Overview of Climate Action Planning

Greenhouse Gas Emissions Reduction

Climate Change Impacts and Adaptation

Implementing Climate Action Plans

OUTLINE
Now is the time to act.

Theme #1
Everyone has a role to play.

Theme #2
Climate action planning = good community planning.

Theme #3
What are climate action plans?

Strategic plans...

...to reduce greenhouse gas emissions.
What are climate action plans?

Strategic plans...

...to increase community resilience to the impacts of climate change.
Who has adopted CAPs?

As of August 2011
CAP Adoption Trends
Why do local climate planning?

• Cities consume 73% of the world's energy and emit 80% of the greenhouse gases
• Technological innovation is not enough
• Impacts of climate change will be felt locally
• Reducing emissions can improve the quality of life in communities
GHG Reduction Strategy
• Conduct a baseline GHG emissions inventory and forecast
• Engage stakeholders
• Formulate plan vision and goals
• Identify a GHG emissions reduction target
GHG Reduction Strategy
• Develop and evaluate GHG emissions reduction measures
• Quantify GHG emissions reduction measures
• Prepare implementation program
GHG Emission Sources

- Transportation
- Energy
- Water
- Agriculture
- Solid Waste

Source: PMC
GHG Emissions Inventory

Collect activity data and convert to metric tons of carbon dioxide equivalent (CO2e)
2030 Emission Reduction Scenarios in San Carlos

- 36.9% Above 2005 (365,731 MT CO₂e) Business-as-Usual
- 2005 Baseline (267,239 MT CO₂e) Reference Point
- 13.2% Below 2005 (231,939 MT CO₂e) Emissions with State Initiatives
- 38.8% Below 2005 (168,900 MT CO₂e) Emissions Trend with State and CAP Initiatives

Source: City of San Carlos
Areas of Climate Action

Source: City of Benicia
Baseline GHG Emissions

*Energy* – Electricity and natural gas consumed by the residents of Bradbury.

*Street Lighting and Water Pumping* – Electricity used by streetlights and water pumps within the city but not owned by the City.

*On-Road Transportation* – Vehicle miles traveled (VMT) in, to, and from the city.

*Waste* – Methane emissions from waste (municipal solid waste), and green waste (alternative daily cover) sent to landfills and regional incinerators (also known as transformation facilities) from the city.

*Water and Wastewater* – Energy required to extract, filter, deliver, and treat the water used and wastewater disposed by the community. Also, the direct emissions from residential septic systems.

*Off-Road Equipment* – Emissions from construction as well as lawn and garden equipment operated within the city.

Source: PMC
Additional Benefits

In addition to reducing greenhouse gases, many strategies provide additional health, economic, or educational benefits when implemented. These tags can be found throughout the document.

- Provides Health Benefits
- Supports Local Business
- Reduces Energy Demand
- Education & Awareness
- Adaptation Measure
- Municipal Revenues
- Reduces Water Consumption
- Community Savings
- Improves Mobility

Source: City of San Luis Obispo
Community Engagement

Source: PMC (modified)
Climate Change in California

California Climate Change Center
2006
Climate Adaptation & GHG Reduction

- Bicycle Infrastructure
- Green Building
- Cooling Centers
Adaptation & Local Jurisdictions

• Setting
• Jurisdiction Control
• Scale (impacts & solutions)
• Uncertainty
• Cross sector impacts & solutions
Adaptation Strategy Development

1. EXPOSURE
   What climate change effects will a community experience?

2. SENSITIVITY
   What aspects of a community (people, structures, and functions) will be affected?

3. POTENTIAL IMPACTS
   How will climate change affect the points of sensitivity?

4. ADAPTIVE CAPACITY
   What is currently being done to address the impacts?

5. RISK & ONSET
   How likely are the impacts and how quickly will they occur?

6. PRIORITIZE ADAPTIVE NEEDS
   Which impacts require actions to address them?

7. IDENTIFY STRATEGIES
   Which strategies should be pursued to address adaptation needs?

8. EVALUATE & PRIORITIZE
   Which strategies should be implemented first?

9. PHASE & IMPLEMENT
   How can the strategies be funded, staffed, and monitored?

Cal EMA, 2012
Exposure
Projected climate impacts

- Difference from current conditions
- Speed of onset
- Spatial variation
- Extent of impact
- Certainty

Metropolitan Transportation Commission 2008
Exposure

DIRECT IMPACTS
- Sea Level Rise
- Changed precipitation
  - Less snow
  - Flooding
  - Drought
  - Intense Rainfall events
- Changed temperature
  - Extreme heat
  - Shift in seasons
- Wind
- Ocean Acidification

INDIRECT IMPACTS
- Wildfire
- Landslide
- Species migration
- Erosion
- Human health
- Economy
- Safety
- Infrastructure
- Ecosystem health
Sensitivity

Function(s)  Structures  Population(s)

CalEMA, CNRA 2012
Potential Impact

For each point of sensitivity identify:

- Temporal extent
- Spatial extent
- Permanence
- Endangers local population
- Level of disruption to normal community function

Metropolitan Transportation Commission 2008
Adaptive Capacity

**Plans**
- General Plan
- Climate Action Plan
- Climate Adaptation Plan
- Area and Specific Plans
- Local Hazard Mitigation Plans
- Local Coastal Plans
- Urban Water Management Plan
- Downtown Plan
- Transit Plan
- Sustainable Community Plans
- Regional Transportation Plans

**Standards, Ordinance, & Programs**
- Capitol Improvement Program
- Zoning Code
- Building Code
- Fire Code
- Tree Ordinance
- Floodplain Ordinance
- Stormwater Management

HIGH  MEDIUM  LOW
Prioritizing Adaptive Needs Planning in the Face of Uncertainty

Adapted from Boswell, Greve, & Seale, 2012; Cal EMA 2013
Santa Cruz, CA
Kern County, CA
San Clemente, CA
The Early Trends in Implementation

- Successful Implementation: 0.75
- Funding Constraints: 0.88
- Staffing Constraints: 0.76
Keys to Successful Implementation

<table>
<thead>
<tr>
<th>Administration</th>
<th>Engagement</th>
<th>Leadership</th>
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<tr>
<td>• Institutionalize action (&quot;green team&quot;)</td>
<td>• Support climate champions</td>
<td>• Communicate co-benefits</td>
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<td>• Allocate staff time</td>
<td>• Engage the public</td>
<td>• Lead by example</td>
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<tr>
<td>• Allocate general fund revenue</td>
<td>• Cultivate partnerships (esp. utilities)</td>
<td>• De-politicize the plan</td>
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Importance of Funding Source

1. General fund revenue
2. Grants
3. Non-governmental organization donations or in-kind services
4. **Impact/development fees**
5. Bonds
6. Special, climate/energy-related tax or fee
7. Carbon offset fees
Hierarchy of Implementation Progress
Thank You!

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