1876 – Executive Order by President U.S. Grant
   *Only Section 14, & East ½ of Section 22*

1877 – Reservation expanded into checkerboard by President Hayes
   *Even-numbered sections for the Tribe*
   *Southern Pacific Railroad owned the odd-numbered sections (1862 Pacific Railway Act)*

32,000+ acres set aside for the Reservation
Indian Canyons Trading Post

- 700sq. ft. building located 2 miles from the electrical grid
- Open 7 days a week (weekends only during summer)
- Power was provided by an aging propane generator
- Soaring maintenance and operation costs/reliability issues
- Noisy/trailer backup diesel generator put into fulltime use
- Multiple options considered in 2008
  - 2005 BIA Mineral Assessment grant
  - 2007 DOE First Steps grant
Trading Post Solar Project

- Completed in 2 Phases 2009-10
- 8.25kW Off-grid Solar System
- 30 PV Panels
- 7.5kW backup diesel generator
- 1-2 Day Battery Backup (48V)
- Fully Automated
Project Challenges/Lessons Learned

- 24/7 – 365 days/year operational requirement
- Site restrictions
- Built-in redundancy
- “Hands free”
- Remote monitoring

- Limited options
- Compatibility issues
- System sizing
- Troubleshooting issues
- Cellular Internet connection problems
Trading Post Power System 20-Year Cost Comparison
(updated 3-31-16)

Estimated Overall Savings
PV System vs Current System:
$132,127
PV System with Grant Funding vs Current System:
$192,227

NOTE:
- Current Fuel System operating expenses include new generator after 10 years.
- PV System operating expenses include battery replacement every 9 years.
- Propane & Diesel prices tracked thru 2016. Escalated by 10% annually after that.

The PV System will also reduce the facility's carbon footprint by about 5,000 lbs of CO2 annually.
Parking lot reconstruction with $1.8M in Tribal Transportation Program funding:
- Replace asphalt surface with concrete
- Install carport shade structures
- Relandscape with drought tolerant plantings
- Project to be completed in 2 phases

Carport shade structures were designed to be “solar ready”

DOE grant funding pursued to install 76.9kW solar system on the carports
Heritage Plaza Solar Project

- $240,000 Project; 50/50 match DOE Grant & Tribal Funds
- 79.95kW System – 246 Solarworld PV Panels (325W ea)
- 99% power offset for $22,000 annual electric bill
- Installation complete, permit signed off, & system turned on
- Functioning as designed absent Net Metering credit
- Interconnection Agreement Application submitted to SCE
- Payback with grant funding in ~5 years
Phase 1 Complete
Solar Project in Phase 1
Phase 2 Under Construction
Solar Monitoring Software
Questions?

Todd Hooks
Director of Economic Development
Agua Caliente Band of Cahuilla Indians
760–883–1350
thooks@aguacaliente-nsn.gov

Dan Malcolm
Planning Manager
Agua Caliente Band of Cahuilla Indians
760–883–1945
dmalcolm@aguacaliente-nsn.gov