

Climate Actions Blue Lake Rancheria

Prepared for:
U.S. Department of Energy Tribal Leader Forum
March 4th, 2015



www.bluelakerancheria-nsn.gov

Overview

- ❖ Introductions
 - Jana Ganion, Energy Director
- ❖ Climate Data
- ❖ Local Actions to Date
- ❖ Future Efforts



Mad River Residents

Photo courtesy of fishingwithjd.com

www.bluelakerancheria-nsn.gov

Oregon / California
Border

Jedediah Smith
Redwood
State Park

Grants Pass
199
Medford
Ashland

97
Klamath
Falls

395

Blue Lake Rancheria

Redwood
National Park

Eureka

Humboldt
Redwoods
State Park

101

MacKerricher
State Park

Redding

Red Bluff

Mc Arthur-Burney
Falls Memorial
State Park

Lassen Volcanic
National Park

Paradise

Chico

Donner Memorial
State Park

Yuba City

80

North
Natomas
Roseville

Sacramento

Sacramento
Region

Fort Ross

Santa Rosa

Napa

Fairfield

Concord

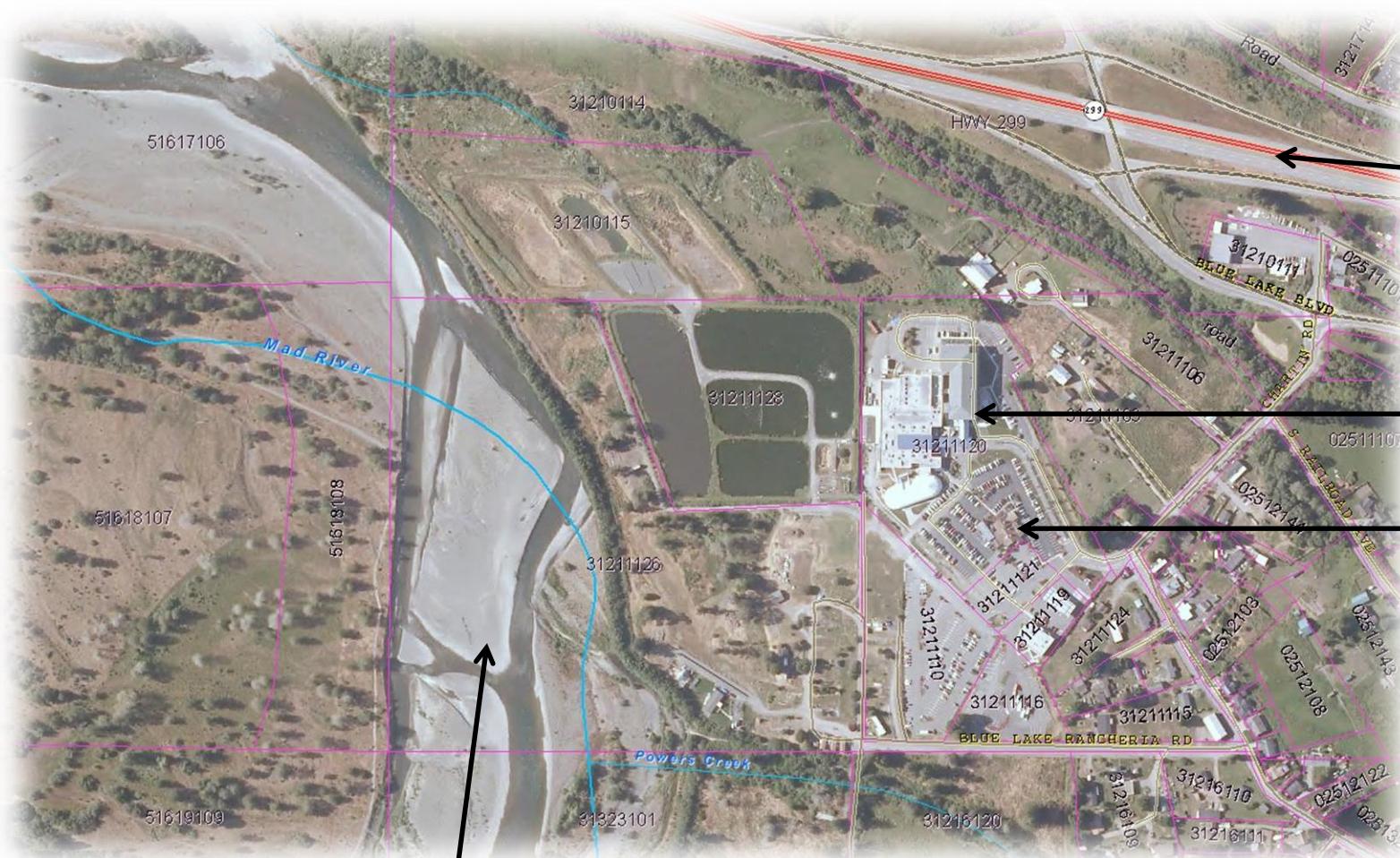
San
Francisco

Oakland

205

Stockton





Mad River



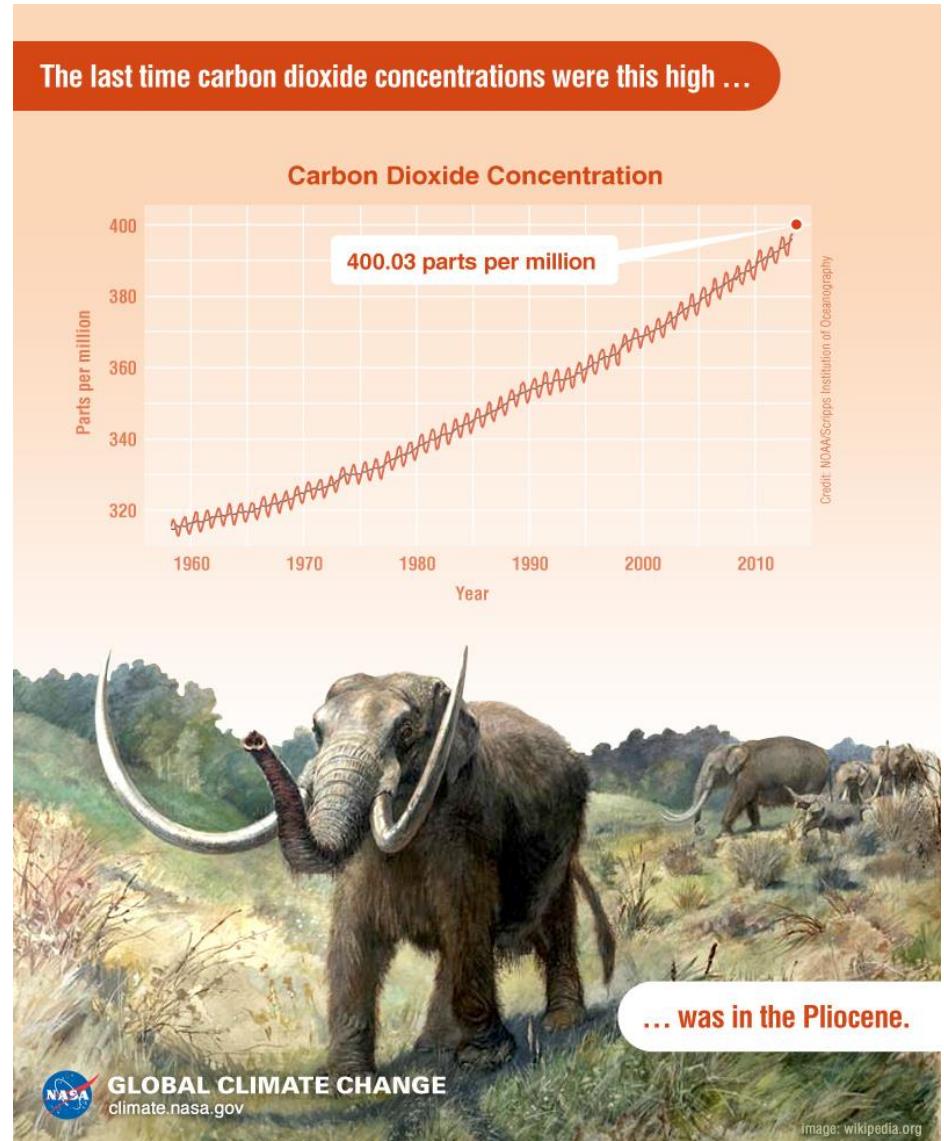
www.bluelakerancheria-nsn.gov

Climate Change Data - Global

- ❖ **2014: Warmest Year in Modern Record** (NOAA)
- ❖ **Global sea level rise:** ~6.7 inches in the last century - and, in the last decade, the rate has nearly doubled. (NASA)
- ❖ **“Scientific evidence for warming of the climate system is unequivocal.”** (IPCC)



<http://climate.nasa.gov>

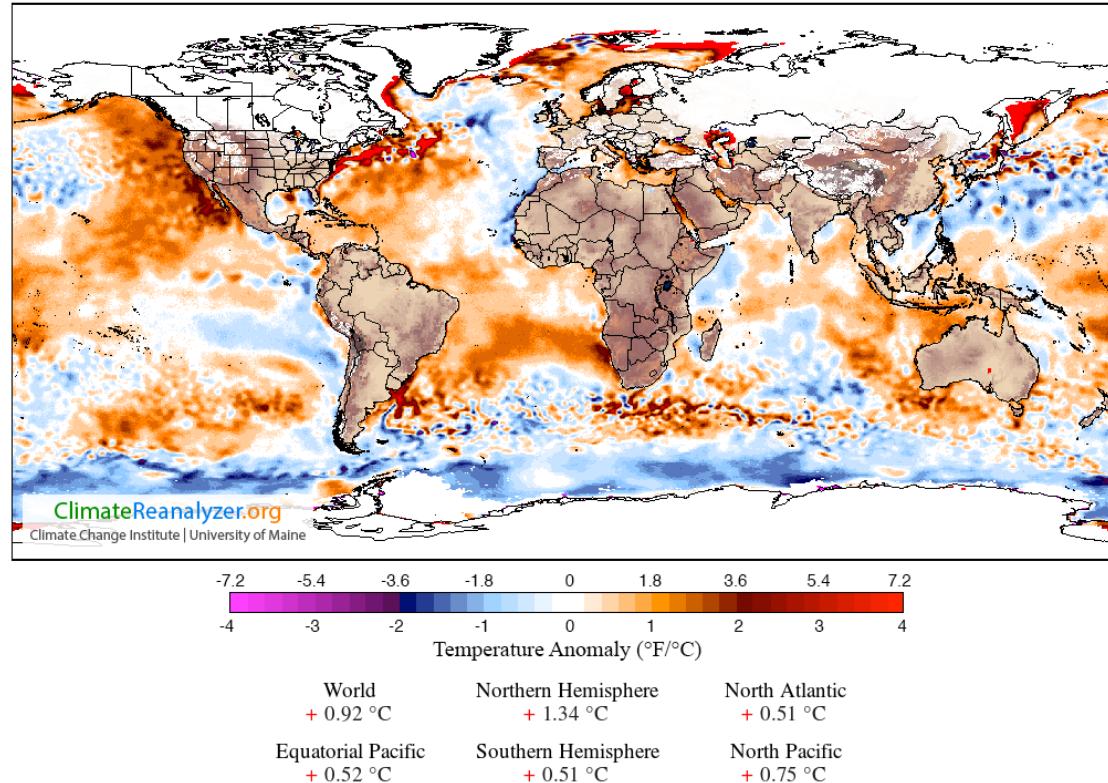


www.bluelakerancheria-nsn.gov

Ocean Effects

Sea Surface T Anomaly
NCEP GFS (0.25°x0.25°)

Forecast Valid - Wed 0000 UTC, Feb 11, 2015
000h from Wed 0000 UTC, Feb 11, 2015



The water temperature in the Gulf of Maine increased eight (8) times faster than the rest of the world's oceans in recent years, some readings are 21 degrees (F) higher than normal.

Source, 2014 Study by Andrew Pershing, Gulf of Maine Research Institute.

http://pamola.um.maine.edu/DailySummary/frames/GFS-025deg/DailySummary/GFS-025deg_WORLD-CED_SST_anom.png

www.bluelakerancheria-nsn.gov



Local Climate Change Impacts

- ❖ Big Wildfires
- ❖ Severe Drought
- ❖ Water Shortages
- ❖ Heavy Rains & Floods
- ❖ Extreme Weather
- ❖ Infrastructure Damage
- ❖ Threats to Life & Safety

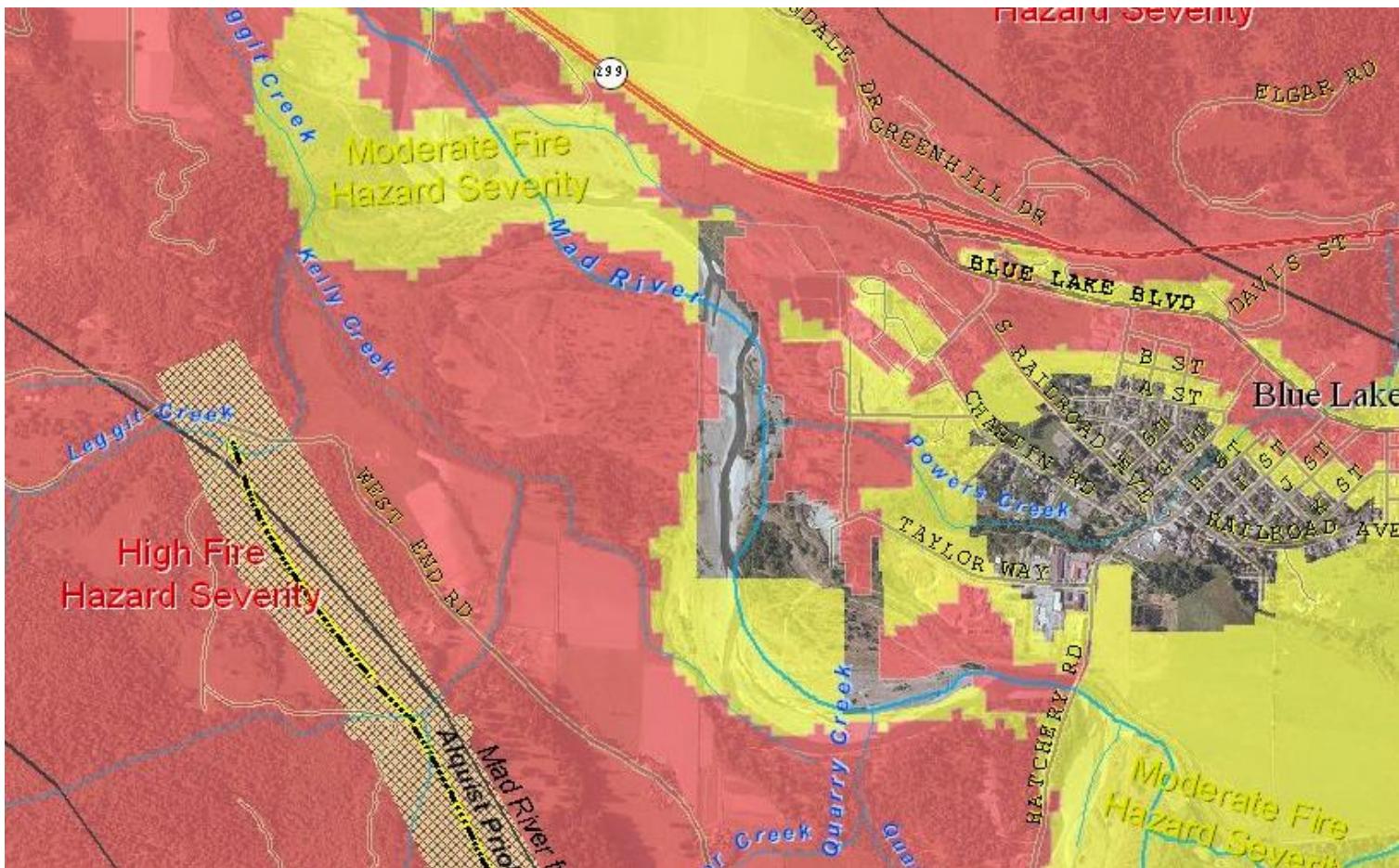


Drought

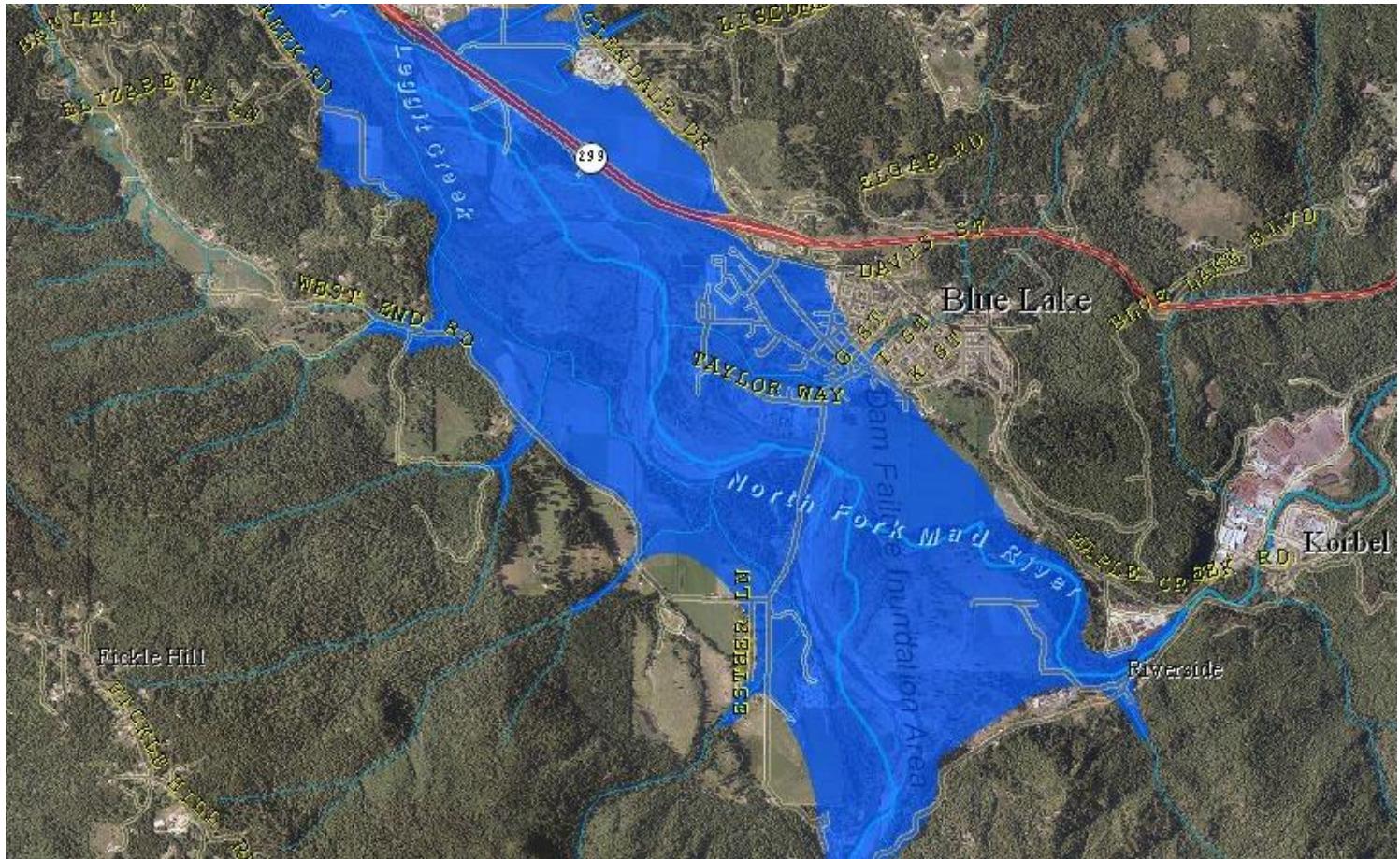
- ✖ 2012, 2013, 2014, Blue-Green Algae in the Mad River



High Fire Hazard Severity



Heavy Rains & Flooding





Infrastructure Damage

- ⌘ Many of the most recent infrastructure plans and data in our region are focused squarely on climate change impacts.
- ⌘ Our relatively rural, isolated area makes this even more critical.





BLR Climate Actions

❖ Reduce Greenhouse Gas Reductions

- Energy efficiency upgrades
- Transition from fossil fuels to green fuels
- Transition from conventional energy to renewable energy
- Support regional GHG reductions

❖ Improve Community Resiliency

- Develop energy security through islanded power capability onsite
- Develop water, food, shelter, and communications security
- Create long-term operability as a regional emergency site.



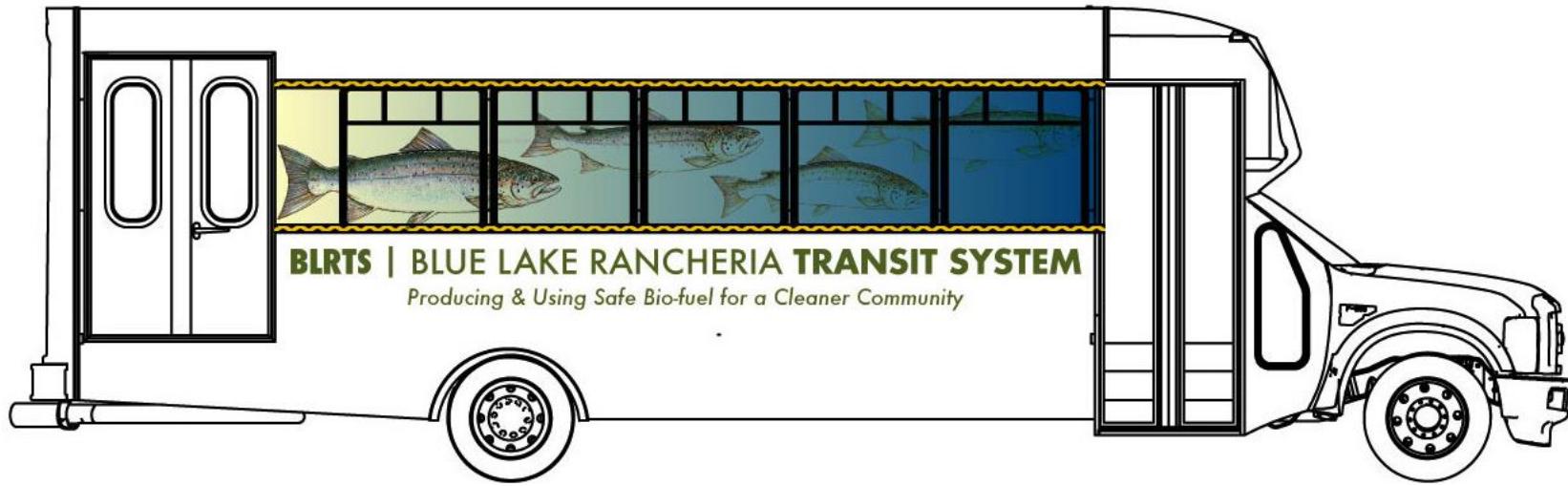
Current Actions

❖ Energy Efficiency Upgrades

- Fuel Station and Tribal Government Offices: reduced power consumption by ~20% and ~15% respectively (2014); savings of ~\$20,000 per year.
- Smart meter analysis by utility, simple rate changes, savings of ~\$15,000 per year.
- Upcoming:
 - Parking lot lighting replacement
 - Ozone commercial laundry system
 - Slot machine retrofits (LED / cold cathode)



Current Actions



- ❖ Biodiesel Transit
- ❖ Regional Electric Vehicles & Infrastructure
- ❖ 2 EV Charging Stations



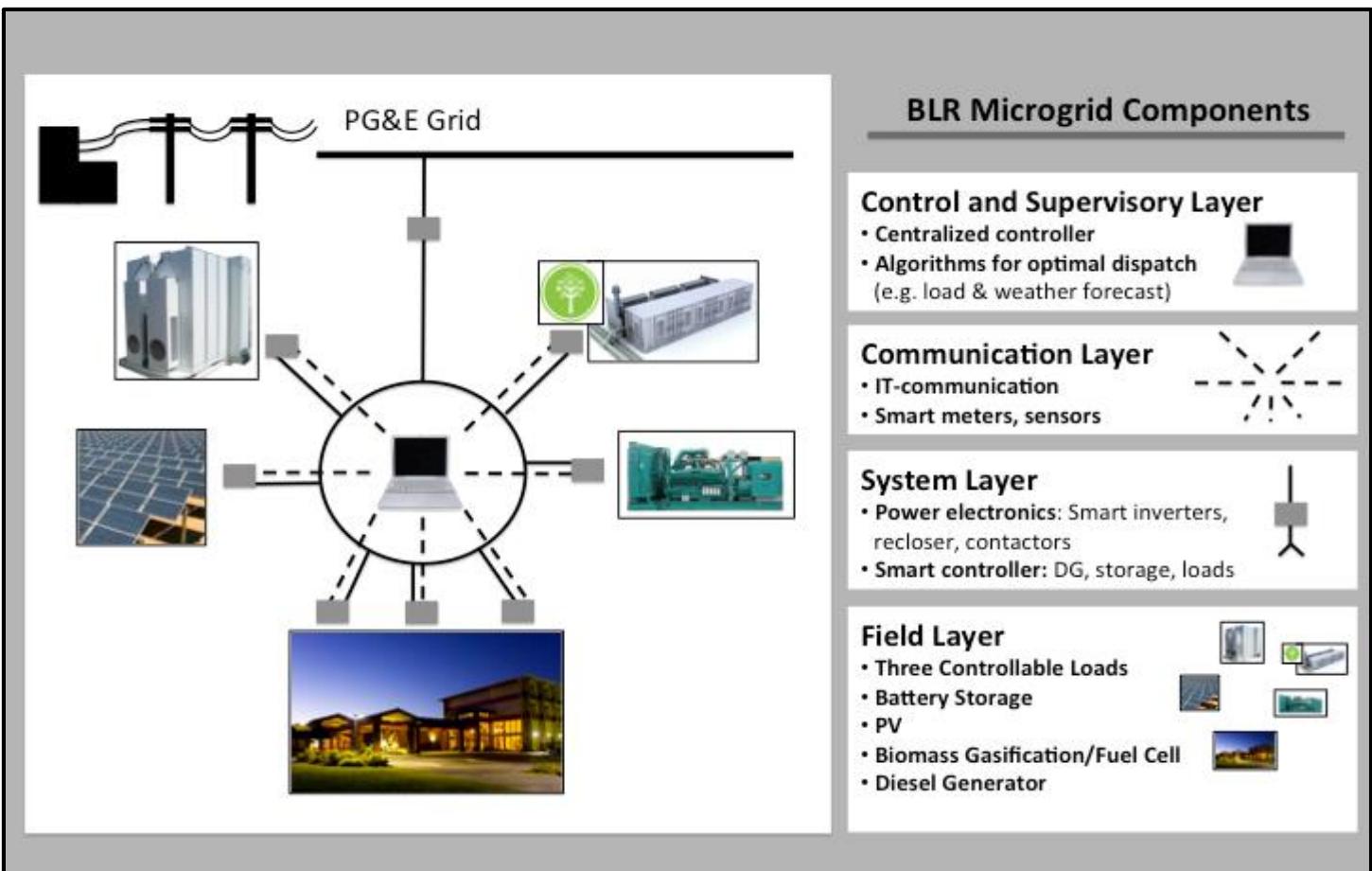
Current Actions

- ❖ Onsite Renewable Energy
- ❖ Solar Arrays for Tribal Residences
- ❖ 175kW Biomass-to-Fuel Cell
 - Supported by California Energy Commission “Public Interest Energy Research (PIER) Program”
 - Improves community resilience
 - Reduces GHGs
 - Tribal, regional, and state partnership
 - Replaces ~1/3 baseload power with renewable source.

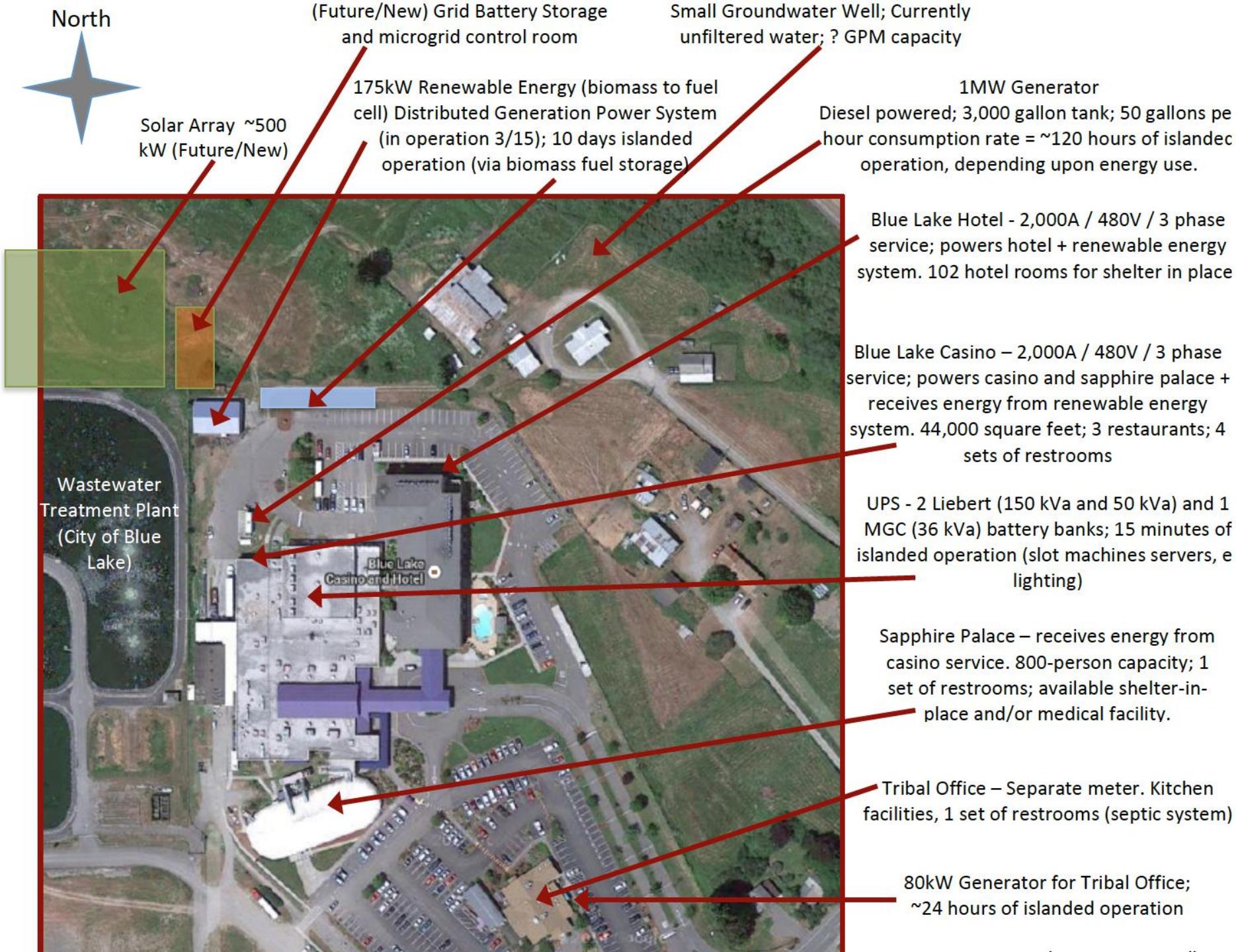


Current Actions

- ❖ Microgrid + Solar Array .5 MW + Battery Storage 800kWh



North



Current Actions

- ❖ Tribal Office of Emergency Services
- ❖ Tribal Wildland Fire Department
- ❖ Emergency/Flood/Water Resource Planning
 - Partnership with Humboldt Bay Municipal Water District; City of Blue Lake; Regional Stakeholders
 - Dam Breach; Levee Breach; Other Flooding
- ❖ Working with local partners on joint climate efforts



Future Actions

❖ GHG Reductions

- Updated Strategic Plans
- Food Waste Diversion / Anaerobic Digestion (feasibility)
- Expand Microgrid
- Expand Solar Energy
- New Data Sets
- Achieve Zero Net Emissions

❖ Community Resiliency

- Consolidate and update plans
- Trainings
- Food Security
- Water Security
- Achieve Islanded Operation



Climate Action Collaboration

Tribal

- ❖ Tribal Government
- ❖ Tribal Members
- ❖ Environmental Programs
- ❖ Office of Emergency Services
- ❖ Wildland Fire Department
- ❖ Department of Energy and Technologies



REDWOOD COAST
Energy Authority

Local, Regional, State, National

- ❖ Humboldt State University
- ❖ Schatz Energy Research Center
- ❖ Redwood Coast Energy Authority
- ❖ **U.S. Department of Energy**
- ❖ U.S. Department of Interior
- ❖ NOAA
- ❖ Pacific Gas & Electric
- ❖ California Energy Commission
- ❖ U.S. Department of Agriculture
- ❖ Humboldt Bay Municipal Water District
- ❖ Humboldt County Office of Emergency Services
- ❖ American Red Cross

❖ Thank you.
❖ Questions?



❖ Solar Wish List.....
❖ Jana Ganion, Energy Director
jganion@blue.lakerancheria-nsn.gov

