

Emissions Reduction Focus Areas

The Climate Action Plan includes focus areas that identify the measures needed to achieve Benicia's 2010 and 2020 emissions reduction targets:

- Public Education and Outreach
- Energy Production
- Transportation and Land Use
- Buildings
- Industrial and Commercial
- Water and Wastewater
- Solid Waste
- Parks and Open Space

A series of objectives with supporting strategies are identified in each focus area. For each strategy, suggested implementation actions are identified. Implementation timelines and indicators to track progress have been identified for each objective and are located in the summary matrix (pp 83). Implementation timelines are broken down into three phases:

- Near-term (2009-2011)
- Mid-term (2012-2015)
- Long-term (2016-2020)

These periods mirror those identified in AB 32, making the Plan consistent with the State timelines for implementation. Indicators to track progress are identified for each strategy in the summary matrix.

Public Education and Outreach has been included as the first focus area because it is considered integral to the successful implementation of objectives and strategies in the other seven focus areas. Given its broad reach and qualitative nature, emission reductions were not calculated for this focus area. Emission calculations were calculated for objectives in the other seven focus areas. In addition, reduction ranges are identified for each strategy within a given objective. The percentage range represents the emission reduction potential of a given strategy as it relates to its respective objective.

Energy efficiency is a critical component of this plan. Therefore, energy efficiency measures have been woven into all of the focus areas with the exception of Energy Production. The Energy Production focus area centers on renewable energy generation.

EMISSIONS REDUCTIONS

Calculating the emissions reductions for each objective requires making assumptions about the degree of implementation, future technology, and individual behavioral changes. The uncertainty associated with these assumptions makes it difficult to assign specific reduction totals to each objective. To address this uncertainty, a series of symbols and percentage ranges have been devised to represent the emission reductions associated with each objective and its strategies.

The specific implementation assumptions and estimated reduction totals are listed in the Appendix.

Plan Implementation & Integration

Three primary principles have been identified as critical to the future effectiveness of the Climate Action Plan. The first principle emphasizes the need for strong internal leadership, organizational capacity and interdepartmental integration. The second fulfills step five of ICLEI's Five Milestone Process, Monitoring and Verification via annual reporting. Principle three recognizes the importance of engaging industrial stakeholders to reduce emissions in the Benicia Industrial Park while adding value to existing and future businesses.

Principle I. Expand the Role of the Internal Green Team

The City of Benicia Green Team should be comprised of City staff assigned to infrastructure and facility management and maintenance, utility management, fleet maintenance and procurement, material and supply procurement, transit management, and, policy development and implementation. The group should develop internal policies and procedures (to present to senior City management for approval and implementation) as they relate to greenhouse gas reduction, green operations and forward-thinking climate protection planning. In addition, the group will provide staff support to the Community Sustainability Commission.

Principle 2. Annual GHG Reduction Monitoring Report

Annual GHG Monitoring Report – Monitoring and verification is step five of ICLEI’s Five Milestone process and is necessary to ensure that the plan is relevant and practical. Tracking strategy indicators/performance measures in order to implement adaptive management principles is the most effective approach. In doing so, strategies and standards may be modified or added in order to best meet the determined needs. The findings of the annual analysis should be presented to the Community Sustainability Commission and to the City Council.

Principle 3. GHG Reductions in Industrial and Commercial Sector

Reducing greenhouse gas emissions in the Industrial and Commercial sector is critically important given the significant emissions associated with the sector. The City must actively engage the business community to work together to develop strategies that add value to the businesses through efficiency and infrastructure, while reducing greenhouse gas emissions.

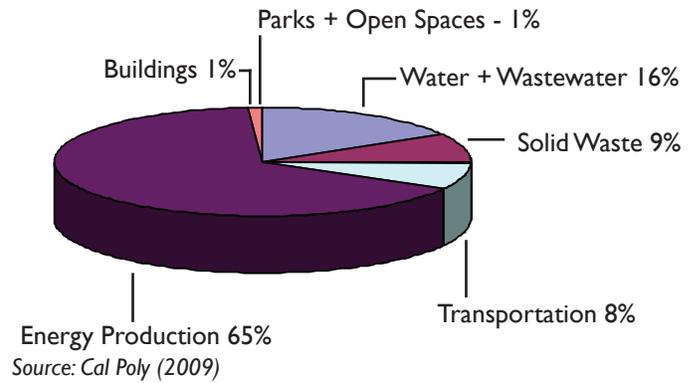
City staff has initiated preliminary discussions with the State of California Department of Conservation regarding the emerald cities partnership program. The program is a public-private partnership designed to achieve California’s resource conservation and environmental goals through technical assistance. The program has the potential to provide the business community with cost free technical resources.

EMISSION REDUCTION OVERVIEW

The following charts illustrate potential greenhouse gas emission reductions associated with relevant focus areas. 56 percent of City Government emission reductions and 43 percent of Community emission reductions are proposed to occur by implementing strategies in the Energy Production focus area.

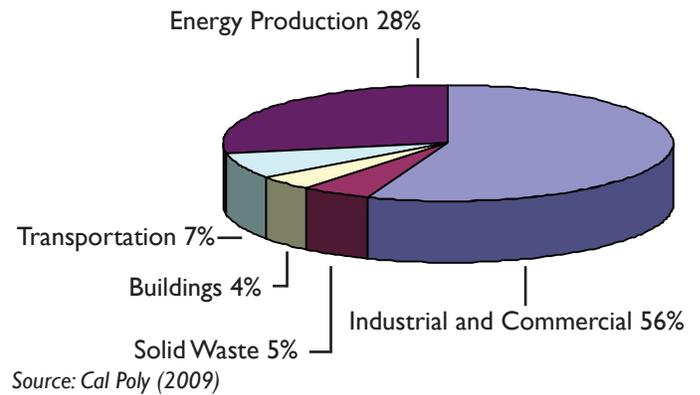
City Government Emission Reductions

The City Government chart excludes ‘Industrial and Commercial’ since it is not applicable to this category. In addition, emission reductions were not calculated for ‘Education and Outreach.’

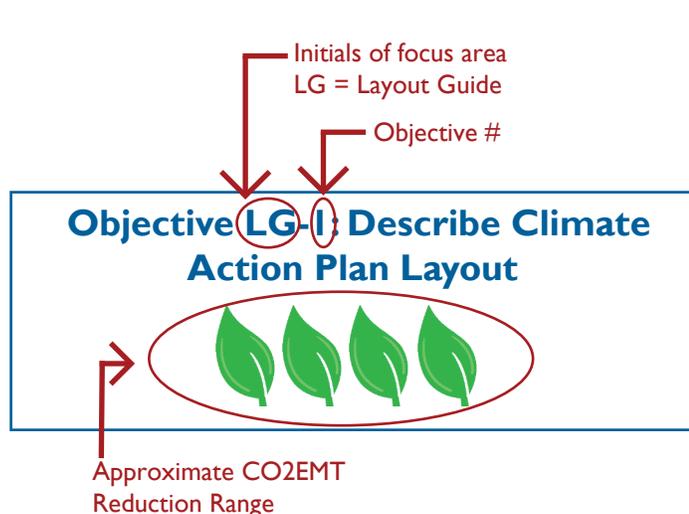


Community Emission Reductions

The Community emissions chart excludes ‘Water and Wastewater’ since they are functions of the City Government. Emission reductions were not calculated for ‘Education and Outreach.’



Focus Area Layout Guide



OBJECTIVES

Objectives establish the framework and targets necessary for each focus area to achieve the City’s 2010 and 2020 emission goals. Objectives are comprised of a set of strategies that serve as the implementation mechanisms.

Below each object title is a set of leaves that represent the range of carbon dioxide equivalent metric tonnes (CO2EMT) reductions that can be achieved if the objective is met (see diagram).

Each set of projected CO2EMT reductions assume phased implementation of all suggested strategies using conservative GHG estimates. These estimates are based on minimum levels of implementation, based on projections of consumer/resident habits, fiscal realities, and the local political climate. Aggressive implementation of particular strategies provides the flexibility to omit others, if so desired.

Existing Actions

The Existing Actions section describes the actions the City is currently undertaking that address the objective. Examples of Existing Actions include existing bus routes, existing community outreach projects, and energy efficient traffic signals that have been installed prior to the approval of the Climate Action Plan.



◆ Strategy LG-1.1. Example

Strategies are the specific sets of actions that the city can choose to implement to reach the objective.

Implementation Actions

- Implementation Actions lay out the steps the City may take to achieve the strategy.

CO2EMT Reduction Range

The reduction range for a strategy uses two targets – minimum and maximum levels of feasible implementation. It is very important to recognize that the stated range is within the context of each individual objective. The range can be a powerful tool to evaluate the relative impact that a given strategy is projected to have on the objective’s total reduction goal. Each objective reduction goal was established based on minimal implementation of each strategy. It is important to understand that the minimum ranges for each objective’s strategies may add up to over 100%, because of assumed overlap between strategies.

Significant assumptions are required when determining GHG value ranges at the strategy level. They are required to quantify otherwise qualitative issues such as behavioral change and rates of adoption. The assumptions are tailored to each individual strategy and are based on readily available data.

Symbol	Emissions Reduction (CO2EMT)
	< 1000
	1000 - 10,000
	10,000 - 50,000
	> 50,000

Strategy Icon Guide

Strategies with similar themes have been linked through the use of icons. Where applicable, icons are located below the strategy name and number. Many strategies have multiple icons indicating overlapping themes.



Public Outreach

Strategies with the public outreach icon require a comprehensive education or outreach program, to be effective. This may include workshops or distributing information on Benicia's climate action plan website.



Solar Energy

Strategies with the sun icon are related to solar energy generation strategies.



Wind Energy

Strategies with the windmill icon are related to wind energy generation strategies.



Transportation

Strategies with the bus icon are related to transportation.



Green Building

Strategies with the green building icon are related to green building practices, which have the potential to maximize efficiency of buildings, reduce energy costs, improve indoor air quality, and increase property values.



Energy Efficiency

Strategies with the light bulb icon are related to energy efficiency practices.



Water Conservation

Strategies with the water drop logo will help conserve water. Water conservation not only reduces our water usage, but also reduces CO₂ emissions by decreasing energy demand on pumps and lift stations used to convey the water.



Carbon Sequestration

Strategies with the Carbon Sequestration icon will help the City and Community reduce CO₂ emissions through carbon sequestration. Carbon sequestration is a greenhouse gas remediation technique that uses trees and other plant life to convert CO₂ into oxygen. A single mature tree can absorb 48 lbs. of CO₂ a year.