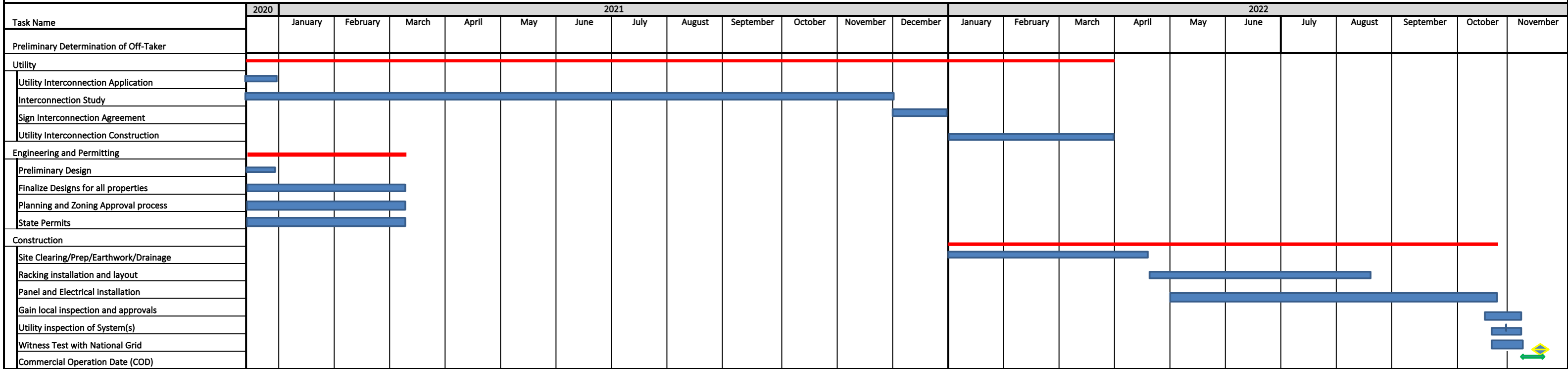


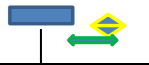
Revity Energy

Main St Solar Project
Project Timeline



Project: Main St's Solar Project
Main St
Hopkinton, RI

■	Task
→	Rollout
—	Summary
◇	Deadline





**8,250 kWac MAIN ST
HOPKINTON GROUND
MOUNTED PV PROJECT**

O&M Plan

October 2020

Operations and Maintenance Plan

Owner/responsible party:



Contact information to be provided at a later date.

Service Items	Est. Frequency
Visual inspection of the Systems general site conditions, PV array, electrical equipment (loose electrical and ground connections), mounting structure, DAS, erosion, corrosion, and discolored panels.	Quarterly
Remove and dispose of materials (i.e. trash, etc.) that may be found in, on or under the PV array obstructing the array.	Quarterly
Test the PV system and DAS, including string level open circuit voltage of all the strings and DC operating amperage tests.	Annually
Perform Infrared (IR) scans on all combiner boxes, re-combiner boxes and inverter connections.	Annually
Perform Infrared (IR) scans on at least 20% of PV modules to determine any loose connections and hot spots within junction boxes/module connections.	Annually
Conduct inverter preventative maintenance in compliance with all manufacturer's operation guidelines, including the cleaning of inverter cabinet air vents and changing of inverter air filters.	Annually
Conduct annual calibration testing of the weather station sensors (pyrometer, wind speed sensor, temperature sensor, etc.). Adjust any sensors found to be performing outside manufacturer s specifications. Document unresolved issues for future corrective action.	Annually
Inspect site vegetation/landscaping to determine if any action necessary.	Quarterly

Additional Detail of Maintenance Items

1) Plant Monitoring

- a. The performance and status of the PV Plants shall be remotely monitored on a continuous basis throughout the year via a Data Acquisition System**
- b. Annual operational summaries including significant operational and maintenance issues**
- c. Service reports to be generated in respect to major faults in the Maintained Equipment**
- d. Weather conditions shall be monitored through sensors**
- e. Plant failures and alarms to be monitored via Also Energy monitoring system**
- f. Soiling levels to be monitored**
- g. Inspection of the emergency shutdown switch will be performed on an as needed basis**

2) Additional Random Inspection Items

a. DC String Cabling

- i. Random visual inspection of cable support systems
- ii. Random visual inspection of grounding components
- iii. Random check fire insulation rating labels
- iv. inspect a random sample of cabling and lines for external damage
- v. Random check DC string cable conditions
- vi. Random check of DC connectors condition (for physical damage, overheating)
- vii. Random visual inspection of cable trays
- viii. Random visual inspection of conduit runs

b. Inverters

- i. Check appearance/cleanliness of the cabinet, ventilation system and insulated surfaces
- ii. Check the general appearance of the inverter cabinet look for any sign of damage to enclosure or water leak
- iii. Confirm the cabinet doors, hinges and handles are in good working order
- iv. Confirm DC disconnect and AC breaker handle mechanical interlocking mechanism is in good working order
- v. Confirm that there is no major rust or broken weld
- vi. Confirm that all doors close properly
- vii. Check the tightness of all electrical bolted connection
- viii. Check all cabling for signs of chafing or deterioration
- ix. Inspect the capacitor bank for loose connection, arc mark, leak or bulging
- x. Check inverter fuses for sign of over heating
- xi. Check the condition of both AC and DC surge suppressors
- xii. Check by hand and confirm that all fans are rotate freely

xiii. Inspect air filters

c. PV Modules and Frames

- i. Visual inspection of ground condition, vegetation, mount, erosion
- ii. Random check of PV modules frames is securely fastened
- iii. Random check for corrosion
- iv. Random check for mechanical connections
- v. Random inspection for loose panels
- vi. Random inspection for clips, bolts, ballast condition
- vii. Random visual inspection of racking anchor
- viii. Random visual inspection of modules for damage
- ix. Random visual inspection of module cleanliness
 - Rain and other natural precipitation will be the only water cleaning the panels
 - No module washing will be performed
- x. Random visual inspection of conditions under modules
- xi. Random visual inspection of grounding connections
- xii. Random visual inspection for shading

d. Monitoring System

- i. DAS device condition (screen, seals, rust, damage)
- ii. check the internet connection
- iii. check if the system working properly
- iv. check if all components can communicate with monitoring system (meters, inverters, CBs)
- v. check CCTV system (if applicable)

e. Sensors

- i. visual inspection of pyranometer
- ii. visual check of ambient temperature sensor
- iii. random measurement of PV module surface temperature
- iv. visual inspection of humidity sensor
- v. visual inspection of anemometer
- vi. visual inspection of wind vane

f. Thermal Scanning of

- i. inverters
- ii. DC -AC disconnects
- iii. switchgears
- iv. SCBs and RCBs

g. AC Cabling and MV Components

- i. visual inspection of AC cables
- ii. visual inspection of the medium-high voltage transformers
- iii. visual inspection of the medium-high voltage components between the medium-high voltage main station on Site and the Grid Connection Point (excluding transmission line)
- iv. visual inspection of any separate power cabinet for heavy dust deposits, pollution, humidity, and water leakage from the outside

h. Site Work

- i. Visual inspections of roads, berms, fences and other non-electrical items on site

ii. Annual inspection to see if any other corrective actions are needed

i. Access Road

i. Access Drive will be repaired on an as needed basis

ii. Snow removal will be performed for emergency access on an as needed basis