

# Sebastopol CAP

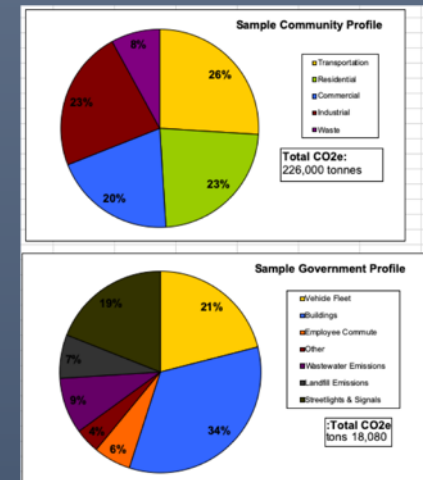
Notes on Format

March 2021 - gg

# Climate Action Template

From Statewide Energy Efficiency Collaborative

- Fill in the Blank format – comes in docx format
- Comes with suggested tables and graphs
- Recommended Categories of GHG inventory
  - BAU
  - Target
  - Community-Wide emissions
  - Sectors
    - Commercial/Industrial Buildings
    - Residential Buildings
    - Energy Production (consumption?)
    - Waste & Recycling
    - Water and Wastewater
    - Transportation
    - Other (ex: Municipal Government)



- Graphs To Include
  - Community Profile by sector
  - Government Profile by
    - Fleets
    - Buildings
    - Employee Commute
    - Street lights and signals
    - Utilities and Waste

# Climate Action Template

From Statewide Energy Efficiency Collaborative – General Outline

# Climate Action Template

## Use of Template – General Instructions

- Modify phrases and words to suit local conditions
- Replace any **[keyword]** with local values for
  - Agencies and individuals that developed the CAP
  - Jurisdiction and local CAP approving authority
  - Base Year
  - Overall Target Percentage below base year and target year
  - City/County
  - Focus Areas and for each
    - Number of strategies
    - List of actions to achieve each strategy
    - Estimate of GHG impact
    - Target for GHG reduction
  - Window of CAP – begin year (in the past) to projection year (in the future) ; Need measured values in past and target values for each focus area by year in the future
  - Where details of reported GHG inventory and metrics can be found on the city's website


# Climate Action Template

Use of Template – General Instructions – Text to Customize

- Executive Summary of findings, targets, and the types of most important recommended actions
- Describe process for creating CAP (meetings held, planning process, any scope limitations)
- Summarize community and government operations GHG emissions
- Identify government services that are included in inventory
- Identify the local impacts of BAU – especially monetary and operational benefits
- The basic targets and current conditions
- Identify how forecasting and measuring are completed
- Identify cross-cutting strategies that impact multiple focus areas
- List of government services impacted
- Symbols that signal how impactful each strategy is expected to be and numerically what each represents
- Include actions at a state level as part of the plan and the expected local impact (for Sebastopol, SCP would be a consideration)
- An short overview for each focus area on the general approach
- Document the next steps that follow the drafting of the CAP, outreach, additional investigation, creation of forums, etc.
- Immediate steps that are to be taken now CAP exists
- An appendix with all the detailed data that relied upon to build the CAP (calculation methods can be found at [www.californiasec.org](http://www.californiasec.org))

# Climate Action Template - Mockup of use

## Energy Production



Sebastopol will migrate over time reliance on fossil fuels for powering stationary applications (buildings, lighting, pumping applications, etc.) and rely upon climate neutral fuel sources. As part of this transformation reliance on green-sourced electricity is a central focus.

Broadly speaking, the use of fossil fuels for energy (including electricity, heating, transportation, and other uses) is the single largest contributor to greenhouse gas emissions and climate change. While California is a strong leader among US states in terms of implementing low or no carbon energy sources, fossil fuels still supply a considerable share of energy for electricity, heating, transportation, and other energy-producing uses. Emissions from fossil fuel combustion for energy, including transportation, represent 72.3% of the community's total GHG emissions. Energy Production is a cross-cutting focus area in that nearly all activities that take place in the community require energy of some sort. While PG&E and SCP are working hard to increase the percentage of electricity generated through renewable sources, opportunities also exist for citizens and Sebastopol local government to produce small-scale renewable energy or fuels, offsetting the need for fossil fuels. This focus area is limited to energy production exclusively – objectives and strategies that focus on end use energy efficiency are included in other focus areas. The programs and projects within this focus area are designed to spur local government and community investment in renewable energy sources including those that produce electricity, heat, and mobile fuels.

Objective	Supporting Strategies	Supports Adaptation	Community/Government	Reduction Potential
EP 1 – Enhance support to residents to rely on carbon neutral energy systems	CB 1, RB 1	Y	Both	☆☆☆
EP 2 – Supply 100% of Sebastopol local government electricity demand via local renewable generation	CB 1	Y	Government	☆☆☆
EP 3 – Promote local production of solar and store surplus energy	WR 1, WW 1		Both	☆☆

Sebastopol Climate Action Plan Page 2 of 4

### Objective EP 1 – Facilitating Renewable Energy Investment

Rely on carbon neutral energy systems ☆☆☆

Strategy EP-1A	Encourage community partners to finance and install renewable systems on large-scale private facilities	Progress Indicator Timeline		
		Short	Mid	Long
<b>Status: New</b>	<b>Implementation Actions Needed:</b>			
<b>Community, Economic Dev Committee</b>	ID Contractors, ID Partners, Convene facilitated dialogue, Negot	150 kW total (include water heating energy)	300 kW total (include water heating energy)	600 kW or equivalent heat energy

Strategy EP-1B	Issue electric reach code ordinance for new construction and major renovations	Progress Indicator Timeline		
		Short	Mid	Long
<b>Status: New</b>	<b>Implementation Actions Needed:</b>			
<b>Community, Local Bank, Bids, Finance, Legal Depts, Utility Experts</b>	Build Financing Stakeholder Group; Identify financing vehicles, scope, appropriate funds/financing; Address legal barriers; Establish Program; Conduct Outreach	300 kW total (include solar water heating energy)	1 MW total (include solar water heating energy)	2 MW total (include solar water heating energy)

### Objective EP 2 – Local Government Renewable Energy

Supply 100% of Sebastopol local government electricity via local renewable generation ☆☆

Strategy EP-2A	Upgrade and expand existing solar capture system and add suitable energy storage	Progress Indicator Timeline		
		Short	Mid	Long
<b>Status: Existing</b>	<b>Implementation Actions Needed:</b>			
<b>PW Dept</b>	ID Contractors, Appropriate funds,	5%	10%	20%

Strategy EP-2B	Over 3 year period, replace all street lights with low power LED	Progress Indicator Timeline		
		Short	Mid	Long
<b>Status: Existing</b>	<b>Implementation Actions Needed:</b>			
<b>PW Dept, Utility</b>	ID Contractors, Appropriate funds, renegotiate PG&E contract	20%	30%	30%

Sebastopol Climate Action Plan Page 3 of 4

# Outline of Sebastopol 2016 CAP

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# Outline of RCPA 2016 CAP

March 2021 - gg



# Outline RCPA CAP 2016

- Pages describing editors, process and geographic scope
- Readers guide with paragraph describing contents of each chapter
- Outline of intended audiences and how they might use the CAP
- TOC, Index to figures, List of abbreviations and acronyms used
- Glossary of Terms
- Executive Summary –
  - Introduction
  - Description of the Climate Threat – and diagram of Inventory
  - Focus Areas (Water and Wastewater, off-road equipment, solid waste, livestock and fertilizer, building energy, transportation)
  - List of 20 Goals by focus area
  - Describes this as Regional effort
  - Benefits of plan to residents and businesses
  - How residents can help
  - Public outreach efforts
- Section 1 Framework
  - Introduction
  - Description of Climate threat and how plan developed
    - Primer on Climate Science and impact of principle gases
    - What Sonoma county must achieve
    - Adaptation concerns
    - Existing actions (state level, county level – legislation)
    - Why we want to tackle this – the benefit list
  - How the Plan (CAP) works
    - How a region plan works; how does it fit with State efforts
    - Local efforts
    - Outline of focus Areas
    - Implementation steps (depends on cities)
    - How cities should report inventory data
    - How residents can Help
  - Outreach and involvement in CAP development process
  - Creation of advisory boards
  - CAP and CEQA relationship – how used

# Outline RCPA CAP 2016 [cont]

- Section 2 Greenhouse Gas Emissions in Sonoma County

- Introduction – outline of basic method for building Inventory
- Description scope of the GHG Inventory; what is included and what is not. Examples of how GHG is computed
- Sources considered (methods for past, current, future)
- Inventory numbers by focus area and time
- GHG detail breakdown/analysis by focus area using terms relevant for specific focus area (ex: Energy %Natgas, %Electric, %other)
- GHG footprint by electric source (i.e. PGE, SCP, Healdsburg, CA avg)
- GHG breakdown by community
- Other Emissions sources and sinks

- Biological
- Goods and Services
- Industrial
- Air Travel

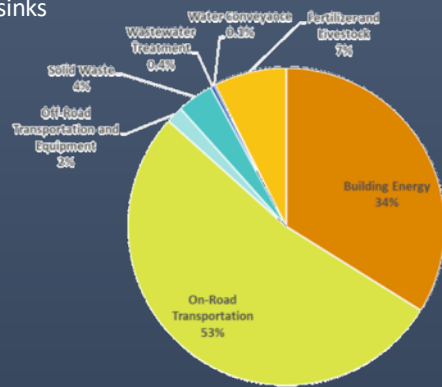


Figure 2-4. 2010 Countywide GHG Emissions by GHG Source

- Section 3 Reductions

- Introduction – summary of state, regional, and city BAU and reduction goals
- CAP GHG Target and Goals
- Reduction Strategy
- Outline of reduction by stated (20) goals
  - Reduction measures – state level with local GHG MTCO<sub>2</sub>e impacts
  - Reduction measures – Regional level with local GHG MTCO<sub>2</sub>e impacts
  - Reduction measures – city level with GHG MTCO<sub>2</sub>e impacts
- Each local reduction measure expanded to show
  - GHG reduction from all total local efforts
  - Community benefits
  - Implementation method
  - Measurement responsibility
  - Key indicators – metrics

GHG Source and Goal	GHG Emission Reductions (MTCO <sub>2</sub> e)
<b>Building Energy</b>	<b>322,500</b>
1 Increase building energy efficiency	53,877
2 Increase renewable energy use	267,027
3 Switch equipment from fossil fuel to electricity	1,625
<b>Transportation and Land Use</b>	<b>428,000</b>
4 Reduce travel demand through focused growth	4,693
5 Encourage a shift toward low-carbon transportation options	43,058
6 Increase vehicle and equipment fuel efficiency	358,720
7 Encourage a shift toward low-carbon fuels in vehicles and equipment	19,413
8 Reduce idling	163
<b>Solid Waste</b>	<b>65,400</b>
9 Increase solid waste diversion	26,219
10 Increase capture and use of methane from landfills	39,140
<b>Water and Wastewater</b>	<b>32,600</b>
11 Reduce water consumption	19,217
12 Increase recycled water and greywater use	75
13 Increase water and wastewater infrastructure efficiency	759
14 Increase use of renewable energy in water and wastewater systems	2,556
<b>Livestock and Fertilizer</b>	<b>1,800</b>
15 Reduce emissions from livestock operations	NQ <sup>1</sup>
16 Reduce emissions from fertilizer use	1,759
<b>Advanced Climate Initiatives</b>	
17 Protect and enhance the value of open and working lands	NQ <sup>1</sup>
18 Promote sustainable agriculture	NQ <sup>1</sup>
19 Increase carbon sequestration	NQ <sup>1</sup>
20 Reduce emissions from consumption of goods and services	NQ <sup>1</sup>
<b>Total CAP Reductions</b>	<b>838,300</b>
Santa Rosa CAP Reductions (including applicable state and city reductions)	558,080
<b>Total County 2020 GHG Reductions</b>	<b>1,396,380</b>

# Outline RCPA CAP 2016 [cont]

- Section 4 Implementation
  - Introduction – multi-jurisdictional responsibility
  - Role of RCPA in the CAP process
  - Role of RCPA Members in CAP process; provide leadership and manpower to complete work and monitoring
  - Role of Regional Entities (SCP, NSCAPCD, SCWMA, SCTA, SCWA, etc.)
  - Implementation Strategy
    - RCPA to assist Member staffs
    - Help amend Ordinances
    - Transfer knowledge between Members
    - Pursue funding
    - Provide education
  - Implementation Schedules for Measures
  - Funding and Financing
  - Community Engagement Plan
  - Evaluation and Monitoring Requirements (due 2018 and 2020)  
CEQA requirement 15183.5
  - New phase required after 2020
- Section 5 Community
  - Separate section for each Jurisdiction
    - Cloverdale
    - Cotati
    - Healdsburg
    - Petaluma
    - Rohnert Park
    - Santa Rosa – has its own standalone CAP
    - Sebastopol
    - Sonoma
    - Windsor
    - County
  - Same outline used for each jurisdiction (See Sebastopol)

# Outline RCPA CAP 2016 [cont]

- Section 6 Readiness
  - Introduction and Background
  - Climate Change Projection Source (USGS BCM)
  - Vulnerability Assessment as
    - More Extremely hot days
    - More frequent and intense droughts
    - More frequent and intense wildfires
    - Fewer winter nights that freezer
    - Greater risk of extreme floods
    - Higher sea level and storm surge
  - For each Vulnerability impacts are listed
    - On people and social systems
    - On built systems (buildings, infrastructure)
    - On natural and Working Lands
  - Plans to increase resilience for
    - Public health
    - Energy
    - Water
    - Food
    - Transportation
    - Natural and working lands
  - Adaptation Goals
  - Co-benefits of GHG reduction strategies
  - Next Steps
- Section 7 References

# Outline RCPA CAP 2016

Actions committed to by Sebastopol

A description is provided in section 3.6 documenting what each **Action** includes and by city what it is to achieve by 2020 (last year)

## Start by 2016

- 1-L2. Outdoor Lighting
- 1-L3. Shade Tree Planting 1-L4. Co-Generation Facilities
- 2-L1. Solar in New Residential Development
- 2-L2. Solar in Existing Residential Buildings
- 2-L3. Solar in New Nonresidential Developments
- 2-L4. Solar in Existing Nonresidential Buildings
- 4-L1. Mixed-Use Development in City Centers and along Transit Corridors
- 4-L2. Increase Transit Accessibility
- 4-L3. Supporting Land Use Measures
- 4-L4. Affordable Housing Linked to Transit
- 5-L1. Local Transportation Demand Management (TDM) Program
- 5-L2. Carpool Incentives and Ride- Sharing Program
- 5-L3. Guaranteed Ride Home
- 5-L4. Supporting Bicycle/ Pedestrian Measures
- 5-L5. Traffic Calming
- 9-L1. Create Construction and Demolition Reuse and Recycling Ordinance

## Start by 2018

- 3-L1. Convert to Electric Water Heating
- 7-L1. Electric Vehicle Charging Station Program
- On-Road-3. Neighborhood/Site Enhancement Strategies
- 5-L6. Parking Policies
- 5-L7. Supporting Parking Policy Measures
- 8-L1. Idling Ordinance
- 11-L1. SB X7-7 Water Conservation Act of 2009
- 11-L2. Water Conservation for New Construction
- 11-L3. Water Conservation for Existing Buildings
- 12-L1. Greywater Use

## Start by 2019

- 7-L2. Electrify Construction Equipment
- 8-L2. Idling Ordinance for Construction Equipment

# Sebastopol CAP

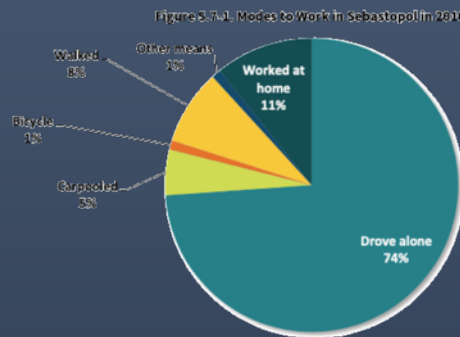
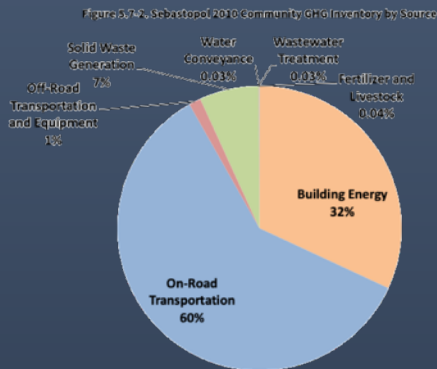
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# Outline Sebastopol CAP 2016 – Section 5.7

- Community Summary – describes the city in 2 paragraphs
  - Demographics
  - Population, Housing, Employment
  - Energy and Water Use
  - Commute Modes
  - Existing actions to reduce GHG Emissions
    - Building energy programs
    - Land Use and Transportation Plans
    - Water and Wastewater efficiency
    - Urban forestry
    - Waste minimization and Recycling
  - GHG Inventory and Forecast
  - GHG Reduction Goals and Measures

- Building Energy GHGs
- On-Road Transportation GHGs
- Off-Road and Equipment GHGs
- Solid Waste GHGs
- Water Conveyance GHGs
- Wastewater treatment GHGs



# Outline Sebastopol CAP 2016

## Measures committed to by Sebastopol

Local Measures			
<b>Goal 1: Increase Building Energy Efficiency</b>	<b>33</b>		
Measure 1-L2: Outdoor Lighting	29	25%	of outdoor lighting to participate
Measure 1-L3: Shade Tree Planting	4	400	trees planted
<b>Goal 2: Increase Renewable Energy Use</b>	<b>1,712</b>		
Measure 2-L1: Solar in New Residential Development	26	100%	of new houses to participate
Measure 2-L2: Solar in Existing Residential Building	248	15%	of existing homes with solar
Measure 2-L3: Solar in New Non-Residential Developments	221	75%	of new non-residential development to participate
Measure 2-L4: Solar in Existing Non-Residential Buildings	1,217	25%	of existing non-residential development with solar
<b>Goal 3: Switch Equipment from Fossil Fuel to Electricity</b>	<b>32</b>		
Measure 3-L1: Convert to Electric Water Heating	32	10%	of households
<b>Goal 4: Reduce Travel Demand Through Focused Growth</b>	<b>245</b>		
Measure 4-L1: Mixed-Use Development in City Centers and Along Transit Corridors	208	60%	of growth to result in mixed use
Measure 4-L2: Increase Transit Accessibility	24	15%	of growth to be 25+ units
Measure 4-L3: Supporting Land Use Measures	NQ	Yes	
Measure 4-L4: Affordable Housing Linked to Transit	13	20%	of new development to be affordable
<b>Goal 5: Encourage a Shift Toward Low-Carbon Transportation Options</b>	<b>471</b>		
Measure 5-L1: Local Transportation Demand Management Program	144	38%	of employees eligible
Measure 5-L2: Carpool-Incentives & Ride-Sharing Program	282	78%	of employees eligible
Measure 5-L3: Guaranteed Ride Home	NQ	Yes	
Measure 5-L4: Supporting Bicycle/Pedestrian Measures	NQ	Yes	
Measure 5-L5: Traffic Calming	45	100%	of trips affected
Measure 5-L7: Supporting Parking Policy Measures	NQ	Yes	

Local Measures			
<b>Goal 1: Increase Building Energy Efficiency</b>	<b>33</b>		
Measure 1-L2: Outdoor Lighting	29	25%	of outdoor lighting to participate
<b>Goal 7: Encourage a Shift Toward Low-Carbon Fuels in Vehicles and Equipment</b>	<b>42</b>		
Measure 7-L1: Electric Vehicle Charging Station Program	3	5	charging stations installed
Measure 7-L2: Electrify Construction Equipment	38	10%	of equipment
Measure 7-L3: Reduce Fossil Fuel Use in Equipment through Efficiency or Fuel Switching	NQ	Yes	
<b>Goal 8: Reduce Idling</b>	<b>9</b>		
Measure 8-L1: Idling Ordinance	NQ	2	minutes below state law
Measure 8-L2: Idling Ordinance for Construction Equipment	9	2	minutes below state law
<b>Goal 9: Increase Solid Waste Diversion</b>	<b>&lt; 1</b>		
Measure 9-L1: Create Construction and Demolition Reuse and Recycling Ordinance	< 1	3%	beyond baseline
<b>Goal 11: Reduce Water Consumption</b>	<b>532</b>		
Measure 11-L1: Senate Bill SB X7-7 - Water Conservation Act of 2009*	418	20%	Reduction in per capita water use
Measure 11-L2: Water Conservation for New Construction*	4	100%/50%	% of new residential/nonresidential development
Measure 11-L3: Water Conservation for Existing Buildings*	110	25%/50%	% of new residential/nonresidential development
<b>Goal 12: Increase Recycled Water and Greywater Use</b>	<b>3</b>		
Measure 12-L1: Greywater Use	3.23	25%	greywater goal
<b>State Measure Reductions in Sebastopol</b>	<b>18,880</b>		
<b>Regional Measure Reductions in Sebastopol</b>	<b>7,600</b>		
<b>Local Measure Reductions in Sebastopol</b>	<b>3,080</b>		
<b>Grand Total Emissions Reductions in Sebastopol</b>	<b>29,560</b>		

\*Measures reduce emissions from multiple sources (i.e. water and energy)  
NQ = not quantified



# Petaluma

Climate Emergency Framework

2021

Population similar to Sebastopol Service Population

# Petaluma Climate Emergency

- Only CAP seems to be section in 2016 RCPA document Section 5.4
- Format of 5.4 same as Sebastopol section 5.7

# Petaluma Climate Emergency

- Document that extends beyond section in RCPA CAP
- Identifies Commission that focuses on Climate issues
  - Establishes the priority level of Climate issues
  - Outlines the roles and responsibilities of the Commission
- Outline of the Climate Problem
- Lists Values and Considerations that establish the context for the document
- Introduction
  - Purpose of document - Framework
  - Outline of Sections and what each addressed
    - Equity and Climate Justice
    - Mitigation and Sequestration
    - Adaptation and social Resilience
    - Community Engagement
  - State and City Emission Reduction Goals
- Section 1: Equity and Climate Justice
  - Definition
  - Problem Statement
  - Future Vision
  - Goal List
- Section 2: Mitigation and Sequestration
  - Definition
  - Problem Statement
  - Future Vision
  - Goal List
- Section 3: Adaptation and social Resilience
  - Definition
  - Problem Statement
  - Future Vision
  - Goal List
- Section 4: Community Engagement
  - Definition
  - Problem Statement
  - Future Vision
  - Goal List

# Petaluma Climate Emergency

## Appendix A: Strategies for future council considerations

(each action list has an overview and co-benefits documented)

- Equity and Climate Justice - sample action lists for
  - Outreach and Education (4)
  - Employment (6)
  - Accessibility (3)
  - Funding (5)
  - Resilience, Self-Reliance, and preparedness (8)
  - Urban planning and Transportation (12)
  - Building and Energy (4)
- Mitigation and Sequestration – sample action lists for
  - Urban Planning and Transportation (6)
  - Building and Energy (3)
  - Land Management (6)
  - Waste (4)
  - Consumption(4)

- Community Engagement – sample action lists for

- Community Input (2)
- Website (4)
- Outreach and Education (10)
- Staffing (1)
- Collaboration and Partnering (3)

- Adaptation and social Resilience – sample action lists for

- Education and Outreach (3)
- Resilient Emergency Response Network (5)
- Climate Change Adaptation and Resilience Plan (6)
- Local Ecosystem (7)
- Infrastructure and Development (8)

## Appendix B: Survey Results

- Results from 1,003 people surveyed for priorities and impacts felt

# Sunnyvale CAP

Adopted May 20, 2014 (draft completed in 2013)

Population similar to Santa Rosa

Funded in part by U.S. DOE



# Sunnyvale CAP 2014

- Executive Summary

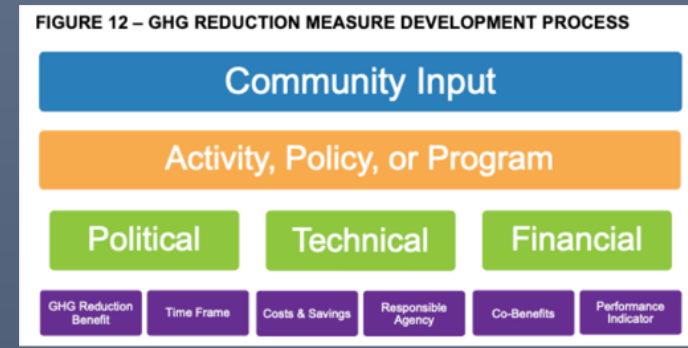
- Outline of framework
  - Plan designed to satisfy both CEQA and BAAQMD requirements
- The planning process
- GHG Emissions Inventory Sectors
  - Transportation
  - Commercial/Industrial
  - Residential
  - Waste
  - Other
- GHG Emissions Projections
  - Planned population and job growth
  - Multiple projections (BAU, Pavley I, Cal Green, ABAU, Renewable Portfolio)
- GHG Reduction Targets
- GHG reduction Goals
- Adaptation Concerns
- Implementation
- Environmental Review

- Chapter 1 – Introduction

- Purpose and Scope
- Local Context – describing Sunnyvale
- Climate Protection efforts to date
  - Green Building Program
  - Sustainable Silicon Valley Participation
  - Energy efficiency and Conservation Block grants
  - Other – ex: bicycle friendly
- Relationship CAP to General Plan
  - Planning Process – CAP+Land Use+Circulation
  - Role of Sustainability Commission
  - Advisory Committee (2035)
- Climate Change Science review
- Federal Framework
  - Clean Air act
  - GHG reduction initiatives
- California Legislative Framework

Climate Change	Land Use & Transportation	Energy & Renewables	Water Conservation	Waste & Recycling
2005 - E.O. S-3-05	2002 - AB 1493	Updated 2010 - Title 24	2006 - AB 1881	1989 - AB 939
2006 - AB 32	2007 - E.O. S-1-07	2002 - SB 1078	2007 - AB 1420	2008 - SB 1016
2007 - SB 97	2008 - SB 375	2006 - SB 1368	2009 - SB X7-7	2011 - AB 939
		2008 - AB 811	2009 - SB 407	

# Sunnyvale CAP 2014



- Chapter 2 - GHG Inventory and Forecast

- Inventory Background and Methodology (kWh and therms by activity)
  - CO<sub>2</sub>, CH<sub>4</sub>, N<sub>2</sub>O converted to CO<sub>2</sub>e using GWP
- 2008 Baseline Inventory Results
- Greenhouse Gas Emissions Forecast
  - BAU by sector
  - Adjusted forecast incorporating State and Regional programs
    - Title 24
    - Clean Car Fuel Stds
    - Renewable portfolio Std
    - Caltrain Electrification
- GHG Reduction Target

- Chapter 3 – GHG Emission Reduction Strategies

- Structure
  - Open Space & Urban Forestry
  - Decrease Energy Consumption
  - Sustainable Energy Portfolio
  - Decrease Water Consumption
  - Reduce Landfill waste
  - Reduce off-road equipment emissions
  - Increase awareness of sustainability issues
  - Improve mobility through land use planning
  - Expand circulation and transportation options
  - Optimize vehicular Travel
- Establish numeric scale ranges (minimal – very high)



# Sunnyvale CAP 2014

- Chapter 3 – GHG Emission Reduction Strategies and supporting actions (cont)

- Open Space and Urban Forestry (OS)
  - Open Space Policy – Actions(1)
  - Outdoor Meeting Space Policy
  - Urban Forestry Policy – Actions (5)
- Decrease Energy Consumption (EC)
  - Lighting Efficiency – actions(3)
  - New Construction and Remodels – Actions (3)
  - Residential Energy Efficiency – Actions (2)
  - Commercial Energy Efficiency – Actions (4)
  - Smart Grid – Actions (3)
  - “Cool” Roofs and Pavements – Actions (4)
- Provide a Sustainable Energy Portfolio (EP)
  - Renewable Energy Portfolio – Actions (1)
  - Local Renewable Energy – Actions (6)
- Decrease Water Consumption (WC)
  - Water Sources and Efficiency – Actions(4)
  - Water Conservation – Actions (4)


- Reduce Landfilled Waste (LW)
  - Materials Management – Actions(3)
  - Recycling and Composting – Actions (2)
- Off-Road Equipment (OR)
  - Lawn and Garden Equipment – Actions (3)
  - Construction Equipment – Actions (3)
- Improve Mobility through Land Use Planning (LP)
  - Parking – Actions (6)
  - Transit-oriented, Higher density, Mixed Use Development – Actions (5)
  - Local Commerce and Food – Actions (4)
  - Jobs/Housing Balance – Actions (2)
  - Distributed Services – Actions (2)
- Increase and Retain Awareness of Sustainability Issues (CA)
  - Community Outreach and Involvement – Actions (11)
  - School Education and Involvement – Actions (2)
- Expand Sustainable Circulation and Transportation Options (CTO)
  - Bicycle, Pedestrian, and Transportation Design Elements – Actions (7)
  - Bicycle, Pedestrian, and Transportation Travel Operations – Actions (7)
  - Transit – Actions (5)
  - Commute Programs – Actions (4)
  - School Commutes – Actions (3)

**EP-1 Key Information**

**GHG Reductions**

2020:	233,400	MTCO <sub>2</sub> e
2035:	338,420	MTCO <sub>2</sub> e

**Co-Benefits**

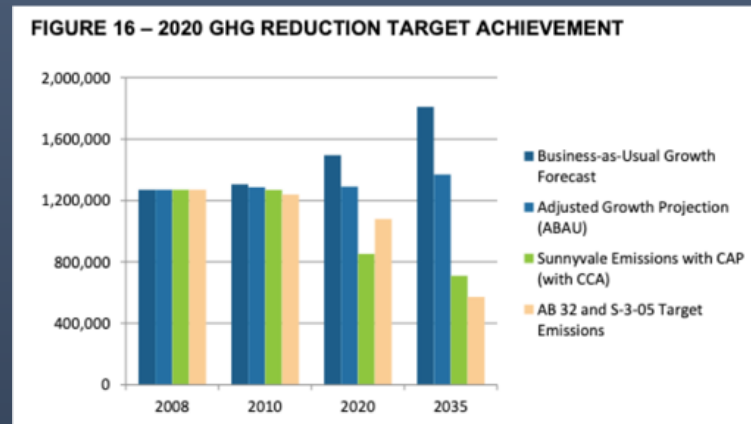
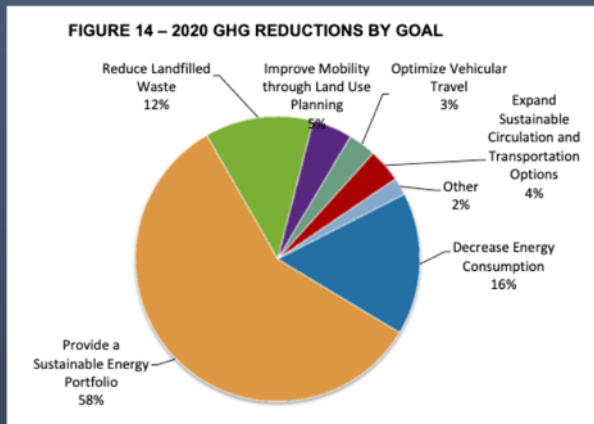



**Implementation Time Frame**  
Near-Term

**Responsible Department**  
Environmental Services

# Sunnyvale CAP 2014

- Chapter 3 – GHG Emission Reduction Strategies and supporting actions (cont)
  - Optimize Vehicular Travel (OVT)
    - Clean Alternative Motor Vehicles and Fuels – Actions(8)
    - Car Sharing – Actions (2)
    - Circulation Efficiency – Actions (2)
  - GHG Goal Summary for 2020 and 2035



# Sunnyvale CAP 2014



- Chapter 4 – Adaptation

- Climate Change Impacts On Sunnyvale
  - Increased Rate of Wildfires
  - Negative Impacts on Wildfires
  - Deteriorating Public Health
  - Sea Level Rise
- Existing Adaptation Efforts
  - California Climate Adaptation Strategy
  - Cal-Adapt
  - S.F. Planning and Urban Research, Climate Change Hits Home
- Plan of Action for Local Governments
  - 9 actions for various departments
- Differentiating Reduction and Adaptation Measures
- Adaptation Strategies
  - Regional Coordination - Actions (1)
  - Preparedness – Actions (2)
  - Adaptive Planning – Actions (2)
  - Monitoring – Actions(2)

- Chapter 5 - Implementation

- Overview – Definitions, Scales, Agencies
- Implementation Measures
  - Monitoring – Actions (5)
  - Update GHG Inventory and Plan – Actions (3)
  - Collaborative Partnerships – Actions (1)
  - Funding Sources – Actions (3)
- Monitoring and updating this Plan
  - Implementation Matrix
  - Staffing plan

- Chapter 6 – Glossary

- Appendix A – GHG Inventory Methodology

- Appendix B – GHG Technical Appendix

- For each action, the method of estimating current conditions and future reductions is detailed (60 pages of details)

- Appendix C – BAAQMD Compliance

- Appendix D – Works cited

# Sunnyvale CAP Implementation Matrix

TABLE 11 – CAP IMPLEMENTATION MATRIX

#	Policy Topic	Reduction Measure	GHG Reductions (MTCO <sub>2</sub> e/year)		City Costs	Community		Time Frame	Responsible Agencies	Applicability	Compliance	Community Benefits			Performance Metrics
			2020	2035		Costs	Savings								
<b>Open Space and Urban Forestry (OS)</b>															
Provide local open space resources that support natural processes and provide rest, relaxation, and recreation opportunities.															
OS-1	Open Space	Maintain and increase the amount of open space in Sunnyvale consistent with the Parks of the Future Plan and the Open Space Element of the General Plan.	-20	-50	Very High	Minimal	Minimal	Near-Term	Community Services & Community Development	New & Existing Development	Voluntary	Improves Public Health	Provides Educational Opportunities	Improves Mobility	New acres of parkland
OS-2	Outdoor Meeting Space	Provide availability and access to outdoor space for recreation or social purposes, including access to public open spaces on privately owned property such as retail shopping centers.	Supportive Measure	Supportive Measure	Minimal	Minimal	Minimal	Mid-Term	Community Development	New Development	Voluntary	Improves Public Health	Provides Educational Opportunities	-	N/A
OS-3	Urban Forestry	Increase the number of shade trees planted in the community, and protect the existing tree stock.	-290	-730	Medium	Low	Medium	Mid-Term	Public Works	New & Existing Development	Mandatory for New, Voluntary for Existing	Improves Public Health	Reduces Energy Demand	Adaptation Measure	Number of new street trees planted
<b>Decrease Energy Consumption (EC)</b>															
Improve energy efficiency and conservation in the community and City operations.															
EC-1	Lighting Efficiency	Increase the use of efficient indoor and outdoor lighting technologies.	-220	-210	Very High	Minimal	Minimal	Mid-Term	Public Works & Community Development	Municipal	Voluntary	Reduces Energy Demand	-	-	Percentage of City streetlights replaced with LED
EC-2	New Construction and Remodels	Require green building practices in new residential and commercial development and remodels.	-4,440	-10,570	Low	High	High	Near-Term	Community Development	New Development	Mandatory	Reduces Energy Demand	Supports Local Economy	Reduces Water Consumption	Compliance with Green Building Ordinance and CALGreen
EC-3	Residential Energy Efficiency	Reduce residential energy use, with emphasis on existing homes built before 1990.	-4,160	-9,090	Medium-High	Very High	Very High	Mid-Term	Community Development	Existing Development	Mandatory	Reduces Energy Demand	Supports Local Economy	Provides Community Savings	Percentage of homes and businesses that respond to energy audits and percentage that participate in a

# Portland CAP

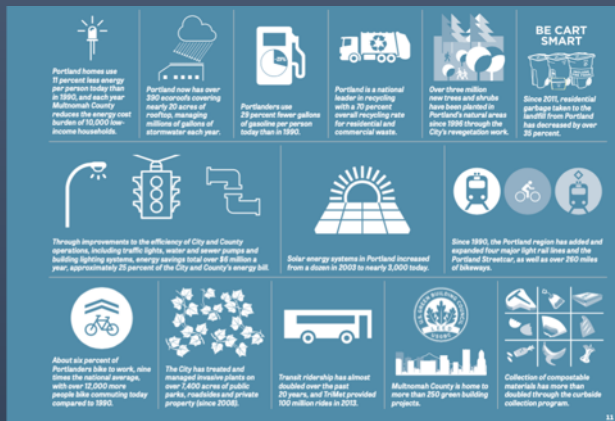
2015 – Population roughly same as Sonoma County

# Portland CAP 2015 outline

- 2050 Vision – Community Aspirations
- Pages describing editors, process and geographic scope
- Introduction
  - The Climate Problem
  - Progress so far
  - Why address problem
  - Who needs to be involved and protected
  - Snapshot of areas addressed

- Background

- Summary of local climate
- Issues experienced resulting from Climate Change
- Impact of Carbon and relation to Emissions
- Who needs to be involved; Fed, State, Region, Local
- Current CO<sub>2</sub> trends (1990-2013)
- Gaps in plan, the carbon budget
- Profile of population, jobs, electric consumption, miles driven
- Future emissions reductions required
- Preparation for planned/expected impacts
- Fast summary by Focus Area of objectives



# Portland CAP 2015 outline

- Analysis of Current Emissions
  - Sector-based emissions (local production and use)
    - Progress so far and how achieved
    - Analysis per capita (residents or jobs as appropriate)
    - Breakdown by Residential, Commercial, Industrial, Transportation, Waste
  - Global-based emissions; goods consumed produced elsewhere
    - Based on national standards
    - Use local spending pattern
    - Consider lifecycle of products cradle to grave

**SECTOR-BASED EMISSIONS INVENTORY**

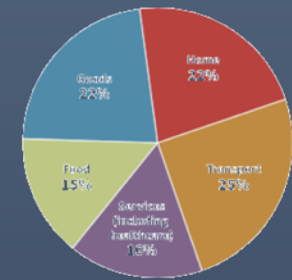
A sector-based emissions inventory allocates carbon emissions primarily among the local residential, commercial, industrial and transportation sectors according to energy use of each sector.

Read more on pages 30-35

**CONSUMPTION-BASED EMISSIONS INVENTORY**

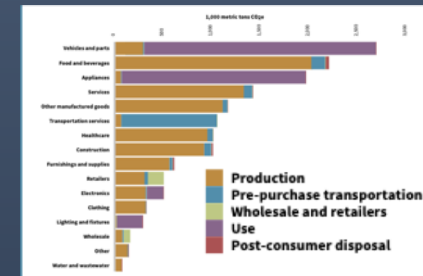
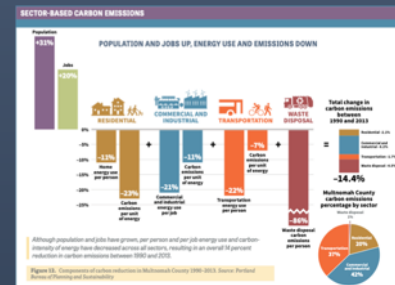
A consumption-based emissions inventory attributes carbon emissions based primarily on the local consumption of goods and services, regardless of where those goods were produced.

Read more on pages 36-41



## Consumption metrics based on published stds

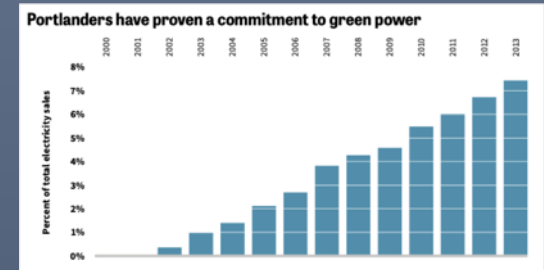
Category	Total GHG emissions	Production	Pre-purchase transportation	Wholesale and retail	Use	Post-consumer disposal	Percent of total emissions
Vehicles and parts	2,822	298	14	1	2,508	0.2	18%
Food and beverages	2,312	2,121	151	3	—	37	15%
Appliances	2,064	63	2	0.1	1,998	0.1	13%
Services	1,488	1,390	93	2	—	4	9%
Other manufactured goods	1,216	1,162	52	2	—	1	8%
Transportation services*	1,102	66	1,036	0.2	—	—	7%
Healthcare	1,060	997	60	3	—	1	7%
Construction	1,056	961	77	4	—	14	7%
Furnishings and supplies	637	588	32	1	—	17	4%
Retailers**	524	316	37	171	—	—	3%
Electronics	523	328	10	1	184	0.5	3%
Clothing	333	330	2	0.1	—	1	2%
Lighting and fixtures	294	7	0.2	0.01	286	0.01	2%
Wholesale**	160	78	13	69	—	—	1%
Other	142	132	10	0.4	—	0.1	1%
Water and wastewater	72	71	1	0.03	—	0.04	0%
<b>TOTAL</b>	<b>15,806</b>	<b>8,907</b>	<b>1,590</b>	<b>258</b>	<b>4,977</b>	<b>74</b>	<b>100%</b>
Percent of Total Emissions	100%	56%	10%	2%	31%	0.5%	



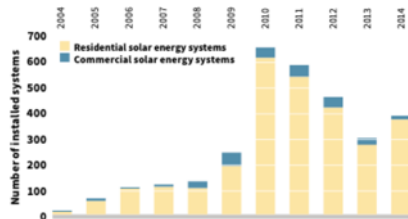
# Portland CAP 2015 outline

- Equity
  - Neighborhood characterizations
  - Housing Cost Issues
  - Ethnic group breakdown by neighborhood
  - Analysis of services and infrastructure by neighborhood
  - Income trends
- Community Impact categories
  - Public Health of Climate Action
  - Economic Benefits of Climate Action
  - Job Creation analysis
  - Environmental Quality changes
  - Role of Trees, Rivers, wetlands on sequestering carbon

- Buildings and Energy
  - Fuel sources for electricity
  - Carbon pricing
  - Building performance ratings and transparency
  - Renewable Energy Progress – reducing barriers
  - Homeowner cost implications
  - List of Objectives with associated Actions to be completed by 2020. identify for each impact magnitude and categories impacted
- Urban Form and Transportation
  - How Land Use relates to Climate Action
  - Analysis of growth impacts to identified neighborhood
  - Transportation Network Gaps
  - Transportation Network changes proposed
  - List of Objectives with associated Actions to be completed by 2020. identify for each impact magnitude and categories impacted



Reaching a peak in 2010, rooftop solar installations have declined over the past few years



URBAN FORM AND TRANSPORTATION			
2030 OBJECTIVE 4	Create vibrant neighborhoods where 80 percent of Portland and Multnomah County residents can easily walk or bicycle to meet all basic daily, non-work needs and have safe pedestrian or bicycle access to transit. Reduce daily per capita vehicle miles traveled by 30 percent from 2008 levels.		
ACTIONS TO BE COMPLETED BY 2020	Impact	Lead agency	Timeframe
Funding			
<b>4A Multimodal Transportation Funding</b> — Support a new state multimodal transportation funding source for transit, bicycle and pedestrian services and facilities. Advocate for including provisions that prioritize transit and multimodal designs for facilities.	C C C C \$ E	City: PBOT	Near-term
<b>4B State Transportation Funding</b> — Support adoption of a road usage and fuel efficiency charge as a long-term replacement for declining gas tax revenue.	C C C C \$ E	City: PBOT	Near-term
<b>Potential impact</b>	C C C C Magnitude of carbon emissions reduction	S High potential to support jobs and prosperity	E High potential to advance equity
		A High potential to improve local environmental quality	R High potential to improve health

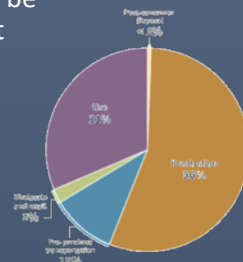


# Portland CAP 2015 outline

- Consumption and Solid waste

- Discussion of use impact vs production impact
- Analysis of waste trends
- Methane capture results
- List of Objectives with associated Actions to be completed by 2020. identify for each impact magnitude and categories impacted

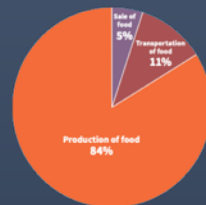
Making the goods we use generates the majority of emissions from consumption



- Food and Agriculture

- How food choices relates to Climate Action
- List of Objectives with associated Actions to be completed by 2020. identify for each impact magnitude and categories impacted

Producing and processing food is more carbon-intensive than the emissions from transporting food



- Urban Forest, Natural Systems and Carbon Sequestration

- Role of Trees and Soil
- Benefits of Climate Actions
- List of Objectives with associated Actions to be completed by 2020. identify for each impact magnitude and categories impacted

- Climate Change Preparations

- Analysis of experienced changes thus far
- Potential Future impacts
  - Human Systems
  - Natural Systems
  - Infrastructure and Built Environment

- For future impacts
- Urban Heat Issues

- List of Objectives with associated Actions to be completed by 2020. identify for each impact magnitude and categories impacted

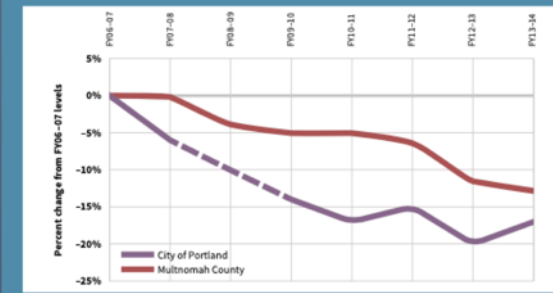
- Community Engagement and Outreach

- Analysis of public organizations involved
- Current Efforts
- Goals
- List of Objectives with associated Actions to be completed by 2020. identify for each impact magnitude and categories impacted

# Portland CAP 2015 outline

- Local Government Operations
  - Analyze use in same focus areas as Community
  - Through Government action, demonstrate changes/actions community can take
  - List of Objectives with associated Actions to be completed by 2020. identify for each impact magnitude and categories impacted
- Implementation
  - List Climate Commitments
  - Measure Progress Regularly
    - Resident satisfaction
    - Transit and active transportation
    - Reduced carbon emissions
    - Complete neighborhoods
    - Healthier people
    - Healthy watersheds
  - Using CAP
    - Setting policy
    - Making Budget Decisions
    - Creating market incentives
    - Developing education and outreach strategies
    - Updating zoning and other codes
    - Making public investments, including infrastructure
    - Delivering health services
    - Emergency Preparedness
  - List of Objectives with associated Actions to be completed by 2020. identify for each impact magnitude and categories impacted

The City and County have walked the talk by reducing emissions



- Climate Plan Development Process Outline
  - Advisory Groups
  - Develop Outline of considerations
  - Identify CAP management process (progress reports and updates)
  - List of related planning efforts (federal, state region, county, transit agencies, other agencies)
- Appendices
  - Glossary
  - Equity Objectives
  - Sector-based inventory calculation methods
  - Consumption-based (global) inventory calculation methods
  - Carbon budget assumptions
  - References

# Gerry's Takeaways

# Takeaways

- Review of all of the CAPs for actions and objectives will provide a rich library of ideas to consider
- The standard format by SEEC seems useful as a working document
- We ought to look at SEEC's metrics and measurements tool to see if it is useful
- There are no easy ways to collect reliably correct metrics. The methods used need to be excruciatingly documented in the appendix
- GHG reduction goals ought to consider two distinct and independent categories; consumption reduction (ex: reduce energy use) and method improvement (ex: sustainable electricity)
- No Sonoma County jurisdiction seems to have delivered on the commitments made in the 2016 plan and there is no mechanism to highlight this gap
- RCPA plans to plan no role in the county climate action process other than as an aggregator of the information and commitments. It expects staffing to come from the various jurisdictions
- Portland's use of standards to develop impacts seems useful and we should search to see if there is an up to date publication of these values