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# **Public Outreach for Geothermal Development**

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**Geothermal Power Generation in California  
California Geothermal Forum  
Mammoth Mountain Inn**

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# Presentation Overview

- **What is Public Outreach and Why is it Important**
- **Outreach Methods**
- **Approach to Environmental Issues**
- **Examples and Successes**



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# **What is Public Outreach and Why is it Important**

# What is Public Outreach?

## What is Public Outreach:

- A process to inform and involve interested parties in the decision making process

## Why is it Required:

- Discretionary approval or decision by public agency
- CEQA and NEPA compliance

## What is the Purpose:

- Meet legal requirements
- Enhance understanding
- Build consensus

# Public Outreach Analysis and Guide

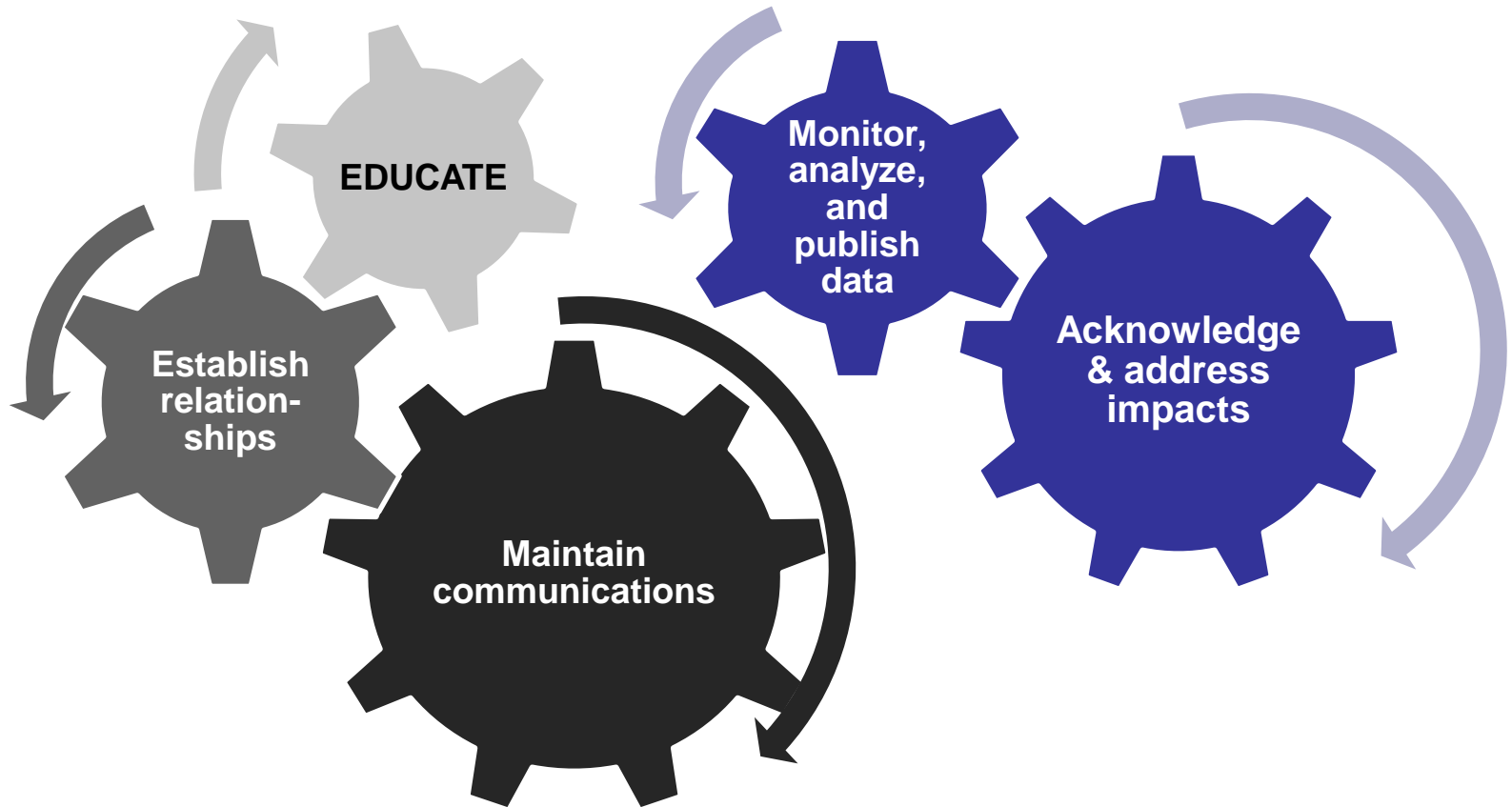
## 2005 Geothermal Outreach Principles and Comment Analysis Report (MHA)

- Eight geothermal projects
- Technical analysis of comments
- Development of outreach principles

## 2011 Geothermal Education and Outreach Guide

- Based on the principles
- How-to for public outreach

# Outreach Principles



# Why Is Outreach Important

- **Understand and address public, agency, tribal concerns**
- **Provide accurate information about the project**
- **Resolve conflicts to expedite permitting**
- **Avoid project challenges**



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# Outreach Methods



# Outreach by Audience

## Public Agencies

- Solicit input early
- Communicate often
- Share results
- Communicate mitigation plans
- Be prepared for technical staff

## NGOs and Public

- Educate
- Present information understandably
- Listen to concerns and address directly
- Be understanding and non-confrontational

## Tribes

- Government to government consultation
- Meetings with tribal staff
- Cultural concerns and differences
- Ethnographers
- Site visits
- Document consultation and meetings

## Legislature

- Establish relationships
- Prepare concise informational materials
- Take on site tours
- Provide feedback on regulatory process

# Outreach Opportunities by Development Phase

## Pre-Environmental Review

- Agencies and tribes first
- Initial meetings with neighbors/public
- Develop contact list

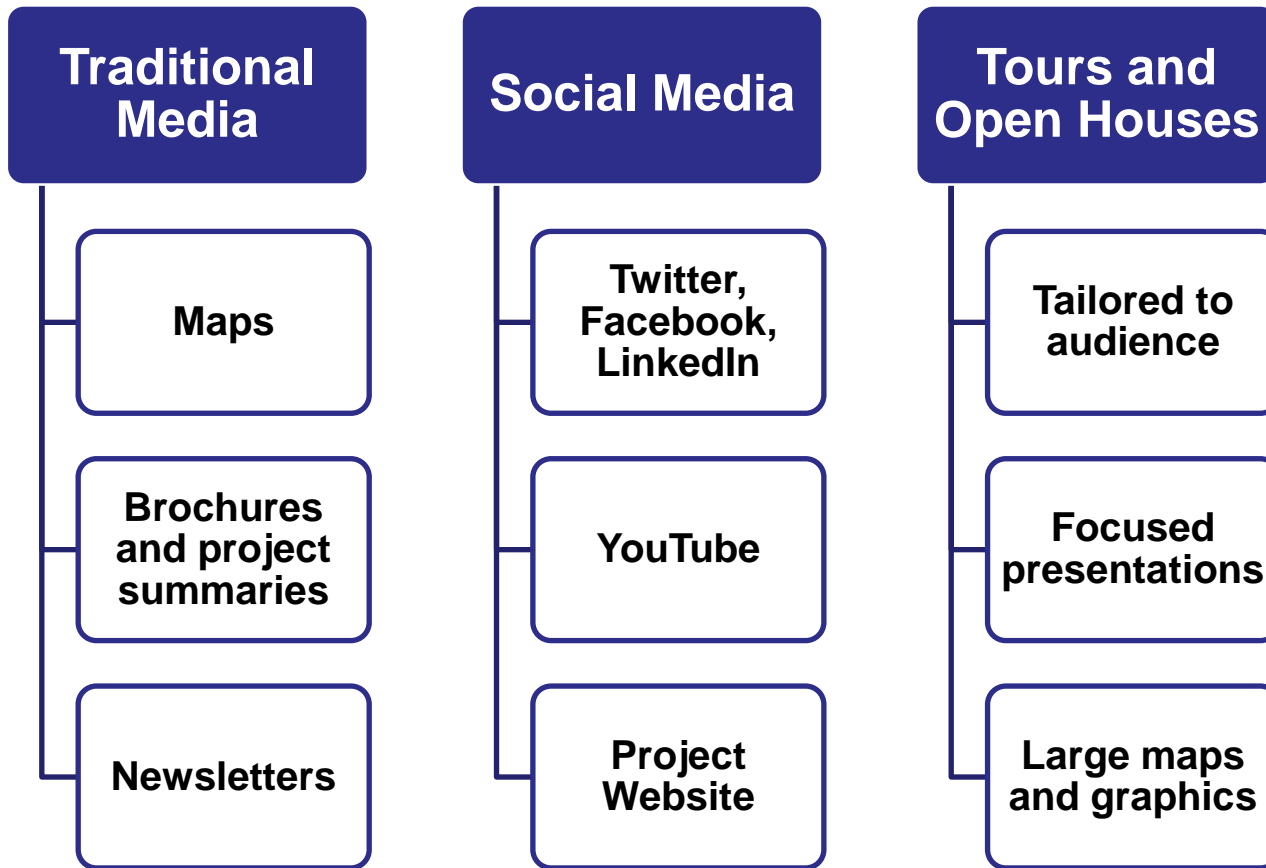
## Environmental Review

- On-going contact with agencies
- Public meetings, workshops, and hearings
- Website or social media

## Construction and Operations

- Data sharing
- Site tours and ongoing education
- Hotlines for public concerns

# Outreach Tools

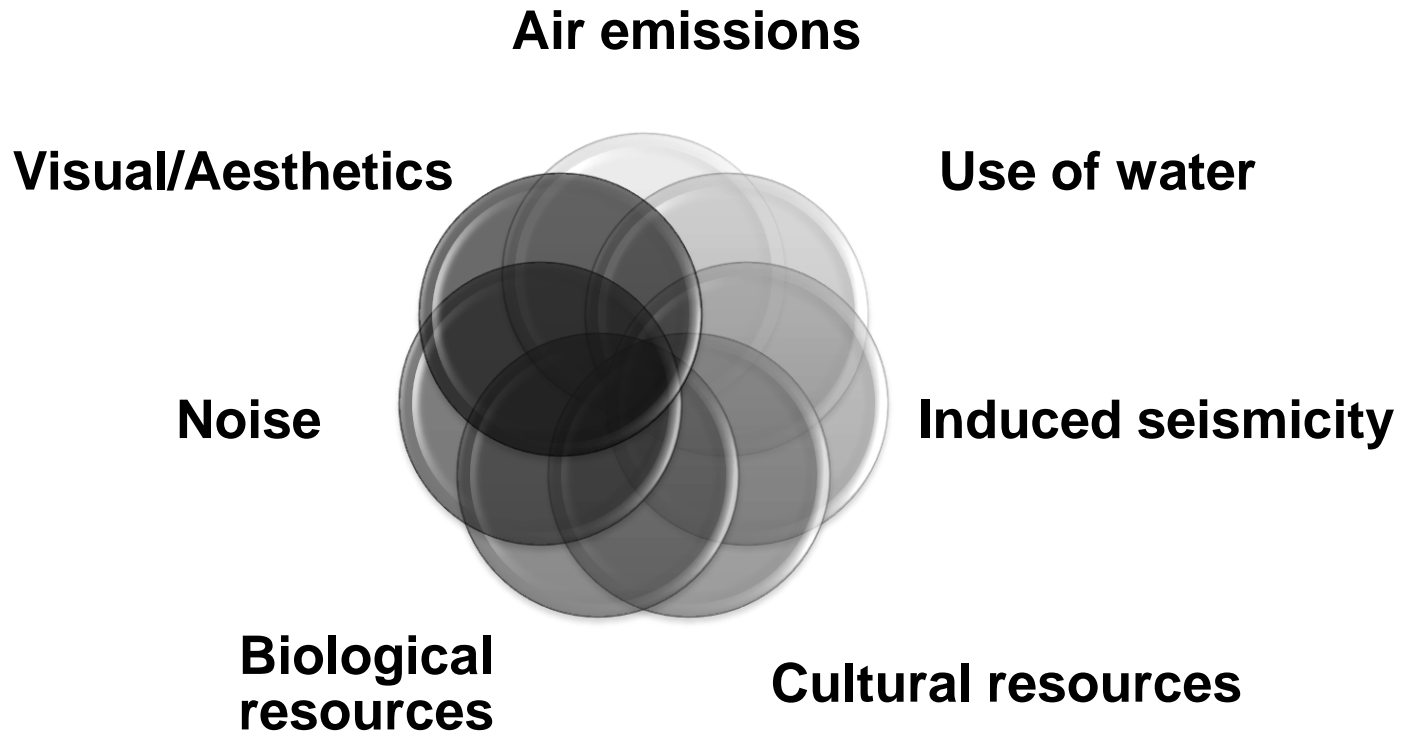




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# **Approach to Environmental Issues**

# Most Common Categories of Impacts



# Addressing Environmental Issues

Impact	Approach to Mitigation
Air emissions	<ul style="list-style-type: none"><li>• Abatement and technologies for key pollutants</li><li>• Monitoring program</li></ul>
Depletion of groundwater	<ul style="list-style-type: none"><li>• Identify water needs</li><li>• Consider cooling system</li><li>• Early planning for long-term needs</li></ul>
Induced seismicity	<ul style="list-style-type: none"><li>• Site wells away from large faults</li><li>• Consider pressure of injection</li><li>• Analysis by expert</li><li>• Usually no effect to property</li></ul>

# Addressing Environmental Issues

Impact	Approach to Mitigation
Damage to resources or tribal concerns	<ul style="list-style-type: none"><li>• Understand issues early and consult with tribes &amp; lead agency</li><li>• Avoid archaeological sites</li><li>• Reduce visibility of plant, provide access &amp; monitor hot springs</li></ul>
Effects to Endangered Species	<ul style="list-style-type: none"><li>• Conduct surveys and consult</li><li>• Avoid as feasible</li><li>• Mitigation and compensation</li></ul>
Noise pollution	<ul style="list-style-type: none"><li>• Address by phase of project, perform studies</li><li>• Sound walls during construction</li><li>• Noise muffling techniques</li><li>• Design of turbine generator building</li></ul>



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# Examples and Successes

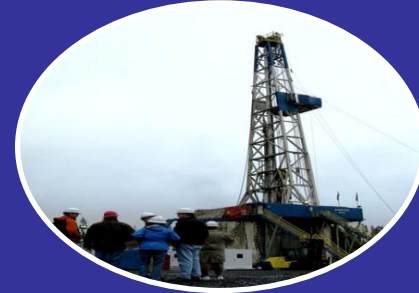


# Examples and Successes



## Calpine Geysers on-going community involvement

- 50 year history at Geysers
- State of the art visitor's center
- Monthly community tours
- Free events like Earth Day 2011

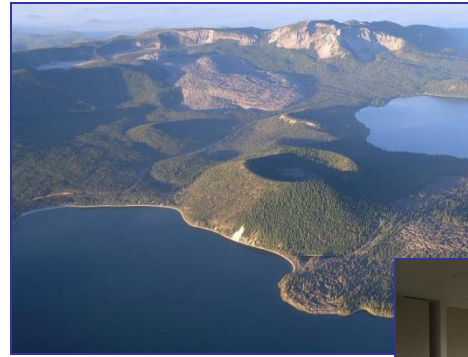


## Newberry EGS initial public outreach

- 3 public meetings in October 2010
- Shape the issues addressed in the EA
- Facebook page with 141 followers

# Newberry Monument (1990)

- **Public outreach program included**
  - Technical advisory committee
  - Public workshops
  - BLM and Forest Service staff training in geothermal development, impacts, mitigation
  - Community college course
  - Tours of The Geysers for agency staff and NGOs
- **Achieved informed consent to create Newberry National Monument and develop a geothermal power plant**





# Magma Energy

**@Magma\_Energy** Vancouver, British Columbia  
*Geothermal power company which operates, develops, explores & acquires. We have an extensive portfolio of properties throughout the US, Iceland & Latin America.*  
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### Connections

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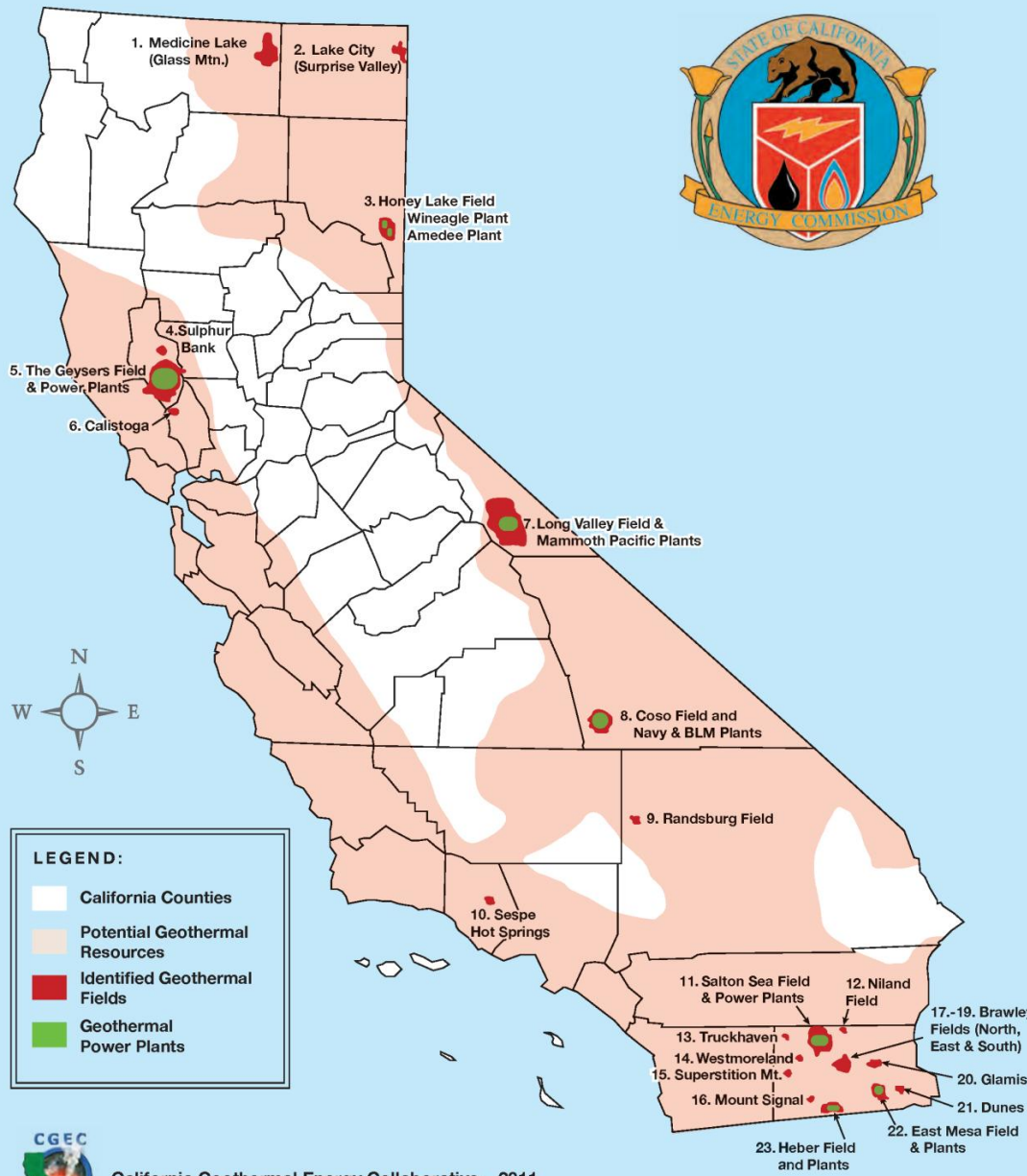


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# Summary

- **Conduct outreach to:**
  - Inform the agencies, tribes and public
  - Describe project
  - Address misinformation
  - Answer questions and concerns
  - Collect comments
  - Gain informed consent



**LEGEND:**

- California Counties
- Potential Geothermal Resources
- Identified Geothermal Fields
- Geothermal Power Plants

