CLIMATE ACTION PLANNING UPDATE
CITY COUNCIL

City 2015 GHG Inventory

CAP Implementation Measures

All-Electric Building Codes

SCP Advanced Energy Rebuild Report

Local Energy Efficiency Retrofit Incentive programs

Planning & Economic Development Department

October 23, 2018

City of Santa Rosa

2015 GREENHOUSE GAS INVENTORY

EMISSIONS SECTORS:

Building Energy

Transportation and Land Use

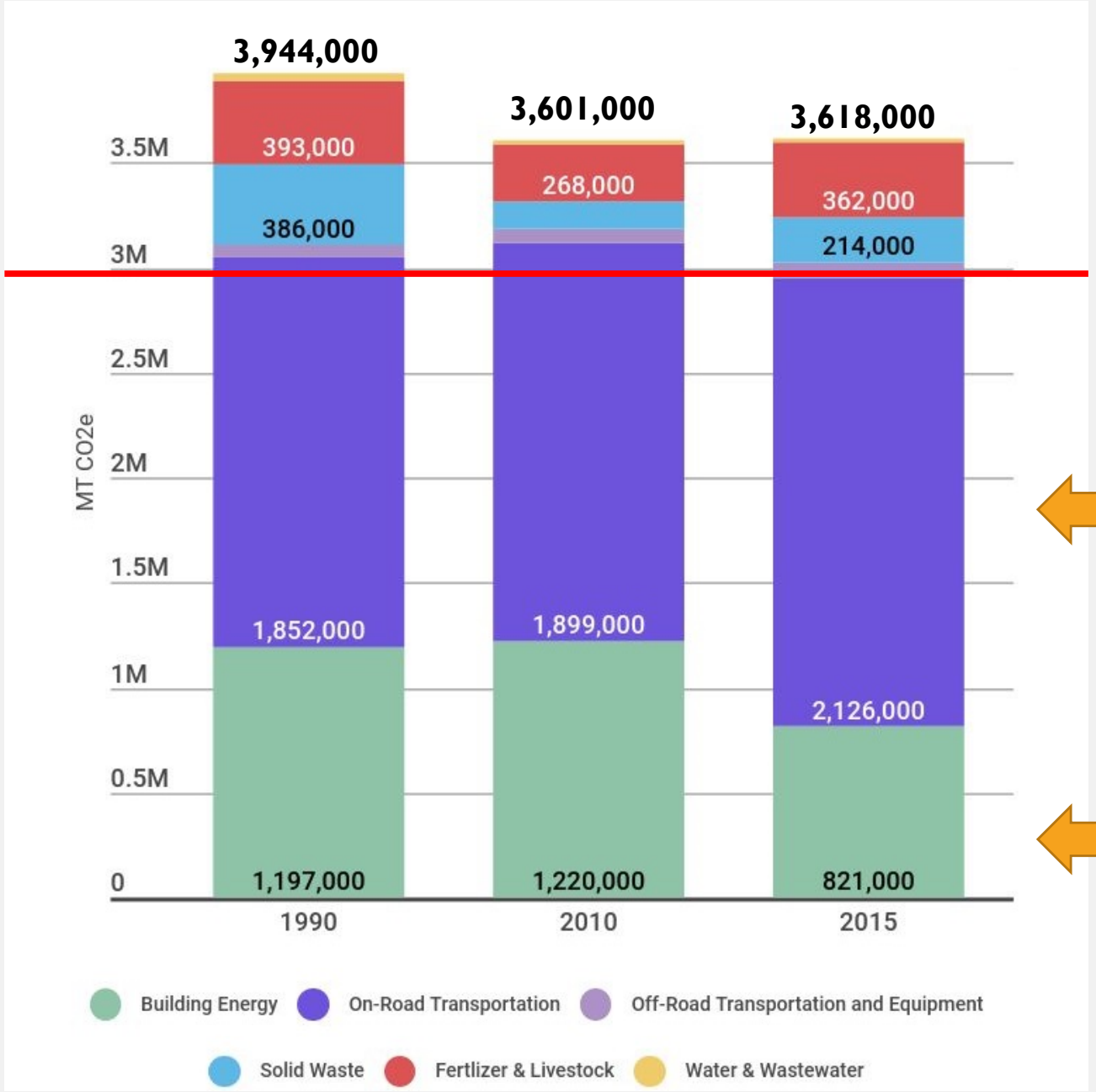
Solid Waste

Water and Wastewater

Livestock and Fertilizer

Countywide Emissions

2020 Goal
(2.97 million)



Countywide emissions remain around 9% below 1990 levels.

260,000 more miles were driven per day in 2015 when compared to 2010.

Sonoma Clean Power inception lead to 33% reduction in GHGs from building energy use.

Jurisdiction Details

	Emissions (MTCO2e)					
	Backcast	Inventory		CA2020 Business as Usual Forecasts		
	1990	**2010**	**2015**	**2020**	**2040**	**2050**
Emissions by Jurisdiction						
Cloverdale	57,000	59,000	63,800	73,300	93,200	93,800
Cotati	51,500	52,100	49,900	61,300	69,000	70,900
Healdsburg	93,500	108,800	116,800	121,000	123,700	121,100
Petaluma	387,000	441,900	445,900	545,000	580,900	588,600
Rohnert Park	291,300	264,300	263,700	372,700	371,800	378,600
Santa Rosa	1,123,100	1,065,200	1,002,800	1,396,900	1,844,700	2,027,500
Sebastopol	73,200	76,300	72,500	93,000	96,500	97,100
Sonoma City	96,900	103,400	105,400	122,200	132,500	131,200
Windsor	133,000	157,800	151,900	188,100	212,000	216,500
Unincorporated Sonoma County	1,244,300	1,004,500	983,300	1,128,800	1,205,600	1,218,300
Emissions Not Assigned to Individual Communities						
Fertilizer and Livestock	392,800	267,600	361,800	242,600	193,500	169,000
Sonoma County Total	**3,943,600**	**3,600,900**	**3,617,800**	**4,344,900**	**4,923,400**	**5,112,600**

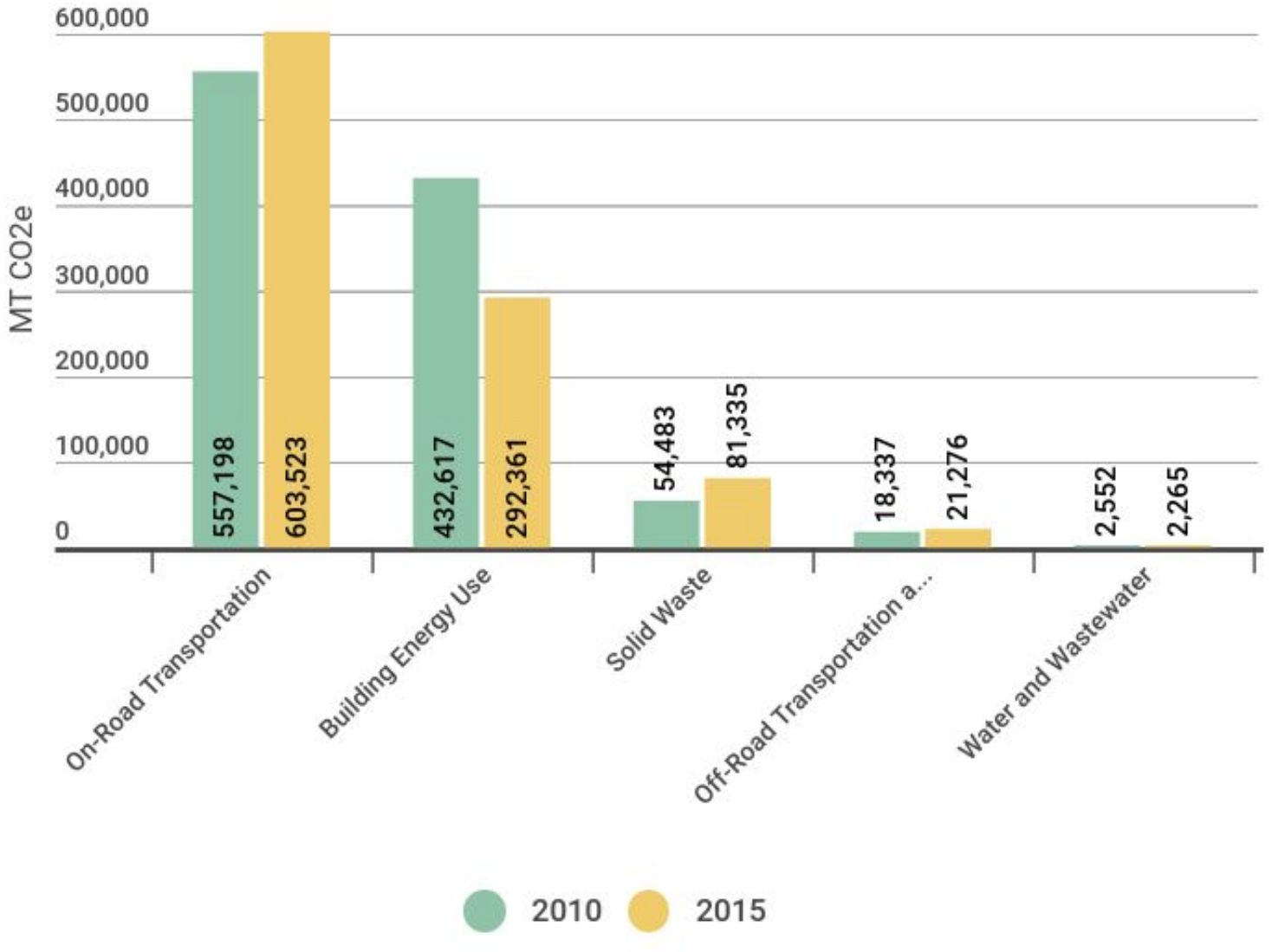
Santa Rosa

Units: Metric tons of CO_2e

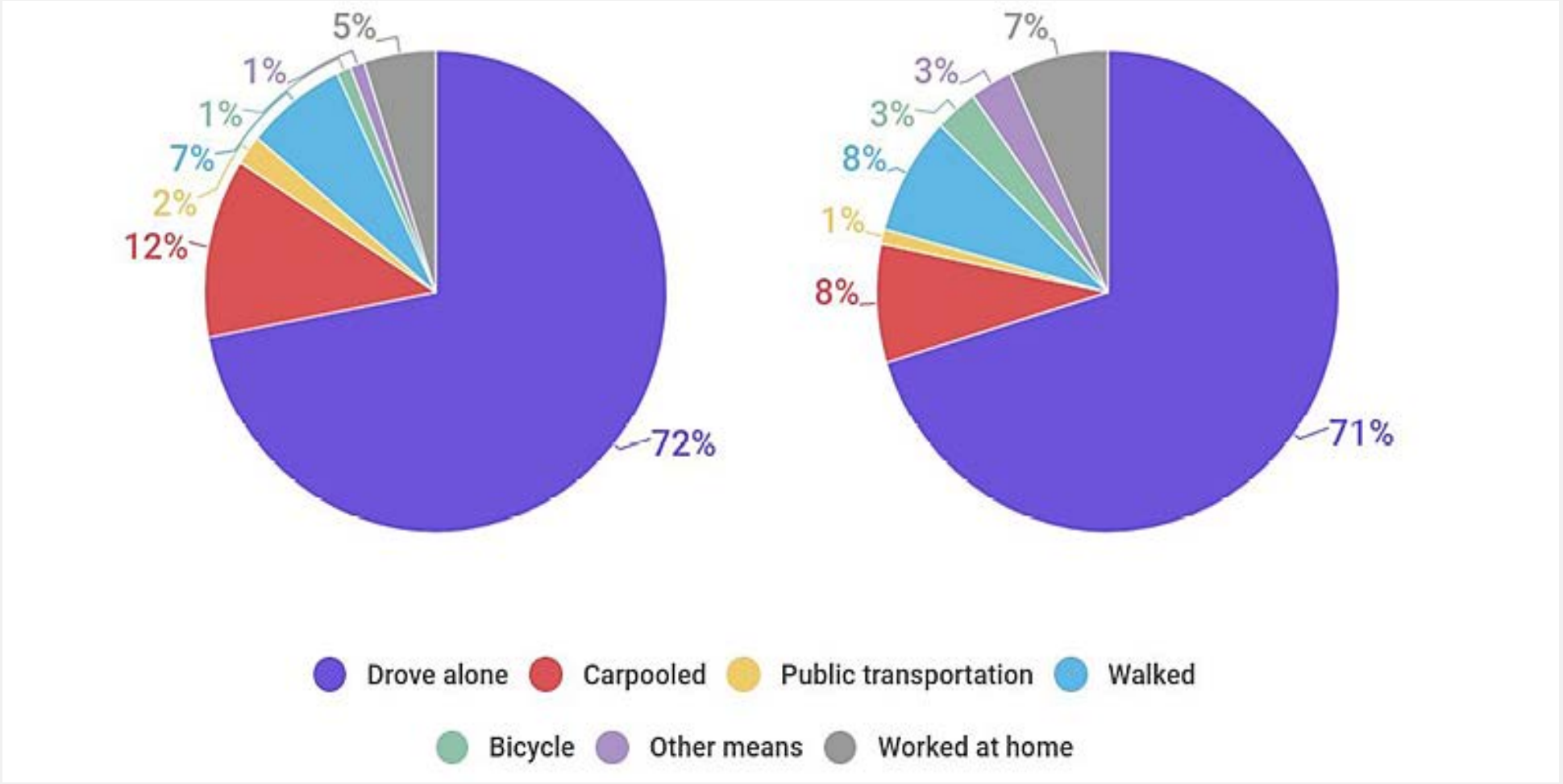
1990	2007	2010	2015
1,123,100	1,321,100	1,065,200	1,002,800

Percent Change from 1990 Levels:	+ 15%	- 5%	- 11%

Total Emissions by Source



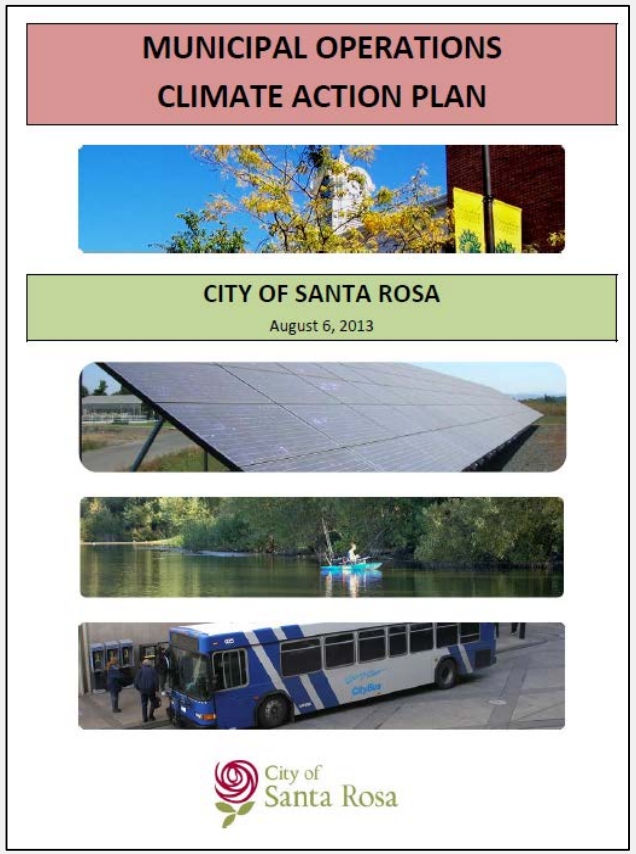
Travel Modes to Work

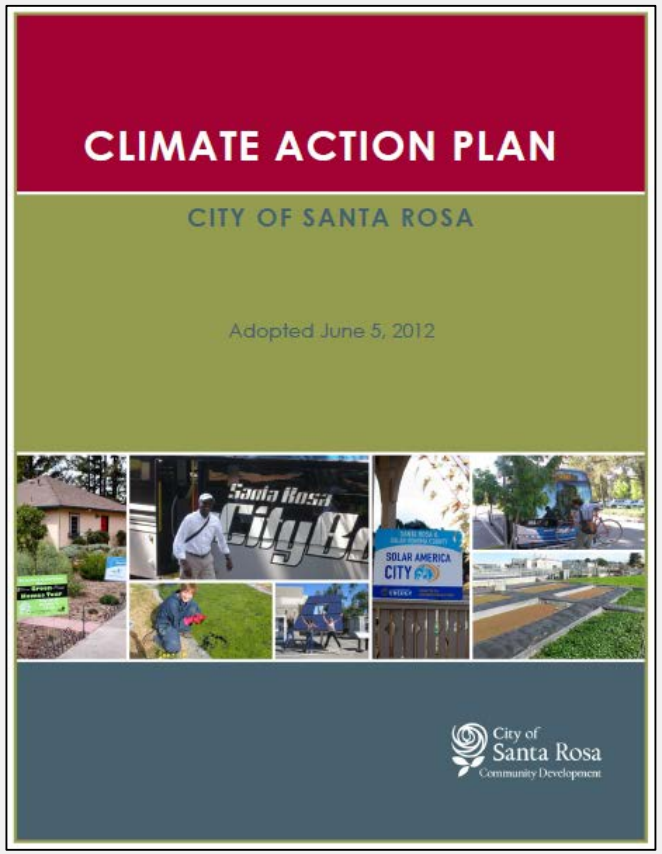


CLIMATE ACTION PLAN UPDATE

CLIMATE ACTION PLANS

- The City Council adopted **two** Climate Action Plans (CAPs) to address greenhouse gas (GHG) emissions.
- The Municipal CAP addresses GHGs from City facilities.
- The Communitywide CAP address citywide GHGs.
- The CAPs include a baseline GHG inventory, and a menu of implementation measures to reduce GHG emissions.





COMMUNITY-WIDE CAP

The Community-wide CAP is divided into categories including:

- Energy efficiency
- Renewable energy usage
- Parking and land use
- Alternative transportation
- Optimized vehicle travel
- Solid waste
- Water and wastewater efficiency
- Local food systems
- Off-road emissions

ENERGY EFFICIENCY

- The California Green Building Standards Code-CALGreen—includes mandatory standards promoting sustainable construction practices.
- It contains mandatory requirements, and optional voluntary standards referred to as Tiers.
- The City adopted all Tier 1 voluntary standards except energy efficiency in Nov. 2016.

CALGreen®

Sonoma Clean Power

RENEWABLE ENERGY

- The mandatory requirements of the CALGreen include wiring for rooftop solar and electric vehicle charging in new residential homes.
- The next building code update (2019) will make rooftop solar a requirement for single-family residential.
- The City receives all electricity delivery from Sonoma Clean Power (SCP) for municipal meters.
- SCP procures a mix of electricity that is a minimum of 42% renewable, carbon-free sources.
- SCP provides 100% renewable electricity to subscribers as a premium service.
- SCP is administering the Advanced Energy Rebuild program, providing rebates for residents rebuilding homes in the Tubbs fire area to higher EE standards.

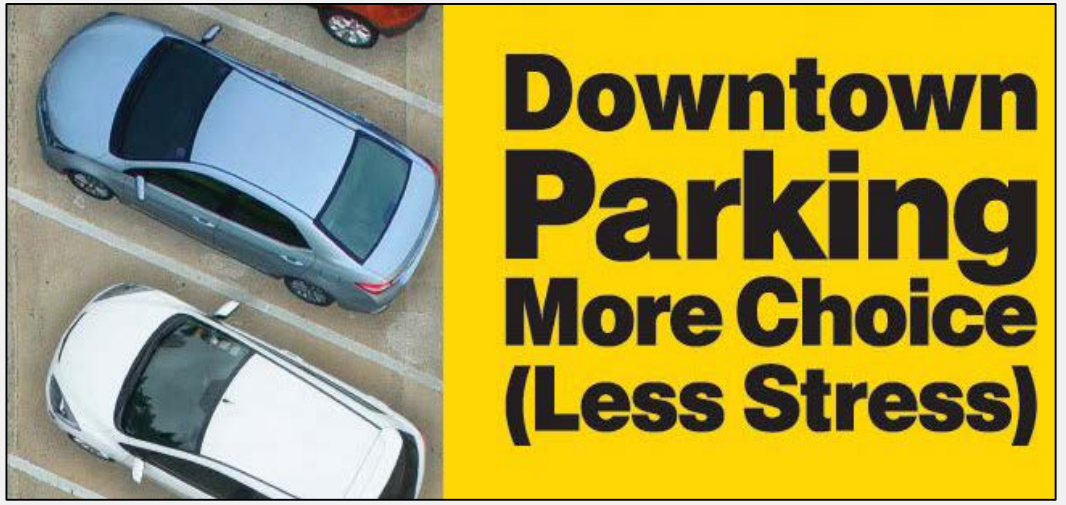
PARKING AND LAND USE

- Gas-powered vehicles are the largest source of community GHG emissions. Land use policies seek to reduce vehicle dependence.

- Station area plans provide developer incentives to construct high density housing near transit and commercial. Policy development is ongoing to increase density bonus and height limits in these priority development areas.

PARKING AND LAND USE
(CONT.)

- A pricing system for public parking was implemented in 2018 to increase parking availability downtown and reduce vehicle circling.
- Parking permits are required in 6 neighborhoods to ensure that only residents park on-street during the day, preventing spillover parking from employment centers and encouraging transit ridership.



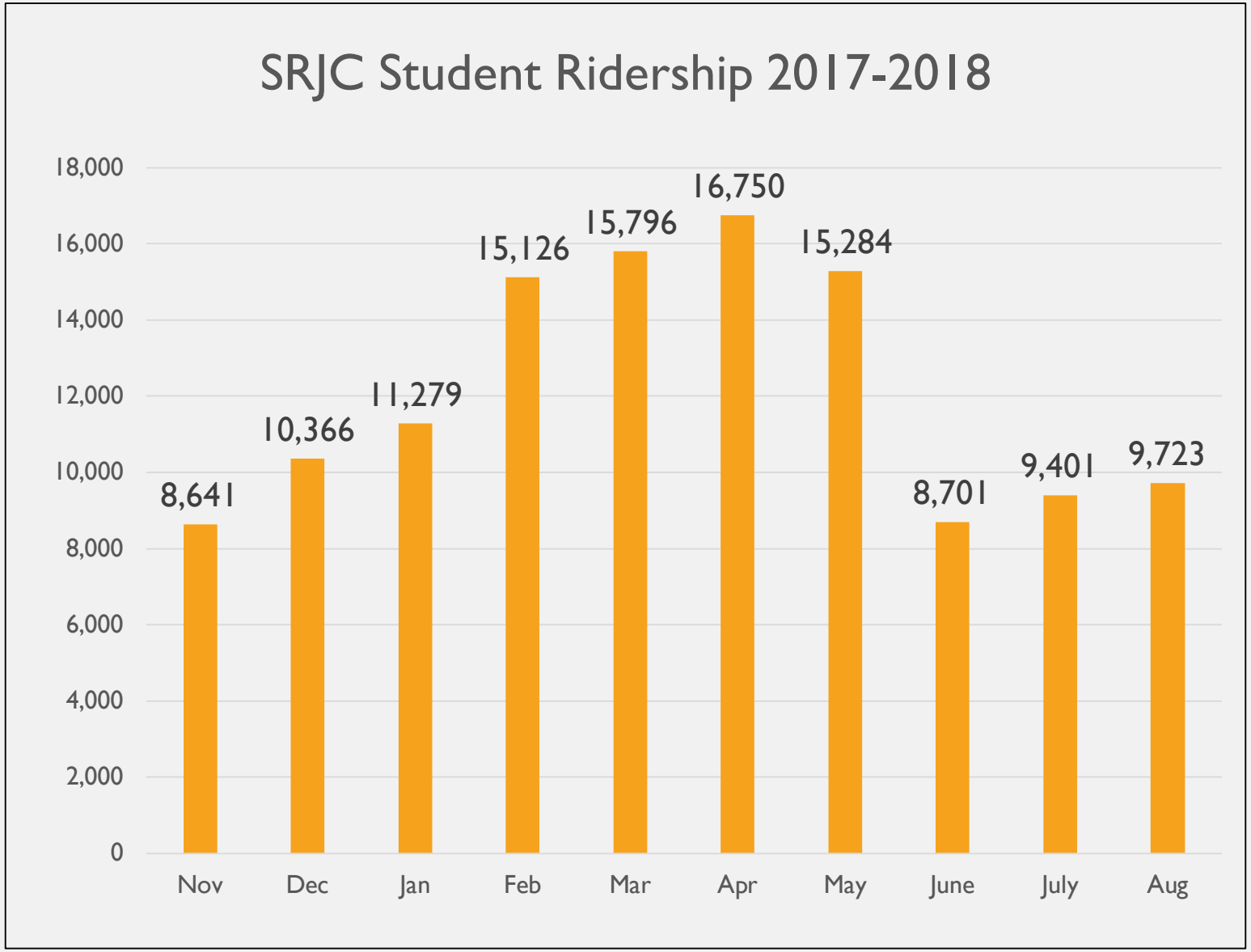
ALTERNATIVE TRANSPORTATION

- Completed pedestrian and bicycle enhancements in +100 locations in 2017:
  - Green painted bike lane transitions
  - Stony Point Road Class II Bike Lane and signal walk
  - Montecito Blvd Class II Bike Lanes
  - Bike/Ped signal design at Hearn Avenue
  - SMART multi-use path improvements
  - Bike share program in development with regional partners

ALTERNATIVE TRANSPORTATION

- In 2017, Reimagining CityBus was completed.
- Since fall of 2017, Transit has collaborated with the SRJC to provide unlimited access to CityBus for students, 3,500 rides per week in Spring 2018.
- Transit continues to manage the Free Ride project, providing participants who walk, bike, or carpool to work with a guaranteed ride home in event of an emergency.
- In 2017, there were1,500 participants in 290 organizations.

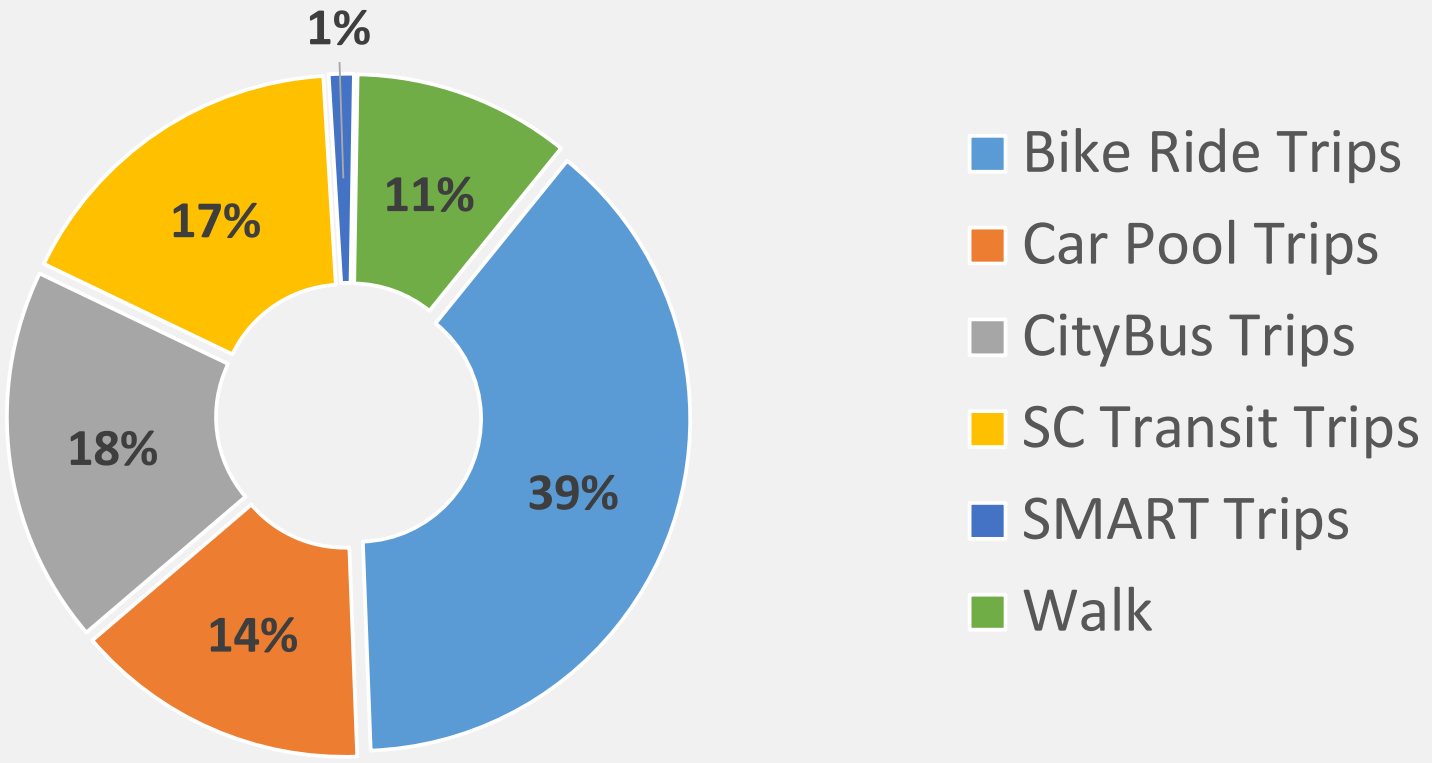
ALTERNATIVE TRANSPORTATION



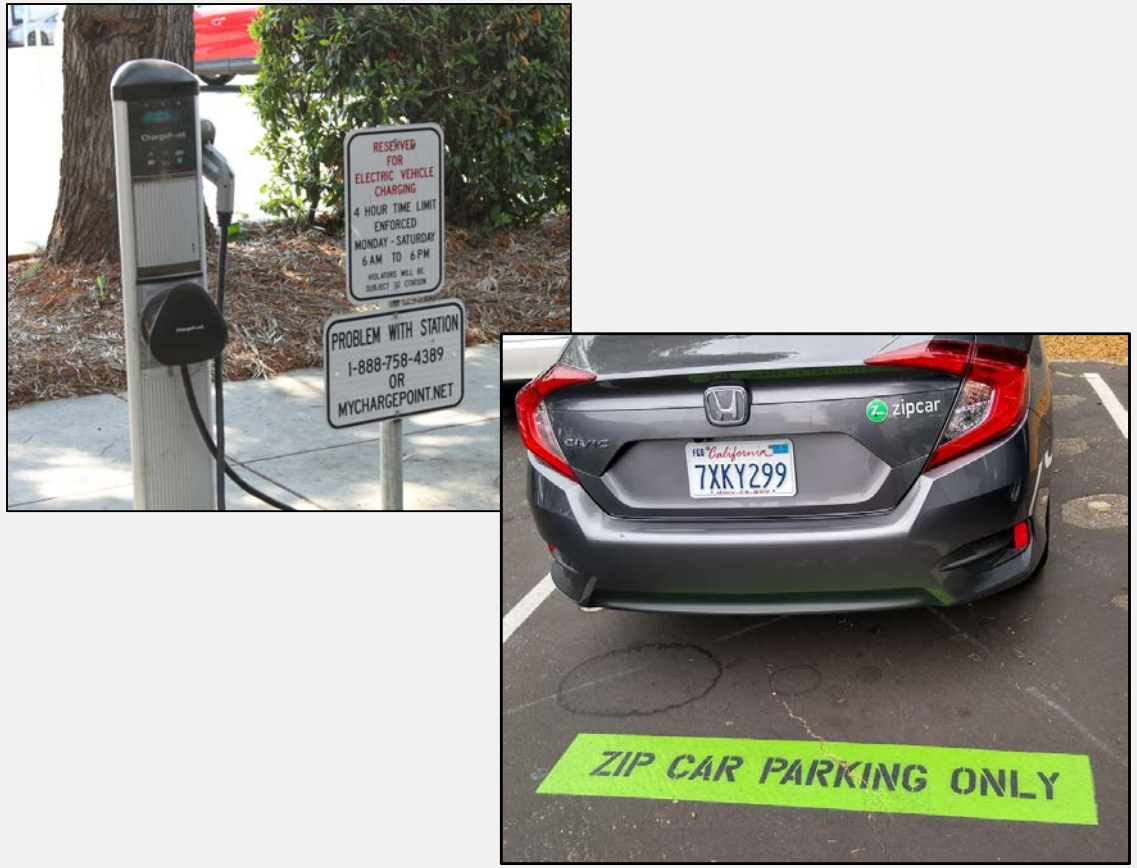
ALTERNATIVE TRANSPORTATION

Santa Rosa Free Ride Program Participation
Aug 2017- Aug 2018

• 38,934 Trips • 1,497 Participants • 262 Organizations



OPTIMIZED VEHICLE TRAVEL



- The City has taken actions to support the adoption of hybrid and all-electric vehicles, including installing 11 electric vehicle chargers in public parking facilities, with seven more planned.
- The City has promoted Sonoma Clean Power's successful annual electric vehicle rebate program.
- The SCTA, in partnership with local governments, is developing a car-share program with two vehicles in downtown Santa Rosa.

SOLID WASTE

- New solid waste hauler Recology mission represents a fundamental shift from traditional waste management to resource recovery.
- Required to progressively increase waste diversion from local landfill over next ten years, with a diversion rate requirement of 60% by 2029.
- Introduction of organic green waste can for all Santa Rosa residents.
- New 2017-18 model year collection vehicles fueled with renewable diesel
- Dedicated "Waste Zero" Santa Rosa team to provide public education and outreach programs.
- The City and others implemented a countywide ban on single-use plastic bags for retail and grocery store use in 2014.

WATER AND WASTEWATER

- Reducing water usage reduces energy used to convey and treat municipal water.
- Water Department manages longstanding water conservation rebate programs.
- Water department is in the process of replacing conventional residential water meters with meters that measure water usage in realtime, to identify leaks, increase water efficiency, and save ratepayers money.

LOCAL FOOD SYSTEMS

SANTA ROSA WEDNESDAY NIGHT MARKET

- The City promotes local agriculture and food production through year-round farmers' markets.
- The Recreation and Parks department established community gardens in new neighborhood parks including Finali and Bayer parks.
- In 2012, the Zoning Code was updated to allow hens on single-family residential lots.

OFF-ROAD EQUIPMENT

- The City encourages the provision of outside electrical outlets for gardening equipment through implementation of the residential building code.
- Ongoing rebate programs to replace turf lawns with water-efficient landscaping.
- Parks staff annually review idling policies, and regularly inspect and maintain landscaping equipment to minimize emissions.
- Standard conditions on new entitlements limit GHG emissions from new construction.

MCAP ACTIVITIES

The Municipal CAP (MCAP) identifies ways to reduce emissions from City facilities and operations, with some overlap with the Community-wide CAP, including:

- Water and wastewater operations
- Building energy
- Fleet vehicles
- Public lighting
- Waste stream

WATER AND WASTEWATER

- LTP transports treated water to the Geysers geothermal plant to generate electricity.
- LTP has completed upgrades including installation of a methane cogeneration system, high efficiency lighting and automatic shutoffs.
- Water conveyance conducted with renewable electricity from SCP.
- Water pump engines replaced with higher efficiency engines as needed.

BUILDING ENERGY

- A high-efficiency boiler was installed in the Ridgeway Swim Center.
- A small cogeneration system was installed at the Finley Center.

BUILDING ENERGY

- The City generates renewable energy at 11 existing solar panel arrays at various water department facilities, a capacity totaling 486 kW.
- Parking division recently completed installation of rooftop solar on 4 parking facilities, increasing generation capacity by 319 kW.
- Exploring opportunities to add floating solar panels to the LTP facility.

FLEET VEHICLES

- Vehicle fleet is upgraded through regular replacement as funding is available.
- Includes 66 hybrid and 4 electric passenger vehicles and EV chargers at City offices.
- Transit currently operates 10 diesel hybrid buses and is in the process of acquiring 2 all-electric buses and chargers.

PUBLIC LIGHTING

- The City continues to replace high wattage sodium street lights with LED lights.
- First phase is completed with roughly 10,000 cobra head lights replaced.
- Second phase to retrofit decorative streetlights with LEDs has commenced and is scheduled to be completed in 2019.

EMPLOYEE COMMUTE & WASTE STREAM

- Administers a trip reduction program, employee telecommute and 9/80 works schedules that reduce employee trips.
- Supports curbside recycling, green waste disposal, and improved waste diversion.
- Implement a recycled content purchasing policy.

CAP IMPLEMENTATION TEAM

- The CAP implementation team consists of City staff from individual implementing departments.
- The team will meet twice annually to report progress of implementation activities by each department.
- Meetings will be publicly noticed and outreach coordinated through participating departments.

RECOGNITION

- The City has been recognized by the California Institute for Local Government:

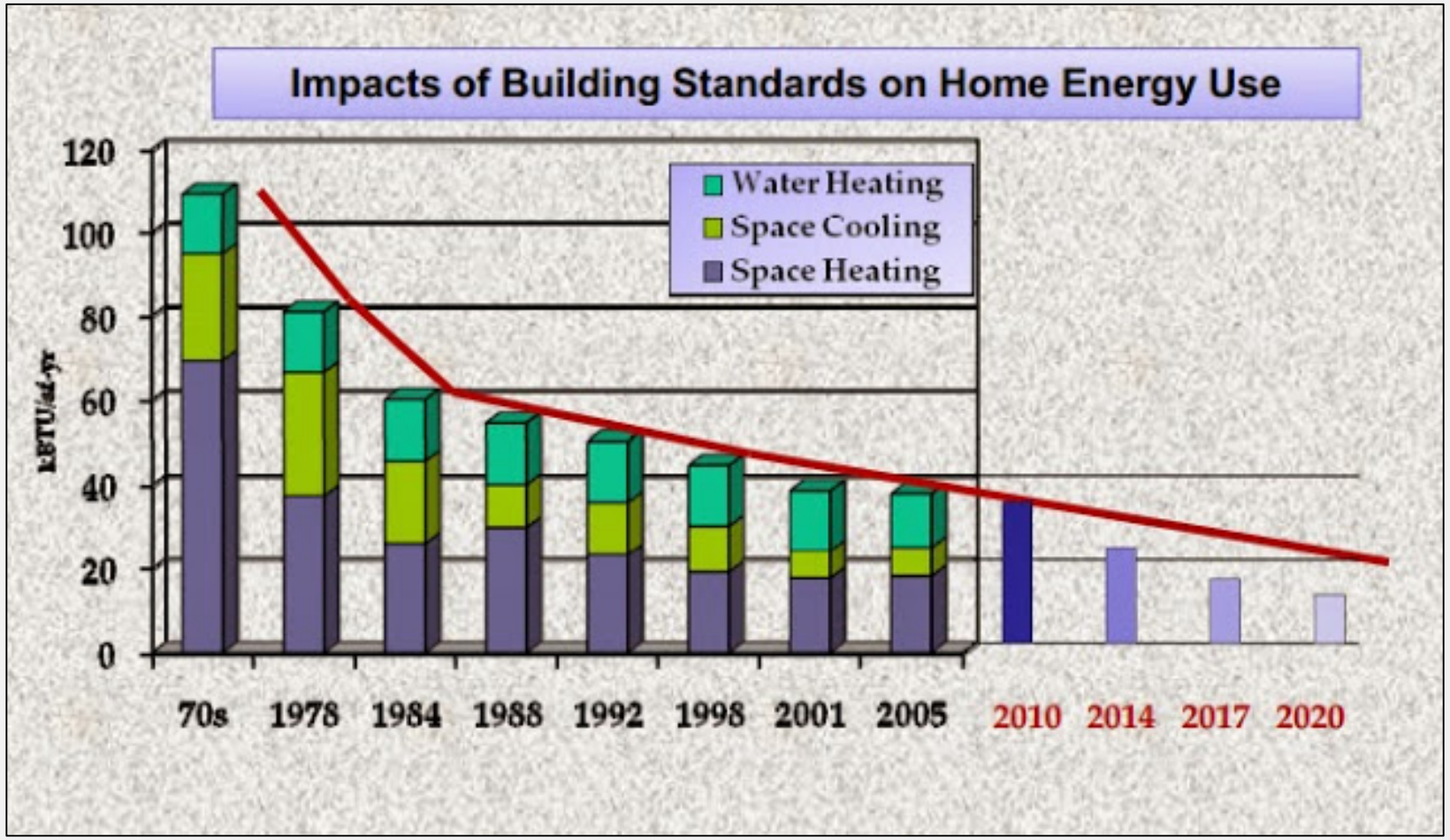
- 2013 Silver Agency 8% GHG Reduction Award
  Silver Best Practices Award
- 2014 Gold Best Practices Award
- 2015 Silver Agency 8% Energy Savings Award
- 2018 Community 21% Greenhouse Gas Reduction
  Natural Gas 5% Savings Award

BUILDING CODES TO SUPPORT CLIMATE ACTION

CALIFORNIA BUILDING STANDARDS CODE (TITLE 24 OF CA CODE OF REGULATIONS)

- Part 1: California Building Standards Administrative Code
- Part 2: California Building Code
- Part 2.5: California Residential Building Code
- Part 3: California Electrical Code
- Part 4: California Mechanical Code
- Part 5: California Plumbing Code
- **Part 6: California Energy Code**
- *Part 7: currently vacant - formerly California Elevator Safety Construction Code*
- Part 8: California Historical Building Code
- Part 9: California Fire Code
- Part 10: California Existing Building Code
- **Part 11: California Green Building Standards Code (CALGreen Code)**
- Part 12: California Reference Standards Code

THREE-YEAR BUILDING CODE CYCLE



*CAL*GREEN BUILDING CODES

- The California Green Building Standards Code, CALGreen, is a set of mandatory building standards to promoting sustainable construction.
- Contains mandatory requirements, and voluntary standards. Tier 1 standards achieve a 15% reduction in energy usage over the mandatory requirement.
- Tier 1 standards are not all-electric, although they may have requirements in common.

2016 TIER 1 BUILDING CODE

- Tier 1 standards:
  - Energy Efficiency, Design, Water Efficiency, Material Conservation, and Environmental Quality

- Tier 1 energy efficiency standard can only be adopted if the City demonstrates to the California Energy Commission cost-effectiveness over time.

- The City adopted all Tier 1 subparts but the energy efficiency standards in Nov. 2016.

OTHER ENERGY EFFICIENCY STANDARDS

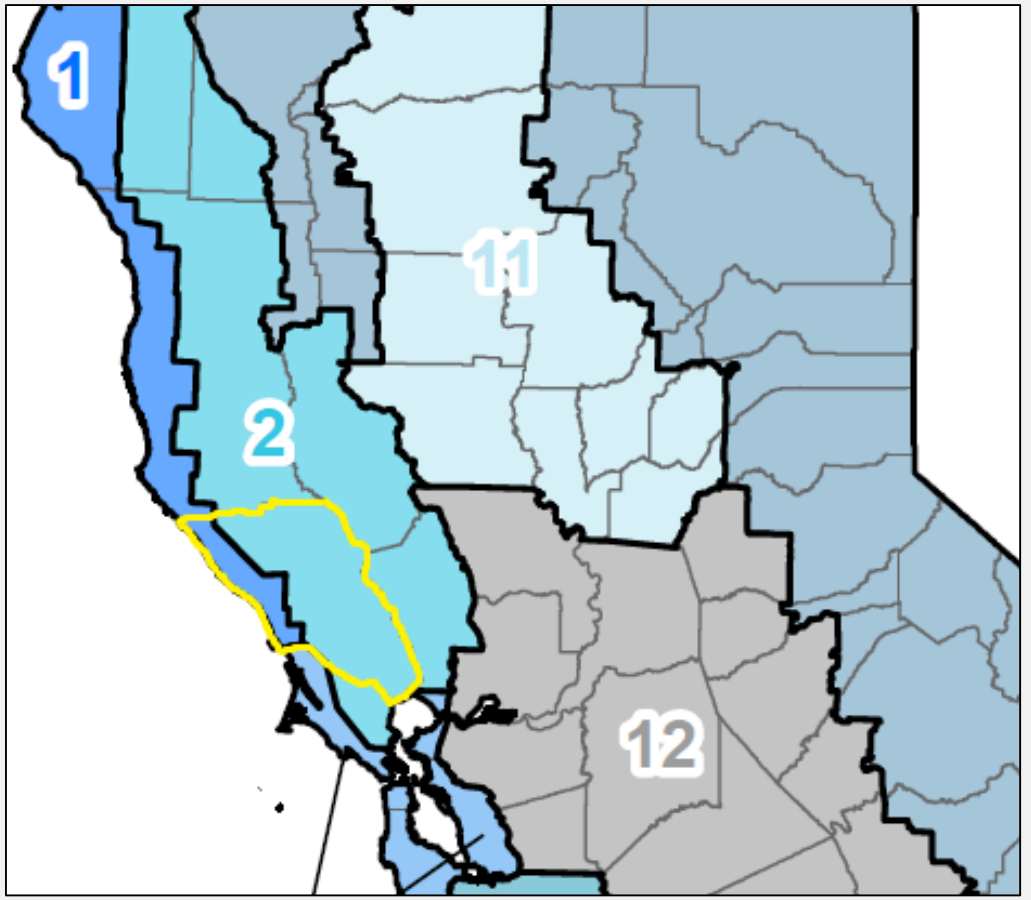
- All-electric building standard: eliminating the use of natural gas in a building, which is primarily used for space and water heating.
- All-electric-ready standard: all pre-wiring needed to remove natural gas service in the future.
- Other energy efficiency standards include cool roofs, solar requirements, space and water heating.

VOLUNTARY EE CODE ADOPTION PROCEDURE

- Voluntary standards are based on the mandatory requirements of each code cycle, and are only effective for the remainder of the code cycle they are approved in.
- CALGreen 2019 mandatory standards have been recently published by the Building Standards Council.
- They are scheduled to be adopted in Jan. 2019.
- The standards become effective in Jan. 2020.
- Tier 1 and Tier 2 standards for 2019 are in development.

VOLUNTARY EE CODE ADOPTION PROCEDURE

- To adopt a non-mandatory energy efficiency code, a cost-effectiveness study must demonstrate over the life of new buildings.
- The voluntary code requirements are reviewed through a public hearing process and approved by Council.
- The California Energy Commission reviews and approves the study, validating the code adoption.
- Opportunity to coordinate with RCPA and member jurisdictions on a cost-effectiveness study for the region.



Building Climate Zones, California, 2017

Sonoma Clean Power's Role in Climate Action Planning

Sonoma Clean Power

Who is Sonoma Clean Power?

- **Not-for-profit** public agency that started serving customers in 2014.
- First stated mission of the joint power's authority establishing SCP is "**reducing greenhouse gas emissions** in Sonoma County and neighboring regions."
- Generates electricity for approximately **600,000 customers** in California's Sonoma and Mendocino counties.
- Pacific Gas & Electric (PG&E) provides distribution of electricity.

Sector – Transportation (59%)

Sonoma Clean Power

Transportation – What We've Done

- 445 electric vehicles sold or leased to Santa Rosa residents through Drive EV
- 712 free residential electric vehicle chargers provided to Santa Rosa residents through GridSavvy

Transportation – Where We're Going

- Additional public charging (level 2, 3) infrastructure
- Encouraging workplace charging
- Thinking of program models to engage non-early adopters

Transportation – What is the Impact?

Compare CO2 emissions for gas and electric cars

How many miles do you drive per year? **15000**

A year of CO2 emissions.

Utilities generate electricity from a variety of sources, including hydroelectric, coal, nuclear, natural gas and a variety of renewable methods, such as solar and wind.

Sonoma Clean Power offers a 100% renewable electricity service known as EverGreen. When you choose EverGreen, you are nearly eliminating greenhouse gas emissions from your electricity use.

Switch to EV and reduce your carbon emissions by an esitmated:

11360 LBS

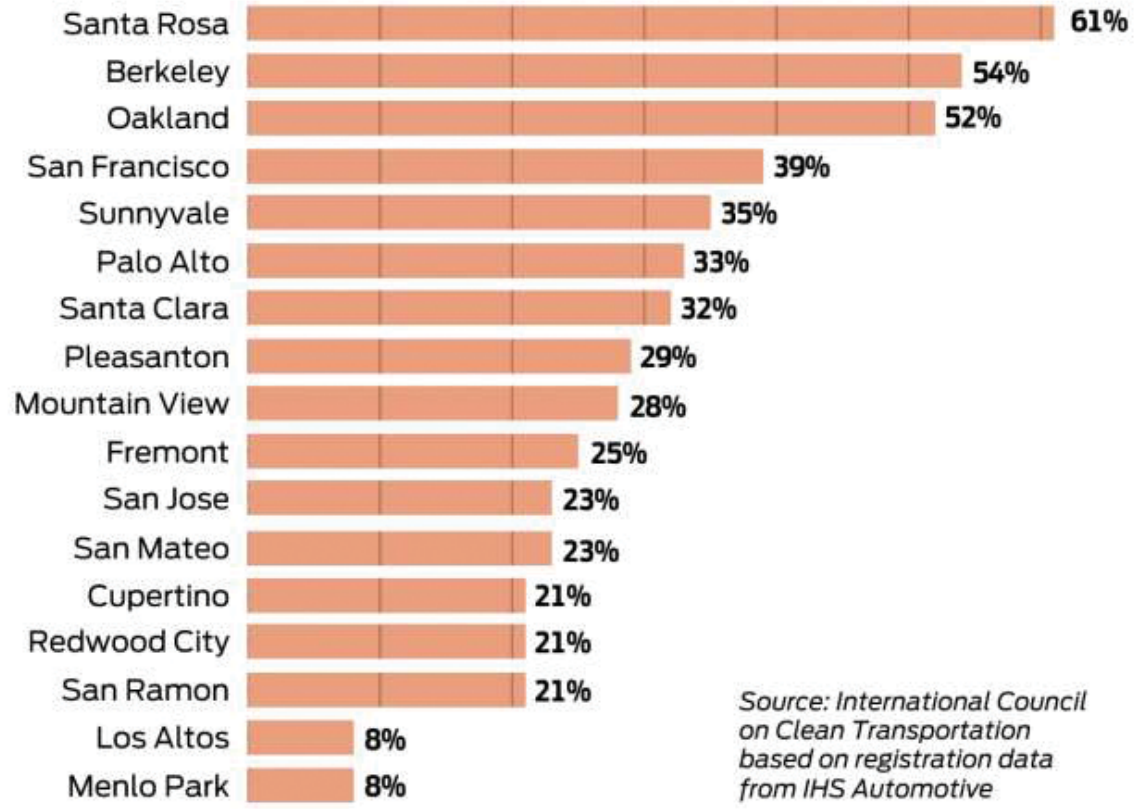
Source: https://sonomacleanpower.org/drive-evchoose-ev

Transportation – What is the Impact?

Power to the people

Sales of plug-in vehicles in Bay Area cities rose rapidly last year. The leader was Santa Rosa, which saw a 61 percent year-over-year increase in new sales.

PERCENT INCREASE FROM 2016 TO 2017 OF ELECTRIC VEHICLE SALES



Source: International Council on Clean Transportation based on registration data from IHS Automotive

John Blanchard / The Chronicle

Sector – Building Energy (23%)

Sonoma Clean Power

Building Energy – What We've Done

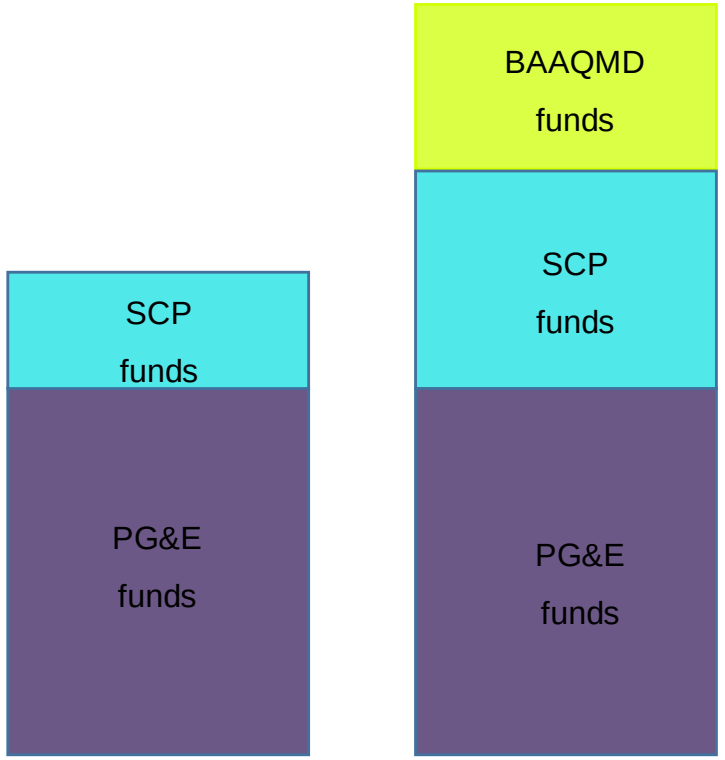
- Further decarbonized electricity powering existing buildings
- Offered free energy saving items through Santa Rosa libraries
- Lending customer induction cooktops to test
- Established Advanced Energy Rebuild, which helps reduce GHG impact of fire rebuilds

Building Energy – Where We're Going

- Tackling existing buildings through Santa Rosa Energy Store offering discounts on energy efficiency equipment
- On-bill repayment options to bring energy efficiency to all
- Expanding GridSavvy Community to help technologies connect to the grid

Advanced Energy Rebuild Overview

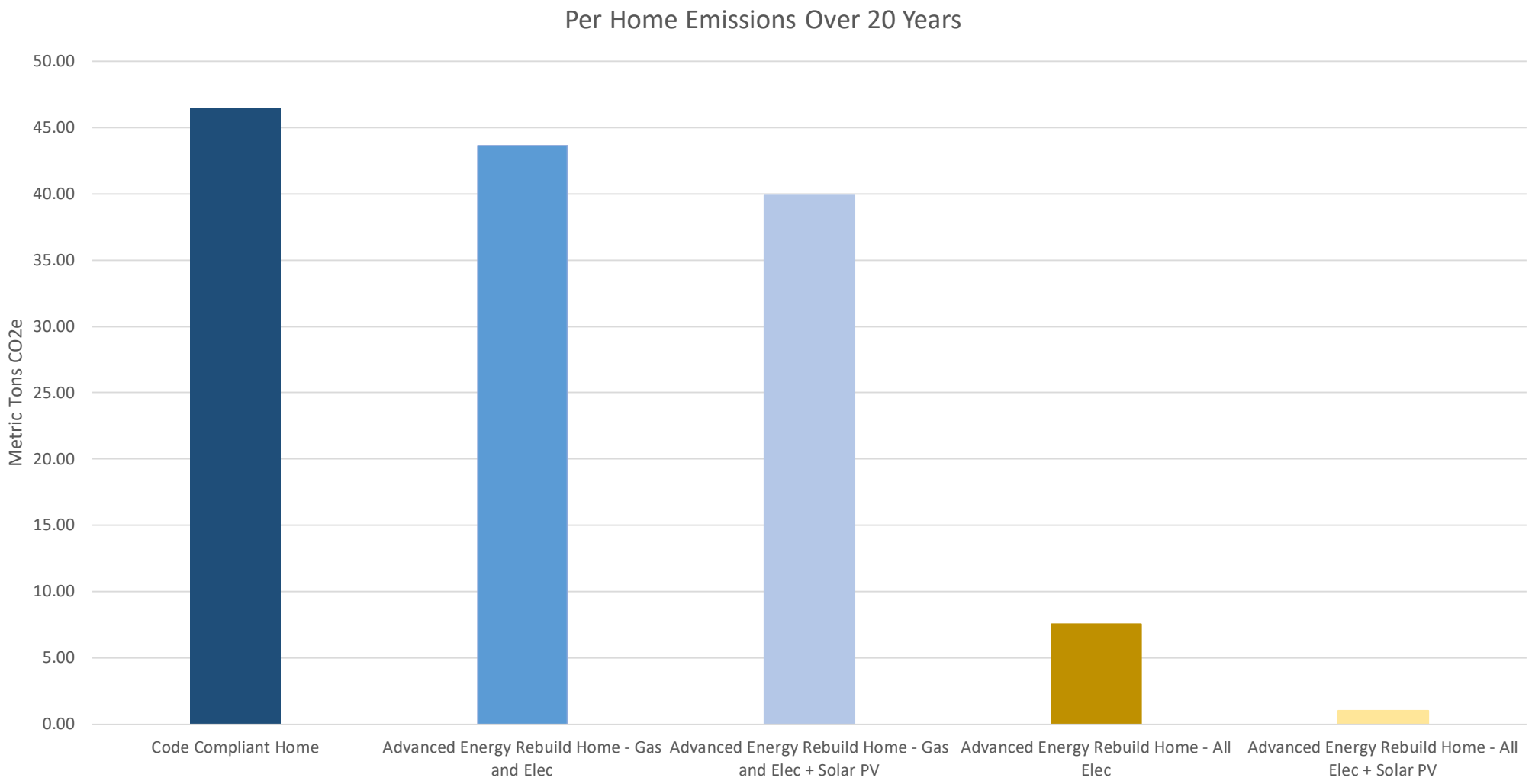
- Collaboration between Sonoma Clean Power, Pacific Gas and Electric (PG&E) and the Bay Area Air Quality Management District.
- Up to **$17,500 in incentives** with one easy online application.
- Goes beyond existing program models by adding in non-standard measures like electric vehicle charging, grid responsiveness, battery storage, and water measures.
- **114 homes** have applied for the program. Approximately **50% of which are all-electric**.
- Energy models for the submitted projects are on average **26% better than current Title 24 code** and are predicted to **save $650 annually on their utility bills**.



Dual Fuel Home (pre-wired for electrification)

All Electric Home

Advanced Energy Rebuild – What's the Impact



Thank you!

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https://sonomacleanpower.org/

Sonoma Clean Power

BAYREN RETROFIT REBATE PROGRAM

HOME UPGRADE INCENTIVE PROGRAM

Incentives and Rebates

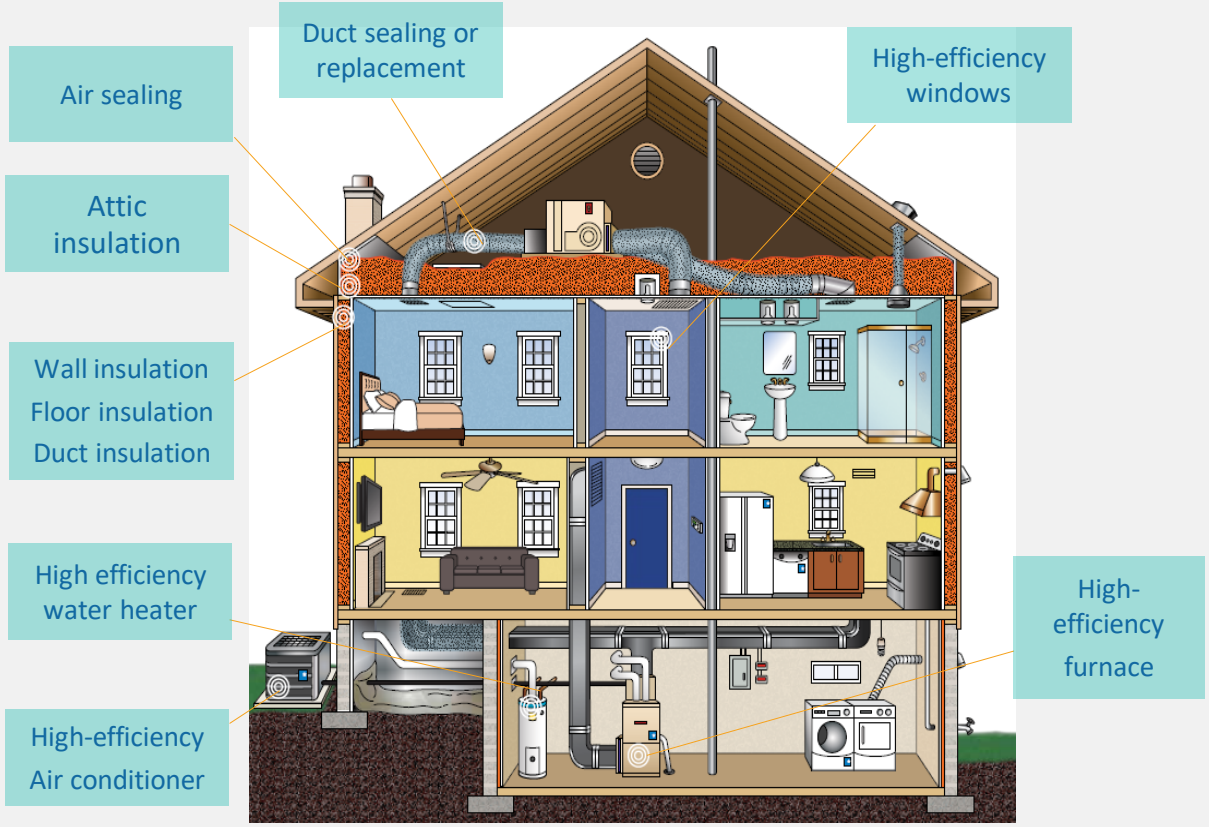
- Up to $5,500 for improving home efficiency
- Get maximum energy efficiency when you combine home improvements
- Incentives are available for single-family homes and 2-4 unit buildings
- Participating contractors

Get Free Help from an Energy Advisor

- 1-866-878-6008
- www.BayRENresidential.org

Financing

- Property Assessed Clean Energy (PACE) financing, such as SCEIP, can be used



BAY AREA MULTIFAMILY BUILDING ENHANCEMENT PROGRAM

Cash Rebates

- $750 per unit calculated for whole building
- Save 15% energy & water with multiple improvements
- Choose your own contractors

No-Cost Energy Consulting

- Energy usage analysis, site visits, scope development
- One-stop-shop to connect with other programs

Enroll online at
bayareamultifamily.org/interest-form

Contact the program:

855-213-2832 or
multifamily@BayREN.org

Case Study: Avalon Apartments, Santa Rosa	
Energy Savings	• 18% overall energy savings • 592 Therms saved • 4812 kWh saved • 6.4 metric tons $C0_2$ emissions reduced
Rebate Amount	$ 15,000 (90% of project cost)
Measures Included	• High efficiency condensing water heater • Replacement of 14 refrigerators with • ENERGY STAR model • Exterior and in-unit lighting upgrades • Low flow aerator installation on unit kitchen and bath faucets
Non-energy Benefits	• Water savings • Increased safety from improved lighting

RECOMMENDATION

- Receive reports and provide comments on:

- 2015 Citywide Greenhouse Gas Inventory
- Climate Action Plan Implementation
- All-electric Building Codes
- Advanced Energy Rebuild Program
- Local Energy Efficiency Retrofit Incentives Programs

QUESTIONS/COMMENTS

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