Shasta Regional Climate Action Plan

Redding City Council Meeting

January 18th 2011
Presentation

• Regional Climate Action Plan Approach
  – Sub-Area Approach
  – RCAP and RTP Relationship

• Turning State Mandates into Regional and Local Opportunities

• Regional Climate Action Plan Process and Schedule

• RCAP Working Group
Shasta RCAP Approach
Sub-Area Approach

1. Unincorporated County
2. Shasta Lake
3. Redding
4. Anderson
Sub-Area Approach

• **Inventory and Projections for each Jurisdiction**
  2008, 2020, 2035, 2050

• **Customized Measure Development**
  Jurisdictions will select:
  - which measures apply to their community
  - performance standards (e.g., level of energy savings)
  - participation levels (e.g., voluntary or mandatory)

• **Regional Plan --- Local Adoption**
• **Defer to RTP Planning Process**
  Jurisdictions have the option to defer land use and transportation measure development to RTP or local planning process

• **Assume SB 375 Target**
  RCAP will assume the jurisdiction’s land use & transportation plans will conform with regional SB 375 target of 0% growth in vehicle emissions

• **Monitor Results**
  RCAP would have monitoring program to evaluate achievement of target
Turning State Mandates into Regional and Local Opportunities
State Mandate → Regional and Local Opportunities

California Legislation

• Executive Order S-3-05 (2005)
  Reduce GHGs to:
  - 80% below 1990 levels by 2050

• AB 32 Global Warming Solutions Act (2006)
  Reduce GHGs to:
  - 1990 levels by 2020

• Scoping Plan
  Call for specific emissions reductions in vehicle, landfills, industrial, etc
California Legislation

• Local governments role:
  − State recommends 15% below current levels by 2020
  − Demonstrate trajectory toward 2050 target

• Senate Bill 375 (2008)
  − State sets regional vehicle emissions targets (0% growth)
  − Land use and transportation
  − Transportation funding and consistency with regional plan

• Senate Bill 97 (2008)
  − Jurisdiction can use Climate Action Plan to reduce impacts of individual projects
State Mandate → Regional and Local Opportunities

Regional and Local Opportunities

- Energy Cost Savings
- Transportation Cost Savings
- Water Supply Protection
- Energy Security
- Air Quality Improvements
- Public Health Improvements
Plan Process & Schedule
Project Process

1. Develop Greenhouse Gas Inventory & Forecasts
2. Review Existing Conditions
3. Conduct Policy Analysis
4. Develop Preliminary Measures
5. Conduct Measure Cost Effectiveness Analysis
6. Develop Final Measures
7. Prepare Draft Climate Action Plan
8. Prepare Final Climate Action Plan and CEQA
1. Develop Greenhouse Gas Inventory and Forecasts

- **2008 Inventory**
  - Sectors:
    - Building Energy (includes water)
    - Solid Waste
    - Wastewater
    - Transportation
    - Industrial
    - Agriculture
    - Forestry
    - Recreation (e.g., boating)
    - Other Off-Road Vehicle Operation

- **Develop 2020, 2035, & 2050 Forecasts**
2. Review Existing Conditions

Example include:

- Demographics
- Building stock (type, size, age)
- Energy end-use
- Climatic conditions
- Land use patterns
- Travel mode split
- Alternative travel mode infrastructure
- Trip type
- Waste characteristics
3. Conduct Policy Analysis

- Evaluate existing policy, programs, actions
  - General Plans
  - Transportation Plans
  - Pedestrian Plans
  - Bicycle Master Plans
  - Public Transit Plans
  - Building and energy ordinances
  - Water and waste ordinances
- Identify areas where “gaps” exist
- Verify findings with jurisdictions
Project Process

4. Develop Preliminary Measures

Using input from:
- Existing conditions
- Gap analysis
- Emissions inventory
- Working Group
- Public workshops
- Industry best practices
5. Conduct Cost Effectiveness Analysis

- GHG Reduction Capacity
- Cost
- Local Context

- Technical Feasibility
- Economic Feasibility
- Political Feasibility

Proposed Measure
5. Conduct Cost Effectiveness Analysis

Customize Measures to fit Jurisdiction Context

- Game measure assumptions:
  - Performance levels
  - Participation rates

- Existing programs
- Voluntary vs. mandatory

<table>
<thead>
<tr>
<th>Measure Version</th>
<th>Measure Performance</th>
<th>Estimated Participation Rate</th>
<th>GHG Emissions Reductions (MTCO₂e/year)</th>
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</thead>
<tbody>
<tr>
<td>Version - 1</td>
<td>20%</td>
<td>4%</td>
<td>140</td>
</tr>
<tr>
<td>Version - 2</td>
<td>20%</td>
<td>15%</td>
<td>525</td>
</tr>
<tr>
<td>Version - 3</td>
<td>20%</td>
<td>32%</td>
<td>1,120</td>
</tr>
<tr>
<td>Version - 4</td>
<td>20%</td>
<td>45%</td>
<td>1,575</td>
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<tr>
<td>Version - 5</td>
<td>40%</td>
<td>32%</td>
<td>2,240</td>
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</tbody>
</table>

Shasta Regional Climate Action Plan
6. Develop Final Measures

Content:
• Measure description
• GHG reduction potential
• Energy savings
• Job generation potential
• Implementation Tables
  - Action Steps
  - Timetable: S/M/L
  - Responsibility
  - Progress indicators
Measure BE-3: ‘Cool Roof’ Retrofits

Benefits:

<table>
<thead>
<tr>
<th>GHG Reduction Potential</th>
<th>Energy Savings Potential</th>
<th>Job Generation Potential</th>
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</thead>
<tbody>
<tr>
<td>2035: 30,000 MT CO₂/year</td>
<td>2036: 6,330 MWh/year</td>
<td>2028-2030: 33 Jobs</td>
</tr>
</tbody>
</table>

Measure Description:
‘Cool roofs’ are made of materials with higher solar reflectivity, which mitigate the urban heat island effect and reduce cooling loads during hot days. In contrast, dark roofs absorb heat from the sun, which elevates urban temperatures and increases demand for air conditioning. According to the Lawrence Berkeley National Laboratory Urban Heat Island Group, replacing a 100 square meter (~1,076 square feet) black or grey roof with cool roof technology can reduce GHG emissions by approximately five MT CO₂/year and urban surface temperatures up to three degrees.

According to the EPA, the cost premium for cool roofs versus conventional roofing materials ranges from zero to 10 cents per square foot for most products. According to FG&E, customers with cool roofs reduce their air conditioning usage by an average of 10 to 20 percent, which will reduce their electric bill by five to 10 percent during the warm summer months.

Along with other energy efficiency retrofit programs, the County and cities will promote cool roof retrofits, and will target outreach efforts to the owners of appropriate building types. As financing is critical to the success of the cool roof program, the County and cities will develop a Property Assessed Clean Energy (PACE) program to further promote energy efficiency retrofits, which would allow qualified commercial property owners to repay the cost of energy efficiency retrofits on their property tax bill. See Appendix E for more details on this type of program. Additionally the jurisdictions will promote utility, state and, federal rebate programs.

Performance Indicators - 2020
1. Square feet of existing commercial and retail building roof area that retrofitted to a cool roof. Only include commercial and retail buildings with cooling load.

<table>
<thead>
<tr>
<th>Unincorporated County</th>
<th>City of Anderson</th>
<th>City of Redding</th>
<th>City of Shasta Lake</th>
</tr>
</thead>
<tbody>
<tr>
<td>&gt;1,000,000 sq. ft. roof area</td>
<td>&gt;60,000 sq. ft. roof area</td>
<td>&gt;800,000 sq. ft. roof area</td>
<td>&gt;100,000 sq. ft. roof area</td>
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</table>

2. Number of existing residential units that retrofitted to a cool roof. Only include units with cooling load.

<table>
<thead>
<tr>
<th>Unincorporated County</th>
<th>City of Anderson</th>
<th>City of Redding</th>
<th>City of Shasta Lake</th>
</tr>
</thead>
<tbody>
<tr>
<td>~1,500 units</td>
<td>~150 units</td>
<td>~600 units</td>
<td>~75 units</td>
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</table>

Performance Indicators - 2035
3. Square feet of existing commercial and retail building roof area that retrofitted to a cool roof by 2035. Only include commercial and retail buildings with cooling load.

<table>
<thead>
<tr>
<th>Unincorporated County</th>
<th>City of Anderson</th>
<th>City of Redding</th>
<th>City of Shasta Lake</th>
</tr>
</thead>
<tbody>
<tr>
<td>&gt;3,500,000 sq. ft. roof area</td>
<td>&gt;200,000 sq. ft. roof area</td>
<td>&gt;1,200,000 sq. ft. roof area</td>
<td>&gt;250,000 sq. ft. roof area</td>
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</table>

4. Number of existing residential units that retrofitted to a cool roof by 2035. Only include units with cooling load.

<table>
<thead>
<tr>
<th>Unincorporated County</th>
<th>City of Anderson</th>
<th>City of Redding</th>
<th>City of Shasta Lake</th>
</tr>
</thead>
<tbody>
<tr>
<td>~350 units</td>
<td>~450 units</td>
<td>~1,000 units</td>
<td>~225 units</td>
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</table>
7. Prepare Draft Climate Action Plan

- District & Working Group Review of Administrative Draft CAP
- Preparation of Public Review Draft CAP
- Public Review Period & Workshop
- Board of Supervisors Study Session
- Optional City Council Study Sessions
Project Approach

8. Final Climate Action Plan and CEQA

- Incorporate Board, Council, and Public comments
- Prepare Final CAP
- CEQA Documentation
- Plan Adoption
# Project Schedule

## Shasta Regional Climate Action Plan

### Proposed Schedule 12/3/10

<table>
<thead>
<tr>
<th>Phase/Task</th>
<th>Year</th>
<th>2010</th>
<th>2011</th>
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<td>Month</td>
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<tr>
<td>Shasta Regional Climate Action Plan</td>
<td></td>
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</tr>
<tr>
<td><strong>Phase 1: Project Kickoff and Inventory/Projections Development</strong></td>
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<tr>
<td>1.1: Kickoff Meeting, Scope Refinement, CAP Outline</td>
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<tr>
<td>1.2: Develop Baseline GHG Emissions Inventory and Projections</td>
<td>MTG</td>
<td>TM</td>
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<td><strong>Phase 2: GHG Reduction Development</strong></td>
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<td>2.1: Develop Preliminary Reduction Strategies and Measures</td>
<td>GA</td>
<td>MATRIX</td>
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<td>2.2: Evaluate Cost-Effectiveness of Preliminary Strategies and Measures</td>
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<td>MATRIX II</td>
<td>TM</td>
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<td>2.3: Develop and Approve GHG Reduction Target</td>
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<td><strong>Task 3: Prepare Climate Action Plan</strong></td>
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<td>3.1: Prepare Administrative Draft Climate Action Plan</td>
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<td></td>
<td>ACAP</td>
</tr>
<tr>
<td>3.3: Prepare Final Climate Action Plan</td>
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<td>FCAP</td>
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<td><strong>Task 4: Working Group Meetings and Community Outreach</strong></td>
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<tr>
<td>4.1: Provide Content for County Website (Including on-line Survey)</td>
<td>SURVEY</td>
<td>WG</td>
<td>WG</td>
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<td>4.2: Working Group Meetings (5)</td>
<td>WG</td>
<td>FORUM</td>
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<td>4.3: Community Forums (4)</td>
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<td>FORUM</td>
<td>BOS</td>
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<td>4.4: Board of Supervisors Public Hearings (2)</td>
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<td>BOS</td>
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<td><strong>Task 5: CEQA IS/IMND</strong></td>
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<td>5.1: CEQA IS/IMND</td>
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<td>IS/IMND</td>
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<td><strong>Task 6: Project Management</strong></td>
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<td>6.1: Project Management</td>
<td>MTG (2)</td>
<td>MTG (2)</td>
<td>MTG (2)</td>
</tr>
</tbody>
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**Shasta Regional Climate Action Plan**

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Working Group
Working Group

Working Group Members:

- City of Anderson
- City of Redding
- City of Shasta Lake
- Lehigh Cement
- Redding Electric Utility
- Shasta Builder’s Exchange
- Shasta County Cattleman's Association
- Shasta County Dept of Resource Management
- Shasta County Public Health (observational member)
- Shasta County Regional Transportation Planning Agency
- Shasta Ranch Aggregate
- Sierra Pacific Industries
Jurisdiction and Public Utility Staff

- Expert Knowledge
- Data Provision
- Best Practices
- Insight into jurisdictional context
- Measure Selection
- Review of Measure Assumptions
- Plan Adoption
Industry and Business

- A sounding board during CAP development
- Provide industry specific ideas, input, and feedback
- Industry best practices
Public Participation

- Define process to public
- Identify issues of greatest importance to public
- Gain feedback from residents and other stakeholders
- Provide opportunity to educate community
Working Group Involvement in Plan Development

1. Develop Greenhouse Gas Inventory & Forecasts
2. Review Existing Conditions
3. Conduct Policy Analysis
4. Develop Preliminary Measures
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