CITY OF CUPERTINO

2017
Climate Action Plan Progress Report & GHG Inventory Update

Prepared by City of Cupertino,
Sustainability Division

2017 CLIMATE ACTION PROGRESS HIGHLIGHTS

Projects and Policies

City received **gold-level designation from SolSmart**, a program funded by the U.S. Department of Energy SunShot Initiative, for adopting programs and practices that make it faster, easier, and cheaper for residents and businesses to go solar

Waste Policy adopted by City Council in December 2017

City awarded two **Beacon Spotlight Awards** by the Institute for Local Government: Platinum Level Award for municipal emissions reduction and Gold Level Award for community-wide emissions reduction

Estimated 449,606 square feet of landscaped area to date covered by **Water Efficient Landscape Ordinance**

Civic Center Demonstration Garden completed, converting 19,000 square feet of turf and ivy to drought tolerant plants, estimated to save over 400,000 gallons of water per year

Cupertino Certified Green Businesses saved **5,892 MT CO2 emissions and over 19 million pounds of waste diverted** from landfill to date

City of Cupertino recognized by League of American Bicyclists as a **Gold Level Bicycle Friendly Business**

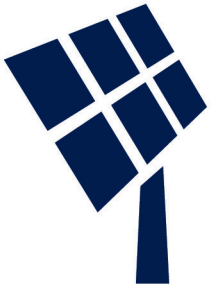
Pedestrian Transportation Plan adopted by City Council in February 2017

2017 CLIMATE ACTION PROGRESS HIGHLIGHTS

CAP Goals Achieved

Silicon Valley Clean Energy Launched

in 2017, offering carbon free electricity to Cupertino residents and businesses (Measure C-E-7)



2.7 MW of community solar capacity

installed since 2015, exceeding 2020 goal of 1.5 MW (Measure C-E-5)

25% reduction — Per Capita Water Usage

community-wide compared to 2010 baseline, exceeding 2020 goal of 20% reduction (Measure C-W-1)

29% reduction — Municipal Water Usage

community-wide compared to 2008 baseline, exceeding 2020 goal of 20% reduction (Measure C-W-1)

100% of municipal electricity usage FROM 100% renewable sources

Achieved via Silicon Valley Clean Energy's GreenPrime option (Measure M-F-1).

25% reduction — Municipal Building Electricity Usage

compared to 2010 baseline, exceeding 2020 goal of 14.5% reduction. (Measure M-F-3)

20% reduction — Municipal Natural Gas Usage

compared to 2010 baseline, exceeding 2020 goal of 14.3% reduction (Measure M-F-3)

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INTRODUCTION

This report, prepared by the Sustainability Division within the Office of the City Manager, summarizes annual progress toward implementation priorities related to energy, water, and transportation measures set forth in the Climate Action Plan (CAP).

As directed by the city's General Plan Sustainability Element, the CAP identifies emissions reduction strategies that are informed by goals, values, and priorities of the Cupertino community. The CAP was unanimously adopted by City Council in January 2015. It contains over 225 measures to help reach a community-wide greenhouse gas (GHG) reduction goal of 15% below 2010 levels by 2020, which approximates a return to 1990 levels. The CAP provides a set of strategies intended to guide GHG emissions reduction efforts both in the community and within the city's municipal operations.

This report benchmarks and tracks the status and progress made on the near-term measures community-wide and in municipal operations in calendar year 2017. If data is not available for 2017, it is provided for the most recent year available. Tracking progress over time will help identify if adjustments to the CAP are needed to reach Cupertino's near-term GHG emissions reduction and sustainability goals for the year 2020 and beyond. Over time, the medium and long-term measures will be added to this annual progress report.

This progress report is organized according to the measures outlined in the CAP, as follows:

Reduce Energy Use / Improve Facilities

Encourage Alternative Transportation / Convert Vehicle Fleet

Conserve Potable Water

Reduce Solid Waste

Expand Green Infrastructure

CO-BENEFITS

Co-benefits describe desirable outcomes beyond GHG emissions reductions and are included in the measures outlined in this report. Below are the co-benefit icons that illustrate these desirable outcomes:


Improves air quality


Reduces energy use


Promotes regional smart growth


Reduces traffic congestion


Reduces water use;
Extends community water supply


Improves water quality;
Reduces storm water run-off


Improves local energy independence


Conserves natural resources


Regional Implementation Opportunities


Increases natural habitat


Reduces heat island effect


Improves public health


Creates local jobs


Reduces waste;
Extends landfill lifespan


Provides long-term savings to residents, businesses, and local governments


Raises community awareness

Reduces landfill methane

2017 NEAR-TERM MEASURE STATUS AND METRICS SUMMARY

Outlined below is a summary of the implementation status of the Near-Term CAP Measures.

Community Measures

Status	Number	Measure Name
Ongoing	2035-1	Long-Term Target Monitoring
Ongoing	C-E-1	Energy Use & Data Analysis
Ongoing	C-E-2	Retrofit Financing- PACE
In Progress	C-E-3	Home and Commercial Building Retrofit Outreach
Ongoing	C-E-5	Community Wide Solar Photovoltaic Development
Complete	C-E-7	Community Choice Energy Option
Ongoing	C-T-1	Bicycle & Pedestrian Environment Enhancements
Ongoing	C-T-2	Bikeshare Program
Ongoing	C-T-3	Transportation Demand Management
Ongoing	C-T-5	Transit Priority
Ongoing	C-T-6	Transit-Oriented Development
Ongoing	C-T-7	Community-Wide Alternative Fuel Vehicles
Ongoing	C-W-1	SB-X7-7 Water Reduction
Ongoing	C-W-2	Recycled Water Irrigation Program
Ongoing	C-SW-1	Zero Waste Goal
Ongoing	C-SW-2	Food Scrap and Compostable Paper Diversion
Ongoing	C-SW-3	Construction & Demolition Waste Diversion Program
Ongoing	C-G-1	Urban Forest Program

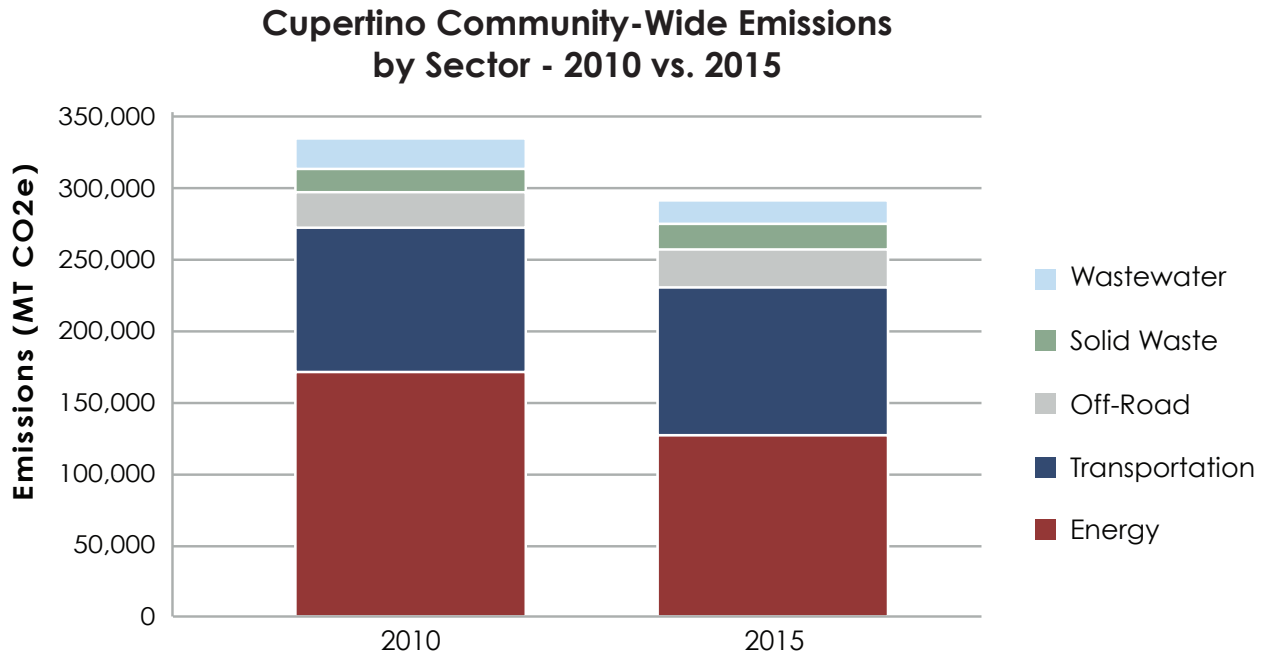
Municipal Measures

Status	Number	Measure Name
Complete	M-F-1	Sustainable Energy Portfolio
Ongoing	M-F-2	Renewable or Low-Carbon Electricity Generation
In Progress	M-F-3	Advance Energy Management Activities
Ongoing	M-F-4	Grow Existing Building Energy Retrofit Efforts
Ongoing	M-F-6	Complete Citywide Public Realm Lighting Efficiency
Ongoing	M-F-7	Conserve Water Through Efficient Landscaping
Ongoing	M-VF-1	Low Emission and Alternative Fuel Vehicles
Ongoing	M-VF-2	Increase Alternative Fuel Infrastructure
In Progress	M-VF-3	Promote Behavior / Fuel Optimization
Ongoing	M-SW-1	Waste Reduction
Ongoing	M-SW-2	Food Scrap and Compostable Paper Diversion

- **Complete** – All required implementation steps have been completed
- **Ongoing** – All required initial steps have been completed, but component is still actively being implemented
- **In Progress** – Implementation steps are still being developed and pursued
- **On Hold** – Implementation has not proceeded due to a programmatic barrier or is no longer applicable based on the original implementation plan

Greenhouse Gas Inventory Update

In 2017, the City completed a greenhouse gas inventory update report[1] for the year 2015. **Community-wide emissions reduced by 13%**, comparing 2015 to the baseline of 2010, as depicted in the chart below. The report projects that with the CAP implementation measures in place, Cupertino is on track to meet its emissions reduction target of 15% below 2010 emissions by 2020.



The City was recognized by the Institute for Local Government with two Beacon Spotlight Awards for reducing emissions from 2015 to 2010: Platinum Level Award for municipal emissions reduction and Gold Level Award for community-wide emissions reduction.

1 See http://www.cupertino.org/our-city/departments/environment-sustainability/climate-action for the 2015 GHG Inventory Update report.

Summary CAP Report Metrics

Below is a brief summary of CAP progress tracking measures. All data is from 2017 unless noted otherwise.

Community Measures

	Measure Name	Metric
C-E-1	**Energy Use & Data Analysis**	
	Community-wide electricity usage	413,021,125 kWh
	Community-wide natural gas usage	14,440,024 therms
C-E-2	**Retrofit Financing**	
	PACE projects financed (2014-2017)	10 projects $286,273 financed
	BayREN residential programs energy savings (Oct 2013 to Dec 2017)	264,639 kWh 15,887 therms
	Commercial retrofit program energy savings (2016)	156,288 kWh
C-E-3	**Home and Commercial Building Retrofit Outreach**	
	GreenBiz program savings (2010 – 2017)	5,892 MT CO2 emissions 3,693,454 kWh electricity 10,639,921 gal. water 19,557,581 lbs. waste
C-E-5	**Community Wide Solar Photovoltaic Development**	
	Solar PV systems installed (excluding Apple 2 Campus)	1.03 MW solar capacity
	Percent increase in residential solar permits (comparing 2017 to 2010)	119% increase
	Apple 2 Campus estimated capacity	26,700 MWh / year
C-T-7	**Community-Wide Alternative Fuel Vehicles**	
	# of hybrids and electric vehicles owned by residents (2016)	3,309 hybrids 1,466 plug-in electric vehicles
	# charging stations installed (home and public)	43 charging stations
C-W-1	**SB-X7-7 Water Reduction**	
	Per capita water usage reduction (comparing 2017 to 2010)	25% reduction
	Landscape rebate program	37 rebates 49,525 sq. ft. converted 990,500 gal. est. water savings
	Water Efficient Landscape Ordinance coverage (2016 - 2017)	449,606 sq. ft. est. landscape area
C-SW-1	**Zero Waste Goal**	
	Diversion rate (2016)	56% - population 72% - employment
C-SW-3	**Construction & Demolition Waste Diversion Program**	
	Diversion of construction and demolition materials	55% diversion
C-G-1	**Urban Forest Program**	
	Number of new trees planted	203 new trees

Municipal Measures

	Measure Name	Metric
M-F-1	**Sustainable Energy Portfolio**	
	Percent of municipal electricity usage coming from renewable sources	100% renewable sources
M-F-2	**Renewable or Low-Carbon Electricity Generation**	
	Generation of solar PV at Service Center	150,448 kWh
	Generation of solar PV at Environmental Education Center (Jan 2017 – Jan 2018)	9,321 kWh
M-F-3	**Advance Energy Management Activities**	
	Reduction in municipal building electricity usage (comparing 2017 to 2010)	25% reduction
	Reduction in municipal natural gas usage (comparing 2017 to 2010)	20% reduction
M-F-7	**Conserve Water Through Efficient Landscaping**	
	Municipal water usage reduction (comparing 2017 to 2008)	29% reduction
M-VF-1	**Low Emission and Alternative Fuel Vehicles**	
	Percent of vehicle fleet comprised of zero or low emissions vehicles (plug-in electric and all electric)	14% clean vehicles
M-SW-1	**Waste Reduction**	
	Paper savings from new electronic invoice process	16,800 pieces of paper / year

Long-Term Target Monitoring

MEASURE 2035-1 | Long-Term Target Monitoring

Goal:	Regularly monitor progress made towards City's 2035 and 2050 targets through inventory updates and review of implementation success related to statewide actions.
Progress Indicators:	Supporting Measure – Not Quantified

Status	Action
● Ongoing	A. Prepare emissions inventory updates on 2-3 year cycle
● Ongoing	B. Develop process for updating statewide reduction estimates as part of future inventory updates to show actual BAU and ABAU emissions levels achieved
● Ongoing	C. If discrepancy between actual reduction results and estimated levels due to fewer reductions from statewide actions, strengthen related local CAP measures to close reductions gap
● Ongoing	D. Incorporate updated BAU and ABAU inventories into regular CAP implementation progress reports

Implementation Update:

In June 2017, Sustainability Division presented the 2015 community-wide and municipal greenhouse gas inventory update to City Council. The community-wide inventory included updated BAU and ABAU projections.

As part of the City's commitment to the Compact of Mayors, the City publically reported emissions data and climate action progress via the reporting platform CDP Cities.

COMMUNITY MEASURES

Detailed below are each of the city's near-term community measures and status updates, organized according to the reduction strategy categories outlined above (reduce energy, encourage alternative transportation, conserve potable water, reduce solid waste, and expand green infrastructure).

Reduce Energy Use Community-wide

MEASURE C-E-1 | Energy Use Data and Analysis

Goal	Increase resident and building owner/tenant/operator knowledge about how, when, and where building energy is used.
Co-Benefits	
Tracking Mechanism	Identify energy savings from participation in energy use data analytics programs.
Progress Indicators	Participation rates in energy analytics program: • 10% of single family units (1,500 homes) and 5% of multi-family units (300 units) participates in advanced analytics program; 775,000 kWh/yr. saved • 10% of nonresidential square footage in 2010 baseline year (1.27 million sq. ft.) participates in advanced analytics program; 2,200,000 kWh/yr. saved

Status	Action
● Ongoing	A. Work with PG&E to facilitate aggressive implementation of PG&E's Home and Business Area Network (HAN) program within Cupertino

Implementation Update:

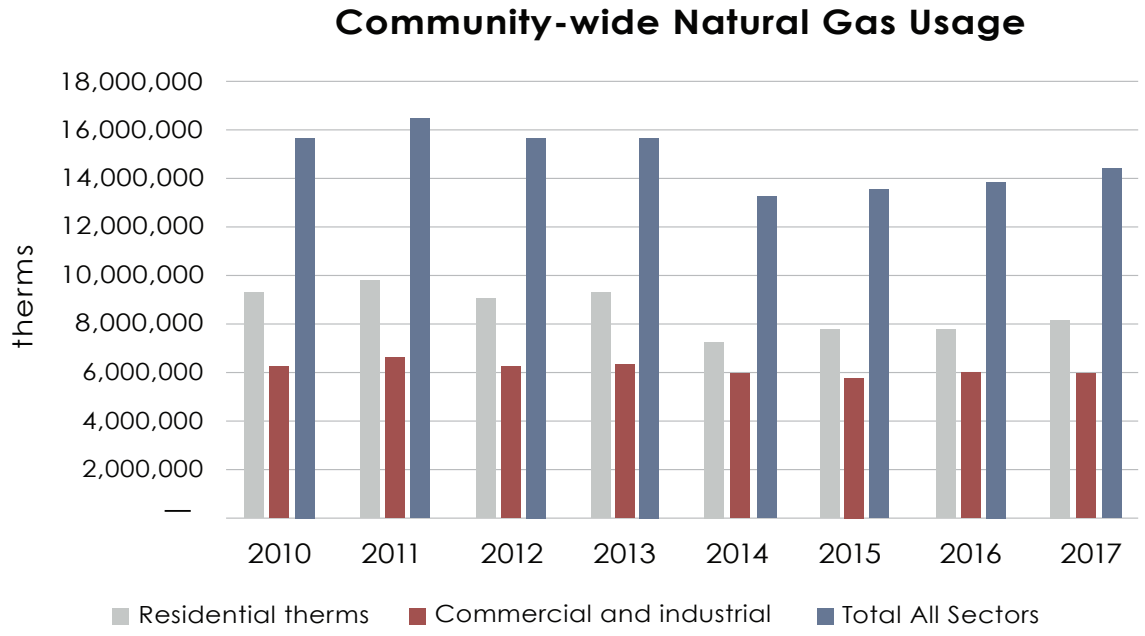
The City is currently co-promoting PG&E's HomeIntel Smart Audit program to Cupertino residents. Launched in spring 2018, HomeIntel is a free online energy audit for PG&E and Silicon Valley Clean Energy customers. The City is working closely with Silicon Valley Clean Energy to develop effective electrification and energy savings programs and initiatives to benefit Cupertino customers.

Natural gas usage

Natural gas usage in the community in 2017 is estimated at 14,440,024 therms[2], a 9% reduction compared to the

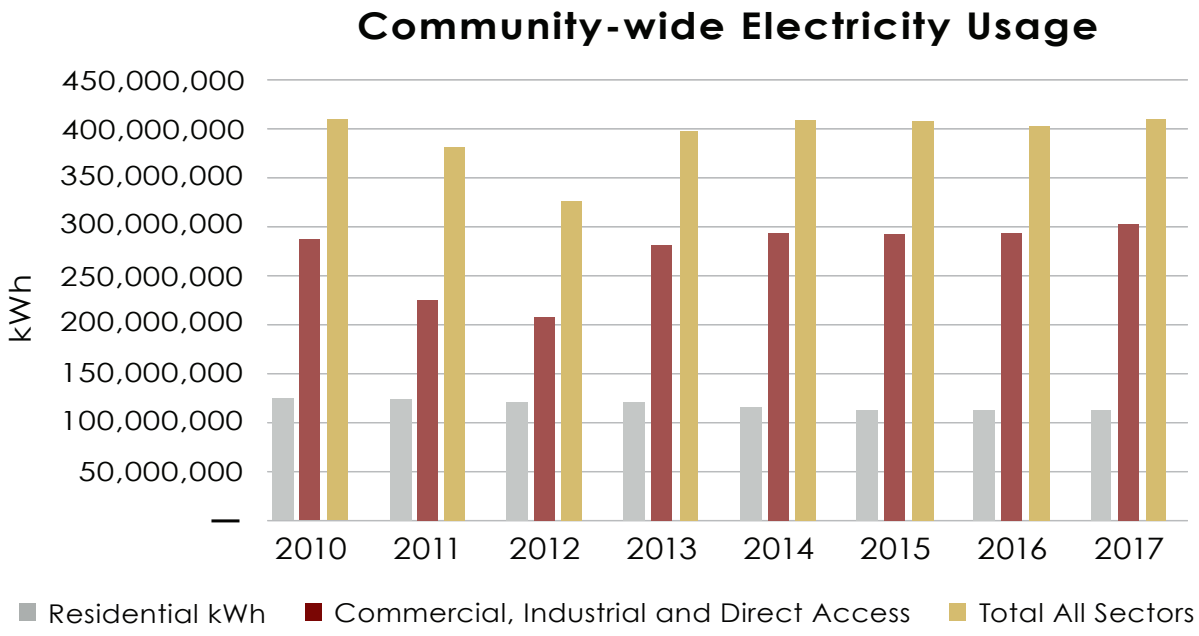
2. Energy data is from PG&E Green Communities 2017 dataset; electricity data for 2017 was provided by Silicon Valley Clean Energy. Discrepancies in data exist in both natural gas and electricity data provided by PG&E. Some commercial and industrial natural gas data for 2017 was excluded from the dataset due to privacy reasons related to the "15/15 Rule"; therefore, 2016 natural gas data for the commercial and industrial sectors was used as a proxy for 2017 data for the following subsectors: Commercial & Industrial Nongovernment therms.

2010 baseline. Below is a breakdown of natural gas usage comparing residential and nonresidential sectors from 2010 to 2017:



Electricity usage

Community-wide electricity usage in 2017 was 413,021,125 kWh. Comparison to the 2010 baseline is not possible, as some direct access data was omitted from the PG&E dataset for 2010, 2011, and 2012 which could significantly affect the total figures for these years. Below is a breakdown of electricity usage comparing residential and nonresidential sectors from 2010 to 2017:



Discrepancies exist as well with the Direct Access electricity data; Direct Access data was not provided for nongovernmental customers for years 2010-2012.

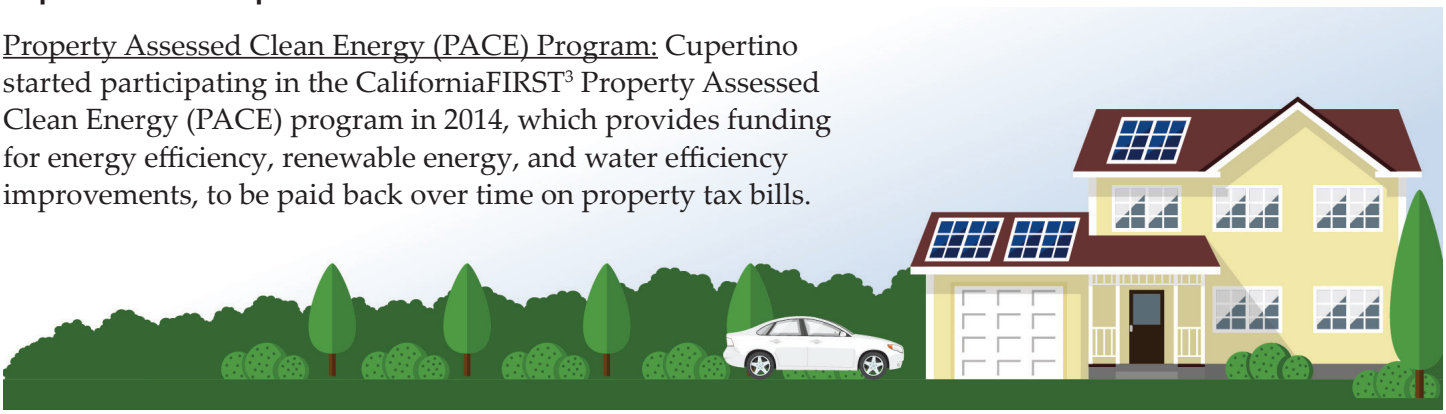
MEASURE C-E-2 | Retrofit Financing

Goal	Promote existing and support development of new private financing options for home and commercial building retrofits and renewable energy development.
Co-Benefits	
Tracking Mechanism	Calculate energy savings from existing building retrofits
Progress Indicators	Upgrade and retrofit residential and commercial buildings throughout the city: • 750 single-family houses install a comprehensive retrofit package; • 450 single-family houses install a basic retrofit package; • 300 multi-family units receive a comprehensive retrofit package; • 175 multi-family units receive a basic retrofit package; • 875,000 square feet of nonresidential space installs a comprehensive retrofit package

Status	Action
● Ongoing	A. Continue to participate in CaliforniaFIRST to make PACE financing available to commercial, industrial, multi-family residential (5+ units), and non-profit-owned buildings
● Complete	B. Continue to participate in effort with other Santa Clara County local governments to establish countywide PACE financing district available for residential property owners (could also provide another source of commercial financing to compliment CaliforniaFIRST program)
● Ongoing	D. Finalize GreenBiz Financing Guide and create residential-focused guide and companion website to direct interested parties to utility, public agency, and local lending institution resources to advance energy efficiency and water conservation measures

Implementation Update:

Property Assessed Clean Energy (PACE) Program: Cupertino started participating in the CaliforniaFIRST[3] Property Assessed Clean Energy (PACE) program in 2014, which provides funding for energy efficiency, renewable energy, and water efficiency improvements, to be paid back over time on property tax bills.



3. For CaliforniaFIRST cumulative totals, amount financed & kW solar capacity installed are less than reported last year due to an over reporting error, which CaliforniaFIRST has since corrected in their system.

In February 2017, Cupertino City Council approved resolutions to sign onto the Association of Bay Area Governments (ABAG) Regional Collaborative Services Agreement and allow additional PACE programs. To date only one provider has completed jobs in Cupertino:

PACE Provider	Number of projects funded	Amount financed	Annual Energy Savings	Solar capacity installed	Timeframe
CaliforniaFIRST	1	$46,611	N/A	8 kW	2017
	10	$286,273	8,303 kWh; 605 therms	32 kW	Aug 2014 through Dec 2017

Regional Energy Efficiency Programs: Below are updates from the four regional programs serving Cupertino residents and businesses with energy efficiency incentives:

Program Name and Description	Type	Number of Projects	Energy Savings	Timeframe
Bay Area Regional Energy Network (BayREN) Home Upgrade Program: Basic upgrades. Provides incentives up to $3,000.	Single family Residential	63 projects completed, $98,950 in incentives	264,639 kWh; 15,887 therms Combined energy savings for single family and multi-family	October 2013 to December 2017
BayREN Multifamily Building Enhancement Program: Comprehensive retrofit upgrades and to save 10% or more of a building's energy use. Provides $750 per unit in rebates.	Multi-family Residential	None for 2017 311 units completed in 2014; $233,250 in incentives		
PG&E Advanced Home Upgrade: Advanced upgrades. Provides incentives up to $5,500	Single family Residential	69 projects completed	Data not provided	Cumulative to October 2016
Silicon Valley Energy Watch Commercial retrofit programs through a partnership with Ecology Action, a nonprofit organization.	Commercial	10 projects completed	156,288 kWh annual savings; 12.20 kW total demand savings	Calendar year 2015 to 2016

MEASURE C-E-3 | Home and Commercial Building Retrofit Outreach

Goal	Develop aggressive outreach program to drive voluntary participation in energy- and water-efficiency retrofits.
Co-Benefits	
Progress Indicators	*Supporting Measure - progress indicators and goals not provided*

Status	Action
In Progress	A. Partner with Housing Division to design a low- to moderate-income targeted energy and water conservation pilot program
In Progress	B. Partner with local Realtor community to develop and implement a building owner outreach campaign that targets new building owners to provide information on available building energy efficiency audit and retrofit programs, as well as locally-available financing options (including PACE financing)

Implementation Update:

Community Based Social Marketing (CBSM) pilot: In 2017, the City engaged a consultant to implement a CBSM pilot project with the goal of designing a behavior change program to engage residents in energy and / or water savings. The project has completed the initial research phase and established a list of behaviors and sustainability messaging to test through the CBSM pilot phase. The pilot is scheduled to be completed in the summer of 2018.

LEED Projects in Cupertino: Leadership in Energy and Environmental Design (LEED) is a third-party certification program of high performance green buildings and a threshold set through the City's Green Building Ordinance for numerous project types. The City tracks LEED buildings constructed and operating within Cupertino via the U.S. Green Building Council's website.

Current LEED Project counts:

Platinum	
Homes	1
New Construction	2
Total:	**3**

Gold	
Commercial Interiors	1
Core and Shell	1
Total:	**2**

Silver	
Core and Shell	1
New Construction	2
Total:	**3**

Certified	
Commercial Interiors	2
New Construction	3
Total:	**5**

In Progress			
Commercial Interiors	2	Mid-rise	1
Core and Shell	1	New Construction	2
Existing Buildings	3	Retail - New Construction	1
Homes	2		
		Total:	**12**

Grand Total:

25

Total LEED Projects

The City's GreenBiz Program shepherds Cupertino small to mid-sized businesses through the statewide California Green Business Program. As the chart below reflects, since 2010 GreenBiz has helped 59 businesses achieve Green Business certification saving over 5,000 metric tons of carbon dioxide cumulatively. Please note that some of the kWh energy savings reported in the chart below might also be reported in Measure C-E-2 under the Silicon Valley Energy Watch incentive program, as some of the green businesses utilize these incentives.

California Green Business Program Metrics for Cupertino

	2010	2011	2012	2013	2014	2015	2016	2017	Total Savings to Date
# new businesses certified	9	5	13	4	3	5	19	1	--
GHG Emissions Saved (MT CO2)	70	88	602	504	592	626	689	2,720	**5,892 MT/CO2**
Energy Saved (kWh)	149,758	177,605	518,850	563,272	581,183	678,129	743,515	281,142	**3,693,454 kWh**
Water Saved (gallons)	567,133	815,564	1,544,086	1,691,466	1,716,193	1,871,258	2,000,400	433,821	**10,639,921 gallons**
Solid Waste Diverted from Landfill (lbs.)	928	2,165	618,102	3,368,120	3,411,388	3,412,625	3,518,048	5,226,205	**19,557,581 lbs**

MEASURE C-E-4 | Energy Assurance & Resiliency Plan

Goal: Develop a long-term community-wide energy conservation plan that considers future opportunities to influence building energy efficiency through additional or enhanced building regulations. *This is a long-term measure with implementation to occur by 2035 or beyond. As the City is working to prioritize near-term (2020) goals in this early stage of implementation, there is no progress to report.*

MEASURE C-E-5 | Community Wide Solar Photovoltaic Development

Goal	Encourage voluntary community-wide solar photovoltaic development through regulatory barrier reduction and public outreach campaigns.
Co-Benefits	
Tracking Mechanism	Track community-wide installed PV capacity and electricity generation potential.
Progress Indicators	• 1.5 MW of new solar PV capacity installed community-wide (residential and nonresidential combined) • Apple Campus 2 solar PV systems installed to generate 15 million kWh/yr.

Status	Action
Ongoing	D. Provide general information on City website describing various solar PV financing / installation options
Complete	F. Work with PG&E to share information about PG&E's Community Solar program
In Progress	L. Instruct building and plan check officials to provide information to customers on the benefits of pre-wiring / pre-plumbing for solar applications at the time of new construction or substantial retrofits, including lower up-front costs as compared to retrofitting buildings in the future

Implementation Update:

GreenPrime 100% Renewable Electricity Option: In July 2017, Silicon Valley Clean Energy (SVCE) became the default electricity provider for all Cupertino residents and businesses. SVCE provides the option to upgrade to its GreenPrime service for a small fee. GreenPrime is similar to PG&E's Community Solar Choice program, in that it provides electricity from 100% renewable energy, including solar power, from the grid.

Removing regulatory barriers to solar PV development: The City received a gold-level designation from SolSmart, a program funded by the U.S. Department of Energy SunShot Initiative. As a SolSmart gold designee, the City received national recognition for adopting programs and practices that make it faster, easier, and cheaper for residents and businesses to go solar:

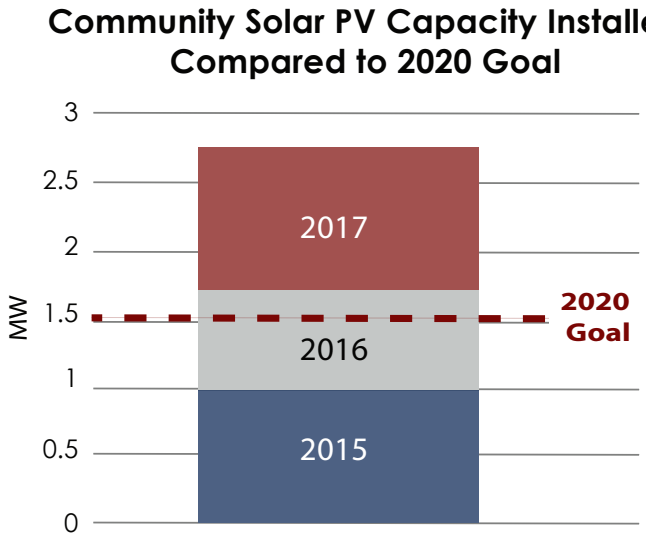
- Cupertino has streamlined its permitting process for small solar power systems;
- Matched its permit fees to reflect national best practices ($400 or less for residential permits);
- Coordinated with regional organizations and local governments to engage utilities, communicating community goals for solar, net metering and interconnection processes; and
- Installed solar power systems at the City's Service Center and Environmental Education Center.

Education and outreach: The City provides information its website on PACE financing for solar panels and

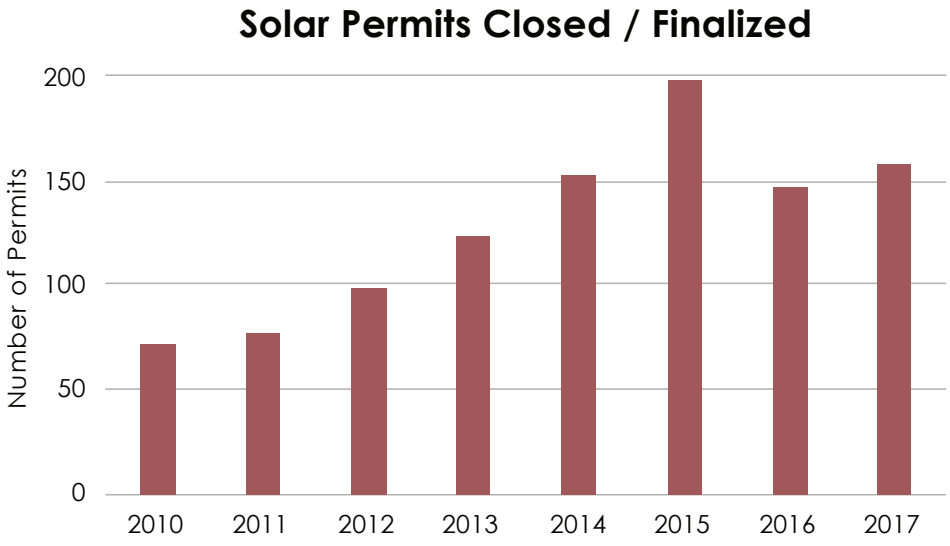
SVCE's Net Energy Metering program for solar customers. In the summer of 2017, the City signed on as an outreach partner to promote Bay Area SunShares, a group-purchasing program for solar panels and electric vehicles administered by the Business Council on Climate Change. Staff promoted SunShares via the City website, flier distribution at community centers and events, and a special presentation for City employees.

New Community Solar PV Capacity

In 2017 there were 158 solar PV permits finalized to install an estimated 1.03 megawatts (MW) of solar capacity. Since the beginning of 2015, there has been an estimated 2.7 MW of solar capacity installed in Cupertino. Below is a snapshot of progress toward the CAP goal for new PV capacity. The data below does not include the solar project at the Apple Campus 2. As the chart shows, Cupertino is exceeding its 2020 solar installation goal for the community:



Solar PV installations have steadily increased in the community since 2010, as reflected in the chart below:



Apple Campus 2 Solar PV Update: The solar PV system at Apple Campus 2 became operational this year; it is estimated to produce 26.7 million kWh per year of electricity. This amount will vary year to year.

MEASURE C-E-6 | Community-Wide Solar Hot Water Development

Goal	Encourage communitywide solar hot water development through regulatory barrier reduction and public outreach campaigns.

This is a long-term measure with implementation to occur by 2035 or beyond. As the City is working to prioritize near-term (2020) goals in this early stage of implementation, there is no progress to report.

MEASURE C-E-7 | Community Choice Energy Option

Goal	Partner with other Santa Clara County jurisdictions to evaluate the development of a regional CCE option, including identification of the geographic scope, potential costs to participating jurisdictions and residents, and potential liabilities.
Co-Benefits	
Tracking Mechanism	Track community participation in clean-electricity purchasing programs. - Supporting Measure.
Progress Indicators	The CAP did not identify progress indicators because this is a long term measure. Staff will be tracking impact of SVCE on Cupertino emissions and its electricity profile.

Status	Action
● Complete	A. Work with other Santa Clara County partners to conduct feasibility study of developing multi-jurisdiction CCE program.
● Complete	B. If study determines CCE to be feasible and advantageous to Cupertino residents and businesses, work with Santa Clara County partners to prepare necessary additional study reports, informational materials, and any other supporting research and/or documents to help pursue development of CCA program.

Implementation Update:

Silicon Valley Clean Energy (SVCE) officially launched on April 3, 2017 and completed enrollment of customers as of January 2018. Cupertino residents and business customers are enrolled in SVCE's carbon free electricity services at lower rates than PG&E's service. The opt-out rate for SVCE is now 3% over the entire SVCE service territory.

SVCE offers two services:

- GreenStart is the default option: carbon-free, 50% renewable sources (i.e. solar and wind) and 50% large hydropower.
- GreenPrime offers 100% renewable energy for a premium.

As the electricity sector makes up 19% of Cupertino's greenhouse gas emissions, the transition to carbon-free electricity will have a significant impact on our community carbon footprint, which will be reflected in future greenhouse gas inventories.

Reduce Energy Use Community-wide

MEASURE C-T-1 | Bicycle & Pedestrian Environment Enhancements

Goal	Continue to encourage multi-modal transportation, including walking and biking, through safety and comfort enhancements in the bicycle and pedestrian environment.
Co-Benefits	
Progress Indicators	*Supporting Measure - progress indicators and goals not provided*

Status	Action
Complete	A. Update City's Bicycle and Pedestrian Transportation Plans to reflect current bicycle and pedestrian safety and access needs; prioritize new projects identified
Ongoing	B. Partner with local bicycle advocacy groups / clubs and neighborhood groups to identify dangerous bicycle or pedestrian conditions, and develop strategies to address problem areas
Ongoing	C. Identify grant-funds to pursue Plan-recommended education, design, and/or construction projects

Implementation Update:

Transportation Division staff has been busy working towards implementing the projects recommended in the 2016 Bicycle Transportation Plan, for which the City Council has dedicated over $7 million in funding for the 2017/18 fiscal year. The most significant of these projects include a network of separated (Class IV) bicycle lanes along McClellan Road and Stevens Creek Blvd, Class III bike boulevards along selected local streets, and off-street bike/ped trails along the UPRR, I-280, and Regnart Creek corridors.

McClellan Road and Stevens Creek Blvd Separated Bike Lanes: Staff is currently in the process of preparing construction plans for the McClellan Road separated bike lanes, which has been divided into three construction phases to streamline implementation: Phase 1 - Imperial Ave to Stelling Road; Phase 2 - Stelling Road to Torre Ave; and Phase 3 - Byrne Ave to Imperial Road. Staff anticipates construction beginning on the Phase 1 portion in late summer 2018, to be completed by the end of 2018. Design for the Phase 2 and 3 segments will happen concurrently with construction of the Phase 1 segment. Staff is targeting construction on all three segments to be completed by the end of 2019, subject to the resolution of right-of-way constraints along the Phase 2 and 3 segments.

A $1.8 million contribution from Apple has enabled design to begin on the segment of Stevens Creek Blvd between Wolfe Road and Tantau Avenue. Construction is expected to begin in late 2018. Staff is currently seeking grant funding for the remaining segments, including Senate Bill 1, County Measure B, and the Road to Zero program sources.

Bicycle Boulevards: Transportation Division staff is conducting a series of neighborhood public workshops throughout the city to introduce the bike boulevard project and to solicit feedback on proposed street improvements. Consensus on these improvements has been reached with the residents within several of the neighborhoods, and staff anticipates beginning construction within these neighborhoods in late summer 2018. Outreach within the remaining neighborhoods will continue through summer.

Trail Feasibility Studies: The Junipero Serra Trail is one of the trail segments that comprise "The Loop". It will provide an off-street bicycle and pedestrian facility that runs parallel to the existing Junipero Serra Channel (south of Interstate 280) and Calabazas Creek and provide a direct connection between the Don Burnett Bicycle-Pedestrian Bridge and Vallco Parkway. The Regnart Creek Trail is another of the trail segments that would make up "The Loop". It will provide an off-street bicycle and pedestrian facility that runs parallel to the existing Regnart Creek and provide a connection between Pacifica Drive and the existing Creekside Trail at E. Estates Drive. Finally, the Historic De Anza Trail, also part of the "The Loop", will parallel the Union Pacific Railroad tracks from Saratoga-Sunnyvale Road in the south, to the Hammon-Snyder House by Rancho San Antonio Park in the north.

Several public meetings have been held for the Junipero Serra and Regnart Creek Trails; feasibility studies for these projects will be presented to the City Council later in 2018. The Historic De Anza Trail study has just been initiated, with outreach to begin summer 2018.

Bicycle Wayfinding Program: A Bicycle Wayfinding Sign Plan for the entire city has been completed. Cost estimates are currently being developed for fabrication and installation of the signs. Staff anticipates requesting funding for this effort once cost estimates have been developed.

Pedestrian Transportation Plan: City Council adopted the 2017 Pedestrian Transportation Plan in February 2017. Projects contained with this plan are intended to enhance the walking environment throughout Cupertino through physical improvements which enhance safety and provide connectivity. Staff will be developing a strategy for implementing projects within the current year.

Kidpool Pilot program: In October 2017, City Council approved the Kidpool Pilot Program in partnership with Fremont Union High School District and Pogo, Inc. to provide parents with a mobile platform to create and manage walk, bike, or car "kidpools" for school pick up and drop off as well as afterschool activities. The goal is to make it easy for busy parents to organize alternative transportation options for their children. An effective parent carpool program has the potential to reduce traffic congestion around schools during peak hours and thus reduce greenhouse gas emissions.

The Fremont Union High School District (FUSD) agreed to pilot the project at Cupertino High School and is slated to run through the end of the school year. Staff has developed an evaluation plan that defines and tracks key metrics to evaluate if the pilot program was successful, such as measuring activity (groups formed, rides initiated, connections made) and number of carpools through manual car counts. Car counts were conducted at Cupertino High in fall 2017 to provide baseline data prior to the application soft launch in December. Staff will present the data after the pilot period and make a recommendation to City Council for next steps.

MEASURE C-T-2 | Bikeshare Program

Goal	Explore feasibility of developing local bikeshare program.
Co-Benefits	
Progress Indicators	*Supporting Measure - progress indicators and goals not provided.*

Status	Action
Ongoing	A. Continue to operate municipal bike fleet for City employee use and encouragement of bike fleets at large employers.

Implementation Update:

The municipal Bike Fleet underwent a relaunch in 2017, described under measure M-VF-1. Bike Fleet ridership has increased and staff have plans to expand the fleet to include electric bikes (e-bikes) and additional bike storage for fleet bikes and employee bike commuters at multiple City facilities.

As a part of the GreenBiz program, employers are encouraged to offer bikes for employee use. Outreach to employers will continue through GreenBiz with the possible addition of periodic commuter benefits compliance evaluations through the Bay Area Air Quality Management District (BAAQMD) program. Staff continues to monitor regional discussions and planning efforts for Bay Area bike share and exploring ways to bring the service to the city as part of a long-term integrated transportation strategy.

MEASURE C-T-3 | Transportation Demand Management

Goal	Provide informational resources to local businesses subject to SB 1339 transportation demand management program requirements and encourage additional voluntary participation in the program.
Co-Benefits	
Tracking Mechanism	Identify vehicle miles traveled (VMT) reductions associated with transportation demand management (TDM) programs offered throughout the community
Progress Indicators	10% of total employees in 2020 participate in TDM program that offers rideshare promotion, telecommuting/ alternative schedules, and subsidized transit fares.

Status	Action
Ongoing	A. Support regional efforts to implement SB 1339 commute benefit requirements for employers with more than 50 employees

Implementation Update:
In order to be fully compliant with SB 1339, employers must complete an initial registration and an annual update with BAAQMD. According to the BAAQMD's records as of February 2018, of the 162 employers subject to SB 1339, 65% were partially or fully compliant, while 35% were not compliant; see the chart below for details.

Employer Status	Total Number	Percent of Total
FULLY Compliant *(Conducted INITIAL AND ANNUAL Update)*	67	41%
PARTIALLY Compliant *(INITIAL Completed without annual Update)*	39	24%
NOT Compliant *(Neither INITIAL nor ANNUAL)*	56	35%
TOTAL	**162**	

Staff will work with the BAAQMD to monitor Cupertino's compliance rate and support businesses in promoting commuter benefits programs and active mobility opportunities with area employers through GreenBiz.

MEASURE C-T-4 | Transit Route Expansion

Goal	Explore options to develop local community shuttle or community-wide car sharing to fill gaps in existing transit network.
Co-Benefits	
Progress Indicators	*Supporting Measure - progress indicators and goals not provided.*

Implementation Update: This is a long-term measure, in which the CAP identifies implementation to happen after 2020. If it becomes feasible to start this measure sooner, progress will be reported to Council. Current members of Cupertino's City Council are taking leadership to evaluate alternative transportation opportunities for our community to shift current modes away from prioritizing single occupancy vehicles to those that optimize mass transit.

MEASURE C-T-5 | Transit Priority

Goal	Improve transit service reliability and speed.
Co-Benefits	
Progress Indicators	*Supporting Measure - progress indicators and goals not provided.*

Status	Action
● Ongoing	A. Work with VTA to identify local roadways on which traffic congestion frequently leads to impacted transit reliability or timing

Implementation Update:

Transit priority functionality was activated on VTA Limited 323 buses on January 25, 2016. These buses trigger transit signal priority along the San Carlos Street-Stevens Creek Boulevard corridor between Delmas Avenue in San Jose and Stelling Road in Cupertino. The Public Works Transportation Division continues to work with VTA to monitor the effectiveness of transit signal priority.

MEASURE C-T-6 | Transit-Oriented Development

Goal	Continue to encourage development that takes advantage of its location near local transit options (e.g., major bus stops) through higher densities and intensities to increase ridership potential.
Co-Benefits	
Progress Indicators	*Supporting Measure - progress indicators and goals not provided.*

Status	Action
● Ongoing	C. Continue to consider off-street parking requirements for transit- oriented and mixed use developments, for developments providing shared parking, and for developments that incorporate travel demand management measures

Implementation Update:

This is an ongoing action item that will be evaluated with each individual project on a case-by-case basis. Cupertino's Complete Streets Policy and various elements of its recently adopted General Plan work to embed this approach into all future development projects.

The City adopted its 2014-2022 Housing Element in May 2015 to accommodate its Regional Housing Needs Allocation (RHNA). Of the five sites identified as Priority Housing Sites, three (Marina Plaza, Barry Swenson and Vallco Shopping District) are located within a ¼ mile walking distance of the VTA Priority Development Area (PDA) located within the city along Stevens Creek Boulevard and N. De Anza Boulevard. Vallco Shopping District would be a Priority Housing Site upon adoption of a Specific Plan for that Special Area.

In 2016, the City reviewed and approved two of the five priority housing sites: Marina Plaza and Hamptons. Through development agreements, both proposals included public benefits for transit and incentives to promote use of transit alternatives.

Marina Plaza requested a density bonus and a lower number of parking spaces than required by the Parking Ordinance. The project's five-year development agreement included funding toward a Transportation Management Association for a citywide shuttle should a stop be located within 400 feet of the property and a bus shelter/benches within the project vicinity.

The Hamptons' site plan and development agreement included private funding for a transportation coordinator, on-demand/rideshare facilitation with designated stop areas, walking and biking routes, formal safe route connection to Apple Park, bicycle hub open to the public, and unbundled parking. The developer requested a lower number of parking spaces than that mandated by the Parking Ordinance. Upon review of an independent parking study, the City approved the reduced parking request. The Development Agreement has a five-year term.

MEASURE C-T-7 | Community-Wide Alternative Fuel Vehicles

Goal	Encourage community-wide use of alternative fuel vehicles through expansion of alternative vehicle refueling infrastructure.
Co-Benefits	
Tracking Mechanism	Track community-wide shift towards alternative fuel vehicles
Progress Indicators	Shift vehicle fuel use from gasoline and diesel to electricity and other clean fuels. Community-wide motor vehicle profile shifts as follows: • 5% of gasoline passenger vehicles shift to plug-in hybrid electric (PHEV); • 5% of diesel passenger vehicles shift to PHEV; • 5% of gasoline light-duty trucks shift to PHEV; • 3% of gasoline heavy-duty trucks shift to CNG; • 3% of diesel heavy-duty trucks shift to CNG; • 40% of diesel buses shift to CNG, 20% shift to PHEV

Status	Action
In Progress	B. Develop Alternative Fuel Infrastructure Siting Plan focused on strategic development of EV charging stations and municipal CNG fueling stations based upon demand analyses and feasibility studies; EV station siting plans will identify appropriate locations for Level 1 (slow charge), Level 2 (fast charge), and Level 3 and DC (rapid charge) charging stations in community and will analyze different models for charging station ownership/management (i.e., public vs. private sector).
Ongoing	C. Work with MTC and Bay Area local governments to develop informational brochures and technical support for developers / contractors interested in providing public electric vehicle (EV) charging ports in new projects.
Ongoing	D. Identify regional partners for collaboration on multi-family EV charging station retrofit program to develop strategies for installing EV chargers in existing multi-family buildings/ apartment developments.
Ongoing	E. Continue to enforce pre-wiring for at-home/business electric vehicle charging ports in new construction per City's existing ordinance and evaluate additional building code and zoning code revisions recommended through SGC Grant
Ongoing	F. Pursue local incentives, partnerships, and funding mechanisms guided by SGC Grant; Provide links on City's website to sources of cash rebates or other financial incentives for purchase and/or lease of alternative fuel vehicles
Ongoing	G. Continue to provide links to maps identifying EV charging stations and alt fuel stations.

Implementation Update:

EV ownership: Last year, staff obtained registration information on electric vehicle (EV) ownership for Cupertino through the Driving to Net Zero (DNZ) project, which came directly from DMV. The DNZ project ended, and we do not have access to the same level of data for 2017. Staff is currently seeking alternate means of obtaining this data for future reports through contacts at the Governor's Office of Planning & Research. Below are the number and type of EVs and hybrid vehicles registered in Cupertino as of March 2016:

Type of Vehicle	Number of vehicles	Percent of total vehicles* registered in Cupertino
Hybrid	3,309	7.5%
Battery electric vehicle (BEV)	1,029	2.3%
Plug-in hybrid electric vehicle (PHEV)	437	1.0%
Total hybrids and EVs:	**4,775**	**10.8%**

**Total vehicles registered in Cupertino: 44,127*

EV charging stations: According to the City's GIS permit database, there were 43 EV charging station permits finalized in 2017 in Cupertino: 1 commercial, 2 multi-family, and 40 single-family. The number does not include Level 1 charging, which does not require a charger to be installed and therefore does not require a permit.

Outreach: Through an e-newsletter to Cupertino area businesses, staff promoted funding opportunities to install EV charging offered through the Air District and PG&E. Information was provided in the fall and spring editions of this newsletter.

Driving to Net Zero: In 2015, the City partnered with the County of Santa Clara and other regional cities to prepare a Strategic Growth Council grant to enable six participating agencies to launch an innovative regional alternative fuel vehicle planning effort titled "Driving to Net Zero: Decarbonizing Transportation in Silicon Valley." The grant was awarded and Cupertino is serving on the advisory team to oversee its implementation. The initiative includes zero emissions vehicle and infrastructure planning, siting, data forecasting, training, and a policy and program platform that will inform future agency decision-making across a variety of sectors.

Conserve Potable Water

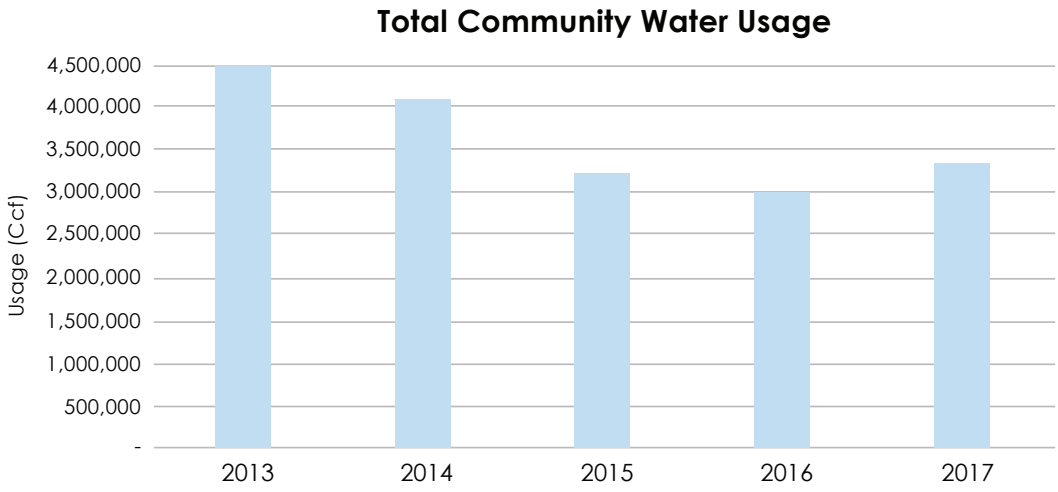
MEASURE C-W-1 | SB-X7-7

Goal	Implement water conservation policies contained within Cupertino's Urban Water Management Plan to achieve 20 percent per capita water reductions by 2020.
Co-Benefits	
Tracking Mechanism	Track per capita water use compared to 2010 baseline levels.
Progress Indicators	Reduce water use 20% less per capita than 2010 baseline usage.

Status	Action
In Progress	B. Work with local water providers to identify opportunities for water use data tracking and reporting at community-wide level; if successful, share this information through CAP's annual progress reporting procedures, aligned with required General Plan implementation annual reports
Ongoing	C. Partner with community/neighborhood groups to promote existing water conservation programs and participation in voluntary turf-removal programs.

Implementation Update:

The city's water service providers, California Water Service and San Jose Water Company, provided water usage data from 2013 – 2017. Since 2013, community water usage has decreased by 25%:

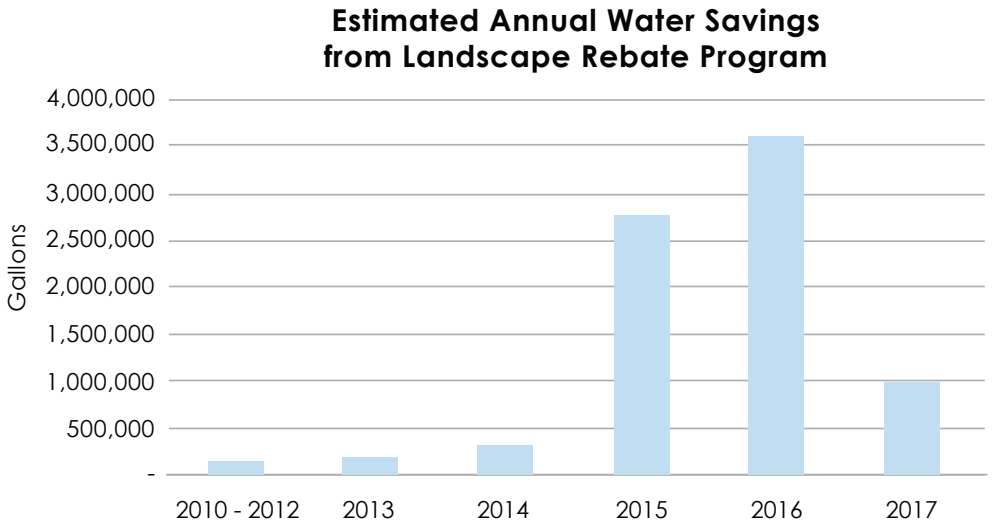


Cupertino is meeting its goal for water usage; compared to the 2010 baseline, per capita water usage has decreased 25%[4].

Education & Training: Since 2015, the City has maintained drought information webpages and flyers to provide updates to the community. In 2017, the City hosted three Graywater Laundry to Landscape Seminars to explain how water from residential washing machines can be used to water their yards, with roughly sixty participants total.

Financial Incentives: The City partners with Santa Clara Valley Water District (SCVWD) to encourage participation in the Graywater Laundry to Landscape Rebate Program and Landscape Rebate Program. The SCVWD offers a $200 rebate for installing approved graywater systems. In 2017, Cupertino added a match of $200 for Cupertino residents to the rebate. There have not been any participants yet; however, staff continues to promote the program and track participation.

The SCVWD offers $1 per square foot of landscape that is converted to be drought tolerant through the Landscape Rebate Program. Starting in 2015, Cupertino offered an additional $1 to the rebate for Cupertino residents and businesses. As the charts below show, participation in the SCVWD program increased significantly in 2015 when Cupertino added $1 per square foot to the rebate. However, the program saw a decrease in participation in 2017, likely due to the drought ending and a reduction in the SCVWD rebate amount from $2/sq. ft. to $1/sq. ft.



Cupertino Participation in SCVWD Landscape Rebate Program

Year	# Rebates	Sq. Feet Converted	Est. Annual Savings (gallons)*
2010-2012	5	7,196	143,920
2013	8	9,933	198,660
2014	16	15,585	311,700
2015	106	138,121	2,762,420
2016	114	180,400	3,608,000
2017	37	49,525	990,500

** Experts estimate that 20 gallons per square foot of lawn converted is saved annually.*

4. Baseline 2010 estimate of 74 ccf/person water usage taken from the Climate Action Plan. Estimated per capita water usage was 55 ccf/person in 2017. Used 2016 population estimate from U.S. Census, as 2017 was not available.

Water Efficient Landscape Ordinance (WELO) Update: WELO is triggered for projects with landscaped areas of 500 sq. ft. or more that require a permit, plan check, or design review. Since WELO went into effect in 2016, a total of 49 projects covering an estimated 449,606 square feet of landscape area have been subject to the ordinance.

MEASURE C-W-2 | Recycled Water Irrigation Program

Goal	Recycled Water Irrigation Program Explore opportunities to use recycled water for irrigation purposes to reduce potable water demands.
Co-Benefits	
Progress Indicators	Supporting Measure - progress indicators and goals not provided.

Status	Action
Ongoing	B. Continue to monitor regional discussions regarding expansion of existing recycled water systems in neighboring jurisdictions
Complete	C. Identify City-owned site to install educational demonstration project that showcases water-efficient landscaping strategies, alternative irrigation options, and/or low-impact landscape design techniques

Implementation Update:

Recycled Water Systems: Apple Campus 2 is the first property in the city using recycled water for irrigation. Apple is using the recycled water for cooling towers, toilet flushing, and turf lawn irrigation needs and represents approximately 70% of Apple Park's total water needs. The system will avoid the use of over 30 million gallons of fresh water annually.

The Hamptons, located near Apple Campus 2, has committed to extending the recycled water main further south to serve their property. This project is currently on hold, so the schedule for this extension is currently unknown. The Vallco project had proposed to extend the recycled water main even further south to Wolfe Rd and Vallco Parkway (possibly to Stevens Creek Blvd) and to utilize recycled water for irrigation of the green roof. Some form of project decision is anticipated in the fall of 2018. No anticipated schedule for construction completion has been provided to date.

No other projects or plans for extension or use of recycled water have been proposed for permitting at this time, but staff continues to monitor regional discussions regarding expansion of existing recycled water systems in neighboring jurisdictions and within Cupertino.

Educational Demonstration Project: In 2017, the City completed the Civic Center Demonstration Garden project next to City Hall, described in detail under Measure M-F-7.

Reduce Solid Waste

MEASURE C-SW-1 | Zero Waste Goal

Goal	Maximize solid waste diversion community-wide through preparation of a zero waste strategic plan.
Co-Benefits	
Progress Indicators	*Supporting Measure - progress indicators and goals not provided.*

Status	Action
● Ongoing	A. Continue to implement City's goal to divert 75% of community-wide solid waste through franchise waste hauling contract

Implementation Update:

The City of Cupertino reports waste tonnage and diversion to CalRecycle each year. For each jurisdiction, CalRecycle calculates a disposal rate and diversion rate for population and for employment. In 2016, Cupertino's population was 58,815 and the number of people employed was 49,392. Below are the most recent available figures from CalRecycle for Cupertino.

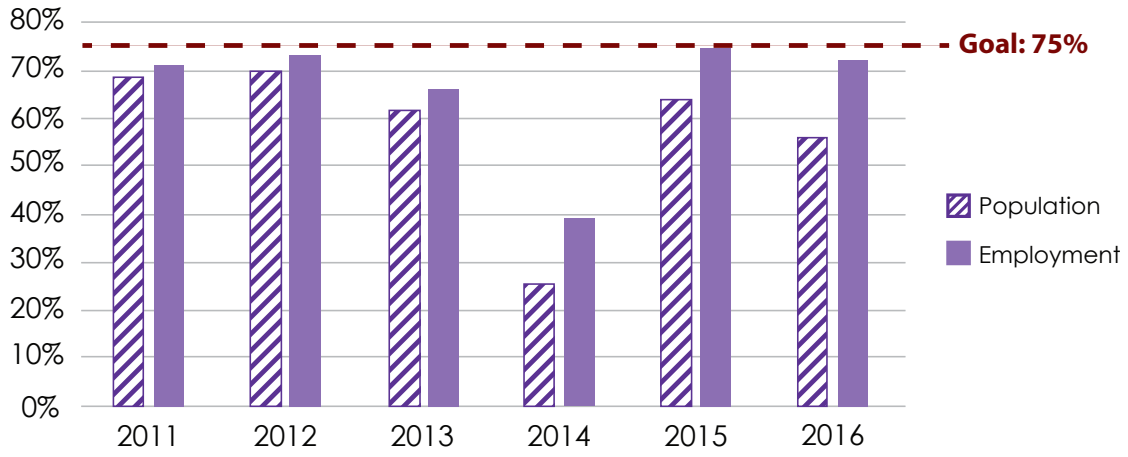
Disposal Rate: The calculated disposal rate is based on how many pounds of solid waste (on average) are sent to the landfill per person per day in the City of Cupertino. In 2016, Cupertino succeeded in falling below the target ceiling disposal rates for both population and employment:

Disposal Rates
(pounds per person per day)

	Population	Employment
Our rate	3.8	4.5
Target rate	*4.3*	*8.1*

Diversion Rate: The diversion rate takes into account tonnage sent to the landfill and source reduction from efforts such as our citywide garage sale, citywide collection of organics for composting, the City's door-to-door residential hazardous waste collection program, and quarterly communitywide recycling events at De Anza College. In 2016, the diversion rate for population was 56% and for employment, 72%.

Community-wide Solid Waste Diversion Rates Per Year Compared to Goal



MEASURE C-SW-2 | Food Scrap and Compostable Paper Diversion

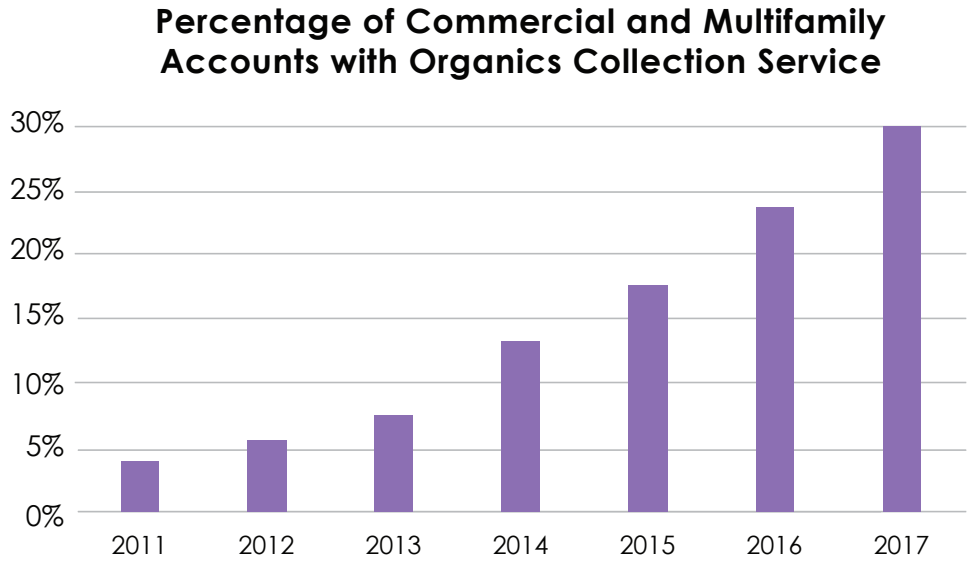
Goal	Continue to promote the collection of food scraps and compostable paper through the City's organics collection program.
Co-Benefits	
Tracking Mechanism	*Track the percentage of compostable food and paper that are diverted from the solid waste stream.*
Progress Indicators	• *Households divert 40% of food scraps and compostable paper;* • *10% of businesses divert 20% of food scraps and compostable paper;* • *Households and businesses divert 85% of yard waste*

Status	Action
● Ongoing	A. Continue to implement the City's organics collection program outreach campaign, including outreach to Cupertino's business community regarding upcoming commercial food waste ordinance

Implementation Update:

Mandatory Commercial Organics Ordinance: In 2017, 25 new businesses and multifamily accounts subscribed to organics collection, bringing the total to 144 businesses. In July 2018, all multi-family properties and

commercial businesses generating four or more cubic yards of solid waste per week will be required to subscribe to organics recycling services. As the chart below reflects, the percentage of accounts with organics collection service is steadily increasing:



Community Outreach: In 2017, Cupertino implemented a multi-family organics recycling pilot at five properties in preparation for the third tier of the organics recycling ordinance effective July 2018. Cupertino staff conducted over eighty site visits in 2017 to aid businesses and multi-family properties in implementation of the ordinance and provide free equipment, host events, create customized signage, conduct door-to-door outreach, or provide employee technical assistance regarding kitchen set-up for separating organic waste.

In 2017, Cupertino staff and Sustainability Commissioners met with Cupertino Union School District and Fremont Union High School District staff to discuss waste programs and helped set up waste audits for Kennedy Middle School. In 2018, a pilot composting program is set to launch at Kennedy.

Regional Partnerships: In 2017, Santa Clara County began a countywide partnership with ReThink Disposable to implement new source reduction strategies and policies. ReThink Disposable will continue to work directly with food service businesses in Cupertino to reduce disposable packaging and save businesses money in the process.

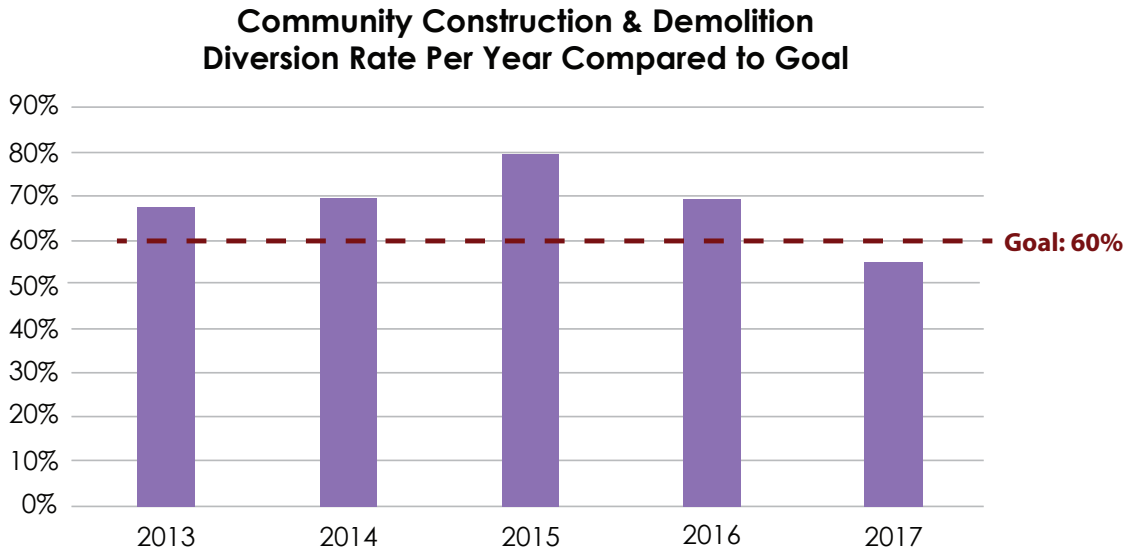
MEASURE C-SW-3 | Construction & Demolition Waste Diversion Program

Goal	Continue to enforce diversion requirements in City's Construction & Demolition Debris Diversion and Green Building Ordinances.
Co-Benefits	
Tracking Mechanism	Track the percentage of construction and demolition waste that is diverted from the solid waste stream.
Progress Indicators	60% of construction and demolition waste diverted, per City's ordinance – approximately 2,600 tons/yr.

Status	Action
● Ongoing	A. Continue to implement City's 60% C&D diversion requirement for applicable projects as defined in City's Construction and Demolition Debris Diversion Ordinance

Implementation Update:

Below are the community diversion rates for roll-off collection of construction and demolition (C&D) materials. The data below excludes self-hauled C&D material. As the chart reflects, Cupertino had a diversion rate of 55% and did not meet its goal of 60% C&D diversion in 2017. This is likely due to the timing of two very large development projects approaching completion in 2017. Very high recycling rates often occur at the beginning and throughout a project while more material that must be landfilled is collected at the end of a project. Two very large projects in Cupertino were winding down in 2017, generating less recyclable material than they had during earlier phases of construction.



In July 5, 2017, Cupertino City Council enacted the C&D ordinance, pursuant to California Green Building Standards Code, to require a minimum of 65% of waste material generated from all projects within the City's jurisdiction to be diverted from the landfill. This ordinance went into effect on August 4, 2017.

Expand Green Infrastructure

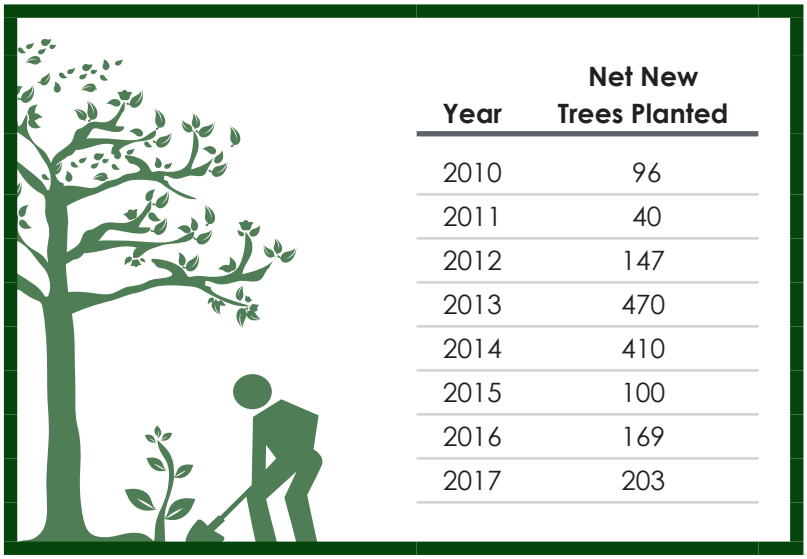
MEASURE C-G-1 | Urban Forest Program

Goal	Support development and maintenance of a healthy, vibrant urban forest through outreach, incentives, and strategic leadership.
Co-Benefits	
Tracking Mechanism	Track the number of new trees planted community-wide
Progress Indicators	2,500 net new trees planted in the city from 2015 onward. **Assumes 2,400 from Apple 2 Campus, and 100 from other community plantings.*

Status	Action
● Ongoing	A. Continue implementing landscaping requirements in City's Development Standards, Design Guidelines, and other regulatory documents.

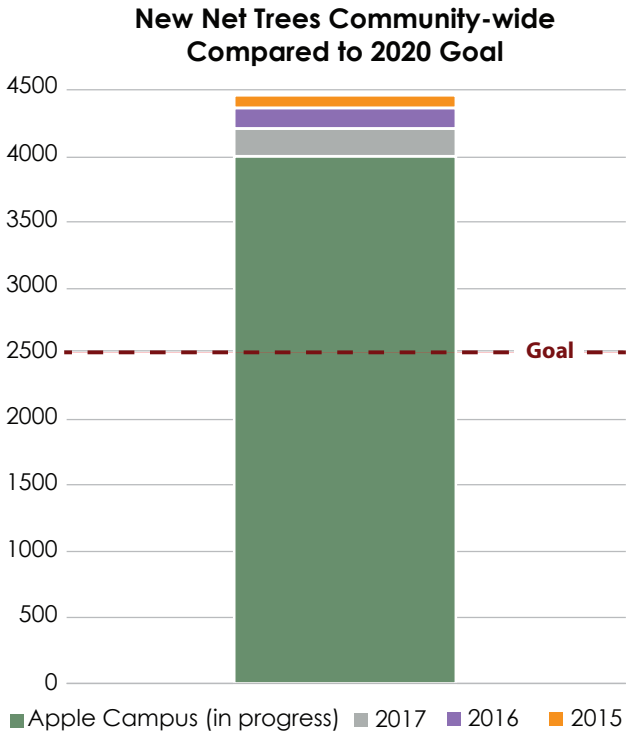
Implementation Update:

Below are the net new trees planted in the city per year (not including the Apple 2 Campus):



Year	Net New Trees Planted
2010	96
2011	40
2012	147
2013	470
2014	410
2015	100
2016	169
2017	203

A total of 3,994 new net trees were to be planted at the Apple 2 Campus. As the chart below shows, we are exceeding our 2020 target for new net trees with the addition of these trees currently underway at the Apple 2 Campus.



MUNICIPAL MEASURES

Detailed below are each of the CAP near-term municipal measures and status updates, organized according to the reduction strategy categories.

Improve Facilities

MEASURE M-F-1 | Sustainable Energy Portfolio

Goal	Procure low-carbon electricity through utility-based programs or participation in a Community Choice Energy District.
Co-Benefits	 
Tracking Mechanism	Track portion of municipal electricity that comes from renewable sources.
Progress Indicators	• *100% of municipal electricity use in 2020 comes from 75% renewable (or zero carbon) sources via PG&E Green Option OR* • *100% of municipal electricity use in 2020 comes from 100% renewable (or zero carbon) sources via Community Choice Energy Program*

Status	Action
● Complete	A. Support utilities enhanced generation portfolio.
● Complete	B. Create Community Choice Energy option.

Implementation Update:

As reported above in Measure C-E-7, Silicon Valley Clean Energy is now the default electricity provider for Cupertino. The City has opted up all its municipal accounts to SVCE's GreenPrime service, which is 100% renewable and carbon free. As of January 1, 2018, the City has met its 2020 goal for Measure M-F-1, as all municipal electricity usage now comes from 100% renewable sources.

Before joining SVCE, electricity emissions made up nearly half of the total emissions in the city's municipal greenhouse gas inventory; going 100% renewable for our electricity portfolio has created a dramatic drop in municipal emissions, which will be reflected in future inventory reports.

MEASURE M-F-2 | Renewable or Low-Carbon Electricity Generation

Goal	Develop renewable energy facilities at municipal buildings and facilities.
Co-Benefits	
Tracking Mechanism	Calculate total electricity generation capacity of municipal solar PV systems.
Progress Indicators	Assumes five solar sites are developed for total installed capacity of 508 kW generating 818,000 kWh/yr. Assumes no solar thermal systems are pursued prior to 2020.

Status	Action
● Ongoing	A. Install solar PV installations on City buildings / property

Implementation Update:

While no new PV systems were installed in 2017, the City is producing renewable energy from existing solar arrays at the Environmental Education Center and the Service Center. Below are the current solar energy generation figures for both sites:

Site (Year PV System Installed)	Capacity (kW)	Percent Progress Toward 2020 Capacity Goal (508 kW installed)	Current Annual Generation* (kWh/yr.)	Percent Progress Toward 2020 Generation Goal (818,000 kWh/yr.)
Service Center (2014)	103.7		150,448	
Environmental Education Center (2015)	6.9		9,321	
TOTAL ALL SITES:	**110.6**	**22%**	**159,769**	**20%**

** Service Center: generation over 12 months, Jan-Dec 2017. Env. Education Center: generation over approx. 12 months, Jan. 26 2017 to Jan. 25 2018.*

MEASURE M-F-3 | Renewable or Low-Carbon Electricity Generation

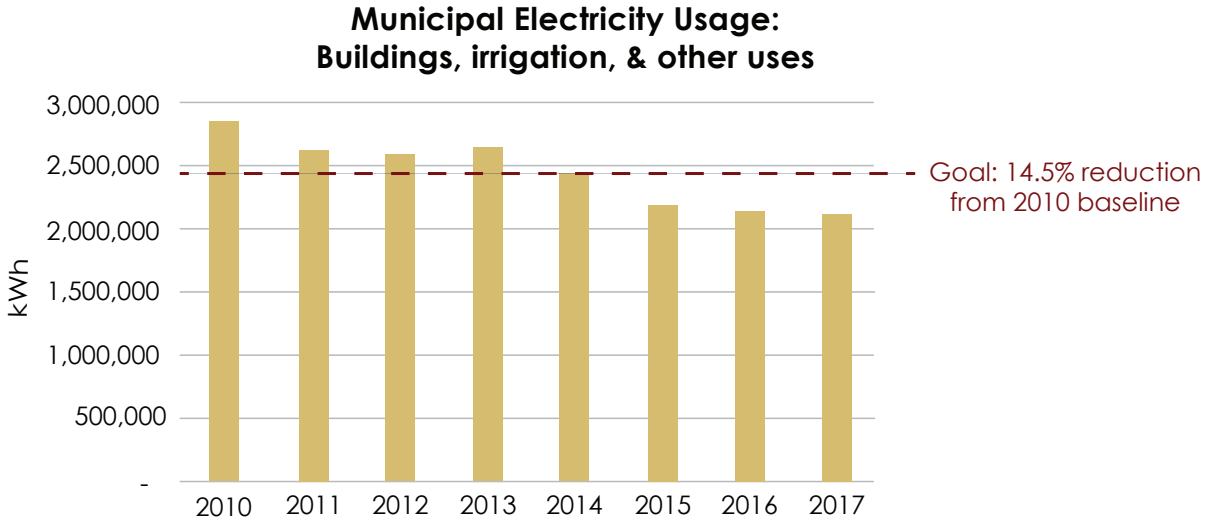
Goal	Reduce energy consumption in existing municipal buildings through data analysis, interactive management systems, employee education, and building operation and maintenance policies.
Co-Benefits	
Tracking Mechanism	Track energy savings from advanced energy analytics program participation.
Progress Indicators	Assumes 14.5% reduction in 2010 baseline building electricity use (i.e., 410,000 kWh/yr. saved) and 14.3% reduction in 2010 baseline building natural gas use (i.e., 6,900 therms/yr. saved).

Status	Action
In Progress	C. Install energy management systems
In Progress	E. Design / implement facilities & equipment energy management policy

Implementation Update:

In 2016, staff completed energy audits with Silicon Valley Energy Watch/Ecology Action for Quinlan Community Center, City Hall, the Sports Center, Blackberry Farm, the Senior Center, and the Library. As a direct result of these audits, in 2017 the City began energy efficiency improvements for the pool pumps at Blackberry Farm and LED tennis court upgrades. The City is piloting a Utility Data Management Solution to assist with tracking municipal energy and water usage and cost data.

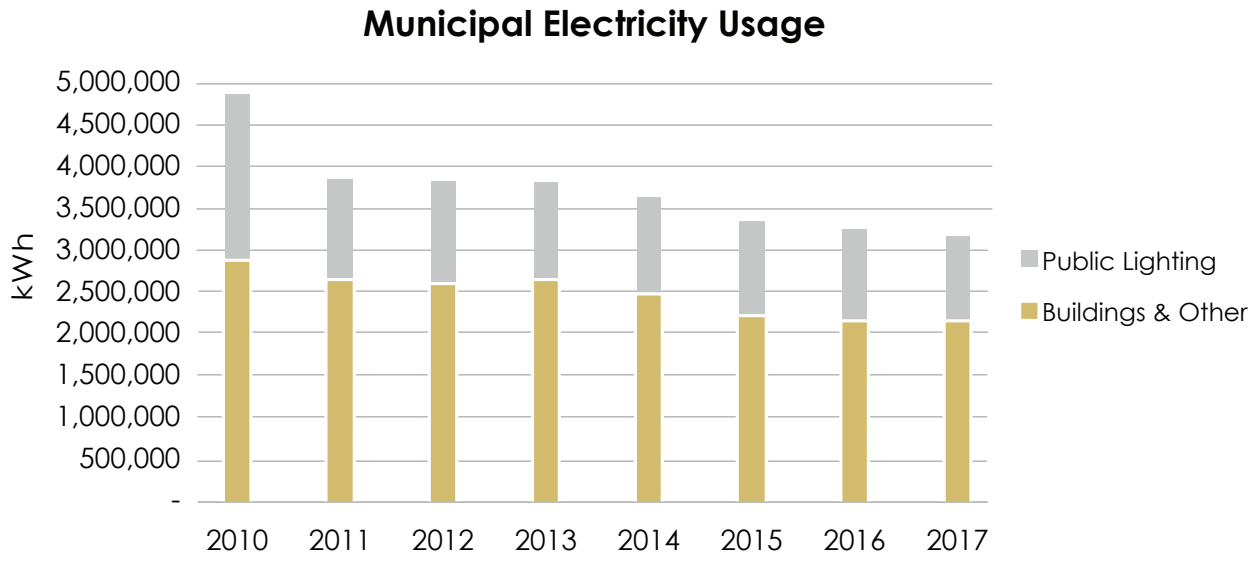
Data and Analytics: Electricity data was provided by PG&E through its Green Communities program[5]. As the chart below illustrates, we are exceeding our 2020 goal for municipal building electricity reduction. Building electricity usage[6] has decreased by 25% comparing 2017 usage to the 2010 baseline. This decrease is in part due to the energy efficiency improvements completed since 2010, as well as the introduction of solar energy production on municipal facilities and other factors.



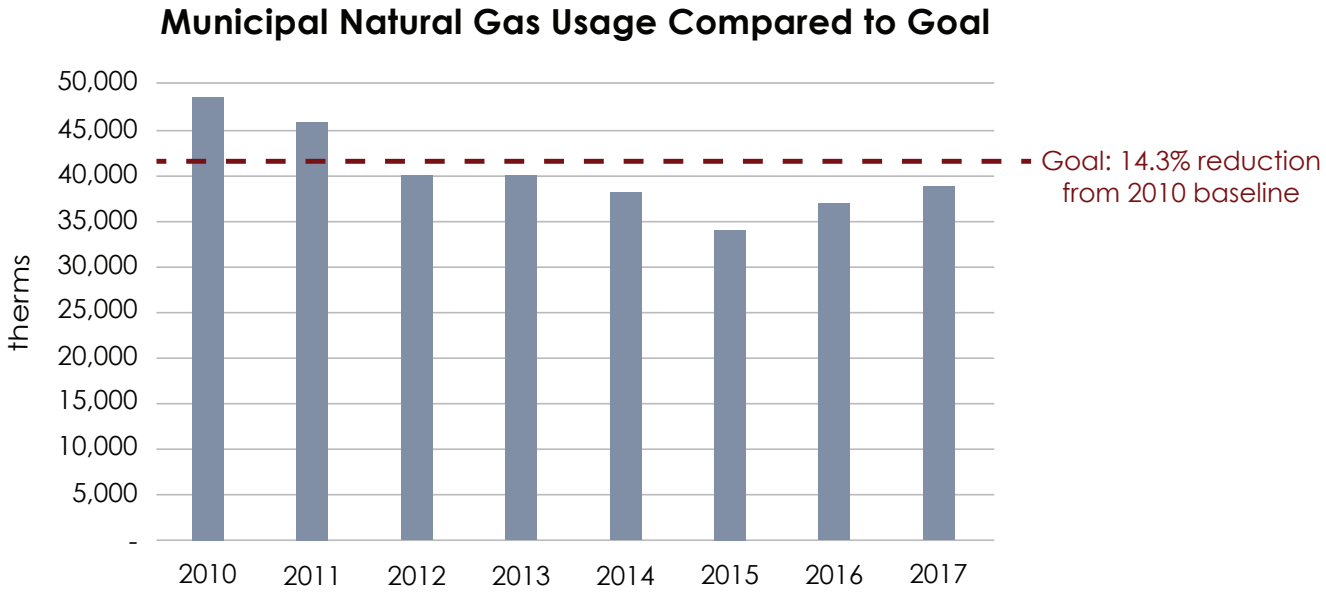
5. Data for previous CAP Reports was also provided by PG&E, but from different reports. Therefore, there are discrepancies when comparing this report's data to previous CAP Reports.

6. Building electricity usage includes facilities, irrigation, misc. uses, park lighting, and other lighting not associated with streetlights or traffic lights. Electricity usage for streetlights and traffic lights / controllers are grouped separately as "Public Lighting".

Municipal aggregate electricity and natural gas usage are detailed below. Electricity usage overall (including public lighting and all municipal electricity accounts) decreased 35% comparing 2017 to the 2010 baseline.



Natural gas usage data was provided by PG&E and the Association of Bay Area Governments (ABAG). We continue to exceed our 2020 goal for natural gas reduction; municipal natural gas usage decreased by 20% in 2017 compared to the 2010 baseline.



MEASURE M-F-4 | Grow Existing Building Energy Retrofit Efforts

Goal	Reduce energy consumption in existing municipal buildings through energy efficiency improvements.
Co-Benefits	
Tracking Mechanism	Track energy use reductions associated with building retrofits.
Progress Indicators	Assumes 254,000 kWh/yr. saved as result of interior lighting retrofits and occupancy sensors, and 59,000 kWh/yr. saved as a result of plug load controllers (assumed 200 controllers installed).

Status	Action
● Ongoing	A. Complete building retrofits

Implementation Update:

Five lights were upgraded to 500W LED bulbs in the slide pool at Blackberry Farm. No further upgrades were recorded for 2017.

Sustainability Reserve Launch: In 2017, Council approved the formation of a Sustainability Reserve funded through rebates from energy and water efficiency improvements. The Reserve will be used as a revolving fund to fund energy efficiency and water efficiency retrofits. The Reserve was initially funded with $75,499 from received rebates.

MEASURE M-F-5 | Expand New Building Energy Performance

Goal Establish energy efficiency targets for new municipal buildings.

This is a long-term measure with implementation to occur by 2035 or beyond. As the City is working to prioritize near-term (2020) goals in this early stage of implementation, there is no progress to report.

MEASURE M-F-6 | Complete Citywide Public Realm Lighting Efficiency

Goal	Upgrade public realm lighting to more efficient technology.
Co-Benefits	
Tracking Mechanism	Track electricity savings from street light and park light retrofits.

Progress Indicators	872,000 kWh/yr. saved through street light retrofit program. 75,000 kWh/yr. saved through park unit parking lot and pathway light retrofit program.

Status	Action
Complete	A. Complete street light retrofits
Ongoing	B. Retrofit remaining parking lot and park facility lighting

Implementation Update:

Cupertino's City-owned streetlights have been upgraded to induction lighting and almost all of PG&E-owned streetlights have been upgraded to LED. Twenty-seven lights were upgraded to LED in the Library parking lot in 2017.

MEASURE M-F-7 | Conserve Water Through Efficient Landscaping

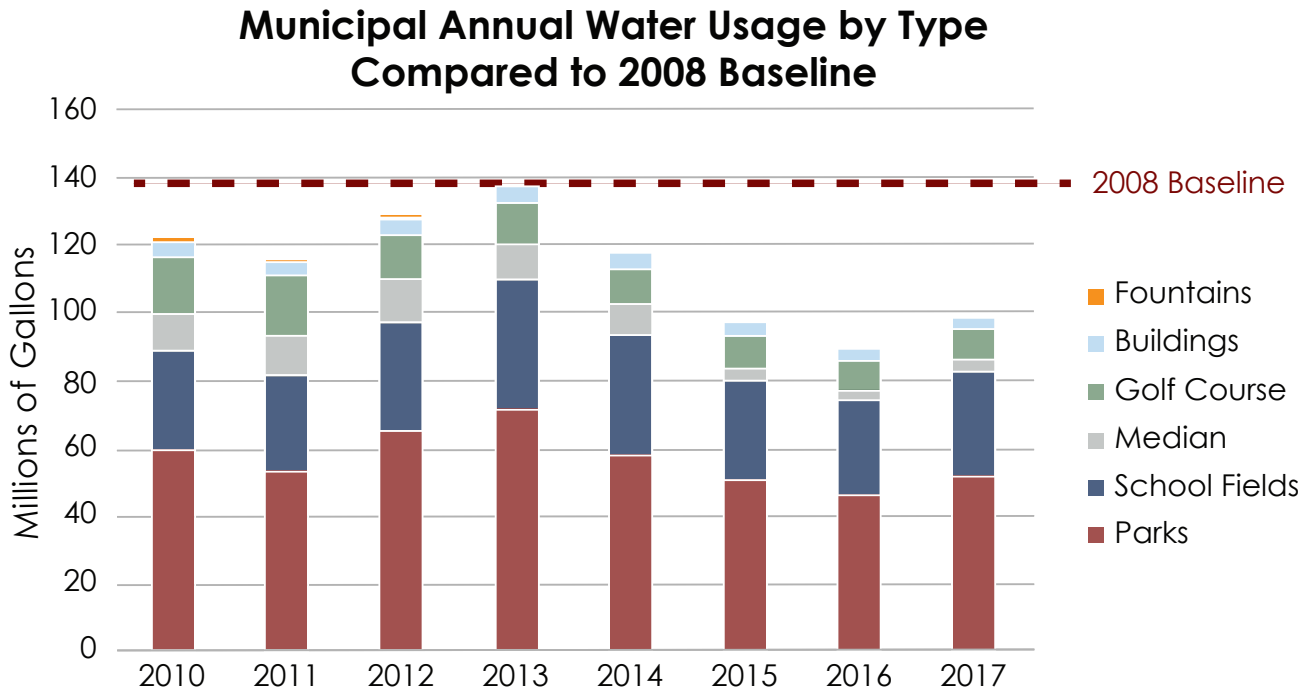
Goal	Implement best management practices in landscaping design and share City successes community-wide to lead by example in water conservation action.
Co-Benefits	
Tracking Mechanism	Track municipal water use and conservation efforts.
Progress Indicators	Achieve Bay Area Climate Compact's goal for 20% water savings by 2018 over 2008 baseline. Assumes 27.5 million gallons of water saved per year over 2008 baseline of 138 million gallons.

Status	Action
On Hold	A. Utilize weather-track system to reduce park & median water use
Ongoing	B. Benchmark & track water use per meter
In Progress	C. Adopt water budget & green grounds policy
Ongoing	D. Use bay-friendly landscaping techniques across parks & medians; install demonstration gardens
Ongoing	E. Install graywater and rainwater catchment systems in new construction and major retrofit projects
In Progress	F. Recognize staff "water wise" practices

Implementation Update: In 2017, the City completed the Civic Center Demonstration Garden project next to City Hall, converting over 19,000 square feet of turf and ivy to a drought tolerant demonstration garden. It is estimated to save about 34 gallons of water per square foot of turf removed. About 11,855 square feet of turf was removed, resulting in an estimated 426,780 gallons of water saved per year from just the turf conversion. Educational and interpretive signage is to be installed on the site. The garden is to be used as a demonstration

area for residents to learn about drought tolerant landscaping. A complementary webpage will be created on the City's website, which will show photos, names, and information about the plants. In addition, the median on Stevens Creek Blvd. to Torre Ave. was upgraded to drought tolerant landscaping.

Water Usage Data: Cupertino has exceeded its goal for this Measure: in 2017, municipal water usage was 29% lower than the 2008 baseline, as depicted in the chart below. Staff will continue to monitor water use annually and implement water conservation and landscape conversion programs.



Encourage Alternative Transportation / Convert Vehicle Fleet

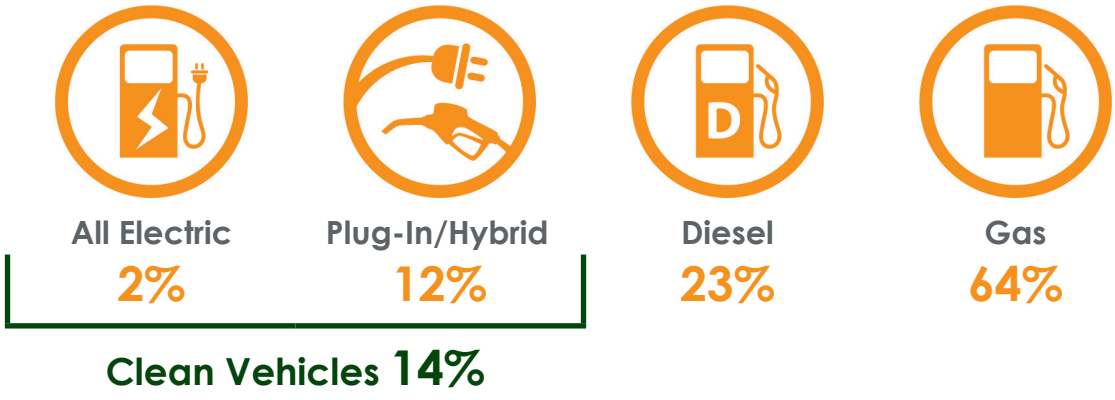
MEASURE M-VF-1 | Low Emission and Alternative Fuel Vehicles

Goal	Transition City vehicle fleet to fuel-efficient and alternative-fuel vehicle models.
Co-Benefits	
Tracking Mechanism	Track composition of municipal fleet by vehicle type/fuel type.
Progress Indicators	Achieve Bay Area Climate Compact's goal for 25% of vehicle fleet to comprise zero-or-low emissions light duty vehicles by 2018.

Status	Action
Ongoing	B. Expand City bike fleet, training, and promotion
Ongoing	C. Promote vehicle alternatives to reduce car-travel to City-sponsored events

Implementation Update:

The City owns 102 vehicles. City fleet vehicle composition is as follows:



In 2015, the City introduced two Ford Focus all battery electric vehicles (EVs) to its fleet, which are zero emissions. On a fully charged battery, the EV's range is about 76 miles.

In 2016, the City switched from traditional diesel to Neste NEXBLT 100% renewable diesel to power all of the diesel vehicles in the fleet. Neste renewable diesel is primarily made from waste and residues, such as animal fats from food industry waste and used cooking oil.

Benefits of renewable diesel include[7]:

- Reduced greenhouse gas emissions: up to 80% reduction over the lifecycle of the fuel compared to conventional fossil diesel fuel
- Improved air quality and reduced tailpipe emissions: 33% lower levels of fine particulates compared to sulfur-free diesel
- Circular economy: converting industrial and processing waste into fuel

The Public Works Department has an internal policy that, at time of vehicle replacement, staff uses a lifecycle cost calculator to estimate the true cost of vehicle ownership to inform procurement decisions. Staff continues to evaluate opportunities to right-size the fleet and procure vehicle types based on departmental and staff requirements which may further reduce pool vehicle size.

Municipal Bike Fleet: The municipal Bike Fleet underwent a relaunch in 2017 with an internal outreach campaign to staff, including: promotional emails, incentives for riding, tabling at the employee Wellness Fair, a presentation with Silicon Valley Bike Coalition on "Basics of Bike Commuting," and redistribution of bikes to include three City facilities. Staff conducted an internal survey of employees and capacity assessment for expansion of the Bike Fleet, and are planning to purchase additional bikes, including e-bikes, for the Fleet in 2018.

In December 2017, the League of American Bicyclists recognized the City of Cupertino as a Gold Level Bicycle Friendly Business. Cupertino is one of 1,500 U.S. local businesses, government agencies, and Fortune 500 companies with the distinction of Bicycle Friendly Business (bikeleague.org/business).

MEASURE M-VF-2 | Increase Alternative Fuel Infrastructure

Goal	Increase availability of alternative refueling infrastructure to support municipal fleet transition.
Co-Benefits	
Tracking Mechanism	Track installation of alternative vehicle refueling infrastructure as compared to vehicle fleet composition targets.
Progress Indicators	Assumes 10 dual-port electric vehicle charging stations installed

Status	Action
● Ongoing	A. Install electric vehicle charging stations

Implementation Update: No new charging stations were added in 2017.

7. Source: Neste product description, benefits, and fuel composition from: www.neste.com

The City owns and maintains six dual port electric charging stations as follows:

- 1 dual-port station on Rodriguez Ave (available to the public)
- 2 dual-port stations in Library parking lot (available to the public)
- 1 dual-port station at Service Center (for municipal employee use)
- 2 dual-port stations at Quinlan Community Center (available to the public)

MEASURE M-VF-3 | Promote Behavior / Fuel Optimization

Goal	Encourage and promote fuel-efficient driving.
Co-Benefits	
Tracking Mechanism	Track fuel savings in vehicles equipped with telematics hardware and/or route optimization practices.
Progress Indicators	Assumes 10% fuel savings over 2010 baseline for all passenger and light-duty trucks (i.e., 2,100 gallons of gasoline saved per year); assumes full implementation of Measure VF-1, Action A assumptions by 2020.

Status	Action
In Progress	C. Expand commuter benefits program

This measure is to be implemented in the mid or long-term. Currently the Building department is using route optimization for inspections and the city continues to implement the anti-idling policy within the Vehicle Use Policy.

Fuel Usage Metrics: Below are fuel usage metrics for the municipal fleet for 2015 through 2017, compared to the baseline year of 2010:

	2010 Baseline	2015	2016	2017
Diesel use, gallons:	9,461	13,698	12,490	12,114
Gasoline use, gallons:	31,563	28,023	27,263	29,564
TOTAL FUEL USE, gallons:	**41,024**	**41,721**	**39,753**	**41,678**

Employee Commute Survey: As part of the greenhouse gas emissions inventory update process, the Sustainability Division conducted an employee commute survey. Compared to a similar survey conducted in 2010, although the total distance traveled by employees to work increased in 2017, the emissions decreased,

as employees are now driving more fuel efficient vehicles. Below are the emissions and distance driven by employees comparing 2010 to 2017[8]:

Description	2010	2017	Percent Change
All employees total driving commute emissions (MT CO2e)	463	443	-4.4%
All employees total driving commute distance (miles/year)	1,244,509	1,272,985	+2.3%

As the chart below shows, the vast majority of trips to work – 87% – were employees driving alone. The results of the survey informed the development of a pilot program to encourage carpooling and alternate commute options, scheduled for implementation in 2018.

Employee Commute Breakdown by Travel Mode (2017)

87% Drove Alone

9% Carpooled *(2 to 6 people)*

1% Biked

1% Walked

1% Worked from Home

*Vanpool, public transit, shuttle, motorcycle: **0%**

8. Data taken from "City of Cupertino 2015 Community-wide and Municipal Operations Greenhouse Gas Emissions Inventory Report", presented to City Council in June 2017. The original chart depicted the 2017 data as 2015, as the survey was used as a proxy for 2015 data.

Reduce Solid Waste

MEASURE M-SW-1 | Waste Reduction

Goal	Reduce municipal waste through procurement policies, waste diversion goals, and waste stream monitoring and analysis.
Co-Benefits	
Tracking Mechanism	Track reductions in municipal solid waste disposal by waste category.
Progress Indicators	Assumes 80% reduction in organic waste (e.g., food scraps and compostable paper, landscape debris/trimmings, scrap lumber, paper/cardboard) from 2010 baseline; emissions reductions are shown next to actions that address specific organic waste sources (i.e., M-SW-1 B, M-SW-2 A, M-SW-3 A). Assumes 80% diversion of municipal office paper over 2010 baseline levels.

Status	Action
Complete	A. Establish stretch waste reduction and diversion goals
In Progress	B. Create paperless office policy / program
Complete	C. Revise green procurement & event specifications, pair with implementation handbook
Ongoing	D. Conduct waste characterization audits and track materials / diversion

Implementation Update:

Stretch Waste and Diversion Goals: A Zero Waste Policy was adopted by City Council on December 19, 2017.

Paperless Office Efforts: In September 2017, the Finance Department began receiving invoices electronically rather than requiring hard copies. This new process is estimated to save over 16,800 pieces of paper per year.

Municipal Waste Characterization Audits: City staff completed the first municipal waste audit of City Hall on February 23, 2017. Based on this audit, staff achieved 50% diversion from the landfill. This diversion number does not include any source reduction measures. Findings of the City Hall audit will influence initiatives and practices such as further education of janitorial staff and employees. Staff plans to conduct a more comprehensive waste characterization study by the end of 2019.

MEASURE M-SW-2 | Food Scrap and Compostable Paper Diversion

Goal	Continue to divert food scraps and compostable paper from municipal waste stream.
Co-Benefits	
Tracking Mechanism	Track diversion of food scrap and compostable paper diversion of municipal waste stream.
Progress Indicators	Assumes 90% diversion of municipal food waste and plant waste over 2010 baseline levels.

Status	Action
● Ongoing	A. Expand municipal collection and composting program

Implementation Update: No updates for 2017.

MEASURE M-SW-3 | Construction and Demolition Waste Diversion

Goal	Enhance construction and demolition waste diversion rates for municipal projects.
Co-Benefits	
Tracking Mechanism	Track diversion of construction and demolition waste for municipal projects.
Progress Indicators	Assumes City continues to achieve 60% diversion of construction and demolition waste from municipal projects

Implementation Update:

Cupertino municipal projects strive for a 75% diversion rate. In 2017, a 60% diversion rate was required by all Capital Improvement Project (CIP) contracts. After the 65% requirement went into effect, the CIP contracts began requiring 65% diversion.