

WHAT I DID WITH MY SUMMER VACATION



WHY Tarija Glacier





**Department of Energy
Deployment of Clean Energy and Energy Efficiency Projects on Indian Land
Topic Area 2: Community-Scale Clean Energy Deployment**



**Washoe Tribe of Nevada and California
Washoe Tribe Clean Energy Project**

- Principal Investigator: Jennifer Johnson, Interim WEPD Program Director
- Install seven photovoltaic arrays on Tribally owned buildings, 8 kW to 38 kW each, totaling 161 kW
- ~288,282 kWh/yr generation saving \$29,889/yr
- Offsetting ~200 tons of CO₂ annually
- Requested EERE funds: \$495,063
- Proposed applicant cost share: \$120,308 cash cost share from utility incentive
- Construction costs: \$474,544/~\$2.93/Watt
- Experienced contractor with over 84 arrays in NV



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**Washoe Tribe of Nevada and California
Washoe Tribe Clean Energy Project**

- The Washoe Tribe of Nevada and California is a federally recognized Indian Tribe organized pursuant to the Indian Reorganization Act of June 18, 1934, as amended.
- The Tribe's aboriginal territory extends to the west of Lake Tahoe Basin, north to Honey Lake, east in the Pine Nut Mountains and south to Antelope Valley, California.
- Tribal members continue to use resources within the aboriginal territory in the same manner as did their ancestors.
- The Tribe has four federally recognized communities (Stewart, Carson, Dresslerville, and Woodfords), three in Nevada and one in California. The Tribe also has jurisdiction over trust parcels and allotments in both Nevada and California.



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- Each of the four communities has a separate governing Community Council; overall, the Washoe Tribal Council governs the Tribe.
- The twelve member, elected Tribal Council includes two representatives from each of the four Community Councils, two off reservation representatives, a Reno/Sparks Indian Colony representative, and a Tribal Chairperson elected at large.
- The Chairperson and Tribal Council members are elected to four year terms.



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- There are 1,600 Tribal members living in four Tribal reservation communities – three in the elbow of western Nevada (Stewart Community, Carson Colony, and Dresslerville Community) and one in California (Woodfords Community) on the eastern slope of the Sierra Nevada Mountains.
- Unfortunately, we have been unsuccessful in finding funds to install solar in Woodfords



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- 78% of the Tribal community families live in poverty and over 50% are unemployed. These families cannot afford to pay their energy bills. Over 40% of Washoe households have an income of less than \$20,000.
- The cost of energy is quickly outpacing average household income. It has become increasingly difficult for the Washoe Tribe to meet rising energy costs to operate Tribal buildings and have them open for services to Tribal members.



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**Washoe Tribe of Nevada and California
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The Washoe Tribe's Energy Vision is:

- To guarantee the availability of affordable and reliable energy to all its members;
- To further the Tribe's goal for self-sufficiency and self-determination through empowerment in the Tribe's energy interests;
- To reduce the environmental impact of the Tribe's energy consumption;
- To promote conservation and efficient use of energy;
- To produce a majority of the Tribe's energy needs through renewable sources by 2025;
- And contribute to Washoe Tribe's local economy consistent with the Tribe's overall mission which is "To achieve and ensure the integrity of an environment and way of life that is one with nature's elements, community, traditions, and values that promote health and wellness for future generations."



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**Washoe Tribe of Nevada and California
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The long term energy goals of the Tribe are:

- Goal 1: To guarantee the availability of affordable and reliable energy to all of its members.
- Goal 2: To reduce the energy bills of tribal members and administration.
- Goal 3: To further the Tribe's goals for self-sufficiency and self-determination through the empowerment in the Tribe's energy interest.
- Goal 4: To minimize the environmental impact of current and/or future development.
- Goal 5: To produce all of the Tribe's energy needs through renewable sources by 2025.
- Goal 6: To build sustainable homes and make existing buildings more efficient.
- Goal 7: To contribute to the Washoe Tribe's local economy with the Tribe's cultural values.



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**Washoe Tribe of Nevada and California
Washoe Tribe Clean Energy Project**

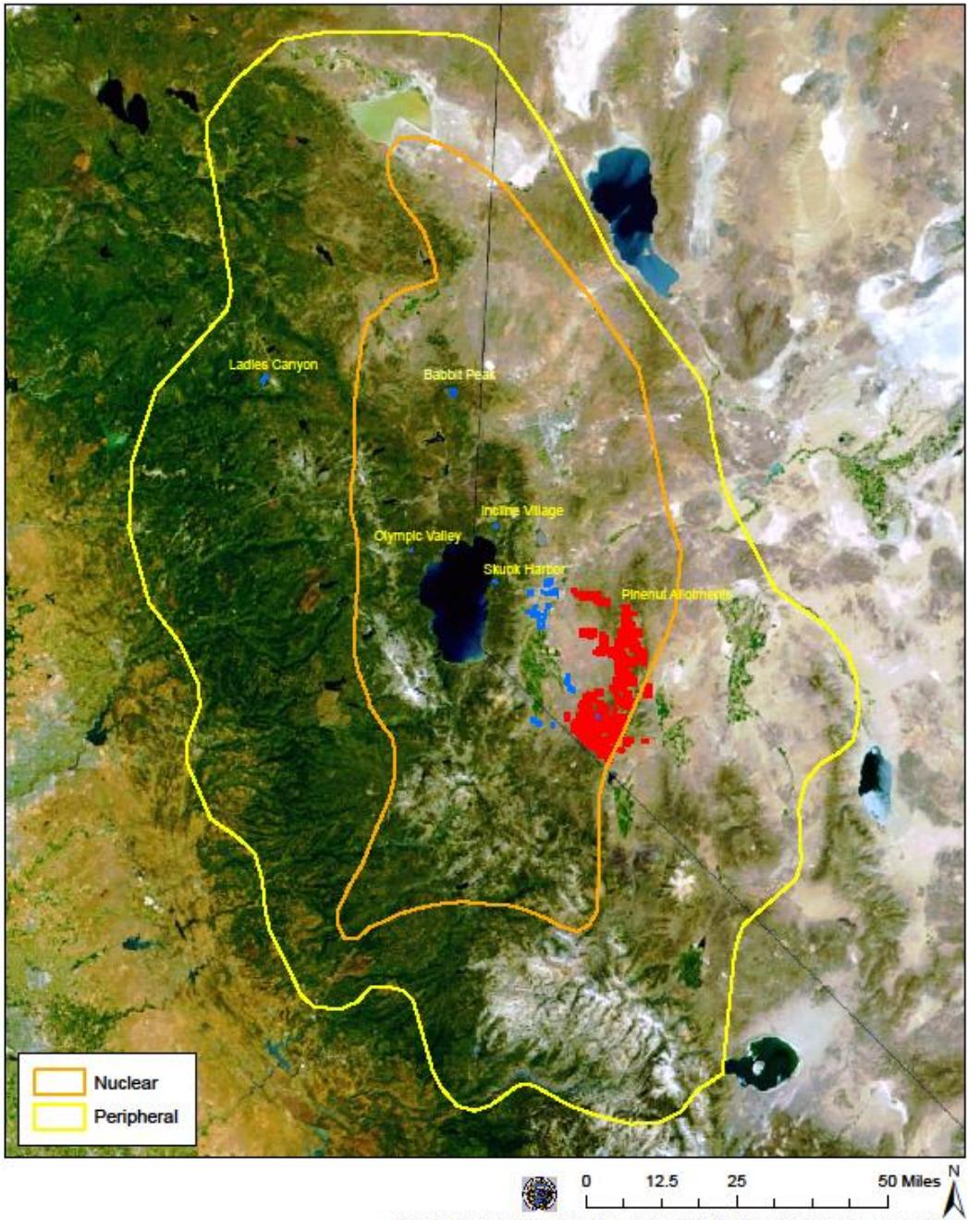
- With the assistance of the Department of Energy (DOE) funding, the WEPD has completed 22 energy audits on tribal administration and community buildings and completed an alternative energy feasibility study.
- WEPD was the first business in Nevada to install solar under the NV Energy SolarGenerations Program.
- WEPD also participated in the 2009 and 2010 SolarGenerations and WindGenerations Program to install approximately 124.5 kW of renewable energy in the Stewart and Dresslerville Communities.

DOG LAND



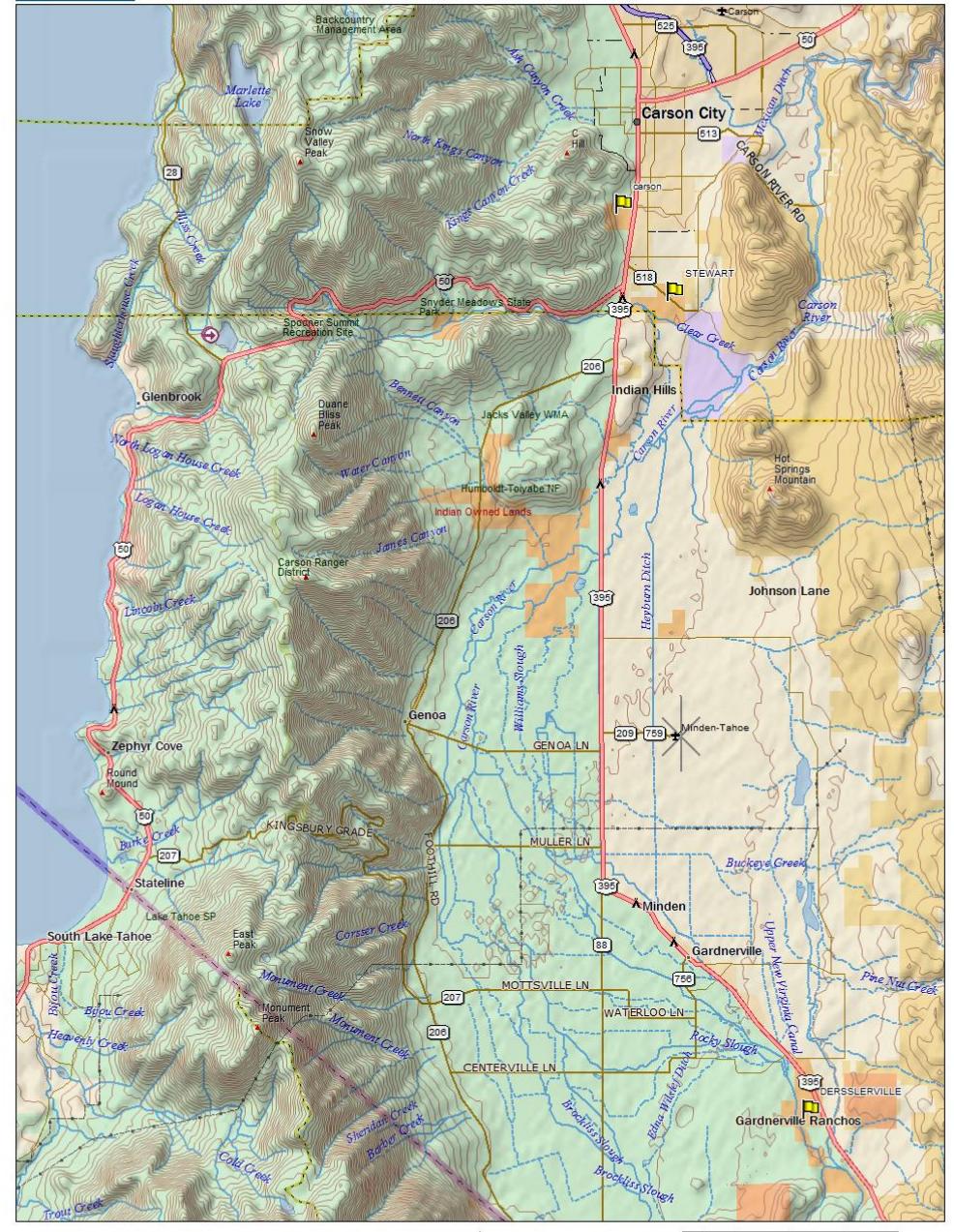
Washoe Tribal Lands

Washoe Tribe of NV and CA
Environmental Protection Department
GIS: J. Johnson
2012



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**Washoe Tribe of Nevada and California
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Our Mission

Black Rock Solar promotes environmental stewardship, economic development and energy independence by providing not-for-profits, tribes and underserved communities with access to clean energy, education, and job training.



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**Washoe Tribe of Nevada and California
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- Formed in out of the Burning Man event in 2007, Black Rock Solar is a 501c3
- 87 arrays totaling over 5.1 MW
- 27 tribal arrays totaling 2.197 MW
- Small off grid arrays and solar trailer, and service at Burning Man
- Recently started work in lighting, service, off grid, and storage





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**Washoe Tribe of Nevada and California
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- Seven ground-mount photovoltaic solar arrays throughout the three Washoe communities in Nevada, covering approximately 2 acres accumulatively.
- Carson Community; A 37.6 kW array at the Washoe One Stop, and a 14.4 kW array at the Carson Community Gym are proposed.
- Stewart Community; A 35.6 kW solar array is proposed for the Stewart Community Wellness Center for the Stewart Community.
- Dresslerville Community; A 36.8 kW array for the Senior Center, an 8 kW array at the Healing Center, an 11.9 kW array at the Dresslerville Head Start, and a 16.2 kW array at the Dresslerville Community Center.



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**Washoe Tribe of Nevada and California
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Progress to date

- Final array location approvals from communities
- NEPA
- USA and site surveys
- Scheduling with cultural monitors
- Site clearing, equipment marshaling, component ordering
- Start Construction at Stewart Community Center



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**Washoe Tribe of Nevada and California
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Stewart Wellness Center work as of Tuesday 5-5-15

- Met with the Cultural Monitor on site who monitored our work
- Determined the location of the array and verified with Tribal Council Member Jackie Steel the final location
- Laid out the post locations
- Determined the heights of the posts using a survey laser
- Assembled the U-channel posts by attaching "spades"
- Began pre-setting the u channel posts to be pneumatically driven tomorrow
- Ordered Module Clamps and unistrut rail

Stewart Community Wellness Center overview



Google earth

feet
meters

300
90





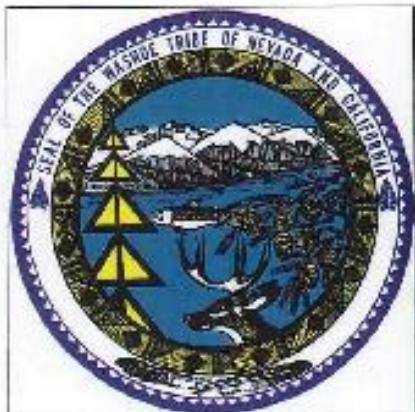






Dresslerville Community Center Overview

1021-1526



2 Fronius 10.1-1 inverters
60 Renesola JC305M-24/Abh
Ground mount 15 deg. fixed tilt
Approx. 18,300W DC
Approx. 16,171W AC



Dresslerville Community Center , 828 Me Hu St., Gardnerville, NV 89410

Black Rock Solar | 250 Bell St | Reno, Nevada 89503 | NV LIC. # 0072260 | 775 237 8669

Drawn by Alexander Kirkpatrick 9/15/2014

Dresslerville Senior Center Overview



4 Fronius 10.1-1 UNT inverters
One with 3 strings of 10 Mods
Three with 4-strings of 9 Mods
138 Mods
42,090 W dc
36,809 W ac

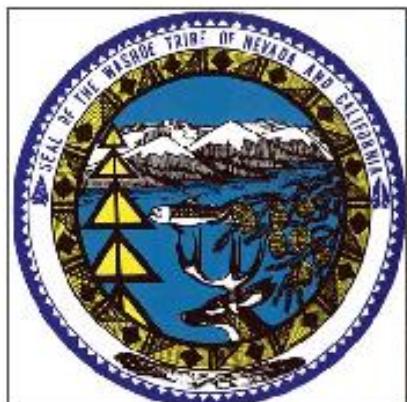


Dresselerville Senior Center , 801 Memdewee Run, Gardnerville, NV 89410

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Carson One Stop and Gym



Washoe Tribe of Nevada and California

Array 1= 2 Fronius 7.5-1 UNI inverters
With 3 strings of 9 modules Total 54 mods
Installed Watts DC = 16,470
Installed Watts AC = 14,404

Array 2= 4 Fronius 10.1-1 UNI inverters
3 inverters with 4 strings of 9 modules
1 inverter with 3 strings of 10 modules

Installed Watts DC = 43,005
Installed Watts AC = 37,609



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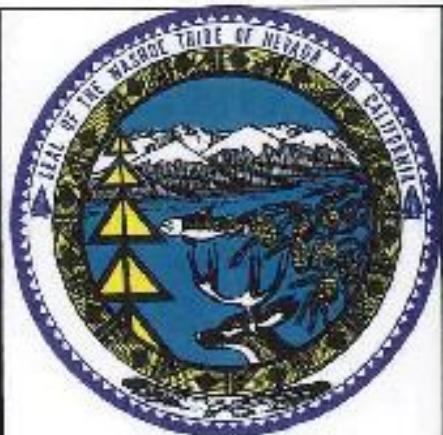
2990 s Curry st, Carson City, NV 89703

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Dresslerville Healing Center Overview

1021-1526



1 Fronius 10.0-1 inverters
30 Renesola JC305M-24/Abh
Ground mount 15 deg. fixed tilt
Approx. 9,150W DC
Approx. 8,002W AC

**BLACK ROCK
SOLAR**



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QUESTIONS?





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**Washoe Tribe of Nevada and California
Washoe Tribe Clean Energy Project**

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