



**Tolowa
Dee-ni'
Nation**

Renewable Solar Energy at Rowdy Creek Fish Hatchery

Erika Partee– Natural Resources Director

Tim Hoone – Planning Director

Jennifer Jacobs – Fisheries Program Manager



About the Tolowa Dee-ni'

- 10,000; 1853 Yan'-daa-k'vt; 1900 - 450
- 1862 - 17,000; 1868 - abandoned; 1906 (Landless California Indian Act)- 160; 1960 termination; 1983 - Tillie Hardwick; today - 900+
- Federally recognized jurisdiction and service area 9,608; Humboldt, Del Norte, Coos, Curry, and Josephine
- Now the 10th largest Tribal Nation within BIA Pacific Region (California) - 1,720
- The endurance of the Tolowa Dee-ni' despite loss of land, forced assimilation, two decades of dissolution, and historical trauma is due to deep reverence and connection to their ancestral lands
- Mission - to exert and protect the inherent sovereignty endowed upon the Tolowa Dee-ni' Nation to promote our Tribal identity, and the well-being of our people, community and environment by building a strong foundation managing resources and perpetuating our cultural lifeways and legacy

Waa-saa-ghitlh-'a~ Wee-ni Naa-ch'aa-ghitlh-ni
(Our Heritage is Why We Are Strong)

Tolowa Dee-ni' Nation Ancestral Territory



Tolowa Dee-ni' Nation Reservation

OREGON
CALIFORNIA



Map created by the Tolowa Dee-ni' Nation GIS Department and is for reference use only. Not to be reproduced without permission from the Tolowa Dee-ni' Nation

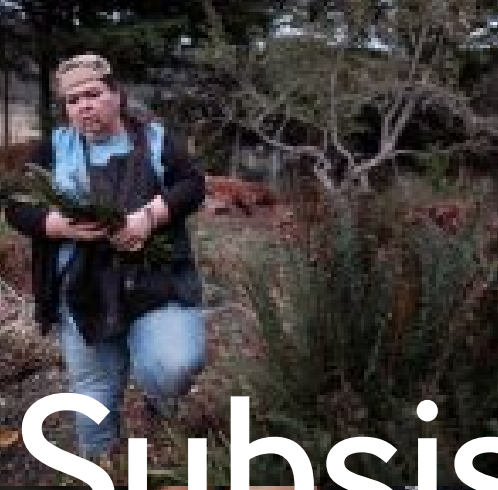
Coordinate System: GCS North American 1983
Datum: North American 1983 Date: 6/2/2017



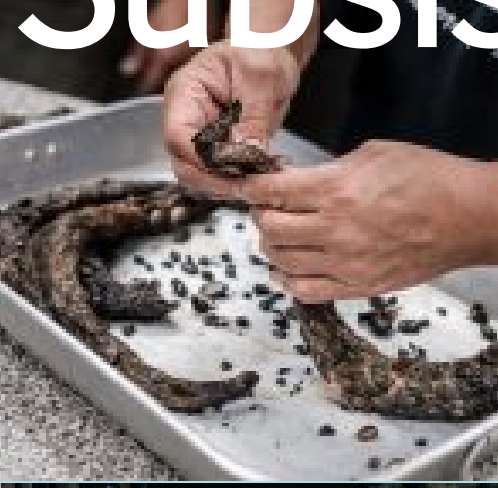
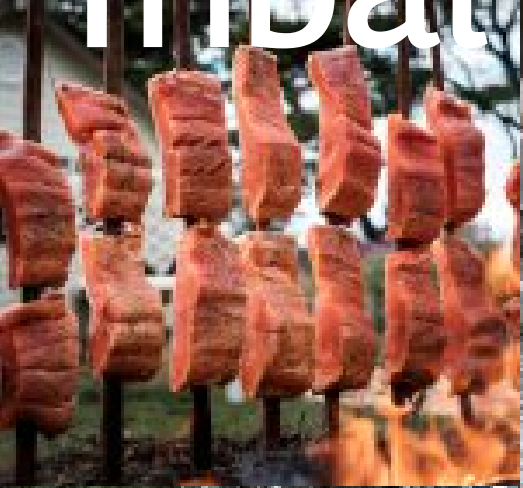
Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

- Ancestral Territory Rivers
- Interstate 5
- State Route 199
- State Highway 101
- TDN Ancestral Territory
- California-Oregon State Line






Tribal Subsistence

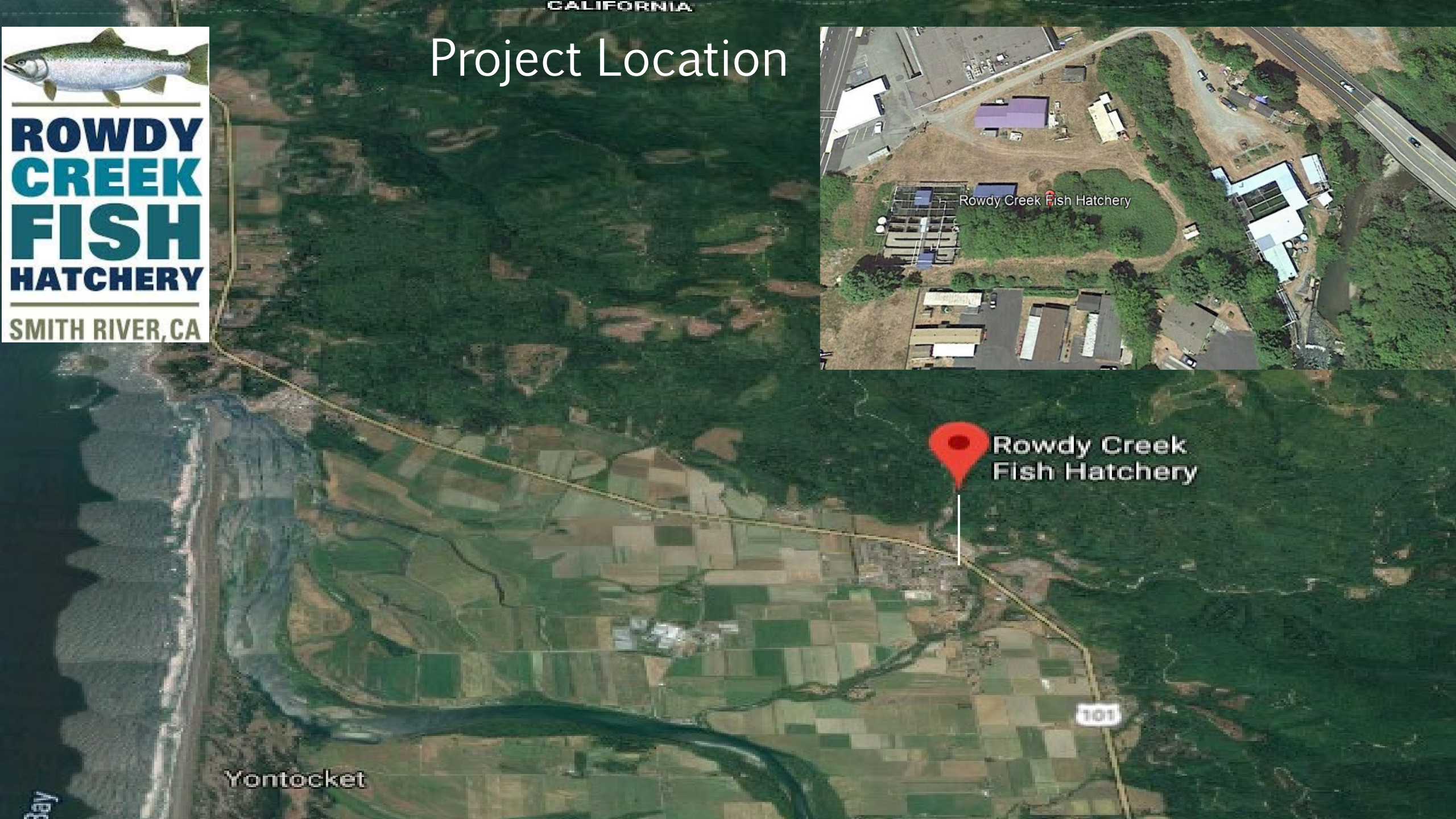
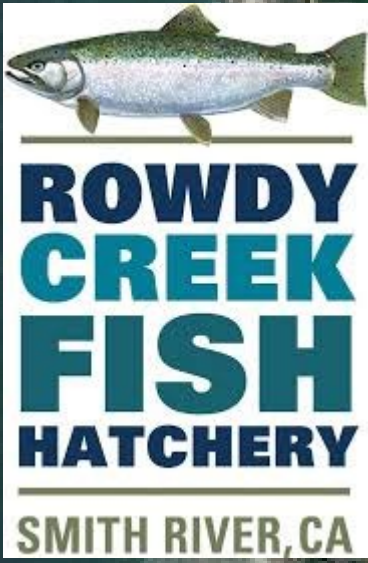


Nvn-nvst-'aa~-ta



Natural Resources is responsible for issues and projects pertaining to the water, wastewater, air, solid waste, watershed, water quality, ocean protection, cultural resources, natural resources, and emergency management. The Department oversees several programs and projects that are primarily funded by grants. The primary function on the Department is to gather data, evaluate and make recommendations to the Tribal Council on conservation and stewardship projects and policies.

Project Location



Project Overview:



Rowdy Creek Fish Hatchery rears and releases Chinook and steelhead supporting fishing opportunities in the Smith River



Supplies Salmon in the Classroom and tours to the local schools



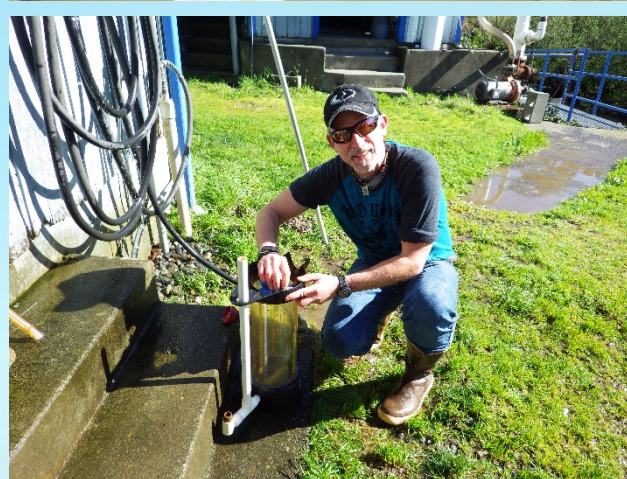
The Rowdy Creek Fish Hatchery owned by Tolowa Dee-ni' Nation has an average electric operating expense of ~\$36,000 annually



Reduction in operational costs needed with infrastructure updates



Reduction of carbon emissions and non-renewable energy use by the Tribe



Project Objectives

113.88KW Photovoltaic system includes:

- 312 x 365 watt solar panels

Installation of 28 panel roof mounted system

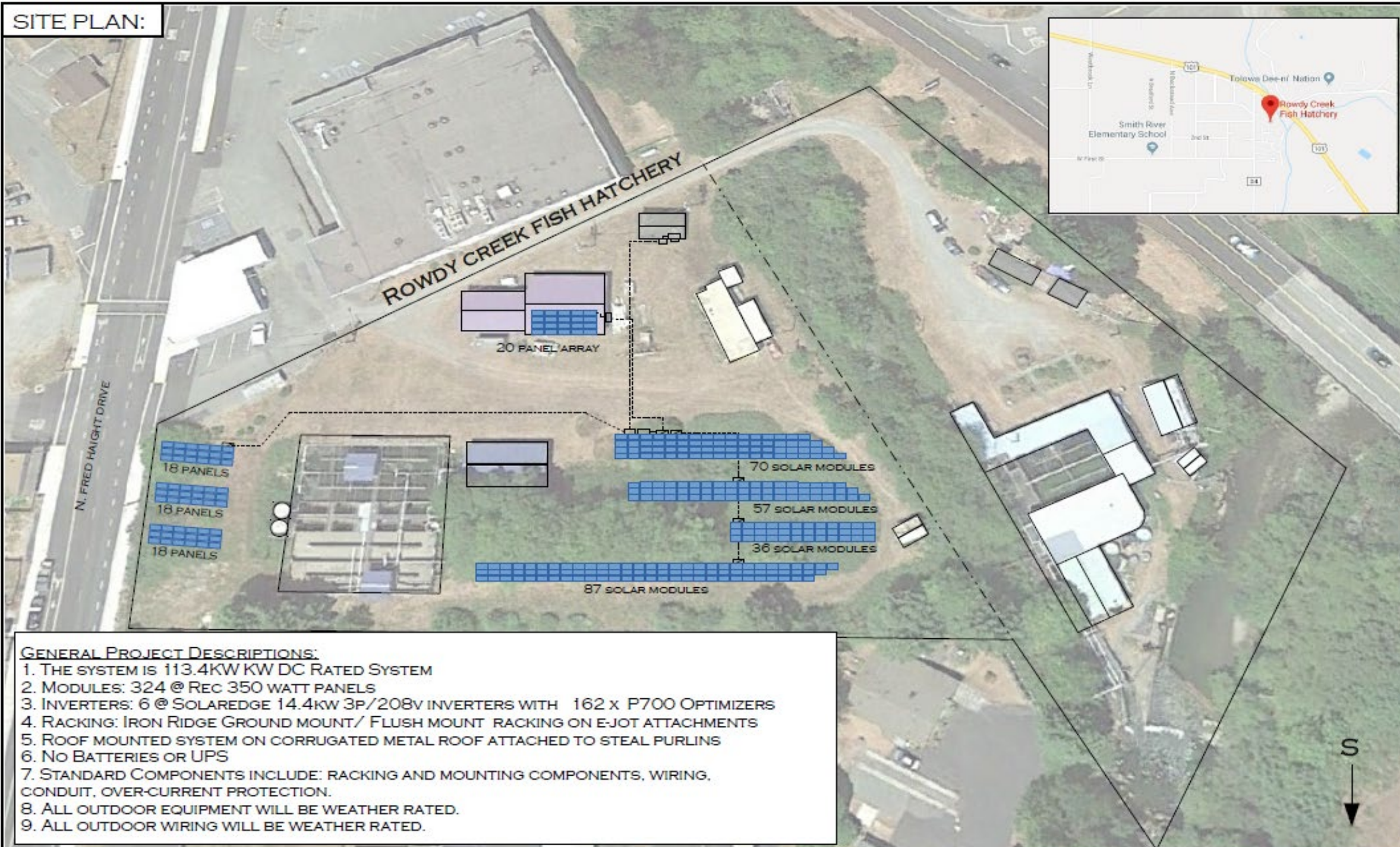
Installation of 284 panels on 6 different ground mounted solar arrays using ground mount racking system and trenching between solar arrays.

Installation of electric Balance-of-System from arrays to PV inverters

Removal of trees and vegetation in selected areas that will effect solar production.

Installation of landscaping material to impede vegetation growth beneath the arrays post construction and installation of landscaping materials to mitigate potential run off into waterways as a result of construction.

SITE PLAN:



- GENERAL PROJECT DESCRIPTIONS:**
1. THE SYSTEM IS 113.4KW KW DC RATED SYSTEM
 2. MODULES: 324 @ REC 350 WATT PANELS
 3. INVERTERS: 6 @ SOLAREEDGE 14.4KW 3P/208V INVERTERS WITH 162 x P700 OPTIMIZERS
 4. RACKING: IRON RIDGE GROUND MOUNT/ FLUSH MOUNT RACKING ON E-JOT ATTACHMENTS
 5. ROOF MOUNTED SYSTEM ON CORRUGATED METAL ROOF ATTACHED TO STEEL PURLINS
 6. NO BATTERIES OR UPS
 7. STANDARD COMPONENTS INCLUDE: RACKING AND MOUNTING COMPONENTS, WIRING, CONDUIT, OVER-CURRENT PROTECTION.
 8. ALL OUTDOOR EQUIPMENT WILL BE WEATHER RATED.
 9. ALL OUTDOOR WIRING WILL BE WEATHER RATED.

DESIGNED BY:
-JAR 2018-

APN: 103-09-02-6000

CUSTOMER:
ROWDY CREEK FISH HATCHERY
255 N. FRED HAIGHT DRIVE
SMITH RIVER, CA 95567
P: 707-487-3443 E: MEGAN.VANPELT@TOWOLA.COM

LIC: C-46 #954140

CONTRACTOR:
GREENWIRED
SOLAR PHOTOVOLTAIC INSTALLATION
WWW.GREENWIRED.COM

1150 #1 EVERGREEN RD
REDWAY, CA 95560
P: 707-923-2001

VER: 1 PG: 1

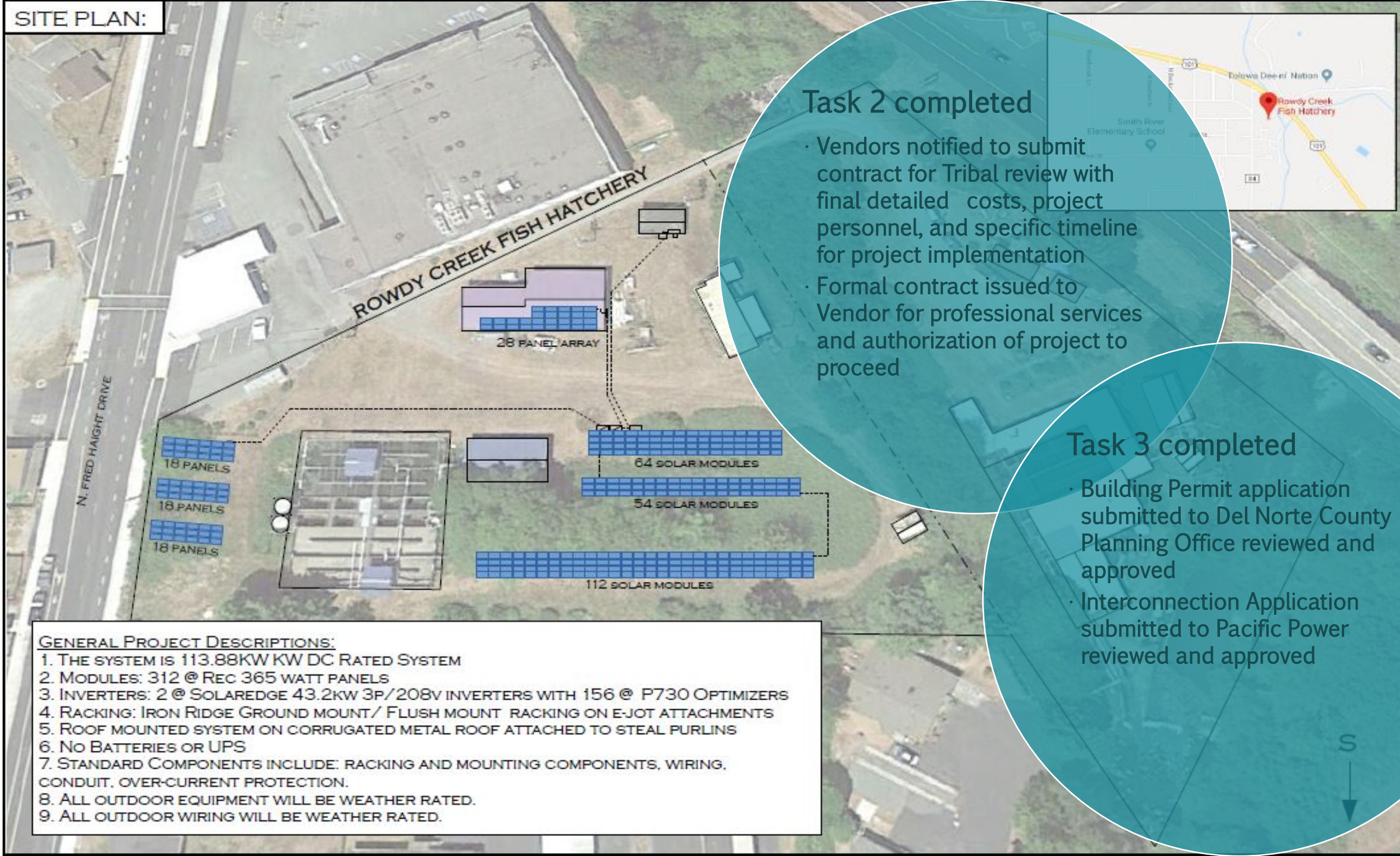
Progress to Date

Task 1 completed

Completed pre-award negotiation process with DOE

- Biological Assessment Completed
- Elevation Certificate Submitted
- Contractor getting under contract
- Tribal administrative and fiscal responsibilities assigned
- Kickoff meeting convened
- Tribal Council informed on project progress





Task 2 completed

- Vendors notified to submit contract for Tribal review with final detailed costs, project personnel, and specific timeline for project implementation
- Formal contract issued to Vendor for professional services and authorization of project to proceed

Task 3 completed

- Building Permit application submitted to Del Norte County Planning Office reviewed and approved
- Interconnection Application submitted to Pacific Power reviewed and approved

GENERAL PROJECT DESCRIPTIONS:

1. THE SYSTEM IS 113.88KW KW DC RATED SYSTEM
2. MODULES: 312 @ REC 365 WATT PANELS
3. INVERTERS: 2 @ SOLAREEDGE 43.2KW 3P/208V INVERTERS WITH 156 @ P730 OPTIMIZERS
4. RACKING: IRON RIDGE GROUND MOUNT/ FLUSH MOUNT RACKING ON E-JOT ATTACHMENTS
5. ROOF MOUNTED SYSTEM ON CORRUGATED METAL ROOF ATTACHED TO STEEL PURLINS
6. NO BATTERIES OR UPS
7. STANDARD COMPONENTS INCLUDE: RACKING AND MOUNTING COMPONENTS, WIRING, CONDUIT, OVER-CURRENT PROTECTION.
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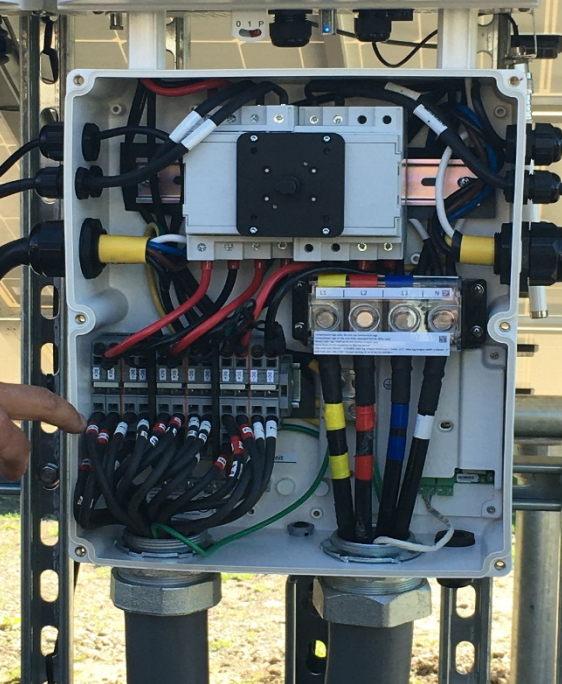


Task 4 completed

Rowdy Creek Fish Hatchery project site ready for project implementation

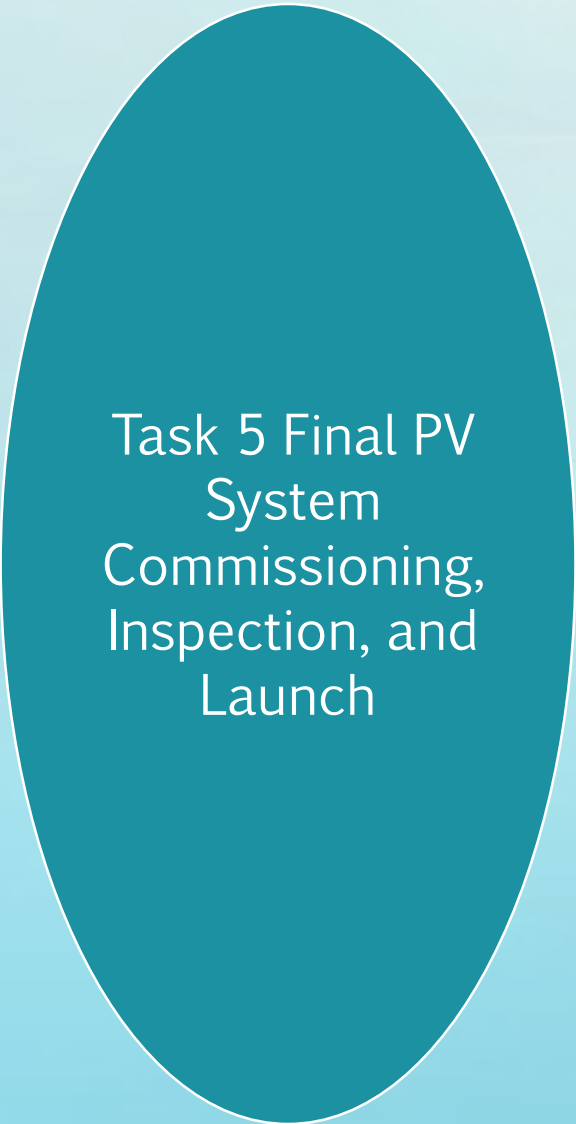
- Heavy equipment brought in for removal of blackberry bushes, trees, and grading
- Debris removed from roof of building
- Trenches prepared to accommodate solar arrays







Coming
soon



Task 5 Final PV
System
Commissioning,
Inspection, and
Launch

- Del Norte County final inspection and approval
- Pacific Power Interconnection process
- Utility interconnection process; system launch approval
- NEW Solar Photovoltaic Renewable Energy System launched
- Monitor system for 12 months



Project Participants

Tolowa Dee-ni' Nation

- Grant Administrators
- Prepared the landscape for panel installation along with guidance from Greenwired
- Will assist in maintaining the system

Rowdy Creek Fish Hatchery

- Provided site knowledge to Greenwired
- Will assist in maintaining the system

Greenwired Renewable Energy Solutions

- Designed and constructed the system
- Assisted with getting the required permits
- Obtaining interconnection agreement with Pacific Power
- Assisted with any additional needs required to construct and operate the PV system

SPECIAL THANKS



U.S. DEPARTMENT OF
ENERGY

Office of
Indian Energy



GREENWIRED[®]
RENEWABLE ENERGY SOLUTIONS

