Climate Action Plan

Purpose

- Satisfy General Plan Settlement Agreement, and General Plan Policy HS-4.20:
  - Develop GHG emissions inventory, estimate emissions
  - Identify emissions reduction targets
  - Identify measures to reduce GHG emissions
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2005 Greenhouse Gas Inventory

2005 Inventory = ~2.4 million metric tons of carbon dioxide equivalent (MT CO2e)
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2020 Greenhouse Gas Forecast
Business as Usual (BAU)

2020 BAU Projections

- Building Energy
- Off-Road Equipment
- High Global Warming GHG
- Wastewater Treatment
- Solid Waste Management
- On-Road Transportation
- Agriculture
- Water Importation

2020 Business as Usual (BAU) Forecast = ~2.7 million MT CO2eq
Approximate 13% increase over 2005 emission levels
Summary of GHG Reduction Measures

27 Greenhouse Gas Reduction Measures in CAP

- Collective Measures by State of California (considered one measure in the CAP)
- 26 Measures at Local (City) Level
- 20 Measures are Voluntary/City Initiative
- 6 Measures are Mandatory
Mandatory GHG Measures

- Water-1: Comply with Senate Bill X7-7
  (20% Water Conservation by 2020)
- Energy -1: Green Building
- Waste -1: Increased Solid Waste Diversion
- Trans-2: Parking Policies
- DRP-1: Development Review Process
- Off-Road-2: Reduced Idling Times for Construction Equipment
Selected Voluntary GHG Measures

- Energy-2: Outdoor Lighting Upgrades
- Water-2: Promotion of Water Efficiency
- Energy-5: Solar Powered Parking
- Off-Road-1: Electric-Powered Construction Equipment
- Trans-8: Safe Routes to School
- Trans-1: Land Use/Transportation
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Reductions

2020 GHG Emissions Target: 2,122,000 MTCO₂e

CAP: 2,102,000 – 2,108,000 MTCO₂e (14,000 to 20,000 MTCO₂e)

Note: The GHG Inventory and BAU Forecast are snapshots of years 2005 and 2020. Individual forecasts were not performed for the years 2006-2019. The emissions path may not necessarily be linear over this range.
## Results

<table>
<thead>
<tr>
<th>Emissions Type</th>
<th>2005 Emissions</th>
<th>2020 Emissions</th>
<th>Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Baseline Emissions</td>
<td>2.4 million MT CO2e</td>
<td>2.7 million MT CO2e</td>
<td>+13%</td>
</tr>
<tr>
<td>BAU Emissions</td>
<td></td>
<td>2.7 million MT CO2e</td>
<td>+13%</td>
</tr>
<tr>
<td>CAP Emissions</td>
<td>2.1 million MT CO2e</td>
<td></td>
<td>-10%</td>
</tr>
</tbody>
</table>

- **83% State =** 473,000 MT CO2e
- **17% City =** 92,000 – 97,000 MT CO2e

**MT =** Metric Tons  
**CO2e =** Carbon Dioxide Equivalent
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Co-Benefits of Reduction Measures (Selected)

- Reduced energy use
- Reduced water use
- Reduced waste generation
- Economic growth
- Reduced air pollution
- Public health improvements
- Increased quality of life
- Increased property values
- Reduced urban heat island effect
- Smart growth
Climate Action Plan Approach

- Developed within the context of the Great Recession, City Fiscal Challenges, and Housing Downturn
- Seeks to Avoid Undue Economic Burdens
- Relies on Best Practices in California
- Seeks to Avoid adding Unique or Non-Competitive Regulatory Requirements
- Balances Competing Objectives while Complying with the Spirit and Intent of the Settlement Agreement
Recommendation

Recommend that the City Council:

- Certify the SEIR and;
- Approve the Climate Action Plan
Costs and Savings for Private Entities

- Voluntary energy measures make up vast majority of capital cost but many have long-term returns through energy savings (depending on financing approaches).

- Additional O & M Costs primarily reflect waste diversion costs that may be offset through recycled material sales (not presumed in current analysis).

- Mandatory measures with net costs limited to state mandates for water conservation and local idling ordinance.
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Cost/Benefit Analysis

- Based on data from the CA Public Utilities Commission, CA Energy Commission, EPA, DOE, and PG&E

- Costs and savings estimated
  - Initial capital costs
  - Operations and maintenance costs
  - Operational savings
  - Implementation costs
  - Payback period
  - Cost per metric ton CO2e

- Cost and savings incurred by the City, private residents, and businesses
Climate Action Plan – Cost/Benefit Analysis

Costs and Savings for City Government

<table>
<thead>
<tr>
<th>Metric</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Additional Capital Costs</td>
<td>$28.5 million</td>
</tr>
<tr>
<td>Other Upfront Costs</td>
<td>$1.4 million</td>
</tr>
<tr>
<td>Net Operations and Maintenance Cost/year</td>
<td>-$151,000</td>
</tr>
<tr>
<td>Annual staff cost</td>
<td>$140,000</td>
</tr>
<tr>
<td>Net annual cost to City</td>
<td>-$11,000</td>
</tr>
</tbody>
</table>

✓ Three measures make up 95% of upfront cost for City: bike paths, safe routes to school, and outdoor lighting.
✓ City has successfully obtained state and federal funds for both bike paths/safe routes to school in past.
✓ City lighting improvements reduce City’s energy bill.

- Energy Programs
- Transportation Programs
- Waste Programs
- Water Programs
- Urban Forestry
- Other Programs
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Vehicle Miles Travelled Reduction Goal

- Vehicle Miles Travelled Reduction Goal
  - Settlement Agreement requires the growth in VMT be no more than the growth in population
  - 11% growth in City population between 2005 and 2020
  - Implementation of the CAP limits citywide VMT growth to 9% (2% below population growth)
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Greenhouse Gas Emission Reduction Target

- Settlement Agreement requires the City to adopt a GHG reduction goal...
  - “in accordance with reduction targets in AB 32, other state laws, or applicable local or regional enactments addressing GHG emissions, and with Air Resources Board regulations and strategies adopted to carry out AB32…”

- CAP identifies a reduction target that is feasible given current economic conditions.
  - 10% below 2005 levels.
  - Consistent with required statewide reductions.
  - Equates to a reduction of ~550,000 metric tons.
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Greenhouse Gas Reduction Measures

- Broad list of potential measures to reduce greenhouse gas emissions
- Measures consider technical, economic, financial, and institutional feasibility
- Measures and programs apply to existing building and new development
### GHG Reductions Achieved through State Programs (MT CO$_2$e)

<table>
<thead>
<tr>
<th>State Actions to Reduce GHG Emissions</th>
<th>MT CO$_2$e</th>
</tr>
</thead>
<tbody>
<tr>
<td>State-1: Senate Bills 1078/107/X 1-2 (Renewable Portfolio Standard)</td>
<td>101,000</td>
</tr>
<tr>
<td>State-2: Title 24 Standards for Non-Residential and Residential Buildings</td>
<td>26,000</td>
</tr>
<tr>
<td>State-3: AB 1109 (Huffman) Lighting Efficiency and Toxics Reduction Act</td>
<td>23,000</td>
</tr>
<tr>
<td>State-4: AB 32 Solar Water Heaters</td>
<td>&lt;1,000</td>
</tr>
<tr>
<td>State-5: AB 1493 (Pavley I)</td>
<td>116,000</td>
</tr>
<tr>
<td>State-6: Advanced Clean Cars $^b$</td>
<td>17,000</td>
</tr>
<tr>
<td>State-7: Executive Order S-1-07 (Low Carbon Fuel Standard)</td>
<td>113,000</td>
</tr>
<tr>
<td>State-8: AB 32 Transportation Reduction Strategies $^c$</td>
<td>23,000</td>
</tr>
<tr>
<td>State-9: AB 32 High Global Warming Potential GHG Reduction Strategies</td>
<td>19,000</td>
</tr>
<tr>
<td>State-10: AB 32 Landfill Methane Program</td>
<td>34,000</td>
</tr>
<tr>
<td><strong>Total Reductions from State Programs</strong></td>
<td><strong>473,000</strong></td>
</tr>
</tbody>
</table>
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Reduction Emission Sectors

- CAP addresses eight primary emissions sectors
  - Building Energy Use
  - Transportation and Land Use
  - Waste Generation
  - Water Consumption
  - Wastewater Treatment
  - Urban Forestry
  - High Global Warming Potential GHGs
  - Off-Road Vehicle Use
Climate Action Plan
Local Greenhouse Gas Reduction Measures

- City of Stockton Measures
  - Local voluntary measures
    - Incentive based (e.g., rebates)
  - Local mandatory measures
    - Required by State law (e.g., Senate Bill X7-7)
- Development Review Process (DRP)
  - Project applicants choose the most appropriate GHG reduction measures for their projects
  - 29% reduction compared to Business as Usual
  - No change from current CEQA practice
- Actions directly undertaken by the City municipal government
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Local Reduction Measures

- Energy Sector Measures
  - Increasing energy efficiency
  - Increasing use of renewable energy
  - Improving City lighting energy efficiency
  - All private sector measures are voluntary

- Measures in this sector would result in
  - Long-term net savings to the City government
  - Long-term net savings for participating residences and businesses.
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Local Reduction Measures

- Transportation Sector Measures
  - Supporting downtown residential growth
  - Supporting other infill along transportation corridors
  - Maintaining transit use in the City
  - Expanding bike and pedestrian paths
  - Improving goods movement
  - Measures in this section fulfill multiple purposes of mobility, balanced growth, air pollution reduction.
  - Cost-effectiveness varies by measure
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Local Reduction Measures

- **Other Sector Measures**
  - Continue ongoing efforts to reduce waste generation and promote recycling
  - Continue ongoing efforts to conserve and use water efficiently to meet state mandates
  - Energy-efficiency upgrades at City’s wastewater treatment plant
  - Supporting incentives for alternative fuel use for the offroad sector
  - Planting to expand City’s urban forest
  - Responsible disposal of consumer products
## Climate Action Plan

### Greenhouse Gas Reductions Overall

<table>
<thead>
<tr>
<th>GHG Emissions Reductions by Sector</th>
<th>MT CO₂e</th>
<th>Percent of Total Reduction (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>State Programs</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>473,000</td>
<td></td>
<td>83%</td>
</tr>
<tr>
<td><strong>Local Programs</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Development Review Process</td>
<td>5,000</td>
<td>1%</td>
</tr>
<tr>
<td>Building Energy Use Measures</td>
<td>49,000</td>
<td>9%</td>
</tr>
<tr>
<td>Land Use and Transportation Measures</td>
<td>14,000 – 19,000</td>
<td>2 to 3%</td>
</tr>
<tr>
<td>Waste Generation Measures</td>
<td>4,000</td>
<td>1%</td>
</tr>
<tr>
<td>Water Consumption Measures</td>
<td>16,000</td>
<td>3%</td>
</tr>
<tr>
<td>Wastewater Treatment Measures</td>
<td>300</td>
<td>0.1%</td>
</tr>
<tr>
<td>Urban Forestry Measures</td>
<td>&lt;100</td>
<td>0.01%</td>
</tr>
<tr>
<td>High GWP GHG Measures</td>
<td>300</td>
<td>0.05%</td>
</tr>
<tr>
<td>Off-Road Vehicle Measures</td>
<td>3,000</td>
<td>0.5%</td>
</tr>
<tr>
<td><strong>Subtotal for Local programs</strong></td>
<td>92,000 – 97,000</td>
<td>16 to 17%</td>
</tr>
<tr>
<td><strong>Total Reductions</strong></td>
<td>565,000 – 571,000</td>
<td>100%</td>
</tr>
</tbody>
</table>
Climate Action Plan

Implementation

- Administration and staffing
- Long term financing
- Phased Implementation from 2014 to 2020
- Supporting strategies
- Community outreach and education
Subsequent Environmental Impact Report - Approach

- Builds on EIR from the General Plan
- Provides additional analysis of Climate Action Plan and Transit Plan/Program
- Identifies where impacts would be greater or different from those disclosed in the General Plan EIR
Subsequent Environmental Impact Report

– Key Findings

- Climate Action Plan and related actions would result in only the following environmental impacts beyond those disclosed in the General Plan EIR:

- Greenhouse Gas Emissions:
  - The CAP (and related actions) would lower GHG emissions compared to taking no action.
  - The CAP would help reduce GHG emissions in the City by 2020 to be consistent with AB 32.
  - Beyond 2020, development would result in additional GHG emissions not addressed by the CAP due to the 2020 horizon of the CAP and AB 32.
  - Additional local and state action after 2020 will be necessary to meet long-term GHG goals.
Subsequent Environmental Impact Report
– Key Findings

- Climate Action Plan and related actions would result in only the following environmental impacts beyond those disclosed in the General Plan EIR:

- Increased severity of several impacts:
  - Vehicle traffic congestion in downtown:
    - may be worse due to greater residential and mixed use growth in the downtown area even though overall vehicle miles travelled will be reduced.
  - Potential increased exposure to floods due to development in flood prone areas
  - Potential affects to historic buildings and visual aesthetics due to increased number of solar roofs.
Subsequent Environmental Impact Report
– Key Findings

- Mitigation identified in the SEIR
  - CUL-MM-1: Downtown Specific Plan Alternative Analysis
  - CUL-MM-2: Historic Building Solar Roof Alternatives Review
  - AES-MM-1: Solar Roof Design Requirements to Reduce Glare Where Necessary for Public Safety
  - CC-1: Develop and implement a Climate Adaptation Plan for the City of Stockton
Subsequent Environmental Impact Report
– Key Findings

- Alternatives Analyzed in the SEIR
  - No Project Alternative: required by CEQA
  - Greater Density (CAP Alternative)
  - Greater Efficiency (CAP Alternative)
  - Community Choice Aggregation (CAP Alternative)
  - Transit 5% Mode Share (Transit Plan/Program Alternative)

- Other alternatives considered but not analyzed further because did not meet project objectives, or were not feasible, or did not lower environmental impacts of proposed project.
Commenters on the Draft SEIR

- Caltrans:
  - Impacts on highway system
- FEMA
  - Generic comment on flood insurance program
- San Joaquin County Dept. Of Public Works
  - Request to be on notice list only
- Delta Protection Commission
  - Concurs that no impacts on Primary Zone of Delta
- Delta Stewardship Council
  - Requested additional info in SEIR on Delta Plan and analysis of consistency with Delta Plan
  - Requested changes in the General Plan relative DSC’s concerns (not in scope of CAP or this SEIR)

Minor revisions made in response to comments
Climate Action Plan

Development

- Climate Action Plan developed by City Staff and Consultants in concert with the Climate Action Plan Advisory Committee (CAPAC).

- CAPAC members appointed by the City Council to be broadly representative of diverse interests in the City
  - Business
  - Developer
  - Labor
  - Non-Profit
  - Environmental

- CAPAC meets monthly and meetings are open to public.

- Key documents posted on the web at:
Climate Action Plan

Contents

- Executive Summary
- Introduction
- City of Stockton’s Greenhouse Gas Emissions Inventory and Forecast
- Emissions Reduction Measures and Cost/Benefit Analysis
- Implementation Strategies
- Appendices
Climate Action Plan
Greenhouse Gas Inventory and Forecast

- Inventory of 2005 GHG emissions
- Forecasted 2020 GHG emissions
- GHG emissions from “community activities”
  - Energy consumed in houses and businesses
  - Emissions from vehicles (onroad/offroad)
  - Landfill emissions from waste generated in the City
  - Emissions associated with transporting water to City
  - Emissions associated with wastewater treatment
  - Several minor sector (chemical product use, agriculture)