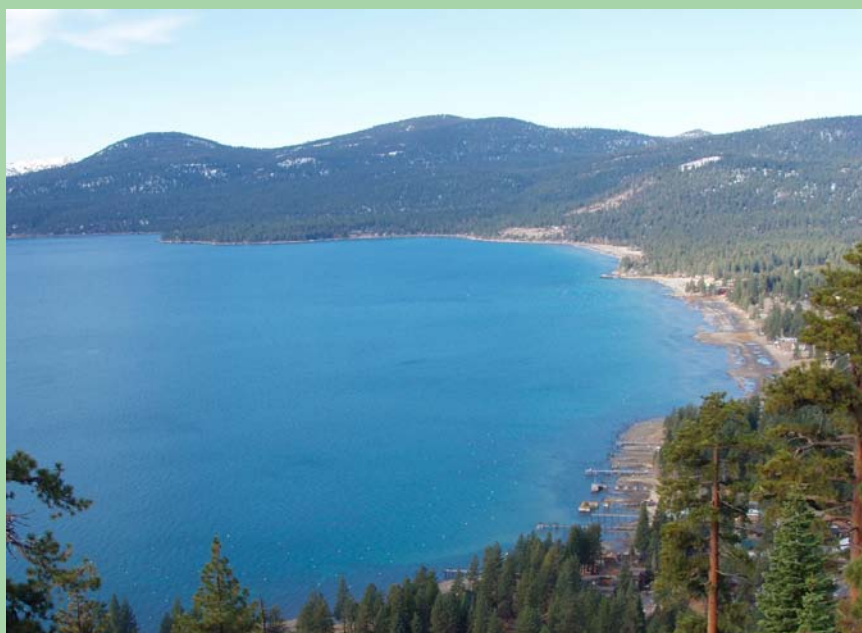


Development of a Small-Scale Biopower Facility at Lake Tahoe – Opportunities and Challenges



***Pacific West Biomass Conference
Seattle, Washington
January 12, 2011***

***Frederick Tornatore
Chief Technical Officer
TSS Consultants***

Introduction

- What is Project trying to do?
- Project components
- The Facility

What is the Project trying to do?

- Conduct successful regional forest-sourced biomass material collection and processing models
- Compare impacts of biomass power on wildfire mitigation efforts
- Investigate potential financing that could be made available from greenhouse gas mitigation measures to support sustainable forest and energy activities
- Assess The economic and emission considerations of developing biomass power in contrast to traditional resource management models
- Reduce public health impact, specifically air quality impacts, of traditional resource management via biomass power

The Ultimate Reason



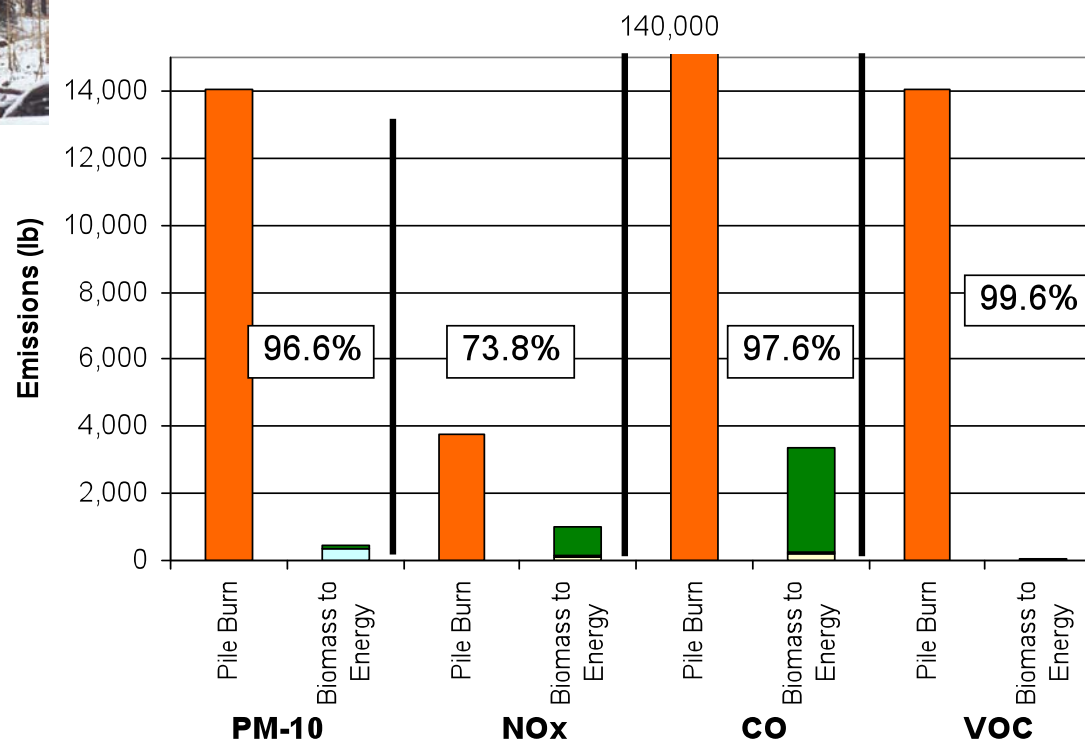
Biomass Removal for Wildfire Fuels Reduction



Open Burning versus Biomass-to-Energy



**Biopower
solves
environmental
problems**



Project Outline – Phase I

- Air/Water Pollution and Carbon Credits /Offsets Study
- Business Plan
- Energy Economics Analysis
- Technology Assessment
- Preliminary Environmental Permitting
- Woody Biomass Fuel Source Analysis
- Communication Plan/Guidebook Preparation

Principal Technologies Considered

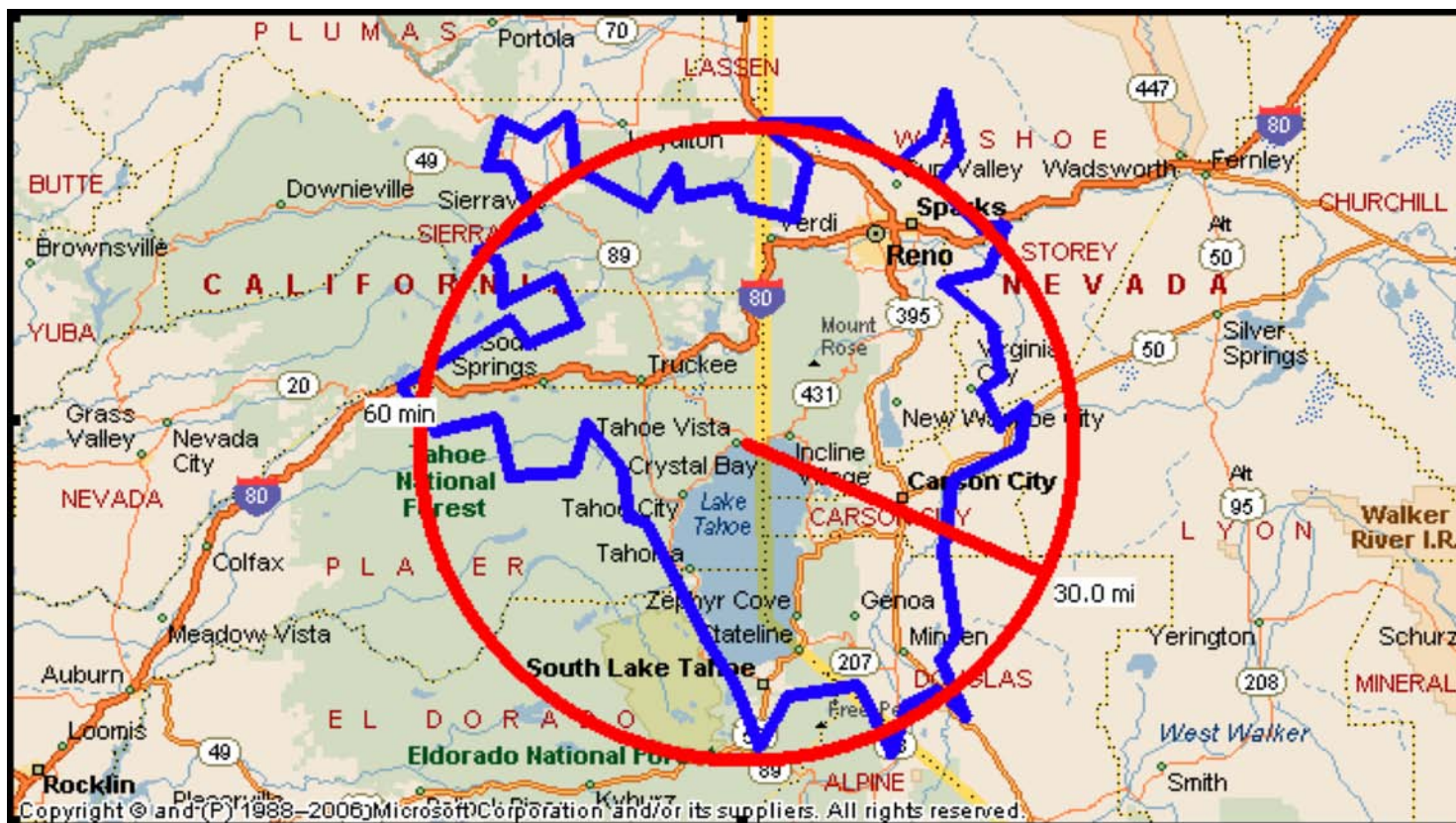


Gasification to IC Engine

Direct Combustion Steam Cycle



Prospective Fuel Supply Area



Project Outline – Phase II

- Environmental Impact Analysis
- Land Entitlement Analysis
- Future Facilities Management Plan Development
- Power Purchase Agreement
- Technology Integration
- Emissions Testing of Power Generation Technologies
- Purchase System Hardware
- Site Preparation, Development, and Construction

The Facility

What: 1-3 MW woody biomass to energy producing facility

Why: Improve forest health, reduce fire danger, remove waste, reduce air and water pollution, provide a renewable source of energy

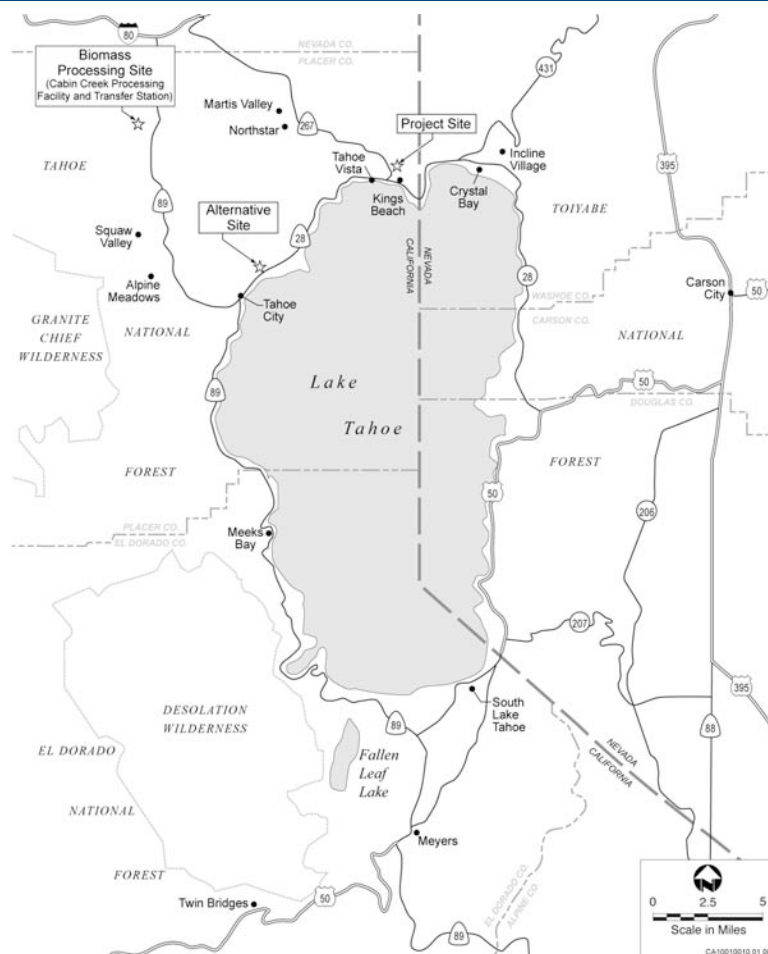
Where: Kings Beach, North Shore area of Lake Tahoe

When: Environmental review underway. Expected operations Winter 2012/2013

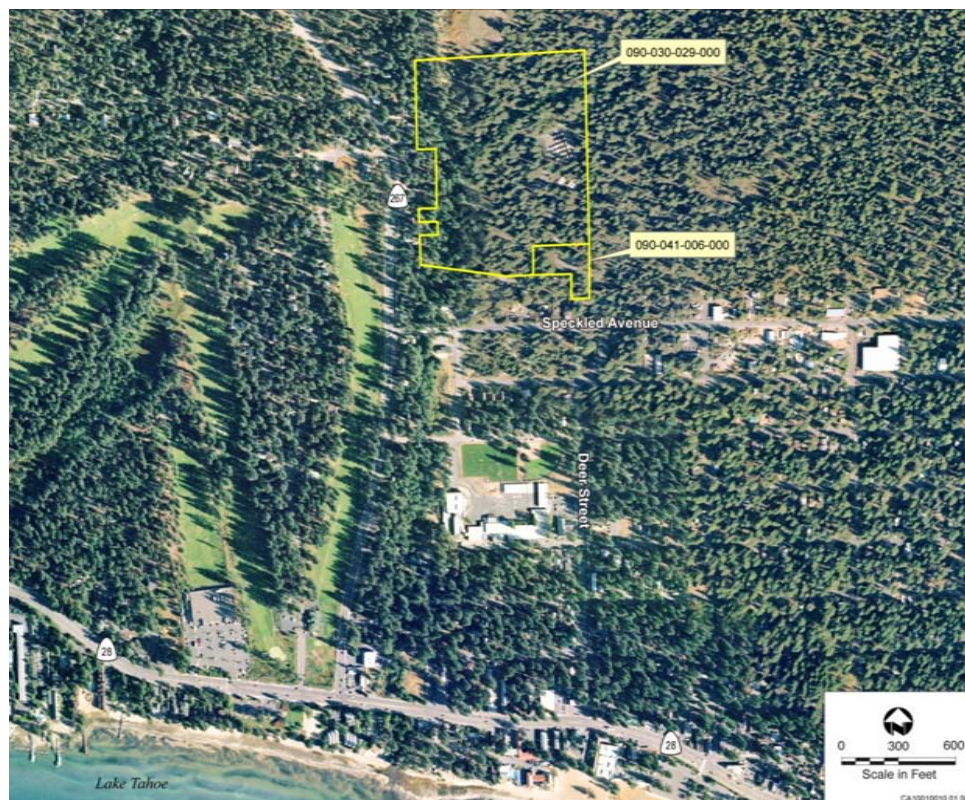
Who: Public/private partnership with local electric utility, U.S. Forest Service

How: County Funding, Agency In-Kind Services, Federal grants, utility investment

Regional Location



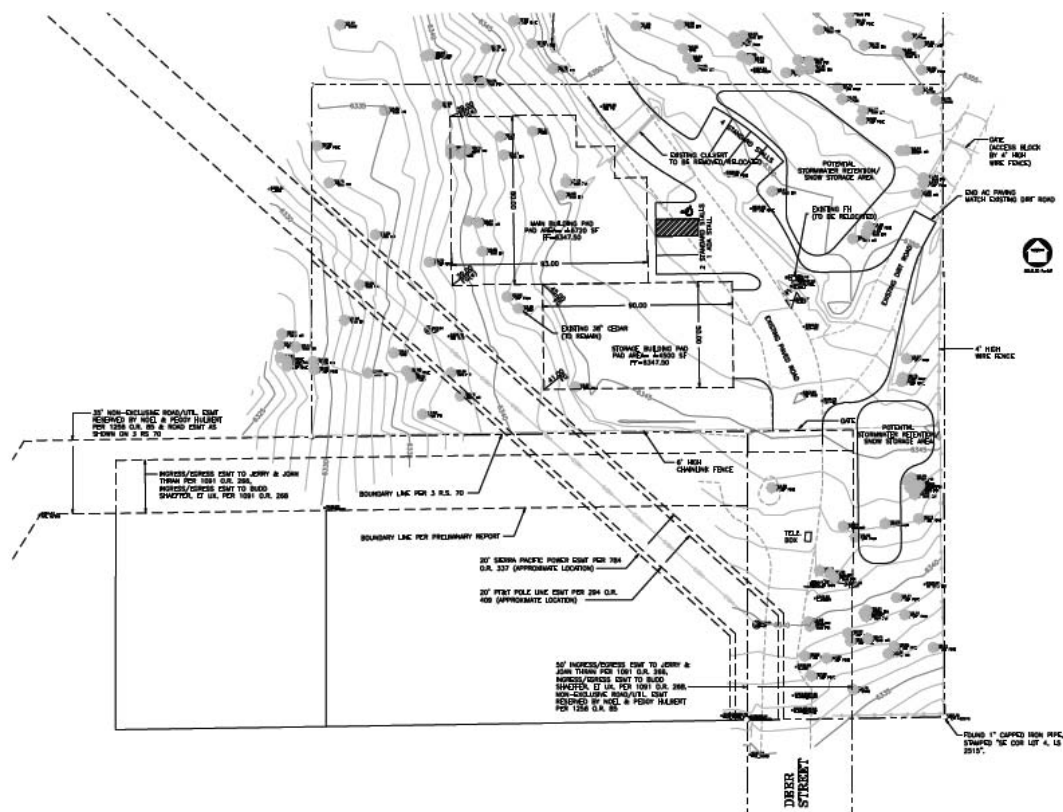
Facility Siting



Facility site



Back-up diesel
generators nearby



Project Funding to Date

- 2007: The U.S. Forest Service (through High Sierra RCDC) and Placer County fund technical feasibility assessment for a biopower facility in the Lake Tahoe Basin - \$50K
- 2008: Placer County receives Congressionally-directed funding to move facility concept into development phase - \$650K
- 2009/10: Placer County receives additional Congressionally-directed funding for continuing development phase and construction phase ~ \$2.5M
- Placer County and the Placer County Air District are also funding activities, along with in-kind services from other agencies
- Private sector partner to contribute remaining funding

Ongoing Steps

- The various Phase I documents and studies are underway, near completion, or completed
- Environmental impact review underway
- Technology assessment work
- Entering Phase II work

Schedule to Operations

- EIR/EIS/EA began: July 2010
- EIR/EIS/EA completed: Spring 2011
- Hearings to approve facility: Summer 2011
- Facility constructions begins: Winter 2012
- Operational: Fall 2012/Winter 2013



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