Yurok Tribe

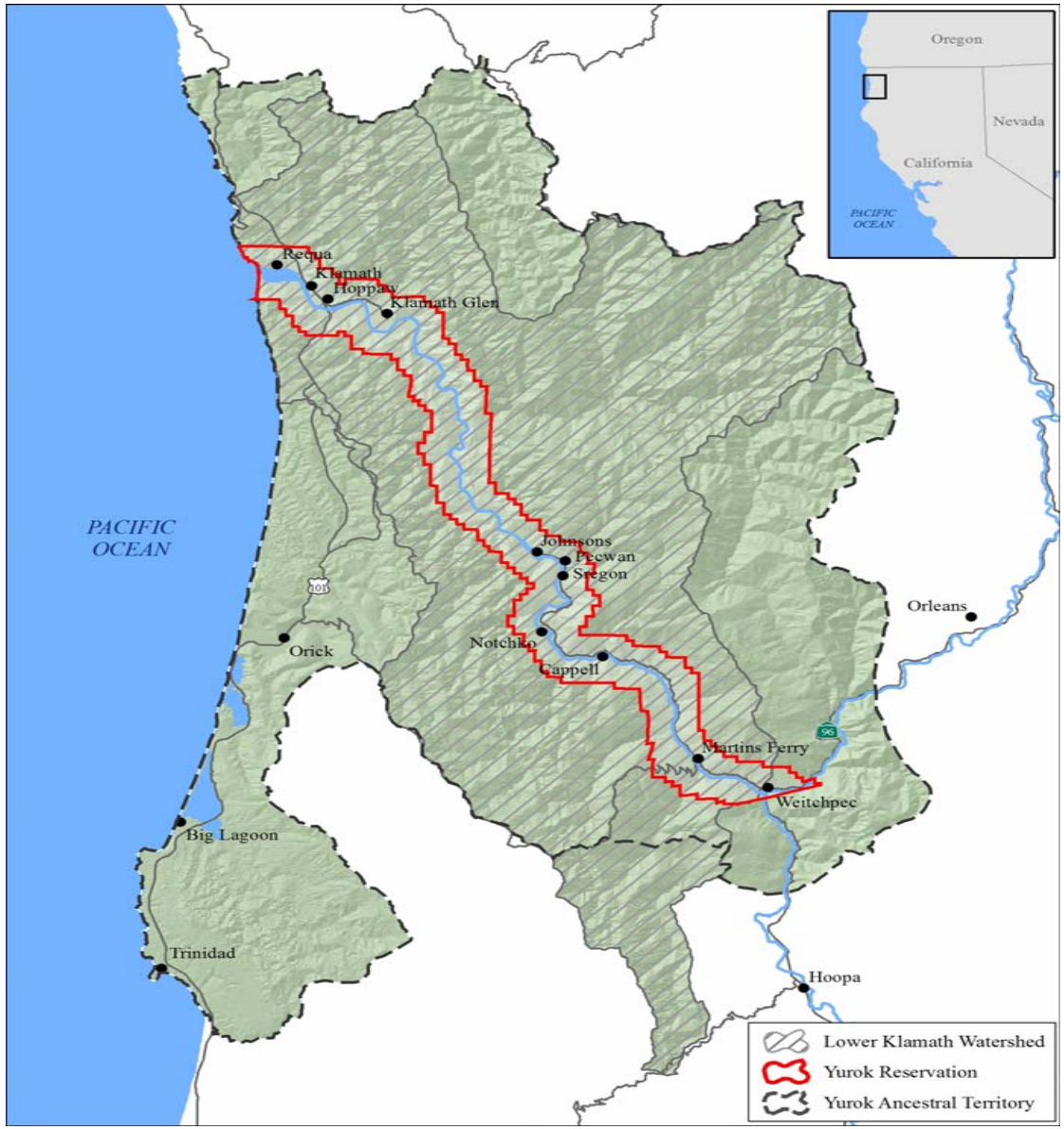
Tribal Utility Feasibility Study
&
Human Capacity Building in Energy Efficiency and Renewable Energy System Maintenance

Presented By:
Dustin Jolley, Tribal Engineer

Schatz Energy Research Center

10/19/05

Location



Schatz Energy Research Center

Background

- Traditional livelihood on the Yurok Reservation is based upon subsistence harvest of salmon on the Klamath River.
- Historically 70% of residents on the Yurok Reservation have not had convenient access to power or phone.
- The Yurok Reservation straddles two counties and is located in the most remote corners of two utility companies' service territories (PP&L and PG&E).

Background

- Energy conservation programs that are available through the power companies have not been readily accessible to residents on the reservation.

- Yurok Tribe members suffer from high energy cost to income ratios: a recent survey indicates 44% of residents' income is spent on energy.

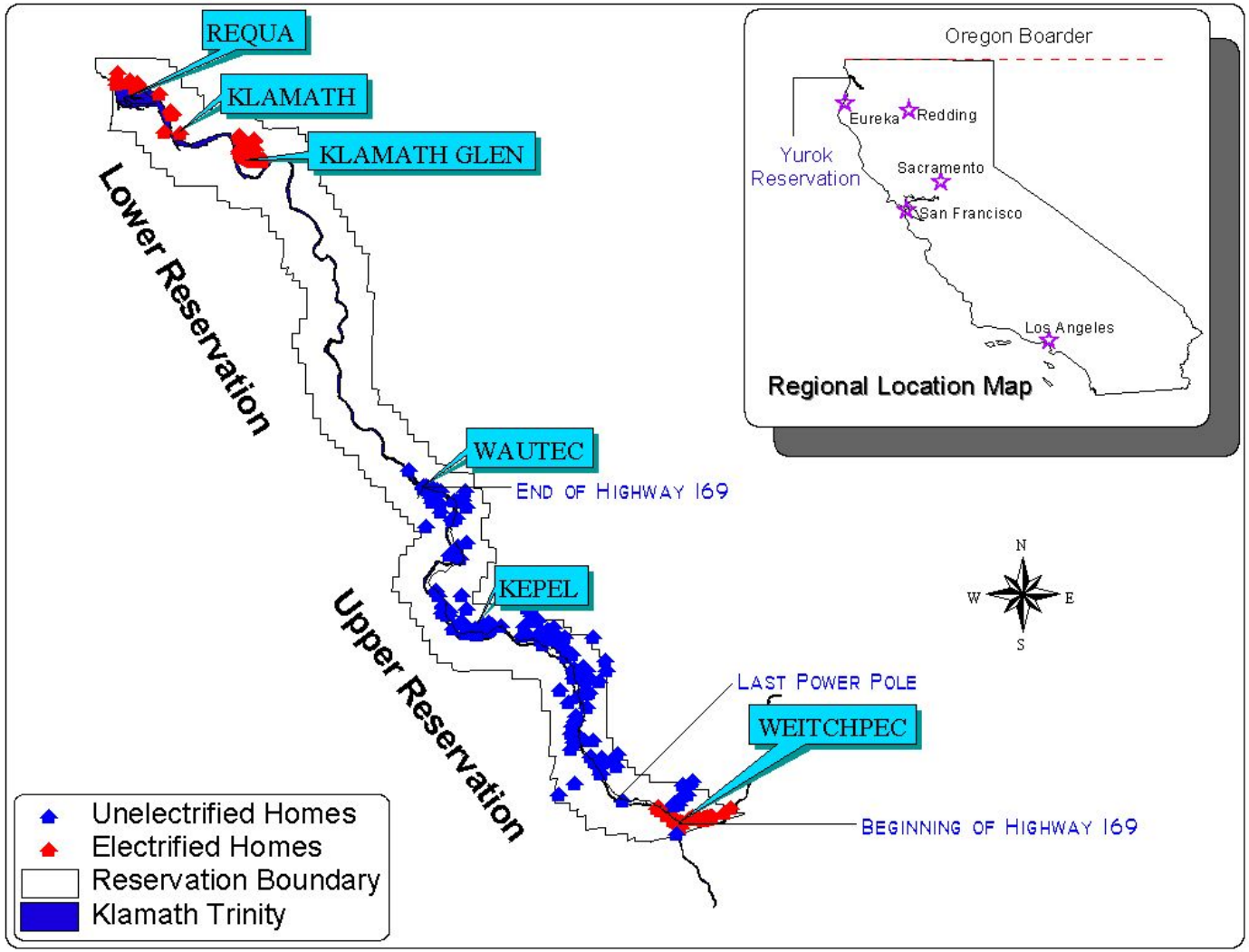
Schatz Energy Research Center

Background

- Renewable Energy Power Systems have been installed in the past that have not endured due to:
  - Lack of education/ understanding of system
  - Lack of proper use and maintenance.

  As a result, the reputation regarding the functionality of these types of technologies has suffered.

Background



Schatz Energy Research Center

RUS Power Line Extension

Approximately 30 miles of 12.5kV power lines are currently being installed at a cost of roughly $150,000 per mile.

- Mostly overhead
- Culturally sensitive areas → underground

This line extension will provide grid power to ~131 homes on the reservation.

Upon completion, ~30 residences will remain without grid-connected electrical power.

Schatz Energy Research Center

Tribal Utility Feasibility Study
Scope of Work

- Develop needs assessment
- Conduct survey & inventory of existing facilities
- Determine feasibility of Tribal Utility
- Determine best form of Tribal Utility
- Develop business plan, documents, and agreements

Schatz Energy Research Center

Survey Results

77.33% of the households utilize Propane fueled refrigerators.

54.67% use a clothes washer that is powered by a generator.

64 of the 75 households surveyed have Televisions.

57 households have VCR's and/or DVD players.

19 of the households surveyed had computers in the home.

Fuel costs whether wood, propane, diesel, or kerosene currently average $132.67 monthly.

Wood heat is the dominate heating source of the households surveyed with 80% or 60 homes heated with wood.

Lighting power sources were as follows:

Lighting		
How do you provide lighting	No.	%
Electricity from Generator	53	70.67%
LPG or Propane	3	4.00%
Fuel oil	1	1.33%
Kerosene	10	13.33%
Wood	0	0.00%
Solar	3	4.00%
Candles	2	2.67%
Some other fuel	3	4.00%
Total	75	100.00%

Schatz Energy Research Center

Feasibility

The benefit of establishing a Tribal Utility would be based mainly on the ownership and control of the electrical grid by the Yurok Tribe. Even though the Tribe is financing the grid extension, transfer of ownership of the grid to PG&E is underway for the following reasons:

- The Tribe cannot afford to survey out separate easements for each pole and line route, which could easily cost over $750,000.
- The Tribe cannot afford to maintain the utility lines.
- The 12.5 kV grid design by PG&E limits the Tribe's ability to "wheel" power from the northwest for sale at a profit.

Feasibility

The concept of establishing a Tribal Electrical Utility is not viable since it is not economically feasible for the Tribe to manage a 120 household electrical service base.

Tribal Utility Feasibility Study - Next Steps

Power Generation?

RUS funded grid extension

– Should we stop here?

Renewable Energy Based Tribal Utility?

Capacity Building Project Tasks

Task 1: Conduct Staff Energy Training
- Hire Energy Specialist & Energy Technician

Task 2: Conduct Energy Efficiency and Renewable Energy Workshops

Task 3: Perform Energy Efficiency and Renewable Energy Needs Assessment

Task 4: Identify Energy Program and Funding Resources

Task 5: Develop Energy Program Strategy

Task 6: Conduct Community Energy Education Campaign

Task 7: Monitor and Document Project Accomplishments

Schatz Energy Research Center

Capacity Building Project
Current Activities

- Hire Energy Specialist & Energy Technician
- Prepare for staff energy trainings
- Prepare for Energy Efficiency and Renewable Energy Workshops
- Plan additional needs assessment work that builds on work already completed

Thank you.

Schatz Energy Research Center

10/19/05