Draft for October 28, 2021, City Council Meeting

City of Palm Springs, California

OFFICE OF SUSTAINABILITY

Climate Action Roadmap

1 Introduction

On October 15, 2019, the Palm Springs Sustainability Commission met to discuss how to move forward with discussions and potential further actions to address the climate change. At that meeting, the group agreed that the City should develop a roadmap to acknowledge the seriousness of our current climate crisis, describe what the City has already done and plans to do to address climate change, and identify potential additional actions.

This document responds to that request and is intended to serve as a focus for further discussions among the Commission and the City Council. It also serves as an initial step in developing more detailed climate goals and strategies to include in a future iteration of the City's Sustainability Plan.

2 Acknowledgement of the Current Climate Crisis

The City of Palm Springs recognizes that climate change is real and is having a dramatic impact on our environment, our economy, and our way of life. Globally, we know that sea levels are rising, polar ice is retreating, permafrost is melting, and fires are increasing. In August, the United Nations released a major report indicating that many of these devastating impacts can no longer be avoided.[1] Here in the Coachella Valley, the summer of 2021 saw new heat records, and a wildfire at Snow Creek in 2020 came close to the City limits.

Figure 1 Key Findings from UN Report

Climate change is and will continue to manifest in Palm Springs in obvious ways: longer periods of drought; more frequent, above-average storm events; longer summers; more frequent and intense wildfires; and higher temperatures. It is also affecting life in the Valley in less visible ways. For example, changes in climate are having a significant impact on our local habitat. Staff at the Coachella Valley Association of Governments has indicated that populations of mammals and arthropods nearly crashed during recent droughts and dry spells. Although we experience some rebounds during wetter weather, we know that further change is inevitable and could be irreversible.[2] National scientists have also noted that the nearby iconic Joshua trees are threatened and may not

[1] United in Science 2021: A multi-organizational high-level compilation of the latest climate science information, World Meteorological Organization, August 9, 2021. https://public.wmo.int/en/resources/united_in_science

[2] Email from Kathleen Brundige at Coachella Valley Association of Governments. September 25, 2019.

last through this century.[3] In 2020, the California Fish and Game Commission unanimously voted to grant western Joshua trees candidate status under the California Endangered Species Act making it the first plant species to be protected in the state due to the threats posed by climate change.[4]

Our weather and environment are a key factor in why people come to Palm Springs and other Desert Cities to live, work, and play. Changes in our environment will have a significant impact on our economy and quality of life. Based on a study by University of California Riverside, claims that "climate change will decimate Palm Springs, Coachella Valley Tourism."[5] The City recognizes that we need to redouble our efforts to strategically address our contribution to climate change and mitigate the impacts we are already seeing and expect to see in the future.

3 EXISTING GOALS AND PLANS

The City's current Climate Change & Resilience goal as stated in the **2016 Sustainability Plan** is to **reduce greenhouse gas emissions to 1990 levels by 2020, 80% below 1990 by 2050, and achieve carbon neutrality for municipal emissions by 2030**. This is consistent with the target identified by the state in AB 32 – California Global Warming Solutions Act.

In addition to the above Sustainability Plan goals, SB 32 signed by Governor Brown in 2016 requires the California Air Resources Board to ensure that statewide greenhouse gas emissions are reduced at least **40 percent below 1990 levels by December 31, 2030**.

The Plan also references a commitment made by the City as part of its participation in the U.S. Conference of Mayor's Climate Protection Agreement to go achieve a 7% reduction below 1990 levels by 2012. This goal aligns with the Kyoto Protocol.

In addition to establishing high-level goals, the 2016 Sustainability Plan also outlined some high-level actions such as monitoring and reporting greenhouse gas emissions; developing strategies based on the Climate Action Plan to reach the 1990 levels by 2020; and improving community resiliency to the potential impacts of climate change, including determining what these impacts will be.

The **Climate Action Plan** (issued in 2013) does not include any additional goals, but rather outlines specific actions that the City could take to reduce its emissions. These actions are organized into broad sectors (e.g., residential, business, municipal, etc.) and served as a menu for potential actions the City could take to reduce emissions. Many of the actions are now out of date, although some of the concepts are still applicable and will be reflected in future actions.

[3] Iconic Joshua trees may disappear—but scientists are fighting back. National Geographic. October 15, 2018. https://www.nationalgeographic.com/environment/2018/10/joshua-trees-moths-threatened-climate-change-scientists-seek-solutions/

[4] https://www.desertsun.com/story/news/environment/2020/09/22/california-joshua-trees-advance-endangered-species-listing/5854896002/

[5] https://news.ucr.edu/articles/2020/09/07/climate-change-will-decimate-palm-springs-coachella-valley-tourism

City Staff and Sustainability Commission members are currently reviewing goals and actions in the Sustainability Plan to determine the most appropriate opportunities for greenhouse gas reduction and will update the Sustainability Plan to reflect these new actions. The following key goals continue to be top of mind:

- Reduce greenhouse gas emissions by at least 40% compared to 1990 levels by the end of 2030
- Reduce greenhouse gas emissions by at least 80% compared to 1990 levels by the end of 2050
- Achieve carbon neutrality for municipal emissions by 2030

4 Activities and Progress to Date

Activities

The City of Palm Springs has always taken climate change seriously. As early as 2008, the City endorsed the U.S. Conference of Mayors Climate Protection Agreement and issued its own Path to Sustainability. Some of the efforts that have already helped the City achieve reductions in greenhouse gas emissions – the primary contributor to climate change – are listed below.

- Launched the Co-generation Facility in 2015 to help offset energy use at City facilities.
- Installed solar arrays at its Wastewater Treatment Plant and at the Convention Center. The Convention Center is able to offset over 60% of its energy use from its solar output.
- Administered commuter incentive programs for rideshare and electric vehicles (EV) to reduce greenhouse gas emissions from employee commuting.
- Implemented LED and energy efficient lighting retrofit projects at City facilities and at street lights.
- Implemented ban on gas-powered leaf blowers and replaced over 400 gas-powered units with electric.
- Implemented a mobile home energy retrofit program that resulted in a reduction of nearly 92,000 pounds (46 tons) of CO_2e. Although emissions reductions were small, changes resulted in cost savings.
- Developed a solar policy and solar zoning ordinance to facilitate the installation of solar on residential and commercial properties.
- Installed a network of 36 EV charging stations and updated parking standards to reflect new state requirements and best practices on EV charging stations on private property to help support EV adoption.
- Implemented changes in the California Energy Code and Green Building Standards Code effective in January 2020.
- Required installation of EV charging stations for certain commercial developments.
- Implemented new Home Energy Assessment Rebate program.

Most recently and most significantly, the City moved to Desert Community Energy in March 2020. The City took the bold step to default all customers to the 100% carbon-free option to maximize the potential for greenhouse gas reductions. In an announcement at the September DCE Board Meeting, DCE staff indicated that, because of excess power purchases, residents that chose the Desert Saver Program were also able to take advantage of

100% carbon free energy – further enhancing the impact of the City's move to DCE. Specifically, this additional carbon-free power would result in an additional 4,400 Metric Tons of CO_2 Equivalent ($MTCO_2e$). This reduction is not included in the numbers reported elsewhere in this report.

Updated Baseline

As noted in the goals, 1990 is the official baseline from which to measure progress. When the City conducted a baseline greenhouse gas inventory for 2010 (published in 2013), the results indicated that the City had already achieved its initial goal – to reach 1990 levels by 2020. However, a variety of changes have occurred in emissions calculations methodologies since 1990 and 2010.

In 2020, the City contracted with a consulting firm, PlaceWorks, to update the 2010 community-wide inventory based on current greenhouse gas emissions inventory methodologies. This update would help determine if the City was still meeting its 1990 target as originally calculated. Updating the 2010 inventory would also help ensure a more consistent comparison point for any future inventories.

The 2010 update revealed a 35% increase in 2010 emissions levels over what was initially reported. Specifically, the City calculated 2010 emissions to be 431,594 Metric Tons of CO_2 Equivalent ($MTCO_2e$) in the 2013 emissions inventory. The updated equivalent is 538,200 $MTCO_2e$. This increase was largely due to more current methodologies used to assess transportation impacts and increases in the global warming potential for some greenhouse gases such as methane that are released from water and wastewater operations and from waste sent to landfill.

Given the changes that resulted from the 2010 update, it was clear that the 1990 emissions baseline would need to be adjusted. Rather than attempting to redo those calculations, the State recommends using a simple calculation of 15% lower than 2010 recalculated emissions levels to arrive at a 1990 equivalent baseline. This means the City's 1990 new equivalent baseline is 495,720 ($MTCO_2e$) (compared to the original 432,136 $MTCO_2e$). Below is a summary of goals based on this new 1990 baseline number.

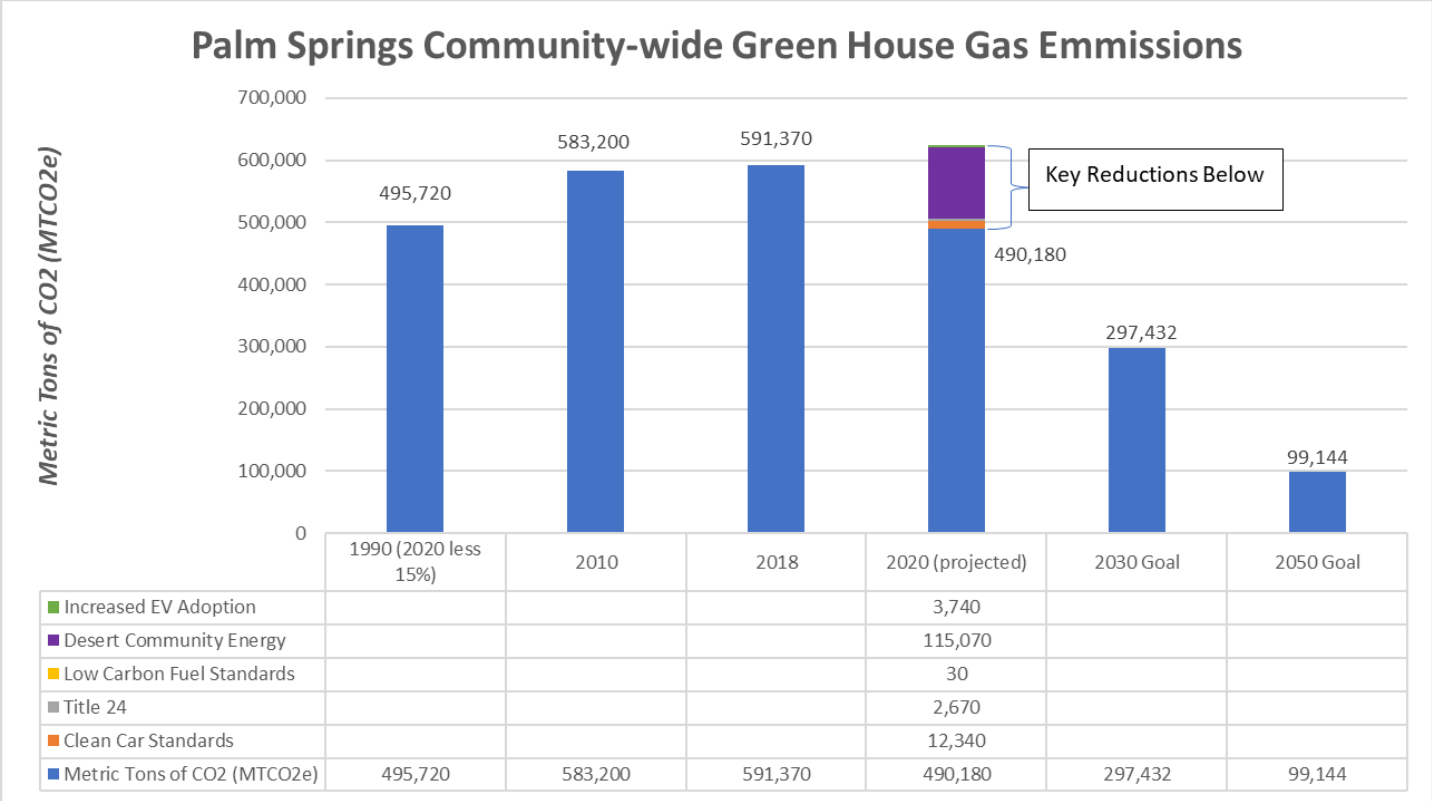
Reporting Year	Target	Palm Springs Emissions Levels ($MTCO_2e$)
2020	1990 Levels (15% below 2010)	495,720
2030	40% Below 1990 Levels	297,430
2050	80% Below 1990 Levels	99,140

2018 Assessment and 2020 Estimate

The City asked PlaceWorks to conduct a new community emissions inventory for 2018 and an estimate for 2020. These assessments helped determine the City's progress towards the goals above and provide a snapshot of key emissions to identify opportunities for additional reductions. Because 2020 was not a typical year, PlaceWorks focused the 2020 estimate on concrete and lasting changes that occurred between 2018 and 2020 such as the move to DCE and the continued improvements in vehicle emissions.

The data from the updated community-wide inventories are summarized in Table 1 along with the future emissions targets for 2030 and 2050.

Table 1 Community-wide GHG Emissions



	1990 (2020 less 15%)	2010	2018	2020 (projected)	2030 Goal	2050 Goal
Increased EV Adoption				3,740		
Desert Community Energy				115,070		
Low Carbon Fuel Standards				30		
Title 24				2,670		
Clean Car Standards				12,340		
Metric Tons of CO2 (MTCO2e)	495,720	583,200	591,370	490,180	297,432	99,144

NOTES:

- Due to differences in calculation methods in 1990, the State has indicated that a reduction of 15% of 2010 levels is the equivalent of the 1990 baseline.
- 2030 Goal is based on a 40% reduction of the revised 1990 data.
- 2050 Goal is based on an 80% reduction of the revised 1990 data.
- In 2018, this number rose to 591,370 $MTCO_2e$. However, with the reductions achieved as a result of the City's participation in Desert Community Energy and reductions from other statewide initiatives, Palm Springs' projected 2020 GHG emissions are estimated to be 493,920 $MTCO_2e$ – below the adjusted goal. Without Desert Community Energy, the City would be about 609,000 $MTCO_2e$, or approximately 4.4% above 2010 levels. The Community's commitment DCE's Carbon Free program reduced its emissions by over 115,000 $MTCO_2e$.

Table 2 includes a breakdown of the 2018 and 2020 estimates that provides important information about major emissions categories. Among the observations that help shape future actions are the following:

- There was a significant reduction in emissions because of residential and commercial participation in Desert Community Energy.
- Transportation is the biggest contributor to overall emissions, accounting for over half of the total.

- Residential energy is still a significant contributor, despite participation in Desert community energy. This is partly due to the inclusion of natural gas.
- Commercial sector emissions were reduced but could easily rise pending additional growth.
- Emissions from solid waste disposal speak to the continued need to divert materials from landfill.

Table 2 Breakdown of Community GHG Inventories for 2018 and 2020

SECTOR	2018 $MTCO_2E$	2020 $MTCO_2E$	PERCENTAGE CHANGE 2018 TO 2020
Residential energy	148,930 (25%)	111,000* (23%)	-25%
Commercial and industrial energy	119,370 (20%)	72,200 (15%)	-40%
Transportation	265,160 (43%)	259,630 (53%)	-2%
Off-road equipment	490 (<1%)	540 (<1%)	10%
Solid waste	23,090 (4%)	24,030 (5%)	4%
Landfill	1,150 (<1%)	1,110 (<1%)	-3%
Water and wastewater	34,500 (6%)	22,990 (5%)	-33%
Fertilizer	20 (<1%)	20 (<1%)	0%
Land use	-1,340 (<1%)	-1,340 (<1%)	0%
Total	**591,370**	**490,180**	**-17%**

Due to rounding, totals may not equal the sum of individual rows or compare exactly to values in other tables.

PlaceWorks provided a detailed breakdown of emissions that helps to further identify opportunities for reductions. Table 3 includes this breakdown, and it reveals the following additional insights:

- Although residential emissions from electricity use is declining and declined significantly in 2020 due to DCE, emissions from residential natural gas increased. Natural gas uses include not only home heating, hot water heating, and cooking uses but also pool heating.
- Despite improvements in the efficiency of vehicles, the emissions from on-road vehicles increased in the 8-year period and continues to be the most significant single source of emissions.
- Emissions from waste sent to landfill increased by over 30% despite a strong focus on increasing recycling rates.
- Off-road equipment includes things like lawn equipment as well as equipment used in construction. These make up a relatively low contribution to overall emissions. These emissions may increase as post-pandemic construction ramps up.
- Wastewater treatment-related process emissions are primarily a result of fugitive emissions from lagoons.

Table 3 Detailed Breakdown of Community GHG Inventories for 2010 and 2018

Sector	Subsector	2010 GHG Emissions ($MTCO_2E$)	2018 GHG Emissions ($MTCO_2E$)	2020 GHG Emissions Estimates ($MTCO_2E$)
Residential buildings	Residential electricity	75,270	70,620	26,580
	Residential natural gas	73,420	78,000	84,110
	Residential propane	430	310	310
	Subtotal	**149,120**	**148,930**	**111,000**
Commercial buildings*	Commercial electricity	82,110	79,260	29,660
	Commercial natural gas	46,560	40,110	42,540
	Subtotal	**128,670**	**119,370**	**72,200**
Transportation	On-road vehicles	254,860	265,160	259,630
	Subtotal	**254,860**	**265,160**	**259,630**
Off-road equipment	Off-road vehicles and equipment	240	470	540
	Subtotal	**240**	**470**	**540**
Solid waste	Community-generated waste	16,840	23,090	24,030
	Former Palm Springs landfill	1,350	1,150	1,110
	Subtotal	**18,190**	**24,240**	**25,140**
Water and wastewater	Water supply electricity**	8,190	15,290	3,160
	Wastewater treatment electricity	1,140	650	40
	Wastewater treatment process emissions	24,110	19,010	19,790
	Subtotal	**33,440**	**34,950**	**22,990**
Land use and sequestration	Fertilizer application	20	20	20
	Natural land sequestration	-840	-840	-840
	Street tree sequestration	-500	-500	-500
	Subtotal	**-1,320**	**-1,320**	**-1,320**
Total		**583,200**	**591,800**	**490,180**

* This sector includes GHG emissions from municipal buildings and facilities, except for those concerned with water and wastewater activities. Those GHG emissions are included in the "water and wastewater" sector.

** The 2018 and 2010 inventories differ in their methods of calculating emissions from water supply electricity, due to differences in data availability between the two years. The 2018 data include additional electricity use, primarily related to the pumping of groundwater supplies, that were not available for the 2010 inventory.

Note: All values are rounded to the nearest 10. Due to rounding, totals may not equal the sums of individual rows.

5 Roadmap of Future Actions to Reduce Greenhouse Gas Emissions

Based on the data provided by PlaceWorks, the City can begin to identify potential projects to assist us in meeting our future GHG reduction goals. The information below is meant to be a starting point for this process and provides a framework for potential future actions. City staff will continue working with PlaceWorks to quantify impacts of potential actions in more concrete ways and to identify potential additional actions to help us meet our goals. This document will evolve and be integrated into other planning documents as more information is available. The sections below highlight the major areas of focus in the development process.

ESTABLISH FUTURE BASELINE

Emissions of greenhouse gasses are not constant. They tend to increase with population growth, economic development, and increased tourism activities. The City is currently working to identify future growth targets and trends through the General Plan Update. This information should be completed and available soon to inform the development of a new 2030 baseline against which we can model potential emissions reduction strategies so that the City can make informed decisions about potential actions.

Even without the 2030 projections, we know that there are things that the City can do to have an impact. Those items are described below.

TRANSPORTATION ACTIONS

Transportation-related emissions are the largest source (53%) of greenhouse gas emissions in the community-wide inventory (259,640 $MTCO_2e$ in 2020). Unless we reduce these emissions significantly, we will never reach our future reduction goals. Although we can expect some reductions from improved vehicle efficiency (approximately 38,000 $MTCO_2e$ based on a 15% improvement[6]), City staff will be working with PlaceWorks to identify opportunities for further reductions, especially in vehicle miles traveled and mix of vehicle types to understand where we can have the most significant impacts. Assuming sufficient granularity in the model, more detailed scenarios for meeting targets can be developed. Then policies, programs, and plans for infrastructure changes needed (requesting funding in city budget) can be proposed and must be started now.

At a minimum, we know that improvements must be made to increase the number of alternative fueled vehicles, enhance non-motorized or electric transportation options, reducing idling, and enhancing public transit options. Some specific actions are listed below:

- **Expand the network of EV charging stations to encourage broader EV adoption.** The market for electric vehicles increased significantly over the past several years. New State goals for 100% zero emissions vehicles by 2035 in California and commitments from car manufacturers to go all electric in a similar time frame may help make this a reality. The City must continue to provide a robust EV charging infrastructure to support these vehicle purchases and do what it can to direct people to less-polluting vehicles. The Office of Sustainability and the Engineering Division have been working over the past several months to add 21 new stations downtown and at City Hall as part of a Phase 1 expansion. Future phases will add chargers at community centers and other locations around the City. Networked chargers will also help us understand who users are and their charging habits. The Sustainability Commission is also working to develop a potential ordinance to expand installation of EV chargers at multi-family complexes. This additional infrastructure helps reduce "range anxiety" among EV buyers and promotes the City as a destination for EV owners thereby resulting in more EV adoption. (Fall 2021/Winter 2022 and beyond)
    - *Potential Impact: The City currently has a higher than average rate of EV ownership (2.75% versus .85% statewide). If we can achieve 30% electric vehicles by 2030, it would result in an*

[6] This 15% reduction estimate is based on a 15% reduction in the emissions factor between 2010 and 2018. The 15% reduction was applied to the 2018 on-road transportation emissions estimate to arrive at the 38,000 $MTCO_2e$.)

annual reduction of about 56,000 $MTCO_2e$, a 22% reduction from the 2020 transportation estimates.

- **Improve walkability.** The City is currently finalizing a Walkability and Safe Routes to School Master Plan. The Master Plan will help promote pedestrian safety and increase pedestrian traffic to reduce transportation-related emissions for short trips. These projects will require funding. Having a plan in place will make it more likely for the City to secure external funds. (2020-2022)
    - *Potential Impact: The City is working with PlaceWorks to assess potential impacts of increased pedestrian activity to determine how these improvements will reduce car trips.*
- **Implement airport shuttle program, encourage/require low-emitting mass transit options for events, and revisit Buzz Trolley concept.** Many residents to Palm Springs fly into the airport and rent a car during their stay. The City should work to better understand the driving habits of visitors, the emissions reductions that could be achieved by reducing car rentals and car use within the city, and what options may be most viable for making these reductions. This could include a City Airport shuttle and a reinvigoration of an electric Buzz Trolley concept within the City. The City could also work with event organizers to ensure that they incorporate low or zero-emission mass transit options for event-related activities. Splash House could be a good event to start with given they already use buses frequently. (2023/2024)
    - *Potential Impact: The City is working with PlaceWorks to assess potential impacts of reductions in localized car trips that may result from these changes.*
- **Update and Implement Active Transportation Plan.** A key to promoting more alternative transportation methods is to enhance related infrastructure. This has been focused traditionally on bike lanes, but the City should think more broadly about a wide range of potential alternative transportation options. Plans should consider the emergence of electric bikes and other alternative transportation modes (e.g., trikes, e-scooters, "golf" carts, etc.) and how that may impact infrastructure needs and should be reflected in an updated Bike Plan and General Plan. CVAG plans for CVLink could play a prominent role as a catalyst for future changes, and the City could consider focusing active transportation routes to align with CVLink locations. (Winter/Spring 2022)
    - *Potential Impact: Improved alternative transportation infrastructure has a direct impact on car travel. According to State Guidance, cities that increase their bike lanes by 1% can see a .25% increase in bike commuting. If Palm Springs doubles its current bike lane miles from the current 62 miles to 124 miles, this could result in a 50% increase in commuting by bike.*[7]
- **Promote mass transit to and from Palm Springs.** The Vehicle Miles Traveled in the City includes trips to and from the City based on Regional transportation data. Getting more people out of their cars and onto mass transit (e.g., Flix Bus and Amtrak) will help further reduce our transportation-related emissions. The City could work with companies such as Flix Bus to promote shared ride options that also promote the Palm Springs brand. (2023/2024)

[7] The City does not have sufficient data on bike commuting to determine a GHG reduction impact, but this would be done as a part of an updated city-wide emissions analysis.

- *Potential Impact: The City is working with PlaceWorks to determine impacts from various scenarios associated with mass transit options.*

RESIDENTIAL AND COMMERCIAL BUILDINGS

AB 3232 enacted in 2018 requires the California Energy Commission (CEC) to assess the potential for the state to reduce GHG emissions from the state's residential and commercial building stock by at least 40 percent below 1990 levels by January 1, 2030. The bill states that decarbonizing California's buildings is essential to achieve the state's GHG reduction goals at the lowest possible cost. The bill establishes that it is the intent of the Legislature to achieve significant reductions in GHG emissions by the state's residential and commercial building stock by January 1, 2030. In addition, SB 350 establishes an objective to double the energy efficiency savings in electricity and natural gas final end uses of retail customers through energy efficiency and conservation.

2020 estimated emissions from residential and commercial buildings combined is our second highest source of emissions (about 183,000 $MTCO_2e$). Although the best way that residents and businesses can contribute to the City's GHG reduction efforts is to sign up for 100% carbon free energy plans, natural gas use remains an important contributor and will be hard to curb. The City will continue to focus efforts to reduce emissions from buildings in the following ways:

- **Continue to support the move to the 100% carbon free option for Palm Springs residents under Desert Community Energy (DCE).** The launch of DCE occurred in April 2020 and continues to be a focus of DCE, City staff, and a dedicated Palm Springs Working Group of DCE's Community Advisory Committee. The City's decision to shift to carbon-free energy as the default for all residents and businesses has had a significant impact on the City's greenhouse gas emissions. However, rising energy prices and confusing energy bills could potentially reverse progress if more residents move away from the 100% carbon-free plan. The City will continue to work with DCE staff to educate community members and discuss the benefits of carbon-free energy. (Ongoing)
    - *Potential Impact: Assuming the participation in DCE continues at relatively consistent levels as in 2020, we would expect that reductions due to DCE would increase from the estimated 115,070 $MTCO_2e$ to 153,427 $MTCO_2e$ for a full year of implementation (the 115,070 $MTCO_2e$ estimate was based on the initial 9 months). This is a net increase in carbon reduction of about 38,000 $MTCO_2e$. Although the State has mandated that 60% of regular household electricity must come from renewable sources by 2030, it is unclear what the carbon intensity of these renewable may be. City staff will work with PlaceWorks to develop estimates for emissions from future energy use, considering the GHG emissions intensity that DCE and Southern California Edison are required to report in their respective annual Power Content Labels.*
- **Develop ordinance to require homes built before 2011 undergoing renovations to make certain targeted energy efficiency upgrades.** The Sustainability Commission is developing a proposal for an ordinance that would require residents to implement energy efficiency improvements depending on the size of their renovation projects. The proposal was reviewed and approved by the Sustainability Commission and is being presented to Council with the accompanying staff report. The current iteration of this proposal includes a menu of options for residents with short pay-back periods that will both reduce their energy use and lower their energy bills. (Winter 2022)

  - *Potential Impact: The water heating package included among the measures in the proposal would reduce residential GHG emissions about 6,000 $MTCO_2e$ over the 30-year lifecycle. The other energy efficiency measures in the proposal would not lead to large GHG reductions due to the high participation in the DCE 100% carbon free option. However, the measures that homeowners would take will reduce their energy use/costs and will provide more resiliency to higher temperatures.*

- **Promote more sustainable cannabis grow facilities and other large commercial buildings.** Cannabis grow facilities have the potential to use a significant amount of energy and water resources. By promoting more sustainable practices, including energy efficient systems and use of renewable energy, the City can avert the potential significant additional greenhouse gas emissions that may result from the growth in this new industry. The City is planning to put forward a new ordinance that would require cannabis grow facilities to use 100% carbon free energy. The ordinance may also cover other large commercial facilities to help flatten the City's GHG growth potential. This ordinance was started by the Sustainability Commission and recently was requested by the Planning Commission. The Sustainability Commission plans to conduct outreach on the potential ordinance in late 2021 and propose something to Council in early 2022. (Fall 2021/Winter 2022)

  - *Potential Impact: The City will need to retain a consultant to better understand potential emissions impacts. However, a recent application by one large grow facility has the potential to increase GHG emissions by close to 15% of all commercial emissions (more than 10,000 $MTCO_2e$ annually) if that facility does not use 100% carbon free energy.*

- **Implement incentive program for Home Energy Assessments.** The Sustainability Commission approved a program to provide rebates to residents that conduct a home energy assessment as part of an approved home energy labeling program. This program began in Spring 2021. It is hoped that providing homeowners with information about how they can reduce their home energy costs will help boost the energy efficiency of existing housing stock. City staff will continue to coordinate with DCE staff to explore opportunities to continue this as one of their energy efficiency programs for homeowners. (Ongoing)

  - *Potential Impact: Like the other home energy efficiency upgrades, it is difficult to estimate potential GHG reductions from these efforts. Assuming residents take action, those actions will likely reduce their energy use/costs and will make homes more resilient to higher temperatures.*

- **Building electrification.** Some cities, mainly in the Bay Area but some in Southern and Central California, are moving towards requiring buildings to go all electric to reduce GHG emissions. The goal is to eventually eliminate or minimize natural gas use, because natural gas can be made from renewable sources such as biogas but not carbon-free sources. The 2022 California Energy Code moves in this direction and will require electric heat pump water heaters in new single-family homes in Palm Springs beginning January 1, 2023. The all-electric ordinances adopted by other cities are not without controversy, and more information will be developed to assess this option more fully. (Ongoing)

  - *Potential Impact: The move to electrification would primarily affect only new construction and potentially major renovations. Natural gas use contributed about 127,000 MTCO2e in the 2020 estimates. We should expect this number to rise given the number of new construction projects underway or in development. A move to electrification may help reduce the increase from future*

residential and commercial projects. The City can work with PlaceWorks to determine the potential impact.

OTHER COMMUNITY EMISSIONS

- **Waste diversion.** One of the challenges that the state continues to have in managing greenhouse gas emissions broadly is managing emissions from landfills. The State has a new law – SB 1383 – that is designed to reduce the amount of organics going to landfills, because these are often responsible for generating a key greenhouse gas, methane. The City is currently working with PSDS to anticipate and respond to this new law. This will help the city reduce its greenhouse gas emissions by reducing the amount of methane emissions from landfills. The City will also continue to work to encourage recycling of other materials to achieve our overall goal of diverting 90% of waste from landfills. The current diversion rate is about 50%. (Ongoing)
    - *Potential Impact: In 2020, the City sent 68,696.57 tons of trash to landfill, but these data are not considered typical due to the impacts of COVID. Using disposal date from 2018 and 2019, it appears that Palm Springs will likely send about 80,000 tons of trash to landfill. This results in about 23,000 $MTCO_2e$ emissions. If the current diversion rate is about 50%, and the City diverts an additional 40% of waste to meet the 90% diversion goal by 2030, this would reduce our landfill waste to 16,000 tons resulting in only 4,600 $MTCO_2e$ of emissions as a result of landfilled material. This would be a reduction of almost 18,400 $MTCO_2e$.*
- **Electric Lawn Equipment.** The City banned gasoline-powered leaf blowers in 2019. Gasoline powered leaf blowers can emit in 1 hour the equivalent air emissions (nitrous oxide and reactive organic gasses) of 1100 miles in a new passenger car. A gasoline lawn mower produces the equivalent of 300 miles in 1 hour. The State just recently banned the sale of gasoline lawn equipment (as well as generators and other items) starting in 2024. Lawn equipment is particularly polluting, because units do not fully combust the gasoline used to run them. In addition to air pollution, this equipment also contributes significantly to noise pollution. The City will re-evaluate its leaf blower efforts next year to determine how to move forward with a complete transformation of this important initiative. (Ongoing)
    - *Potential Impact: Lawn equipment is accounted for in the community inventory under Off-road Equipment (540 $MTCO_2e$). Of these emissions, only about 40 $MTCO_2e$, is attributed to lawn equipment. If we assume that 80% of lawn equipment is converted to electric by 2030, this may mean a reduction of 32 $MTCO_2e$. While not a significant amount from a GHG perspective, the other co-benefits – reduced ground-level particulates and noise pollution reduction – warrant further focus on this issue.*

6 POTENTIAL ACTIONS TO ADDRESS CLIMATE IMPACTS

One of the areas that the City has not focused attention on in the past is resiliency and climate adaptation. With the immediate nature of many climate impacts, this must be moved to the forefront of thinking along with continued efforts to reduce greenhouse gasses that are the source of these impacts. The City is currently working to update its General Plan to incorporate elements of climate adaptation. Particular attention will be paid to the impact of climate changes on vulnerable communities and the equity of impacts across various communities. While PlaceWorks has not completed their vulnerabilities assessment for the General Plan update,

we know that we will see impacts from higher temperatures for longer durations, ongoing drought, stronger storms and wind events, and habitat loss. Below are some examples of potential strategies to address some of these issues. These actions will be expanded when the vulnerability analysis is complete.

- **Allow outdoor workers to start earlier in summer months.** In August, the Union of Concerned Scientists published a report documenting the increased threat of heat exposure to outdoor workers as global temperatures continue to rise.[8] When developing the gasoline leaf blower ordinance, one of the requests that gardeners put forward was to allow them to start earlier to reduce battery depletion. Given year-after-year of record temperatures, outdoor workers are increasingly vulnerable to the effects of heat. Allowing work to start earlier will help reduce these impacts. City staff will work to develop the ordinance in the new year. (Spring 2022)

- **Develop Improved Response Plans for Climate Events.** Sustainability staff will work with Emergency Management staff to identify opportunities to improve response efforts related to climate-related events such as wind storms, power outages, severe heat events, and flooding. (Fall 2021/Winter 2022)

- **Add shade structures.** City staff recognize that shade will play a critical role in the ability to enjoy outdoor spaces and to encourage pedestrian activity, especially in warmer months. The Sustainability Commission has begun to discuss how best to address this in the context of what appears to be long-term drought. Tree planting may become a less appealing option than the installation of shade structures. Sustainability staff plans to work with Planning staff to discuss shading and how more varied ideas for shade structures can be integrated into the General Plan and into specific project planning efforts. (Winter 2022)

- **Insulate homes.** As noted above, Staff is working with the Sustainability Commission to develop an ordinance to promote energy efficiency measures for homes. Among these are opportunities to improve insulation. This will be a critical element to increasing resiliency of homes against rising temperatures. (Winter 2022)

7 CITY-WIDE EMISSIONS

City emissions are a subset of overall community emissions. Although there was a detailed City Inventory created in 2010, the City did not do a city emissions inventory for 2018 or 2020 as part of these initial assessments. A detailed City Inventory will be done as part of a more in-depth assessment to determine how the City might achieve carbon neutrality by 2030. For reference, the detailed City assessment from 2010 is included in Table 4. It shows that the City's largest sources of emissions are the following:

- Wastewater treatment plant emissions – primarily from fugitive emissions from lagoons
- Buildings and facilities – especially the co-generation facility that is operated on natural gas

[8] Too Hot to Work: Assessing the Threats Climate Change Poses to Outdoor Workers. August 17, 2021. Union of Concerned Scientists https://ucsusa.org/resources/too-hot-to-work

Table 4: City-wide Emissions Summary 2010

Sector	Subsector	GHG emissions ($MTCO_2e$)
Buildings & facilities	Building electricity use	2,910
	Building natural gas use	980
	Cogeneration	4,170
Lighting	Traffic signals	110
	Street lights	240
	Outdoor lighting	60
Fleet	Gasoline vehicles	770
	Diesel vehicles	260
	CNG vehicles	10
Commute	Gasoline vehicles	700
	Diesel vehicles	80
Solid waste	Government-generated solid waste	380
Landfill	Waste in place	1,350
Off-road equipment	Gasoline equipment	30
	Diesel equipment	140
	CNG equipment	0
Refrigerants	Building refrigerants	220
	Vehicle refrigerants	90
Fertilizer	Golf courses	10
	Park land	0
Wastewater	Embedded energy	930
	Wastewater treatment	24,090
Informational items	*Waste hauling*	*690*
Total		**37,530**

Although the numbers have likely changed in 2020, these are still the most significant opportunities for reductions. The City will be working with PlaceWorks to do an updated city-wide inventory and to explore reduction opportunities. Among the ideas we will explore are the following:

- **Investigate capture technologies for greenhouse gas emissions from wastewater treatment plant.** Wastewater treatment plant emissions were the single largest municipal emissions source in the 2010 greenhouse gas Inventory. The City may be able to further reduce its direct greenhouse gas emissions by incorporating emissions control technologies that capture emissions from the wastewater treatment process for use as fuel. The Sustainability Commission is working with the water treatment plant operators to investigate whether this idea is feasible. Although the City had pursued similar options in the past, there were legal, technological, and fiscal barriers that prevented implementation. (Winter 2021)

- **Fleet electrification.** The City will work to identify infrastructure needs and feasibility of electrifying the City fleet. This would include Police Department vehicles as well as maintenance, Code Enforcement, Engineering, and Planning. Incentives and grant programs are anticipated to assist in this transition. (2022)
- **Building energy assessments.** It has been nearly 10 years since the City did assessments of its energy uses. Although some accounts have moved to Desert Community Energy, some accounts cannot be converted, and energy efficiency is a critical first step in achieving carbon neutrality. These assessments should also include assessments of additional renewable energy potential (e.g., solarized parking shade structures). (2023)

8 NEXT STEPS

The Sustainability Commission and City staff continues to work with PlaceWorks to identify opportunities to reduce greenhouse gas emissions and adapt to climate impacts and looks forward to additional discussions with Council. Staff will continue to work with Planning Staff to integrate concepts, as appropriate, into the General Plan. Specific actions will be incorporated into the upcoming Sustainability Plan update. Sustainability staff will plan to provide report-outs to Council regarding progress in this area annually and assess GHG emissions reductions at least bi-annually.