



# **San Manuel Tribal Utility Feasibility Assessment**

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**Funded through  
2018 DOE**

**‘First Steps Toward Developing Renewable Energy and  
Energy Efficiency on Tribal Lands’**

**SAN**  **MANUEL**  
BAND OF MISSION INDIANS



# San Manuel Band of Mission Indians

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San Manuel Reservation, Highland, CA

The San Manuel Band of Mission Indians is a federally recognized American Indian tribe located near the city of Highland, Calif. 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 just over 900 acres of mostly mountainous land.





CANADA

Maine

Vermont

Massachusetts

New Hampshire

Rhode Island

Connecticut

New York

New Jersey

Delaware

Washington

Montana

North Dakota

Minnesota

Wisconsin

Michigan

Oregon

Idaho

South Dakota

Wyoming

Iowa

Nebraska

Nevada

Utah

Colorado

Kansas

Missouri

Illinois

Indiana

Ohio

West Virginia

Virginia

California

Arizona

New Mexico

Oklahoma

Arkansas

Tennessee

South Carolina

North Carolina

Alabama

Georgia

Texas

Mississippi

Louisiana

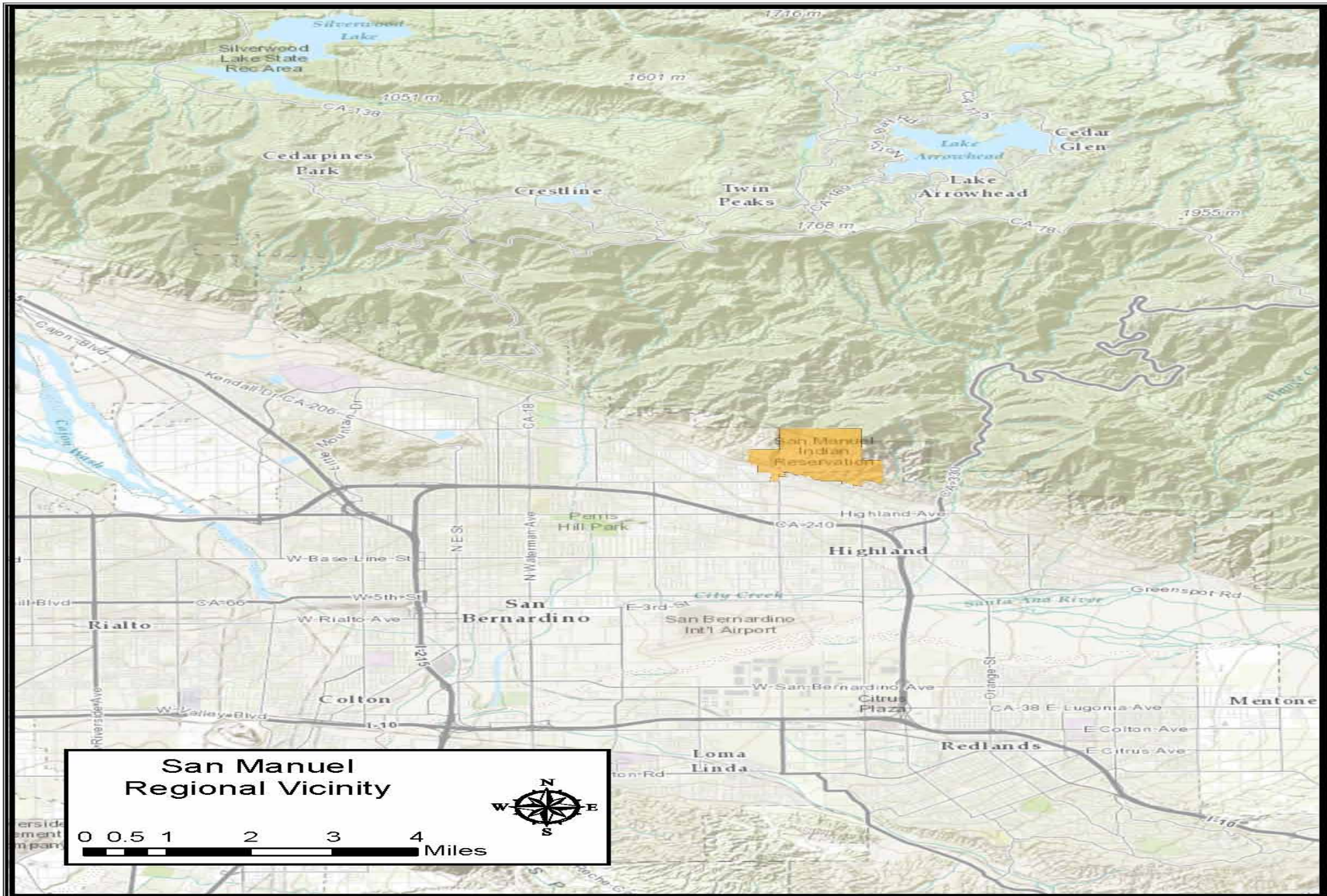
Florida

MEXICO

400 km

200 mi

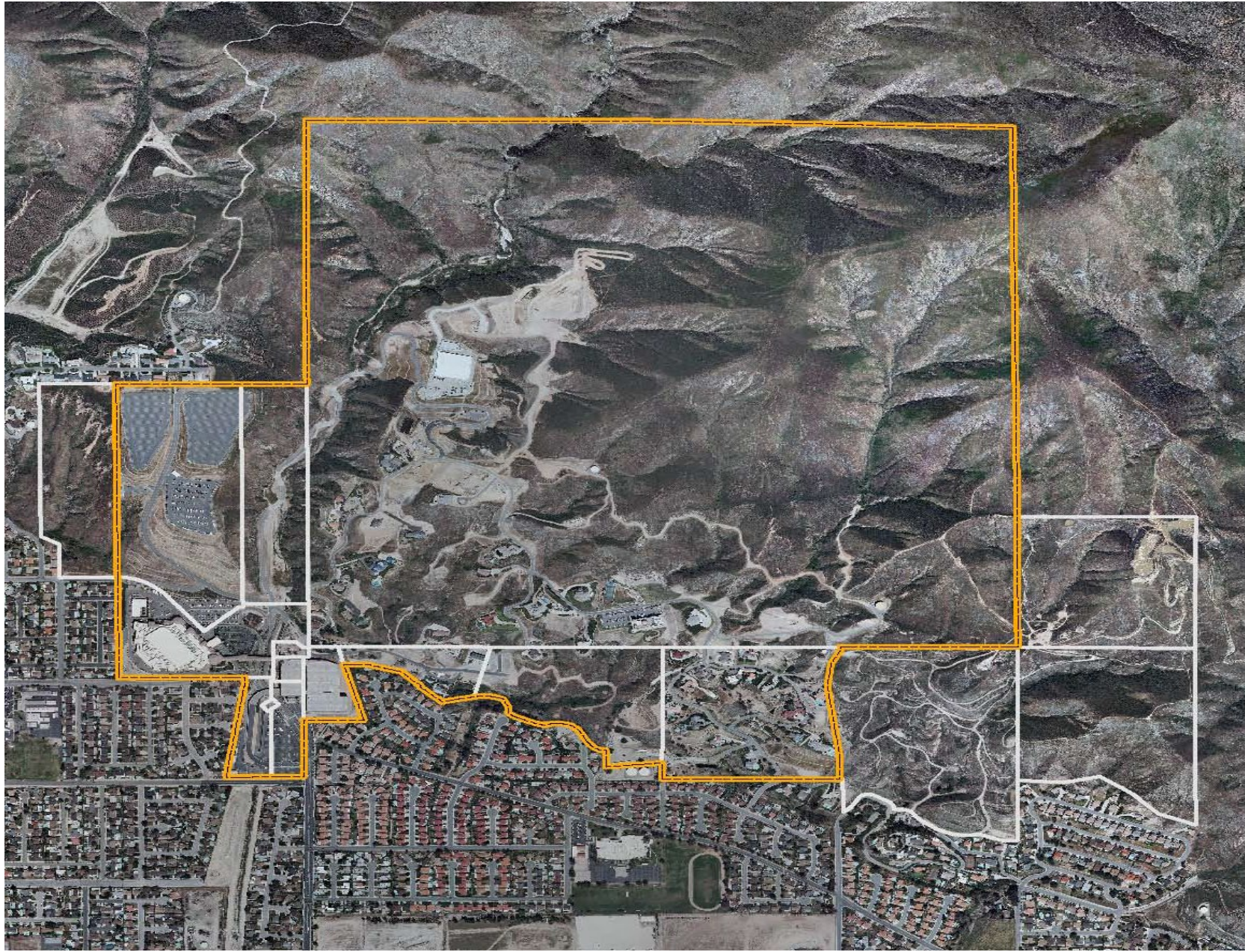
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**San Manuel  
Regional Vicinity**

0 0.5 1 2 3 4 Miles





## 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.
- 2016 purchase of more than 1,500 acres commonly known as the Arrowhead Springs Resort
- 2017 Broke ground on ~44 new residential lots along the eastern Reservation.
- In 2018 the San Manuel Casino saw more than 6 Million visitors annually and broke ground on a 500 room hotel and event center.





# Why 'First Steps?'

- Local utility provider at capacity to meet current tribal demand
- Future growth of tribal business enterprises
- Increased # of homes and facilities on the Reservation next 20 years
- Greater energy security for the Tribe
- WAPA allocation of over 2.5 MWs

# Edison 12kV Upgrades (Not Recommended)

## Why shouldn't we power it all through SCE?

- Spotty energy – end of line within SCE infrastructure
- No dedicated 12kV circuits (load sharing with other customers)
- No guaranteed capacity to meet future needs
- Future cost implications significant against future SCE rates
- Lack of power source diversification
- SCE departing load fees

# 12.5 MW Fuel Cell NOT RECOMMENDED



## OVERVIEW

- Too much upfront capitol
- Too long payback on investment
- lease options are available

### What are the benefits of this option?

- Low emission energy source
- Scalable
- Minimum permitting

### What are the disadvantages of this option?

- Proprietary system
- New public company
- 20 year commitment
- Unable to flex power generation in future TUA model
- Must run 24/7
- EPA permit may be required

# 12.5 MW CHP Energy Island NOT RECOMMENDED



Why can't we run everything from a 12.5 MW CHP?

- Air pollution
- Environmental Permitting
- Space constraints
- Lack of energy diversification
- SCE departing load fees

# 66kV Substation RECOMMENDED



Is a 66kV substation a good solution for future Tribal energy needs?

Yes, a substation is a good long-term solution:

- More reliable, dedicated power
- Unlimited scalability
- Potential cost savings (wholesale vs retail)
- Tribal independence and sovereignty
- Best power source to meet additional future power needs for Master Plan development

# Current & Future Diversification Strategies



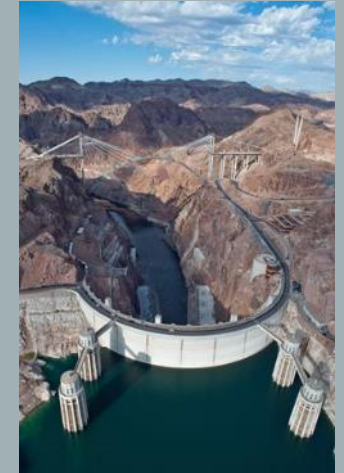
Solar PV (1-3 MW)



Existing Diesel  
Generators (6 MW)



Fuel Cells (1 MW scalable)



WAPA (2.5 MW)



TUA Net Purchased Grid  
Electricity (scalable)



CHP (5 MW)



Edison 12 kV lines

# Potential Solar & Battery Storage

## Near Term Projects



## Solar & Battery Storage

- Solar Potential Locations:
  - Community Center Parking (Under Construction ~400,000 kW)
  - New & Existing Parking Structures at Casino (potential ~3MW)
- Scalable Capacity = ~4 MW
- EV Charging Stations – 6 at Community Center
- Battery Storage
  - Solar Optimization – TBD

## New & Existing Parking Structures



Potential ~ 3 MW Renewable Energy

# 2017 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 **(IN PROGRESS)**
- Engage in discussions with California Independent System Operator (CAISO) **(IN PROGRESS)**
- Engage in discussions with incumbent utility (SCE) **(IN PROGRESS)**







# Long Term Actions

## Federal WAPA Power Procurement

- Tribe currently benefits from 2.5 MW of Federal Power Purchasing at Savings to SCE
- Options for best utilization of WAPA Allocation and other wholesale sources will be integrated with TUA Power Procurement Planning

## 66kV Substation (SCE or Tribal-Owned)

- SCE MOS and substation feasibility study is ongoing for the substation

## Creation of Tribal Utility Authority (TUA)

- SMUA ordinance has been adopted
- Appointing a GM is in process
- Working With Department of Energy, Avant, Holland & Knight, EnergyDynamix and R.G. Vanderweil preparing all documents to qualify as a “Small Non-Jurisdictional Load Serving Entity” and finalize grant requirements

# Next Steps for First Steps

If San Manuel decides to form a Tribal utility it could assume the energy obligations of the Tribe after providing notice to its provider, WAPA, and the U.S. Bureau of Reclamation. The Tribe has the right to terminate the agreement with SCE at any time for any reason, once the tribal utility is prepared to assume the Hoover Dam power allocation to provide the maximum benefit to the Tribe.

# Contact Info

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Consultants on the project

- Avant Energy
- Holland & Knight
- EnergyDynamix
- R.G. Vanderweil



# Thank you

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Q&A

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