

HIA of Biomass Energy Facility in Placer County

Rick Kreutzer, M.D.

This HIA was made possible through a grant from the Health Impact Project

Presentation Outline

- Background-
 - Governor's Bioenergy Action Plan
 - Why do an HIA on a BEF?
- HIA of Biomass Energy Facility Steps
- Health Impacts and Recommendations
- Evaluation of Project Process and Impact
- HIA Team
- Questions

Governor's Bioenergy Action Plan

- 2012 Bioenergy Action Plan (Builds on plans from 2011, 2006)
- The *2012 Bioenergy Action Plan* outlines strategies, goals, objectives, and actions that California state agencies will take to increase bioenergy development in California.

Current bioenergy production in California includes: 33 biomass plants that generate a combined 600 megawatts of electricity, nearly 2 percent of California's total electricity supply.

The US Forest Service, California Department of Forestry and Fire, Sierra Nevada Conservancy, California Energy Commission, Placer County and others are working together to identify and promote community-scale biomass facilities in high fire hazard areas to reduce fire risks while providing local energy and other benefits.

Strategies to Increase Bioenergy Production and Reduce Waste

- Develop policies and programs to increase sustainable use of biomass residues from the forestry, agricultural, and urban sectors
- Increase research, development and demonstration of bioenergy
- Identify and create solutions or remedies to address regulatory, statutory, and utility interconnection challenges
- Monetize the benefits that bioenergy provides to local communities and California more broadly.

Goals of the 2012 Bioenergy Action Plan

- *Increase environmentally and economically sustainable energy production from biomass residues, including but not limited to forest-derived wood waste, agricultural and food processing waste, wastewater, and urban-derived biomass.*
- *Increase the use of biomass for local distributed generation, combined heat and power facilities, fuel cells, and renewable transportation fuels.*
- Undertake research and demonstration projects and develop funding mechanisms to stimulate deployment of cost-effective and sustainable bioenergy technologies.
- *Stimulate economic development in rural and economically disadvantaged regions of the state.*
- *Reduce the risks and impacts of wildfires in forested regions.*
- *Improve air and water quality.*
- Increase diversion of biomass from landfills.
- Streamline the permitting process through collaboration with stakeholders and local, regional, state, and federal agencies.
- ***Reduce emissions of potent GHG emissions such as methane that would otherwise be released into the atmosphere from animal waste and decomposing organic material.***

Why an HIA

- The green waste composting experience
- Add a broader health perspective to decision-making context
- Decision-makers (Planning Commission/Board of Supervisors) open to analysis
- History of community unease with proposed facility
- Potentially able to insert HIA into EIA/R process
- Strong partners in place
- CDPH wanted the experience

HIA Steps

- Screening
- Scoping
- Assessment
- Recommendations
- Reporting
- Monitoring

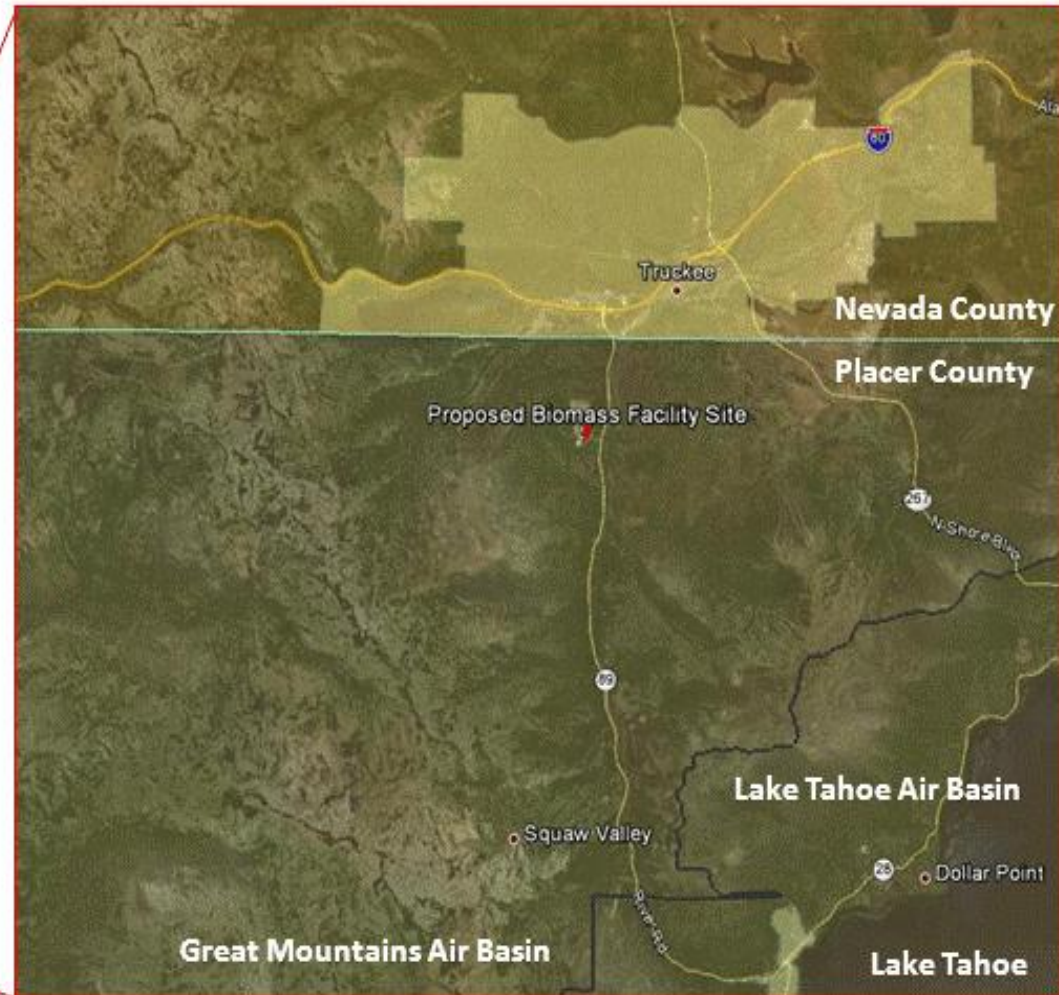
Health Pathways for the Operational Phase of the Project



Regional View of the Project Site



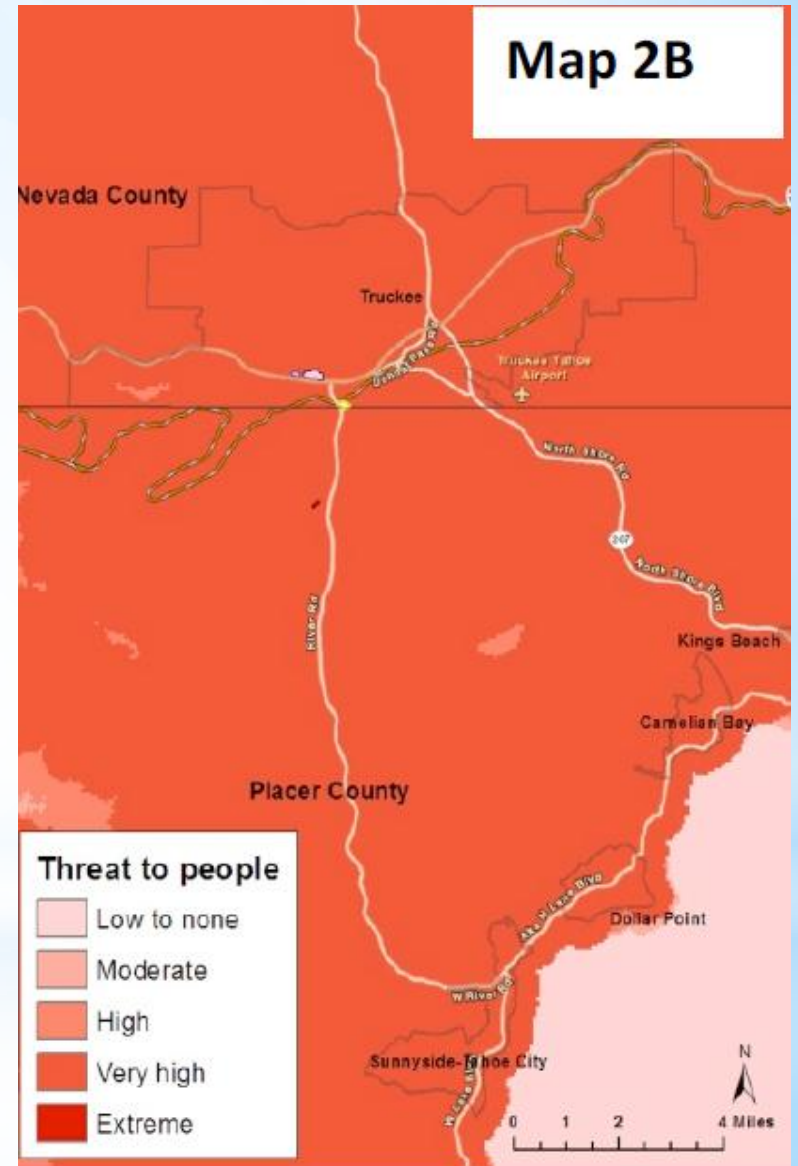
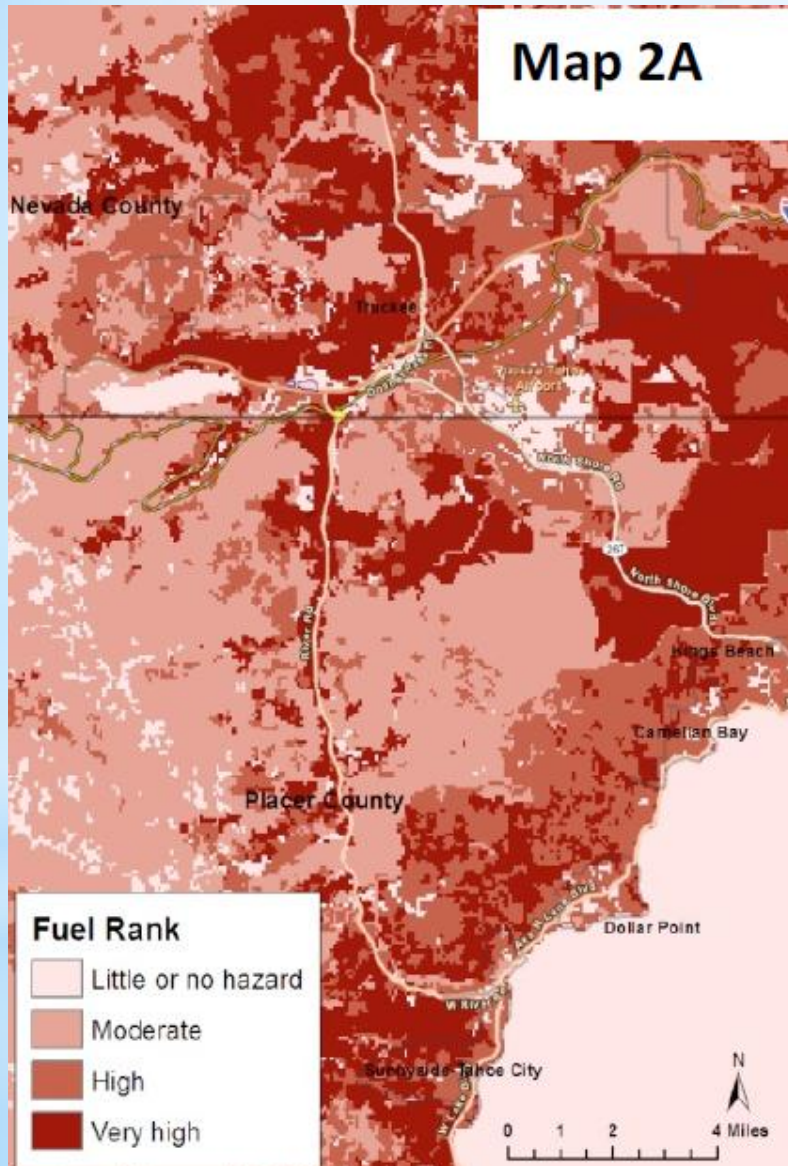
Closer Views of the Project Site



Legend

- Air basin boundary
- County boundary
- Interstate
- Highway
- City boundary

Wildfire Risks in the Lake Tahoe and Truckee Areas



Effect Characterization

■ Certainty











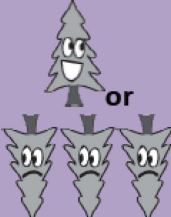







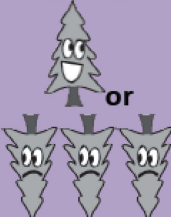







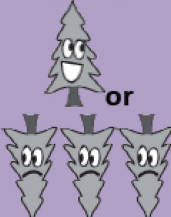




Unlikely	There is little evidence that impacts will occur as a result of the project, or limited plausibility given existing conditions
Possible	Health effects are logically plausible, but limited data and/or consensus exist to suggest a substantial risk for positive or negative impacts above existing baseline conditions
Likely	Health effects are logically plausible, and there is strong evidence to suggest that a change in health risks or health effects will occur
Very likely / certain	Adequate evidence exists that a health effect will occur, and that the impact will directly and causally impact health
Insufficient evidence / not evaluated	Evidence is inadequate to judge the certainty of a project impact/health effect

■ Magnitude




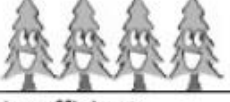





Low	Positive or negative health effects would not be perceptible, and any changes would impact few people
Medium	Positive or negative health effects could result in minor changes in health for some households, and these changes would be reversible
High	Positive or negative health effects would accrue across the entire impacted community and would result in permanent changes in health
Insufficient evidence / not evaluated	Evidence is inadequate to judge the magnitude of a project impact/health effect

■ Direction & Distribution












Determination of Health Effects

		Certainty of Impact			
Magnitude of Impact		Unlikely	Possible	Likely	Very likely
Low	Low	 or	 or 	 or 	 or 
	Medium	 or 	 or 	 or 	 or 
High	Medium	 or 	 or 	 or 	 or 
	High	 or 	 or 	 or 	 or 

Summary of Health Effects Assessment

Potential Health Effect	Certainty	Magnitude	Summary Effect
AIR QUALITY & HEALTH			
Respiratory irritation from fugitive dust	Unlikely	Low	
Health impacts from construction and operations	Unlikely	Low	
Health impacts from biomass facility emissions	Possible	Low	
Health impacts from reduction in open-pile burns	Very likely	Medium	
Stress and anxiety from biomass facility emissions	Insufficient Evidence	Insufficient Evidence	Insufficient Evidence
WILDFIRES & HEALTH			
Improvements in air quality and reductions in air-related respiratory illnesses.	Likely	Medium	
Reductions in physical injuries and home displacement	Possible	Low	
Impacts to community mental health	Possible	Medium	
Community anxiety related to on-site wood storage & fire risks	Possible	Low	
GREENHOUSE GAS EMISSIONS & HEALTH			
Mitigation of climate change and related health effects related to greenhouse gas emission reductions from the proposed biomass facility	Unlikely	Low	

Summary of Health Effects Assessment

TRAFFIC AND TRANSPORTATION & HEALTH			
Injuries and deaths due to traffic accidents	Unlikely	Low	
Reductions in physical activity due to increases in traffic	Unlikely	Low	
WATER QUALITY & HEALTH			
Health effects from storm water contamination	Unlikely	Low	
Health effects from increased sediment load and overflow of storm water	Unlikely	Low	
Health effects related to improved water quality resulting from reduced open pile burns and wildfire risks	Insufficient evidence	Insufficient evidence	Insufficient evidence
NOISE & HEALTH			
Annoyance caused by daytime onsite construction noise	Unlikely	Low	
Annoyance caused by daytime onsite operations noise	Unlikely	Low	
Annoyance or sleep disturbance caused by nighttime operations	Unlikely	Low	
Annoyance caused by daytime vehicle traffic	Unlikely	Low	
ECONOMIC and ENERGY SECURITY & HEALTH			
Health effects related to increased energy security	Unlikely	Low	
Health effects related to increased income	Unlikely	Low	
Health effects related to increased medical access	Unlikely	Low	

Health Impacts and Recommendations

GREENHOUSE GAS (GHG) EMISSIONS - The project can benefit GHG reduction strategies when considering its broader impact on energy production and wildfire reduction. Health effects due to GHG emission reductions will not occur from this project alone.

- *No Recommendations*

TRAFFIC AND TRANSPORTATION - The relative increase in traffic and its associated risk to health is very small.

- *Improve signage on SR 89 near Cabin Creek Road warning cyclists of project-related vehicles, and warning vehicles of the presence of a cyclist/pedestrian pathway.*

WATER QUALITY - The proposed biomass facility will pose minimal health risk in terms of water security given mitigation measures in place.

- *No Recommendations*

Health Impacts and Recommendations

AIR QUALITY - Regional air quality will improve from the reduction of open pile burning. Low levels of emissions will be concentrated at the proposed project site; there is little evidence to suggest that these emissions will negatively impact health in surrounding communities.

- *Develop a communications plan between residents and facility operators. Clear communication from facility operators and/or County staff could ease community anxieties regarding the facility.*
- *More frequent on-site inspections—for example, once during summer months and once during winter months—could ease community anxieties regarding emissions during winter months when an inversion layer is often present*

WILDFIRES - The project will reduce health effects related to wildfires and wildfire risk.

- *Explore the feasibility of using residential wood waste as biomass fuel for the facility, including materials from wildfire defensible space clearance around homes.*

Health Impacts and Recommendations

NOISE - Noise is not expected to impact health given the small impact the additional traffic will have on existing noise levels, and the remoteness of the project facility from the nearest households.

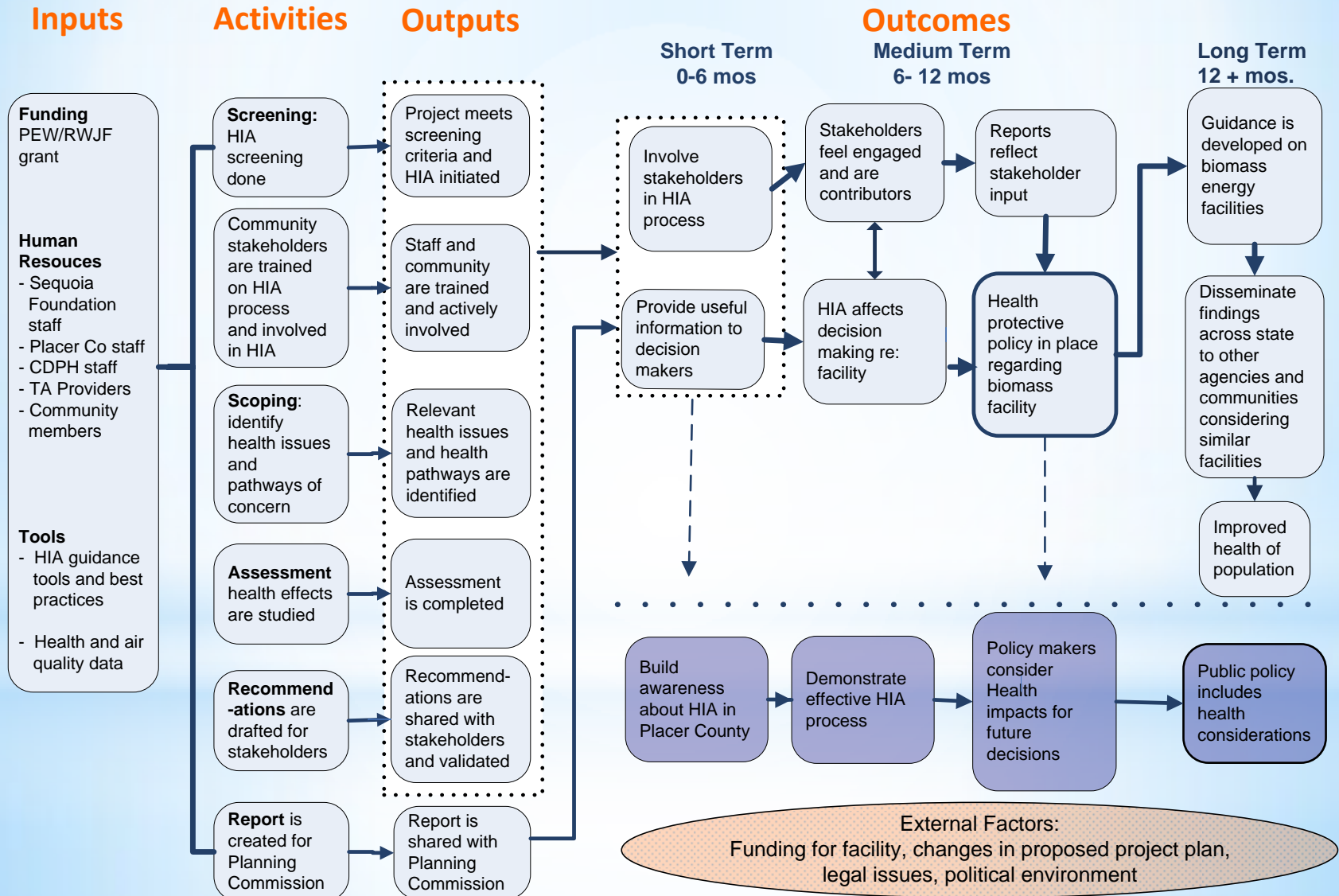
- *Develop strong communication channels between nearby community residents and the Project Manager of the biomass facility to ensure that any noise complaints are quickly and expediently resolved.*

ECONOMIC AND ENERGY SECURITY - The project may have small and limited positive health effects related to energy and economic security.

- *Prioritize the hiring of local contractors for both facility construction and operations, as feasible.*

Health Impact Assessment (HIA)- Placer County Biomass Facility

Goal: To assess the potential impacts of a biomass energy facility on human health following Health Impact Assessment standard practices and produce a report for decision makers.



The HIA Team

■ Sequoia Foundation

- Bindi Gandhi - HIA Project Manager
- Max Richardson - HIA Technical Assistance

■ California Department of Public Health

- Environmental and Occupational Disease Control - Dr. Rick Kreutzer, Division Chief

■ Placer County

- Health Department- Dr. Rich Burton, Health Officer
- Planning Department - Brett Storey, Project Manager

Additional Support provided by Health Impact Project (Katie Hirono & Aaron Wernham) and Habitat Health Impact Consulting (Ame-Lia Tamburrini)