Climate Action Planning

Peter Gower, AICP CEP
Nevada APA Conference
September 14, 2015
Presentation Overview

• Climate Change Primer
  • Global impacts
  • Regional and local impacts
• Mitigation
• Adaptation
• Climate Action Planning
  • San Diego, CA
  • Portland, OR
• Bringing it home
  • Climate Action Planning in Reno, Nevada
Climate Change Primer
Climate Change Primer

Global anthropogenic CO₂ emissions

Quantitative information of CH₄ and N₂O emission time series from 1850 to 1970 is limited

- Fossil fuels, cement and flaring
- Forestry and other land use

IPCC 2014
Climate Change Primer

(a) Observed globally averaged combined land and ocean surface temperature anomaly 1850–2012

- **Annual average**
  - Temperature (°C) relative to 1986–2005
  - Year range: 1850–2000

- **Decadal average**
  - Temperature (°C) relative to 1986–2005
  - Year range: 1850–2000

IPCC 2014
Climate Change – Global Impacts

Super Typhoon Haiyan - 2013
Climate Change – Global Impacts

Smithsonian.com
Greenland 2013
Climate Change – Regional Impacts
Climate Change – Local Impacts

Truckee River at Center Street Bridge – September 2014
Climate Change – Local Impacts

Truckee River at former Virginia Street Bridge – 1997 Flood
Climate Change – Local Impacts

Squaw Valley - March 2015
Climate Change – Local Impacts

Caughlin Fire 2011
Mitigation
Mitigation

• Fundamentally reduce greenhouse gas emissions
Mitigation Strategies

• **Energy efficient buildings**
  (e.g., UNR Joe Crowley Student Union – LEED Silver Certification)
Mitigation Strategies

- Connecting land use and transit

Marquam Hill, Portland

Dunsmuir Street, Vancouver
Mitigation Strategies

- Renewable Energy Generation

- Energy efficient vehicles

Ormat Geothermal Facility, Galena

NV Energy Solar Charging Station, Las Vegas
Mitigation

Atmospheric $\text{CO}_2$ Concentrations

- Even higher emissions scenario (A1FI)
- Higher emissions scenario (A2)
- Lower emissions scenario (B1)
- Stabilization 450 ppm
- Observations

EPA 2009
Adaptation
Adaptation

- Also know as climate resiliency or preparedness
- Planning for a “new normal”
- Build communities and systems that are less vulnerable to change and have a greater ability to adapt
Climate Action Planning
Climate Action Planning

- Transportation Plan
- Preparedness Plan
- Water Resources Plan
- Local Land Use Plans
- Economic Development Plan
Climate Action Planning

- Where does it start?
  - Catalyzing event
    - Vancouver wind storm
    - Hurricane (Katrina, Sandy)
    - Sierra drought?
  - Downward political pressure
    - California’s AB 32 and SB 375
  - Upward pressure (community groups and organizations)
- Local leadership
- Combination of factors
Climate Action Planning

Sample localities with Climate Action Plans

<table>
<thead>
<tr>
<th>Arlington, MA</th>
<th>Escondido, CA</th>
<th>Palo Alto, CA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Broward County, FL</td>
<td>Hayward, CA</td>
<td>Portland, OR</td>
</tr>
<tr>
<td>Burlington, VT</td>
<td>Kansas City, MO</td>
<td>Salt Lake City, UT</td>
</tr>
<tr>
<td>Carbondale, CO</td>
<td>Martinez, CA</td>
<td>San Diego, CA</td>
</tr>
<tr>
<td>Cleveland, OH</td>
<td>Novato, CA</td>
<td>Santa Cruz, CA</td>
</tr>
<tr>
<td>Davis, CA</td>
<td>Orange County, FL</td>
<td>Tacoma, WA</td>
</tr>
</tbody>
</table>
Climate Action Planning
Case Study #1
San Diego, California
San Diego Climate Action Plan

- Currently in draft form
- Mitigation Elements:
  - Energy conservation
  - Renewable energy generation
  - Transit and land use
  - Solid waste and waste water reduction
  - Carbon sequestration

- Fundamental goal: provide a roadmap to achieve GHG reductions
San Diego Climate Action Plan

- Land Use Focus:
  - Provide incentive/financing programs (e.g., Property Assessed Clean Energy (PACE)) for energy efficient buildings

Small scale residential

Large scale commercial (UCSD)
San Diego Climate Action Plan

• Land Use Focus:
  • Set *region-wide* mode share target for mass transit at 12% by 2025 and 25% by 2035
  • Established transit priority areas to prioritize pedestrian improvements that provide safe and easy access to transit.

North Park
Renaissance
Mixed-Use
TOD adjacent to 30th Street
Rapid Bus Station
San Diego Climate Action Plan

• Land Use Focus:
  • Establish mode share targets for bicycling – 6% region-wide by 2020 and 18% by 2035 in transit priority areas.
    • Focus on addressing the “first mile/last mile” challenge
      • Bike lane improvements (road diets, bike lane painting, bike lane buffering)
      • Bike sharing program
San Diego Climate Action Plan

- City is developing a separate adaptation plan to address:
  - Water supply issues
  - Urban agriculture for local food security
  - Waterway setbacks
  - LID storm water requirements
  - Fuels reduction in WUI areas
  - Community education and preparedness
Climate Action Planning
Case Study #2
Portland, Oregon
Portland Climate Action Plan

• First city to adopt a climate action plan (1993)
• One of the most eco-conscious cities in the world
• Draft 2015 Plan has nine major 2030 objectives categories:
  1) Buildings and energy
  2) Urban form and transportation
  3) Consumption and solid waste
  4) Food and agriculture
  5) Carbon sequestration
  6) Preparedness
  7) Outreach and education
  8) Municipal operations
  9) Implementation
Portland Climate Action Plan

- Land Use Focus
  - Previous efforts have resulted in modest GHG declines since 2000
  - Seeking 80% reduction in GHG emissions by 2050
Portland Climate Action Plan

- Land Use Focus
  - Healthy connected (“complete”) neighborhood concept – 2030 goal is for 80 percent of residents to have this lifestyle
Portland Climate Action Plan

• Land Use Focus
  • Low carbon land use review and approval requirements
  • Affordable housing access to transit
  • Improved street connections (remediate access barriers)
Bringing it Home
Climate Action Planning in Reno, Nevada
Climate Trends

Mean Temperature for Western United States (11 states)
12 month period ending in December

- Temperature (°F)
- 10 year running mean
Climate Trends

Nevada Statewide Precipitation Oct-Feb

Orange Line Denotes 11-year running mean

Linear Trend 1895-present
+ 0.30 ± 0.63 in. (6% 13%) per 100 yr

Linear Trend 1949-present
+ 0.60 ± 1.76 in. (+ 12% 36%) per 100 yr

Linear Trend 1975-present
- 1.03 ± 4.10 in. (- 21% 85%) per 100 yr

Wettest Year
8.30 in. (172%) in 2005

Driest Year
2.01 in. (41%) in 1912

Oct-Feb 2015
3.42 in. (71%)
City of Reno Climate Action Planning

• **Climate Action Initiative Technical Working Group**
  • Formed in July 2015
  • Developing climate action recommendations for City Manager
  • Focusing on mitigation and adaptation
  • Focus areas include:
    • Land Use
    • Transportation
    • Water
    • Energy
    • Waste
    • Community and social empowerment
City of Reno Climate Action Planning

- Compact of Mayors
  - City Council unanimously approved last week

- Commit to:
  - Reduce GHG emissions
  - Set data-based reduction targets
  - Develop climate action plan
  - Identify vulnerabilities
  - Develop adaptation plan
City of Reno Climate Action Planning

- Mitigation Opportunities
  - Regional and location-specific mode share targets for transit, cycling and pedestrians
  - Infrastructure to support pedestrian and bike use
  - Density targets for key growth areas
  - Building efficiency standards
    - LEED requirements
    - Cool roof designs
    - PACE?
  - Consider carbon intensity of development proposals
- Education
- Evaluate and build upon existing plans...
Mitigation

Midtown/Downtown, Reno, NV
Mitigation

• Intensify...smartly
Adaptation

• Prepared in 2014 in response to potential climate variability and related impacts, mainly from flooding, drought, and fire.

• Makes connections between impacts and ability to maintain adequate public services

• Notes the economic and health ramifications
City of Reno Climate Action Planning
Opportunities for Success

• Leadership will be key
  • Needs on-going political support
  • Dedicate staff position(s) to implement the plan
  • Leverage local organizations and community leaders

• Leverage Existing Efforts
  • City of Reno Master Plan update
  • RTC planning efforts
  • Regional Plan update

• Be Unique
  • Accommodate future growth in complete neighborhoods, similar to Portland, but remember...
  • ...we are not Portland, and that is OK!! We still need to create a sustainable, enduring vision for the future.
City of Reno Climate Action Planning

Climate Change & Mitigation & Resiliency
Tuesday, September 29, 2015  5:30-7pm  McKinley Arts & Culture Center Auditorium
Thank you. Questions?

Peter.Gower@EMPSi.com
775-323-1433