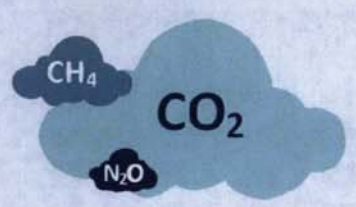
Attachment A:
Pasadena Climate Action Plan,
2018 Annual Report

2018 ANNUAL REPORT

PASADENA
CLIMATE ACTION PLAN

INTRODUCTION

WHAT ARE GHG EMISSIONS?

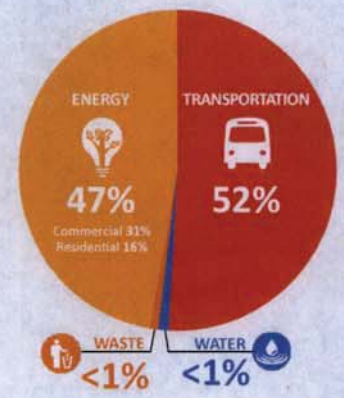


GHG emissions in the atmosphere play a critical role in the Earth's changing climate. In particular, human-activities, such as burning of fossil fuels to generate electricity, have intensified these changes. The three primary GHGs are carbon dioxide (CO2), methane (CH4), and nitrous oxide (N2O).

2009 GHG INVENTORY

The CAP includes a GHG emissions inventory to better understand where GHG emissions originate and to inform the development of effective strategies and actions to reduce local emissions. The inventory identifies and quantifies emissions resulting from community wide activities of residents, businesses, and municipal operations for the year 2009. The inventory also serves as an emissions baseline against which the City can set emissions reduction goals and measure future progress.

As shown in the figure below, the transportation and energy sectors accounted for the two largest contributors of emissions, contributing approximately 99 percent of the community-wide total.



In 2005, California adopted Executive Order (EO) S-3-05 and established a long-term GHG reduction target of reducing emissions 80 percent below 1990 levels by 2050. The following year in 2006, California became the first state in the U.S. to mandate statewide GHG emissions reductions by passing the Global Warming Solutions Act, Assembly Bill (AB) 32, which established a statewide target to reduce GHG emissions to 1990 levels by 2020. In 2016, the enactment of Senate Bill 32 extended this commitment by raising the emissions reduction target to 40 percent below 1990 levels by 2030, demonstrating California's commitment towards achieving the overall statewide target for 2050.

Local governments have a vital role in assisting the State's climate change initiatives. During the past decade, the City has pursued a variety of programs and policies that promote alternative modes of transportation, increase energy efficiency of new buildings, expand recycling, ban plastic bags and polystyrene products, and conserve natural resources to proactively reduce its carbon footprint and greenhouse gas (GHG) emissions. The City remains committed to confronting climate change. In 2018, the City Council adopted the Pasadena Climate Action Plan (CAP), a strategic framework for measuring, planning, and reducing the City's share of GHG emissions.

The CAP established GHG reduction goals consistent with state legislation, as shown in Figure 1.

Figure 1- CAP Goals and Statewide GHG Emissions Reduction Targets

Year	Pasadena CAP Goals	Statewide Targets
2020	27% below 2009 levels (equivalent to 14% below 1990 levels)	15% below 2009 levels per AB 32 (equivalent to 1990 levels)
2030	49% below 2009 levels (equivalent to 40% below 1990 levels)	49% below 2009 levels per SB 32 (equivalent to 40% below 1990 levels)
2035	59% below 2009 levels (equivalent to 52% below 1990 levels)	The state does not have a 2035 target
2050	83% below 2009 levels (equivalent to 80% below 1990 levels)	83% below 2009 levels per EO S-3-05 (equivalent to 80% below 1990 levels)

The City has made significant progress in reducing GHG emissions. Between 2009 and 2013, GHG emissions decreased by approximately 9-percent. Reductions in emissions predominately came from the energy and transportation sectors. To continue this effort, the role of the CAP document is to set local reduction goals and develop a strategy consistent with California's targets, identify existing and new programs to achieve reductions, monitor and evaluate progress, and to serve as a qualified GHG emission reduction strategy consistent with the California Environmental Quality Act (CEQA) Guidelines Section 15183.5.

2020 STRATEGY

In order to accomplish statewide targets and local reduction goals for the years 2020 and 2035, the Pasadena CAP identifies an approach that contains five principle strategies: (1) Sustainable Mobility and Land Use, (2) Energy Efficiency and Conservation, (3) Water Conservation, (4) Waste Reduction, and (5) Urban Greening. Each strategy includes a series of measures that define the direction the community and the City will take. The CAP contains a total of 27 measures that are regulatory, incentive-based, or voluntary. Particular measures are qualitative and support the overall strategy while other measures include quantifiable targets that can yield approximate GHG reductions. In addition, each measure has an implementation time frame and over time, the City will monitor, review, and update the Pasadena CAP to ensure continued effectiveness and progress. Each measure consists of a set of implementation actions intended to define the specific steps that both the City and the community will implement over time. The CAP contains a total of 142 implementation actions that are ambitious, yet attainable and include a combination of ordinances, policies, programs, and incentives, as well as outreach and educational activities.

The 2018 Annual Report marks the first annual report and provides a snapshot of the City's progress. This report focuses on the progress made towards achieving the 2020 GHG emissions reduction goal. It identifies the status of 13 performance indicators and whether those indicators will likely be achieved by year 2020. The report also highlights key actions and programs implemented by various City Departments - Planning & Community Development (Planning), Transportation (DOT), Water & Power (PWP), and Public Works (PW). Appendix A details the status of all implementation actions identified within the near-term time frame.

With only one year of implementation, the City has made significant progress relative to the goals set forth for the year 2020. For example, the City's collective efforts and emphasis on electric vehicles (EV) has led to the electrification of a portion of the city fleet and the development of PWP's robust Power UP campaign to encourage the adoption of EVs. Other notable achievements include the newly adopted Power Integrated Resource Plan and its long-term goal to achieve a 100% carbon-neutral power portfolio. Although such accomplishments are promising, it is still too early to evaluate the effectiveness of this long-term plan.

Important to note, this report does not quantify the level of GHG emission reductions for year 2018. The City recognizes it may become necessary to modify the Pasadena CAP to account for state and/or federal actions or improvements to technology and efficiency, and will do so through its assessment of the overall progress of the Pasadena CAP every five years with a GHG inventory. If the inventory reveals that the City is not making the expected or anticipated progress towards meeting the emission reduction goals, the effectiveness of the strategy, measures and/or actions will be evaluated and may be modified as necessary at that point.

CAP REDUCTION STRATEGY

27 Measures

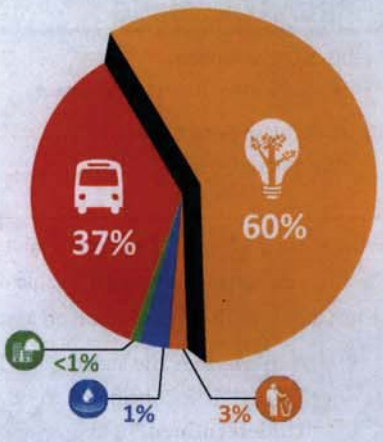
Defines the direction to achieve the CAP's goals

142 Actions

Action steps that will be implemented over time

2020 REDUCTION STRATEGY MIX

GHG reductions for the year 2020 are focused on energy measures



2018 CAP Annual Report Card

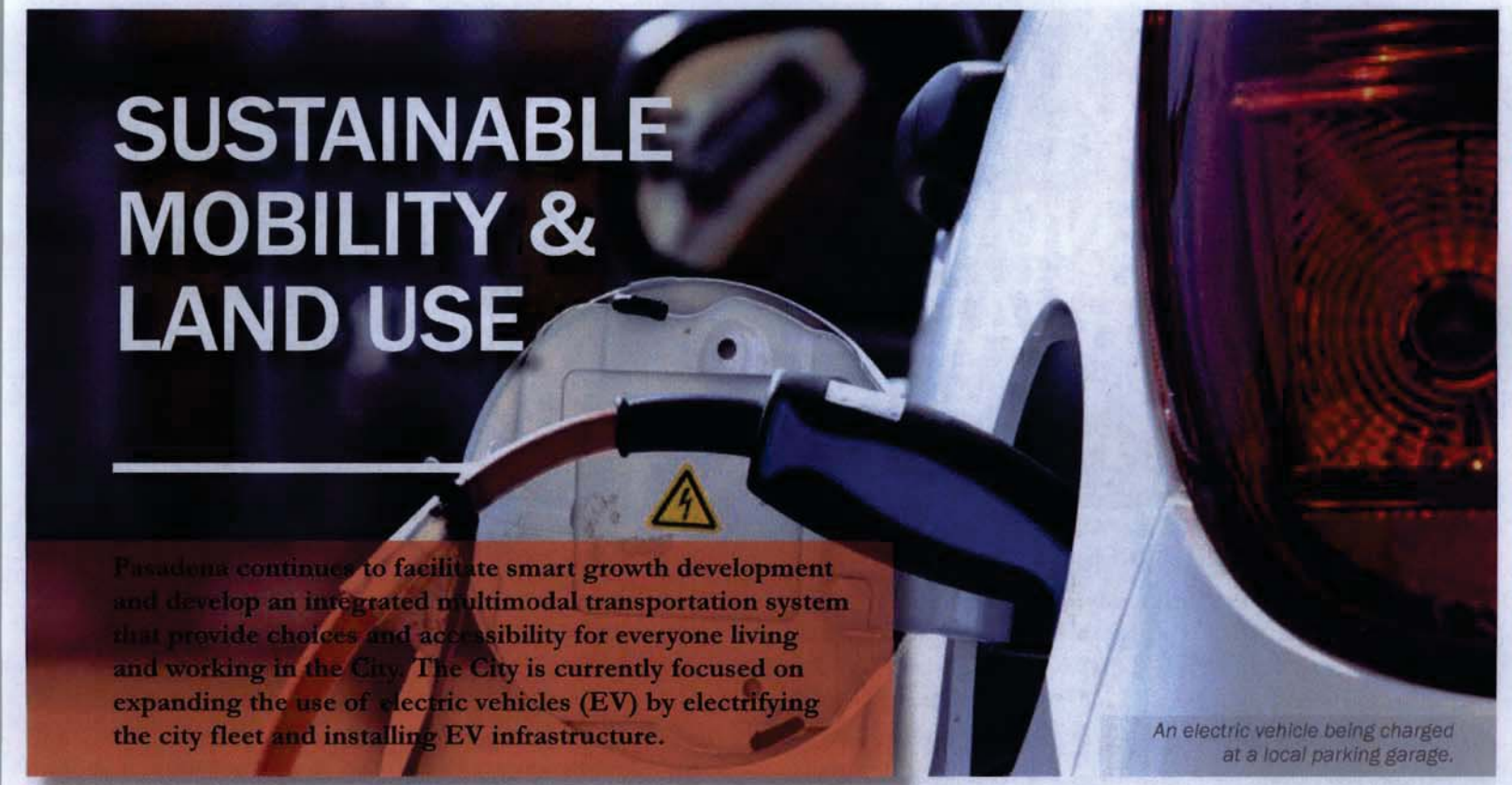
	2018	Achieved	Likely	Undetermined
SUSTAINABLE MOBILITY & LAND USE				
T-1 Walking and Bicycling Install **3** miles of bike lanes Acquire **400** bicycle share bicycles, Install **1** bike share station per square mile	**0** miles **0** bike share **0** bike share stations			See page 5
T-2 Public Transit Achieve **10%** transit mode share	**6%** transit mode share		●	
T-3 Transportation Demand Management Achieve **10%** carpooling mode share	**7%** carpooling mode share		●	
T-4 Alternative Fuel Vehicles Achieve **5%** electric vehicle mode share	Not available		●	
ENERGY EFFICIENCY & CONSERVATION				
E-2 Energy Retrofits of Existing Buildings Decrease energy use in existing buildings by **16%** below 2013 levels	Not available		●	See page 6
E-3 Municipal Operations Decrease municipal energy use by **10%** below 2013 levels and/or **10%** of municipal energy use be from renewable sources	**<1% decrease** in municipal energy use		●	
E-4 Residential and Commercial Carbon-Neutral Energy Replace **950,000 kWh** of electricity use with carbon-free energy	**54,822,457 kWh** reduction in fossil-fueled energy supply	●		
E-5 City's Energy Portfolio Achieve **40%** Renewable Portfolio Standard (RPS)	**35%** RPS		●	
WATER CONSERVATION				
WC-1 Potable Water **0%** reduction in water consumption per capita (Comply with SBX-7 target of **20%** below SBX-7 baseline by 2020)	**26% below** SBX-7 baseline	●		
WASTE REDUCTION				
WR-1 Solid Waste Achieve **75%** diversion rate	**60%** diversion rate			● See page 8
WR-3 Composting and Food Recycling Reduce organic waste by **50%** below 2014 levels	Not available			● See page 8
URBAN GREENING				
UG-1 Green Space Acquire **5** new acres of green space	**0.3** acres restored green space		●	See page 9
UG-2 Urban Forest Plant **500** new trees	**347** new trees planted		●	

The list above only includes performance indicators in the CAP with quantifiable GHG reduction targets for the year 2020. Mode shares for transit and carpooling used available data from the U.S. Census Bureau, 2017 American Community Survey. The status of each performance indicator is based on an assessment as follows:

- **"Achieved"** if the stated goals has been met
- **"Likely"** if it anticipated to be achieved by the target year
- **"Undetermined"** if there are missing data, reports, or parameters to make a determination

SUSTAINABLE MOBILITY & LAND USE

Pasadena continues to facilitate smart growth development and develop an integrated multimodal transportation system that provide choices and accessibility for everyone living and working in the City. The City is currently focused on expanding the use of electric vehicles (EV) by electrifying the city fleet and installing EV infrastructure.



An electric vehicle being charged at a local parking garage.

2019 Stevie Silver Winner

POWER UP PASADENA

recognized for **educational outreach campaign** to encourage adoption of EVs

$88,000

of **electric vehicle rebates** awarded to residential and commercial customers

$932,000

of **Low Carbon Fuel Standard Program** credits to be used for EV infrastructure

58

applications approved for **residential chargers** totaling to $25,000

10 BIKE RACKS

installed in the City

Bicycle safety outreach reached out to over

1,100 RIDERS

FIRE TRUCKS

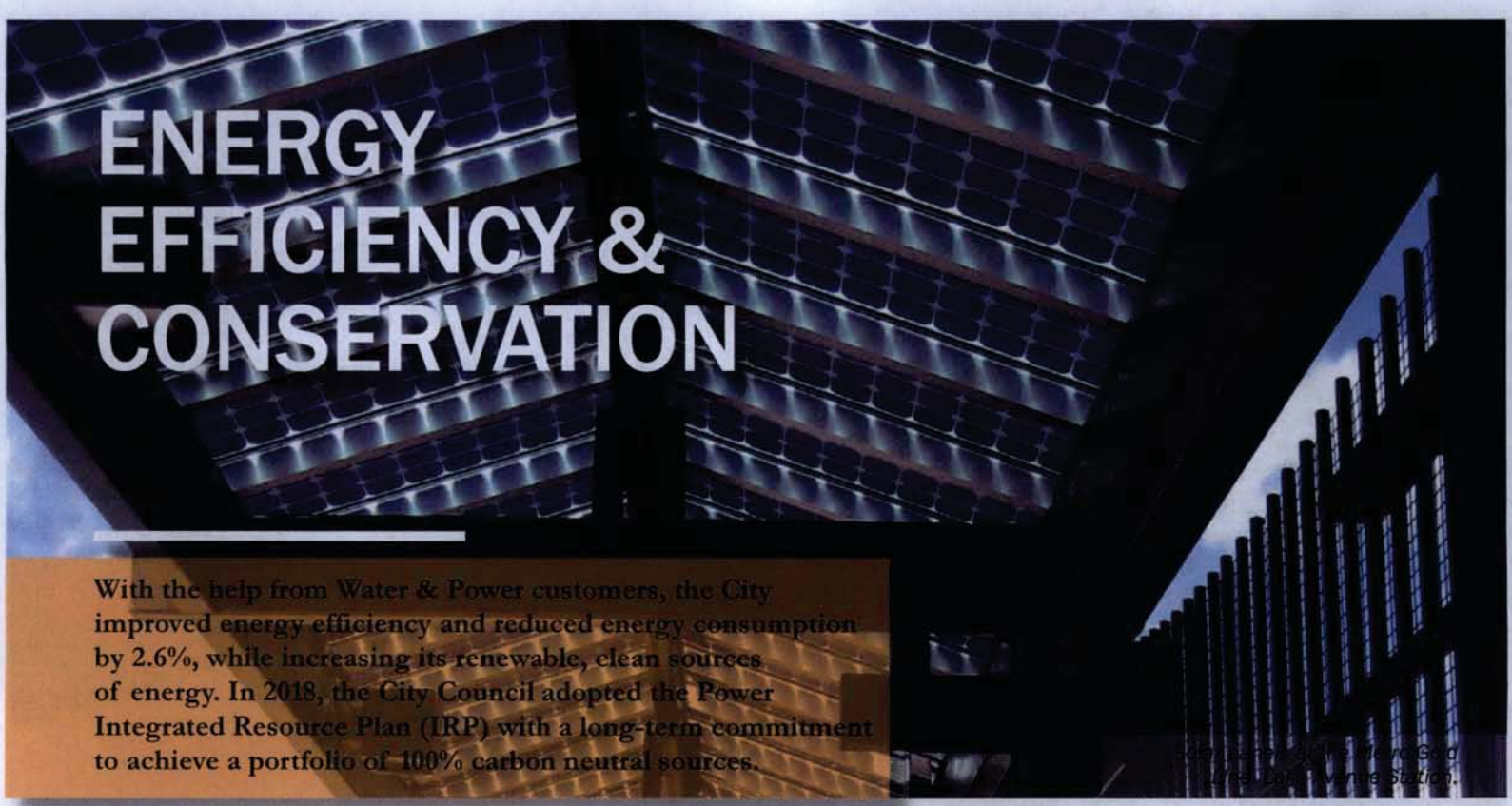
started using low carbon fuel for much of its fleet

30 BUS FINDERS

installed in 2018, totalling to **116** in the City

- An evaluation of alternatives used by other municipalities employing bicycle share vendors from the private sector is currently underway (DOT).
- Two projects in the Bicycle Transportation Plan- Union Street Protected Bike Lanes and Cordova Street Lane Reconfiguration - have been initiated (DOT).
- A Safe Routes to School Program in anticipated to begin late 2019 and conclude by 2021 (DOT).
- The Short Range Transit Plan draft is being finalized (DOT).
- A partnership between Pasadena City College, Caltech, and ArtCenter was successfully implemented in order to continue to fund the College Pass Program (DOT).
- PWP was awarded the Local Government Partnership Program grant to expand charging infrastructure in Pasadena. PWP plans to install approximately 100 Level 2 chargers and 24 fast chargers in 2019.
- The CAP Consistency Checklist was created in order to implement the CAP at a project-level- 23 new developments have incorporated sustainable development actions into their projects (Planning).
- PW purchased battery powered leaf blowers and lawn mowers and continues to look for opportunities to expand its green equipment in a manner consistent with operational needs.
- DOT, along with cities within the Arroyo-Verdugo region, completed Go Verdugo, a trip reduction toolkit to manage on-site transportation programs and encourage riders alternative transportation options.

ENERGY EFFICIENCY & CONSERVATION



With the help from Water & Power customers, the City improved energy efficiency and reduced energy consumption by 2.6%, while increasing its renewable, clean sources of energy. In 2018, the City Council adopted the Power Integrated Resource Plan (IRP) with a long-term commitment to achieve a portfolio of 100% carbon neutral sources.

Power IRP

On December 2018, PWP submitted the following recommendations to the California Energy Commission

- **No new long term commitments** for fossil- fueled resources for energy needs
- Achieve a **60% renewable portfolio standard** by 2030
- Set a **75% GHG reduction target** from 1990 levels by 2030
- Adopt a long-term goal to achieve a **100% carbon neutral power** portfolio

35%
renewable portfolio standard, a 2.25% increase from 2017

1225 kW
of **solar** privately installed for both commercial and residential projects

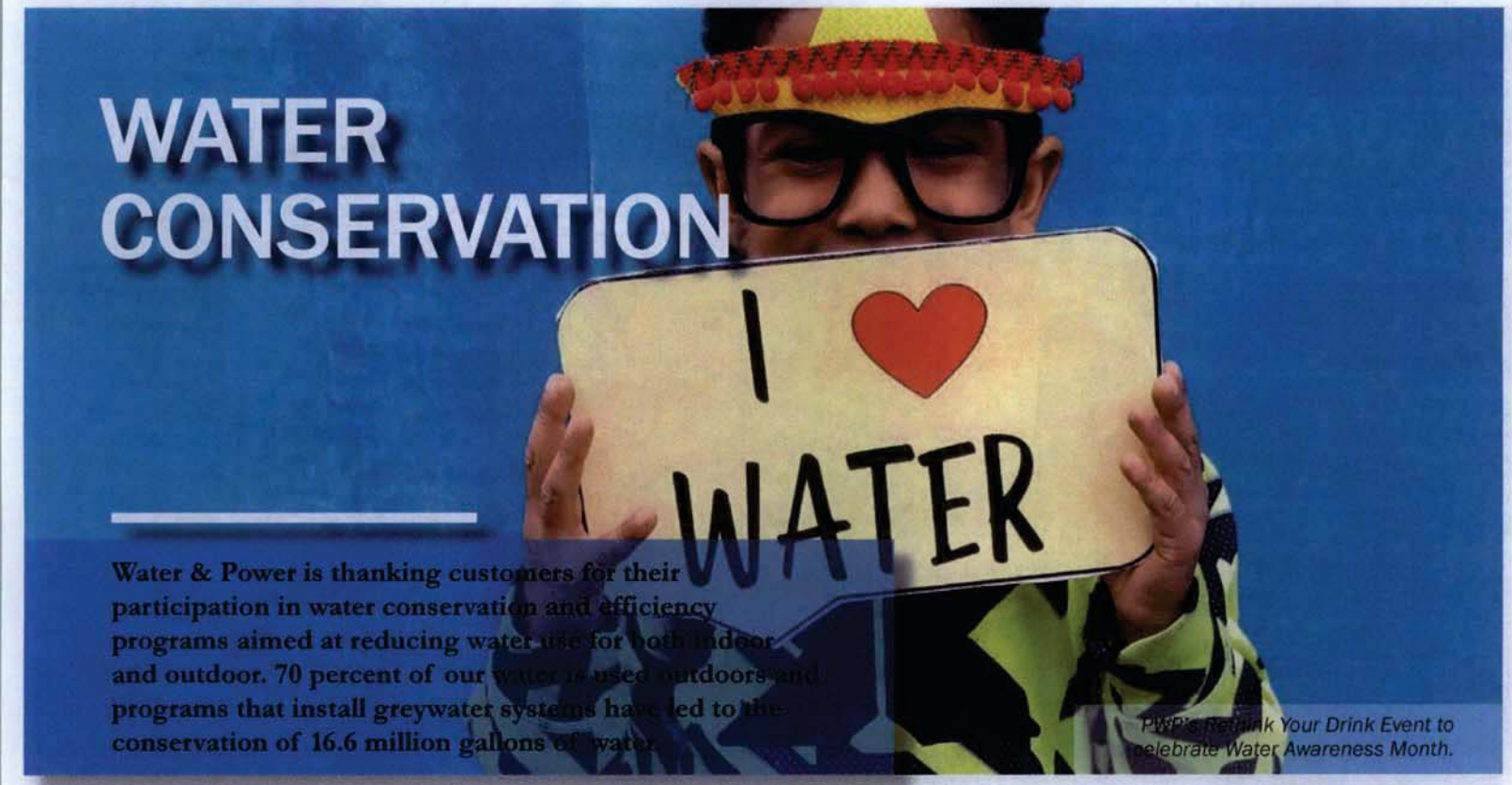
$127,000
worth of rebates given for **energy efficiency products**

304
thermostats

2,195
residential energy efficiency products (i.e. Energy Star appliances and efficiency HVAC systems)

- A GHG Inventory is needed to assess the energy use in existing buildings, therefore information for this metric is currently unavailable. (Planning)
- City Council formally approved the termination of PWP's forty-year contract with the Intermountain Power Agency for energy from its coal-fired Intermountain Power Project.
- PWP contracts with O-Power Energy to produce hard copy reports issued to all residents and encourages them to compare past usage to reduce their use and install efficiency products.
- PWP's UnderOneRoof Program, through the Housing Department (Neighborhood Housing Services of LA County), offers housing loans that help finance energy efficiency improvements for low-income customers.
- Energy outreach campaigns, such as PWP's direct install programs, are developed to support the wide-range of customer types and their varying needs.
- As of 2018, PWP has a total of 768 customers subscribed to the Green Power Purchase Program. This number encompasses all existing customers since the program began.
- Launched the Online Residential Rebate Portal which allows electric utility customers to submit online applications for home energy rebates and track the processing status. Paper applications no longer required.
- The City was awarded SCAG's Sustainability Grant to develop a study for Urban Heat Island Reduction Strategies for Lincoln Avenue and Holly Street.(Planning and PW)

WATER CONSERVATION



PWP's Rethink Your Drink Event to celebrate Water Awareness Month.

Water & Power is thanking customers for their participation in water conservation and efficiency programs aimed at reducing water use for both indoor and outdoor. 70 percent of our water is used outdoors and programs that install greywater systems have led to the conservation of 16.6 million gallons of water.

1,600 CUSTOMERS

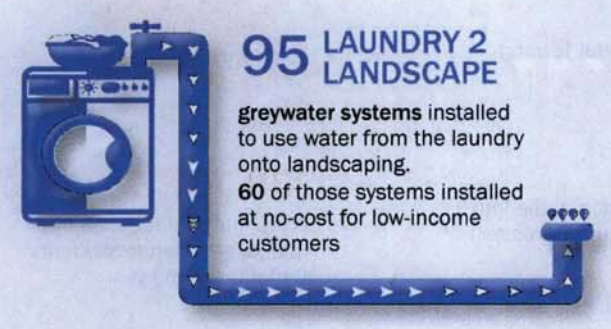
participated in **rebates** for water conservation measures

550 RESIDENTS

received indoor/outdoor water efficiency measures installed through the **Home Improvement Program**

250 RESIDENTS

received on site technical consults for **greywater systems** and approved 308 applications



95 LAUNDRY 2 LANDSCAPE

greywater systems installed to use water from the laundry onto landscaping.
60 of those systems installed at no-cost for low-income customers

equivalent to:

51 ACRE FEET

of **lifetime water savings**

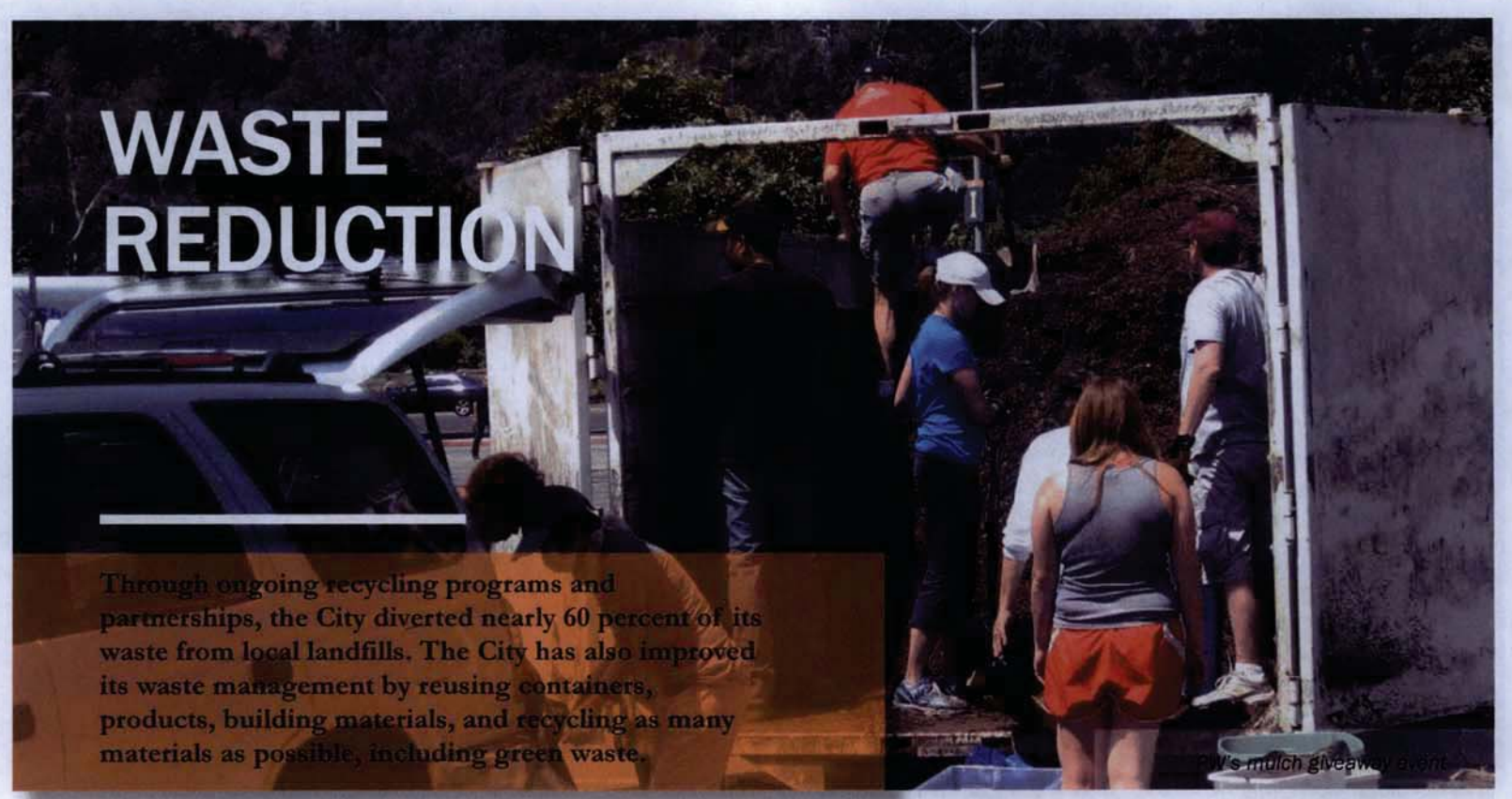
or

16.6 million

gallons of water

- The Water System and Resource Plan was initiated in 2018 as the plan to reflect community values for resource planning and update the capital improvement program. It is anticipated to be completed in December 2019. (PWP)
- PWP installed drought tolerant landscapes and efficient drip irrigation systems for 25 low-income customers through the Landscape Direct Install Program and 539 residential customers received indoor/outdoor water efficiency measures installed through the Home Improvement Program.
- The Non-Potable Water program is being redefined for less energy intensive water sources to be developed as the first priority. (PWP)
- Water is essential to life and good water quality is possibly the best quality of life indicator for any community. The Water Quality report is updated annually on the website and communicated to the public by bill insert, e-newsletter, and other outreach mediums that its available to the public. Information is also available on the PWP web page that informs customers about the quality of the drinking water and tips and information.
- Plans for a habitat restoration project within Hahamongna Watershed Park were finalized with construction anticipated in January 2019. (PW)
- In April 2019, Council adopted amendments to the City's Water Efficient Landscape Ordinance consistent with the State's Model Water Efficient Landscape Ordinance (MWELO). The amendments requires irrigation efficiency in landscaping for applicable projects.

WASTE REDUCTION



Through ongoing recycling programs and partnerships, the City diverted nearly 60 percent of its waste from local landfills. The City has also improved its waste management by reusing containers, products, building materials, and recycling as many materials as possible, including green waste.

PW's mulch giveaway event

of the City's waste was **diverted from local landfills**

95,000 TONS
of **recycling** collected (as heavy as four Statues of Liberty)

98,000 TONS
of **trash** collected (or nine and a half Eiffel Towers)

62 TONS
of **electronic waste** collected and recycled at the four eWaste events (equivalent to nine tyrannosaurus rex)

280 TONS
of free mulch of recycled tree material provided to residents 10 months of the year

- In 2018, 264.31 tons of organic waste was recycled through City managed programs but the percent diversion rate is unavailable. Per SB 1383, the State will provide guidance for determining this percentage. (PW)
- China's "National Sword" policy has affected the recycling market and may impact the City's likelihood to meet the 75% diversion goal by 2020 since there are few markets for many of the recycling commodities generated by the City. PW will focus on raising recycling awareness through education and outreach to increase the City's diversion rate.
- The City has begun discussion with the Sanitation Districts of Los Angeles County for composting the City's green waste. The waste would be delivered to Scholl Canyon Landfill where it will be conditioned for composting and sent to an off site composting facility. (PW)
- PW continues enforcement of the polystyrene food packaging ban.
- Recycling stations have been deployed in high pedestrian traffic and public areas throughout the City. (PW)
- A pilot organics recycling program has been established at all City fire stations with the intent to gauge participation, identify problems and solutions and use this information to potentially expand recycling services. (PW)
- PW continues to work with the Health Department to develop a food recovery program.
- PW partners with the County Public Works Department to host backyard composting workshops.
- Free mulch is provided to residents 10 months of the year at two established locations. (PW)

URBAN GREENING

Volunteers planting trees during Arbor Day.

Steadily maintaining a healthy urban forest, the City recognizes the importance of trees and other vegetation to absorb and capture carbon dioxide from the atmosphere. The City continues its efforts to expand the tree canopy and increase the amount of greenspace defined as a combination of types of open space; natural and developed.

60,000 TREES

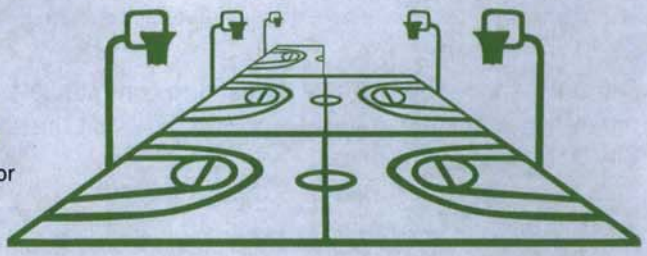
in the City of Pasadena (almost half the population of the City!)

TREE CITY USA

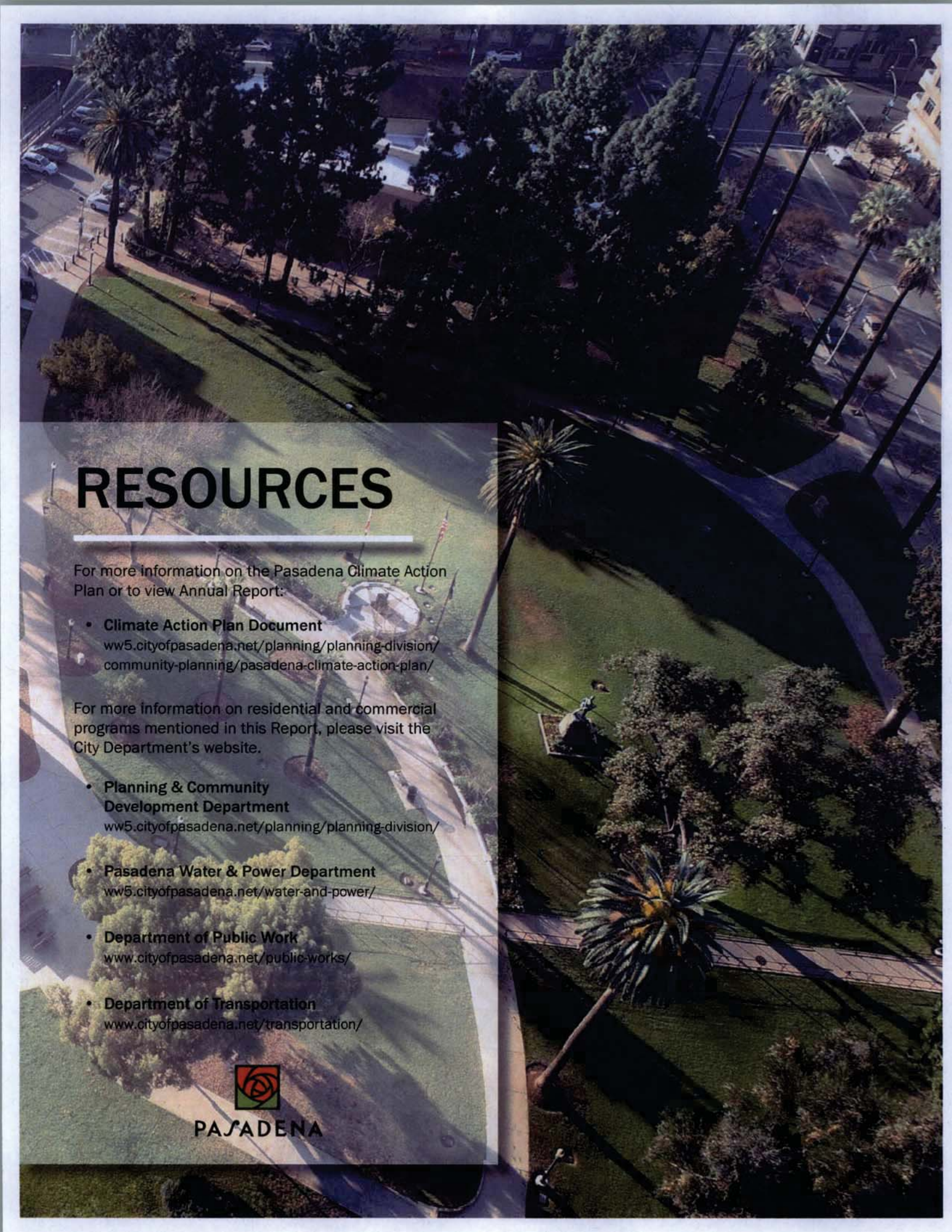
awarded by the National Arbor Day Foundation for the 29th consecutive year

13,000 SF

of green space restored (or two and a half basketball courts)



- The goal of acquiring 5 new acres of green is anticipated to be achieved by 2020 with the City's new 3.8 acre Desidero Park along with smaller projects that beautify the area. (PW)
- The 2018 State of the Urban Forest report accounted for more than 60,000 public trees of over 250 different species in the City.
- Two City parking lots, known as the El Molino and Madison parking lots, have been identified as potential sites and fall within the under-parked "gap" areas. The park design process is anticipated to start in 2019. (PW)
- Acquired the Banner Bank property for the purpose of converting the property to greenspace within an established "gap" area.
- In 2019, the street tree pruning cycle maps will be published on the PW's division web page.
- PW is working towards accreditation by the American Public Works Association (APWA) who recognizes agencies that have demonstrated excellent municipal service and found by the APWA to be consistent with industry best practices and peer agencies.
- Through the Specific Plan Update process, staff is exploring different strategies to incentivize and/or require green space for future development projects.



RESOURCES

For more information on the Pasadena Climate Action Plan or to view Annual Report:

- **Climate Action Plan Document**
  ww5.cityofpasadena.net/planning/planning-division/community-planning/pasadena-climate-action-plan/

For more information on residential and commercial programs mentioned in this Report, please visit the City Department's website.

- **Planning & Community Development Department**
  ww5.cityofpasadena.net/planning/planning-division/
- **Pasadena Water & Power Department**
  ww5.cityofpasadena.net/water-and-power/
- **Department of Public Work**
  www.cityofpasadena.net/public-works/
- **Department of Transportation**
  www.cityofpasadena.net/transportation/

PASADENA