



Seminole Tribe of Florida

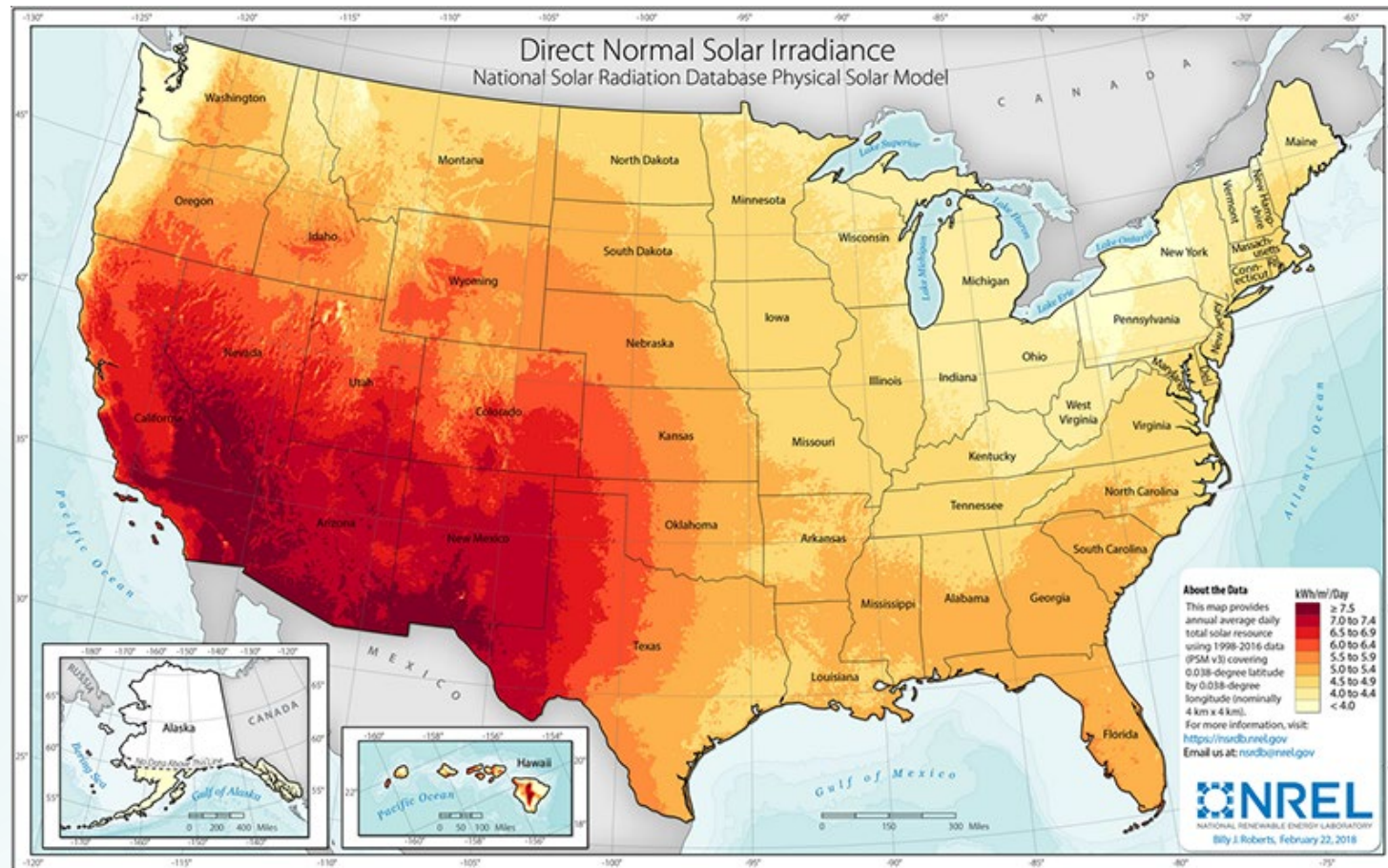
Rural Reservation Resiliency Initiative

2020 Report

PRESENTED BY:
CHERYL GIACOBBE
HARVEY RAMBARATH



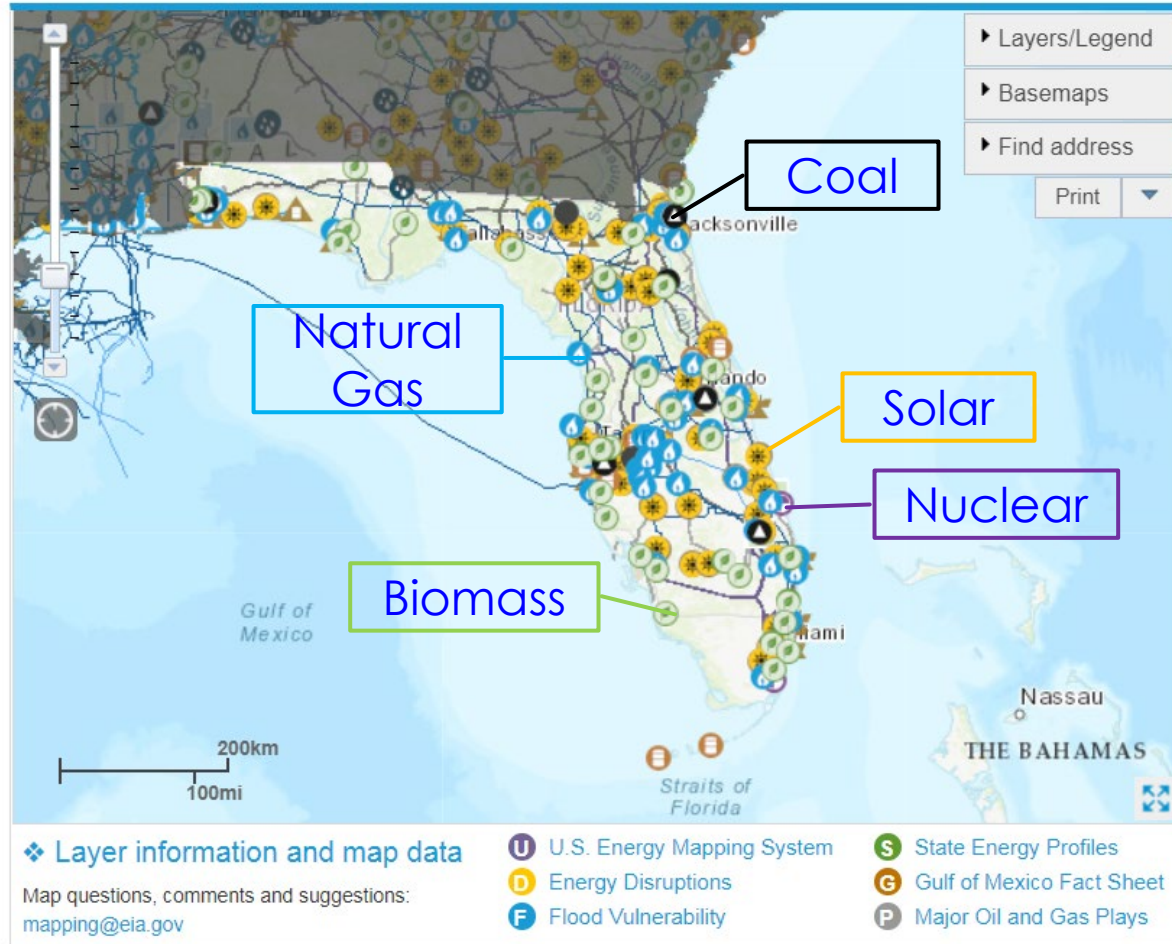
Potential for Solar Energy Generation



- This map shows U.S. average annual solar radiation in kilowatthours (kWh) per square meter per day (kWh/m²/d) for direct normal irradiance (DNI).
- Even though Florida is the Sunshine State, it does not receive the greatest amount of DNI.

State of Florida Energy Profile

Profile Overview



- 3rd most populous state behind California and Texas with population of approximately 21million
- 2nd in net energy production behind Texas *but still not enough to meet it own demands*
- Utility scale net electric utility generation:
 - Natural gas 72.2%
 - Coal fired 13.2%
 - Nuclear 10%
 - Renewable 2.7%
 - Petroleum fired .2%
- 3rd in energy consumption behind Texas and California

Seminole Tribe of Florida Reservations




Approximately 4,240 members
Approximately 90,030 acre
land base

- Big Cypress 52,338 acres
- Hollywood 497 acres
- Brighton 35,805 acres
- Fort Pierce 60 acres
- Immokalee 600 acres
- Tampa 39 acres
- Lakeland 692 acres



Seminole Tribe of Florida

- Exercised sovereign authority over territories in Southeast US from time immemorial
- Resisted US political and military removal efforts throughout 19th Century
- Organized under Indian Reorganization Act in 1957
 - IRA Section 16 Tribal Council governs Seminole Tribe of Florida
 - IRA Section 17 Board of Directors manages business arm, Seminole Tribe of Florida, Inc. (“STOF, Inc.”)
- Recognized for leadership in advancing sovereignty, e.g. first smoke shops (1976) and first high-stakes bingo (1979)



The Dependence Problem

- Tribe depends on outsiders for energy for governmental operations and economic development.
- Tribe has no authority over state-regulated utilities and are subject to rate increases and supply interruptions.
- Tribe's ability to plan long-term is impaired because of unknown future energy costs.



Why Renewables?

- The Tribe depends on energy provided by state-regulated utilities based off-reservation.
 - Grid reliability issues.
 - Energy from fossil fuels is expensive and the price is likely to continue to climb.
 - Overwhelmingly, the utilities produce energy by burning fossil fuels that create greenhouse gases and other emissions (e.g., sulfur and mercury).
-



The Cost Problem



- Retail prices that utilities charge tribes are high and generally increasing.
- Even though natural gas has been cheaper, electric rates have generally continued to rise.
- Costs may rise as users leave utility system.



Impact of Hurricane Irma

- Hurricane Irma made landfall in August 2017 and impacted the entire State of Florida
 - Hurricane Irma was extremely powerful and catastrophic
 - Most of the Tribe's reservation communities, businesses and government operations were affected
 - Several facilities across the Tribe's reservations sustained severe damage
-



Impact of Hurricane Irma (cont)

- The Tribe had to close and discontinue its government operations for several weeks and in some cases months until recovery
 - There are approximately 680 residents living in the BC Reservation, which were particularly impacted by grid resiliency issues and outages
 - In the aftermath of Hurricane Irma the Tribe was the largest purchaser of propane and diesel for generators in Florida
-



Seminole Tribe of Florida Renewable Energy Committee

- In January 2018 the Chairman and the Tribal Council formed the Renewable Energy Committee with key people across the Tribe including a representative from the Chairman's office
- The Committee was charged with:
 - Ensuring power continuity across critical Tribal operations to the extent possible during and after a storm
 - Identifying solutions to mitigate and limit power outages as a result of a storm
 - Identifying opportunities that would allow the Tribe to be as self sufficient as possible in meeting its energy demands



Project Summary

- The Seminole Tribe of Florida (“Tribe”) wishes to effectively address its significant grid resiliency vulnerabilities, especially on its rural Big Cypress Reservation which has experienced significant and repeated grid outages
- Frequency of outages has required all Tribal facilities to rely on backup generators.

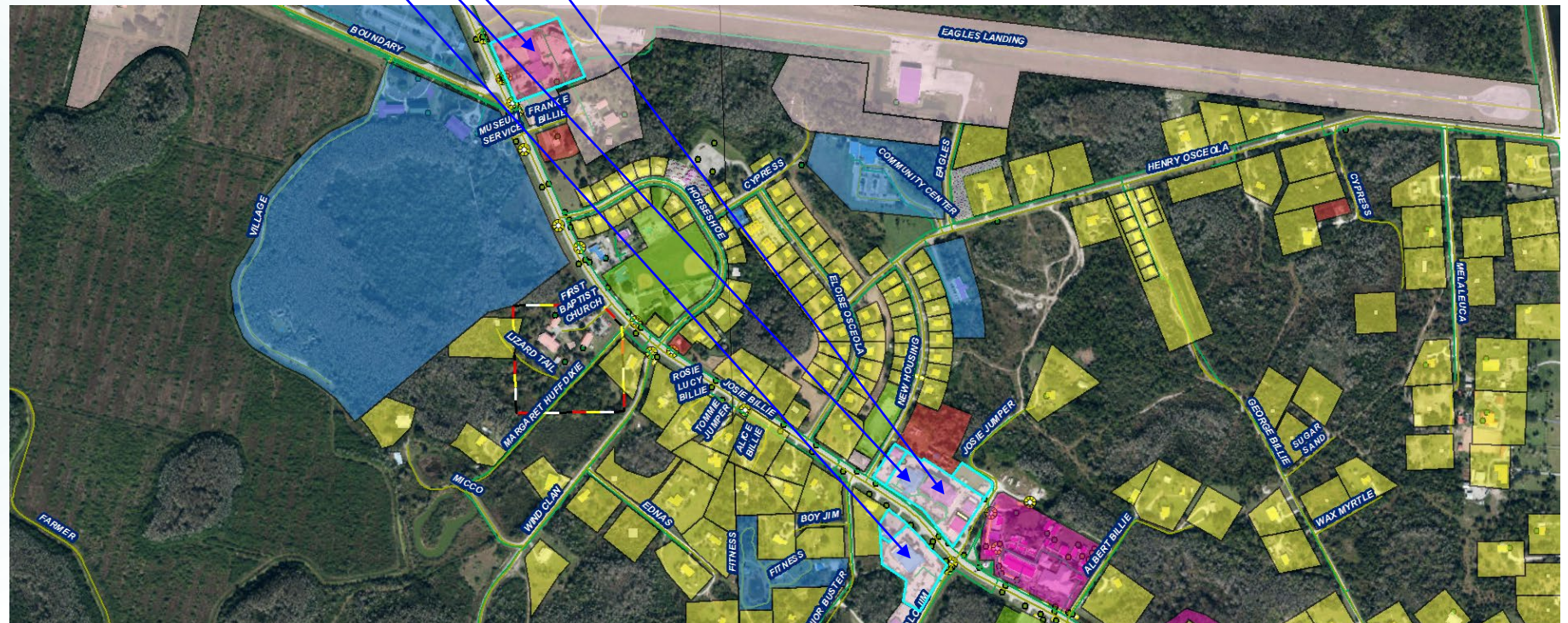


Scope of Work for Project

- Technical Summary: Install 445 kW of solar facilities, 1,510 kWh battery storage, transfer switches and control systems that will serve 4 essential facilities in the Big Cypress Reservation.
- Technical Details: The Tribe has issued an RFP for a Contractor to design and build the Integrated Systems at the 4 essential facilities and bids were received on 12/14/2020 and are now being reviewed.

Project Locations and Needs

<u>Big Cypress</u>	<u>kW Peak Demand</u>	<u>Battery Peak Power, kW</u>	<u>Battery Capacity, kWh</u>	<u>Type of Solar Mount</u>	<u>Solar Capacity, kW dc</u>	<u>Solar kWh, year 1 estimate</u>	<u>Percent of Building's annual kWh from Solar</u>
Big Cypress Frank Billie Field Office	138.9	180.0	320	Carport	100	159,600	32%
Big Cypress Senior Center	83.9	110.0	150	Carport	40	63,840	28%
Big Cypress Health Clinic	201.9	260.0	640	Roof	170	271,320	22%
Big Cypress Public Safety Complex	140.3	180.0	400	Ground & Carport	135	215,460	32%
TOTALS	564.9 kW	730.0 kW	1510 kWh		445 kW	710,220 kWh	



BC Frank Billie Field Office & Senior Center

Solar Sites Details

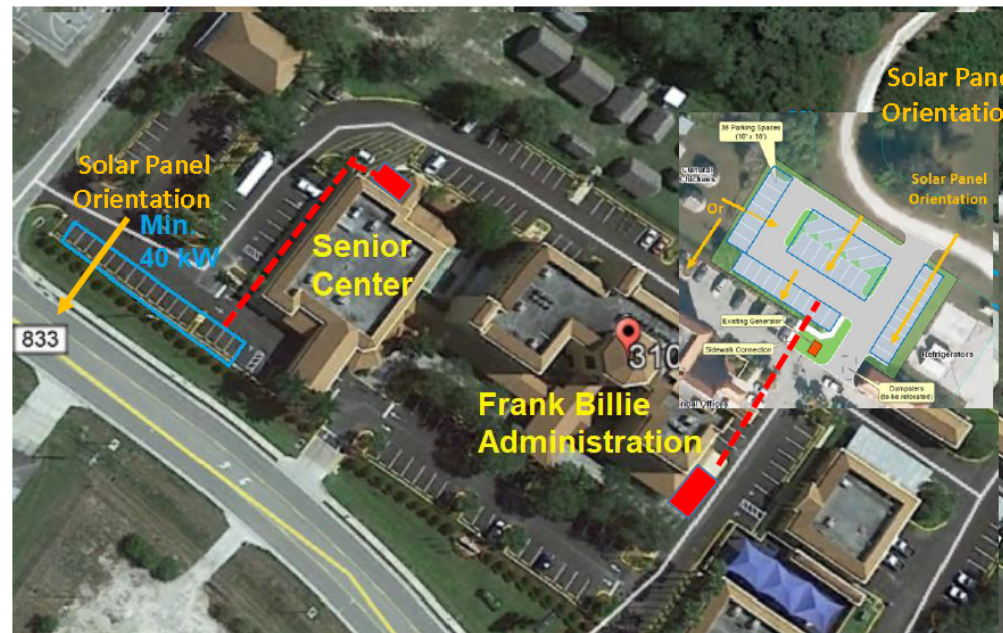
Big Cypress Frank Billie Administration and Senior Center

31000 Josie Billie Hwy and 30988 Josie Billie Hwy

Senior Center

(estimated dc)
40 kW (min) PV

(estimated ac)
150 kWh Battery Capacity
110 kW Power Supply



Frank Billie Administration

(estimated dc)
100 kW (min) PV

(estimated ac)
320 kWh Battery Capacity
180 kW Power Supply

- Trenched / bored conduit run
- ◆ Battery-Energy-Storage-System Housing:
Not to scale. Roughly 8'Wx6'Dx6'H

BC Health Clinic

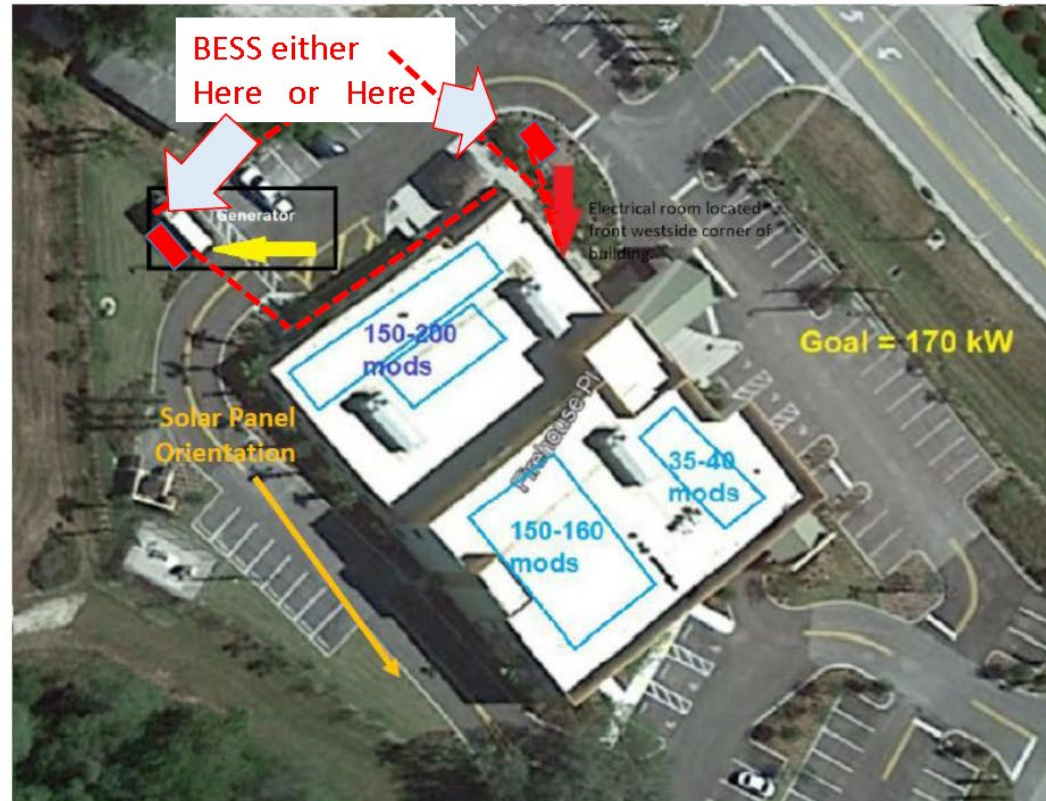
Solar Sites Details Big Cypress Health Clinic 31055 Josie Billie Hwy

BC Health Clinic

(estimated dc)
goal is
170 kW PV

(estimated ac)
640 kWh Battery Capacity
260 kW Power Supply

--- Trenched / bored conduit run
◆ Battery-Energy-Storage-System Housing:
Not to scale. Roughly 8'Wx6'Dx6'H



BC Public Safety Complex

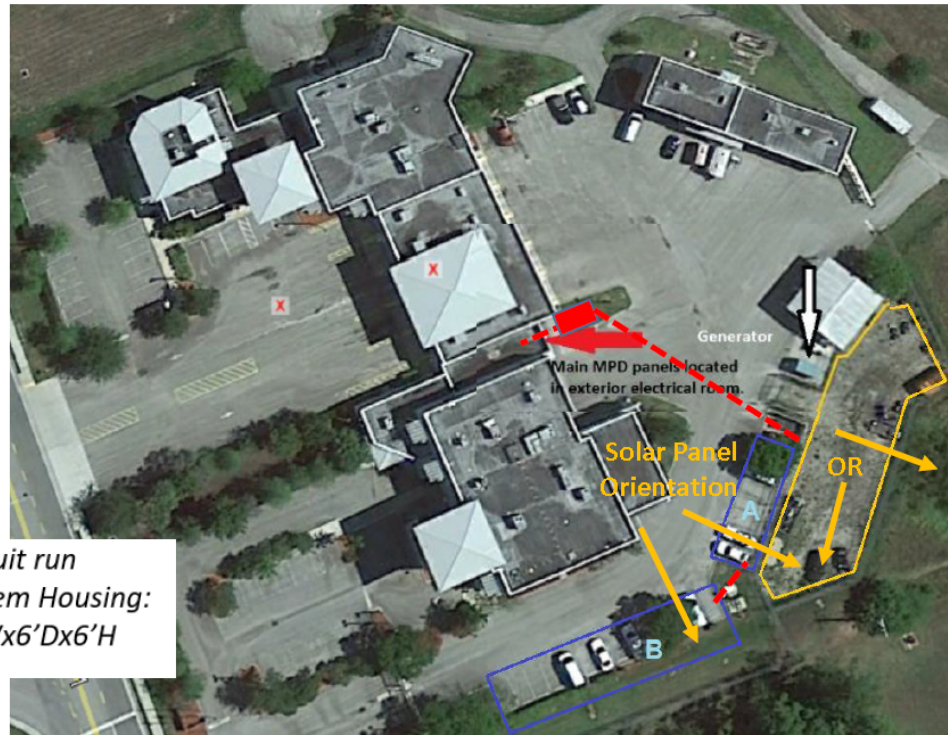
Solar Sites Details Big Cypress Public Safety Complex 30300 Josie Billie Hwy

BC Public Safety

(estimated dc)
Add up to 135 kW PV

(estimated ac)
400 kWh Battery Capacity
180 kW Power Supply

--- Trenched / bored conduit run
◆ Battery-Energy-Storage-System Housing:
Not to scale. Roughly 8'Wx6'Dx6'H



Notes:

Ground Mount

Solar Carports

- A. Normal depth of parking space
- B. One-and-one half depth of parking space

Highly recommend walking the spaces to get better perspective of site



Project Participants

- DOE Office of Indian Energy
- Chairman & Tribal Council
- Executive & Senior Management Staff
- Consultants (Baker Tilly, Sandia Labs)
- Glades Electric
- Tribal Members



Project Objectives

- Providing reliable electrical energy to essential services buildings in Big Cypress Reservation
- Reducing reliance on fossil fuel based electrical energy
- Reducing the Tribe's carbon footprint
- Saving over \$3 million in local utility energy over life of project
- Training 6-8 Tribal members on construction and at least 4 Tribal Members on O&M of solar PV systems



Project Approach

- Executive Director of Finance oversees Administration of project
- Assistant Director of Planning & Development will coordinate efforts to oversee design and construction of project
- Installer responsible for design, construction, and commissioning of system
- Facilities Management Director responsible for O&M upon completion



Procurement

The RFP process will select a design/build contractor and require that:

- Solar installation company must have significant experience in installing solar PV systems
- Substantial experience in designing, installing and interconnecting solar PV systems, transfer switch and control systems, with battery storage technologies in Florida
- Substantial relationships with multiple equipment providers to ensure timely delivery of equipment.



Current Status

- RFP for Design/Build Contract was advertised on 10/14/2020
- Bids received on 12/14/2020
- Bids Opened and are being reviewed
- Anticipate Bid Award in First Quarter 2021

Current Schedule

Task Number Per Statement of Work	Title or Brief Task Description	Task Completion Date				Progress Notes
		Original Planned	Revised Planned	Actual	Percent Complete	
1	Re-Issuance of request for proposals and selection of preferred installer	03/17/2019	10/14/2020	10/14/2020	100%	RFP issued
2	Tribe negotiates D-B contract with Installer and contract is executed.	07/30/2019	1/31/2021			Bid Opening Scheduled 12/14/2020
3	Approval of Detailed Site Drawings	09/15/2019	4/30/2021			
4	Environmental/ Cultural Review	08/14/2019	09/30/2020		100%	
5	Building/Electrical Permitting	09/13/2019	4/30/2021			
7	Interconnection Approval	10/13/2019	5/30/2021			
8	Construction Start	07/10/2020	5/15/2021			
9	Commissioning	08/17/2020	08/15/2021			
10	Verification	09/01/2020	09/15/2021			
11	Reporting to DOE regarding PV production and battery cycling	10/20/2020	12/16/2021			
12	First Annual Reporting in Denver, Colorado	12/17/2019	12/17/2020	12/17/2020	100%	Virtual Conference Presentation
13	Second Annual Reporting in Denver, Colorado	12/16/2020	12/16/2021			
14	Third Annual Reporting in Denver, Colorado		12/15/2022			Added 3 rd Year Reporting



**"We do not inherit the earth from our
ancestors, we borrow it from our children."
~Native American Proverb**



TRIBAL COMMUNITY DEVELOPMENT



Thank You

CHERYL GIACOBBE

HARVEY RAMBARATH