CMS Solar Project

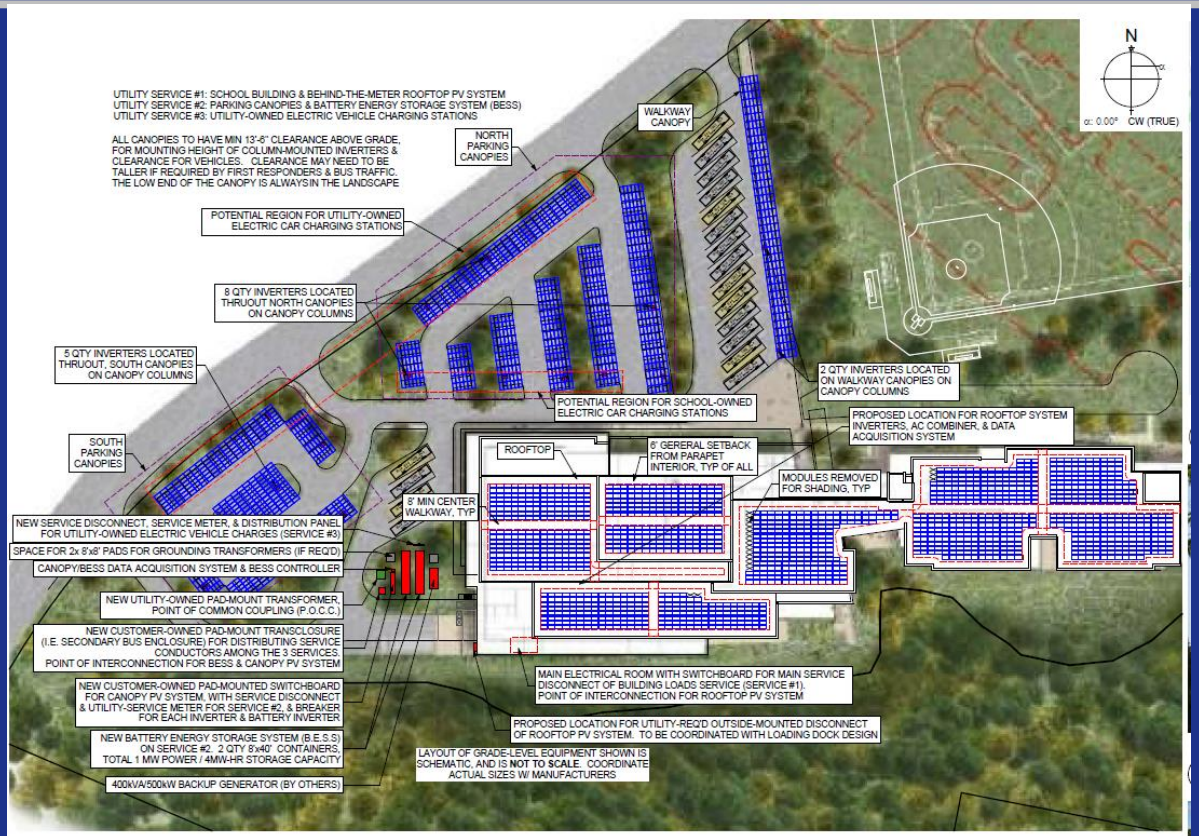
- Goal: Net Zero Building or generating as much energy as being used on site
- Cost will be separate from proposed article
- CMLP is leading the design and financing

CURRENT STATUS

- CMLP hired a consultant to assist
- Completed feasibility study of maximum installation
- Rooftop and ground canopies are possible

3 SIMILAR PARKING CANOPY

4 SIMILAR ROOFTOP CANOPY


UTILITY SERVICE #1: SCHOOL BUILDING & BEHIND-THE-METER ROOFTOP PV SYSTEM
UTILITY SERVICE #2: PARKING CANOPIES & BATTERY ENERGY STORAGE SYSTEM (BESS)
UTILITY SERVICE #3: UTILITY-OWNED ELECTRIC VEHICLE CHARGING STATIONS
ALL CANOPIES TO HAVE MIN 13'-6" CLEARANCE ABOVE GRADE, FOR MOUNTING HEIGHT OF COLUMN-MOUNTED INVERTERS & CLEARANCE FOR VEHICLES. CLEARANCE MAY NEED TO BE TALLER IF REQUIRED BY FIRST RESPONDERS & BUS TRAFFIC. THE LOW END OF THE CANOPY IS ALWAYS IN THE LANDSCAPE
NORTH PARKING CANOPIES
WALKWAY CANOPY
N
α: 0.00° CW (TRUE)
POTENTIAL REGION FOR UTILITY-OWNED ELECTRIC CAR CHARGING STATIONS
8 QTY INVERTERS LOCATED THRUOUT NORTH CANOPIES ON CANOPY COLUMNS
5 QTY INVERTERS LOCATED THRUOUT, SOUTH CANOPIES ON CANOPY COLUMNS
2 QTY INVERTERS LOCATED ON WALKWAY CANOPIES ON CANOPY COLUMNS
POTENTIAL REGION FOR SCHOOL-OWNED ELECTRIC CAR CHARGING STATIONS
PROPOSED LOCATION FOR ROOFTOP SYSTEM INVERTERS, AC COMBINER, & DATA ACQUISITION SYSTEM
SOUTH PARKING CANOPIES
ROOFTOP
6' GERERAL SETBACK FROM PARAPET INTERIOR, TYP OF ALL
MODULES REMOVED FOR SHADING, TYP
8' MIN CENTER WALKWAY, TYP
NEW SERVICE DISCONNECT, SERVICE METER, & DISTRIBUTION PANEL FOR UTILITY-OWNED ELECTRIC VEHICLE CHARGES (SERVICE #3)
SPACE FOR 2x 8'x8' PADS FOR GROUNDING TRANSFORMERS (IF REQ'D)
CANOPY/BESS DATA ACQUISITION SYSTEM & BESS CONTROLLER
NEW UTILITY-OWNED PAD-MOUNT TRANSFORMER, POINT OF COMMON COUPLING (P.O.C.C.)
NEW CUSTOMER-OWNED PAD-MOUNT TRANSCLOSURE (I.E. SECONDARY BUS ENCLOSURE) FOR DISTRIBUTING SERVICE CONDUCTORS AMONG THE 3 SERVICES. POINT OF INTERCONNECTION FOR BESS & CANOPY PV SYSTEM
NEW CUSTOMER-OWNED PAD-MOUNTED SWITCHBOARD FOR CANOPY PV SYSTEM, WITH SERVICE DISCONNECT & UTILITY-SERVICE METER FOR SERVICE #2, & BREAKER FOR EACH INVERTER & BATTERY INVERTER
NEW BATTERY ENERGY STORAGE SYSTEM (B.E.S.S) ON SERVICE #2. 2 QTY 8'x40' CONTAINERS, TOTAL 1 MW POWER / 4MW-HR STORAGE CAPACITY
400kVA/500kW BACKUP GENERATOR (BY OTHERS)
MAIN ELECTRICAL ROOM WITH SWITCHBOARD FOR MAIN SERVICE DISCONNECT OF BUILDING LOADS SERVICE (SERVICE #1). POINT OF INTERCONNECTION FOR ROOFTOP PV SYSTEM
PROPOSED LOCATION FOR UTILITY-REQ'D OUTSIDE-MOUNTED DISCONNECT OF ROOFTOP PV SYSTEM. TO BE COORDINATED WITH LOADING DOCK DESIGN
LAYOUT OF GRADE-LEVEL EQUIPMENT SHOWN IS SCHEMATIC, AND IS NOT TO SCALE. COORDINATE ACTUAL SIZES W/ MANUFACTURERS
1 1,263.32 kWdc (1,216.5 kWac) PV ARRAY WITH 2,748 QTY MODULES AT 7° THRU 10° FIXED TILTS
0 20' 50' 100'

CMSBC AND CMLP COORDINATION

- Designers have been collaborating
- CMLP has met with CMSBC on several occasions
- Project has been presented to the Light Board
- Estimated energy use intensity (EUI) < CCHS
  - CCHS approximately uses less than 1 MW
  - Max capacity is approximately 4MW so even if half are installed, we should be able to meet need

CMLP NEXT STEPS

- If the CMS warrant article is approved:
  - CMLP consultant will work with CMS designers to design a system meeting or exceeding energy needs
  - With size and capacity numbers, CMLP will determine the financing to ensure equitable benefits to customer base

TIMING OF SOLAR

- Will aim to work in tandem with CMSBC timeline:
  - 1.5 of design and bid
  - 1.5 years of construction
- Exact timing of construction will need to be assessed during future design phase

COST ESTIMATES OF SOLAR

Rooftop Panels	$1,900,000
Canopy	+$2,000,000
Total for Solar	**$3,900,000**
Battery	**$4-6 million** (depending upon size)