

Appendix E: Urban Greening Measures and Methodology

South Bay Cities Climate Action Plans
December 2017

Appendix E: Urban Greening (UG) Measures and Methodology

REFERENCE GUIDE - November 2017

This document is a reference guide for Urban Greening (UG) measures that municipal governments may include and implement in their climate action plans. The South Bay Cities Council of Governments (SBCCOG) worked with member cities to identify specific measures and associated calculations to reduce Green House Gas (GHG) emissions using the baseline year of 2005. Reductions were estimated for both community and municipal operations. The 2005 inventory is established as a starting point against which other inventories are compared and targets are set.

URBAN GREENING

Urban greening includes spaces such as parks, forests, green roofs, local agriculture, street trees, and community gardens. These spaces are “carbon sinks” as they store greenhouse gas emissions that are otherwise emitted into the atmosphere. (Institute for Local Government, 2013) Other benefits include providing critical ecosystem services, promoting physical activities, and improving the psychological well-being of community residents as well as also may reduce vehicle miles traveled. (Wolch, Byrne, & Newell, 2014)

REDUCTION MEASURES

Goal UG A: Increase and Maintain Urban Greening in the Community

The expansion of green spaces in Urban areas, is a pathway for reducing the CO₂ emissions and energy use. The urban vegetation reduces the CO₂ concentration from the atmosphere via photosynthesis and by carbon sequestration through plant growth. It also, reduces the energy use and CO₂ emissions associated with water delivery by providing a medium for wastewater recycling and increased storm water retention.

Measure UG A 1: Increase Community Gardens

Encouraging the community to create new gardens can contribute to GHG reductions by establishing new vegetated open space that will sequester CO₂ from the atmosphere. Community gardens can also potentially reduce GHG emissions by providing the community with a local source of food. This strategy may reduce the number of vehicle trips and miles traveled by both food delivery service and the consumers to grocery stores as well as displace carbon-intensive food production practices.

Actions:

- Establish a community garden – Establish a new garden or maintain an existing one
- Promote gardening and composting – Provide resources and information regarding community gardens and composting to educate the general public on how to grow organic edible plants
- Organize tool lending program and bounty exchange – Work with community organizations or neighborhood groups to organize garden-tool lending program and/or garden bounty exchange program to encourage more community gardens

Measure UG A 2: Increase Rooftop Gardens

Supporting the community in creating rooftop gardens will reduce the underlying building's temperature by shading and evapotranspiration, which results in a decrease of energy used for cooling the building and reduction of GHG emissions. The gardens can also sequester CO₂ emissions from the atmosphere, reduce storm water runoff, and improve air quality by reducing temperatures and capturing air pollutants.

Actions:

- Offer incentives to encourage rooftop gardens – Offer financial incentives (rebates) and/or recognition on website, newsletters, and other outreach materials
- Promote rooftop gardens for residential and commercial buildings – Provide informational materials to contractors, homeowners and businesses about the benefits of rooftop gardens

Measure UG A 3: Support Local Farms

Local farmer's markets can reduce GHG emissions by providing the community with a more local source of food, potentially resulting in a reduction in the number of trips and vehicle miles traveled by both the food delivery service and the consumers traveling to grocery stores. If the food sold at the local farmer's market is produced organically, it can also contribute to GHG reductions by displacing carbon-intensive food production practices.

Actions:

- Establish a local farmer's market – Work with local organizations to establish farmer's markets in the community or maintain current farmer's market
- Promote farmer's market – Promote farmer's market to the community through website, newsletters, or flyers
- Provide financial incentives to encourage residents to shop at farmer's markets – Provide financial incentives for low-income residents to purchase fresh produce at farmer's markets in the community, such as coupons for discounts

Goal UG B: Increase and Maintain Urban Greening in Municipal Facilities

Implementing urban greening strategies in municipal facilities will help reduce greenhouse gas emissions while demonstrating to the community the City's commitment to improving the environment. Cities are may also be responsible for maintaining urban forest on municipal properties such as parks. Urban forests can broadly include urban parks, street trees, landscape boulevards, public gardens, river and coastal promenades, greenways, wetlands, nature preserves, natural areas, and shelter belts of trees. Maintaining the urban forest reduces GHG emissions from decomposition of plant material.

Measure UG B 1: Increase Rooftop Gardens at Municipal Facilities

Creating a demonstration rooftop garden can reduce the underlying municipal building's temperature by shading and evapotranspiration, which results in a decrease of energy used for cooling the building and reduction of greenhouse gas emissions. The gardens can also sequester CO₂ emissions from the atmosphere, reduce storm water runoff, and improve air quality by reducing temperatures and capturing air pollutants.

Actions:

- Create a demonstration rooftop garden on municipal building – Install a rooftop garden on a municipal building as an example for the community

Measure UG B 2: Restoration/ Preservation of Landscapes

Maintenance is necessary to prevent the increase of emissions. If the urban forest is not maintained in the community, the decomposition of trees is a source of emissions.

Actions:

- Landscape/Open Space and Tree Maintenance – Develop a program to conserve open spaces and trees and promote the ability of such resources to remove carbon from atmosphere

Measure UG B 3: Increase Open Space

Creating vegetated land from previously developed land will sequester CO₂ from the atmosphere that would not have been captured if there was no land change. (CAPCOA 2010)

Actions:

- Create new green space or open space – Increase the area of green and open space in the community by developing new parks with recreational open space or re-vegetating vacant lots

Works Cited

CAPCOA. (2010). *Quantifying Greenhouse Gas Mitigation Measures*.

Institute for Local Government. (2013). *Sustainability Best Practices Framework*. 30-32.

Wolch, J., Byrne, J., & Newell, J. (2014). Urban green space, public health, and the environmental justice: The challenge of making cities 'just green enough'. *Landscape and Urban Planning*, 234-244.