



# **San Manuel Tribal Utility Feasibility Assessment**

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**Funded through  
2019 DOE**

**‘First Steps to Developing Energy Resiliency on Tribal Lands’**







# San Manuel Band of Mission Indians

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San Manuel Reservation, California

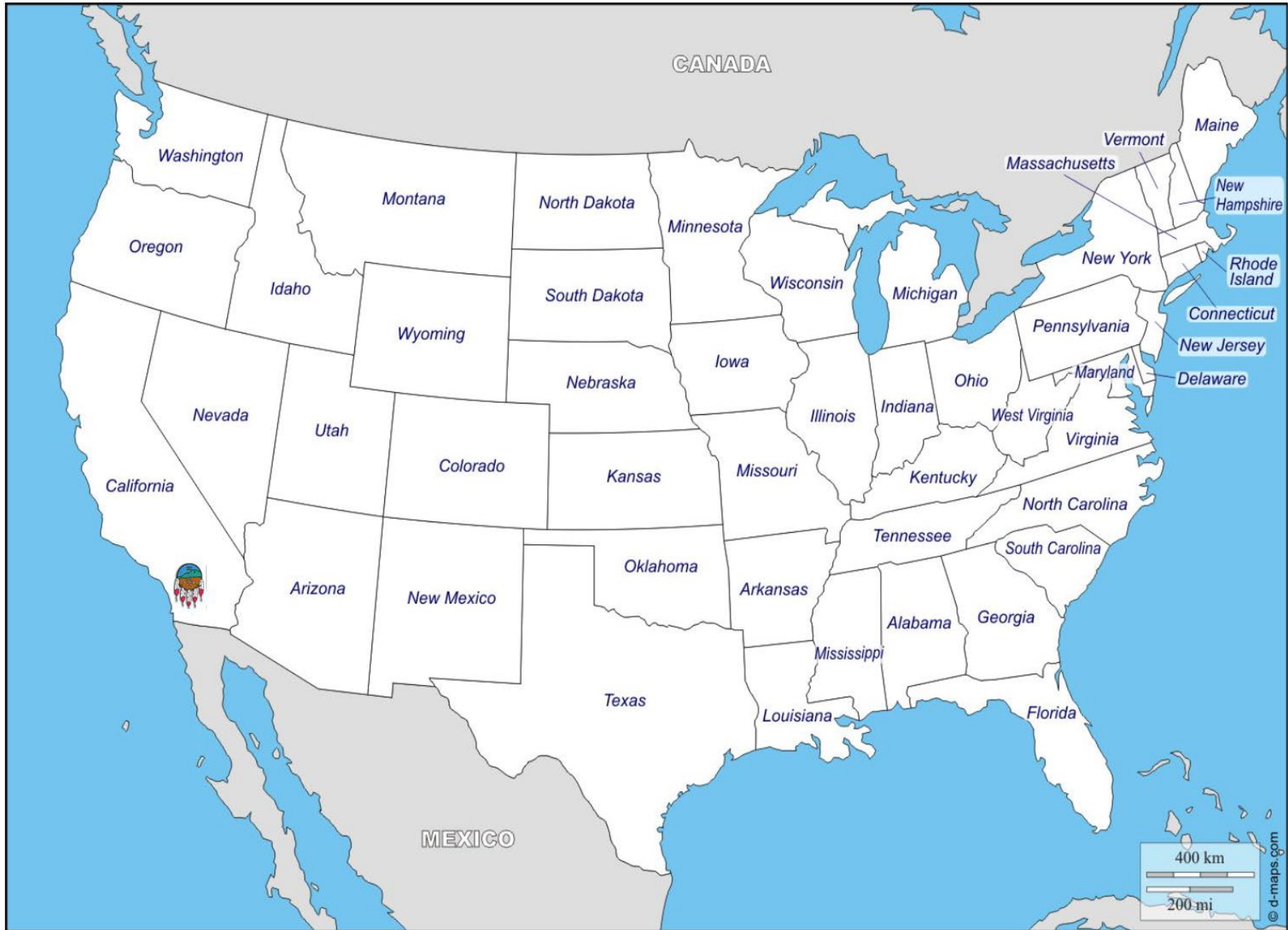


The San Manuel Band of Mission Indians is a federally recognized American Indian tribe located near the City of Highland, California. San Manuel is one of several clans of Serrano Indians, who are the indigenous people of the San Bernardino highlands, passes, valleys mountains and high deserts who share a common language and culture. The San Manuel Reservation was established in 1891 and recognized as a sovereign nation with the right of self-government.

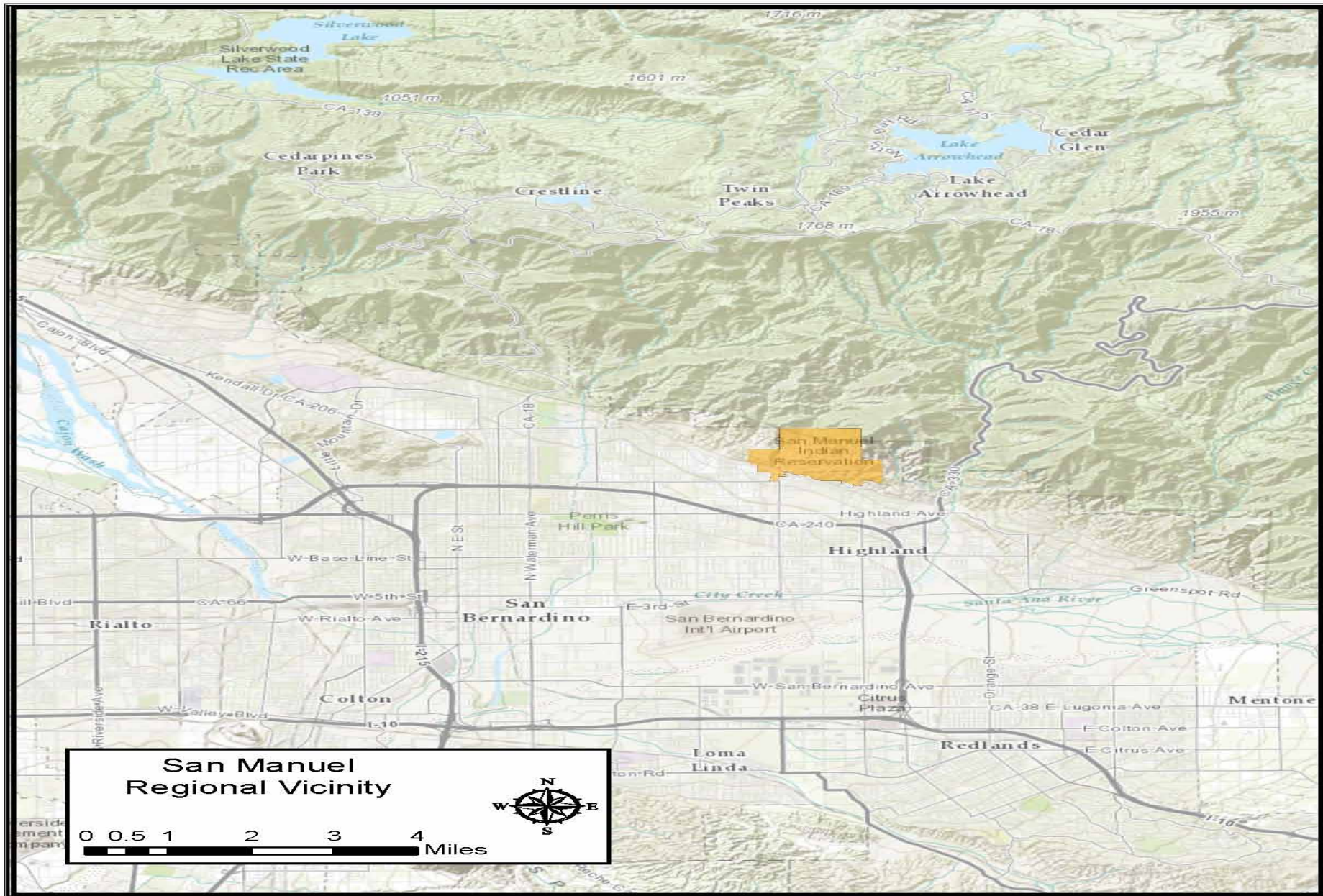
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The Reservation is named after Santos Manuel, a great tribal leader, and is located in southern California, in the foothills of the San Bernardino Mountain region, just north of the city of Highland. It consists of over 900 acres of mostly mountainous land.









## MISSION

“

To operate a sustainable Tribal Government that advances sovereignty, builds self-sufficiency, champions culturally-conscious stewardship principles with respect to Tribal resources, and faithfully supports and serves the Tribal community.

”





# San Manuel Today

- With more than 5,000 employees, San Manuel is one of the largest employers in San Bernardino County.
- 2017: Broke ground on ~40 new residential lots along the eastern Reservation.
- 2018: San Manuel approved the Charter for its Tribal Utility Authority and initiated its Energy Strategy.
- 2019: Completed a new cultural/spiritual center and installed a 440 kW Solar PV carport at the San Manuel Community Center.
- A new hotel and event center is under construction which will complement the San Manuel Casino and add electric load.



# Why ‘First Steps?’

- Local utility provider has limited capacity to support tribal loads at 12 kV service
- Future growth of Tribal business enterprises
- Increased number of Tribal facilities and homes on the Reservation next 20 years
- Greater energy security for the Tribe
- Maximize the benefit of 2.5 MW WAPA allocation over 5,590 MWh/year

**TRIBAL MANAGEMENT OF ITS ENERGY DESTINY**



# Driving Forces Behind San Manuel's Electrical Strategy

- **Sovereignty (Tribe owns & operates)**
- **Ability To Address Future Growth**
- **More Resilient Electrical Infrastructure**
  - 66 kV is a dedicated line served by two substations
- **Obtain Needed Infrastructure Faster**
  - 3-5 years faster than SCE built and owned
- **Cost Savings on Energy Cost**
  - 66 kV estimated to reduce cost by 20% compared to 12 kV retail utility service

# Combined Heat and Power



## Balanced approach for new energy requirements

- 5.0 MW sized to anticipated 2021 load
- 1,200 ton absorption chillers providing a portion of cooling requirements
- Utility grid is the back up to CHP
- Physical hedge to power price volatility
  - Max gen when production cost < market power
  - Min gen when production cost > market power



# 66 kV Substation



## 66 kV substation: A strategic solution for future Tribal energy needs

- Enables a “Tribal Micro Grid”
- More reliable, dedicated power
- Unlimited scalability
- Potential cost savings
- Tribal independence and sovereignty
- Best solution to meet future Tribal power needs

# San Manuel 66 kV Substation Project

## ➤ Tribal Owned Substation

- Two 28 MVA 66/12 kV transformers
- 12 kV open air switch rack
- 8 circuit positions for future growth

## ➤ Utility Owned 66 kV Switch Rack

- Ring Bus
- 4 Circuit Breakers
- Dedicated exclusively to Tribal loads

## ➤ Utility Owned 66 kV Sub-transmission Lines

- Looped into SCE Del-Rosa – Highland 66 kV line
- Tied to two SCE 66 kV substations (resiliency)
- 2,000 ft new underground 66 kV lines





# Potential Solar PV & Battery Storage

## Solar & Battery Storage

- 2019 completion of 440 kW Solar PV and EV Charging stations at San Manuel Community Center Parking lot
- Considering Solar PV parking at Casino Parking Structures
  - Provide shading as well as renewable energy
  - EV Charging Stations
- Battery Energy Storage



# 2019 San Manuel Utility Authority (SMUA) Milestone Summary

## Complete Formation Strategy

- Power Supply Strategy ✓
- Infrastructure Strategy ✓
- O&M Strategy ✓

## Establish Tribal Energy Organization

- Adopted a TUA Ordinance ✓
- Hire a General Manager ✓
- Draft TUA Implementation Plan ✓







# Next Steps

## Federal WAPA Power Procurement

- Tribe currently benefits from 2.5 MW (5,590 MWh/year)
- SCE Power Displacement Agreement transfers benefits to Tribe

## 66 kV Substation Project

- SCE and San Manuel designs currently in progress
- Construction expected to commence during 2020
- Completion targeted in 2021

## Formation of Tribal Utility Authority (TUA)

- SMUA ordinance has been adopted by Tribe
- Bob Hoffman is the interim General Manager
- Draft TUA Implementation Plan
- Establish the TUA as a “Small Non-Jurisdictional Load Serving Entity” to finalize DOE grant requirements

# Contact Info

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Consultants on the project

- Holland & Knight
- MRW & Associates
- Energy Dynamix
- R.G. Vanderweil Engineers





# Thank you

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Q&A