



# Solar Photovoltaic (PV) Feasibility Update

## San Mateo Union High School District

Board of Trustees Meeting  
May 2022

# AGENDA

1. Progress Since Last Update
2. Project Costs and Savings
3. Site-by-Site Financial Analysis
4. Site Layouts
5. Next Steps

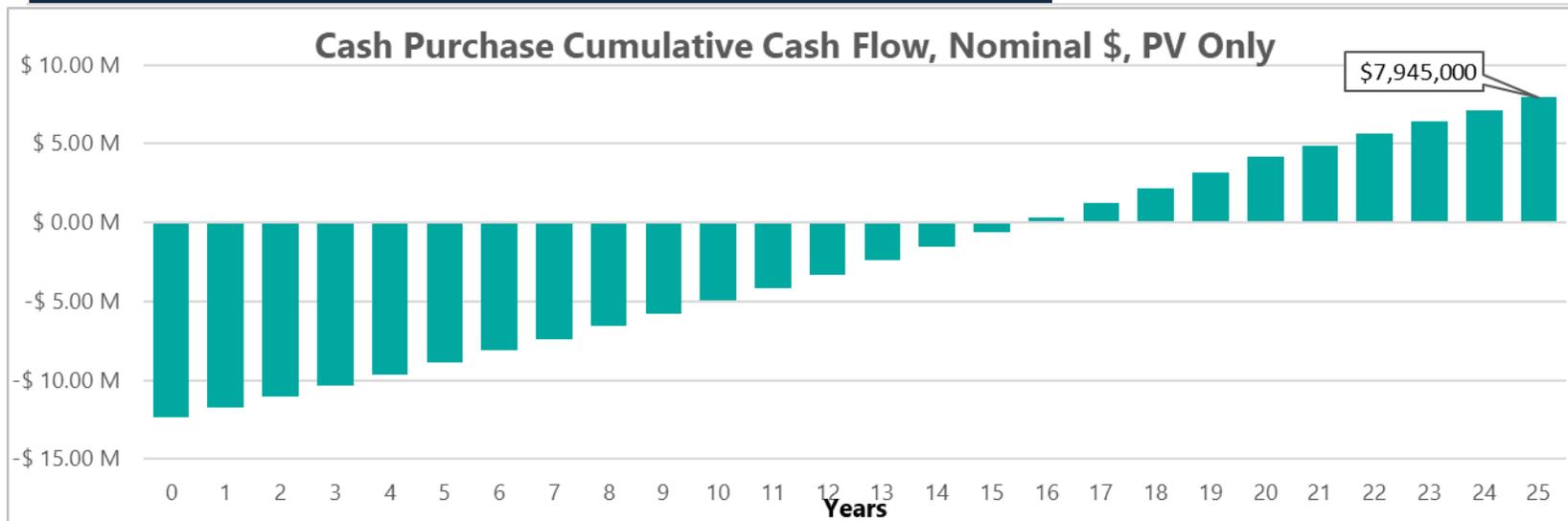


# PROGRESS SINCE LAST UPDATE

1. Filed Interconnection Applications (IA) with PG&E to secure NEM 2 grandfathering
2. Updated solar PV pricing to reflect current market conditions
3. Updated solar PV savings to reflect current utility tariffs
4. Gathered “Site Details” packet of information with relevant site-specific details and cash flows

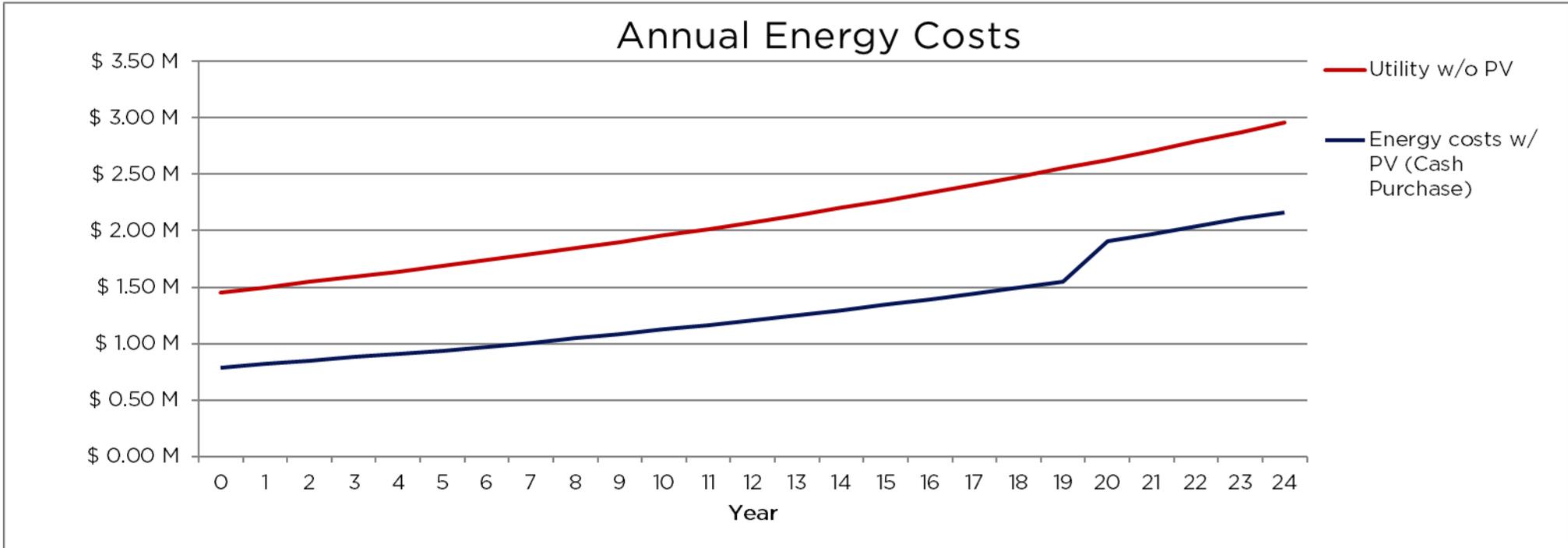
# PROJECT COSTS AND SAVINGS

	Cash Purchase (\$4.59/W)
Approximate Project Size	2.32 MW
Project Capital Costs	\$10.66M
Project Development Costs	\$1.71M
25-Year Nominal Savings	\$7.94M
25-Year NPV Savings, 2.0% Discount Rate	\$3.36M



# PROJECT ANNUAL ENERGY COST SAVINGS

	<b>Cash Purchase</b>
<b>Year 1 Energy Savings vs Utility, Nominal \$</b>	\$668k
<b>25-Year Energy Savings vs Utility, Nominal \$</b>	\$20.3M



# SITE-BY-SITE FINANCIAL ANALYSIS

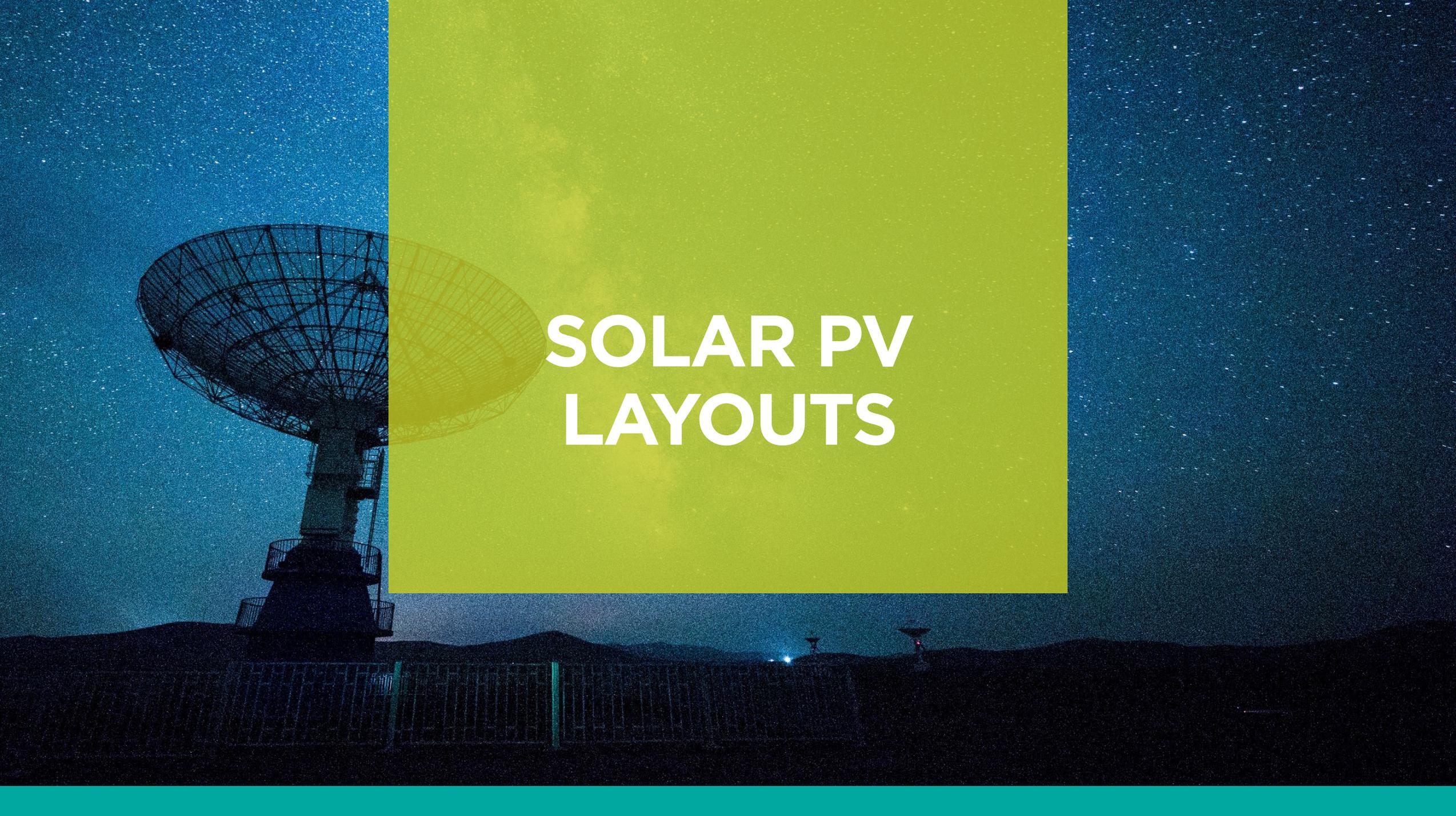
Site	System Size (kWp)	Estimated Capital Cost <sup>1,2</sup> (\$)	Energy Consumption Offset <sup>3</sup> (Yr 1)	Utility Bill Offset <sup>3</sup> (Yr 1)	Lifetime Nominal Savings <sup>1</sup> (\$)	Lifetime NPV Savings <sup>1</sup> (\$, 2023)
Aragon HS	395	\$2,062,000	89%	72%	\$875,000	\$212,000
Burlingame HS	255	\$1,361,000	70%	56%	\$693,000	\$228,000
Capuchino HS	385	\$2,049,000	83%	77%	\$1,809,000	\$936,000
Hillsdale HS	320	\$1,681,000	87%	60%	\$609,000	\$93,000
Mills HS	435	\$2,260,000	89%	85%	\$2,114,000	\$1,125,000
San Mateo HS	285	\$1,565,000	96%	91%	\$1,123,000	\$514,000
District Office	155	\$804,000	84%	56%	\$226,000	(\$8,000)
Peninsula HS	60	\$389,000	91%	87%	\$270,000	\$118,000
Maintenance	30	\$198,000	87%	83%	\$148,000	\$68,000
<b>TOTAL<sup>4</sup></b>	<b>2,320</b>	<b>\$12,368,000</b>	<b>87%</b>	<b>74%</b>	<b>\$7,945,000</b>	<b>\$3,358,000</b>

<sup>1</sup> Individual costs and savings assume portfolio pricing and may not be achievable on each individual site basis

<sup>2</sup> Costs include an estimated 16% soft costs, including 10% contingency

<sup>3</sup> Offset percentages include existing solar PV

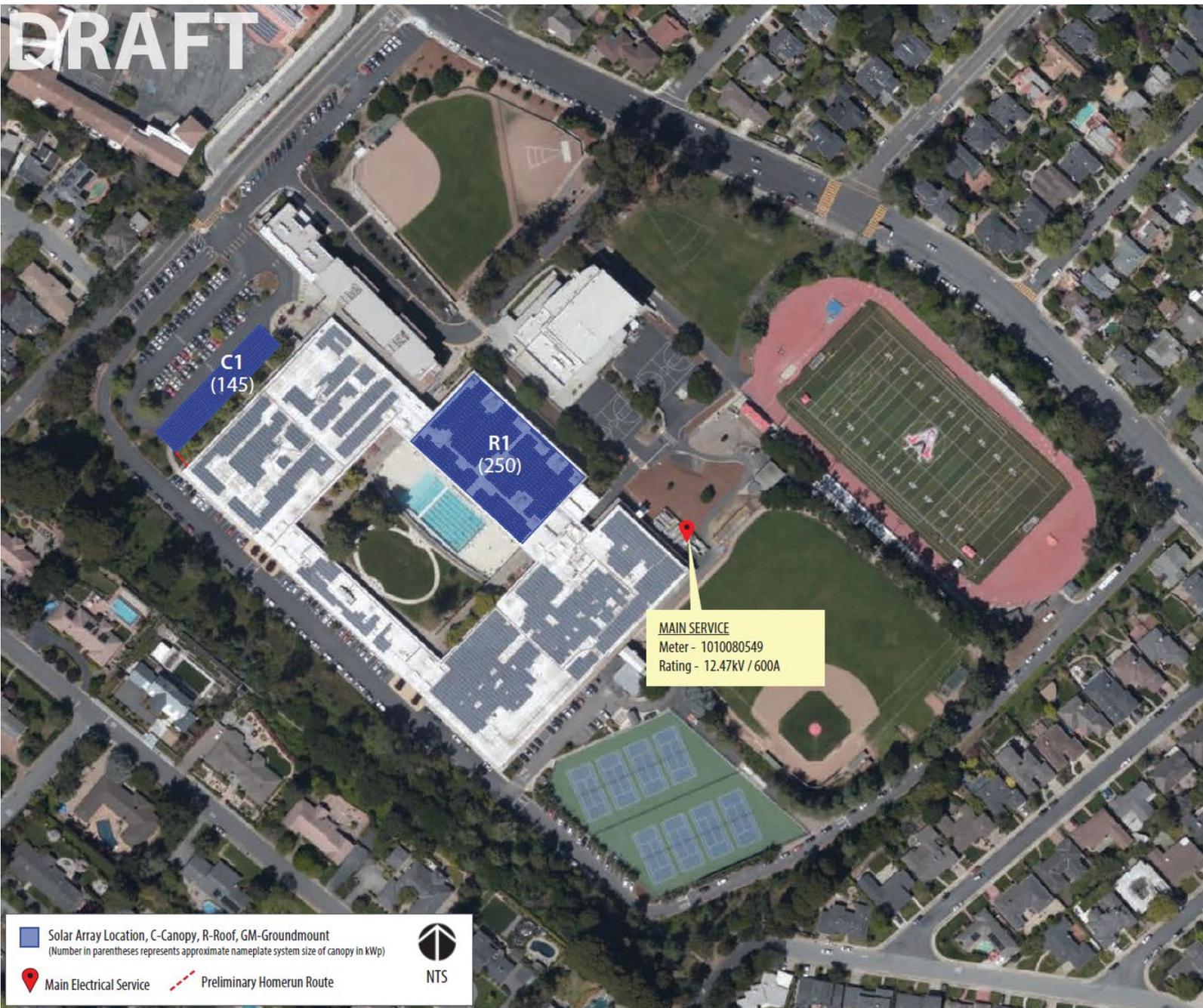
<sup>4</sup> Because of some fixed fees, not all of the total costs/savings are the same as the sum of each individual site

A large satellite dish antenna is silhouetted against a dark, starry night sky. The dish is positioned on the left side of the frame. A large, semi-transparent yellow-green rectangle is overlaid on the right side of the image, containing the text 'SOLAR PV LAYOUTS' in white, bold, sans-serif capital letters. The background shows a dark landscape with a fence in the foreground and other smaller satellite dishes visible in the distance under a starry sky.

# SOLAR PV LAYOUTS

DRAFT

Aragon HS  
900 Alameda De Las Pulgas, San Mateo, CA 94402



 Solar Array Location, C-Canopy, R-Roof, GM-Groundmount  
(Number in parentheses represents approximate nameplate system size of canopy in kWp)

 Main Electrical Service

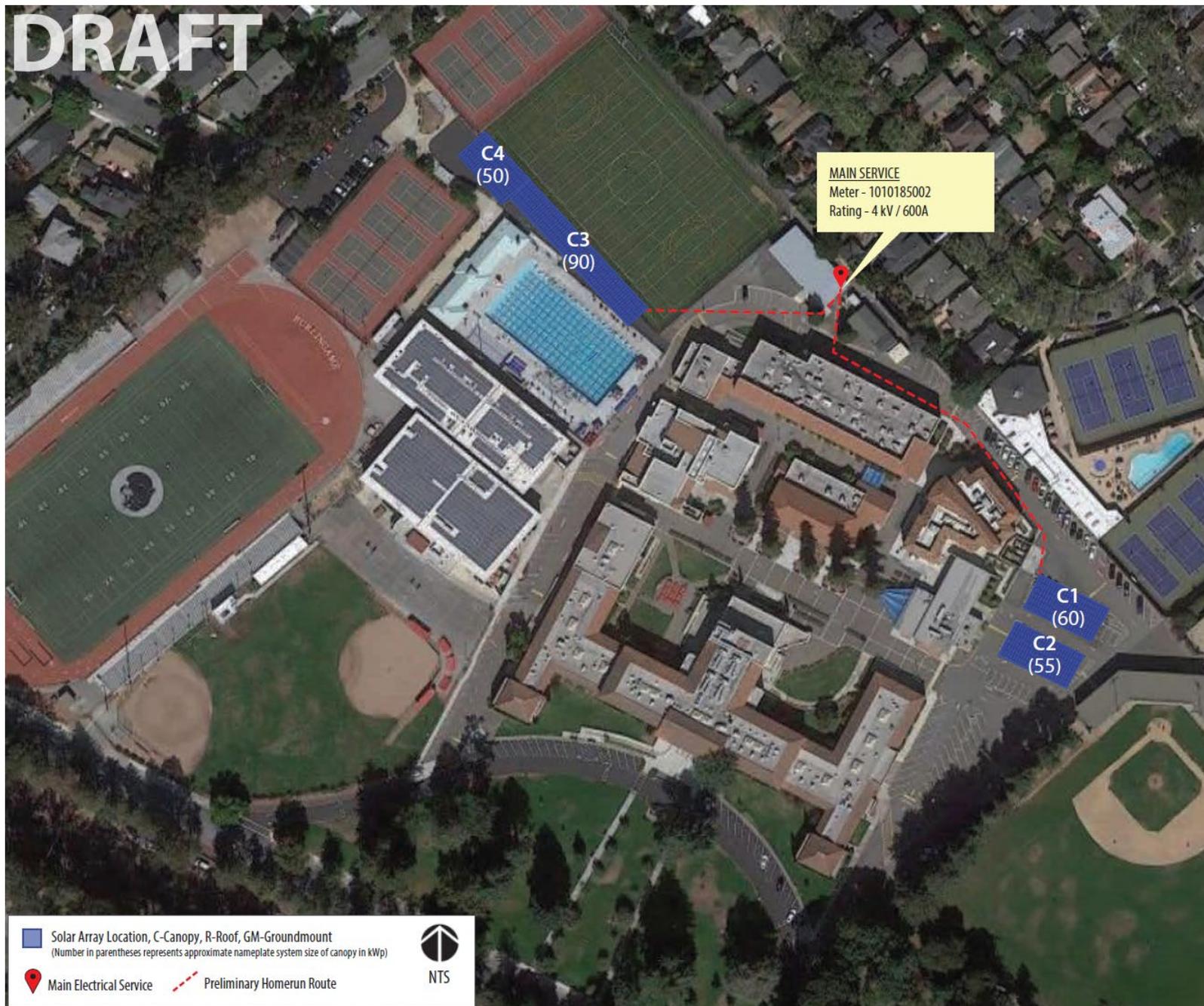
 Preliminary Homerun Route

 NTS

SMUHSD Solar, Preliminary Siting  
3/21/2022



# DRAFT



MAIN SERVICE  
Meter - 1010185002  
Rating - 4 kV / 600A

 Solar Array Location, C-Canopy, R-Roof, GM-Groundmount  
(Number in parentheses represents approximate nameplate system size of canopy in kWp)

 Main Electrical Service

 Preliminary Homerun Route

 NTS

## Burlingame HS

1 Mangini Way, Burlingame, CA 94010

**Note:** Layout may be updated when details of new gym project are available.

SMUHSD Solar, Preliminary Siting  
3/21/2022



# DRAFT

Capuchino HS  
1501 Magnolia Ave, San Bruno, CA 94066



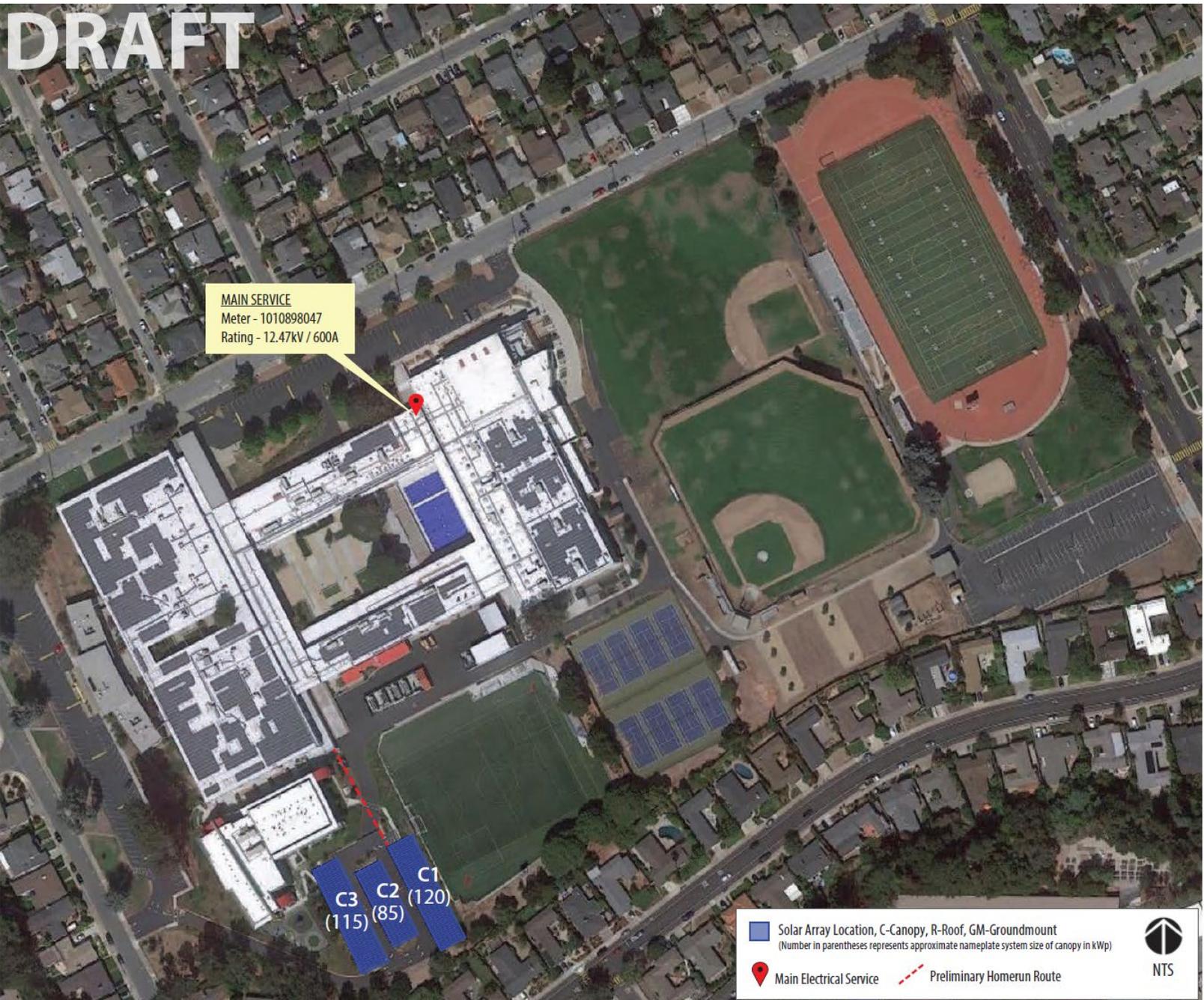
SMUHSD Solar, Preliminary Siting  
3/21/2022



# DRAFT

## Hillsdale HS

31St Ave & Del Monte, San Mateo, CA 94403



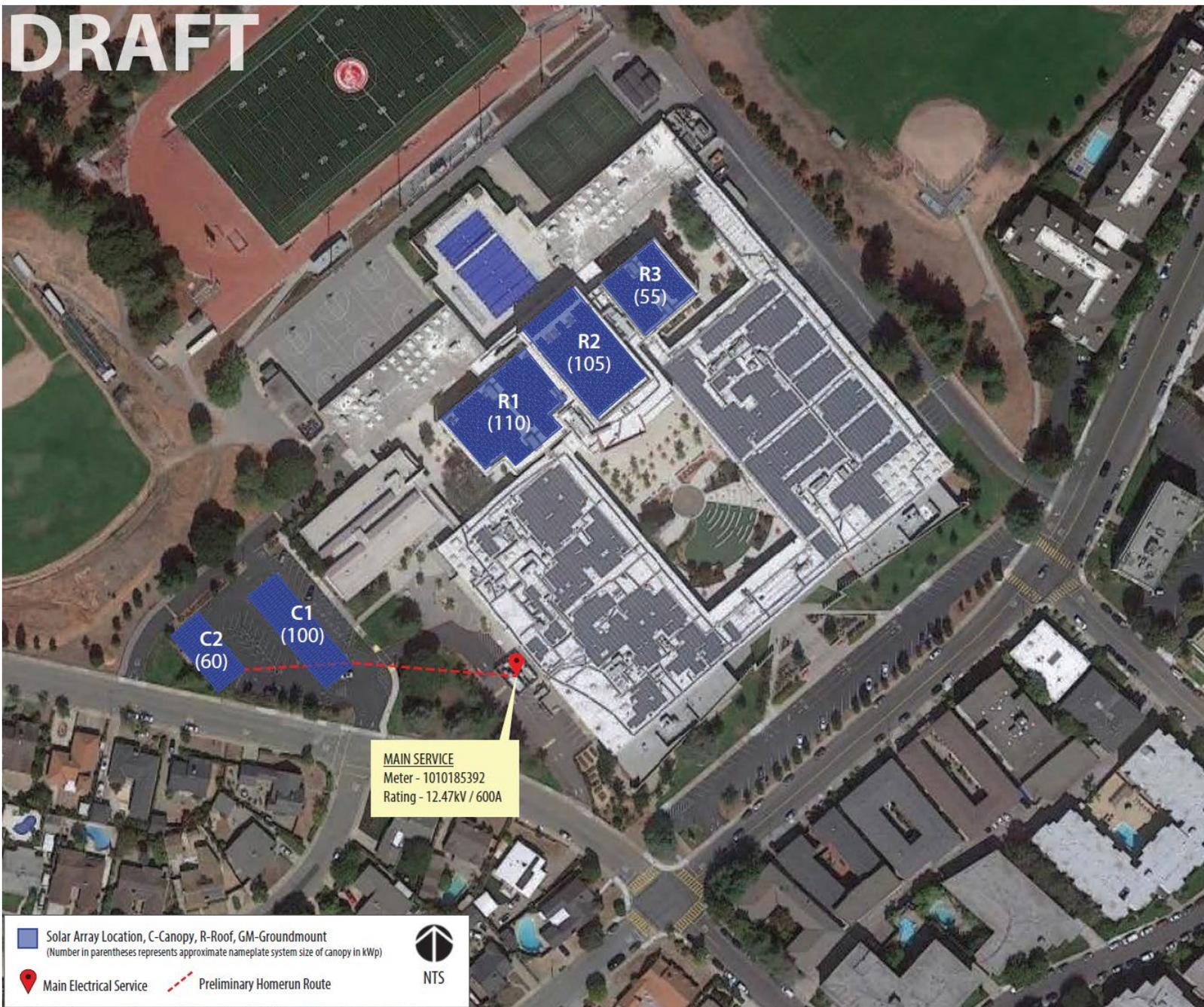
SMUHSD Solar, Preliminary Siting  
3/21/2022



# DRAFT

## Mills HS

400 Murchison Dr, Millbrae, CA 94030



SMUHSD Solar, Preliminary Siting  
3/22/2022



DRAFT

San Mateo HS  
506 N Delaware St, San Mateo, CA 94401

**Note:** Layout may be updated when details of new gym project are available.



SMUHSD Solar, Preliminary Siting  
3/22/2022

**SAGE**  
ENERGY CONSULTING  
an NIVS company

DRAFT

District Office  
506 N Delaware St, San Mateo, CA 94401



SMUHSD Solar, Preliminary Siting  
3/21/2022



DRAFT

Peninsula HS  
860 Hinckley Rd, Burlingame, CA 94010



SMUHSD Solar, Preliminary Siting  
3/22/2022



DRAFT

# Maintenance Yard

839 Hinckley Rd, Burlingame, CA 94010



MAIN SERVICE  
Meter - 1004551370  
Rating - 120/208V / 225A

R1  
(30)

 Solar Array Location, C-Canopy, R-Roof, GM-Groundmount  
(Number in parentheses represents approximate nameplate system size of canopy in kWp)

 Main Electrical Service

 Preliminary Homerun Route

 NTS

SMUHSD Solar, Preliminary Siting  
3/22/2022



# EXISTING SYSTEM PERFORMANCE

## July 2020 to 2021 Performance

Site	System Size (kWp)	Production (kWh)	Weather Adjusted Performance <sup>1</sup> (%)	Nominal Savings (\$)	Energy Consumption Offset	Utility Bill Offset
Aragon HS	745	922,000	95%	\$175,000	53%	52%
Burlingame HS	260	297,000	80%	\$37,000	24%	18%
Capuchino HS	660	887,000	108%	\$209,000	60%	62%
Hillsdale HS	770	864,000	91%	\$181,000	59%	53%
Mills HS	485	695,000	93%	\$161,000	64%	70%
San Mateo HS	840	1,060,000	83%	\$270,000	68%	76%
<b>TOTAL</b>	<b>3,760</b>	<b>4,725,000</b>	<b>92%</b>	<b>\$1,033,000</b>	<b>55%</b>	<b>57%</b>

<sup>1</sup> Weather adjusted performance is the ratio of actual PV production relative to what was expected based on modeling, system age, and weather

**Note:** Existing PV systems are billed under NEM 1, while new PV systems would be billed under NEM 2. This means that exported energy from the existing systems is valued ~10% higher than for the new systems.

# NEXT STEPS

1. District review of Site Details and Board direction\*
2. Determine project milestone schedule
3. Solicit competitive proposals through RFP under CA GC 4217
4. Evaluate proposals and rank vendors\*
5. Contract negotiations with top-ranked vendor\*
6. Design, construction, and commissioning

*\* Go/no-go decision points*



## Q&A

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