



Smith River Rancheria

Feasibility

Feasibility of Wind, Solar, Conservation and Utility Changes

DOE Tribal Energy Program
Program Review Meeting
November 5-8, 2007

Ed Wait

Smith River Rancheria

Achieving Energy Self-Sufficiency





SMITH RIVER RANCHERIA



Striving to build a healthy, self-reliant rural Indian economy for the benefit of Smith River Rancheria members and visitors. Working to maintain and support rural assets, which include scenic and recreation areas, healthy ecosystems, and clean air and water. Enhance the community, which will serve as a center of cultural, economic, civic, and social activity.

Diversify the economic base to achieve greater economic stability and growth. Build partnerships and facilitate action to achieve economic health and quality of life in the community.

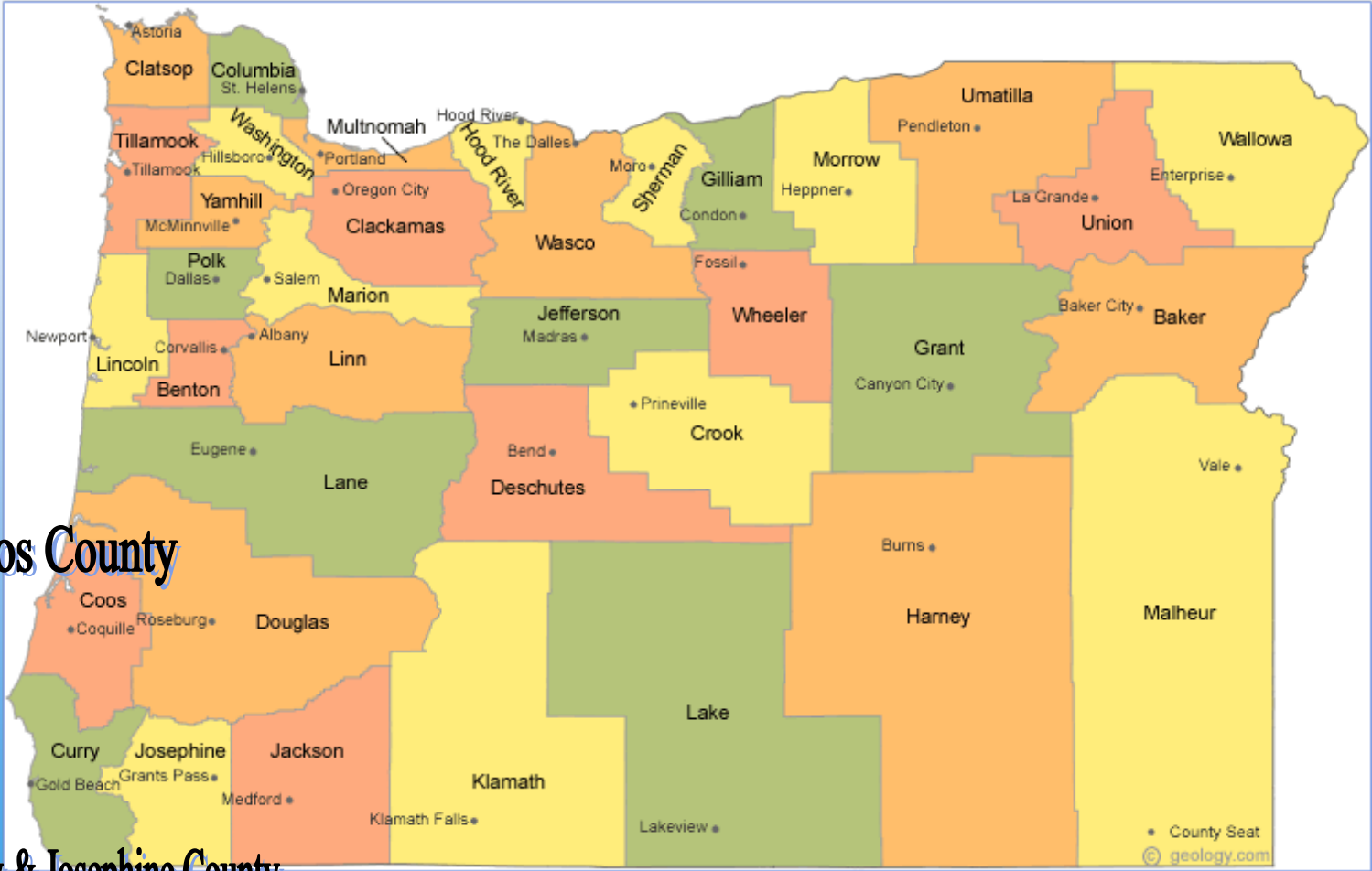




Smith River Rancheria

County Boundaries

OREGON



Coos County

Curry & Josephine County



Smith River Rancheria

County Boundaries

CALIFORNIA

Del Norte County



Humboldt County





Smith River Rancheria

Property

- Rural Coastal Community
- Smith River Rancheria
 - Checkerboard Property
- Development and Expansion of Tribal Resources





Smith River Rancheria

Objectives

- Economic & Technical Feasibility
- Evaluate Wind & Solar Energy
- Tribal Energy Load Assessment
- Community Need for Energy vs. Export
- Conservation Opportunities
- Power Market Assessment
- Site-Specific Resource Monitoring





Smith River Rancheria

Wind

Wind Efforts

- Avoid Controversial Sites
- Only Sites Owned by Smith River Rancheria
- Smaller Scale & Next to Tribal Buildings
- Member Owned Sites and Closer to Trust Lands
- Little Political Exposure
- Better Chance of Net Metering Contract
- Little Interference by Third Parties





Smith River Rancheria

Wind Outcomes

- Site Audited at all Smith River Rancheria Facilities
- Average Wind Speed Considered Low to Fair
- System Payback Over 45-75 Years
 - Too Long
 - Too Expensive





Smith River Rancheria

Solar Objectives

- Solar
 - Consider Feasibility for Tribal Facilities
 - Assess Technical Feasibility
 - Exposure
 - Construction
 - Configuration of Building
 - Economic Evaluation
 - Accurate Equipment Cost
 - Study and understand Solar Incentives Available
 - Investigate Funding Sources
 - Access Economics





Smith River Rancheria

Solar Outcomes

- Solar Outcomes
 - Evaluate all Smith River Rancheria Facilities
 - Maximum Solar Capacity Determined Utilizing Usable South Facing Root Area
 - System Payback From 58-83 Years
 - Too Long
 - Too Expensive





Smith River Rancheria

Conservation

- Conservation

- Evaluate Casino, Administration Offices, Community Center & Head Start Building
- Access General Construction
- Review Heating/Cooling Equipment & Operation
- Investigate Lighting
- Building “Tightness” and Weather Stripping
- Study and Understand incentives Available
- Investigate Funding Sources
- Access Economics





Smith River Rancheria

Conservation Outcomes

- Conservation Outcomes
 - Facilities Energy Audits
 - Energy Saving Measures With a Pay-Back Period of 7 Years or Less
 - Energy Efficiencies Were Identified and Reviewed by Maintenance





Smith River Rancheria

Utilities

- Interconnected Utilities
 - PacifiCorp and Coos Curry Electric
 - Ability to Sell into Oregon or California Market
 - On Site Generation
 - Allocation
 - Purchase from Either Market
 - Future Tribal Enterprises
 - Added Redundancy for Smith River Rancheria





Smith River Rancheria

Lessons Learned

- Conservation is the First Step in Minimizing Energy Use.
- Wind, Solar & Bio Mass Provide a Limited Energy Resource Due to Geographic Location and Sustainability of Source.
- Self Determination is More Than Just Developing Resources Locally it is How Power Delivery Takes Place.





Smith River Rancheria

Investigation

Development of an Energy Organization Investigation

DOE Tribal Energy Program
Program Review Meeting
November 5-9, 2007

Smith River Rancheria

Ed A. Wait

W.G. Buehler & Associates

Werner G. Buehler

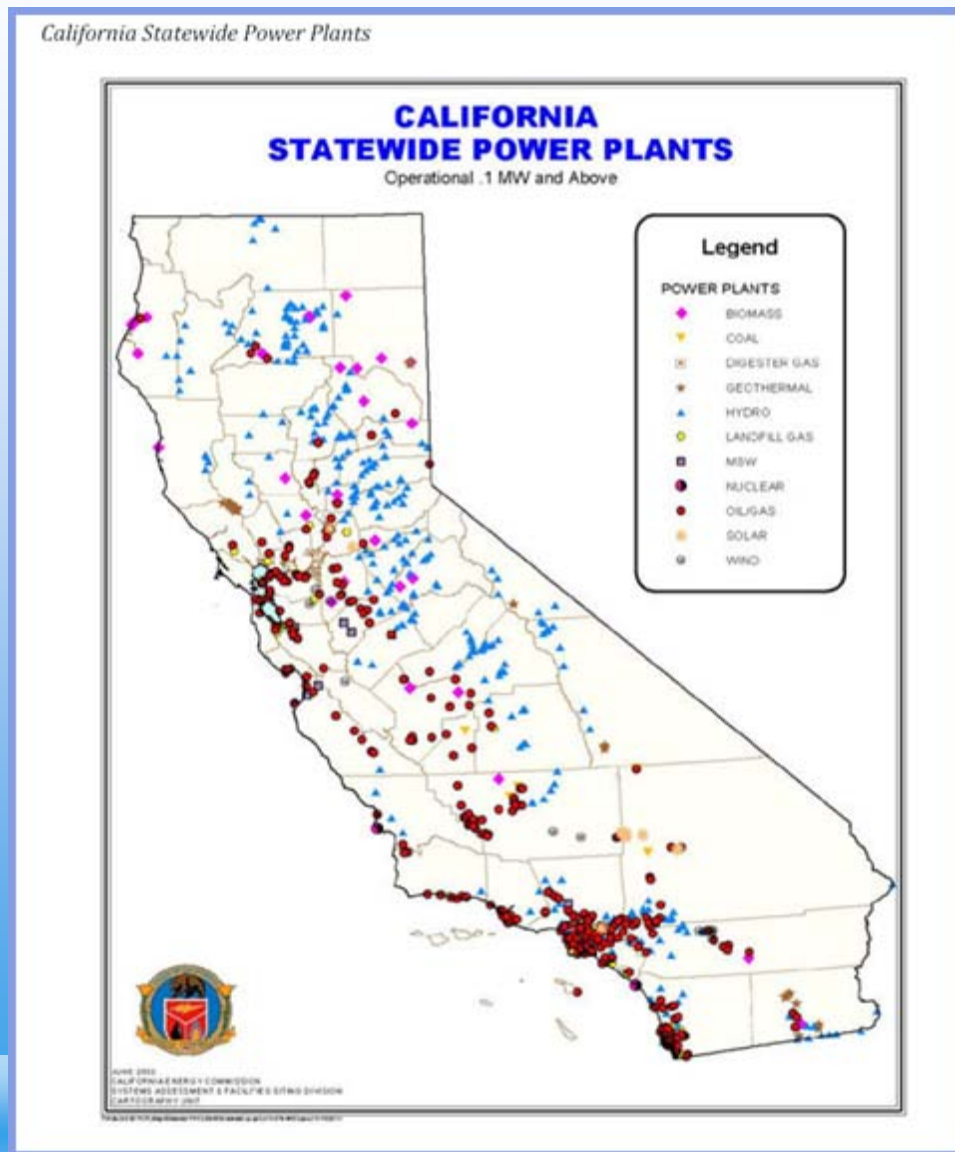
Achieving Energy Self-Sufficiency





Smith River Rancheria

Power Plants

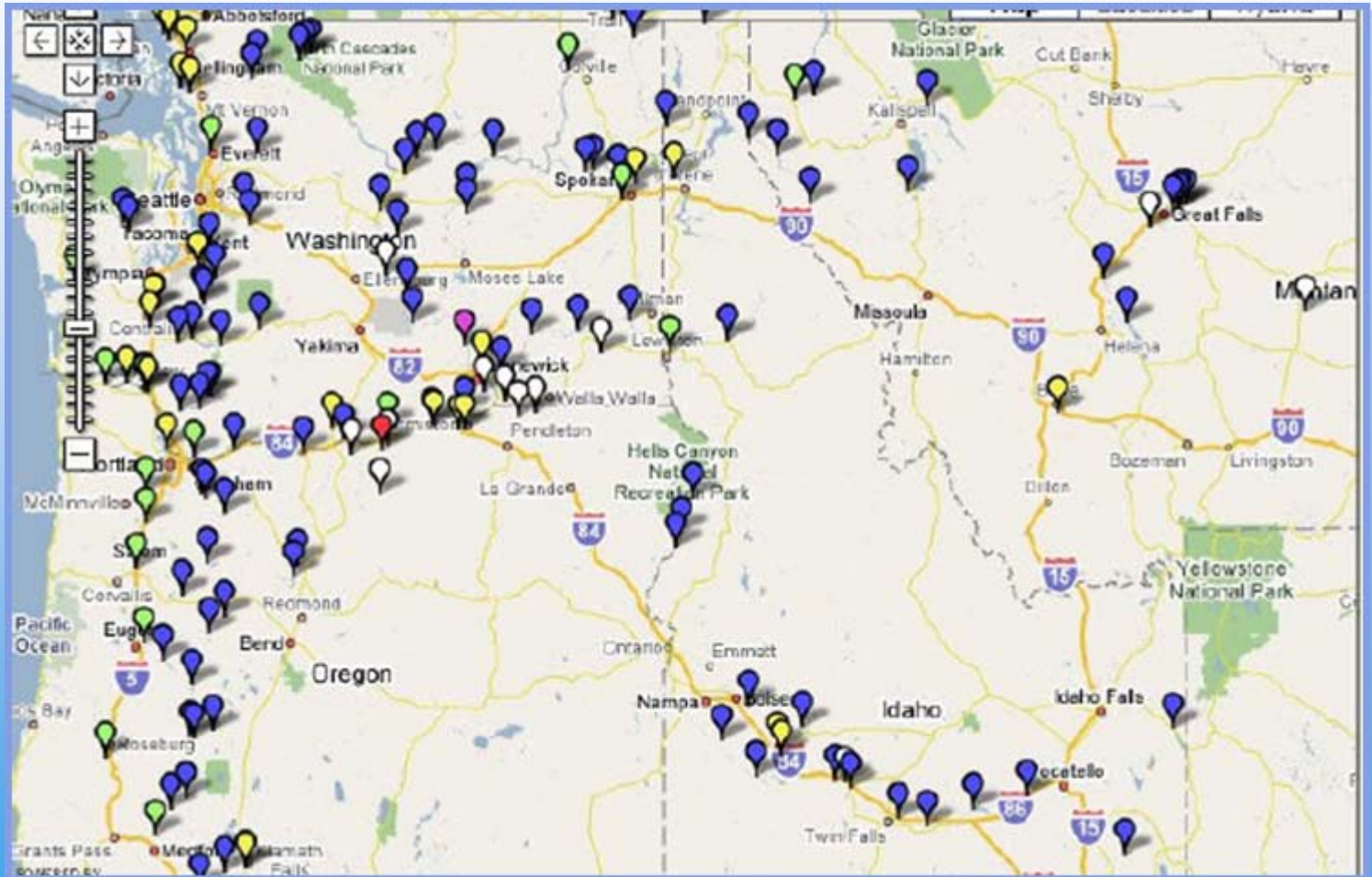




Smith River Rancheria

Sources

- Sources to Feed Locally Owned Tribal Utilities



Red=Coal, Blue=Hydropower, Pink=Nuclear, Yellow=Natural Gas, Green=Bio Mass, White=Wind





Smith River Rancheria

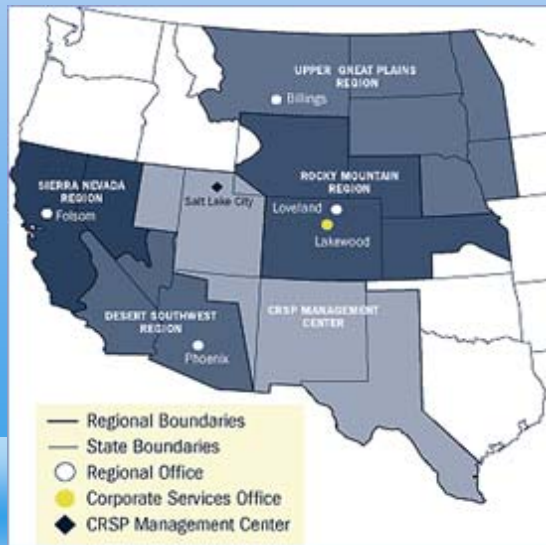
Resources

Power Supply Options

Given the geographic location of Smith River Rancheria in northwestern most corner of California, there are many power supply options. The options for “central station” produced power and power management are:

1. **Federal Power Marketing Agencies**
 - a. **Western Area Power Administration (WAPA)**
 - b. **Bonneville Power Administration (BPA)**

Western Area Power Administration (WAPA)



Bonneville Power Administration (BPA)





Smith River Rancheria

Entities



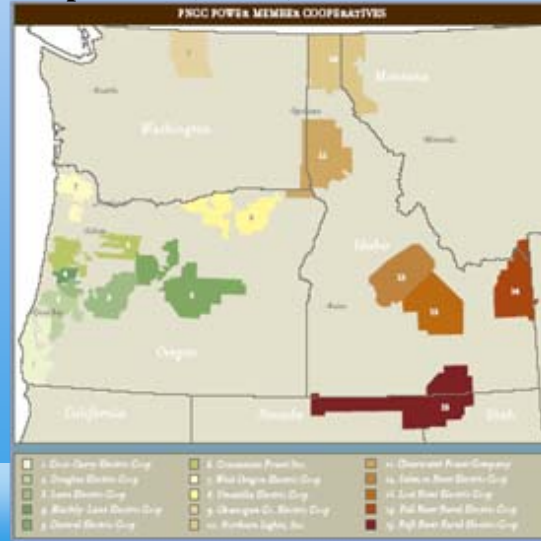
2. Power Marketing/Management Entities

- a. Northern California Power Agency (NCPA)
- b. Pacific Northwest Generating Cooperative (PNGC)
- c. The Energy Authority (TEA)

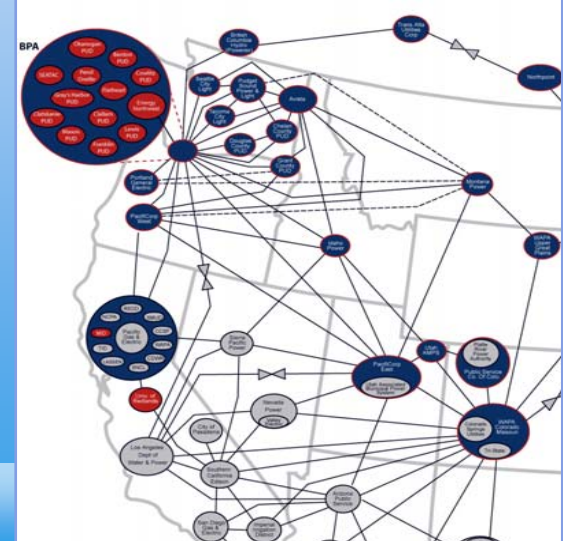
Northern California Power Agency (NCPA)



Pacific Northwest Generating Cooperative (PNGC)



The Energy Authority (TEA)





Smith River Rancheria

Electric Utilities

- Historically local public utilities have purchased surplus wholesale power from larger IOUs nearby, this does not seem to be a viable option in the SSR's geographic location today.
- All of the area's IOU's contracted are short of generation and are actively seeking more.
- That being so, Portland General Electric (PGE), Pacific Power and Light Company and Pacific Gas and Electric are not seeking entering into contracts with others at this time.





Smith River Rancheria

Future Forecast

- BPA's "White Book" forecasts load resource balance; taking into account IPP projects.
- If not or if the IPPs arrange to send their generated power outside the region into markets they deem to be more "lucrative", then the region could suffer significant shortages.
- Additionally, should the all important Columbia River System suffer from poor snow pack and associated runoff for consecutive years/seasons the regional power generation adequacy becomes even more precarious.

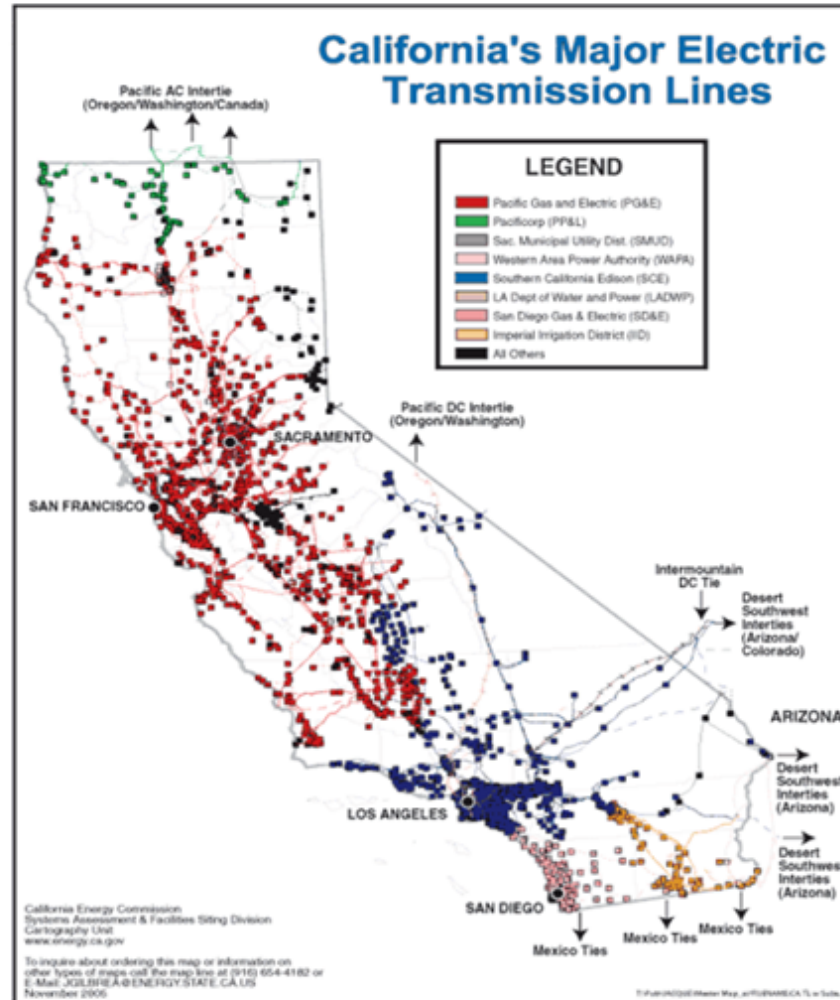




Smith River Rancheria

Major Transmission

California's Major Electric Transmission Lines

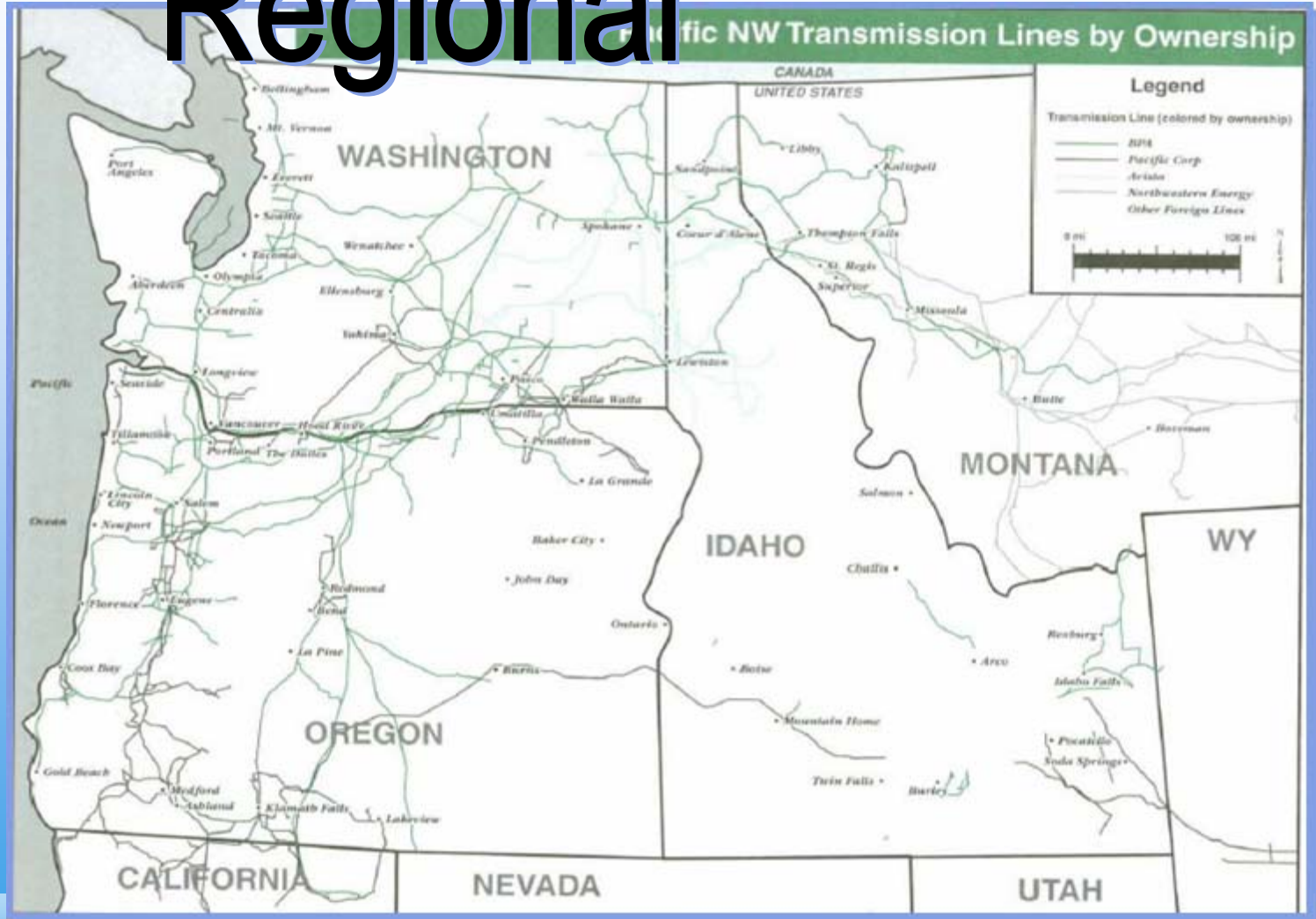




Smith River Rancheria

Transmission Lines

Regional





Smith River Rancheria

Transmission Lines

Local

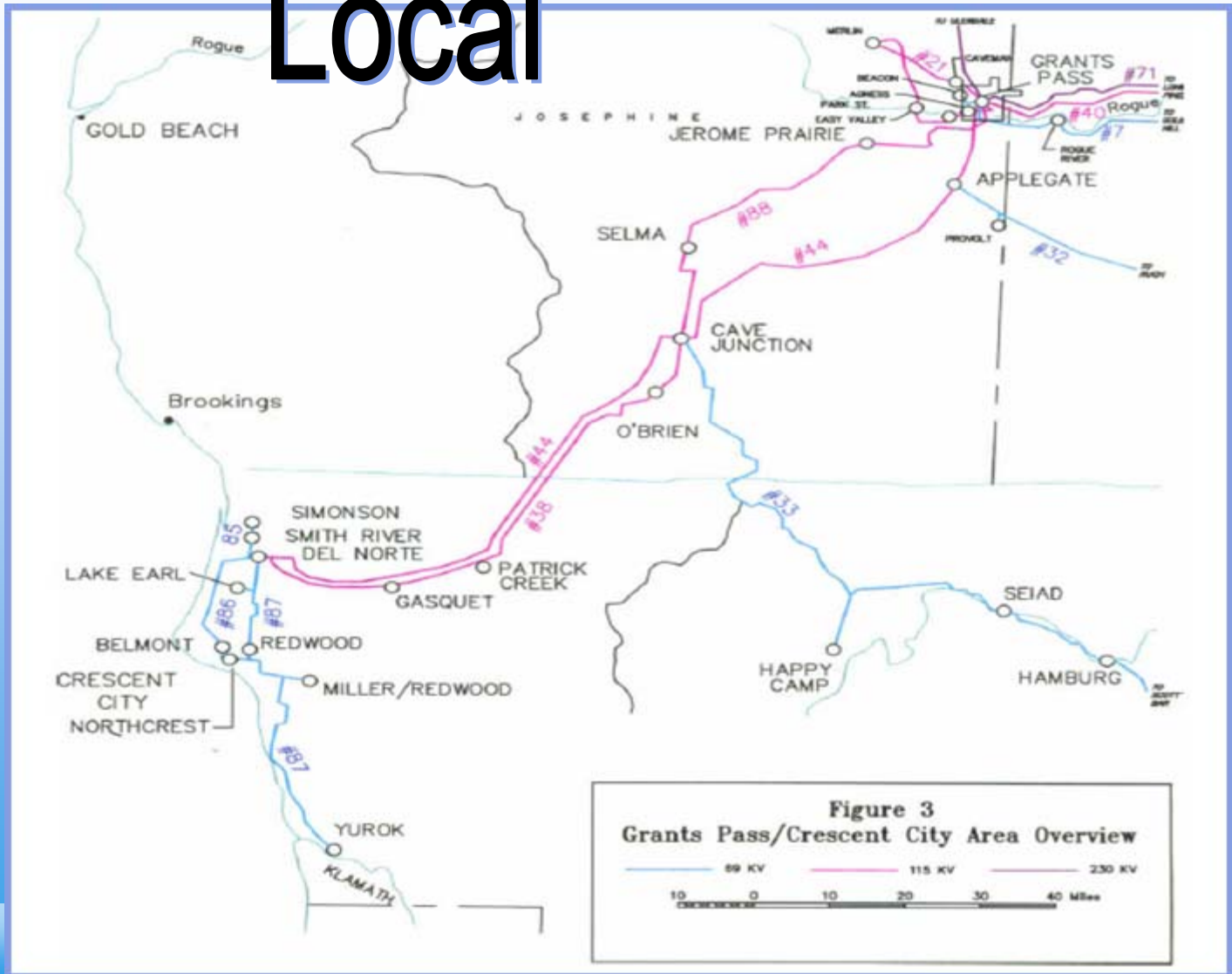


Figure 3
Grants Pass/Crescent City Area Overview



Smith River Rancheria

Transmission Lines





Smith River Rancheria

Service Area





Smith River Rancheria

Utility Formation

Utility Formation Options - Pros and Cons

Issues/ Characteristics	Tribal Enterprise	Tribal Utility	Electric Co-Op	Mutual Electric Co-Op	PUD	Irrigation District
BPA Preference Power	NO	YES	YES	YES	YES	YES
WAPA Preference	NO	YES	YES	YES	YES	YES
Democratic Governance	NO	YES	YES	LIMITED	YES	YES
Multiple Utility Services	YES	YES	YES	YES	YES	YES
For-Profit	YES	NO	NO	NO	NO	NO
Not-For-Profit	NO	YES	YES	YES	YES	YES
Local Control	NO	YES	YES	YES	YES	YES
Assets Needed for BPA Delivery	NO	YES	YES	YES	YES	YES
Assets Needed for WAPA Delivery	NO	NO	YES	MAYBE	YES	YES
State PUC Regulated	YES	NO	NO	NO	NO	NO
Contiguous Land or Service Territory	YES	YES	YES	NO	YES	YES
Dual State Service Area	YES	YES	YES	MAYBE	NO	NO



Smith River Rancheria

Public Power Costs

Public Power Costs Less

Publicly Owned Investor-Owned Cooperative

Retail Electric Rates

