

San Pasqual Band of Mission Indians Microgrid Project

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San Pasqual General Information

- Reservation was established in 1910
- The Reservation encompasses approximately 3,143 acres
- 280 Tribal members and over 1,400 lineal descendants
- Reservation population is 1,600
- 450 homes on the reservation
- 83 homes have solar



San Pasqual Band of Mission Indians Trust and Fee Lands

 Trust Land (1,990 US Acres)
 Fee Land (1,153 US Acres)
[3,143 Total US Acres]

 Valley
Center
Middle

Center

Woods Valley
Golf Club

San Pasqual
Reservation



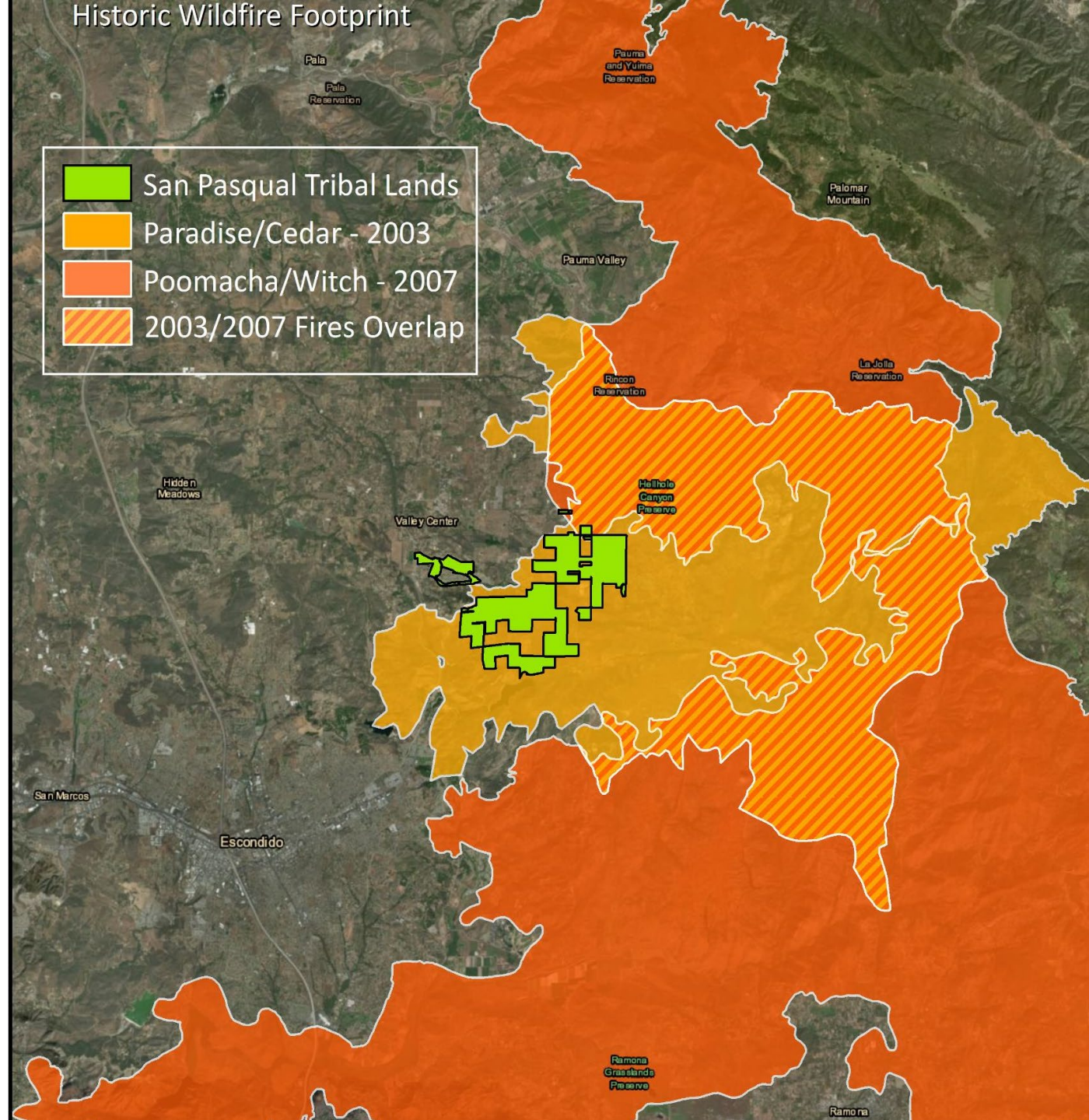
Date Created: 4/20/2018

Source: San Pasqual Band of Mission
Indians Environmental Department



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San Pasqual and Wildfire



Power Supply Threats & Impacts



THREATS

- Severe weather
- High winds
- Wildfires
- Earthquakes
- Localized physical damage to utility distribution systems
- SDG&E system upgrades (planned outages)

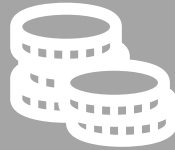
IMPACTS

- Inability to Use Facilities
- Lost Productivity & Revenues
- Equipment Damage

Microgrid Project Goals



Resilience: Maintain electric power during outages



Economic: Reduce electricity costs



Environmental:
100% renewables,
reduce emissions

Priority/Critical Electricity Loads

Facility	Emergency Purpose	Critical Electric Loads
Tribal Administration	Red Cross evacuation center; emergency public shelter; tribal command and control; first aid	HVAC, lighting, telecom/IT, food storage, food service
Housing & Security	First response (police); public safety and security monitoring	Telecom/IT, security camera monitoring, lighting
Fire Department	First response (residential fire station); 911 emergency dispatch	Telecom/IT, lighting, overhead door operation
Education Building	Emergency public shelter	HVAC, food storage, food service, lighting
Preschool	Emergency public shelter	HVAC, lighting
Wastewater Treatment Plant	Wastewater treatment for complex	Full load

Proposed Microgrid Components



Solar PV Systems

157 kW DC (new)
24 kW DC (existing)



Propane Generators



Battery Energy Storage
Systems (BESS)

120 kW / 480 kWh



Microgrid Controls



Energy Management Controls

San Pasqual Tribal Government Complex Microgrid Project CONCEPTUAL DESIGN

- Master Meter
- Existing/Sub Meter
- New Solar PV Site
- Existing Solar PV System
- BESS Location
- LP Genset Location
- Point of Interconnection
- Underground Cable Run
- Building Cable Run
- Existing Propane Tank
- New Propane Tank



Project Benefits



- Offset 108% of grid electricity
- Offset SDG&E electricity costs
- Provide redundant backup power

Project Team

SPBMI

John Flores, Environmental
Director

David Martinez, Public Works
Director

Desiree Morales, Utilities
Manager

Owner's Representatives

Josh Simmons

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Design Build Contractor

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[Gridscape Solutions](#)

Cassidee Kido

[Energy Solutions](#)

Code Compliance

[EsGil Corporation](#)

Project Status & Accomplishments



Contracted Design Build Contractor



Completed SDGE applications for 3-phase service and interconnection



Completed design engineering



Construction activities have commenced



Completion of construction in Q1 of 2021 (est.)

Lessons Learned

- Procurement/contracting takes time
- Utility approvals take time
- Opportunities to leverage funding
- Budget changes
- Seek performance guarantees
- Regular, strategic communications
- Go fast by going slow

Thank you

Questions and Comments

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