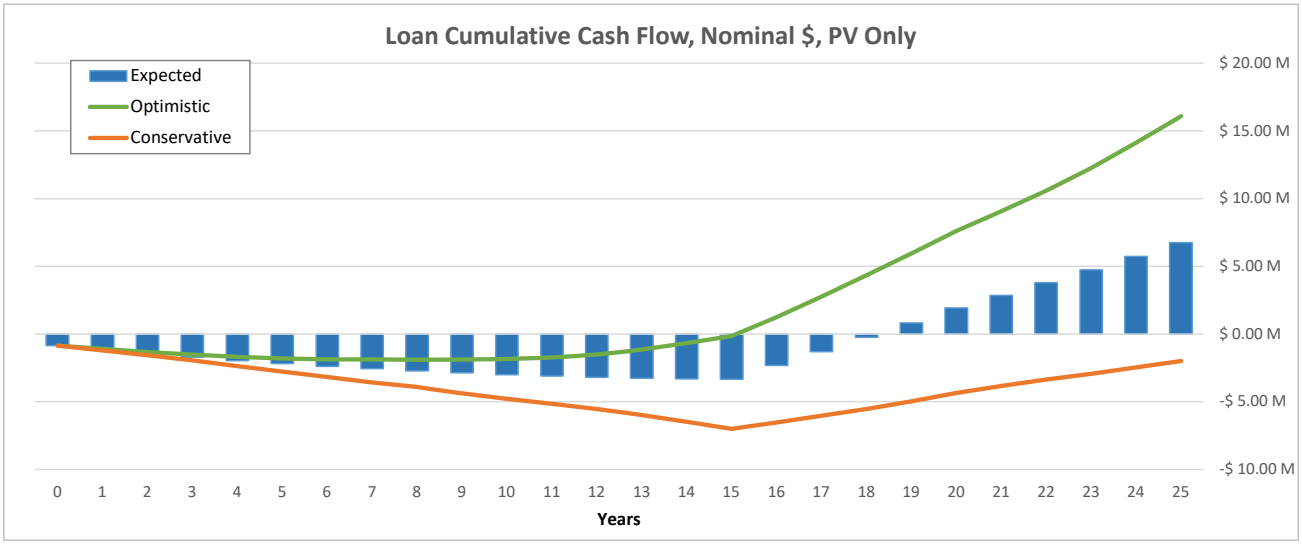
		PV & BESS					
Year	Estimated Utility Usage (kWh)	Annual Estimated Utility Cost w/o PV	Utility Energy Cost w/PV & BESS	PV Operating Costs Buyout Year-7	PPA Payments	Net Annual Savings	Cumulative Project Cash Flow
0	-	$ -	$ -	$ -	$ -	$ (669,000)	$ (669,000)
1	5,651,000	$ 1,447,000	$ 580,000	$ 655,000	$ 636,000	$ 213,000	$ (456,000)
2	5,651,000	$ 1,490,000	$ 604,000	$ 650,000	$ 631,000	$ 236,000	$ (220,000)
3	5,651,000	$ 1,535,000	$ 630,000	$ 645,000	$ 627,000	$ 260,000	$ 40,000
4	5,651,000	$ 1,581,000	$ 657,000	$ 641,000	$ 622,000	$ 284,000	$ 324,000
5	5,651,000	$ 1,628,000	$ 683,000	$ 636,000	$ 617,000	$ 309,000	$ 633,000
6	5,651,000	$ 1,677,000	$ 712,000	$ 614,000	$ 613,000	$ 351,000	$ 984,000
7	5,651,000	$ 1,728,000	$ 742,000	$ 7,731,000	$ -	$ (6,746,000)	$ (5,762,000)
8	5,651,000	$ 1,779,000	$ 772,000	$ 229,000	$ -	$ 778,000	$ (4,984,000)
9	5,651,000	$ 1,833,000	$ 804,000	$ 231,000	$ -	$ 798,000	$ (4,186,000)
10	5,651,000	$ 1,888,000	$ 837,000	$ 233,000	$ -	$ 818,000	$ (3,368,000)
11	5,651,000	$ 1,944,000	$ 870,000	$ 235,000	$ -	$ 839,000	$ (2,529,000)
12	5,651,000	$ 2,003,000	$ 906,000	$ 237,000	$ -	$ 860,000	$ (1,669,000)
13	5,651,000	$ 2,063,000	$ 940,000	$ 213,000	$ -	$ 910,000	$ (759,000)
14	5,651,000	$ 2,125,000	$ 978,000	$ 215,000	$ -	$ 932,000	$ 173,000
15	5,651,000	$ 2,188,000	$ 1,017,000	$ 218,000	$ -	$ 954,000	$ 1,127,000
16	5,651,000	$ 2,254,000	$ 1,057,000	$ 220,000	$ -	$ 976,000	$ 2,103,000
17	5,651,000	$ 2,322,000	$ 1,100,000	$ 223,000	$ -	$ 999,000	$ 3,102,000
18	5,651,000	$ 2,391,000	$ 1,142,000	$ 226,000	$ -	$ 1,022,000	$ 4,124,000
19	5,651,000	$ 2,463,000	$ 1,188,000	$ 230,000	$ -	$ 1,046,000	$ 5,170,000
20	5,651,000	$ 2,537,000	$ 1,234,000	$ 233,000	$ -	$ 1,070,000	$ 6,240,000
21	5,651,000	$ 2,613,000	$ 1,482,000	$ 237,000	$ -	$ 894,000	$ 7,134,000
22	5,651,000	$ 2,691,000	$ 1,535,000	$ 241,000	$ -	$ 915,000	$ 8,049,000
23	5,651,000	$ 2,772,000	$ 1,592,000	$ 245,000	$ -	$ 936,000	$ 8,985,000
24	5,651,000	$ 2,855,000	$ 1,649,000	$ 249,000	$ -	$ 957,000	$ 9,942,000
25	5,651,000	$ 2,941,000	$ 1,707,000	$ 232,000	$ -	$ 1,003,000	$ 10,945,000



Cash Flow Analysis of Solar Lease, PV

San Mateo Foster City School District, 18 Sites, September 15 2021

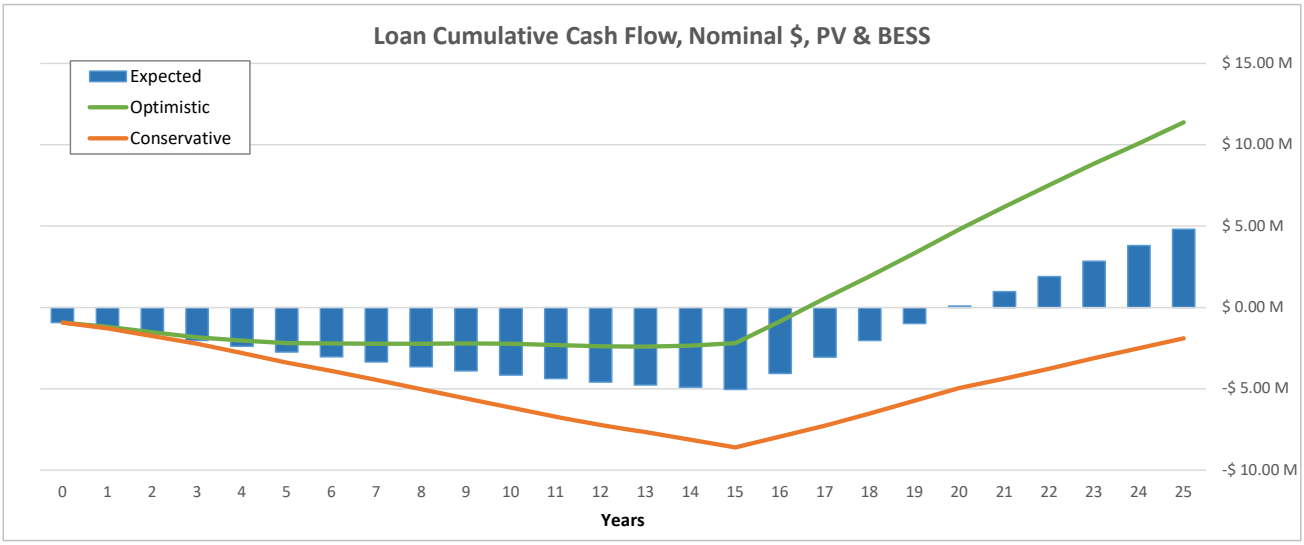
				PV			
Year	Estimated Utility Usage (kWh)	Annual Estimated Utility Cost w/o PV	Utility Energy Cost w/PV	PV Operating Costs	Loan Payments	Net Annual Savings	Cumulative Project Cash Flow
0	-	$ -	$ -	$ -	$ -	$ (863,000)	$ (863,000)
1	5,651,000	$ 1,447,000	$ 593,000	$ 139,000	$ 1,013,000	$ (297,000)	$ (1,160,000)
2	5,651,000	$ 1,490,000	$ 617,000	$ 141,000	$ 1,013,000	$ (281,000)	$ (1,441,000)
3	5,651,000	$ 1,535,000	$ 644,000	$ 144,000	$ 1,013,000	$ (265,000)	$ (1,706,000)
4	5,651,000	$ 1,581,000	$ 670,000	$ 147,000	$ 1,013,000	$ (249,000)	$ (1,955,000)
5	5,651,000	$ 1,628,000	$ 698,000	$ 150,000	$ 1,013,000	$ (232,000)	$ (2,187,000)
6	5,651,000	$ 1,677,000	$ 727,000	$ 135,000	$ 1,013,000	$ (198,000)	$ (2,385,000)
7	5,651,000	$ 1,728,000	$ 757,000	$ 138,000	$ 1,013,000	$ (180,000)	$ (2,565,000)
8	5,651,000	$ 1,779,000	$ 787,000	$ 141,000	$ 1,013,000	$ (163,000)	$ (2,728,000)
9	5,651,000	$ 1,833,000	$ 820,000	$ 145,000	$ 1,013,000	$ (144,000)	$ (2,872,000)
10	5,651,000	$ 1,888,000	$ 853,000	$ 148,000	$ 1,013,000	$ (126,000)	$ (2,998,000)
11	5,651,000	$ 1,944,000	$ 887,000	$ 152,000	$ 1,013,000	$ (107,000)	$ (3,105,000)
12	5,651,000	$ 2,003,000	$ 923,000	$ 155,000	$ 1,013,000	$ (88,000)	$ (3,193,000)
13	5,651,000	$ 2,063,000	$ 960,000	$ 156,000	$ 1,013,000	$ (66,000)	$ (3,259,000)
14	5,651,000	$ 2,125,000	$ 998,000	$ 160,000	$ 1,013,000	$ (46,000)	$ (3,305,000)
15	5,651,000	$ 2,188,000	$ 1,037,000	$ 164,000	$ 1,013,000	$ (25,000)	$ (3,330,000)
16	5,651,000	$ 2,254,000	$ 1,078,000	$ 168,000	$ -	$ 1,008,000	$ (2,322,000)
17	5,651,000	$ 2,322,000	$ 1,121,000	$ 172,000	$ -	$ 1,029,000	$ (1,293,000)
18	5,651,000	$ 2,391,000	$ 1,164,000	$ 176,000	$ -	$ 1,051,000	$ (242,000)
19	5,651,000	$ 2,463,000	$ 1,209,000	$ 181,000	$ -	$ 1,073,000	$ 831,000
20	5,651,000	$ 2,537,000	$ 1,256,000	$ 185,000	$ -	$ 1,096,000	$ 1,927,000
21	5,651,000	$ 2,613,000	$ 1,501,000	$ 190,000	$ -	$ 922,000	$ 2,849,000
22	5,651,000	$ 2,691,000	$ 1,555,000	$ 195,000	$ -	$ 942,000	$ 3,791,000
23	5,651,000	$ 2,772,000	$ 1,611,000	$ 200,000	$ -	$ 961,000	$ 4,752,000
24	5,651,000	$ 2,855,000	$ 1,669,000	$ 205,000	$ -	$ 981,000	$ 5,733,000
25	5,651,000	$ 2,941,000	$ 1,730,000	$ 191,000	$ -	$ 1,020,000	$ 6,753,000



Cash Flow Analysis of Solar Lease, PV & BESS

San Mateo Foster City School District, 18 Sites, September 15 2021

				PV & BESS			
Year	Estimated Utility Usage (kWh)	Annual Estimated Utility Cost w/o PV	Utility Energy Cost w/PV & BESS	PV & BESS Operating Costs	Loan Payments	Net Annual Savings	Cumulative Project Cash Flow
0	-	$ -	$ -	$ -	$ -	$ (929,000)	$ (929,000)
1	5,651,000	$ 1,447,000	$ 580,000	$ 215,000	$ 1,091,000	$ (331,000)	$ (1,260,000)
2	5,651,000	$ 1,490,000	$ 604,000	$ 215,000	$ 1,091,000	$ (399,000)	$ (1,659,000)
3	5,651,000	$ 1,535,000	$ 630,000	$ 216,000	$ 1,091,000	$ (380,000)	$ (2,039,000)
4	5,651,000	$ 1,581,000	$ 657,000	$ 216,000	$ 1,091,000	$ (361,000)	$ (2,400,000)
5	5,651,000	$ 1,628,000	$ 683,000	$ 217,000	$ 1,091,000	$ (342,000)	$ (2,742,000)
6	5,651,000	$ 1,677,000	$ 712,000	$ 201,000	$ 1,091,000	$ (305,000)	$ (3,047,000)
7	5,651,000	$ 1,728,000	$ 742,000	$ 202,000	$ 1,091,000	$ (308,000)	$ (3,355,000)
8	5,651,000	$ 1,779,000	$ 772,000	$ 204,000	$ 1,091,000	$ (288,000)	$ (3,643,000)
9	5,651,000	$ 1,833,000	$ 804,000	$ 205,000	$ 1,091,000	$ (267,000)	$ (3,910,000)
10	5,651,000	$ 1,888,000	$ 837,000	$ 207,000	$ 1,091,000	$ (247,000)	$ (4,157,000)
11	5,651,000	$ 1,944,000	$ 870,000	$ 209,000	$ 1,091,000	$ (226,000)	$ (4,383,000)
12	5,651,000	$ 2,003,000	$ 906,000	$ 211,000	$ 1,091,000	$ (205,000)	$ (4,588,000)
13	5,651,000	$ 2,063,000	$ 940,000	$ 208,000	$ 1,091,000	$ (176,000)	$ (4,764,000)
14	5,651,000	$ 2,125,000	$ 978,000	$ 210,000	$ 1,091,000	$ (155,000)	$ (4,919,000)
15	5,651,000	$ 2,188,000	$ 1,017,000	$ 213,000	$ 1,091,000	$ (133,000)	$ (5,052,000)
16	5,651,000	$ 2,254,000	$ 1,057,000	$ 216,000	$ -	$ 981,000	$ (4,071,000)
17	5,651,000	$ 2,322,000	$ 1,100,000	$ 219,000	$ -	$ 1,004,000	$ (3,067,000)
18	5,651,000	$ 2,391,000	$ 1,142,000	$ 222,000	$ -	$ 1,027,000	$ (2,040,000)
19	5,651,000	$ 2,463,000	$ 1,188,000	$ 225,000	$ -	$ 1,050,000	$ (990,000)
20	5,651,000	$ 2,537,000	$ 1,234,000	$ 228,000	$ -	$ 1,074,000	$ 84,000
21	5,651,000	$ 2,613,000	$ 1,482,000	$ 232,000	$ -	$ 899,000	$ 983,000
22	5,651,000	$ 2,691,000	$ 1,535,000	$ 236,000	$ -	$ 920,000	$ 1,903,000
23	5,651,000	$ 2,772,000	$ 1,592,000	$ 240,000	$ -	$ 940,000	$ 2,843,000
24	5,651,000	$ 2,855,000	$ 1,649,000	$ 244,000	$ -	$ 962,000	$ 3,805,000
25	5,651,000	$ 2,941,000	$ 1,707,000	$ 227,000	$ -	$ 1,007,000	$ 4,812,000



Attachment C. Sensitivity Analysis

25-year Sensitivity & Risk Analysis Measure T Bond, PV Only

San Mateo Foster City School District

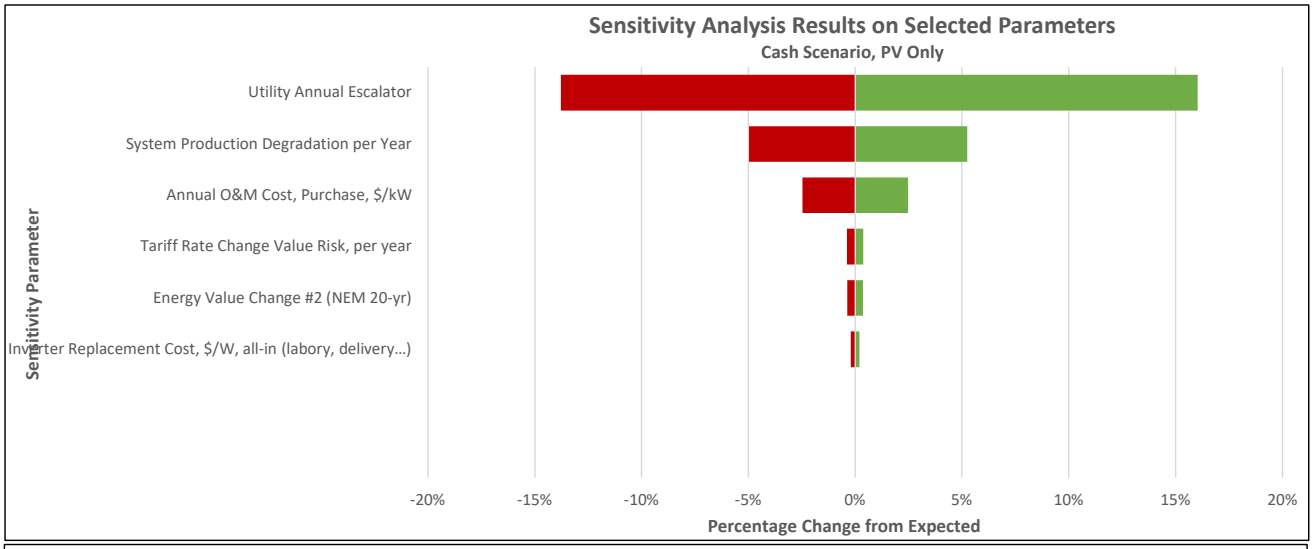
Parameters

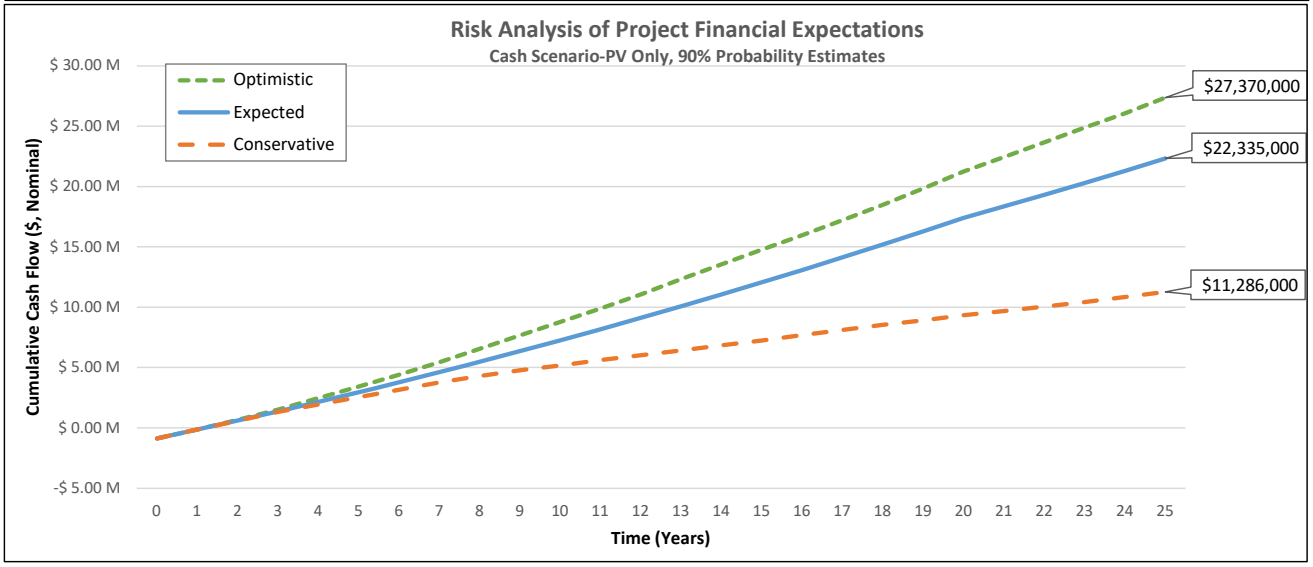
The table below presents the NPV savings and variation under optimistic, expected and conservative assumptions.

Cash Sensitivity Parameter	Expected Value	25-Year NPV			Parameter Variation	
		Optimistic (P10)	Expected (P50)	Conservative (P90)	Conservative	Optimistic
Utility Annual Escalator	3.00%	$18,459,000	$15,908,000	$13,714,000	-13.8%	16.0%
System Production Degradation per Year	0.75%	$16,744,000	$15,908,000	$15,118,000	-5.0%	5.3%
Annual O&M Cost, Purchase, $/kW	$30.00	$16,302,000	$15,908,000	$15,514,000	-2.5%	2.5%
Tariff Rate Change Value Risk, per year	-0.10%	$15,969,000	$15,908,000	$15,847,000	-0.4%	0.4%
Energy Value Change #2 (NEM 20-yr)	-15.0%	$15,966,000	$15,908,000	$15,850,000	-0.4%	0.4%
Inverter Replacement Cost, $/W, all-in (labory,	$0.11	$15,940,000	$15,908,000	$15,876,000	-0.2%	0.2%
0		$0	$0	$0	0.0%	0.0%
0		$0	$0	$0	0.0%	0.0%
Weighted Sensitivity:		$19,456,000	$15,908,000	$8,431,000		

Risk Analysis Results

The figures below present the variation in NPV for each sensitivity parameter and yearly cash flow variation under optimistic and conservative





25-year Sensitivity & Risk Analysis Measure T Bond, PV & BESS

San Mateo Foster City School District

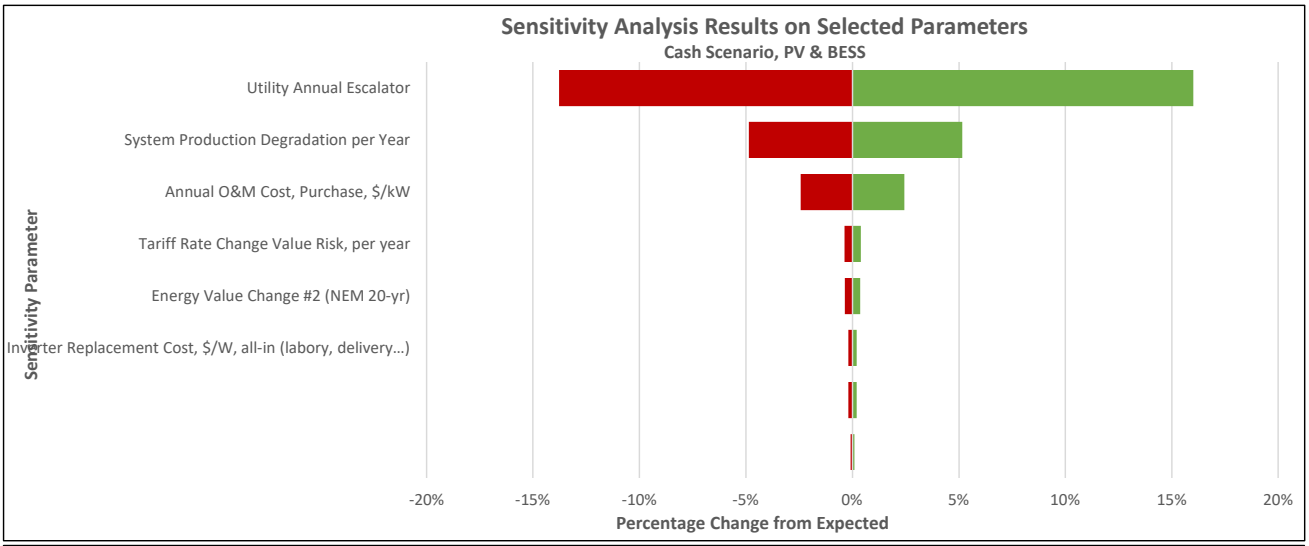
Parameters

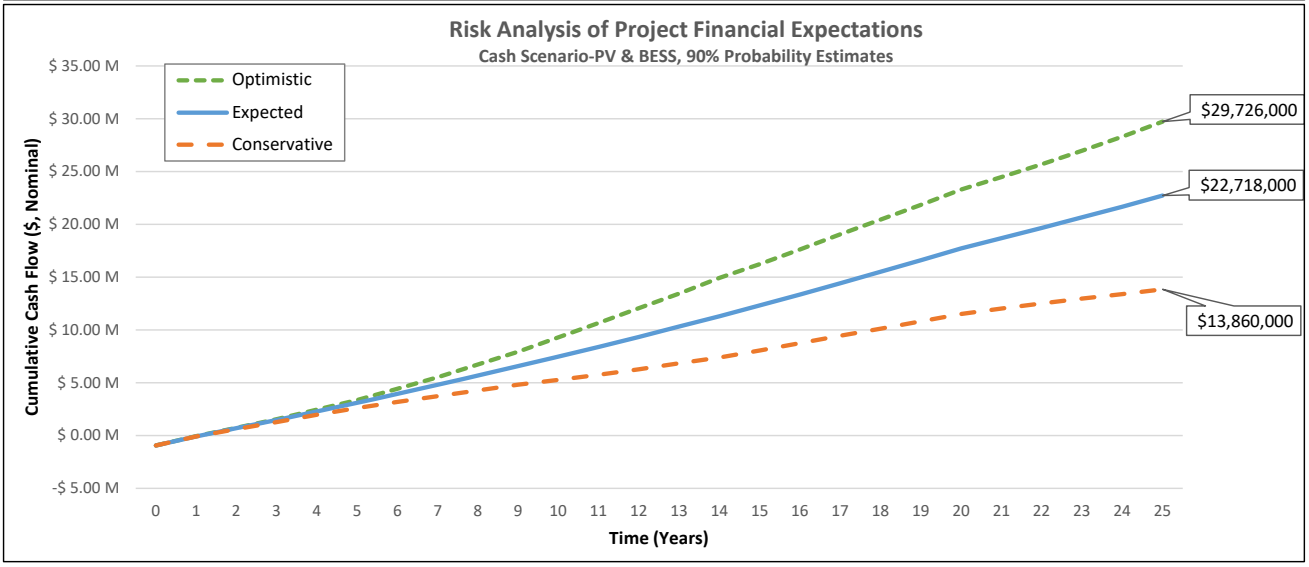
The table below presents the NPV savings and variation under optimistic, expected and conservative assumptions.

Cash Sensitivity Parameter	Expected Value	25-Year NPV			Range of Parameter Variation	
		Optimistic (P10)	Expected (P50)	Conservative (P90)	Conservative	Optimistic
Utility Annual Escalator	3.00%	$18,802,000	$16,208,000	$13,977,000	-13.8%	16.0%
System Production Degradation per Year	0.75%	$17,044,000	$16,208,000	$15,418,000	-4.9%	5.2%
Annual O&M Cost, Purchase, $/kW	$30.00	$16,602,000	$16,208,000	$15,814,000	-2.4%	2.4%
Tariff Rate Change Value Risk, per year	-0.10%	$16,270,000	$16,208,000	$16,146,000	-0.4%	0.4%
Energy Value Change #2 (NEM 20-yr)	-15.0%	$16,267,000	$16,208,000	$16,149,000	-0.4%	0.4%
Inverter Replacement Cost, $/W, all-in (labory,	$0.11	$16,240,000	$16,208,000	$16,176,000	-0.2%	0.2%
Total BESS Savings, Year-1	$12,592	$16,240,000	$16,208,000	$16,176,000	-0.2%	0.2%
BESS O&M Cost, Purchase, $/kWh	$10.00	$16,224,000	$16,208,000	$16,193,000	-0.1%	0.1%
Weighted Sensitivity:		$21,115,000	$16,208,000	$10,122,000		

Risk Analysis Results

The figures below present the variation in NPV for each sensitivity parameter and yearly cash flow variation under optimistic and conservative





20-year Sensitivity & Risk Analysis PPA, PV Only

San Mateo Foster City School District

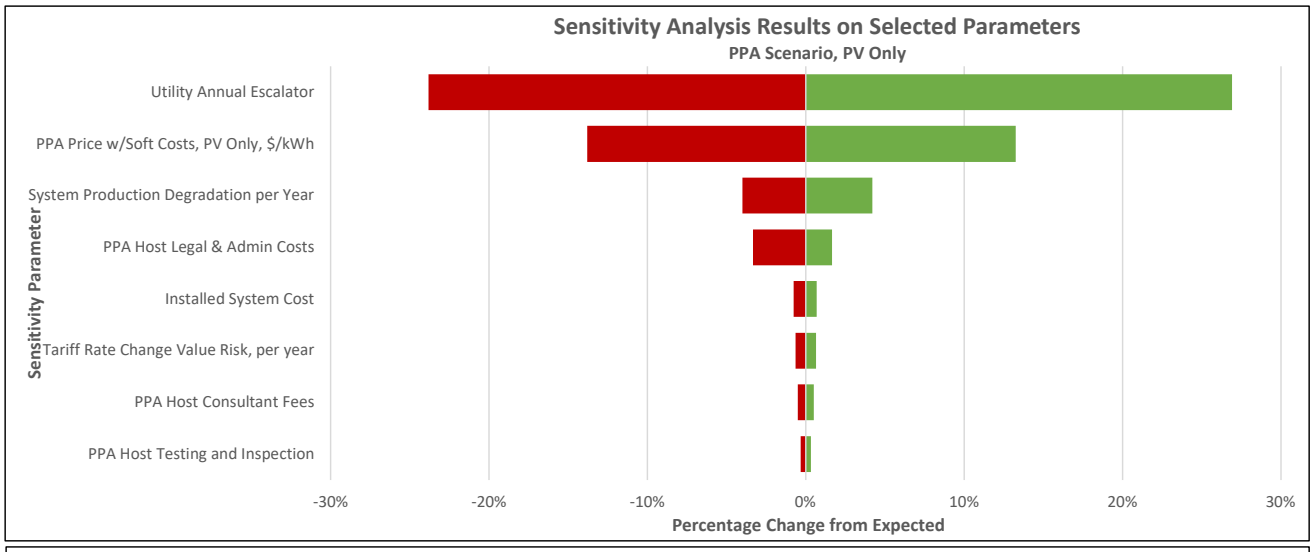
Parameters

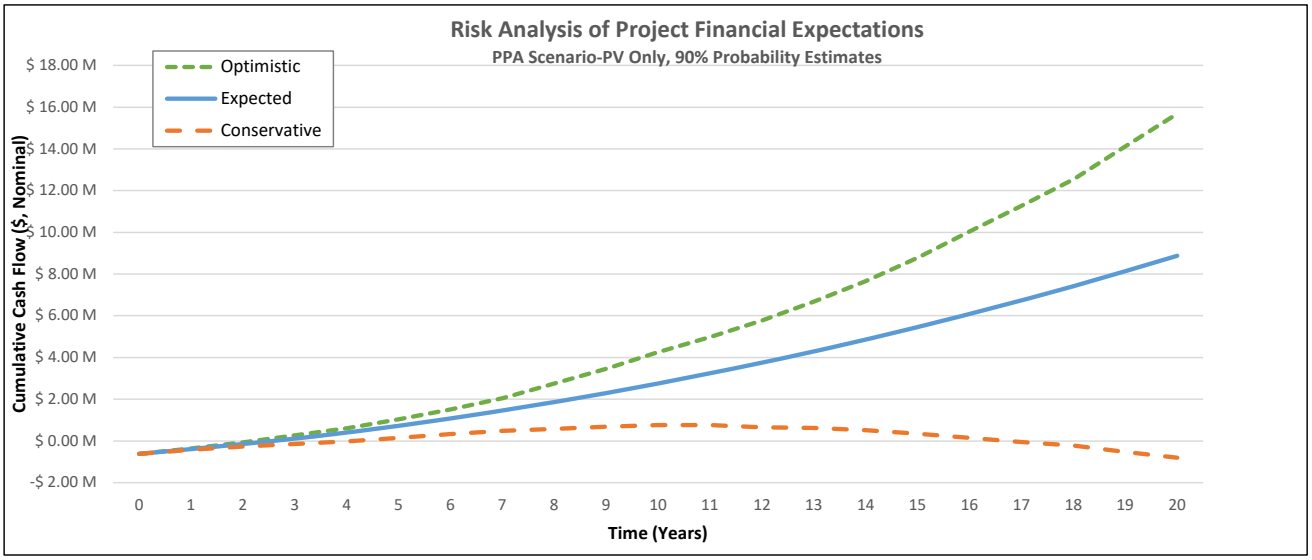
The table below presents the NPV savings and variation under Conservative, Expected and Optimistic assumptions.

		25-Year NPV			Parameter Variation	
PPA Sensitivity Parameter	Expected Value	Conservative (P90)	Expected (P50)	Optimistic (P10)	Conservative	Optimistic
Utility Annual Escalator	3.00%	$4,903,000	$6,436,000	$8,168,000	-23.8%	26.9%
PPA Price w/Soft Costs, PV Only, $/kWh	$0.1547	$5,547,000	$6,436,000	$7,289,000	-13.8%	13.3%
System Production Degradation per Year	0.75%	$6,178,000	$6,436,000	$6,706,000	-4.0%	4.2%
PPA Host Legal & Admin Costs	2.0%	$6,221,000	$6,436,000	$6,543,000	-3.3%	1.7%
Installed System Cost	$10,715,877	$6,387,000	$6,436,000	$6,480,000	-0.8%	0.7%
Tariff Rate Change Value Risk, per year	-0.10%	$6,394,000	$6,436,000	$6,478,000	-0.7%	0.7%
PPA Host Consultant Fees	1.5%	$6,404,000	$6,436,000	$6,468,000	-0.5%	0.5%
PPA Host Testing and Inspection	1.0%	$6,414,000	$6,436,000	$6,457,000	-0.3%	0.3%
	Weighted Sensitivity:	-$427,000	$6,436,000	$11,222,000		

Risk Analysis Results

The figures below present the variation in NPV for each sensitivity parameter and yearly cash flow variation under Conservative and Optimistic





20-year Sensitivity & Risk Analysis PPA, PV & BESS

San Mateo Foster City School District

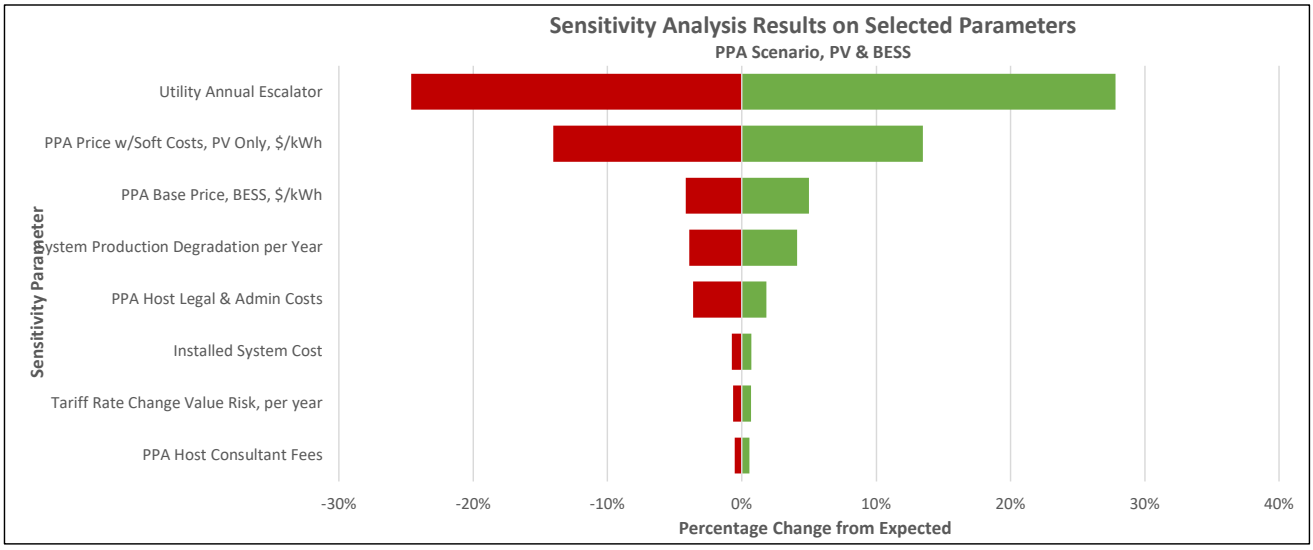
Parameters

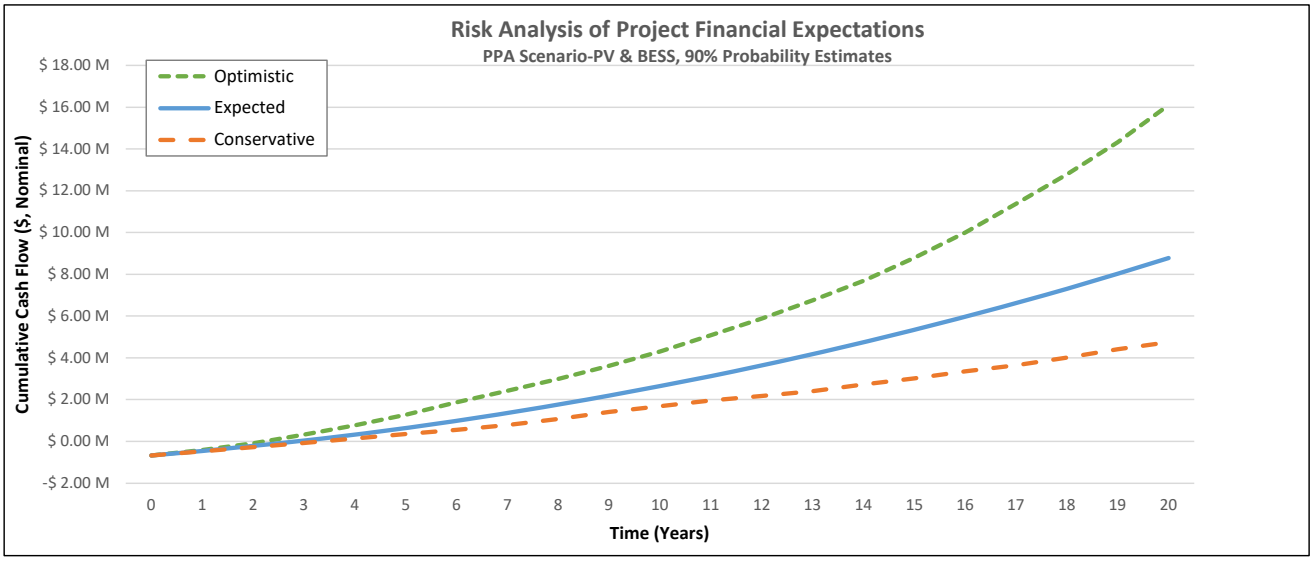
The table below presents the NPV savings and variation under Conservative, Expected and Optimistic assumptions.

		25-Year NPV			Parameter Variation	
PPA Sensitivity Parameter	Expected Value	Conservative (P90)	Expected (P50)	Optimistic (P10)	Conservative	Optimistic
Utility Annual Escalator	3.00%	$4,774,000	$6,333,000	$8,094,000	-24.6%	27.8%
PPA Price w/Soft Costs, PV Only, $/kWh	$0.1547	$5,445,000	$6,333,000	$7,186,000	-14.0%	13.5%
PPA Base Price, BESS, $/kWh	$0.0054	$6,068,000	$6,333,000	$6,649,000	-4.2%	5.0%
System Production Degradation per Year	0.75%	$6,085,000	$6,333,000	$6,593,000	-3.9%	4.1%
PPA Host Legal & Admin Costs	2.0%	$6,102,000	$6,333,000	$6,448,000	-3.6%	1.8%
Installed System Cost	$10,715,877	$6,285,000	$6,333,000	$6,377,000	-0.8%	0.7%
Tariff Rate Change Value Risk, per year	-0.10%	$6,290,000	$6,333,000	$6,376,000	-0.7%	0.7%
PPA Host Consultant Fees	1.5%	$6,298,000	$6,333,000	$6,368,000	-0.5%	0.5%
	Weighted Sensitivity:	$3,437,000	$6,333,000	$11,514,000		

Risk Analysis Results

The figures below present the variation in NPV for each sensitivity parameter and yearly cash flow variation under Conservative and Optimistic





25-year Sensitivity & Risk Analysis PPA Buyout, PV Only

San Mateo Foster City School District

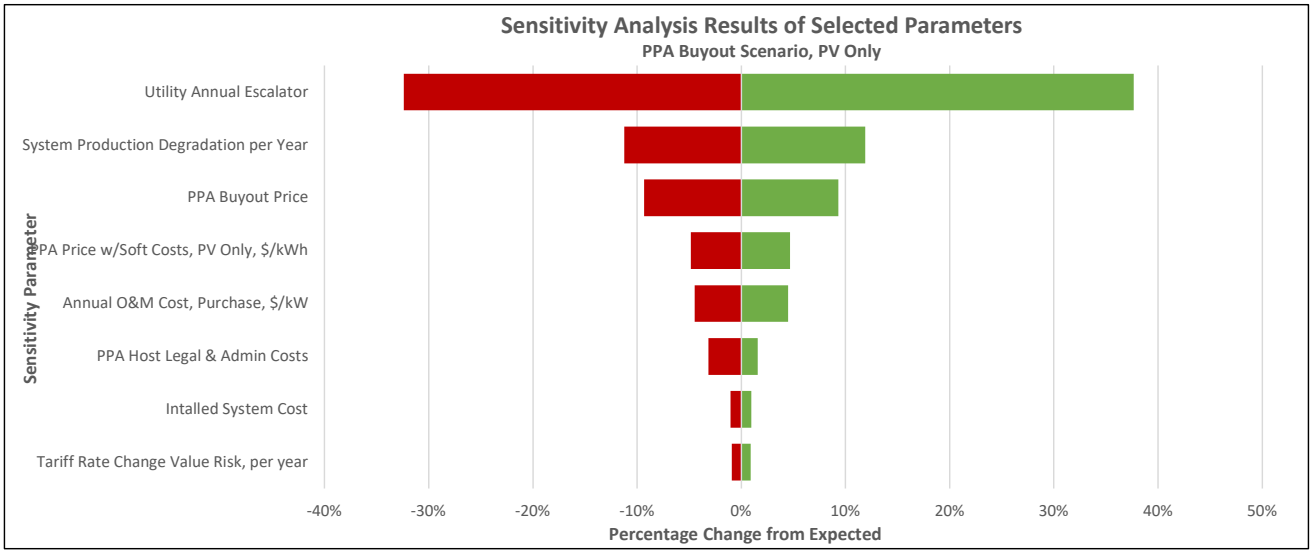
Parameters

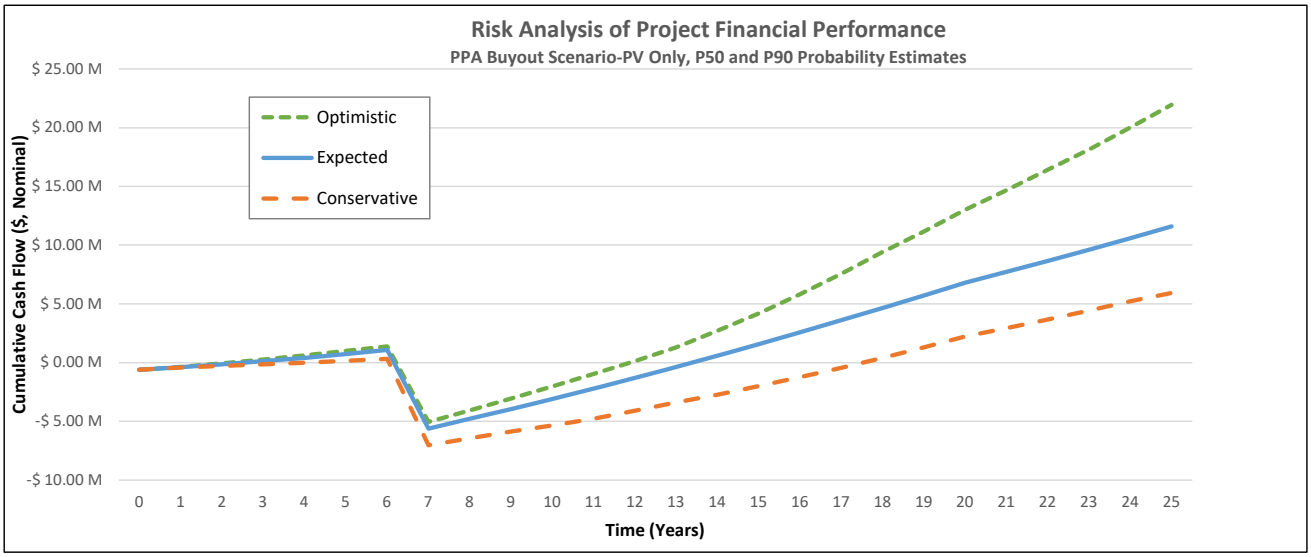
The table below presents the NPV savings and variation under optimistic, expected and conservative assumptions.

PPA Buyout Sensitivity Parameter	Expected Value	25-Year NPV			Range of Parameter Variation	
		Conservative (P90)	Expected (P50)	Optimistic (P10)	Conservative	Optimistic
Utility Annual Escalator	3.00%	$4,578,000	$6,772,000	$9,323,000	-32.4%	37.7%
System Production Degradation per Year	0.75%	$6,012,000	$6,772,000	$7,578,000	-11.2%	11.9%
PPA Buyout Price	7,503,520	$6,141,000	$6,772,000	$7,403,000	-9.3%	9.3%
PPA Price w/Soft Costs, PV Only, $/kWh	$0.1547	$6,443,000	$6,772,000	$7,088,000	-4.9%	4.7%
Annual O&M Cost, Purchase, $/kW	$30.00	$6,468,000	$6,772,000	$7,076,000	-4.5%	4.5%
PPA Host Legal & Admin Costs	2.0%	$6,558,000	$6,772,000	$6,879,000	-3.2%	1.6%
Intalled System Cost	$10,715,877	$6,702,000	$6,772,000	$6,836,000	-1.0%	0.9%
Tariff Rate Change Value Risk, per year	-0.10%	$6,711,000	$6,772,000	$6,833,000	-0.9%	0.9%
	Weighted Sensitivity:	$2,638,000	$6,772,000	$13,412,000		

Risk Analysis Results

The figures below present the variation in NPV for each sensitivity parameter and yearly cash flow variation under optimistic and conservative





25-year Sensitivity & Risk Analysis PPA Buyout, PV & BESS

San Mateo Foster City School District

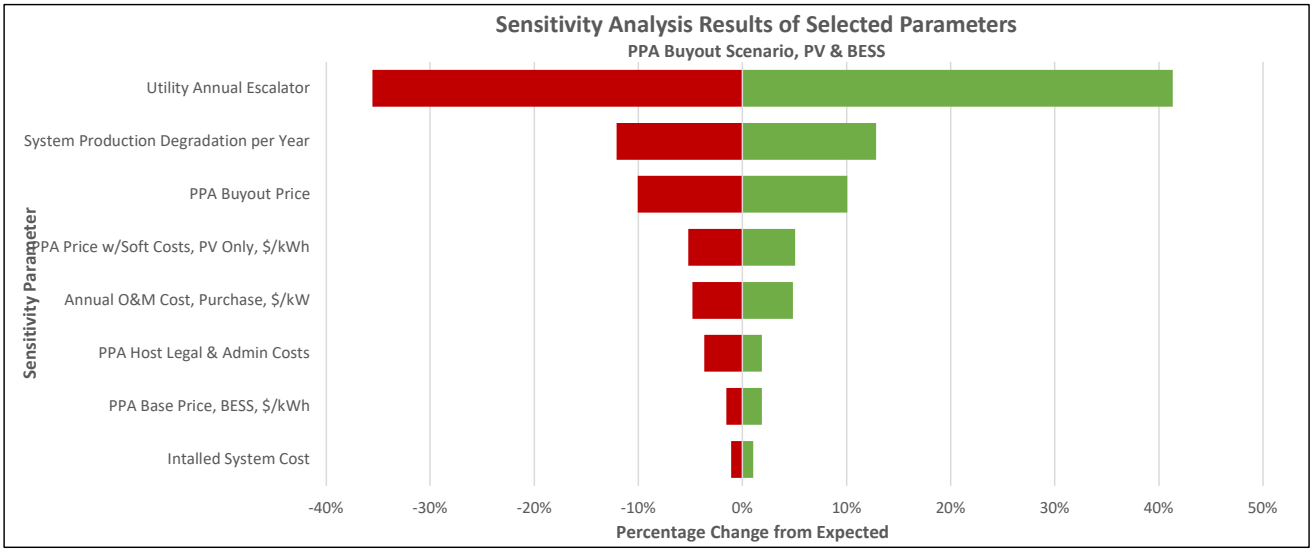
Parameters

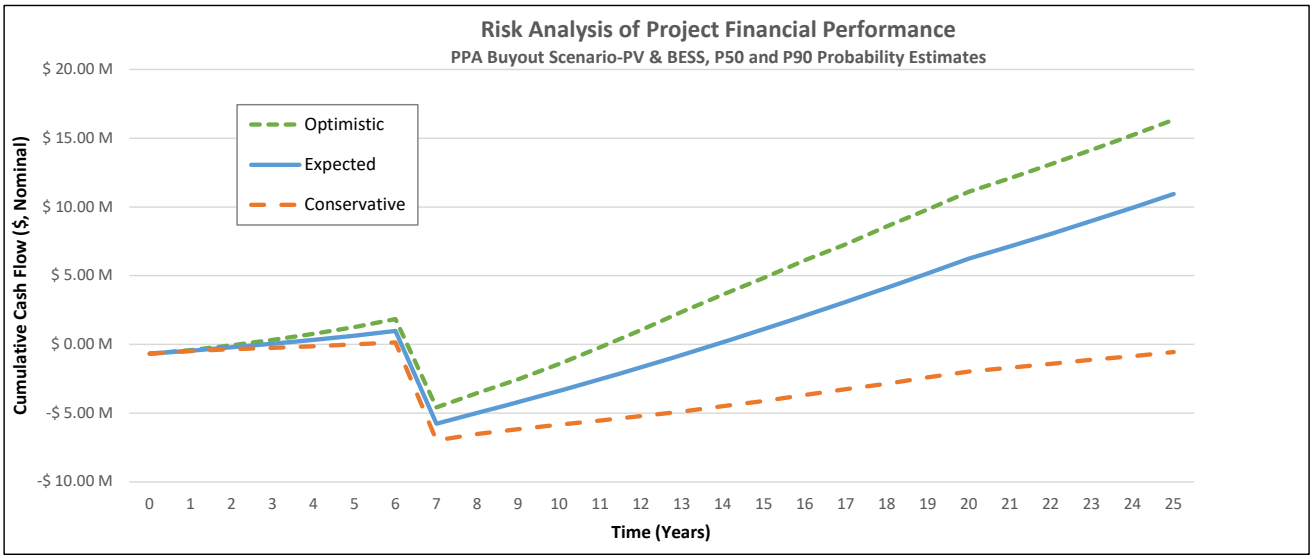
The table below presents the NPV savings and variation under optimistic, expected and conservative assumptions.

PPA Buyout Sensitivity Parameter	Expected Value	25-Year NPV			Range of Parameter Variation	
		Conservative (P90)	Expected (P50)	Optimistic (P10)	Conservative	Optimistic
Utility Annual Escalator	3.00%	$4,044,000	$6,275,000	$8,869,000	-35.5%	41.3%
System Production Degradation per Year	0.75%	$5,516,000	$6,275,000	$7,079,000	-12.1%	12.8%
PPA Buyout Price	7,503,520	$5,644,000	$6,275,000	$6,906,000	-10.1%	10.1%
PPA Price w/Soft Costs, PV Only, $/kWh	$0.1547	$5,946,000	$6,275,000	$6,591,000	-5.2%	5.0%
Annual O&M Cost, Purchase, $/kW	$30.00	$5,971,000	$6,275,000	$6,578,000	-4.8%	4.8%
PPA Host Legal & Admin Costs	2.0%	$6,044,000	$6,275,000	$6,390,000	-3.7%	1.8%
PPA Base Price, BESS, $/kWh	$0.0054	$6,177,000	$6,275,000	$6,392,000	-1.6%	1.9%
Intalled System Cost	$10,715,877	$6,205,000	$6,275,000	$6,338,000	-1.1%	1.0%
	Weighted Sensitivity:	-$1,580,000	$6,275,000	$10,268,000		

Risk Analysis Results

The figures below present the variation in NPV for each sensitivity parameter and yearly cash flow variation under optimistic and conservative





25-year Sensitivity & Risk Analysis Lease, PV Only

San Mateo Foster City School District

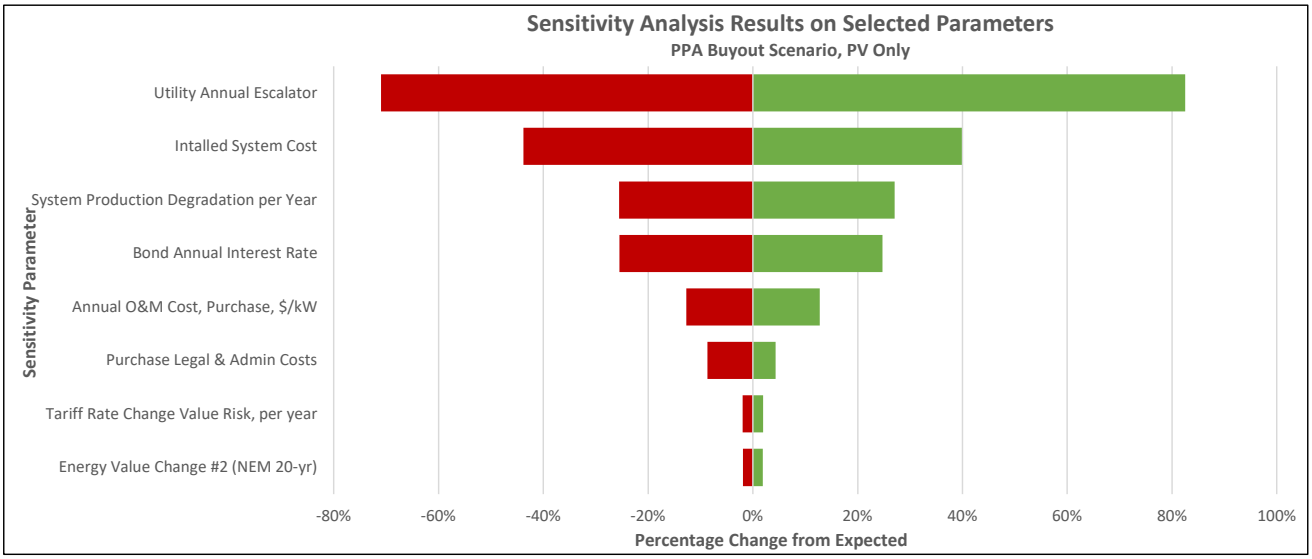
Parameters

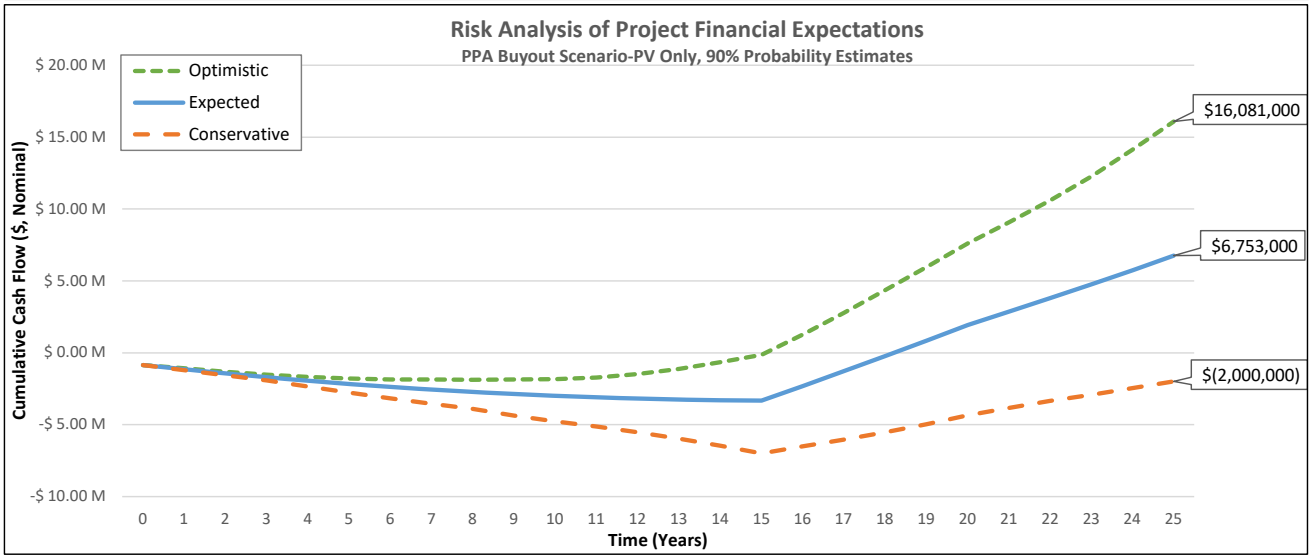
The table below presents the NPV savings and variation under optimistic, expected and conservative assumptions.

		25-Year NPV			Range of Parameter Variation	
Lease Sensitivity Parameter	Expected Value	Optimistic (P10)	Expected (P50)	Conservative (P90)	Conservative	Optimistic
Utility Annual Escalator	3.0%	$5,642,000	$3,091,000	$898,000	-71.0%	82.5%
Intalled System Cost	$10,715,877	$4,323,000	$3,091,000	$1,736,000	-43.8%	39.9%
System Production Degradation per Year	0.75%	$3,927,000	$3,091,000	$2,301,000	-25.6%	27.0%
Bond Annual Interest Rate	4.50%	$3,855,000	$3,091,000	$2,303,000	-25.5%	24.7%
Annual O&M Cost, Purchase, $/kW	$30.00	$3,485,000	$3,091,000	$2,697,000	-12.7%	12.7%
Purchase Legal & Admin Costs	2.5%	$3,225,000	$3,091,000	$2,823,000	-8.7%	4.3%
Tariff Rate Change Value Risk, per year	-0.10%	$3,152,000	$3,091,000	$3,030,000	-2.0%	2.0%
Energy Value Change #2 (NEM 20-yr)	-15.0%	$3,149,000	$3,091,000	$3,033,000	-1.9%	1.9%
Weighted Sensitivity:		$9,186,000	$3,091,000	-$2,854,000		

Risk Analysis Results

The figures below present the variation in NPV for each sensitivity parameter and yearly cash flow variation under optimistic and conservative





25-year Sensitivity & Risk Analysis Lease, PV & BESS

San Mateo Foster City School District

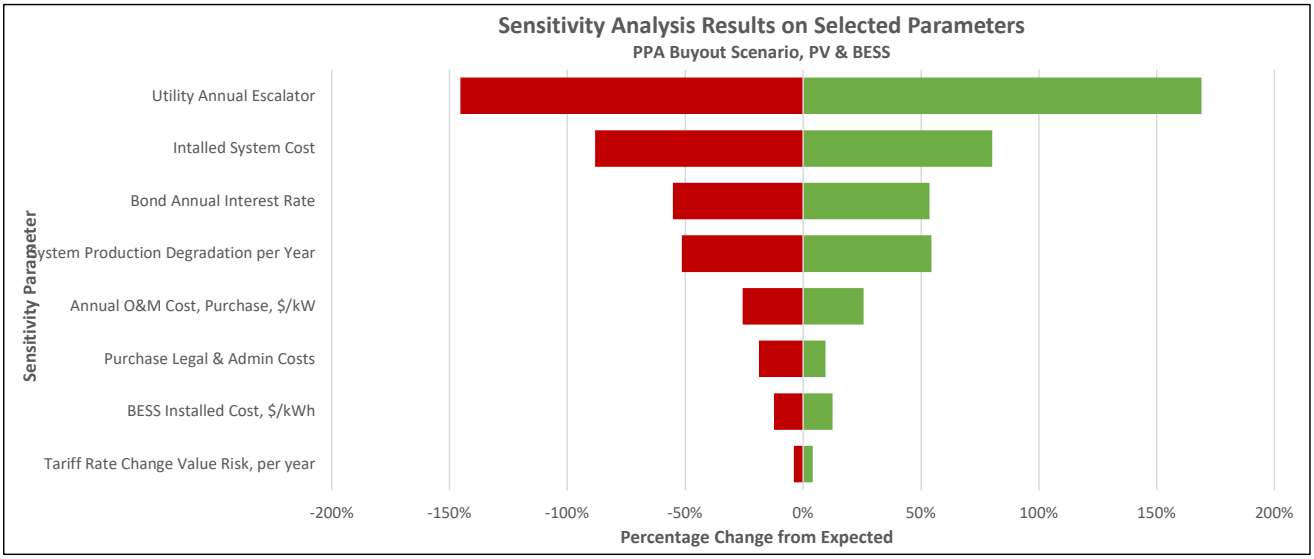
Parameters

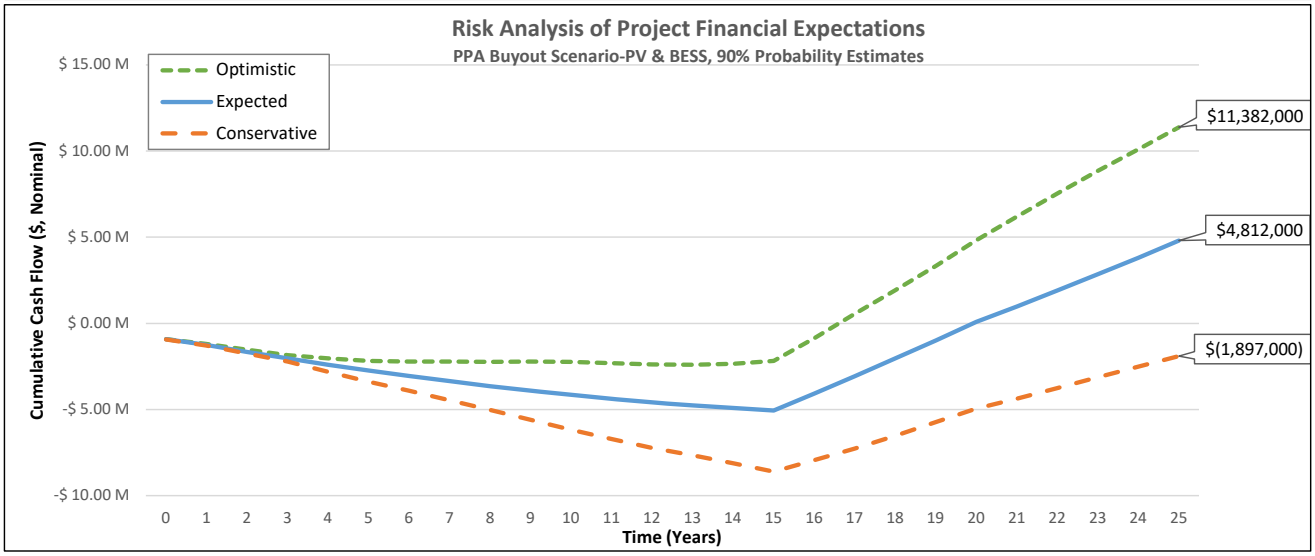
The table below presents the NPV savings and variation under optimistic, expected and conservative assumptions.

		25-Year NPV			Range of Parameter Variation	
Lease Sensitivity Parameter	Expected Value	Optimistic (P10)	Expected (P50)	Conservative (P90)	Conservative	Optimistic
Utility Annual Escalator	3.0%	$4,129,000	$1,535,000	-$695,000	-145.3%	168.9%
Intalled System Cost	$10,715,877	$2,766,000	$1,535,000	$181,000	-88.2%	80.2%
Bond Annual Interest Rate	4.50%	$2,358,000	$1,535,000	$687,000	-55.3%	53.6%
System Production Degradation per Year	0.75%	$2,371,000	$1,535,000	$745,000	-51.5%	54.4%
Annual O&M Cost, Purchase, $/kW	$30.00	$1,929,000	$1,535,000	$1,141,000	-25.7%	25.7%
Purchase Legal & Admin Costs	2.5%	$1,680,000	$1,535,000	$1,247,000	-18.8%	9.4%
BESS Installed Cost, $/kWh	$1,150	$1,727,000	$1,535,000	$1,344,000	-12.5%	12.5%
Tariff Rate Change Value Risk, per year	-0.10%	$1,597,000	$1,535,000	$1,474,000	-4.0%	4.0%
Weighted Sensitivity:		$6,091,000	$1,535,000	-$3,184,000		

Risk Analysis Results

The figures below present the variation in NPV for each sensitivity parameter and yearly cash flow variation under optimistic and conservative





Attachment D. PV Design

For each site evaluated in this study, Attachment D includes site detail packet:

1. Conceptual Design PV Layouts
2. Helioscope Annual Production Reports

Audubon ES

841 Gull Avenue, Foster City, CA 94404

PV Target (Estimated)

	Nameplate (kWp)	Production (kWh)
Target Production	255	427,500
PV Shown	151	238,500

Notes

1. Battery Energy Storage System (BESS) location is preliminary and to be finalized if pursued further.

San Mateo-Foster City School District Solar
Preliminary Siting
9/9/2021

SAGE ENERGY CONSULTING

Bayside Academy

2025 Kehoe Avenue, Foster City, CA 94404

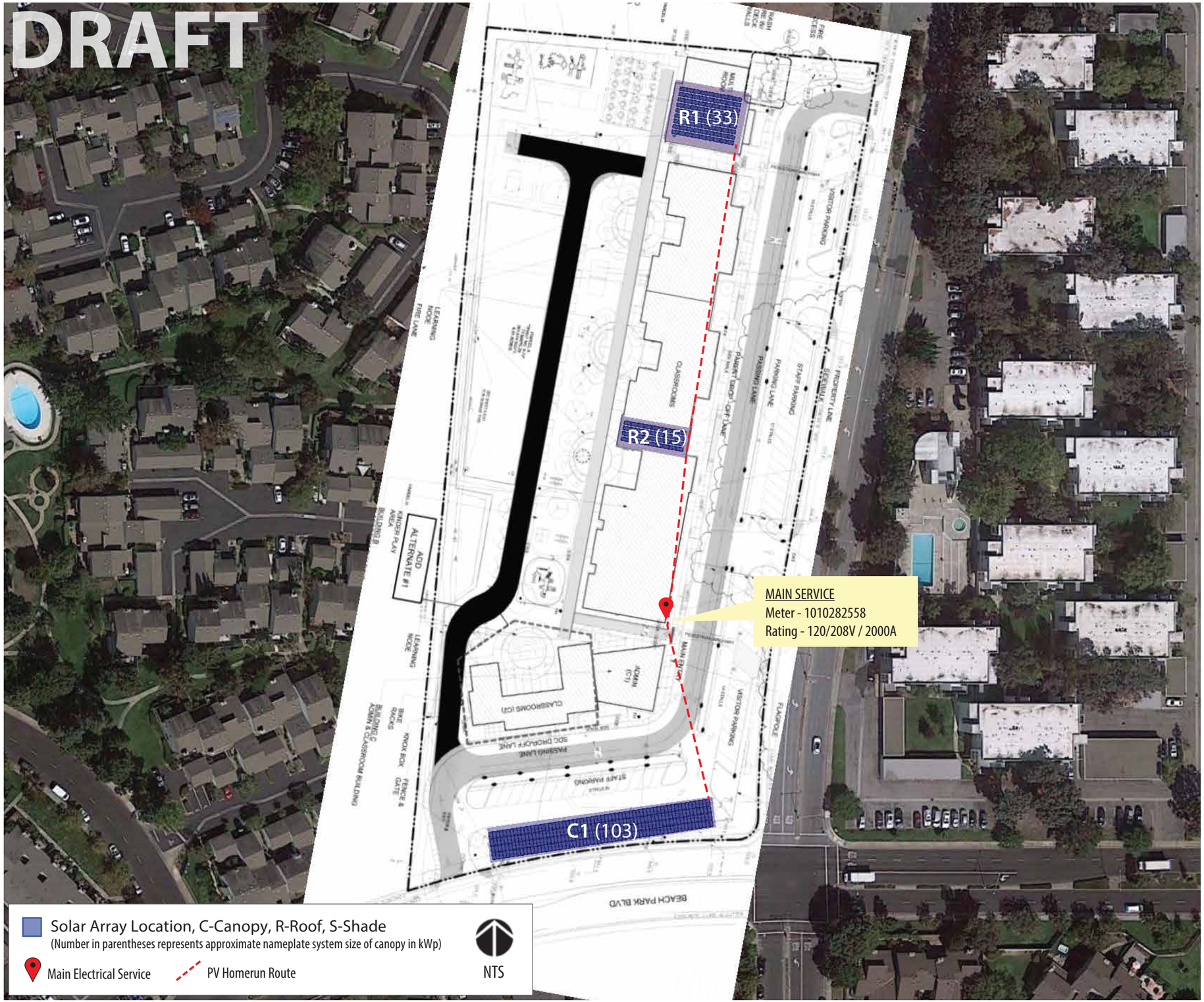
PV Target (Estimated)

	Nameplate (kWp)	Production (kWh)
Target Production	320	493,700
PV Shown	319	489,300

Notes

San Mateo-Foster City School District Solar
Preliminary Siting
9/9/2021

SAGE ENERGY CONSULTING



Beach Park ES

1050 Shell Boulevard, Foster City, CA 94404

PV Target (Estimated)

	Nameplate (kWp)	Production (kWh)
Target Production	151	245,900
PV Shown	151	245,900

Notes

San Mateo-Foster City School District Solar
Preliminary Siting
9/9/2021

SAGE ENERGY CONSULTING

Borel MS

425 Barneson Avenue, San Mateo, CA 94402

PV Target (Estimated)

	Nameplate (kWp)	Production (kWh)
Target Production	315	527,900
PV Shown	234	374,600

Notes

1. Battery Energy Storage System (BESS) location is preliminary and to be finalized if pursued further.

San Mateo-Foster City School District Solar
Preliminary Siting
9/9/2021

SAGE ENERGY CONSULTING

Brewer Island ES

1151 Polynesia Dr, Foster City, CA 94404

PV Target (Estimated)

	Nameplate (kWp)	Production (kWh)
Target Production	185	309,200
PV Shown	162	256,300

Notes

1. Battery Energy Storage System (BESS) location is preliminary and to be finalized if pursued further.

San Mateo-Foster City School District Solar
Preliminary Siting
9/9/2021

SAGE ENERGY CONSULTING

DRAFT

Child Nutrition Center

1146 19th Ave, San Mateo, CA 94403

PV Target (Estimated)

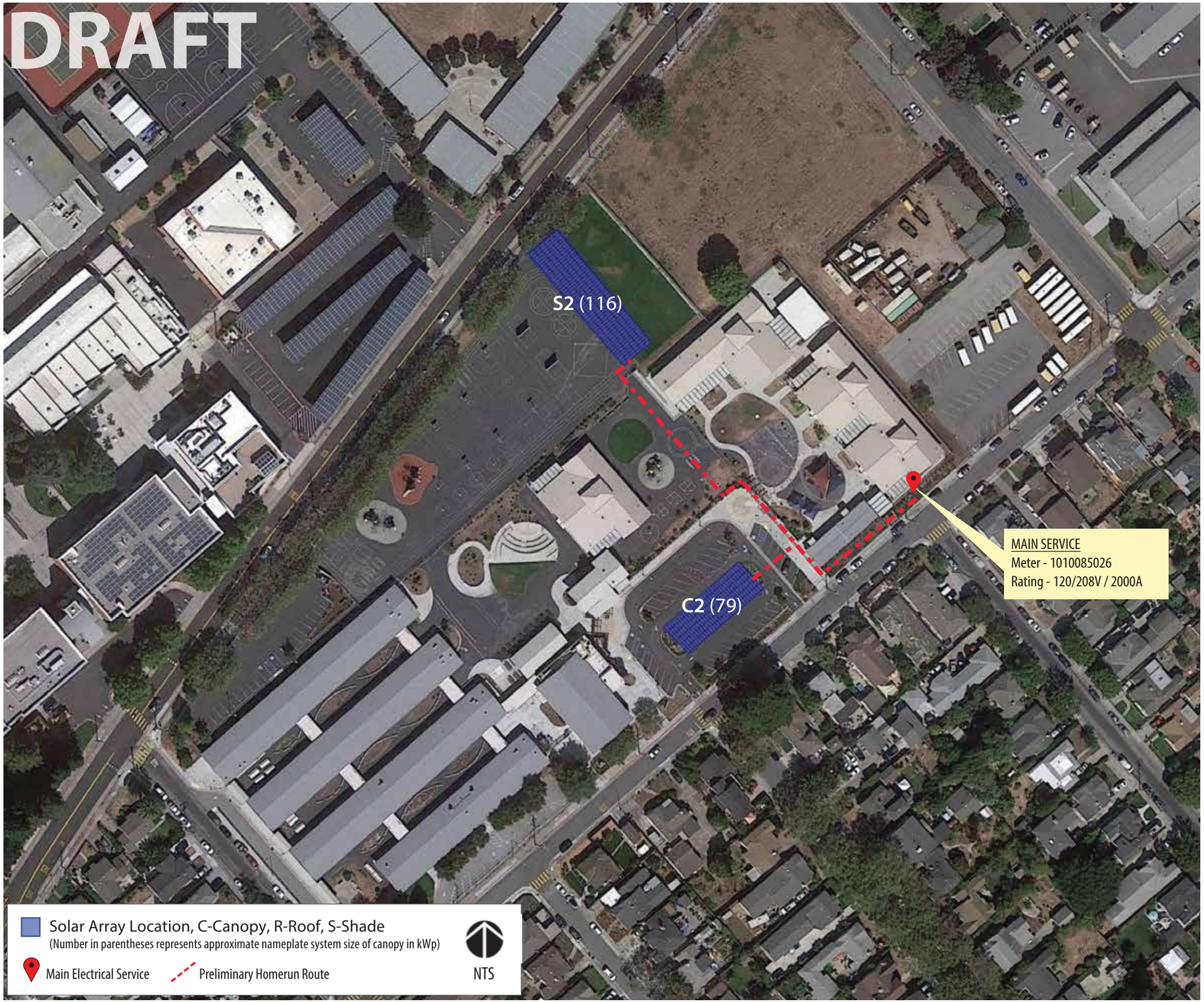
	Nameplate (kWp)	Production (kWh)
Target Production	140	235,200
PV Shown	94	129,100

Notes

1. Battery Energy Storage System (BESS) location is preliminary and to be finalized if pursued further.

San Mateo-Foster City School District Solar
Preliminary Siting
9/9/2021

SAGE ENERGY CONSULTING



College Park ES and Turnbull

715A Indian Avenue, San Mateo, CA 94401

PV Target (Estimated)

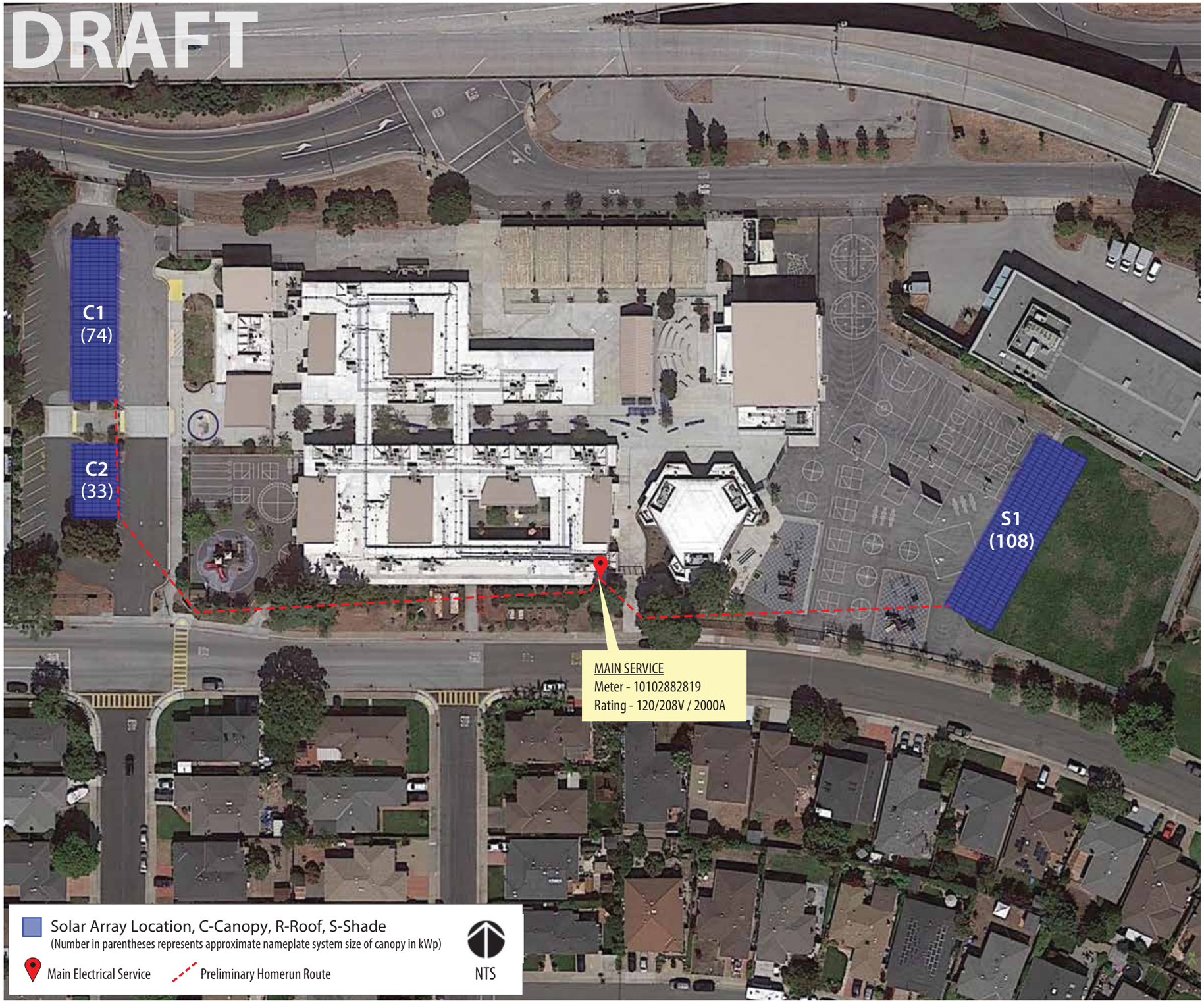
	Nameplate (kWp)	Production (kWh)
Target Production	215	237,500
PV Shown	195	297,200

Notes

1. College Park and Turnbull are contiguous sites and are treated as a single site with multiple services for NEMA considerations.
2. Turnbull is NEMA-Generating and College Park is NEMA-Benefitting.
3. The PV system is interconnected with Turnbull service but offsets energy consumption at both sites.
4. PV systems may be moved to the adjacent empty lot.

San Mateo-Foster City School District Solar
Preliminary Siting
9/9/2021

SAGE ENERGY CONSULTING



Fiesta Gardens ES

1001 Bermuda Drive, San Mateo, CA 94403

PV Target (Estimated)

	Nameplate (kWp)	Production (kWh)
Target Production	215	329,900
PV Shown	215	329,900

Notes

San Mateo-Foster City School District Solar
Preliminary Siting
9/9/2021

SAGE ENERGY CONSULTING

Foster City ES

461 Beach Park Blvd, Foster City, CA 94404

PV Target (Estimated)

	Nameplate (kWp)	Production (kWh)
Target Production	295	488,600
PV Shown	189	302,200

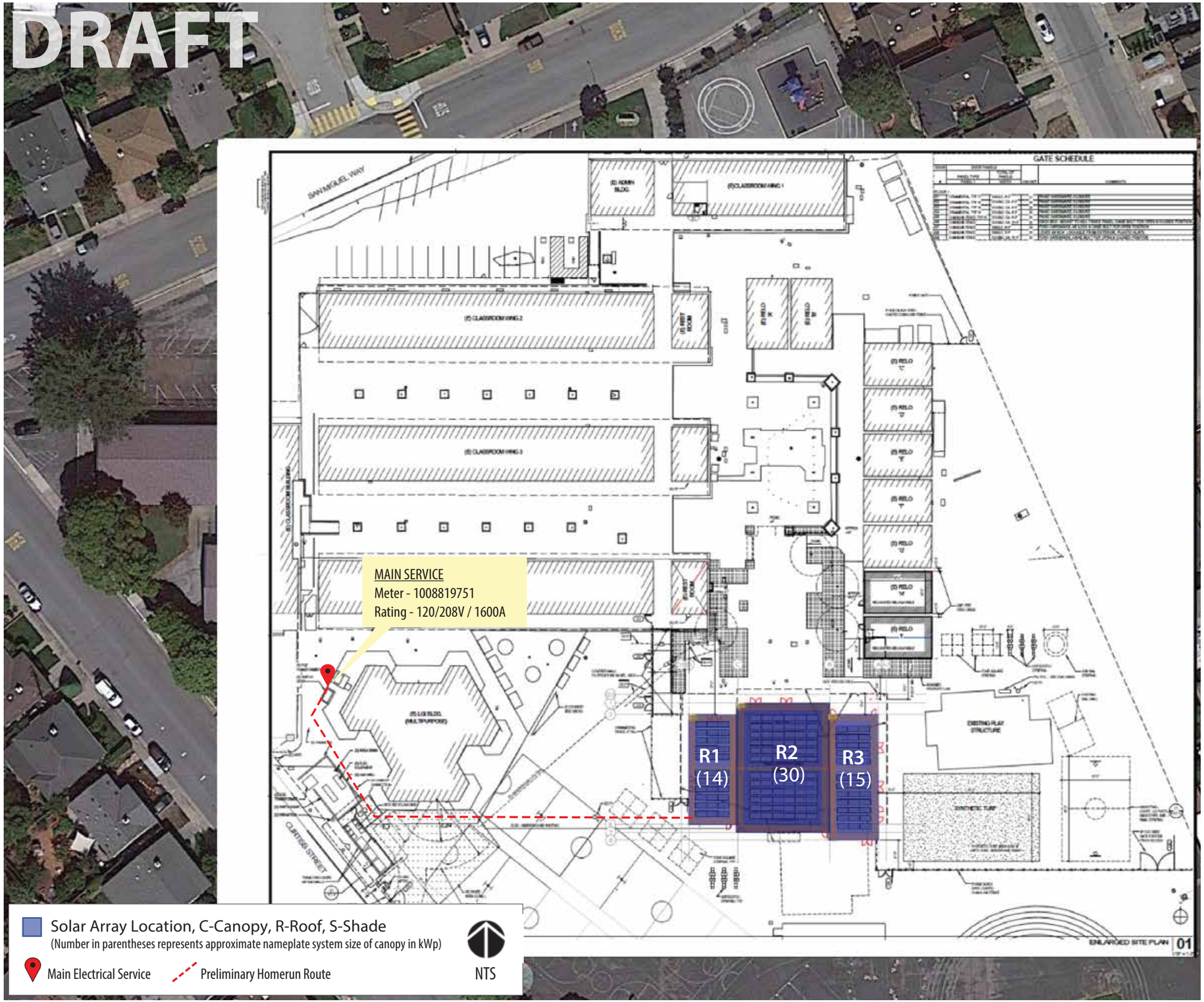
Notes

1. Battery Energy Storage System (BESS) location is preliminary and to be finalized if pursued further.

San Mateo-Foster City School District Solar
Preliminary Siting
9/9/2021

SAGE ENERGY CONSULTING

DRAFT



George Hall ES

130 San Miguel Way, San Mateo, CA 94403

PV Target (Estimated)

	Nameplate (kWp)	Production (kWh)
Target Production	145	237,700
PV Shown	59	90,600

Notes

1. Rooftop PV systems R1, R2, and R3 are being considered on top of new building's solar-ready roofs.
2. The new building has not been constructed yet.

San Mateo-Foster City School District Solar
Preliminary Siting
9/9/2021

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Highlands ES

2320 Newport Street, San Mateo, CA 94402

PV Target (Estimated)

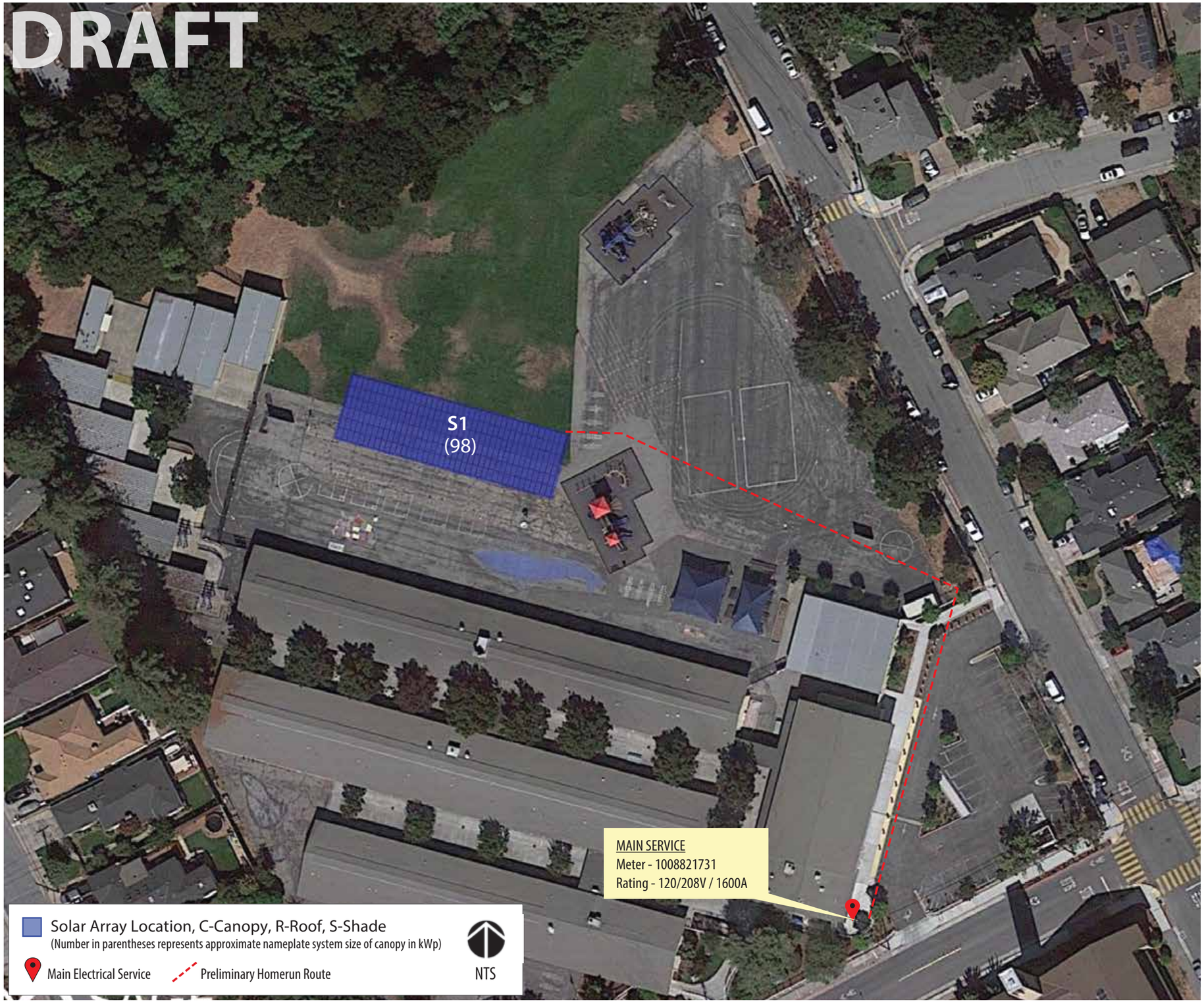
	Nameplate (kWp)	Production (kWh)
Target Production	120	199,200
PV Shown	46	69,300

Notes

1. Rooftop PV systems R1, and R2 are being considered on top of new building's solar-ready roofs.
2. The new building has not been constructed yet.

San Mateo-Foster City School District Solar
Preliminary Siting
9/9/2021

SAGE ENERGY CONSULTING



Laurel ES

316 W. 36th Avenue, San Mateo, CA 94403

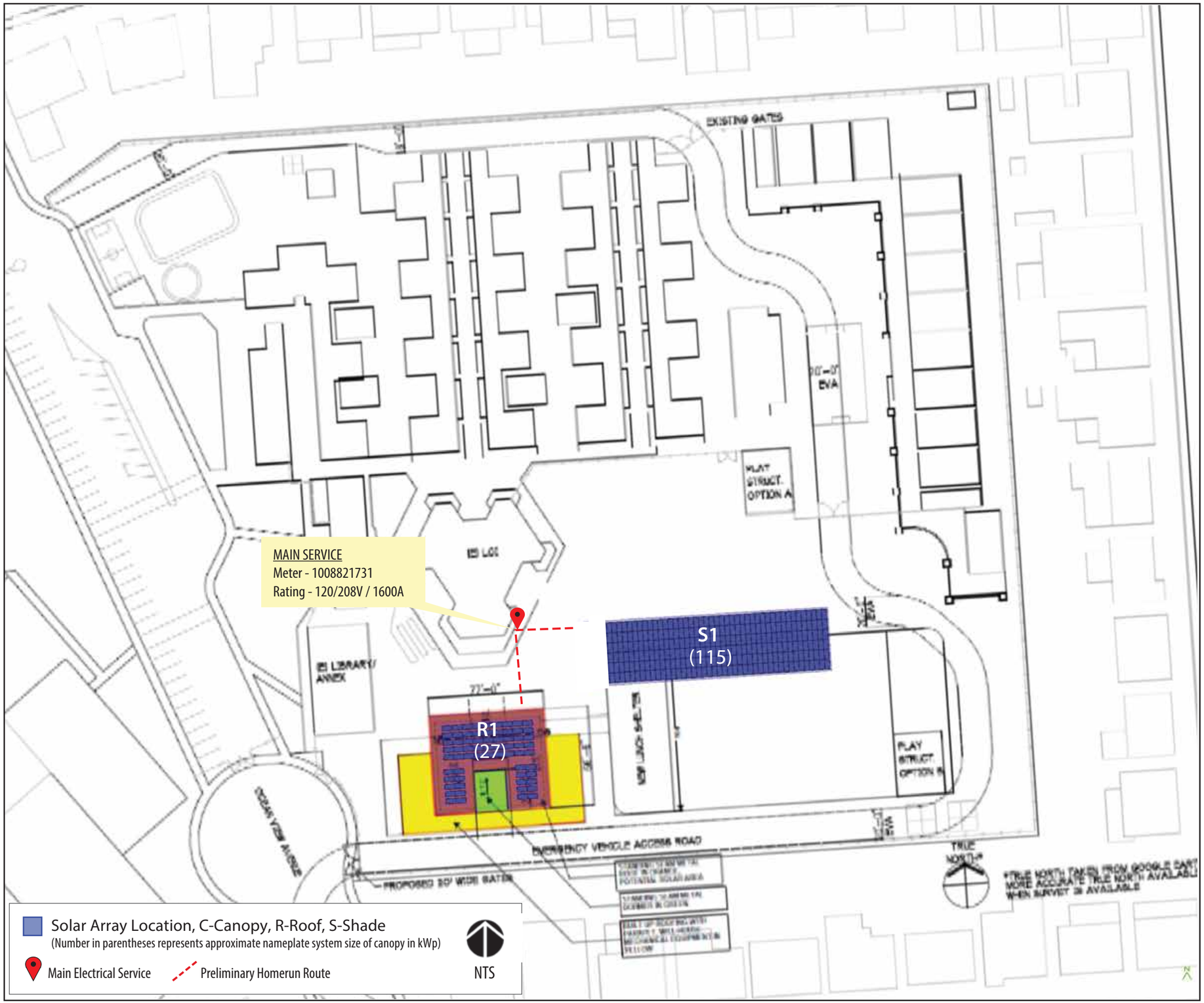
PV Target (Estimated)

	Nameplate (kWp)	Production (kWh)
Target Production	135	223,300
PV Shown	98	160,100

Notes

San Mateo-Foster City School District Solar
Preliminary Siting
9/9/2021

SAGE ENERGY CONSULTING



LEAD ES

949 Ocean View Avenue, San Mateo, CA 94401

PV Target (Estimated)

	Nameplate (kWp)	Production (kWh)
Target Production	205	335,100
PV Shown	142	231,400

Notes

1. Rooftop PV system R1 is being considered on top of new MPR's solar-ready roofs.
2. The new MPR building has not been constructed yet.
3. Shade canopy system S1 can be over the "New Lunch Area" to the east of the new MPR. There may be a slight reduction in the PV capacity if this option is chosen.

San Mateo-Foster City School District Solar
Preliminary Siting
9/13/2021

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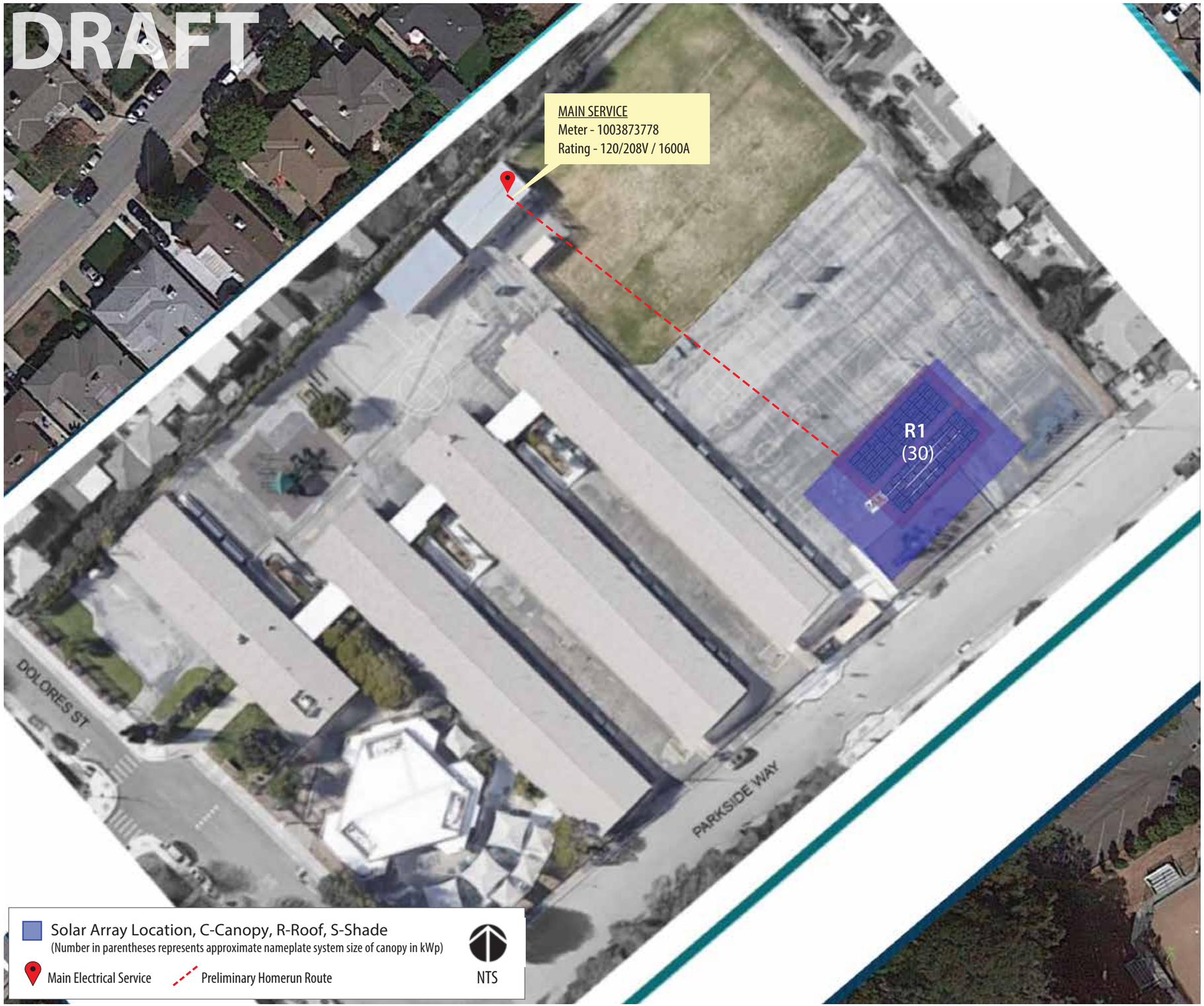


Meadow Heights ES

2619 Dolores Street, San Mateo, CA 94403

PV Target (Estimated)

	Nameplate (kWp)	Production (kWh)
Target Production	140	214,700
PV Shown	30	44,800

Notes

1. Rooftop PV system R1 is being considered on top of new building's solar-ready roof.
2. The new building has not been constructed yet.

San Mateo-Foster City School District Solar
Preliminary Siting
9/13/2021

SAGE ENERGY CONSULTING

Parkside Montessori

1685 Eisenhower Street, San Mateo, CA 94403

PV Target (Estimated)

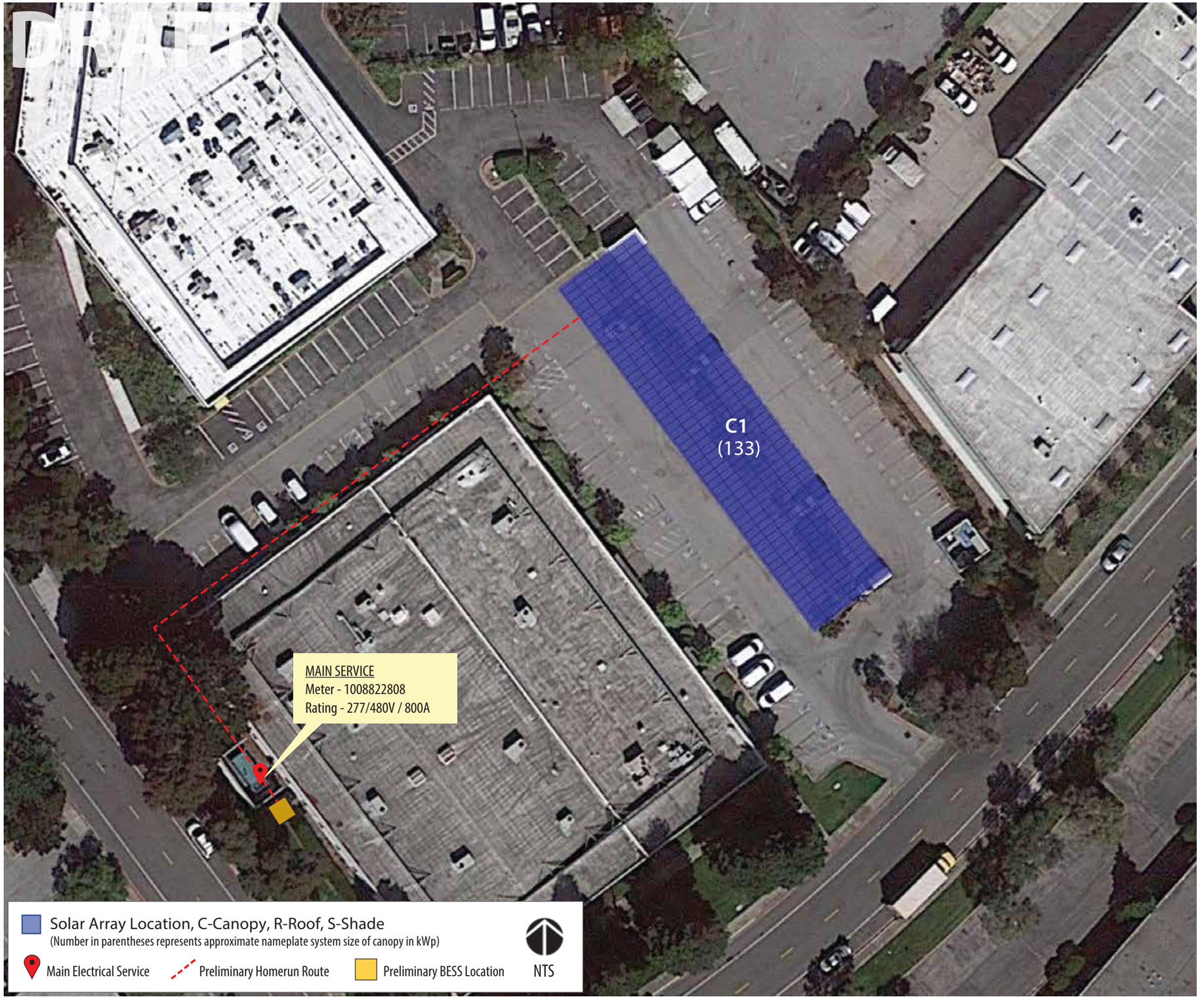
	Nameplate (kWp)	Production (kWh)
Target Production	175	273,200
PV Shown	175	273,200

Notes

1. Rooftop PV system R1 is being considered on new MPR's solar-ready roof.
2. The new MPR building has not been constructed yet and may be located in a different area than shown.

San Mateo-Foster City School District Solar
Preliminary Siting
9/9/2021

SAGE ENERGY CONSULTING



SMFC District Office

1170 Chess Dr. Foster City CA 94404

PV Target (Estimated)

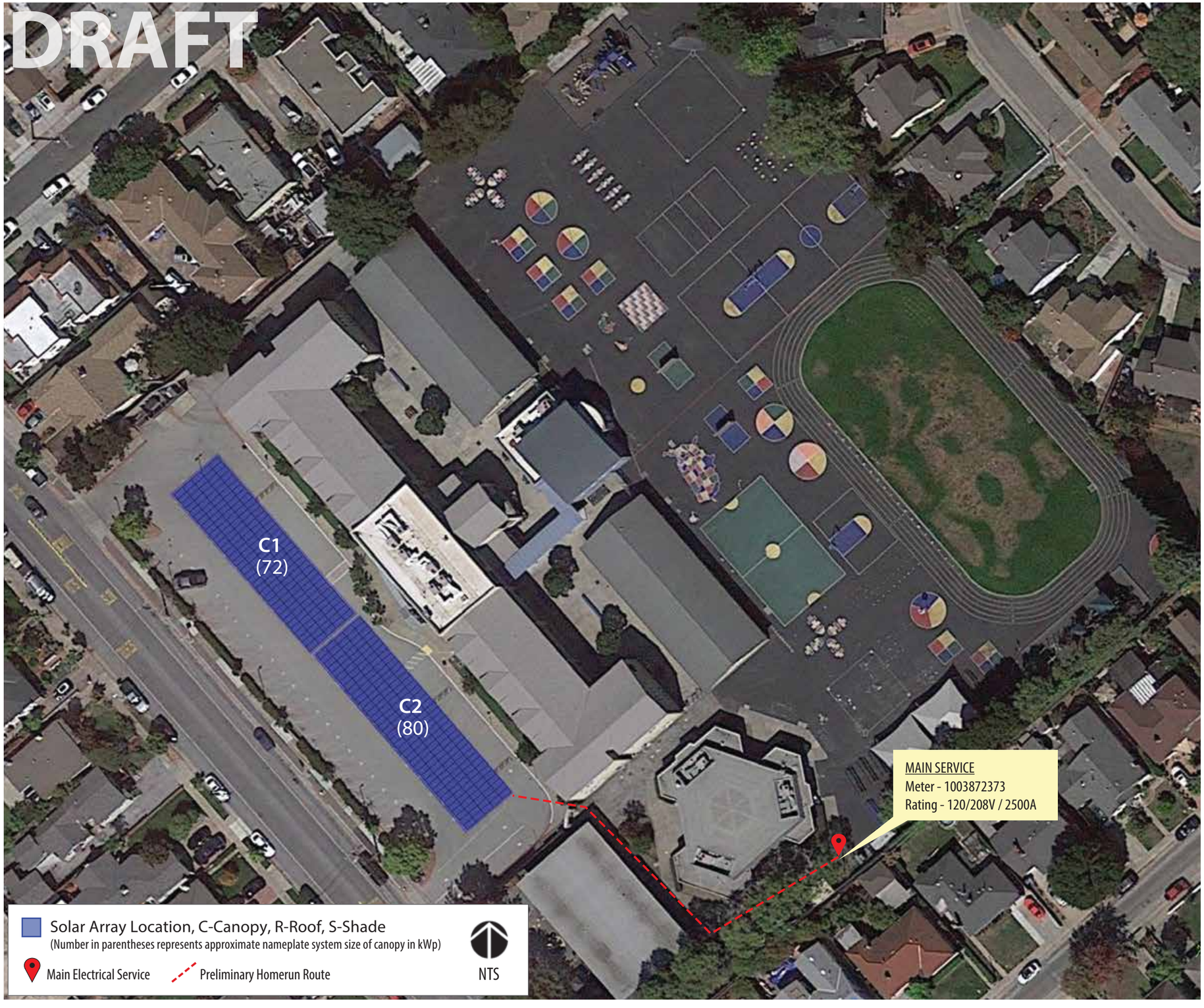
	Nameplate (kWp)	Production (kWh)
Target Production	275	455,300
PV Shown	133	209,000

Notes

1. Battery Energy Storage System (BESS) location is preliminary and to be finalized if pursued further.

San Mateo-Foster City School District Solar
Preliminary Siting
9/9/2021

SAGE ENERGY CONSULTING



Sunnybrae ES

1031 S. Delaware Street, San Mateo, CA 94402

PV Target (Estimated)

	Nameplate (kWp)	Production (kWh)
Target Production	180	302,900
PV Shown	152	229,200

Notes

1. The new MPR building for the school site has not been constructed yet and the new MPR's solar-ready roof could have additional PV.

San Mateo-Foster City School District Solar
Preliminary Siting
9/9/2021

SAGE ENERGY CONSULTING

Audubon ES

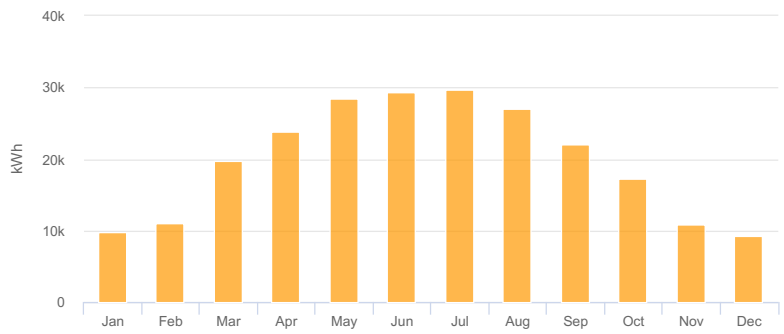
Report

Project Name	San Mateo Foster City SMFCSD
Project Address	1450 Tarpon Street Foster City, CA 94404
Prepared For	SMFCSD
Prepared By	David Williard david@sagerenew.com

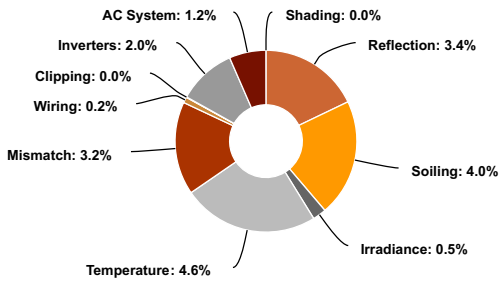
System Metrics

Design	Audubon ES
Module DC Nameplate	150.9 kW
Inverter AC Nameplate	150.0 kW Load Ratio: 1.01
Annual Production	238.5 MWh
Performance Ratio	82.9%
kWh/kWp	1,580.8
Weather Dataset	TMY, 10km grid (37.55,-122.25), NREL (prospector)
Simulator Version	32d623a7ec-be57a81186-5f88df888e-db8a00436a

Monthly Production



Sources of System Loss



Annual Production

	Description	Output	% Delta
Irradiance (kWh/m²)	Annual Global Horizontal Irradiance	1,827.8	
	POA Irradiance	1,907.2	4.3%
	Shaded Irradiance	1,907.1	0.0%
	Irradiance after Reflection	1,841.9	-3.4%
	Irradiance after Soiling	1,768.2	-4.0%
	Total Collector Irradiance	**1,768.2**	**0.0%**
Energy (kWh)	Nameplate	268,697.1	
	Output at Irradiance Levels	267,447.1	-0.5%
	Output at Cell Temperature Derate	255,043.5	-4.6%
	Output After Mismatch	246,949.4	-3.2%
	Optimal DC Output	246,465.2	-0.2%
	Constrained DC Output	246,431.8	0.0%
	Inverter Output	241,531.0	-2.0%
	Energy to Grid	**238,511.9**	**-1.2%**
Temperature Metrics			
	Avg. Operating Ambient Temp		15.5 °C
	Avg. Operating Cell Temp		27.9 °C
Simulation Metrics			
	Operating Hours		4657
	Solved Hours		4657

Condition Set

Description	Condition Set 1
Weather Dataset	TMY, 10km grid (37.55,-122.25), NREL (prospector)
Solar Angle Location	Meteo Lat/Lng
Transposition Model	Perez Model
Temperature Model	Sandia Model

Temperature Model Parameters

Rack Type	a	b	Temperature Delta
Fixed Tilt	-3.56	-0.075	3°C
Flush Mount	-2.81	-0.0455	0°C
East-West	-3.56	-0.075	3°C
Carport	-3.56	-0.075	3°C

Soiling (%)

J	F	M	A	M	J	J	A	S	O	N	D
4	4	4	4	4	4	4	4	4	4	4	4

Irradiation Variance	5%
Cell Temperature Spread	4° C
Module Binning Range	0% to 1.3%
AC System Derate	1.25%

Module Characterizations

Module	Uploaded By	Characterization
LG410N2W-V5 (LG)	Folsom Labs	Spec Sheet Characterization, PAN

Component Characterizations

Device	Uploaded By	Characterization
Sunny Tripower_Core1 50-US-41 (SMA)	Folsom Labs	Default Characterization

Components

Component	Name	Count
Inverters	Sunny Tripower_Core1 50-US-41 (SMA)	3 (150.0 kW)
Home Runs	1/0 AWG (Copper)	6 (219.3 ft)
Combiners	3 input Combiner	3
Combiners	4 input Combiner	3
Strings	10 AWG (Copper)	21 (1,048.5 ft)
Module	LG, LG410N2W-V5 (410W)	368 (150.9 kW)

Wiring Zones

Description	Combiner Poles	String Size	Stringing Strategy
Wiring Zone	12	15-19	Along Racking

Field Segments

Description	Racking	Orientation	Tilt	Azimuth	Intrarow Spacing	Frame Size	Frames	Modules	Power
R-1	Flush Mount	Landscape (Horizontal)	5°	206.33191°	1.9 ft	1x1	128	128	52.5 kW
S-2	Carport	Portrait (Vertical)	7°	213.16896°	1.9 ft	6x1	40	240	98.4 kW

Detailed Layout

Bayside Academy

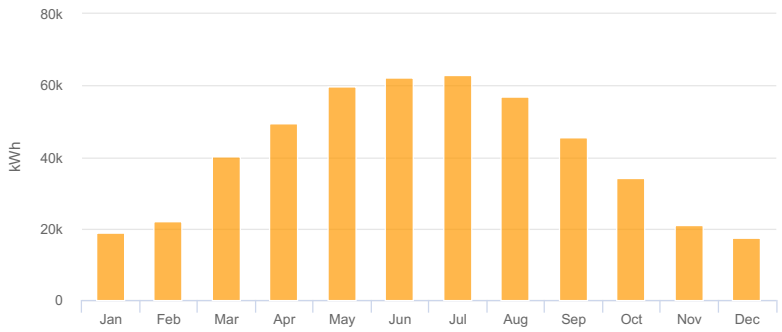
Report

Project Name	San Mateo Foster City SMFCSD
Project Address	1450 Tarpon Street Foster City, CA 94404
Prepared For	SMFCSD
Prepared By	David Williard david@sagerenew.com

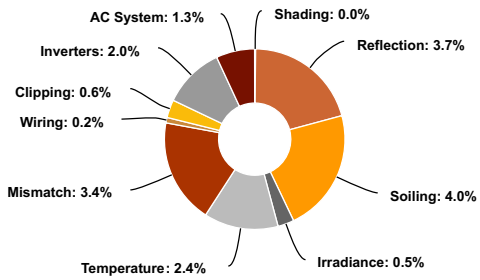
System Metrics

Design	Bayside Academy
Module DC Nameplate	319.8 kW
Inverter AC Nameplate	250.0 kW Load Ratio: 1.28
Annual Production	489.4 MWh
Performance Ratio	83.8%
kWh/kWp	1,530.5
Weather Dataset	TMY, 10km grid (37.55,-122.25), NREL (prospector)
Simulator Version	74229d5799-f58a9b0c56-a978769182-27e179afda

Monthly Production



Sources of System Loss



Annual Production

	Description	Output	% Delta
Irradiance (kWh/m²)	Annual Global Horizontal Irradiance	1,827.8	
	POA Irradiance	1,826.1	-0.1%
	Shaded Irradiance	1,825.5	0.0%
	Irradiance after Reflection	1,757.3	-3.7%
	Irradiance after Soiling	1,687.0	-4.0%
	Total Collector Irradiance	**1,687.0**	**0.0%**
Energy (kWh)	Nameplate	543,361.4	
	Output at Irradiance Levels	540,499.5	-0.5%
	Output at Cell Temperature Derate	527,456.8	-2.4%
	Output After Mismatch	509,559.0	-3.4%
	Optimal DC Output	508,666.0	-0.2%
	Constrained DC Output	505,704.7	-0.6%
	Inverter Output	495,638.2	-2.0%
	Energy to Grid	**489,442.7**	**-1.3%**
Temperature Metrics			
	Avg. Operating Ambient Temp		15.5 °C
	Avg. Operating Cell Temp		24.1 °C
Simulation Metrics			
	Operating Hours		4657
	Solved Hours		4657

Condition Set

Description	Condition Set 1
Weather Dataset	TMY, 10km grid (37.55,-122.25), NREL (prospector)
Solar Angle Location	Meteo Lat/Lng
Transposition Model	Perez Model
Temperature Model	Sandia Model

Temperature Model Parameters

Rack Type	a	b	Temperature Delta
Fixed Tilt	-3.56	-0.075	3°C
Flush Mount	-2.81	-0.0455	0°C
East-West	-3.56	-0.075	3°C
Carport	-3.56	-0.075	3°C

Soiling (%)

J	F	M	A	M	J	J	A	S	O	N	D
4	4	4	4	4	4	4	4	4	4	4	4

Irradiation Variance	5%
Cell Temperature Spread	4° C
Module Binning Range	0% to 1.3%
AC System Derate	1.25%

Module Characterizations

Module	Uploaded By	Characterization
LG410N2W-V5 (LG)	Folsom Labs	Spec Sheet Characterization, PAN

Component Characterizations

Device	Uploaded By	Characterization
Sunny Tripower_Core1 50-US-41 (SMA)	Folsom Labs	Default Characterization

Components

Component	Name	Count
Inverters	Sunny Tripower_Core1 50-US-41 (SMA)	5 (250.0 kW)
Home Runs	1/0 AWG (Copper)	10 (489.7 ft)
Combiners	4 input Combiner	5
Combiners	5 input Combiner	5
Strings	10 AWG (Copper)	45 (3,495.8 ft)
Module	LG, LG410N2W-V5 (410W)	780 (319.8 kW)

Wiring Zones

Description	Combiner Poles	String Size	Stringing Strategy
Wiring Zone	12	15-19	Along Racking

Field Segments

Description	Racking	Orientation	Tilt	Azimuth	Intrarow Spacing	Frame Size	Frames	Modules	Power
S-1	Carport	Portrait (Vertical)	7°	0.47856393°	1.6 ft	6x1	64	384	157.4 kW
C-1	Carport	Portrait (Vertical)	7°	180.7283°	1.6 ft	6x1			0
C-2	Carport	Portrait (Vertical)	7°	180.7283°	1.6 ft	6x1			0
R-1	Flush Mount	Landscape (Horizontal)	5°	180.7283°	1.6 ft	1x1			0
S-2	Carport	Portrait (Vertical)	7°	180.16574°	1.6 ft	6x1	66	396	162.4 kW

Detailed Layout

Beach Park ES

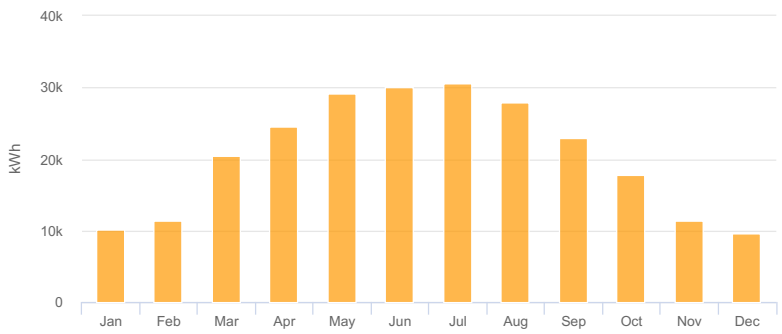
Report

Project Name	San Mateo Foster City SMFCSD
Project Address	1450 Tarpon Street Foster City, CA 94404
Prepared For	SMFCSD
Prepared By	David Williard david@sagerenew.com

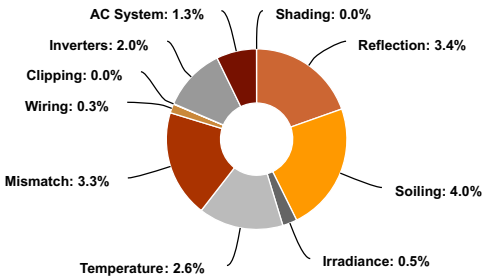
System Metrics

Design	Beach Park ES
Module DC Nameplate	151.3 kW
Inverter AC Nameplate	150.0 kW Load Ratio: 1.01
Annual Production	245.9 MWh
Performance Ratio	84.5%
kWh/kWp	1,625.5
Weather Dataset	TMY, 10km grid (37.55,-122.25), NREL (prospector)
Simulator Version	e2238d69b7-7405e28364-14e4487edb-3db1ffd089

Monthly Production



Sources of System Loss



Annual Production

	Description	Output	% Delta
Irradiance (kWh/m²)	Annual Global Horizontal Irradiance	1,827.8	
	POA Irradiance	1,923.9	5.3%
	Shaded Irradiance	1,923.9	0.0%
	Irradiance after Reflection	1,858.7	-3.4%
	Irradiance after Soiling	1,784.3	-4.0%
	Total Collector Irradiance	**1,784.3**	**0.0%**
Energy (kWh)	Nameplate	271,893.2	
	Output at Irradiance Levels	270,665.5	-0.5%
	Output at Cell Temperature Derate	263,540.1	-2.6%
	Output After Mismatch	254,771.3	-3.3%
	Optimal DC Output	254,054.4	-0.3%
	Constrained DC Output	254,020.3	0.0%
	Inverter Output	249,029.1	-2.0%
	Energy to Grid	**245,916.3**	**-1.3%**
Temperature Metrics			
	Avg. Operating Ambient Temp		15.5 °C
	Avg. Operating Cell Temp		24.6 °C
Simulation Metrics			
	Operating Hours		4657
	Solved Hours		4657

Condition Set

Description	Condition Set 1
Weather Dataset	TMY, 10km grid (37.55,-122.25), NREL (prospector)
Solar Angle Location	Meteo Lat/Lng
Transposition Model	Perez Model
Temperature Model	Sandia Model

Temperature Model Parameters

Rack Type	a	b	Temperature Delta
Fixed Tilt	-3.56	-0.075	3°C
Flush Mount	-2.81	-0.0455	0°C
East-West	-3.56	-0.075	3°C
Carport	-3.56	-0.075	3°C

Soiling (%)

J	F	M	A	M	J	J	A	S	O	N	D
4	4	4	4	4	4	4	4	4	4	4	4

Irradiation Variance	5%
Cell Temperature Spread	4° C
Module Binning Range	0% to 1.3%
AC System Derate	1.25%

Module Characterizations

Module	Uploaded By	Characterization
LG410N2W-V5 (LG)	Folsom Labs	Spec Sheet Characterization, PAN

Component Characterizations

Device	Uploaded By	Characterization
Sunny Tripower_Core1 50-US-41 (SMA)	Folsom Labs	Default Characterization

Components

Component	Name	Count
Inverters	Sunny Tripower_Core1 50-US-41 (SMA)	3 (150.0 kW)
Home Runs	1/0 AWG (Copper)	6 (463.5 ft)
Combiners	3 input Combiner	3
Combiners	4 input Combiner	3
Strings	10 AWG (Copper)	21 (2,031.9 ft)
Module	LG, LG410N2W-V5 (410W)	369 (151.3 kW)

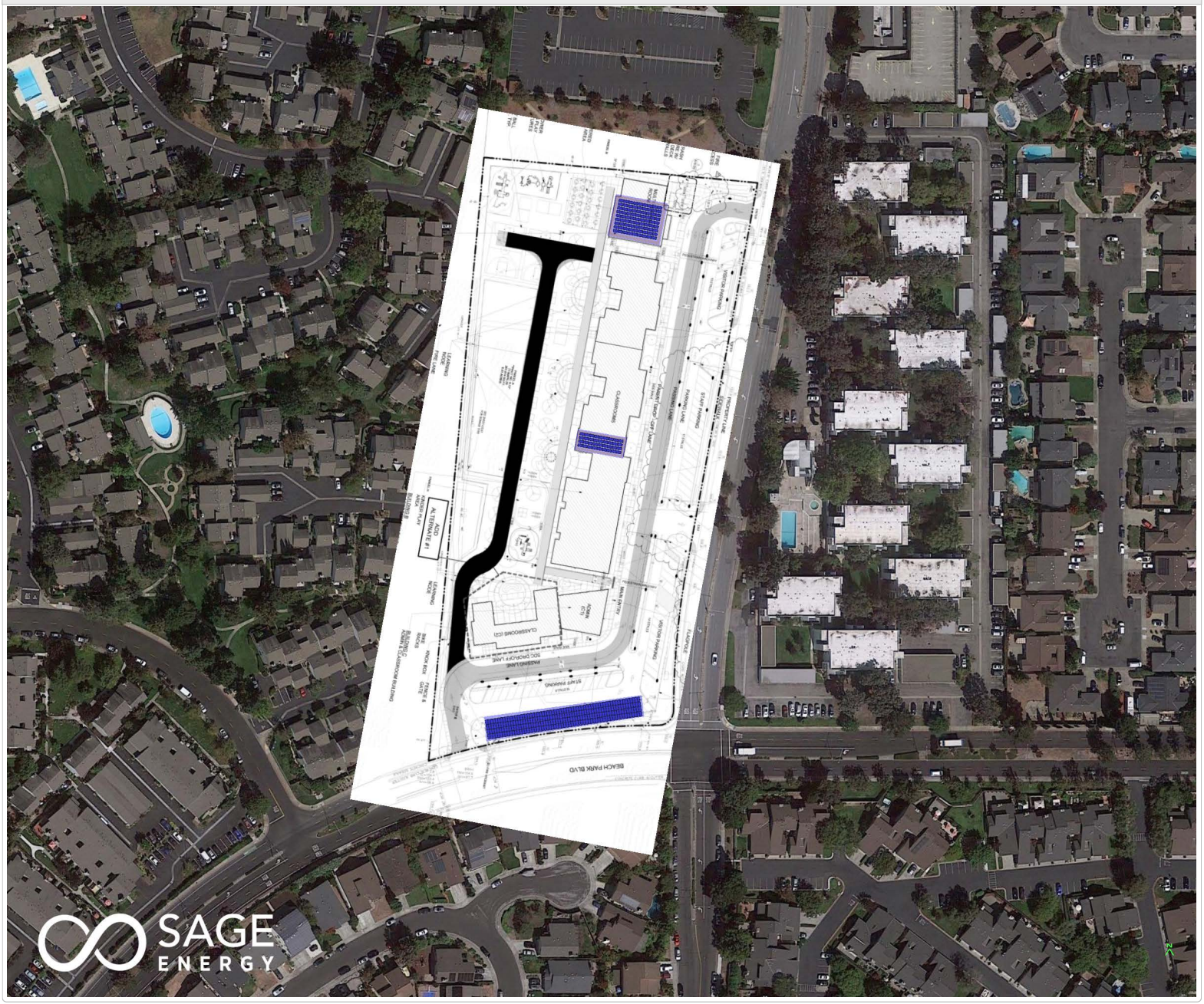
Wiring Zones

Description	Combiner Poles	String Size	Stringing Strategy
Wiring Zone	12	15-19	Along Racking

Field Segments

Description	Racking	Orientation	Tilt	Azimuth	Intrarow Spacing	Frame Size	Frames	Modules	Power
C-1	Carport	Portrait (Vertical)	7°	171.40408°	0.0 ft	4x1	63	252	103.3 kW
R-1	Carport	Landscape (Horizontal)	7°	190.63214°	1.9 ft	1x1	81	81	33.2 kW
R-3	Carport	Landscape (Horizontal)	7°	190.04533°	1.9 ft	1x1			0
R-2	Carport	Landscape (Horizontal)	7°	190.37871°	1.9 ft	1x1	36	36	14.8 kW

Detailed Layout



Borel MS

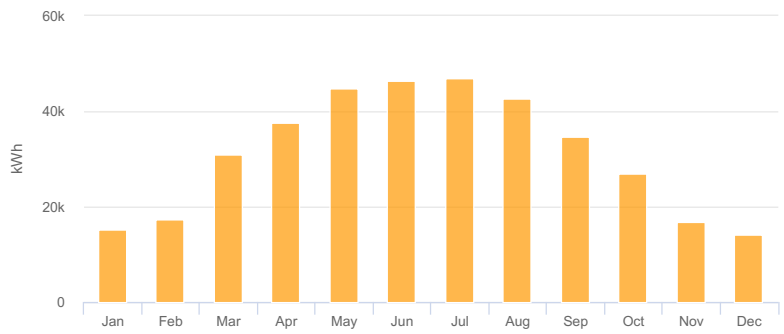
Report

Project Name	San Mateo Foster City SMFCSD
Project Address	1450 Tarpon Street Foster City, CA 94404
Prepared For	SMFCSD
Prepared By	David Williard david@sagerenew.com

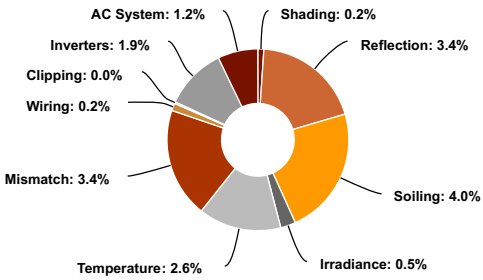
System Metrics

Design	Borel MS
Module DC Nameplate	234.1 kW
Inverter AC Nameplate	200.0 kW Load Ratio: 1.17
Annual Production	374.6 MWh
Performance Ratio	84.3%
kWh/kWp	1,600.1
Weather Dataset	TMY, 10km grid (37.55,-122.25), NREL (prospector)
Simulator Version	ff81f5bea0-448e49a180-3df33d3f15-a622dbef93

Monthly Production



Sources of System Loss



Annual Production

	Description	Output	% Delta
Irradiance (kWh/m²)	Annual Global Horizontal Irradiance	1,827.8	
	POA Irradiance	1,898.2	3.8%
	Shaded Irradiance	1,894.6	-0.2%
	Irradiance after Reflection	1,830.2	-3.4%
	Irradiance after Soiling	1,757.0	-4.0%
	Total Collector Irradiance	**1,757.0**	**0.0%**
Energy (kWh)	Nameplate	414,289.8	
	Output at Irradiance Levels	412,335.5	-0.5%
	Output at Cell Temperature Derate	401,675.4	-2.6%
	Output After Mismatch	387,913.6	-3.4%
	Optimal DC Output	387,006.1	-0.2%
	Constrained DC Output	386,813.0	0.0%
	Inverter Output	379,341.1	-1.9%
	Energy to Grid	**374,599.4**	**-1.2%**
Temperature Metrics			
	Avg. Operating Ambient Temp		15.5 °C
	Avg. Operating Cell Temp		24.5 °C
Simulation Metrics			
	Operating Hours		4657
	Solved Hours		4657

Condition Set

Description	Condition Set 1
Weather Dataset	TMY, 10km grid (37.55,-122.25), NREL (prospector)
Solar Angle Location	Meteo Lat/Lng
Transposition Model	Perez Model
Temperature Model	Sandia Model

Temperature Model Parameters

Rack Type	a	b	Temperature Delta
Fixed Tilt	-3.56	-0.075	3°C
Flush Mount	-2.81	-0.0455	0°C
East-West	-3.56	-0.075	3°C
Carport	-3.56	-0.075	3°C

Soiling (%)

J	F	M	A	M	J	J	A	S	O	N	D
4	4	4	4	4	4	4	4	4	4	4	4

Irradiation Variance	5%
Cell Temperature Spread	4° C
Module Binning Range	0% to 1.3%
AC System Derate	1.25%

Module Characterizations

Module	Uploaded By	Characterization
LG410N2W-V5 (LG)	Folsom Labs	Spec Sheet Characterization, PAN

Component Characterizations

Device	Uploaded By	Characterization
Sunny Tripower_Core1 50-US-41 (SMA)	Folsom Labs	Default Characterization

Components

Component	Name	Count
Inverters	Sunny Tripower_Core1 50-US-41 (SMA)	4 (200.0 kW)
Home Runs	1/0 AWG (Copper)	8 (456.1 ft)
Combiners	3 input Combiner	4
Combiners	5 input Combiner	4
Strings	10 AWG (Copper)	32 (3,066.5 ft)
Module	LG, LG410N2W-V5 (410W)	571 (234.1 kW)

Wiring Zones

Description	Combiner Poles	String Size	Stringing Strategy
Wiring Zone	12	15-19	Along Racking

Field Segments

Description	Racking	Orientation	Tilt	Azimuth	Intrarow Spacing	Frame Size	Frames	Modules	Power
S-1	Carport	Portrait (Vertical)	7°	228.4253°	1.6 ft	6x1	54	324	132.8 kW
C-1	Flush Mount	Portrait (Vertical)	7°	138.97005°	0.0 ft	1x1			0
S-2	Flush Mount	Portrait (Vertical)	7°	139.09308°	0.0 ft	6x1			0
R-1	Fixed Tilt	Landscape (Horizontal)	7°	141.02557°	1.5 ft	1x1	247	247	101.3 kW

Detailed Layout

Brewer island ES

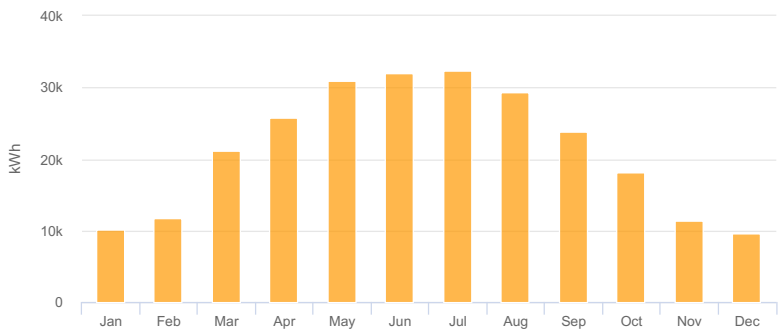
Report

Project Name	San Mateo Foster City SMFCSD
Project Address	1450 Tarpon Street Foster City, CA 94404
Prepared For	SMFCSD
Prepared By	David Williard david@sagerenew.com

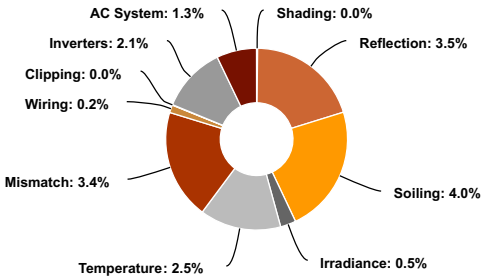
System Metrics

Design	Brewer island ES
Module DC Nameplate	162.0 kW
Inverter AC Nameplate	150.0 kW Load Ratio: 1.08
Annual Production	256.3 MWh
Performance Ratio	84.3%
kWh/kWp	1,582.6
Weather Dataset	TMY, 10km grid (37.55,-122.25), NREL (prospector)
Simulator Version	ff81f5bea0-448e49a180-3df33d3f15-a622dbef93

Monthly Production



Sources of System Loss



Annual Production

	Description	Output	% Delta
Irradiance (kWh/m²)	Annual Global Horizontal Irradiance	1,827.8	
	POA Irradiance	1,878.2	2.8%
	Shaded Irradiance	1,877.6	0.0%
	Irradiance after Reflection	1,811.6	-3.5%
	Irradiance after Soiling	1,739.1	-4.0%
	Total Collector Irradiance	**1,739.1**	**0.0%**
Energy (kWh)	Nameplate	283,668.2	
	Output at Irradiance Levels	282,289.0	-0.5%
	Output at Cell Temperature Derate	275,111.9	-2.5%
	Output After Mismatch	265,664.2	-3.4%
	Optimal DC Output	265,028.8	-0.2%
	Constrained DC Output	264,991.0	0.0%
	Inverter Output	259,548.9	-2.1%
	Energy to Grid	**256,304.5**	**-1.3%**
Temperature Metrics			
	Avg. Operating Ambient Temp		15.5 °C
	Avg. Operating Cell Temp		24.4 °C
Simulation Metrics			
	Operating Hours		4657
	Solved Hours		4657

Condition Set

Description	Condition Set 1
Weather Dataset	TMY, 10km grid (37.55,-122.25), NREL (prospector)
Solar Angle Location	Meteo Lat/Lng
Transposition Model	Perez Model
Temperature Model	Sandia Model

Temperature Model Parameters

Rack Type	a	b	Temperature Delta
Fixed Tilt	-3.56	-0.075	3°C
Flush Mount	-2.81	-0.0455	0°C
East-West	-3.56	-0.075	3°C
Carport	-3.56	-0.075	3°C

Soiling (%)

J	F	M	A	M	J	J	A	S	O	N	D
4	4	4	4	4	4	4	4	4	4	4	4

Irradiation Variance	5%
Cell Temperature Spread	4° C
Module Binning Range	0% to 1.3%
AC System Derate	1.25%

Module Characterizations

Module	Uploaded By	Characterization
LG410N2W-V5 (LG)	Folsom Labs	Spec Sheet Characterization, PAN

Component Characterizations

Device	Uploaded By	Characterization
Sunny Tripower_Core1 50-US-41 (SMA)	Folsom Labs	Default Characterization

Components

Component	Name	Count
Inverters	Sunny Tripower_Core1 50-US-41 (SMA)	3 (150.0 kW)
Home Runs	1/0 AWG (Copper)	6 (577.5 ft)
Combiners	3 input Combiner	1
Combiners	4 input Combiner	4
Combiners	5 input Combiner	1
Strings	10 AWG (Copper)	24 (2,624.7 ft)
Module	LG, LG410N2W-V5 (410W)	395 (162.0 kW)

Wiring Zones

Description	Combiner Poles	String Size	Stringing Strategy
Wiring Zone	12	15-19	Along Racking

Field Segments

Description	Racking	Orientation	Tilt	Azimuth	Intrarow Spacing	Frame Size	Frames	Modules	Power
C-2	Carport	Portrait (Vertical)	7°	239.4°	1.6 ft	6x1	40	240	98.4 kW
C-3	Carport	Portrait (Vertical)	7°	59.21371°	1.6 ft	4x1			0
C-1	Carport	Portrait (Vertical)	7°	120.83989°	1.6 ft	5x1	31	155	63.6 kW
S-1	Carport	Portrait (Vertical)	7°	149.43916°	1.6 ft	3x1			0
IGFS - R1	Fixed Tilt	Landscape (Horizontal)	7°	209.69482°	1.6 ft	1x1			0
IGFS - R2	Fixed Tilt	Landscape (Horizontal)	7°	209.88695°	1.6 ft	1x1			0

Detailed Layout

Child Nutrition Center

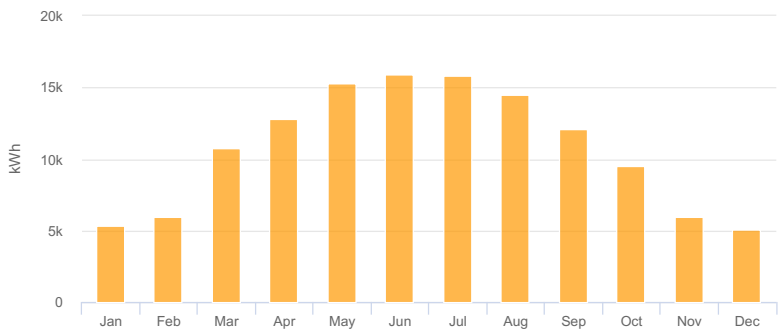
Report

Project Name	San Mateo Foster City SMFCSD
Project Address	1450 Tarpon Street Foster City, CA 94404
Prepared For	SMFCSD
Prepared By	David Williard david@sagerenew.com

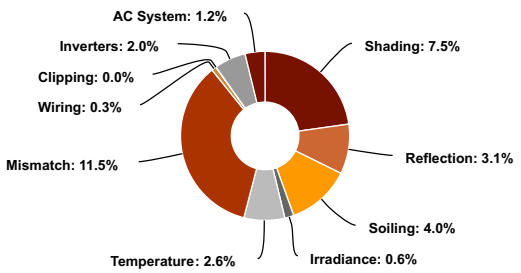
System Metrics

Design	Child Nutrition Center
Module DC Nameplate	93.9 kW
Inverter AC Nameplate	100.0 kW Load Ratio: 0.94
Annual Production	129.1 MWh
Performance Ratio	71.8%
kWh/kWp	1,375.5
Weather Dataset	TMY, 10km grid (37.55,-122.25), NREL (prospector)
Simulator Version	74229d5799-f58a9b0c56-a978769182-27e179afda

Monthly Production



Sources of System Loss



Annual Production

	Description	Output	% Delta
Irradiance (kWh/m²)	Annual Global Horizontal Irradiance	1,827.8	
	POA Irradiance	1,916.6	4.9%
	Shaded Irradiance	1,773.6	-7.5%
	Irradiance after Reflection	1,718.2	-3.1%
	Irradiance after Soiling	1,649.5	-4.0%
	Total Collector Irradiance	**1,651.1**	**0.1%**
Energy (kWh)	Nameplate	156,127.0	
	Output at Irradiance Levels	155,234.7	-0.6%
	Output at Cell Temperature Derate	151,269.2	-2.6%
	Output After Mismatch	133,831.5	-11.5%
	Optimal DC Output	133,443.6	-0.3%
	Constrained DC Output	133,422.0	0.0%
	Inverter Output	130,783.6	-2.0%
	Energy to Grid	**129,148.8**	**-1.2%**
Temperature Metrics			
	Avg. Operating Ambient Temp		15.5 °C
	Avg. Operating Cell Temp		23.9 °C
Simulation Metrics			
	Operating Hours		4657
	Solved Hours		4657

Condition Set

Description	Condition Set 1
Weather Dataset	TMY, 10km grid (37.55,-122.25), NREL (prospector)
Solar Angle Location	Meteo Lat/Lng
Transposition Model	Perez Model
Temperature Model	Sandia Model

Temperature Model Parameters

Rack Type	a	b	Temperature Delta
Fixed Tilt	-3.56	-0.075	3°C
Flush Mount	-2.81	-0.0455	0°C
East-West	-3.56	-0.075	3°C
Carport	-3.56	-0.075	3°C

Soiling (%)

J	F	M	A	M	J	J	A	S	O	N	D
4	4	4	4	4	4	4	4	4	4	4	4

Irradiation Variance	5%
Cell Temperature Spread	4° C
Module Binning Range	0% to 1.3%
AC System Derate	1.25%

Module Characterizations

Module	Uploaded By	Characterization
LG410N2W-V5 (LG)	Folsom Labs	Spec Sheet Characterization, PAN

Component Characterizations

Device	Uploaded By	Characterization
Sunny Tripower_Core1 50-US-41 (SMA)	Folsom Labs	Default Characterization

Components

Component	Name	Count
Inverters	Sunny Tripower_Core1 50-US-41 (SMA)	2 (100.0 kW)
Home Runs	1/0 AWG (Copper)	3 (197.9 ft)
Combiners	3 input Combiner	1
Combiners	4 input Combiner	1
Combiners	6 input Combiner	1
Strings	10 AWG (Copper)	13 (1,147.0 ft)
Module	LG, LG410N2W-V5 (410W)	229 (93.9 kW)

Wiring Zones

Description	Combiner Poles	String Size	Stringing Strategy
Wiring Zone	12	15-19	Along Racking

Field Segments

Description	Racking	Orientation	Tilt	Azimuth	Intrarow Spacing	Frame Size	Frames	Modules	Power
R-1	Fixed Tilt	Landscape (Horizontal)	7°	209.54996°	1.9 ft	1x1	229	229	93.9 kW

Detailed Layout

College Park ES + Turnbull Pre

94404

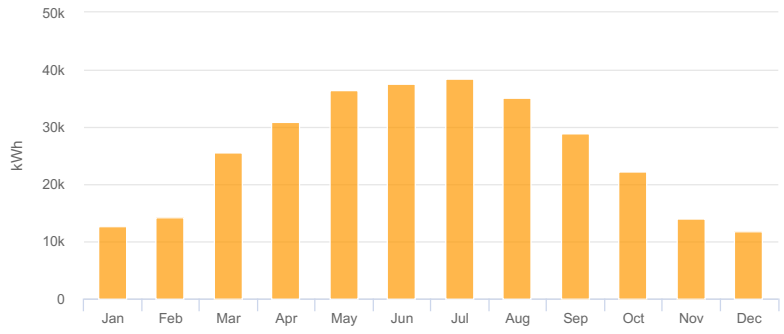
Report

Project Name	San Mateo Foster City SMFCSD
Project Address	1450 Tarpon Street Foster City, CA 94404
Prepared For	SMFCSD
Prepared By	David Williard david@sagerenew.com

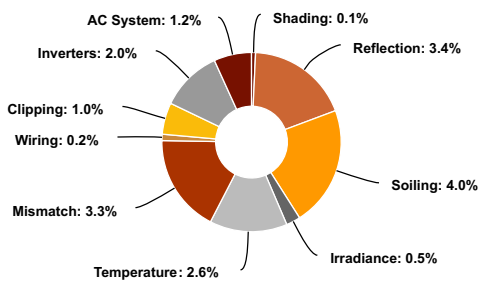
System Metrics

Design	College Park ES + Turnbull Pre
Module DC Nameplate	194.3 kW
Inverter AC Nameplate	150.0 kW Load Ratio: 1.30
Annual Production	307.8 MWh
Performance Ratio	83.5%
kWh/kWp	1,584.1
Weather Dataset	TMY, 10km grid (37.55,-122.25), NREL (prospector)
Simulator Version	ff81f5bea0-448e49a180-3df33d3f15-a622dbef93

Monthly Production



Sources of System Loss



Annual Production

	Description	Output	% Delta
Irradiance (kWh/m²)	Annual Global Horizontal Irradiance	1,827.8	
	POA Irradiance	1,896.2	3.7%
	Shaded Irradiance	1,893.6	-0.1%
	Irradiance after Reflection	1,828.8	-3.4%
	Irradiance after Soiling	1,755.6	-4.0%
	Total Collector Irradiance	**1,755.6**	**0.0%**
Energy (kWh)	Nameplate	343,638.1	
	Output at Irradiance Levels	342,011.6	-0.5%
	Output at Cell Temperature Derate	333,181.1	-2.6%
	Output After Mismatch	322,313.6	-3.3%
	Optimal DC Output	321,633.8	-0.2%
	Constrained DC Output	318,257.9	-1.0%
	Inverter Output	311,746.8	-2.1%
	Energy to Grid	**307,850.0**	**-1.2%**
Temperature Metrics			
	Avg. Operating Ambient Temp		15.5 °C
	Avg. Operating Cell Temp		24.5 °C
Simulation Metrics			
	Operating Hours		4657
	Solved Hours		4657

Condition Set

Description	Condition Set 1
Weather Dataset	TMY, 10km grid (37.55,-122.25), NREL (prospector)
Solar Angle Location	Meteo Lat/Lng
Transposition Model	Perez Model
Temperature Model	Sandia Model

Temperature Model Parameters

Rack Type	a	b	Temperature Delta
Fixed Tilt	-3.56	-0.075	3°C
Flush Mount	-2.81	-0.0455	0°C
East-West	-3.56	-0.075	3°C
Carport	-3.56	-0.075	3°C

Soiling (%)

J	F	M	A	M	J	J	A	S	O	N	D
4	4	4	4	4	4	4	4	4	4	4	4

Irradiation Variance	5%
Cell Temperature Spread	4° C
Module Binning Range	0% to 1.3%
AC System Derate	1.25%

Module Characterizations

Module	Uploaded By	Characterization
LG410N2W-V5 (LG)	Folsom Labs	Spec Sheet Characterization, PAN

Component Characterizations

Device	Uploaded By	Characterization
Sunny Tripower_Core1 50-US-41 (SMA)	Folsom Labs	Default Characterization

Components

Component	Name	Count
Inverters	Sunny Tripower_Core1 50-US-41 (SMA)	3 (150.0 kW)
Home Runs	1/0 AWG (Copper)	6 (542.7 ft)
Combiners	4 input Combiner	3
Combiners	5 input Combiner	3
Strings	10 AWG (Copper)	27 (2,817.2 ft)
Module	LG, LG410N2W-V5 (410W)	474 (194.3 kW)

Wiring Zones

Description	Combiner Poles	String Size	Stringing Strategy
Wiring Zone	12	15-19	Along Racking

Field Segments

Description	Racking	Orientation	Tilt	Azimuth	Intrarow Spacing	Frame Size	Frames	Modules	Power
C-2	Carport	Portrait (Vertical)	7°	139.09299°	0.0 ft	1x1	192	192	78.7 kW
S-2	Carport	Portrait (Vertical)	7°	229.8168°	0.0 ft	6x1	47	282	115.6 kW
C-1	Carport	Portrait (Vertical)	7°	139.39871°	0.0 ft	4x1			0
C-3	Carport	Portrait (Vertical)	7°	139.39871°	0.0 ft	4x1			0
C-4	Carport	Portrait (Vertical)	7°	226.90338°	0.0 ft	6x1			0
C-5	Carport	Portrait (Vertical)	7°	139.12012°	0.0 ft	6x1			0

Detailed Layout

Fiesta Gardens ES

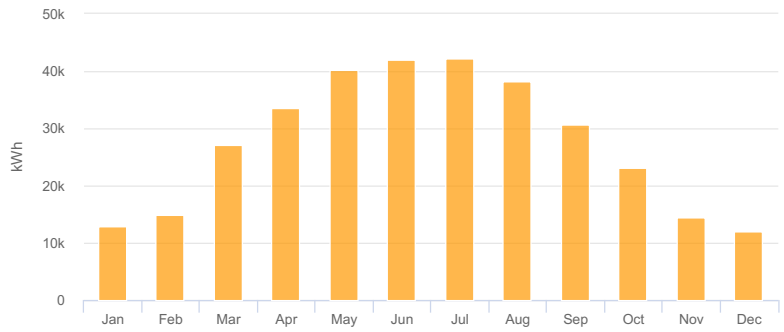
Report

Project Name	San Mateo Foster City SMFCSD
Project Address	1450 Tarpon Street Foster City, CA 94404
Prepared For	SMFCSD
Prepared By	David Williard david@sagerenew.com

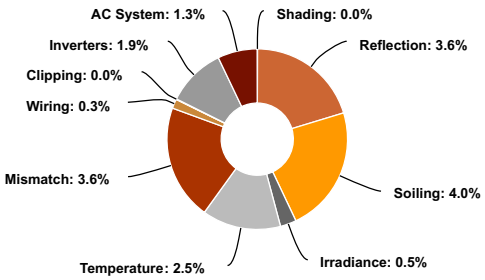
System Metrics

Design	Fiesta Gardens ES
Module DC Nameplate	212.8 kW
Inverter AC Nameplate	200.0 kW Load Ratio: 1.06
Annual Production	331.3 MWh
Performance Ratio	84.2%
kWh/kWp	1,557.1
Weather Dataset	TMY, 10km grid (37.55,-122.25), NREL (prospector)
Simulator Version	e2238d69b7-7405e28364-14e4487edb-3db1ffd089

Monthly Production



Sources of System Loss



Annual Production

	Description	Output	% Delta
Irradiance (kWh/m²)	Annual Global Horizontal Irradiance	1,827.8	
	POA Irradiance	1,849.5	1.2%
	Shaded Irradiance	1,849.3	0.0%
	Irradiance after Reflection	1,783.3	-3.6%
	Irradiance after Soiling	1,711.9	-4.0%
	Total Collector Irradiance	**1,711.9**	**0.0%**
Energy (kWh)	Nameplate	366,891.3	
	Output at Irradiance Levels	365,023.2	-0.5%
	Output at Cell Temperature Derate	355,923.5	-2.5%
	Output After Mismatch	342,971.8	-3.6%
	Optimal DC Output	341,957.6	-0.3%
	Constrained DC Output	341,903.3	0.0%
	Inverter Output	335,531.6	-1.9%
	Energy to Grid	**331,337.5**	**-1.3%**
Temperature Metrics			
	Avg. Operating Ambient Temp		15.5 °C
	Avg. Operating Cell Temp		24.2 °C
Simulation Metrics			
	Operating Hours		4657
	Solved Hours		4657

Condition Set

Description	Condition Set 1
Weather Dataset	TMY, 10km grid (37.55,-122.25), NREL (prospector)
Solar Angle Location	Meteo Lat/Lng
Transposition Model	Perez Model
Temperature Model	Sandia Model

Temperature Model Parameters

Rack Type	a	b	Temperature Delta
Fixed Tilt	-3.56	-0.075	3°C
Flush Mount	-2.81	-0.0455	0°C
East-West	-3.56	-0.075	3°C
Carport	-3.56	-0.075	3°C

Soiling (%)

J	F	M	A	M	J	J	A	S	O	N	D
4	4	4	4	4	4	4	4	4	4	4	4

Irradiation Variance	5%
Cell Temperature Spread	4° C
Module Binning Range	0% to 1.3%
AC System Derate	1.25%

Module Characterizations

Module	Uploaded By	Characterization
LG410N2W-V5 (LG)	Folsom Labs	Spec Sheet Characterization, PAN

Component Characterizations

Device	Uploaded By	Characterization
Sunny Tripower_Core1 50-US-41 (SMA)	Folsom Labs	Default Characterization

Components

Component	Name	Count
Inverters	Sunny Tripower_Core1 50-US-41 (SMA)	4 (200.0 kW)
Home Runs	1/0 AWG (Copper)	8 (1,165.6 ft)
Combiners	3 input Combiner	4
Combiners	4 input Combiner	4
Strings	10 AWG (Copper)	28 (4,782.0 ft)
Module	LG, LG410N2W-V5 (410W)	519 (212.8 kW)

Wiring Zones

Description	Combiner Poles	String Size	Stringing Strategy
Wiring Zone	12	15-19	Along Racking

Field Segments

Description	Racking	Orientation	Tilt	Azimuth	Intrarow Spacing	Frame Size	Frames	Modules	Power
S-1	Carport	Portrait (Vertical)	7°	119.26001°	0.0 ft	6x1	44	264	108.2 kW
C-1	Carport	Portrait (Vertical)	10°	270°	0.0 ft	5x1	51	255	104.6 kW
S-3	Carport	Portrait (Vertical)	10°	179.30414°	0.0 ft	6x1			0

Detailed Layout

Foster City

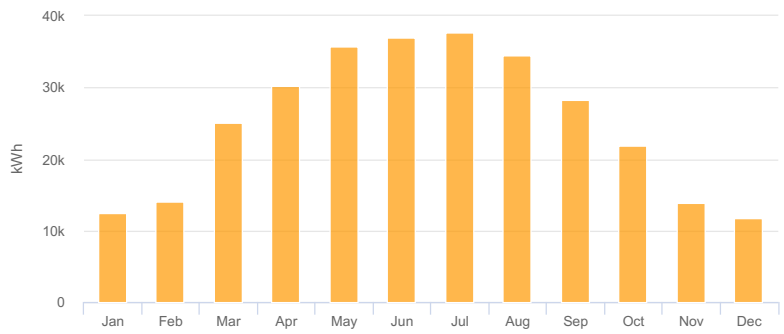
Report

Project Name	San Mateo Foster City SMFCSD
Project Address	1450 Tarpon Street Foster City, CA 94404
Prepared For	SMFCSD
Prepared By	David Williard david@sagerenew.com

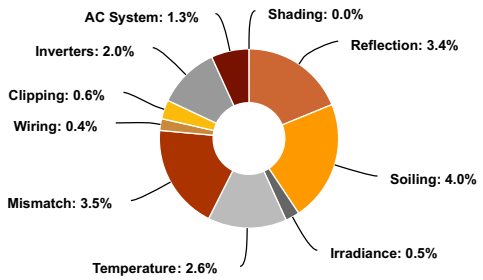
System Metrics

Design	Foster City
Module DC Nameplate	189.4 kW
Inverter AC Nameplate	150.0 kW Load Ratio: 1.26
Annual Production	302.2 MWh
Performance Ratio	83.6%
kWh/kWp	1,595.4
Weather Dataset	TMY, 10km grid (37.55,-122.25), NREL (prospector)
Simulator Version	32d623a7ec-be57a81186-5f88df888e-db8a00436a

Monthly Production



Sources of System Loss



Annual Production

	Description	Output	% Delta
Irradiance (kWh/m²)	Annual Global Horizontal Irradiance	1,827.8	
	POA Irradiance	1,907.6	4.4%
	Shaded Irradiance	1,907.6	0.0%
	Irradiance after Reflection	1,841.9	-3.4%
	Irradiance after Soiling	1,768.2	-4.0%
	Total Collector Irradiance	**1,768.2**	**0.0%**
Energy (kWh)	Nameplate	337,341.6	
	Output at Irradiance Levels	335,772.6	-0.5%
	Output at Cell Temperature Derate	327,022.6	-2.6%
	Output After Mismatch	315,628.3	-3.5%
	Optimal DC Output	314,404.7	-0.4%
	Constrained DC Output	312,433.8	-0.6%
	Inverter Output	306,033.5	-2.1%
	Energy to Grid	**302,208.1**	**-1.3%**
Temperature Metrics			
	Avg. Operating Ambient Temp		15.5 °C
	Avg. Operating Cell Temp		24.5 °C
Simulation Metrics			
	Operating Hours		4657
	Solved Hours		4657

Condition Set

Description	Condition Set 1
Weather Dataset	TMY, 10km grid (37.55,-122.25), NREL (prospector)
Solar Angle Location	Meteo Lat/Lng
Transposition Model	Perez Model
Temperature Model	Sandia Model

Temperature Model Parameters

Rack Type	a	b	Temperature Delta
Fixed Tilt	-3.56	-0.075	3°C
Flush Mount	-2.81	-0.0455	0°C
East-West	-3.56	-0.075	3°C
Carport	-3.56	-0.075	3°C

Soiling (%)

J	F	M	A	M	J	J	A	S	O	N	D
4	4	4	4	4	4	4	4	4	4	4	4

Irradiation Variance	5%
Cell Temperature Spread	4° C
Module Binning Range	0% to 1.3%
AC System Derate	1.25%

Module Characterizations

Module	Uploaded By	Characterization
LG410N2W-V5 (LG)	Folsom Labs	Spec Sheet Characterization, PAN

Component Characterizations

Device	Uploaded By	Characterization
Sunny Tripower_Core1 50-US-41 (SMA)	Folsom Labs	Default Characterization

Components

Component	Name	Count
Inverters	Sunny Tripower_Core1 50-US-41 (SMA)	3 (150.0 kW)
Home Runs	1/0 AWG (Copper)	6 (1,042.9 ft)
Combiners	4 input Combiner	3
Combiners	5 input Combiner	3
Strings	10 AWG (Copper)	27 (6,258.3 ft)
Module	LG, LG410N2W-V5 (410W)	462 (189.4 kW)

Wiring Zones

Description	Combiner Poles	String Size	Stringing Strategy
Wiring Zone	12	15-19	Along Racking

Field Segments

Description	Racking	Orientation	Tilt	Azimuth	Intrarow Spacing	Frame Size	Frames	Modules	Power
C-1	Carport	Portrait (Vertical)	7°	243.23068°	1.6 ft	6x1	29	174	71.3 kW
S-3	Carport	Portrait (Vertical)	7°	243.23068°	1.6 ft	6x1			0
S-2	Carport	Portrait (Vertical)	7°	179.48384°	0.0 ft	6x1	48	288	118.1 kW

Detailed Layout

George Hall ES

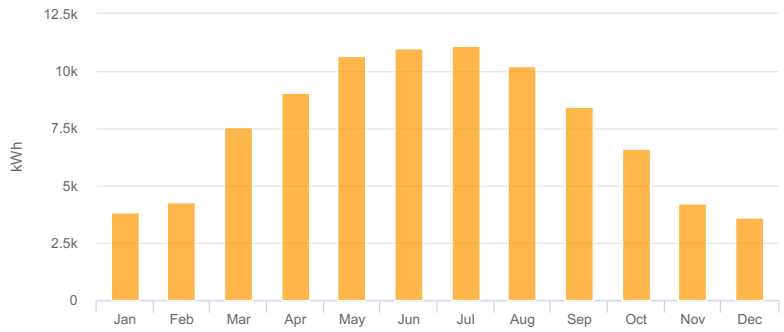
Report

Project Name	San Mateo Foster City SMFCSD
Project Address	1450 Tarpon Street Foster City, CA 94404
Prepared For	SMFCSD
Prepared By	David Williard david@sagerenew.com

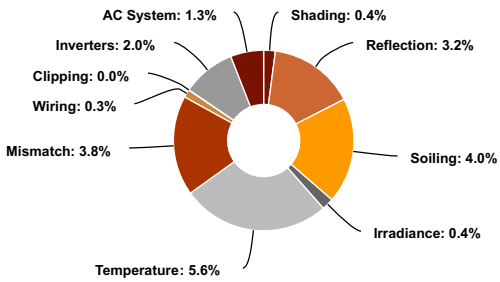
System Metrics

Design	George Hall ES
Module DC Nameplate	57.8 kW
Inverter AC Nameplate	50.0 kW Load Ratio: 1.16
Annual Production	90.60 MWh
Performance Ratio	81.2%
kWh/kWp	1,567.2
Weather Dataset	TMY, 10km grid (37.55,-122.25), NREL (prospector)
Simulator Version	32d623a7ec-be57a81186-5f88df888e-db8a00436a

Monthly Production



Sources of System Loss



Annual Production

	Description	Output	% Delta
Irradiance (kWh/m²)	Annual Global Horizontal Irradiance	1,827.8	
	POA Irradiance	1,929.7	5.6%
	Shaded Irradiance	1,921.2	-0.4%
	Irradiance after Reflection	1,858.8	-3.2%
	Irradiance after Soiling	1,784.5	-4.0%
	Total Collector Irradiance	**1,784.5**	**0.0%**
Energy (kWh)	Nameplate	103,902.2	
	Output at Irradiance Levels	103,434.8	-0.4%
	Output at Cell Temperature Derate	97,629.4	-5.6%
	Output After Mismatch	93,935.8	-3.8%
	Optimal DC Output	93,655.5	-0.3%
	Constrained DC Output	93,644.0	0.0%
	Inverter Output	91,749.1	-2.0%
	Energy to Grid	**90,602.2**	**-1.3%**
Temperature Metrics			
	Avg. Operating Ambient Temp		15.5 °C
	Avg. Operating Cell Temp		29.6 °C
Simulation Metrics			
	Operating Hours		4657
	Solved Hours		4657

Condition Set

Description	Condition Set 1
Weather Dataset	TMY, 10km grid (37.55,-122.25), NREL (prospector)
Solar Angle Location	Meteo Lat/Lng
Transposition Model	Perez Model
Temperature Model	Sandia Model

Temperature Model Parameters

Rack Type	a	b	Temperature Delta
Fixed Tilt	-3.56	-0.075	3°C
Flush Mount	-2.81	-0.0455	0°C
East-West	-3.56	-0.075	3°C
Carport	-3.56	-0.075	3°C

Soiling (%)

J	F	M	A	M	J	J	A	S	O	N	D
4	4	4	4	4	4	4	4	4	4	4	4

Irradiation Variance	5%
Cell Temperature Spread	4° C
Module Binning Range	0% to 1.3%
AC System Derate	1.25%

Module Characterizations

Module	Uploaded By	Characterization
LG410N2W-V5 (LG)	Folsom Labs	Spec Sheet Characterization, PAN

Component Characterizations

Device	Uploaded By	Characterization
Sunny Tripower_Core1 50-US-41 (SMA)	Folsom Labs	Default Characterization

Components

Component	Name	Count
Inverters	Sunny Tripower_Core1 50-US-41 (SMA)	1 (50.0 kW)
Home Runs	1/0 AWG (Copper)	2 (91.0 ft)
Combiners	3 input Combiner	1
Combiners	5 input Combiner	1
Strings	10 AWG (Copper)	8 (768.4 ft)
Module	LG, LG410N2W-V5 (410W)	141 (57.8 kW)

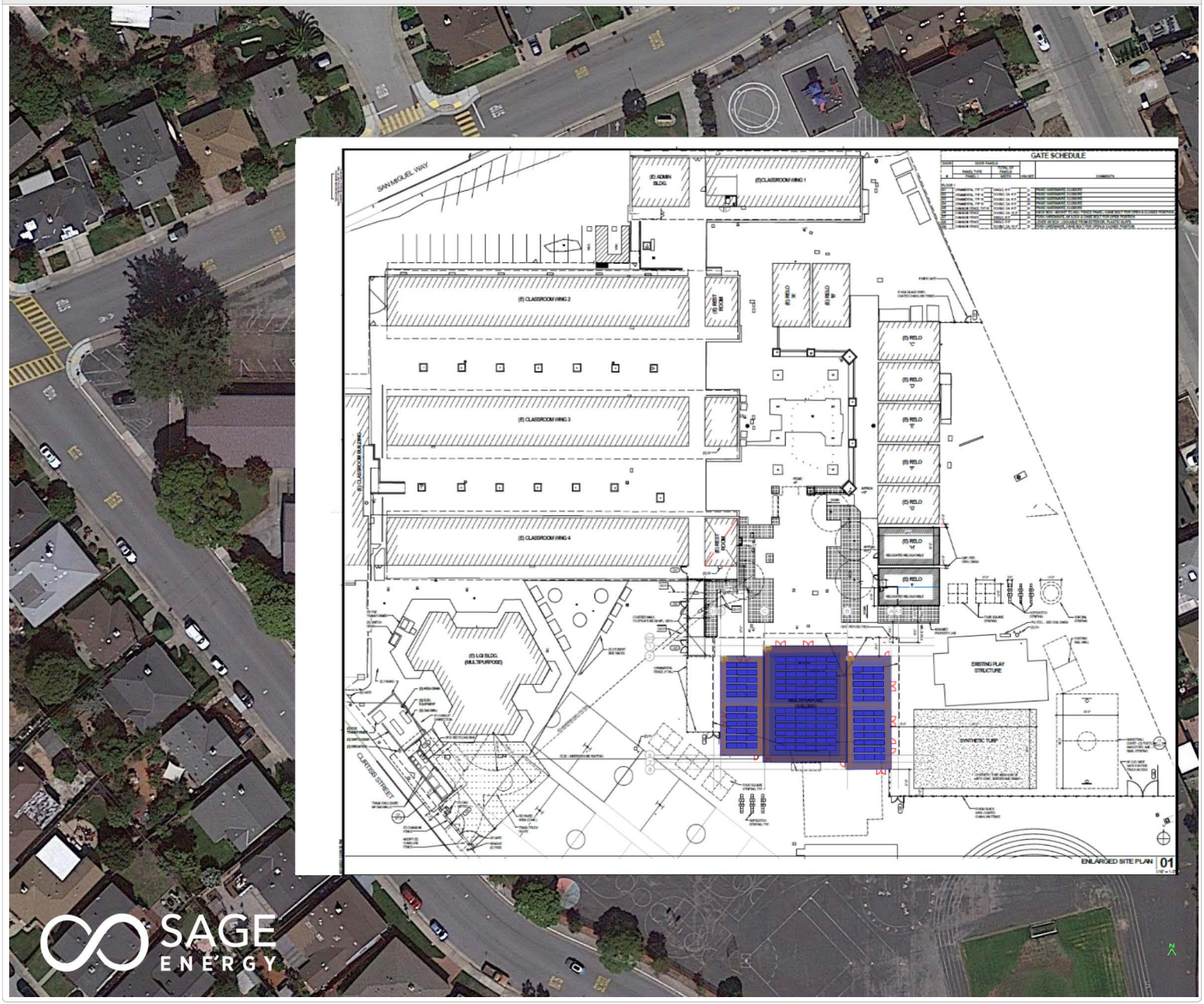
Wiring Zones

Description	Combiner Poles	String Size	Stringing Strategy
Wiring Zone	12	15-19	Along Racking

Field Segments

Description	Racking	Orientation	Tilt	Azimuth	Intrarow Spacing	Frame Size	Frames	Modules	Power
R-1	Flush Mount	Landscape (Horizontal)	5°	180.19785°	0.0 ft	1x1			0
R-2	Flush Mount	Landscape (Horizontal)	5°	180.19785°	0.0 ft	1x1			0
R-3	Flush Mount	Landscape (Horizontal)	5°	180.19785°	0.0 ft	1x1			0
R-4	Flush Mount	Landscape (Horizontal)	5°	180.19785°	0.0 ft	1x1			0
IGFS - R1	Flush Mount	Landscape (Horizontal)	5°	180.19785°	1.5 ft	1x1	72	72	29.5 kW
Field Segment 6	Fixed Tilt	Landscape (Horizontal)	10°	180.19785°	1.5 ft	1x1	33	33	13.5 kW
Field Segment 6 (copy)	Fixed Tilt	Landscape (Horizontal)	10°	180°	1.5 ft	1x1	36	36	14.8 kW

Detailed Layout



Highlands ES_Added for IGFS

94404

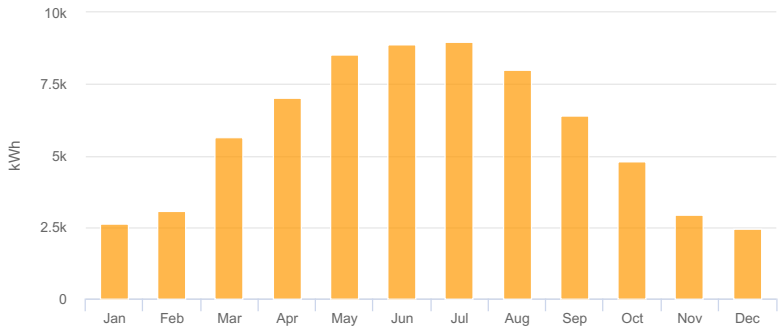
Report

Project Name	San Mateo Foster City SMFCSD
Project Address	1450 Tarpon Street Foster City, CA 94404
Prepared For	SMFCSD
Prepared By	David Williard david@sagerenew.com

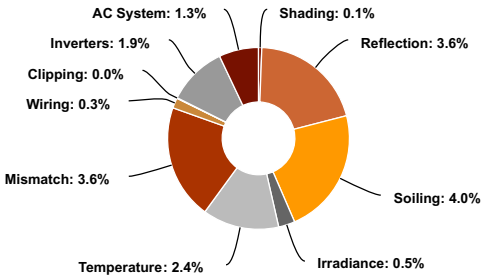
System Metrics

Design	Highlands ES_Added for IGFS
Module DC Nameplate	45.1 kW
Inverter AC Nameplate	50.0 kW Load Ratio: 0.90
Annual Production	69.32 MWh
Performance Ratio	84.1%
kWh/kWp	1,537.0
Weather Dataset	TMY, 10km grid (37.55,-122.25), NREL (prospector)
Simulator Version	32d623a7ec-be57a81186-5f88df888e-db8a00436a

Monthly Production



Sources of System Loss



Annual Production

	Description	Output	% Delta
Irradiance (kWh/m²)	Annual Global Horizontal Irradiance	1,827.8	
	POA Irradiance	1,827.7	0.0%
	Shaded Irradiance	1,825.8	-0.1%
	Irradiance after Reflection	1,759.6	-3.6%
	Irradiance after Soiling	1,689.2	-4.0%
	Total Collector Irradiance	**1,689.2**	**0.0%**
Energy (kWh)	Nameplate	76,731.4	
	Output at Irradiance Levels	76,330.7	-0.5%
	Output at Cell Temperature Derate	74,487.1	-2.4%
	Output After Mismatch	71,785.1	-3.6%
	Optimal DC Output	71,553.3	-0.3%
	Constrained DC Output	71,542.0	0.0%
	Inverter Output	70,196.1	-1.9%
	Energy to Grid	**69,318.7**	**-1.3%**
Temperature Metrics			
	Avg. Operating Ambient Temp		15.5 °C
	Avg. Operating Cell Temp		24.1 °C
Simulation Metrics			
	Operating Hours		4657
	Solved Hours		4657

Condition Set

Description	Condition Set 1
Weather Dataset	TMY, 10km grid (37.55,-122.25), NREL (prospector)
Solar Angle Location	Meteo Lat/Lng
Transposition Model	Perez Model
Temperature Model	Sandia Model

Temperature Model Parameters

Rack Type	a	b	Temperature Delta
Fixed Tilt	-3.56	-0.075	3°C
Flush Mount	-2.81	-0.0455	0°C
East-West	-3.56	-0.075	3°C
Carport	-3.56	-0.075	3°C

Soiling (%)

J	F	M	A	M	J	J	A	S	O	N	D
4	4	4	4	4	4	4	4	4	4	4	4

Irradiation Variance	5%
Cell Temperature Spread	4° C
Module Binning Range	0% to 1.3%
AC System Derate	1.25%

Module Characterizations

Module	Uploaded By	Characterization
LG410N2W-V5 (LG)	Folsom Labs	Spec Sheet Characterization, PAN

Component Characterizations

Device	Uploaded By	Characterization
Sunny Tripower_Core1 50-US-41 (SMA)	Folsom Labs	Default Characterization

Components

Component	Name	Count
Inverters	Sunny Tripower_Core1 50-US-41 (SMA)	1 (50.0 kW)
Home Runs	1/0 AWG (Copper)	2 (59.0 ft)
Combiners	2 input Combiner	1
Combiners	4 input Combiner	1
Strings	10 AWG (Copper)	6 (327.7 ft)
Module	LG, LG410N2W-V5 (410W)	110 (45.1 kW)

Wiring Zones

Description	Combiner Poles	String Size	Stringing Strategy
Wiring Zone	12	15-19	Along Racking

Field Segments

Description	Racking	Orientation	Tilt	Azimuth	Intrarow Spacing	Frame Size	Frames	Modules	Power
R-1	Fixed Tilt	Landscape (Horizontal)	5°	176.1424°	1.9 ft	1x1			0
R-2	Fixed Tilt	Landscape (Horizontal)	5°	176.57176°	1.9 ft	1x1			0
R-3	Fixed Tilt	Landscape (Horizontal)	5°	176.57176°	1.9 ft	1x1			0
R-4	Fixed Tilt	Landscape (Horizontal)	5°	176.57176°	1.9 ft	1x1			0
R-5	Fixed Tilt	Landscape (Horizontal)	5°	176.57176°	1.9 ft	1x1			0
R-6	Fixed Tilt	Landscape (Horizontal)	5°	176.57176°	1.9 ft	1x1			0
Field Segment 7	Fixed Tilt	Landscape (Horizontal)	5°	279.9°	1.9 ft	1x1	55	55	22.6 kW
Field Segment 7 (copy)	Fixed Tilt	Landscape (Horizontal)	5°	99.82506°	1.9 ft	1x1	55	55	22.6 kW

Detailed Layout

Laurel ES

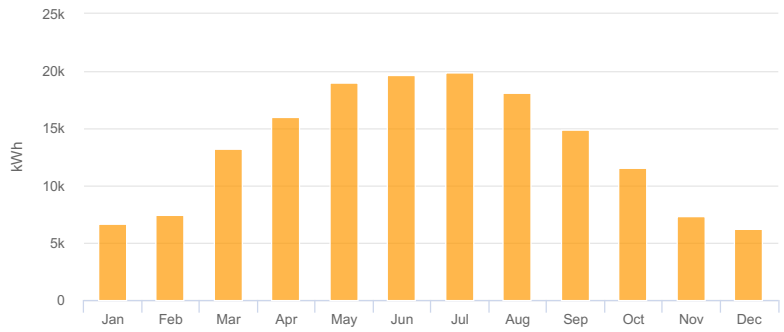
Report

Project Name	San Mateo Foster City SMFCSD
Project Address	1450 Tarpon Street Foster City, CA 94404
Prepared For	SMFCSD
Prepared By	David Williard david@sagerenew.com

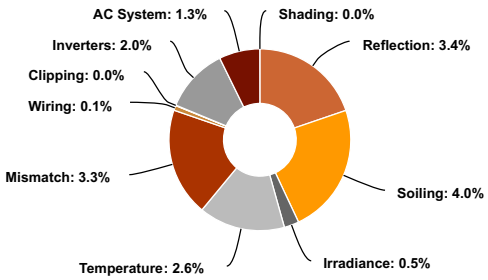
System Metrics

Design	Laurel ES
Module DC Nameplate	98.4 kW
Inverter AC Nameplate	100.0 kW Load Ratio: 0.98
Annual Production	160.2 MWh
Performance Ratio	84.6%
kWh/kWp	1,627.5
Weather Dataset	TMY, 10km grid (37.55,-122.25), NREL (prospector)
Simulator Version	74229d5799-f58a9b0c56-a978769182-27e179afda

Monthly Production



Sources of System Loss



Annual Production

	Description	Output	% Delta
Irradiance (kWh/m²)	Annual Global Horizontal Irradiance	1,827.8	
	POA Irradiance	1,924.1	5.3%
	Shaded Irradiance	1,924.1	0.0%
	Irradiance after Reflection	1,858.8	-3.4%
	Irradiance after Soiling	1,784.4	-4.0%
	Total Collector Irradiance	**1,784.4**	**0.0%**
Energy (kWh)	Nameplate	176,849.9	
	Output at Irradiance Levels	176,049.2	-0.5%
	Output at Cell Temperature Derate	171,404.1	-2.6%
	Output After Mismatch	165,718.1	-3.3%
	Optimal DC Output	165,474.2	-0.1%
	Constrained DC Output	165,452.0	0.0%
	Inverter Output	162,177.9	-2.0%
	Energy to Grid	**160,150.6**	**-1.3%**
Temperature Metrics			
	Avg. Operating Ambient Temp		15.5 °C
	Avg. Operating Cell Temp		24.6 °C
Simulation Metrics			
	Operating Hours		4657
	Solved Hours		4657

Condition Set

Description	Condition Set 1
Weather Dataset	TMY, 10km grid (37.55,-122.25), NREL (prospector)
Solar Angle Location	Meteo Lat/Lng
Transposition Model	Perez Model
Temperature Model	Sandia Model

Temperature Model Parameters

Rack Type	a	b	Temperature Delta
Fixed Tilt	-3.56	-0.075	3°C
Flush Mount	-2.81	-0.0455	0°C
East-West	-3.56	-0.075	3°C
Carport	-3.56	-0.075	3°C

Soiling (%)

J	F	M	A	M	J	J	A	S	O	N	D
4	4	4	4	4	4	4	4	4	4	4	4

Irradiation Variance	5%
Cell Temperature Spread	4° C
Module Binning Range	0% to 1.3%
AC System Derate	1.25%

Module Characterizations

Module	Uploaded By	Characterization
LG410N2W-V5 (LG)	Folsom Labs	Spec Sheet Characterization, PAN

Component Characterizations

Device	Uploaded By	Characterization
Sunny Tripower_Core1 50-US-41 (SMA)	Folsom Labs	Default Characterization

Components

Component	Name	Count
Inverters	Sunny Tripower_Core1 50-US-41 (SMA)	2 (100.0 kW)
Home Runs	1/0 AWG (Copper)	4 (155.8 ft)
Combiners	3 input Combiner	2
Combiners	4 input Combiner	2
Strings	10 AWG (Copper)	14 (664.4 ft)
Module	LG, LG410N2W-V5 (410W)	240 (98.4 kW)

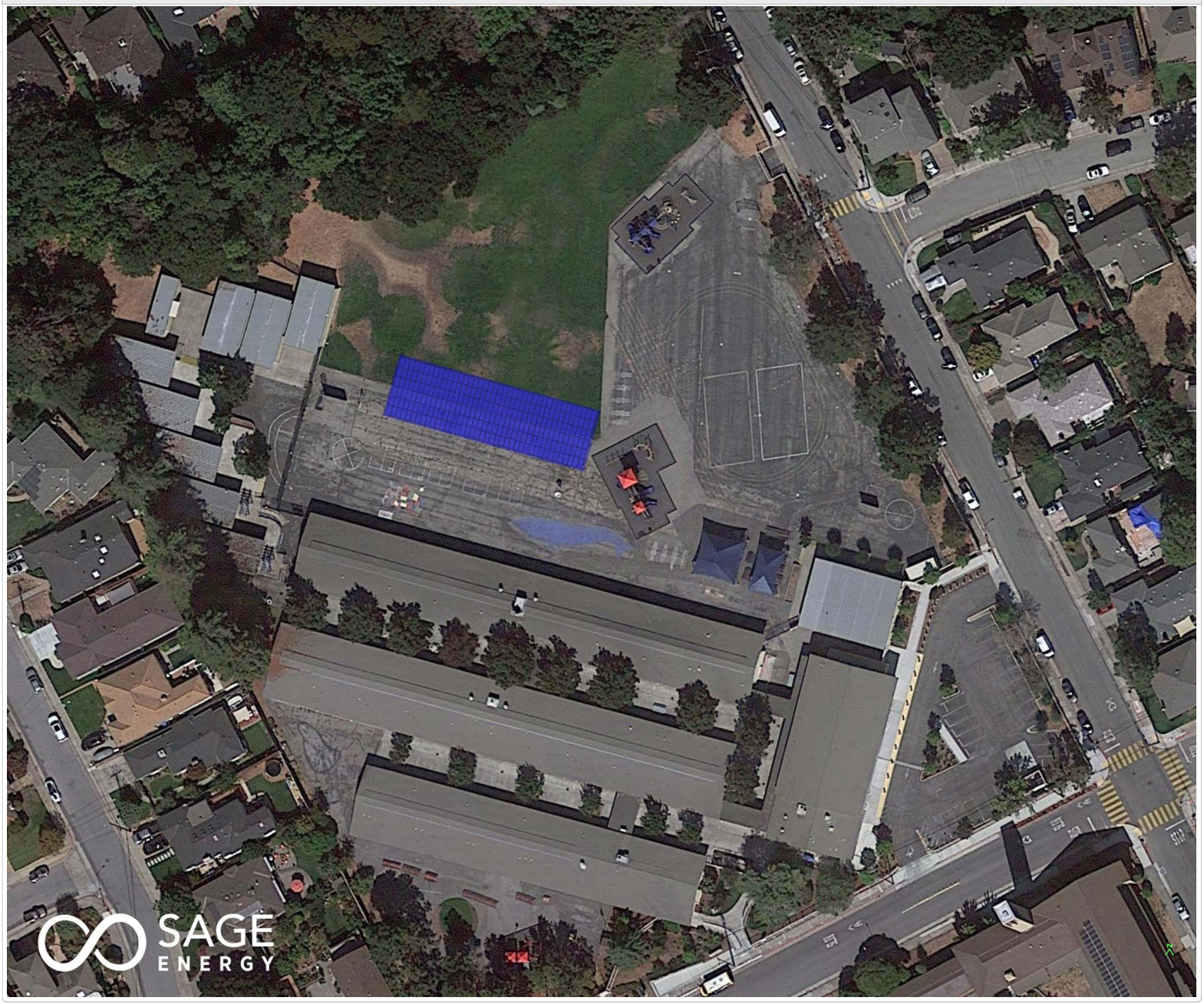
Wiring Zones

Description	Combiner Poles	String Size	Stringing Strategy
Wiring Zone	12	15-19	Along Racking

Field Segments

Description	Racking	Orientation	Tilt	Azimuth	Intrarow Spacing	Frame Size	Frames	Modules	Power
S-1	Carport	Portrait (Vertical)	7°	195.53033°	1.6 ft	6x1	40	240	98.4 kW
R-1	Flush Mount	Landscape (Horizontal)	5°	195.23462°	1.9 ft	1x1			0
R-2	Flush Mount	Landscape (Horizontal)	5°	195.0756°	1.9 ft	1x1			0

Detailed Layout



LEAD / Horrall ES

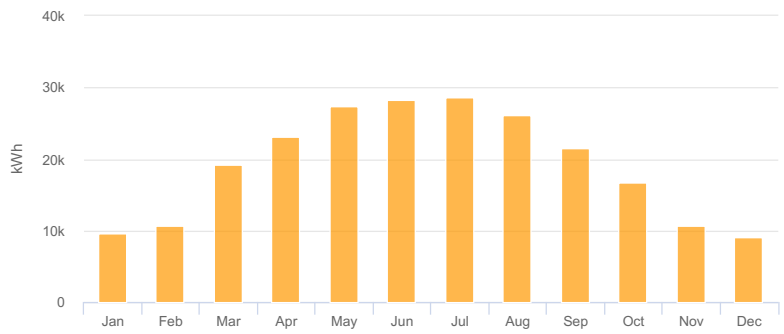
Report

Project Name	San Mateo Foster City SMFCSD
Project Address	1450 Tarpon Street Foster City, CA 94404
Prepared For	SMFCSD
Prepared By	David Williard david@sagerenew.com

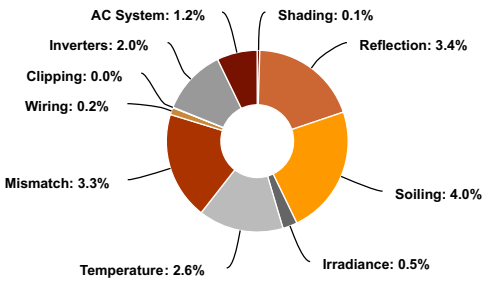
System Metrics

Design	LEAD / Horrall ES
Module DC Nameplate	142.3 kW
Inverter AC Nameplate	150.0 kW Load Ratio: 0.95
Annual Production	231.2 MWh
Performance Ratio	84.4%
kWh/kWp	1,625.3
Weather Dataset	TMY, 10km grid (37.55,-122.25), NREL (prospector)
Simulator Version	32d623a7ec-be57a81186-5f88df888e-db8a00436a

Monthly Production



Sources of System Loss



Annual Production

	Description	Output	% Delta
Irradiance (kWh/m²)	Annual Global Horizontal Irradiance	1,827.8	
	POA Irradiance	1,925.2	5.3%
	Shaded Irradiance	1,923.7	-0.1%
	Irradiance after Reflection	1,858.9	-3.4%
	Irradiance after Soiling	1,784.5	-4.0%
	Total Collector Irradiance	**1,784.5**	**0.0%**
Energy (kWh)	Nameplate	255,703.2	
	Output at Irradiance Levels	254,550.4	-0.5%
	Output at Cell Temperature Derate	247,844.6	-2.6%
	Output After Mismatch	239,581.7	-3.3%
	Optimal DC Output	239,054.7	-0.2%
	Constrained DC Output	239,020.1	0.0%
	Inverter Output	234,154.1	-2.0%
	Energy to Grid	**231,227.2**	**-1.2%**
Temperature Metrics			
	Avg. Operating Ambient Temp		15.5 °C
	Avg. Operating Cell Temp		24.6 °C
Simulation Metrics			
	Operating Hours		4657
	Solved Hours		4657

Condition Set

Description	Condition Set 1
Weather Dataset	TMY, 10km grid (37.55,-122.25), NREL (prospector)
Solar Angle Location	Meteo Lat/Lng
Transposition Model	Perez Model
Temperature Model	Sandia Model

Temperature Model Parameters

Rack Type	a	b	Temperature Delta
Fixed Tilt	-3.56	-0.075	3°C
Flush Mount	-2.81	-0.0455	0°C
East-West	-3.56	-0.075	3°C
Carport	-3.56	-0.075	3°C

Soiling (%)

J	F	M	A	M	J	J	A	S	O	N	D
4	4	4	4	4	4	4	4	4	4	4	4

Irradiation Variance	5%
Cell Temperature Spread	4° C
Module Binning Range	0% to 1.3%
AC System Derate	1.25%

Module Characterizations

Module	Uploaded By	Characterization
LG410N2W-V5 (LG)	Folsom Labs	Spec Sheet Characterization, PAN

Component Characterizations

Device	Uploaded By	Characterization
Sunny Tripower_Core1 50-US-41 (SMA)	Folsom Labs	Default Characterization

Components

Component	Name	Count
Inverters	Sunny Tripower_Core1 50-US-41 (SMA)	3 (150.0 kW)
Home Runs	1/0 AWG (Copper)	6 (401.6 ft)
Combiners	3 input Combiner	3
Combiners	4 input Combiner	3
Strings	10 AWG (Copper)	21 (1,763.0 ft)
Module	LG, LG410N2W-V5 (410W)	347 (142.3 kW)

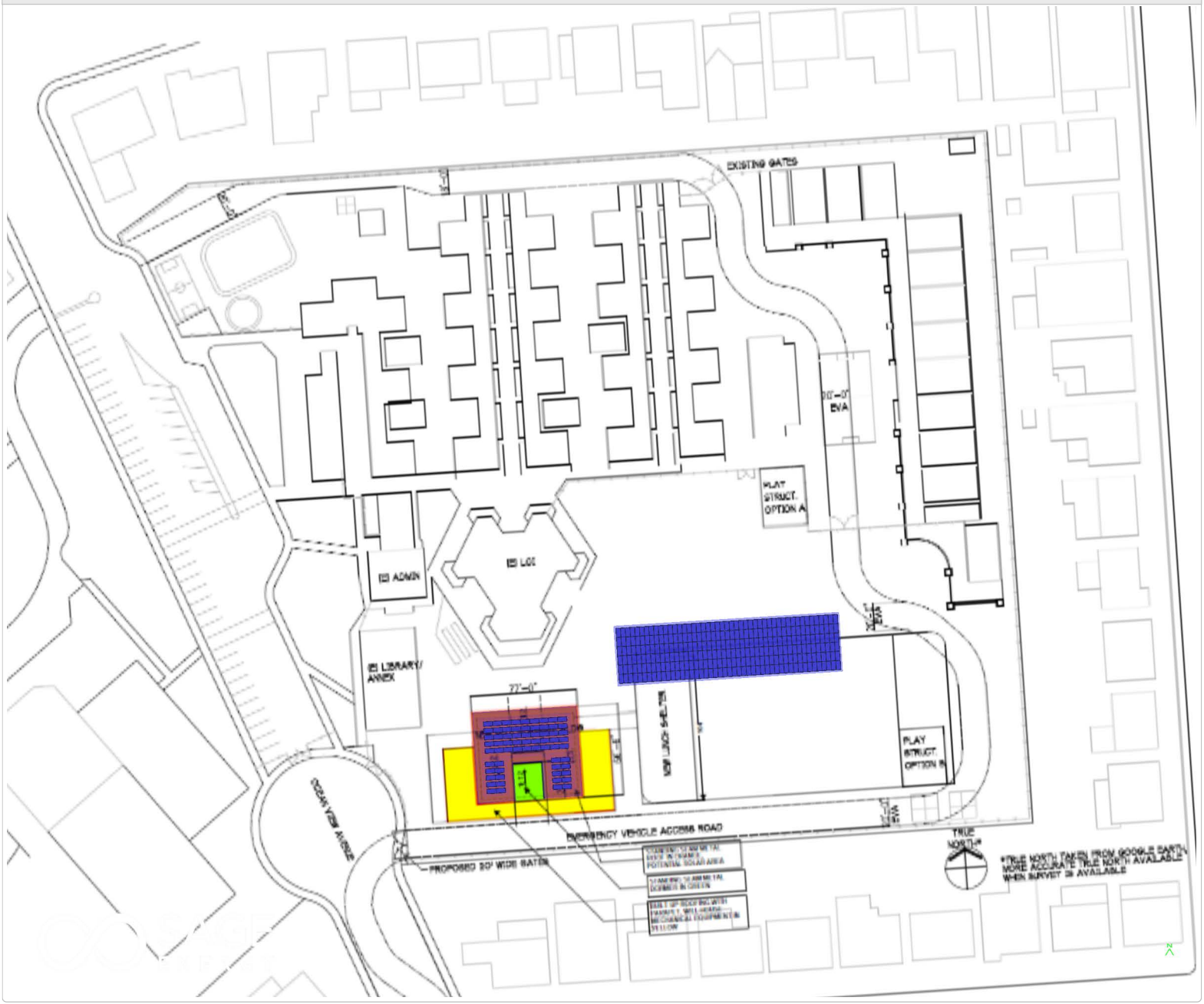
Wiring Zones

Description	Combiner Poles	String Size	Stringing Strategy
Wiring Zone	12	15-19	Along Racking

Field Segments

Description	Racking	Orientation	Tilt	Azimuth	Intrarow Spacing	Frame Size	Frames	Modules	Power
S-1	Carport	Portrait (Vertical)	7°	178.0453°	0.0 ft	6x1	47	282	115.6 kW
IGFS - R1	Fixed Tilt	Landscape (Horizontal)	7°	176.42084°	1.5 ft	1x1	65	65	26.7 kW
IGFS - S1	Carport	Portrait (Vertical)	7°	266.47253°	0.0 ft	6x1			0

Detailed Layout



Meadow Heights ES - added for IGFS

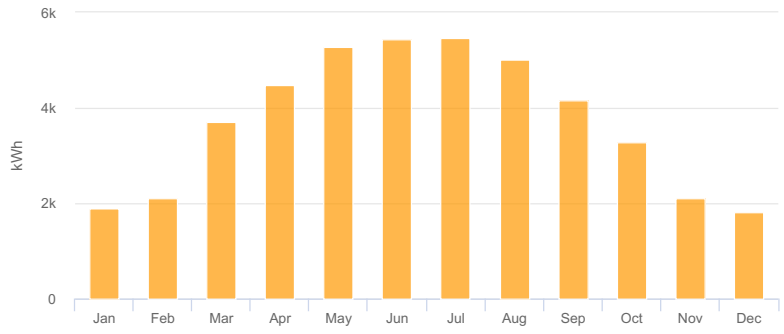
Report

Project Name	San Mateo Foster City SMFCSD
Project Address	1450 Tarpon Street Foster City, CA 94404
Prepared For	SMFCSD
Prepared By	David Williard david@sagerenew.com

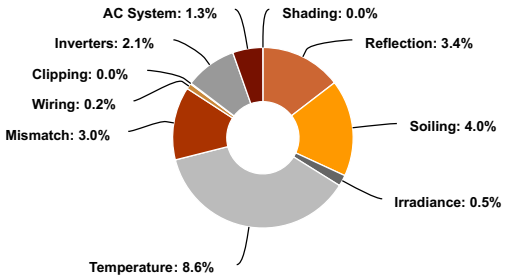
System Metrics

Design	Meadow Heights ES - added for IGFS
Module DC Nameplate	29.5 kW
Inverter AC Nameplate	50.0 kW Load Ratio: 0.59
Annual Production	44.76 MWh
Performance Ratio	79.4%
kWh/kWp	1,516.2
Weather Dataset	TMY, 10km grid (37.55,-122.25), NREL (prospector)
Simulator Version	32d623a7ec-be57a81186-5f88df888e-db8a00436a

Monthly Production



Sources of System Loss



Annual Production

	Description	Output	% Delta
Irradiance (kWh/m²)	Annual Global Horizontal Irradiance	1,827.8	
	POA Irradiance	1,908.5	4.4%
	Shaded Irradiance	1,908.4	0.0%
	Irradiance after Reflection	1,844.2	-3.4%
	Irradiance after Soiling	1,770.4	-4.0%
	Total Collector Irradiance	**1,770.4**	**0.0%**
Energy (kWh)	Nameplate	52,637.5	
	Output at Irradiance Levels	52,394.5	-0.5%
	Output at Cell Temperature Derate	47,892.9	-8.6%
	Output After Mismatch	46,438.0	-3.0%
	Optimal DC Output	46,331.4	-0.2%
	Constrained DC Output	46,316.0	0.0%
	Inverter Output	45,324.8	-2.2%
	Energy to Grid	**44,758.2**	**-1.3%**
Temperature Metrics			
	Avg. Operating Ambient Temp		15.5 °C
	Avg. Operating Cell Temp		34.4 °C
Simulation Metrics			
	Operating Hours		4657
	Solved Hours		4657

Condition Set

Description	Condition Set 1
Weather Dataset	TMY, 10km grid (37.55,-122.25), NREL (prospector)
Solar Angle Location	Meteo Lat/Lng
Transposition Model	Perez Model
Temperature Model	Sandia Model

Temperature Model Parameters

Rack Type	a	b	Temperature Delta
Fixed Tilt	-3.56	-0.075	3°C
Flush Mount	-2.81	-0.0455	0°C
East-West	-3.56	-0.075	3°C
Carport	-3.56	-0.075	3°C

Soiling (%)

J	F	M	A	M	J	J	A	S	O	N	D
4	4	4	4	4	4	4	4	4	4	4	4

Irradiation Variance	5%
Cell Temperature Spread	4° C
Module Binning Range	0% to 1.3%
AC System Derate	1.25%

Module Characterizations

Module	Uploaded By	Characterization
LG410N2W-V5 (LG)	Folsom Labs	Spec Sheet Characterization, PAN

Component Characterizations

Device	Uploaded By	Characterization
Sunny Tripower_Core1 50-US-41 (SMA)	Folsom Labs	Default Characterization

Components

Component	Name	Count
Inverters	Sunny Tripower_Core1 50-US-41 (SMA)	1 (50.0 kW)
Home Runs	1/0 AWG (Copper)	1 (30.0 ft)
Combiners	4 input Combiner	1
Strings	10 AWG (Copper)	4 (140.4 ft)
Module	LG, LG410N2W-V5 (410W)	72 (29.5 kW)

Wiring Zones

Description	Combiner Poles	String Size	Stringing Strategy
Wiring Zone	12	15-19	Along Racking

Field Segments

Description	Racking	Orientation	Tilt	Azimuth	Intrarow Spacing	Frame Size	Frames	Modules	Power
R-1	Flush Mount	Portrait (Vertical)	7°	224.11487°	0.0 ft	1x1			0
R-2	Flush Mount	Portrait (Vertical)	7°	224.11487°	0.0 ft	1x1			0
R-3	Flush Mount	Portrait (Vertical)	7°	224.11487°	0.0 ft	1x1			0
R-4	Flush Mount	Portrait (Vertical)	7°	224.11487°	0.0 ft	1x1			0
Field Segment 5	Flush Mount	Landscape (Horizontal)	10°	133.39503°	1.5 ft	1x1	72	72	29.5 kW

Detailed Layout

Parkside Montessori

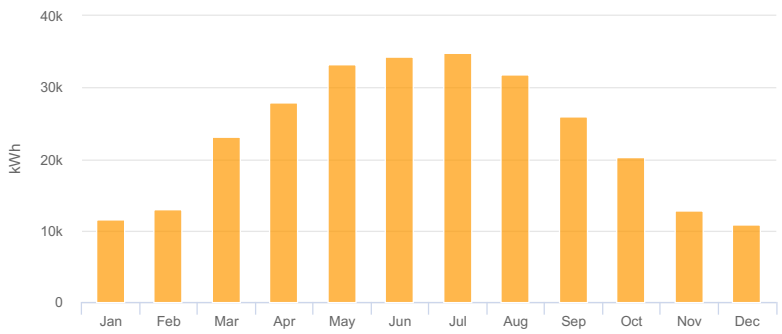
Report

Project Name	San Mateo Foster City SMFCSD
Project Address	1450 Tarpon Street Foster City, CA 94404
Prepared For	SMFCSD
Prepared By	David Williard david@sagerenew.com

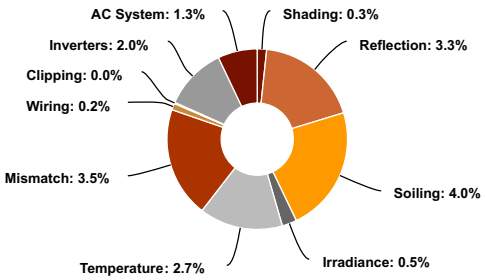
System Metrics

Design	Parkside Montessori
Module DC Nameplate	173.4 kW
Inverter AC Nameplate	150.0 kW Load Ratio: 1.16
Annual Production	279.8 MWh
Performance Ratio	84.2%
kWh/kWp	1,613.3
Weather Dataset	TMY, 10km grid (37.55,-122.25), NREL (prospector)
Simulator Version	ff81f5bea0-448e49a180-3df33d3f15-a622dbef93

Monthly Production



Sources of System Loss



Annual Production

	Description	Output	% Delta
Irradiance (kWh/m²)	Annual Global Horizontal Irradiance	1,827.8	
	POA Irradiance	1,916.9	4.9%
	Shaded Irradiance	1,911.2	-0.3%
	Irradiance after Reflection	1,848.3	-3.3%
	Irradiance after Soiling	1,774.4	-4.0%
	Total Collector Irradiance	**1,774.4**	**0.0%**
Energy (kWh)	Nameplate	309,943.0	
	Output at Irradiance Levels	308,506.7	-0.5%
	Output at Cell Temperature Derate	300,323.6	-2.7%
	Output After Mismatch	289,799.3	-3.5%
	Optimal DC Output	289,203.1	-0.2%
	Constrained DC Output	289,084.6	0.0%
	Inverter Output	283,334.4	-2.0%
	Energy to Grid	**279,792.7**	**-1.3%**
Temperature Metrics			
	Avg. Operating Ambient Temp		15.5 °C
	Avg. Operating Cell Temp		24.5 °C
Simulation Metrics			
	Operating Hours		4657
	Solved Hours		4657

Condition Set

Description	Condition Set 1
Weather Dataset	TMY, 10km grid (37.55,-122.25), NREL (prospector)
Solar Angle Location	Meteo Lat/Lng
Transposition Model	Perez Model
Temperature Model	Sandia Model

Temperature Model Parameters

Rack Type	a	b	Temperature Delta
Fixed Tilt	-3.56	-0.075	3°C
Flush Mount	-2.81	-0.0455	0°C
East-West	-3.56	-0.075	3°C
Carport	-3.56	-0.075	3°C

Soiling (%)

J	F	M	A	M	J	J	A	S	O	N	D
4	4	4	4	4	4	4	4	4	4	4	4

Irradiation Variance	5%
Cell Temperature Spread	4° C
Module Binning Range	0% to 1.3%
AC System Derate	1.25%

Module Characterizations

Module	Uploaded By	Characterization
LG410N2W-V5 (LG)	Folsom Labs	Spec Sheet Characterization, PAN

Component Characterizations

Device	Uploaded By	Characterization
Sunny Tripower_Core1 50-US-41 (SMA)	Folsom Labs	Default Characterization

Components

Component	Name	Count
Inverters	Sunny Tripower_Core1 50-US-41 (SMA)	3 (150.0 kW)
Home Runs	1/0 AWG (Copper)	6 (215.0 ft)
Combiners	3 input Combiner	3
Combiners	5 input Combiner	3
Strings	10 AWG (Copper)	24 (1,574.8 ft)
Module	LG, LG410N2W-V5 (410W)	423 (173.4 kW)

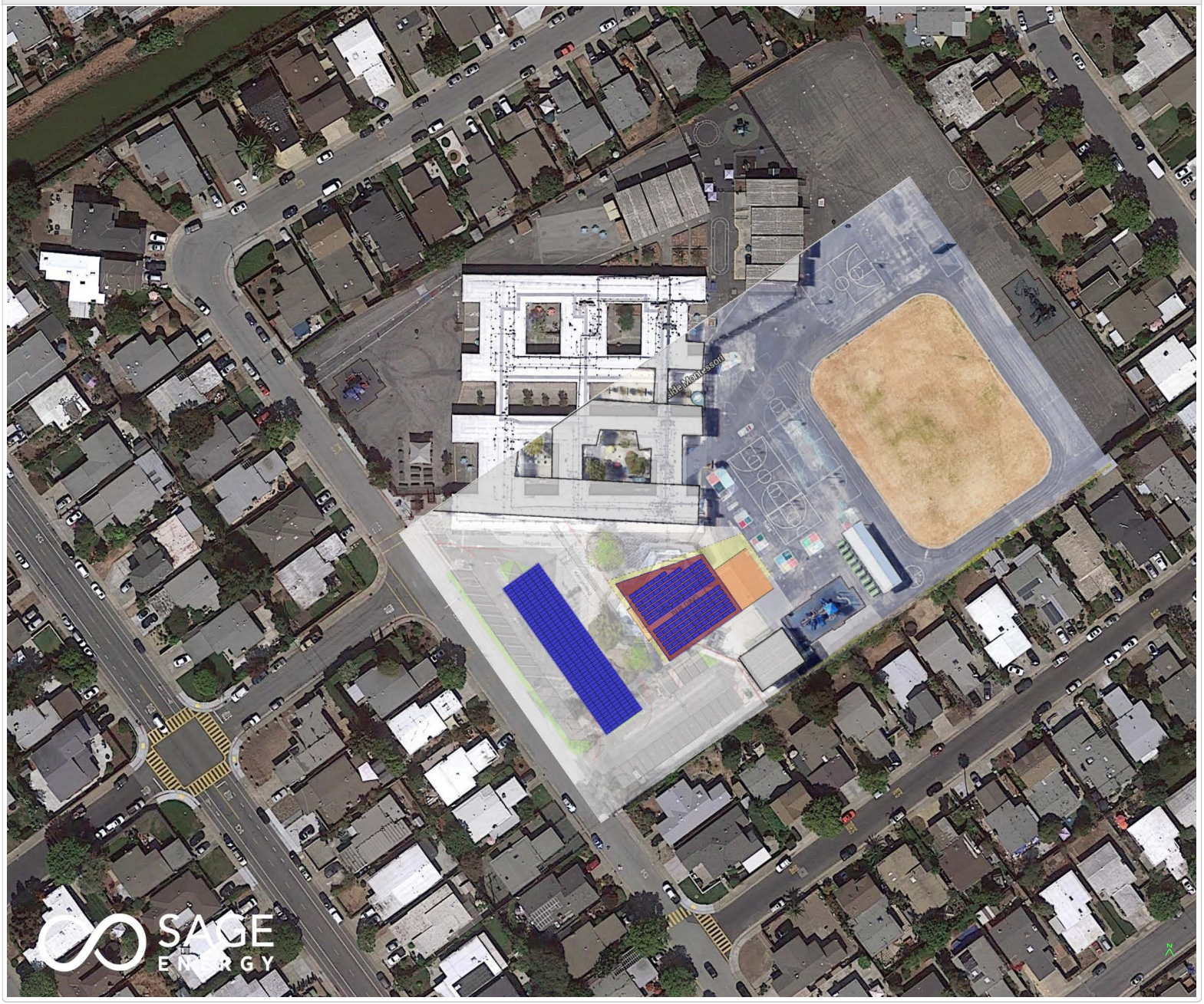
Wiring Zones

Description	Combiner Poles	String Size	Stringing Strategy
Wiring Zone	12	15-19	Along Racking

Field Segments

Description	Racking	Orientation	Tilt	Azimuth	Intrarow Spacing	Frame Size	Frames	Modules	Power
S-2	Carport	Portrait (Vertical)	7°	233.79257°	1.6 ft	6x1			0
IGFS - R1	Fixed Tilt	Landscape (Horizontal)	10°	145.1309°	1.5 ft	1x1	135	135	55.4 kW
IGFS - C1	Carport	Portrait (Vertical)	10°	234.63258°	0.0 ft	6x1	48	288	118.1 kW

Detailed Layout



SMFC District

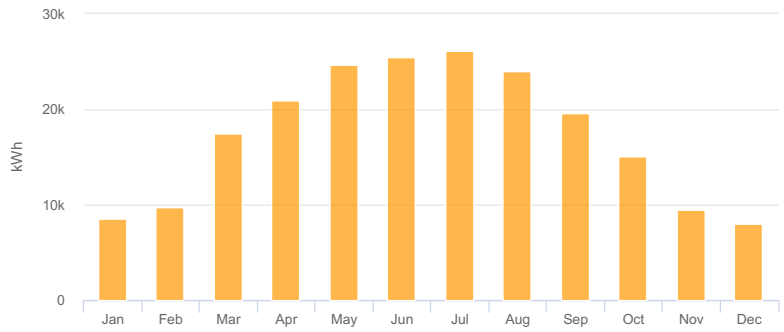
Report

Project Name	San Mateo Foster City SMFCSD
Project Address	1450 Tarpon Street Foster City, CA 94404
Prepared For	SMFCSD
Prepared By	David Williard david@sagerenew.com

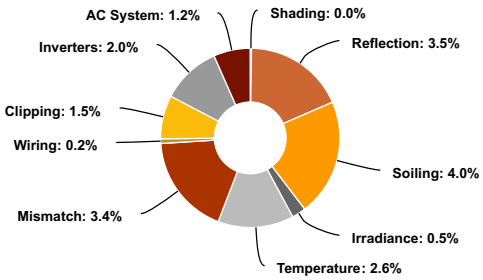
System Metrics

Design	SMFC District
Module DC Nameplate	132.8 kW
Inverter AC Nameplate	100.0 kW Load Ratio: 1.33
Annual Production	209.0 MWh
Performance Ratio	83.1%
kWh/kWp	1,573.0
Weather Dataset	TMY, 10km grid (37.55,-122.25), NREL (prospector)
Simulator Version	32d623a7ec-be57a81186-5f88df888e-db8a00436a

Monthly Production



Sources of System Loss



Annual Production

	Description	Output	% Delta
Irradiance (kWh/m²)	Annual Global Horizontal Irradiance	1,827.8	
	POA Irradiance	1,892.3	3.5%
	Shaded Irradiance	1,891.4	0.0%
	Irradiance after Reflection	1,826.1	-3.5%
	Irradiance after Soiling	1,753.1	-4.0%
	Total Collector Irradiance	**1,753.1**	**0.0%**
Energy (kWh)	Nameplate	234,553.1	
	Output at Irradiance Levels	233,431.4	-0.5%
	Output at Cell Temperature Derate	227,399.4	-2.6%
	Output After Mismatch	219,581.4	-3.4%
	Optimal DC Output	219,230.5	-0.2%
	Constrained DC Output	215,976.2	-1.5%
	Inverter Output	211,608.4	-2.0%
	Energy to Grid	**208,963.3**	**-1.2%**
Temperature Metrics			
	Avg. Operating Ambient Temp		15.5 °C
	Avg. Operating Cell Temp		24.4 °C
Simulation Metrics			
	Operating Hours		4657
	Solved Hours		4657

Condition Set

Description	Condition Set 1
Weather Dataset	TMY, 10km grid (37.55,-122.25), NREL (prospector)
Solar Angle Location	Meteo Lat/Lng
Transposition Model	Perez Model
Temperature Model	Sandia Model

Temperature Model Parameters

Rack Type	a	b	Temperature Delta
Fixed Tilt	-3.56	-0.075	3°C
Flush Mount	-2.81	-0.0455	0°C
East-West	-3.56	-0.075	3°C
Carport	-3.56	-0.075	3°C

Soiling (%)

J	F	M	A	M	J	J	A	S	O	N	D
4	4	4	4	4	4	4	4	4	4	4	4

Irradiation Variance	5%
Cell Temperature Spread	4° C
Module Binning Range	0% to 1.3%
AC System Derate	1.25%

Module Characterizations

Module	Uploaded By	Characterization
LG410N2W-V5 (LG)	Folsom Labs	Spec Sheet Characterization, PAN

Component Characterizations

Device	Uploaded By	Characterization
Sunny Tripower_Core1 50-US-41 (SMA)	Folsom Labs	Default Characterization

Components

Component	Name	Count
Inverters	Sunny Tripower_Core1 50-US-41 (SMA)	2 (100.0 kW)
Home Runs	1/0 AWG (Copper)	2 (25.0 ft)
Combiners	9 input Combiner	2
Strings	10 AWG (Copper)	18 (1,372.1 ft)
Module	LG, LG410N2W-V5 (410W)	324 (132.8 kW)

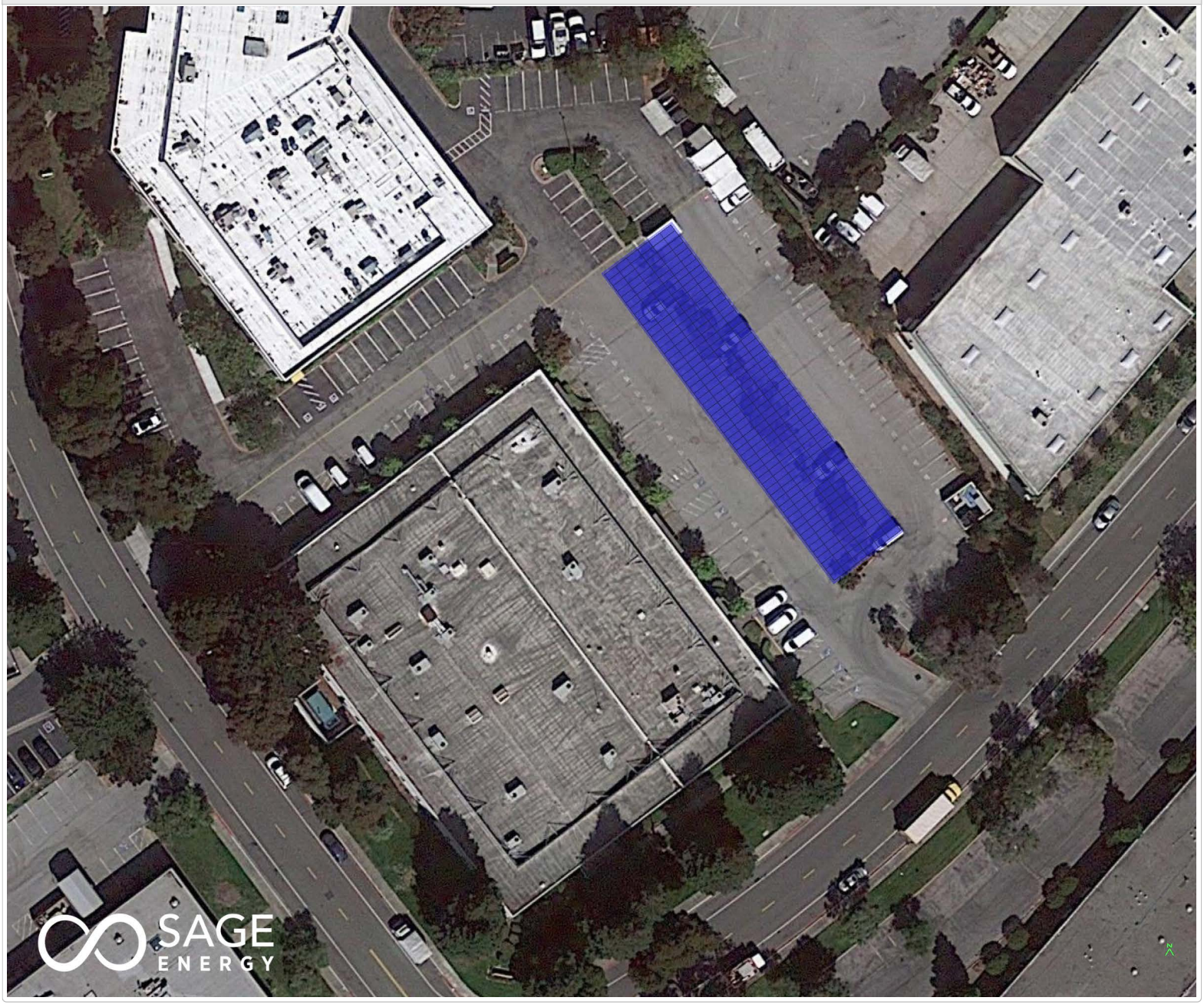
Wiring Zones

Description	Combiner Poles	String Size	Stringing Strategy
Wiring Zone	12	15-19	Along Racking

Field Segments

Description	Racking	Orientation	Tilt	Azimuth	Intrarow Spacing	Frame Size	Frames	Modules	Power
R-1	Carport	Landscape (Horizontal)	7°	233.20232°	1.6 ft	1x1			0
C-1	Carport	Portrait (Vertical)	7°	233.1°	0.0 ft	6x1	54	324	132.8 kW

Detailed Layout



Sunnybrae ES

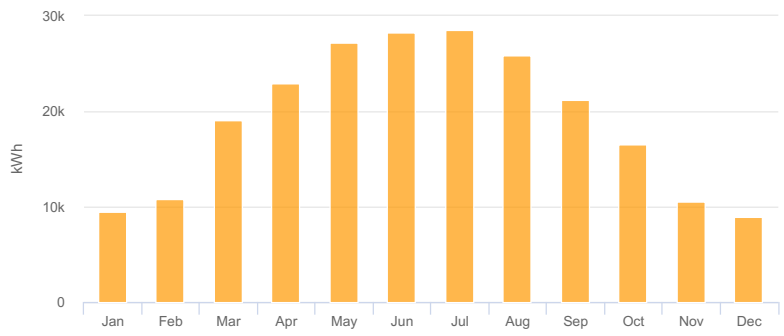
Report

Project Name	San Mateo Foster City SMFCSD
Project Address	1450 Tarpon Street Foster City, CA 94404
Prepared For	SMFCSD
Prepared By	David Williard david@sagerenew.com

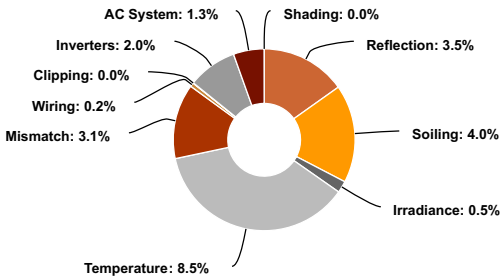
System Metrics

Design	Sunnybrae ES
Module DC Nameplate	151.7 kW
Inverter AC Nameplate	150.0 kW Load Ratio: 1.01
Annual Production	229.2 MWh
Performance Ratio	79.6%
kWh/kWp	1,510.8
Weather Dataset	TMY, 10km grid (37.55,-122.25), NREL (prospector)
Simulator Version	32d623a7ec-be57a81186-5f88df888e-db8a00436a

Monthly Production



Sources of System Loss



Annual Production

	Description	Output	% Delta
Irradiance (kWh/m²)	Annual Global Horizontal Irradiance	1,827.8	
	POA Irradiance	1,897.3	3.8%
	Shaded Irradiance	1,897.2	0.0%
	Irradiance after Reflection	1,831.4	-3.5%
	Irradiance after Soiling	1,758.2	-4.0%
	Total Collector Irradiance	**1,758.2**	**0.0%**
Energy (kWh)	Nameplate	268,630.9	
	Output at Irradiance Levels	267,355.9	-0.5%
	Output at Cell Temperature Derate	244,727.1	-8.5%
	Output After Mismatch	237,247.3	-3.1%
	Optimal DC Output	236,880.1	-0.2%
	Constrained DC Output	236,845.5	0.0%
	Inverter Output	232,093.5	-2.0%
	Energy to Grid	**229,192.3**	**-1.3%**
Temperature Metrics			
	Avg. Operating Ambient Temp		15.5 °C
	Avg. Operating Cell Temp		34.2 °C
Simulation Metrics			
	Operating Hours		4657
	Solved Hours		4657

Condition Set

Description	Condition Set 1
Weather Dataset	TMY, 10km grid (37.55,-122.25), NREL (prospector)
Solar Angle Location	Meteo Lat/Lng
Transposition Model	Perez Model
Temperature Model	Sandia Model

Temperature Model Parameters

Rack Type	a	b	Temperature Delta
Fixed Tilt	-3.56	-0.075	3°C
Flush Mount	-2.81	-0.0455	0°C
East-West	-3.56	-0.075	3°C
Carport	-3.56	-0.075	3°C

Soiling (%)

J	F	M	A	M	J	J	A	S	O	N	D
4	4	4	4	4	4	4	4	4	4	4	4

Irradiation Variance	5%
Cell Temperature Spread	4° C
Module Binning Range	0% to 1.3%
AC System Derate	1.25%

Module Characterizations

Module	Uploaded By	Characterization
LG410N2W-V5 (LG)	Folsom Labs	Spec Sheet Characterization, PAN

Component Characterizations

Device	Uploaded By	Characterization
Sunny Tripower_Core1 50-US-41 (SMA)	Folsom Labs	Default Characterization

Components

Component	Name	Count
Inverters	Sunny Tripower_Core1 50-US-41 (SMA)	3 (150.0 kW)
Home Runs	1/0 AWG (Copper)	6 (210.3 ft)
Combiners	3 input Combiner	3
Combiners	4 input Combiner	3
Strings	10 AWG (Copper)	21 (1,029.1 ft)
Module	LG, LG410N2W-V5 (410W)	370 (151.7 kW)

Wiring Zones

Description	Combiner Poles	String Size	Stringing Strategy
Wiring Zone	12	15-19	Along Racking

Field Segments

Description	Racking	Orientation	Tilt	Azimuth	Intrarow Spacing	Frame Size	Frames	Modules	Power
R-1	Flush Mount	Landscape (Horizontal)	7°	229.126°	0.0 ft	1x1			0
R-2	Flush Mount	Landscape (Horizontal)	7°	229.126°	0.0 ft	1x1			0
C-1	Flush Mount	Portrait (Vertical)	7°	229.00328°	0.0 ft	5x1	35	175	71.8 kW
C-2	Flush Mount	Portrait (Vertical)	7°	229.15654°	0.0 ft	5x1	39	195	80.0 kW

Detailed Layout