



**October 2015**  
(Minor amendments May 2018)

# Climate Action Plan Update and Status Report



## TABLE OF CONTENTS

Introduction .....	2
City Council Actions .....	3
Figure 1 – Previous Menlo Park Climate Action Plan Milestones .....	3
Communitywide Greenhouse Gas Inventory Results Between 2005 and 2013.....	5
Figure 2 – Communitywide Greenhouse Gas Emission Inventory 2005-2013.....	5
Figure 3 –2013 Menlo Park Communitywide Greenhouse Gas Emissions by Source .....	5
Greenhouse gas reduction strategies 2015–2017 .....	6
Greenhouse gas reduction strategies 2017–2020 .....	7
Greenhouse gas reduction strategies beyond 2020.....	8
Status update of City Council-approved strategies .....	9
Recommended Next Steps of GHG Emission Reduction Strategies .....	13
Appendix A – Previous Menlo Park Climate Action Planning City Council Reports .....	14
Appendix B - City of Menlo Park Municipal Operations GHG Emissions .....	16
Municipal Operations Greenhouse Gas Emissions Inventory 2009 By Source (2,889 tons CO <sub>2</sub> e) .....	17

### Note:

May 2018 amendments included Introduction, Figure 1, Greenhouse gas reduction strategies FY 2015-17 statuses, Greenhouse gas reduction strategies FY 2018-20 and Greenhouse gas reduction strategies Beyond 2020.

## Introduction

For approximately 1,000 years before the Industrial Revolution, the amount of greenhouse gases (GHGs) in the atmosphere remained relatively constant. However, during the 20<sup>th</sup> century, scientists observed a rapid change in climate due to increased GHGs in the atmosphere that were found to be directly linked to an increase in anthropogenic, or human-caused, activities. Actions such as the use of fossil fuels to power vehicles and buildings and disposing of waste in landfills release GHGs that change - and will continue to change Earth's temperature.

The Intergovernmental Panel on Climate Change (IPCC) has identified four (4) major GHGs water vapor, carbon dioxide (CO<sub>2</sub>), methane (CH<sub>4</sub>), and ozone (O<sub>3</sub>)—that have been scientifically proven to cause an increase in the average global temperatures observed within the 20<sup>th</sup> and 21<sup>st</sup> centuries. CO<sub>2</sub>, in particular, is one of the most commonly emitted GHGs resulting from human activities. According to the IPCC, specific concentrations of CO<sub>2</sub> have increased by 40 percent since preindustrial times, primarily from fossil fuel emissions and land use changes.

Climate change impacts are accompanied by varying degrees of uncertainty. However, the IPCC's Fifth Assessment Report has determined that the warming of the climate system is unequivocal, and since the 1950s, many of the observed changes are unprecedented over decades of millennia. The atmosphere and oceans have warmed, the amount of snow and ice have diminished, sea level has risen globally, and the concentrations of GHGs have increased, all due to human activity. Additionally, the IPCC's Fifth Assessment Report projects, under different climate change scenarios, that global surface temperature change at the end of the 21<sup>st</sup> century is likely to exceed 1.5 degrees Celsius (°C) or 2.7 degrees Fahrenheit (°F).

In California, potential impacts resulting from climate change include, but are not limited to the following:

- Decreasing Sierra Nevada snow pack, affecting adequate water supplies
- More prevalent infectious diseases and illnesses directly affecting human health
- Declined productivity in agriculture due to irregular blooms and harvest and increased pests and pathogens
- Accelerated sea level rise, impacting beaches, marine ecosystems and infrastructure
- Increased and more severe wildfire and flood seasons
- Detrimental effects on California's largest industries, including agriculture, wine, tourism, skiing, tourism, fishing and forestry
- Altered timing for wildlife migrations and loss of species, impacting the food chain and other vital ecosystems
- Poor air quality made worse due to more severe heat waves and higher concentrations of air pollution
- Reduction in available renewable hydropower
- Increasing threats from pests and pathogens from warmer weather
- Increase in extreme weather causing flooding, mudslides and destruction to infrastructure

Many local, state and federal governments around the world have and continue to take action to reduce global GHG emissions. The purpose of the City of Menlo Park’s Climate Action Plan is to provide strategies that reduce local emissions and assist Menlo Park in meeting or exceeding the emissions reduction targets of 27 percent by 2020 from 2005 levels.

The City of Menlo Park’s first Climate Action Plan was approved by the City Council in 2009 and the City Council stated that it was intended to be a ‘living document’ to be updated periodically as current strategies are implemented and as new emissions reduction strategies and technologies emerge. On an annual basis, the City Council reviews and approves a report on the City of Menlo Park’s current implementation strategies and future plans. In addition, the City’s Environmental Quality Commission meets monthly to discuss a variety of climate action planning-related topics, and the City’s sustainability staff continually provides leadership in completing climate action planning projects, along with other compliance and regulatory duties. Since its approval, the Climate Action Plan has garnered support from a number of Menlo Park’s nonprofit and for-profit organizations.

## Menlo Park City Council Actions

The City of Menlo Park has taken a number of actions in recent years to address climate change. To provide context and facilitate retrieval of that history, Figure 1 below provides an overview of the City of Menlo Park’s climate action planning to-date. For a more detailed description of the milestones, see “Strategies Approved by City Council” section below. Appendix A provides a history of the Climate Action Planning reports that have been presented to the City Council.

**Figure 1 – Previous Menlo Park Climate Action Plan Milestones**

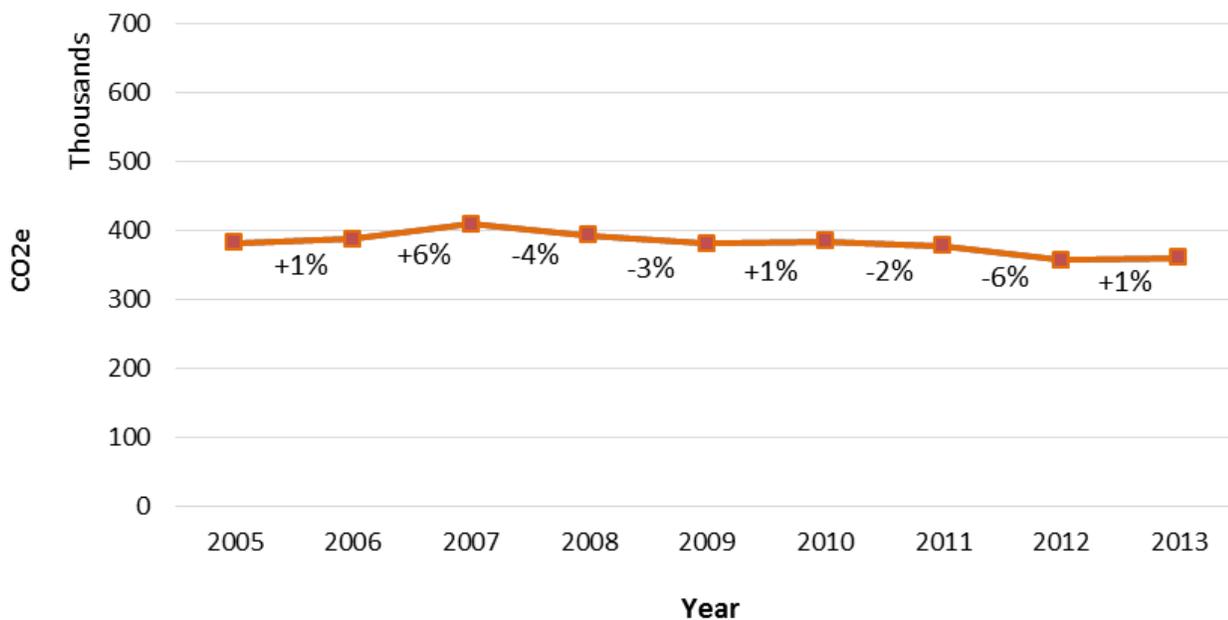
Year	Milestone
2005	Green Ribbon Panel – 100+ participants
2005	First Community Greenhouse Gas (GHG) Inventory Completed
2008	Approval to develop a Climate Action Plan
2009	1st Climate Action Plan drafted and approved
2009	Included height and density limit adjustments to promote active and public transportation in the El Camino Real/Downtown Specific Plan
2011	Climate Action Plan update
2012	Adoption of Polystyrene Food Ware Ordinance, which applies to all food vendors in the city and prohibits food vendors, including restaurants, delis, cafes, markets, fast-food establishments, vendors at fairs, and food trucks from dispensing prepared food in polystyrene containers labeled at No. 6.
2013	Climate Action Plan update
2013	City Council adopts a 27 percent GHG reduction goal from 2005 levels by 2020
2013	Adoption of reusable bag ordinance, which prohibits distribution of plastic bags and mandates a minimum charge of 25 cents per recycled paper bag or reusable bag provided at retail and grocery checkout. The ordinance applies to all retail stores in the City, and retailers may keep all revenue earned from bag sales.
2014	Climate Action Plan update
2014	Adoption of Environmental Preferable Purchasing Policy
2015	Variable-frequency drive systems installed in Burgess Pool and Belle Haven Pool. An annual GHG reduction of 38 tons is estimated.
2015	New chillers and variable frequency drive system installed at City Hall/Administration Building and Library. Estimated GHG reduction is 121 tons, based on data collected on energy use and

	the efficiency rates generated by the system that was installed.
2015	New energy monitoring system installed at City Hall/Administration Building and Library with an estimated annual GHG reduction of 120 lbs. based on data collected on energy use in each building and the efficiency rates generated system that was installed.
2015	Solar photovoltaic installations completed at the Arrillaga Family Gymnastics Center, Civic Center parking lot (solar carport), Arrillaga Family Gymnasium, Onetta Harris Community Center and City Corporation Yard. The solar installations offset approximately 80 percent of current PG&E energy use at these facilities, they will save over \$461,000 in energy costs over the course of the 20-year power purchase agreements, and they reduce 419 tons of GHG emissions from municipal operations. In addition, the City received over \$71,000 worth of energy rebates from PG&E's California Solar Incentive rebate program. The GHG emissions saved from the clean energy produced is equivalent to removing approximately 80 vehicles from the road annually.
2015	City teamed up with local nonprofits Menlo Spark, Facebook, and GRID Alternatives to provide free solar panels to 10 residential properties in Belle Haven
2015	Climate Action Plan update
2016	City Council approves of Caltrain "Go Pass," which provides City staff annual unlimited-rides on Caltrain.
2016	Four public electric vehicle charging stations installed: Two at the Civic Center and two at Downtown Parking Plaza 2.
2016	In October 2016, Phase 1 of transitioning to renewable energy was completed and all municipal accounts, small- and medium-sized businesses and 20 percent of residential accounts were enrolled in Peninsula Clean Energy's (PEC) "ECO100," which is 100 percent renewable electricity.
2017	Phase 2 of transitioning all Menlo Park energy customers to Peninsula Clean Energy completed in April 2017, providing at least 50 percent renewable energy. The transition also offered residents access to upgrade to ECO100.
2017	Adopted three new zoning districts for the Bayfront (M-2 Area)/ConnectMenlo that include transportation demand management and green and sustainable building requirements.
2017	Adoption of a resolution reaffirming the City of Menlo Park's commitment in combating climate change and supporting the Paris Agreement.
2017	Adoption of resolution for a vision of 100 percent renewable energy powering Menlo Park community by 2030 to meet GHG emissions reduction target of 27 percent by 2020 from 2005 levels.
2017	Adoption of a Community Zero Waste Plan, which established a goal to reduce landfilled materials to 3.1 pounds per person per day and achieve at least 73 percent diversion of franchised waste from landfill disposal by 2035.

## Communitywide Greenhouse Gas Inventory Results Between 2005 and 2013

Using ICLEI's (Local Governments for Sustainability) updated Clean Air and Climate Protection (CACP) Software, the City of Menlo Park was able to complete greenhouse gas (GHG) inventories between 2005 and 2013 using inventory data from 2013. GHG emissions were measured from building energy usage, solid waste sent to the landfill, estimated fuel consumption, and methane produced from a closed landfill (Bedwell Bayfront Park) in Menlo Park.<sup>1</sup> Figure 2 shows the annual trend in communitywide GHG emissions from all sources combined, while Figure 3 shows Menlo Park's inventory for 2013 broken down by source.

**Figure 2 – Communitywide Greenhouse Gas Emission Inventory 2005-2013**



For reference, GHG emissions can also be expressed as carbon dioxide equivalents (CO<sub>2</sub>e). The trends show GHG emissions going up or down slightly each year, based on factors such as the PG&E energy emissions factors, economic growth/decline. The general trend has been a flat line or no growth in GHG emissions, which is generally positive as it shows that local, state, and federal initiatives appear to be working even though there has been some development growth.

<sup>1</sup> Energy data obtained from PG&E. Transportation calculated using total gasoline sales data provided by the City of Menlo Park's Finance Department with an assumption that 95% of sales are fuel sales, and applying the average cost per gallon of gasoline in California from the California Energy Almanac produced by the California Energy Commission. Solid waste data obtained from CalRecycle; and Bayfront Park data was provided by Fortistar, the contracted operator of the landfill. \*Final CO<sub>2</sub>e count being verified by staff, direct access figures are under review as of 7/15/15.

Figure 3 shows that in 2013, the City of Menlo Park’s communitywide emissions totaled 360,427 tons of CO<sub>2</sub>e. Appendix B shows the GHG emissions attributed directly to City of Menlo Park operations, which were a small portion of the City’s overall GHG emissions.

Emissions from electricity and natural gas use in the residential sector totaled 16 percent, followed by commercial customers at 30 percent, and Direct Access energy users at 9 percent. Emissions from transportation (fuel purchases) totaled 40 percent, followed by the closed Bayfront Park landfill at 4 percent and solid waste at 1 percent.

When compared to the City of Menlo Park’s 2012 communitywide inventory (356,521 tons) there was a 1 percent increase in emissions. This 1 percent increase was attributed to the following community trends:

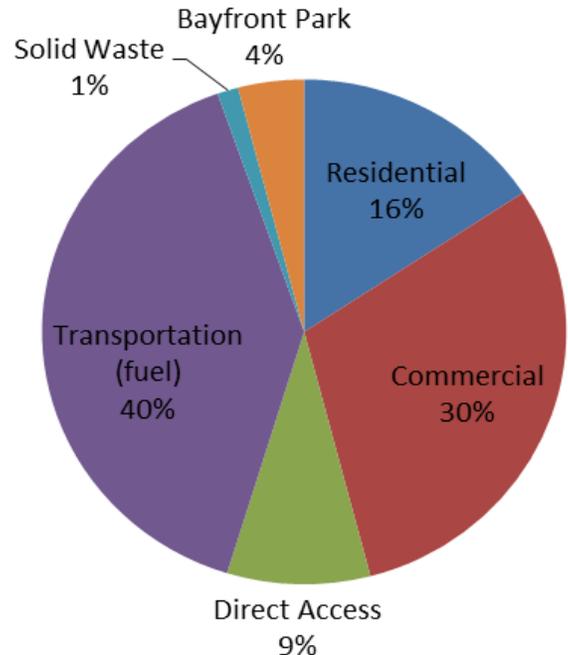
- Increase in energy consumption in both the residential and commercial sectors. For example, there was a 3.4 percent increase in residential energy use and 5.5 percent increase in commercial energy use from 2012-2013.
- Increase in development projects occurring in the City of Menlo Park, which can be seen in the differences in finalized building permits for new construction that went from 78 building permits in 2012 to 117 in 2013, a 50 percent increase over 2012.
- In 2012, Facebook did not occupy the former Sun Microsystems corporate campus as remodeling was occurring at the site. In 2013, Facebook moved 6,500 employees to the former Sun Microsystems campus. Facebook has submitted plans for campus expansion, which will roughly triple its current size by 2020. Rebuilding and infill new construction in the residential and commercial sector are expected to result in continued rise in energy demand in the City of Menlo Park for several years to come.
- PG&E emission factors slightly increased from 0.4440 lbs. CO<sub>2</sub>/kWh to 0.4990 lbs. CO<sub>2</sub>/kWh between 2012 and 2013.

The next section provides an overview of proposed strategies that can help push Menlo Park toward achieving GHG emissions reduction goals.

### Greenhouse gas reduction strategies 2015–2017

The following list of measures in Figure 4 are recommended community and municipal strategies to aid in meeting the City of Menlo Park’s GHG emissions reduction targets, to align with the ConnectMenlo Guiding Principles/General Plan, and to adapt to changing State regulations. Additional measures may be needed at the international, national, statewide and local level to achieve the City’s climate action goals.

**Figure 3 –2013 Menlo Park Communitywide Greenhouse Gas Emissions by Source**



## Fiscal Year 2015-16

- Completed installation of solar photovoltaic panels on four City buildings
- Completed installation of four Electric Vehicle (EV) charging stations at City public parking locations
- Incorporated CAP strategies and GHG emission reductions into General Plan update
- Completed energy efficient upgrades and renewable energy installation at city facilities. Considered Community Choice Energy (CCE) options to gain additional renewable power in Menlo Park's portfolio.
- Provided City staff with a Caltrain "Go Pass," which provides employees with a free unlimited-ride pass on Caltrain between all zones, seven days a way week to increase Caltrain ridership by employees
- Completed evaluation of methane capture and treatment at Bedwell Bayfront Park (Closed Landfill)

## **Greenhouse gas reduction strategies 2017–2020**

### Fiscal Year 2016-17

- Incorporated Zero Net Energy concepts and LEED Silver and Gold requirements into Planning requirements and Building Codes to increase efficiency in new buildings in the ConnectMenlo neighborhood.
- Implemented Energy Star ratings requirement, or other performance tracking methodology, into planning requirements for new buildings in the ConnectMenlo neighborhood.

### Fiscal Year 2017-18

- Consider extending and increasing ConnectMenlo electric vehicle charging station requirements to other areas of the community
- Adopt Community Zero Waste Plan

### Fiscal Year 2018-19

- Electric Vehicle Charging Policy Options and Gap Analysis (EQC Recommendation)
- Integrate green design standards similar to ConnectMenlo in the Downtown Specific Plan Update (EQC Recommendation)
- Revive and update the City's Environmental Preferable Purchasing Policy (EPP) to require new City buildings, facilities, purchases, and vehicles to meet certain minimum environmental attributes
- Develop a Transportation Master Plan to reduce congestion and greenhouse gas emissions
- Development of a Transportation Management Association to reduce driving alone behavior and encourage sustainable forms of transportation (transit, carpool, bicycling, walking, etc.)
- Development of standard operating procedures for implementing the green and sustainable building requirements in the ConnectMenlo area
- Incorporating greenhouse gas reduction and zero waste strategies in the Parks and Recreation Facilities Master Plan
- Community Zero Waste Plan Implementation:
  - Implementation of Zero Waste requirements for ConnectMenlo
  - Modify city owned drinking fountains to support refillable water bottles (full hydration stations)
  - Update the Solid Waste Ordinance and Construction and Demolition Ordinance

## Fiscal Year 2019-20

- Consider additional resiliency strategies for protecting Menlo Park land in the projected Sea Level Rise (SLR) zone
- Robust Climate Action Plan update community engagement program to craft Menlo Park's strategy looking forward to 2040 (depending upon staff capacity and city priorities)
- Implementation of Community Zero Waste Plan:
  - Create Zero Waste Policy for events held within the City
  - Implement zero waste strategies within City facilities

## **Greenhouse gas reduction strategies beyond 2020**

### Beyond 2020 Strategies to Consider

- Consider fuel switching strategies to move residential and commercial energy from natural gas and other fuels to renewable electricity portfolio
- Consider consumption-based community engagement program to reduce GHG impacts of plug load, food, and consumer goods purchased in Menlo Park
- Create and execute a communitywide initiative to convert all City residents to 100 percent renewable energy (PCE's ECO100)
- Complete a Urban Forest Master Plan with the support of the City Arborist and the Environmental Quality Commission to increase urban tree canopy
- Continue implementation of City EPP, residential and commercial water, waste and energy efficiency programs
- Consider large scale renewable energy generation within Menlo Park (such as solar farm on a portion of open space, or large number of solar roof-top installations)
- Encourage local food production through social marketing, education and community garden programs
- Develop bike sharing program
- Develop car sharing program
- Consider developing an energy efficient/renewable energy plan for commercial and residential sector to re-invigorate energy upgrades for existing buildings
- Re-invigorate a social marketing program to increase biking, public transit and walking in the community

This is a recommended timeline only, and it does not capture all of the work that has been done relating to the Climate Action Plan. Still, new policies and programs related to GHG reductions may require a comprehensive cost-benefit analysis. Nearly all policies and programs would require City Council approval before implementation. In addition, the five-year strategy also reflects what can be accomplished with current staff resources

## Status update of City Council-approved strategies

In April 2014, City Council approved of a five-year CAP strategy. The following is the status of projects previously discussed. The projects are listed roughly in the order in which they were originally planned to be implemented. The progress highlights the varied speed in which projects can move forward within the context of the larger City effort.

Below is a list of projects with corresponding status update for each of them. The Climate Action Plan will continue to evolve and adapt to the needs of the community and its residents, and the projects outlined below are a testament to its continued success.

### FY 2011-12 Projects

<b>Participated in Energy Upgrade California</b>	<p>In April 2015, the City of Menlo Park, San Mateo County and Bay Area Regional Energy Network (BayREN) cosponsored a homeowner energy efficiency workshop at the Belle Haven neighborhood center. Over 30 residents attended the workshop. The City continues to conduct outreach regarding energy efficiency opportunities for both residents and businesses, through bill inserts, Facebook, Twitter and Nextdoor social media campaigns. The State Energy Watch program provides up to \$4,500 in rebates to homeowners and \$750 per unit to multifamily dwelling owners that complete energy efficient upgrades. City Council approved a rebate program in 2011 that provided partial payment to residents for completing a home energy audit, and full rebate if any recommended energy efficient upgrades are made. According to San Mateo County Energy Watch reports, Menlo Park had the third highest participation rate in the program for the county behind San Mateo and San Bruno. Approximately 25 projects were completed in Menlo Park. The City maintains a small fund for energy audit rebates; however, the nearby nonprofit agency that offered audits to residents has experienced program changes that have resulted in a reduced number of requests for the funds.</p>
<p>Status Completed 2011-2017</p>	
<b>Establish Climate Action Plan GHG Emissions Reduction Target</b>	<p>City Council adopted a GHG emissions reduction target of 27 percent by 2020 from 2005 level in March 2013.</p>
<p>Status Completed in 2013</p>	
<b>Mandatory Commercial Recycling Ordinance</b>	<p>Statewide mandatory commercial recycling was enacted in 2013 via AB 341 and Statewide mandatory commercial organics recovery was enacted in 2014 via AB 1826, thus removing the perceived need for local ordinances. The South Bay Waste Management Authority (also referred to as SBWMA or RethinkWaste) is taking the lead in publicizing and implementing these laws on behalf of its member agencies, including Menlo Park.</p>
<p>Status Removed</p>	

<b>Energy Performance Contracting and Solar Power Purchase Agreements</b>	<p>Worked with San Mateo County Energy Watch to provide a free energy audit of the City's administration building, and an Energy Management System (EMS) was recommended. The City Council appropriated over \$1 million in the Capital Improvement Program (CIP) for FY 2014-15, and FY 2015-16 for the energy efficiency projects at City facilities, these included variable frequency drives, Energy Monitoring Systems (EMS), and new chillers, which are estimated to save 578 tons of CO<sub>2</sub>e. On October 6, 2015, the City Council accepted the chillers and variable frequency drives as completed by the contractor.</p>
<p>Status</p> <p>Completed in 2016-17</p>	<p>In 2013, City Council also approved participating in the regional renewable energy procurement project (R-REP) to install solar on four city facilities (Arrillaga Gymnasium, Arrillaga Gymnastics Center, Onetta Harris Center and Corporation Yard). Construction of the solar power facilities is complete as of FY2015-16.</p> <ul style="list-style-type: none"> <li>• The combined solar system sizes equal 390.4 kW</li> <li>• The annual solar output is estimated to be 580,889 kWh</li> <li>• Over the course of the 20 year Power Purchase Agreement (PPA), the City is expected to save over \$461,000 in energy costs (when compared to PG&amp;E), with minimal capital outlay by the City</li> <li>• The installations are estimated to reduce the City's Municipal GHG emissions by 419 metric tons annually, which is equivalent to removing 88 passenger cars from the road every year.</li> </ul>
<b>Adopt Environmental Purchasing Policy for City Operations</b>	<p>Implementation and reporting on the results of the policy are still in progress. The City established an Environmental Purchasing Policy (EPP) working group consisting of members from all departments that created the policy, which was adopted in 2014. The committee has not met since adoption due to other city priorities and limited staff resources. Reporting is expected to begin in FY 2015-16.</p>
<p>Status</p> <p>Completed in 2014, being updated (2018)</p>	
<b>Improve Methane Capture at Bedwell Bayfront Park</b>	<p>Delays are due to expected changes in methane production due to the age of the landfill and unexpected changes in regulatory standards for operating the closed landfill. A consultant was hired to study this issue in FY 2013-14 and a revised plan is expected in 2016.</p>
<p>Status</p> <p>Completed in 2016</p>	
<b>Phase II Sustainable Building Standards Development</b>	<p>Green and sustainable building requirements were adopted as part of the updated Bayfront (M-2) land use designations in the ConnectMenlo Land Use Element. The green and sustainable building requirements include waste management and diversion, water and energy efficiency, bird-friendly design, hazard mitigation/sea level topics for new construction.</p>
<p>Status</p> <p>Completed</p>	

FY 2012-13 Projects

<b>Expand Green Business Certification Program</b>	San Mateo County revived the program using a one-year Climate Fellow staff person in FY 2014-15. Menlo Park businesses were certified. City staff helped to publicize the program and the businesses in 2015. Follow up is needed to ensure the County continues the program on continual basis.
Status  Implemented in FY 2014-15, Ongoing	
<b>Maximize Recycling and Composting at all City facilities to a 75 percent measured diversion rate</b>	Staff has provided outreach to City employees on proper use of city recycling programs. Reporting and follow up are pending additional staff time availability.
Status  In Progress, Ongoing	
<b>Consider Adopting Zero Waste Policy</b>	City Council adopted a communitywide zero waste plan. It is currently being implemented.
Status  Adopted in FY 2017-18, Ongoing	
<b>Implement Civic Green Building Policy for New City facilities or major renovations</b>	Due to limited staff resources, this project is on hold until the Environmental Purchasing Policy is fully implemented. In 2014, the City's Environmental Purchasing Policy was adopted; additional staff time is needed to complete department level follow up, training and reporting. Environmental staff is planning to assist the City Hall remodeling team in choosing green building materials whenever possible. If the project qualifies, the City may certify the project under the U.S. Green Building Council's Leadership in Energy and Environmental Design (LEED) O+M (Operations and Management) framework.
Status  On Hold, and may be addressed through environmental purchasing policy update	

FY 2012-13 Projects

<b>Car Sharing and Public Transportation Marketing</b>	These projects were de-emphasized in the CAP to reflect the Transportation and Bicycle Commissions as main drivers of these projects, and reduce duplication of effort.
Status  Hold	

<b>Social Marketing Program for Alternative Transportation</b>	City staff and volunteers implemented a social media campaign for active transportation in 2014 via the transportation division's Facebook and Twitter accounts.
Status	Bicycle infrastructure improvements and campaigns to promote active transportation and commute alternatives to single occupancy vehicles were completed by the Bicycle and Transportation commissions and staff in 2014 and remain ongoing.
Hold	

#### FY 2014-15 Projects

<b>Consider Electric Vehicle Charging Stations</b>	In 2014, the City won a grant, as part of a regional effort, for EV chargers. Appropriate accessible parking locations for the chargers were identified and the City is ran electrical conduit and enhanced electrical service to the selected locations. The cost of the chargers and the installation of the chargers are were covered by the grant, and the City contributed approximately \$30,000 to provide the conduit and electrical service upgrades required. Two electric vehicle charging stations were installed at the Civic Center and two in Parking Plaza 2 in 2016.
Status  Competed in FY 2016-17	
<b>Variable Frequency Drive Systems Installation</b>	In 2015, funds amounting to \$64,272 were used to install variable frequency drive systems at Burgess Park and Belle Haven Park pools. An annual carbon dioxide equivalent reduction of 38 tons is estimated.
Status  Completed FY 2014-15	

#### FY 2015-16 Projects

<b>Capital Improvement Plan</b>	In FY 2015-16, City Council approved \$100,000 annually in the Capital Improvement Plan (CIP) for Climate Action Plan activities (Staff Report #15-083).
Status  Implemented, On Going	
<b>Energy Monitoring Systems</b>	Approved \$375,000 in funding was used to purchase and install new energy monitoring systems at City Hall/Administration Building and Library with an estimated annual carbon dioxide equivalent reduction of 120 lbs. based on data collected on energy use in each building and the efficiency rates generated system that was installed.
Status  Completed FY 2015-16	
<b>Chiller and Variable Frequency Drive Systems Installation</b>	Approved \$606,160 in funding to purchase and install new chillers and variable frequency drive systems at City Hall/Administration Building and Library. Estimated annual carbon dioxide equivalent (CO2e) reduction is 121 tons, based on data collected on energy use and the efficiency rates generated by the system that was installed.
Status  Completed FY 2015-16	

<b>Solar Photovoltaic Installations</b>	The City made four power purchase agreements with Cupertino Electric as part of the Regional Renewable Energy Procurement Project (R-REP) with Alameda County to install solar PV systems on municipal buildings (rooftop and solar carport). In 2015, solar panels were installed on the Arrillaga Family Gymnasium, Arrillaga Family Gymnastics Center, City Corporation Yard and Onetta Harris Community Center. The estimated annual CO2e reduction is 419 tons.
Status  Completed FY 2015-16	
<b>Free Solar Power Panels</b>	In 2015, the City of Menlo Park teamed up with Facebook, Menlo Spark and GRID Alternatives to provide free solar panels to 10 residences in Belle Haven.
Status  Completed in FY 2015-16	
<b>Caltrain “Go Pass”</b>	In 2016, City Council approved of the Caltrain Go Pass program that provides City staff annual unlimited-rides on Caltrain between all zones, seven days a week.
Status  Completed in FY 2015-16	

## Recommended Next Steps of GHG Emission Reduction Strategies

This annual update and status report is intended to complete a high-level analysis of the City’s current GHG emissions and reduction strategies, and identify new strategies for consideration over the next five years.

For FY 2015-16 the City Council Approved \$100,000 annually in the Capital Improvement Plan (CIP) for Climate Action Plan activities. These funds are used to pursue the strategies listed in Figure 4.

The next recommended steps include:

- City Council review the community and municipal GHG inventories for 2013 (above, accomplished).
- Staff to continue to consider and implement strategies identified in the report through the annual Capital Improvement Plan and/or city budget process.
- Environmental Quality Commission to advise staff and City Council regarding updates to the General Plan, which will facilitate GHG reductions in the near and long term.
- Staff to track statewide changes, such as Governor’s Executive Orders, which affect the City’s Climate Action Planning.

## Appendix A – Previous Menlo Park Climate Action Planning City Council Reports

Date	Action
5/1/2007	Adoption of a resolution appropriating \$35,000 from the General Fund Reserve for consultant and staff costs to conduct a Greenhouse Gas Emissions Inventory and authorizing the City Manager to enter into a contract for \$24,100 with ICLEI – Local Governments for Sustainability to conduct the inventory, and adoption of a resolution endorsing the U.S. Mayors Climate Protection Agreement, as modified. (Staff Report #07-075)
3/4/2008	Receipt of updates to the Menlo Park Greenhouse Gas Emissions Inventory Analysis; approval of a resolution authorizing the City Manager to execute a grant agreement in the amount of \$25,000 with the Bay Area Air Quality Management District for developing a Climate Action Plan and to execute a contract in the amount of \$30,600 with ICLEI-Local Governments for Sustainability to develop a Climate Action Plan; and appointment of a councilmember to the Core Team for planning. (Staff Report #08-031)
3/25/2008	Consideration of purchasing offset credit for Greenhouse Gas Emissions from City operations through the PG&E Climate Smart Program (Staff Report #08-039)
3/25/2008	Core Team for drafting the Climate Action Plan (Staff Report #08-040)
4/22/2008	Adopt the Climate Action Assessment Plan Report and authorize use of remaining funds from the Green@Home contract with Acterra to provide additional energy efficiency incentives that would increase Menlo Park’s participation in the regional Energy Upgrade California Program (Staff report #11-128)
4/2/2013	Provide direction on the Climate Action Plan Update and Status Report, new measuring methodology for transportation greenhouse gas emissions, and a community greenhouse reduction target, and provide direction on funding in order to achieve target. (Staff report #13-051)
6/17/2014	Receive annual community greenhouse gas inventory information and approve updated five year Climate Action Plan strategy (Staff report #14-113)
6/17/2014	Approve a resolution authorizing the City Manager to execute an agreement with the Bay Area Climate Collaborative, ABM, and ChargePoint to install four electric vehicle charging stations in Menlo Park with grant funds from the California Energy Commission (Staff report #14-115)

10/07/2014	Approve a resolution making findings necessary to authorize an energy services contract for Power Purchase Agreements (PPA) at the Arrillaga Gymnasium, Arrillaga Gymnastics Center, Onetta Harris Center and City Corporation Yard; authorize the City Attorney to finalize the agreement and authorize the City Manager to execute the agreement; and amend the existing consulting contract with Optony, Inc. to include construction management services (Staff report #14-178)
10/20/2015	Receipt of updates to the Menlo Park Climate Action Plan and Status Report (Staff report #15-156)
6/20/2017	Approve a resolution reaffirming the City's commitment to combat climate change and expressing support for the Paris Agreement (Staff report #17-147)
07/18/2017	Adopt a resolution for a vision of 100 percent renewable energy powering the Menlo Park community by 2030 (Staff report #17-167)

## Appendix B - City of Menlo Park Municipal Operations GHG Emissions

The City of Menlo Park conducted the following Municipal GHG Inventory in 2009, which showed an increase in GHG of 594 tons due to expansion of City infrastructure/facilities and changes in emissions factors. The 2009 Municipal Inventory has not been officially updated; however, the City has tracked information reflecting the municipal energy saving projects conducted with the support of PG&E. The projects, which were completed in 2010 through 2013, provide GHG emissions reduction of 100 tons (a number of additional projects were conducted; however, they were not counted in this calculation, because the year of completion has not been established).

In addition, the City Council has approved the following municipal energy-efficiency related projects, which are in progress, and are expected to save an additional amount of more than 578 tons of GHG:

October 2014:

- Project: Approved \$64,272 in funding to install variable frequency drive systems at the Burgess Park and Belle Haven Park pools.

Estimated annual CO<sub>2</sub>e reduction: 38 tons Status: Completed FY 2014-15

- Project: Approved four Power Purchase Agreements (PPA) with Cupertino Electric as part of the Regional Renewable Energy Procurement Project (R-REP) with Alameda County to install solar PV systems on municipal buildings (rooftop and solar carport). Solar will be installed on the Arrillaga Family Gymnasium, Arrillaga Family Gymnastics Center, City Corporation Yard and Onetta Harris Community Center.

Estimated annual CO<sub>2</sub>e reduction: 419 tons. Status: Completed November 2015.

April 2015 (For the City's Administrative Building and Library):

- Project: Approved \$375,000 in funding to purchase a new Energy Monitoring System

Estimated annual CO<sub>2</sub>e reduction: 120 lbs. Status: Completed FY 2015-16

- Project: Approved \$606,160 in funding to purchase new chillers and variable frequency drives.

Estimated annual CO<sub>2</sub>e reduction: 121 tons. Status: Completed October 6, 2015

Emissions from the City’s municipal operations are embedded within the communitywide totals. In the year 2009, the City of Menlo Park’s municipal operations generated 2,889 tons of CO<sub>2</sub>e, which constitutes 0.004 percent of the community’s total greenhouse gas emissions. This is a 25 percent increase compared to 2005 total emissions (2,305 tons).

Electricity and natural gas use in the City’s buildings contributed to 47 percent, the vehicle fleet contributed 19 percent of this total and the remainder of CO<sub>2</sub>e came from streetlights, waste and the electricity for pumping water and stormwater.

**Municipal Buildings** - Electricity and natural gas use in the City’s buildings contributed to 47 percent of CO<sub>2</sub>e from municipal operations. This is up 14 percent compared to City buildings contributing 33 percent of CO<sub>2</sub>e toward municipal operations in 2005. This increase can be attributed to a number of reasons, including but not limited to: PG&E’s greenhouse gas CO<sub>2</sub> emission rates for electricity increased from kWh x (0.489 lbs. /kWh / 2,204.6 lbs. /metric ton) in 2005 to kWh x (0.641 lbs. /kWh / 2,204.6 lbs. /metric ton) in 2009. The increase in emissions rates means that each kWh consumed in 2009 contributed approximately 31.1 percent more CO<sub>2</sub> than in 2005. Another reason for the increase in fuel and electricity consumption from municipal buildings is the construction of new buildings from 2005-2009.

**Vehicle Fleet** - In 2009, Menlo Park’s municipal vehicle fleet was responsible for the second largest share of overall municipal emissions at 19 percent. Compared to 2005’s 28.4 percent, this is a 9.4 percent reduction. Menlo Park’s vehicle fleet consists of analyzing the fuel consumed by City vehicles and equipment, such as police vehicles, and the tractors used for landscaping.

**Streetlights** - The energy consumed by the City’s streetlights accounted for 13 percent of municipal operations greenhouse gas emissions in 2009. This analysis included the energy consumed by streetlights, traffic signals, park lighting, decorative lights and parking lot lights. Compared to 2005’s 11.9 percent, this is a 1.1 percent increase. This increase can be attributed to the addition of more streetlights, including signal cameras added throughout the City in 2008.

**Water/Sewage** - The emissions resulting from the energy used to pump water and wastewater remained the same at 5 percent in 2005 and 2009. This analysis excludes pumping and treatment of wastewater that is carried out by the West Bay Sanitary District (WBSD), East Palo Alto Sanitary District (EPASD), and the South Bay Side System Authority (SBSA).

**Waste** - In 2009, the relative contribution of landfilled waste from municipal operations to greenhouse gas emissions is 16 percent. Compared to landfilled waste contributing 20.8 percent to municipal operations in 2005, there is a 4.8 percent decrease. This decrease can be attributed to the reduction of solid waste sent to the landfill from year to year.

## Municipal Operations Greenhouse Gas Emissions Inventory 2009 By Source (2,889 tons CO<sub>2</sub>e)

