



SUSTAINABILITY COMMISSION
Standing Subcommittee on Solar and Green Building
CITY OF PALM SPRINGS, CALIFORNIA

www.palmsprings-ca.gov

www.yoursustainablecity.com

September 9, 2021
9:30 AM

Via Teleconference

AGENDA

Pursuant to Executive Order N-29-20, this meeting will be conducted by teleconference and there will be no in-person public access to the meeting location.

To view/listen/participate in the meeting live, please use the following link: <https://us02web.zoom.us/j/84603743447> / call +16699006833,, 84603743447#- Meeting ID: 846 0374 3447

- Written public comment may also be submitted to cityclerk@palmspringsca.gov. Transmittal prior to the meeting is required. Any correspondence received during or after the meeting will be distributed to the Board/Commission as soon as practicable and retained for the official record.
- The meeting will be recorded and the audio file will be available from the Office of the City Clerk and will be posted on the City's YouTube channel, as soon as practicable.

COMMISSION STANDING SUBCOMMITTEE	
David Freedman	Sandra Garratt

Staff representatives: Patrick Tallarico, Manager, Office of Sustainability; Tracy Sheldon, Program Coordinator.

City of Palm Springs Vision Statement: Palm Springs aspires to be a unique world-class desert community, where residents and visitors enjoy our high quality of life and a relaxing experience. We desire to balance our cultural and historical resources with responsible, sustainable economic growth and enhance our natural desert beauty. We are committed to providing responsive, friendly, and efficient customer service in an environment that fosters unity among all our citizens.

Please **MUTE OR TURN OFF** all audible electronic devices for the duration of this meeting. Thank you!

CALL TO ORDER

ROLL CALL

ACCEPTANCE OF AGENDA

PUBLIC COMMENTS: PUBLIC COMMENTS: This time is for members of the public to address the Subcommittee on Agenda items and items of general interest within the subject matter jurisdiction of the Subcommittee. The Subcommittee cannot take action on items not listed on the posted Agenda. Three (3) minutes are assigned for each speaker.

A. Sustainable Cannabis Grow Facilities

1. **Planning Commission Study Session**
2. **Industry Seminar**

B. GHG Inventory / Climate Action Roadmap Presentation to City Council

1. **Existing Home Energy Sustainability Ordinance Proposal**
2. **Transportation and Other Elements**

C. California Climate & Energy Collaborative Forum

D. EV Charger Expansion

E. SolarApp+ Launch

F. Home Energy Assessment Rebates

G. Legislative and Regulatory Update

H. DCE Issues/Updates

I. Agenda Items for September Commission Meeting

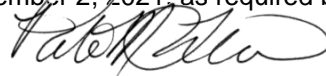
J. ADJOURNMENT – Discuss date of the next meeting of the Sustainability Commission Solar and Green Building Subcommittee.

**Sustainability Commission Subcommittee on Solar and Green Building Regular Meeting Agenda
September 9, 2021, 9:30 a.m. - Page 2**

It is the intention of the City of Palm Springs to comply with the Americans with Disabilities Act (ADA) in all respects. If, as an attendee or a participant at this meeting, you need special assistance beyond what is normally provided, the City will attempt to accommodate you in every reasonable manner. Please contact the Office of the City Clerk at (760) 323-8204 at least 48 hours prior to the meeting to inform us of your needs and to determine if accommodation is feasible.

Pursuant to G.C. Section 54957.5(b)(2) the designated office for inspection of records in connection with the meeting is the Office of Sustainability, City Hall, 3200 E. Tahquitz Canyon Way, Palm Springs, CA 92262. Agenda and staff reports are available on the City's website www.palmspringsca.gov. If you would like additional information on any item appearing on this agenda, please contact the Office of Sustainability at 760-323-8214.

AFFIDAVIT OF POSTING: I, Patrick Tallarico, Manager, Office of Sustainability of the City of Palm Springs, California, certify this Agenda was posted at or before 5:00 p.m. on Thursday, September 2, 2021, as required by established policies and procedures.



Patrick Tallarico, Manager, Office of Sustainability



CITY OF PALM SPRINGS

DEVELOPMENT SERVICES DEPARTMENT

MEMORANDUM

Date: September 1, 2021

To: Planning Commission

From: David A. Newell, AICP
Assistant Planning Director

Subject: Study Session Agenda Item 1: Cannabis Cultivation and Nonresidential Uses – Imposing Requirements for Carbon Free and/or Renewable Energy Usage, Including Solar.

At its July 14, 2021 meeting, the Planning Commission requested a study session to discuss solar and water usage for commercial uses, particularly as it relates to cannabis cultivation. The request was in response to large cannabis cultivation facilities considered at recent meetings and a desire to address energy demands of such large facilities and require sustainable practices related to energy and water usage.

Sustainability Commission Vice Chair Freedman has done a great deal of work on this subject and has closely followed updates that the State has been considering regarding energy mandates for non-residential development. A draft ordinance has been prepared for discussion purposes (Attachment 1), and Mr. Freedman will make a presentation on the ordinance (Attachment 2). Representatives from the California Energy Commission will also be available to provide information and answer questions.

ATTACHMENTS:

1. Draft Ordinance
2. Presentation by Sustainability Commission Vice Chair David Freedman

ORDINANCE NO. ____

AN ORDINANCE OF THE CITY OF PALM SPRINGS, CALIFORNIA, AMENDING CHAPTERS 5.55 AND 8.30 OF THE PALM SPRINGS MUNICIPAL CODE REGARDING USE OF RENEWABLE AND CARBON-FREE ENERGY BY NONRESIDENTIAL BUILDINGS AND INDOOR AND GREENHOUSE CANNABIS CULTIVATION SITES AND DELETING CHAPTER 8.32 OF THE PALM SPRINGS MUNICIPAL CODE.

City Attorney's Summary

This Ordinance amends Chapter 5.55 and amends and replaces in its entirety Chapter 8.30 of the City's Municipal Code to establish requirements for the use of renewable and carbon free energy by new and existing nonresidential buildings and indoor and greenhouse cannabis cultivation sites in Palm Springs. Chapter 8.30 currently grants authority to the City Manager to establish a municipal solar utility. However, such authority is no longer necessary considering the City's participation in Desert Community Energy, which supplies carbon free and renewable energy to electricity customers in Palm Springs. This Ordinance also deletes Chapter 8.32 of the City's Municipal Code regarding municipal solar utility leasehold marketing, which was related to Chapter 8.30 being amended and replaced by this Ordinance.

WHEREAS, the City of Palm Springs adopted Chapter 5.55 of the Palm Springs Municipal Code in order to, among other things, regulate the cultivation, manufacturing, processing, testing, transportation, and distribution, of cannabis goods in a manner which is responsible and which protects the health, safety, and welfare of the residents of Palm Springs.

WHEREAS, the City of Palm Springs adopted Section 93.23.15 of the Palm Springs Zoning Code in order to establish special standards for cannabis facilities.

WHEREAS, indoor and greenhouse cannabis cultivation as authorized under Palm Spring Municipal Code Chapter 5.55 and Zoning Code Section 93.23.15 substantially contributes to the City's greenhouse gas (GHG) emissions. According to the New Frontier Data 2018 Cannabis Energy Report cited in a report submitted to the California Energy Commission (CEC) on May 6, 2021 and relied on by the CEC in connection with the development of the 2022 California Energy Code approved by the CEC on August 11, 2021, annual energy intensity for a California indoor cannabis facility averages 241 kilowatt hours (kWh) per square foot of canopy. New Frontier Data further reports based on data from nine states that indoor facilities using high pressure sodium lamps average 282 kWh per square foot while those using LEDs average 173 kWh per square foot. Greenhouse

cultivation facilities average of 134 kWh / year per square foot of canopy. The CEC uses an average electricity emission factor of 240.4 metric tons of carbon dioxide equivalents per gigawatt hour (1 million kilowatt hours).

WHEREAS, a new study by Colorado State University researchers shows that indoor cannabis cultivation in Riverside County results in life-cycle GHG emissions of between 2,296 and 3,318 kilograms of carbon dioxide equivalent per kilogram of dried flower.

WHEREAS, according to an Environmental Impact Report prepared in August 2017 for Santa Cruz County, indoor and greenhouse operations have an estimated average water demand of 0.1 gallon per square foot of canopy per day. Mission Springs Water District applies a water demand factor of 4.55 acre-feet per year (1,482,624 gallons) per acre of a cultivation site in its service area, which includes parts of the Cannabis Overlay Zone established under Section 92.28.00 of the Palm Springs Zoning Code.

WHEREAS, according to a report submitted to the CEC on July 2, 2021 and relied on by it in connection with the development of the 2022 California Green Building Standards Code approved by the CEC on September 30, 2021, the reuse of transpired water for irrigation would lower water consumption of indoor cannabis growing facilities, resulting in water savings and the embedded energy savings associated with extracting, treating, transporting, and collecting water.

WHEREAS, Palm Springs is one of the oldest urban areas in the Coachella Valley, and many of its commercial buildings were built before energy efficiency codes were enacted.

WHEREAS, Palm Springs commercial buildings and indoor and greenhouse cannabis cultivation sites that do not self-generate or purchase renewable and carbon-free energy use electricity partially supplied by fossil-fuel burning power plants that emit carbon dioxide, one of several pollutants that contribute to global warming.

WHEREAS, the Sustainability Plan adopted by City Council in June 2016 sets the following goals:

- Develop strategies to reduce community-wide contributions to GHG emissions to 1990 levels by 2020 and 80% below 1990 by 2050;
- Encourage the building or retrofitting of one million square feet of green buildings;
- Reduce the total energy use by all buildings built before 2012 by 10%;
- Reduce energy use and carbon use from new homes and buildings;
- Supply 50% of all energy from renewable sources by 2030.

WHEREAS, in addition to the above Sustainability Plan goals, SB 32 signed by Governor Brown in September 2016 requires the California Air Resources Board to ensure that statewide GHG emissions are reduced at least 40 percent below 1990 levels by December 31, 2030, and AB 3232 enacted in 2018 requires the 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.

WHEREAS, the General Plan adopted by City Council in October 2007 sets the following goals:

- Support and encourage the use of alternative energy in the construction of new buildings and retrofit of existing buildings;
- Encourage and support the incorporation of energy efficiency and conservation practices in subdivision and building design;
- Make the maximum use of solar electric capabilities on an individual and community wide basis.

WHEREAS, in April 2020, Desert Community Energy (DCE) launched in Palm Springs with DCE's Carbon Free energy product as the default choice for residential, commercial, and municipal accounts. The Carbon Free energy product consists of renewable energy under the California Renewables Portfolio Standard and hydropower.

WHEREAS, Southern California Edison also offers renewable energy products to its customers.

WHEREAS, according to the GHG inventory prepared by the City's consultant, Palm Springs has achieved its 2020 GHG emissions reduction target by reducing emissions 15 percent below 2010 levels primarily as a result of the launch of DCE and the commitment by most customers to stay with the Carbon Free program. Without the reductions achieved by DCE, Palm Springs' projected 2020 GHG emissions would have been approximately 4.4% above 2010 levels.

WHEREAS, moving to renewable and carbon free electricity by nonresidential buildings and indoor and greenhouse cannabis cultivation sites is a significant step the City can take to continue reducing community-wide GHG emissions and meet the above Sustainability Plan, General Plan and state goals.

WHEREAS, the Planning Commission of the City of Palm Springs held a study session on September 1, 2021, to consider the draft ordinance. By vote of ___ to __ at its meeting of [_____,], 2021, the Planning Commission approved the draft ordinance and recommended its adoption by City Council.

WHEREAS, the Sustainability Commission of the City of Palm Springs, by vote of ___ to __ at its meeting of [_____,], 2021, also approved the draft ordinance and recommended its adoption by City Council.

THE CITY COUNCIL OF THE CITY OF PALM SPRINGS DOES HEREBY ORDAIN AS FOLLOWS:

SECTION 1. The above recitals are true and correct and are incorporated herein by this reference herein as material findings in support of this Ordinance.

SECTION 2. Subdivision (A)(4) of Section 5.55.096 of the Palm Springs Municipal Code is hereby amended to read:

4. The Cultivation includes adequate measures that minimize use of water for Adult-Use Cannabis Cultivation at the site. Dehumidification equipment shall have the capability to reuse transpired water for irrigation.

SECTION 3. Subdivision (A)(8) of Section 5.55.096 of the Palm Springs Municipal Code is hereby amended to read:

8. Sufficient power availability to meet the requirements of the proposed use in accordance with Chapter 8.30 of the Palm Springs Municipal Code to the extent applicable.

SECTION 4. Subdivisions (B)(2)(d) and (B)(2)(e) of Section 5.55.205 of the Palm Springs Municipal Code are hereby amended to read:

d. Water conservation measures, water capture systems, or grey water systems shall be incorporated in Adult-Use Cannabis Cultivation operations in order to minimize use of water. Dehumidification equipment shall have the capability to reuse transpired water for irrigation.

e. All onsite electricity demands shall be met in accordance with Chapter 8.30 of the Palm Springs Municipal Code to the extent applicable.

SECTION 5. Chapter 8.30 of the Palm Springs Municipal Code is hereby amended to read:

RENEWABLE ENERGY FOR NONRESIDENTIAL BUILDINGS AND INDOOR CANNABIS CULTIVATION SITES

Sections:

8.30.010 Short Title.

8.30.020 Purpose.

8.30.030 Definitions.

8.30.040 Carbon Free and/or Renewable Energy Usage and Compliance.

8.30.050 Implementation.

8.30.010 Short Title.

Sections 8.30.00 through 8.30.050 may be referred to as the Renewable Energy Ordinance of the City of Palm Springs.

8.30.020 Purpose.

Recognizing that the Sustainability Plan has set a vision of Palm Springs as a high efficiency, renewable energy city, the City Council finds that it is in the public interest to

require the use of carbon free and renewable energy sources in Nonresidential Buildings and Cannabis Cultivation Sites. The purpose of this Chapter is to reduce GHG emissions by such facilities while protecting the public health, safety and welfare of the residents of Palm Springs.

8.30.030 Definitions.

For purposes of this Chapter 8.30, the following terms have the following meanings:

“Cannabis Cultivation Site” means a cultivation site as defined in Section 5.55.050 of the Palm Springs Municipal Code corresponding to the following state cultivator license types set forth in California Business and Professions Code Section 26050:

- Type 1A or “specialty indoor”
- Type 1B or “specialty mixed-light”
- Type 2A or “small indoor”
- Type 2B or “small mixed-light”
- Type 3A or “indoor”
- Type 3B or “mixed-light”

“Carbon free or renewable energy resources” means energy resources qualifying as renewable pursuant to California Public Resources Code Chapter 8.6, Section 25741 (a) and California Public Utilities Code Chapter 2.3, Article 16, Section 399.16(b)(1) or (2), as amended from time to time, and generation from hydroelectric facilities greater than 30 megawatts. Carbon free or renewable energy resources include the Carbon Free product offered by Desert Community Energy and the Green Rate Program at the 100% level and the Community Renewables Program offered by Southern California Edison.

“Nonresidential Building” means a facility other than a Cannabis Cultivation Site composed of occupancy types(s) other than residential – including type A, B, E, I-1, I-2, I-3, M, R-1, and S, as defined in Chapter 3 of the California Building Code, as amended from time to time.

"Permittee" means a person issued a City permit under Palm Springs Municipal Code Chapter 5.55.

8.30.040 Carbon Free and/or Renewable Energy Usage and Compliance.

A. Each Nonresidential Building and Cannabis Cultivation Site subject to this Chapter 8.30 shall, as of the date specified in subdivisions (B) and (C) respectively, ensure that all onsite electricity demands are met through any combination of:

1. purchase from carbon free or renewable energy resources, and/or
2. on-site generation from carbon free or renewable energy resources.

B. The date of applicability of the requirements of this Chapter 8.30 to Nonresidential Buildings is as follows:

1. Customers on Southern California Edison Rate Schedule TOU-8 (or any successor rate schedule) or whose monthly maximum demand exceeds 500 kW or has exceeded 500 kW for any three months during the preceding 12 months: January 1, 2023.

2. Customers on Southern California Edison Rate Schedule TOU-GS-3 (or any successor rate schedule) or whose monthly maximum demand registers 200 kW through 500 kW or has exceeded 200 kW for any three months during the preceding 12 months: January 1, 2024.

3. Customers on Southern California Edison Rate Schedule TOU-GS-2 (or any successor rate schedule) or whose monthly maximum demand registers above 20 kW and below 200 kW or has exceeded 20 kW for any three months during the preceding 12 months: January 1, 2025.

4. The requirements of this Chapter 8.30 shall be applicable to owners and tenants in new Nonresidential Buildings upon issuance of their certificate of occupancy on or after the effective date of this Chapter.

Customers on Southern California Edison Rate Schedule TOU-GS-1 (or any successor rate schedule) or whose monthly maximum demand does not exceed 20 kW are not subject to the requirements of this Chapter.

C. The date of applicability of the requirements of this Chapter 8.30 to Cannabis Cultivation Sites in operation on the date of effectiveness of this Chapter is as follows, based on state cultivator license types:

1. Type 3A and Type 3B: January 1, 2022.

2. Type 2A and Type 2B: January 1, 2023.

3. Type 1A and Type 1B: January 1, 2024.

The requirements of this Section 8.30.040 shall be applicable upon commencement of Cultivation operations by Cannabis Cultivation Sites of all the above types receiving their permits for Adult-Use Cannabis Cultivation pursuant to Section 5.55.096 on or after the effective date of this Chapter.

D. In facilities subject to the requirements of this Chapter 8.30, it shall be the responsibility of Nonresidential Building owners and tenants and Cannabis Cultivation Site Permittees to ensure that all electric meters for which respectively they are the account holder comply the energy source provisions of this Section 8.30.040.

E. A Nonresidential Building owner or tenant or Cannabis Cultivation Site Permittee subject to this Chapter 8.30, as of the date specified in subdivisions (B) and (C)

respectively, will be compliant if it is on a waitlist for enrollment in a program satisfying the conditions of subdivision (A).

F. A Nonresidential Building owner or tenant or Cannabis Cultivation Site Permittee subject to this Chapter 8.30 will not be considered in violation of this Chapter 8.30 during the term (including any renewals thereof) of an existing long-term energy contract executed and dated prior to the date of effectiveness of this Chapter.

8.30.050 Implementation.

A. The City Manager or the City Manager's designee(s) may adopt rules and regulations for the implementation of this Chapter 8.30, including rules for verification of compliance with the requirements of this Chapter.

B. The City Manager may modify or suspend any or all the requirements of this Chapter 8.30 if the City Manager submits a written determination to the City Council indicating:

1. lack of carbon free or renewable energy market resources available to meet demand, and/or

2. the cost of all available carbon free or renewable energy resources options is more than 25% of each energy provider's default program offering, and/or

3. the requirement conflicts with or is similar to or less comprehensive than a renewable energy requirement adopted by the State of California or the Federal government, including the California Energy Code as adopted by the City under Palm Springs Municipal Code Section 8.04.065.

SECTION 6. If any section, subsection, sentence, clause, or phrase of this Ordinance is for any reason held to be invalid or unconstitutional by a decision of any court of competent jurisdiction, such decision will not affect the validity of the remaining portions of this Ordinance. The City Council declares that it would have passed this Ordinance and each and every section, subsection, sentence, clause, or phrase not declared invalid or unconstitutional without regard to whether any portion of the Ordinance would be subsequently declared invalid or unconstitutional.

SECTION 7. The proposed Ordinance is not subject to the California Environmental Quality Act (Public Resources Code Section 21000 *et. seq.*) pursuant to Section 15060(c)(2) and 15060(c)(3) of the State Guidelines, because the Ordinance will not result in a direct or reasonably foreseeable indirect physical change in the environment and is not a "project," as that term is defined in Section 15378 of the State Guidelines.

SECTION 8. The Mayor shall sign and the City Clerk shall certify to the passage and adoption of this Ordinance and shall cause the same, or the summary thereof, to be published and posted pursuant to the provisions of law and this Ordinance shall take effect thirty (30) days after passage.

ADOPTED THIS __TH DAY OF _____, 2021.

CHRISTY HOLSTEGE
MAYOR

ATTEST:

ANTHONY J. MEJIA, MMC
CITY CLERK

CERTIFICATION

STATE OF CALIFORNIA)
COUNTY OF RIVERSIDE) ss.
CITY OF PALM SPRINGS)

I, ANTHONY J. MEJIA, City Clerk of the City of Palm Springs, California, do hereby certify that Ordinance No. _____ is a full, true, and correct copy, and was introduced at a regular meeting of the Palm Springs City Council held on _____, 2021, and adopted at a regular meeting of the City Council held on _____, 2021, by the following vote:

AYES:
NOES:
ABSENT:
ABSTAIN:

IN WITNESS WHEREOF, I have hereunto set my hand and affixed the official seal of the City of Palm Springs, California, this ___ day of _____, 2021.

ANTHONY MEJIA, MMC
CITY CLERK

Renewable Energy Ordinance Proposal

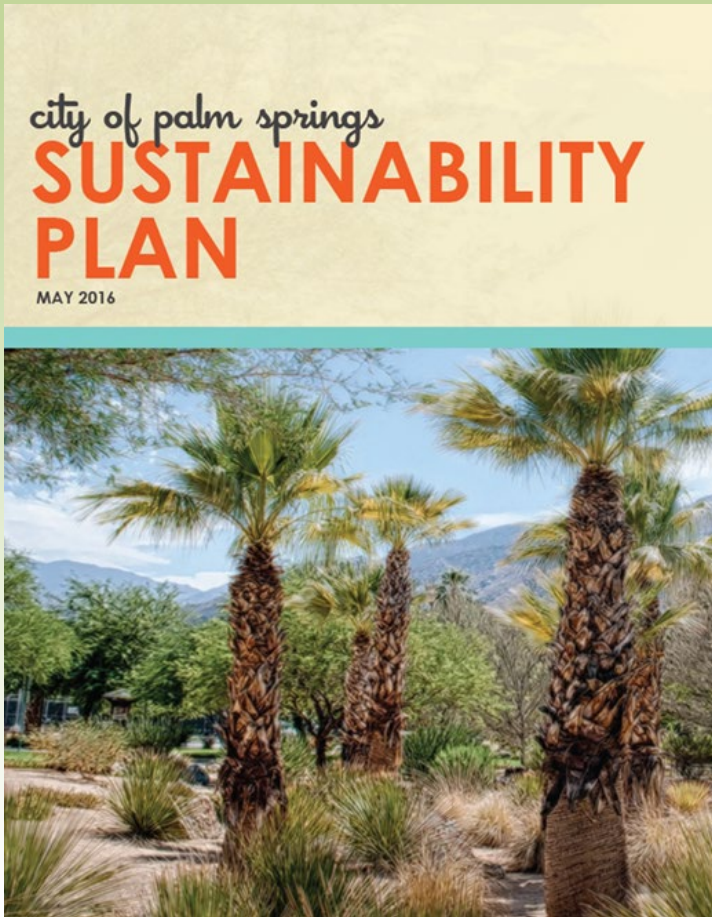
Planning Commission
Study Session 9/1/21



Presenter
David Freedman
Sustainability Commission Vice Chair
Solar and Green Building Committee



City and State GHG / Energy Goals



- Reduce GHG emissions to 1990 levels by 2020, and 80% below 1990 levels by 2050.
- Encourage the building or retrofitting of one million square feet of green buildings.
- Reduce the total energy use by all buildings built before 2012 by 10%.
- Reduce energy use and carbon use from new homes and buildings.
- Supply 50% of all energy from renewable sources by 2030.
- State goals (SB 32 / AB 3232) to reduce GHG emissions 40% below 1990 levels by 2030.



GHG Inventory Results

- City recently completed a GHG inventory in connection with its ongoing General Plan update.
- Palm Springs achieved its 2020 GHG emissions reduction target primarily as a result of the 2020 launch of Desert Community Energy (DCE) and the commitment by most DCE customers to stay with its Carbon Free program.
- Commercial and industrial energy represents approximately 14.6% of estimated 2020 GHG emissions.
- The other largest contributors to GHG emissions are transportation (53.4%) and residential energy (22.4%).



Cannabis Environmental Impact

- Cannabis cultivation is considered more energy and water intensive than general light industrial uses assumed in the California Emissions Estimator Model (CalEEMod) used in CEQA studies.
- Annual energy intensity for a California indoor cannabis facility averages 241 kilowatt hours (kWh) per square foot of canopy.
- Indoor facilities using high pressure sodium lamps average 282 kWh per square foot while those using LEDs average 173 kWh per square foot. Greenhouse cultivation facilities average of 134 kWh / year per square foot of canopy. (Source: New Frontier Data, 2018)
- Indoor cannabis cultivation in Riverside County results in life-cycle GHG emissions of between 2,296 and 3,318 kilograms (kg) of CO2 equivalent per kg of dried flower. (Source: Colorado State U, 2021)
- Indoor and greenhouse operations use 0.1 gallon of water per square foot of canopy per day. (Source: Santa Cruz County, 2017)



Ordinance Background

- Based on San Francisco ordinance adopted in 2019.
- Complements 2022 Energy Code provisions on cannabis facilities and solar + storage for nonresidential buildings.
- Requirement to purchase carbon-free or renewable energy (e.g., DCE Carbon Free Program or SCE Green Rate or Community Renewables programs at 100% level) or generate it on-site. Carbon-free energy is from hydropower.
- Does not mandate the installation of solar facilities, which would require demonstrating cost-effectiveness and prior approval of California Energy Commission.
- Sustainability Commission is separately working on proposal to increase energy efficiency of existing buildings – initially residential but cost effectiveness data will be available next year for nonresidential buildings.



Ordinance Cannabis Provisions

- Applies to indoor and mixed-light cultivation facilities.
- Renewable energy requirement for existing facilities phased in over three years, largest facilities (based on state license type) first.
- New facilities must comply at the start of operations.
- New requirement that dehumidification equipment have the capability to reuse transpired water for irrigation – this is considered best industry practice.
- Permit applicants must provide substantial evidence of ability to comply with energy and water requirements.



Ordinance Nonresidential Provisions

- Applies to all nonresidential buildings – owners and tenants. Small commercial businesses are exempt.
- Renewable energy requirement for existing facilities phased in over three years, largest energy users (based on SCE tariff or monthly energy demand) first.
- Monthly energy demand is proxy for building size used in San Francisco ordinance – City does not have building size data.
- New facilities must comply at certificate of occupancy.
- Users on long-term energy contracts can continue them until end of contract term (including renewals).



Ordinance Phase-In Schedule

Effective Date	Proposed Ordinance Requirement to Purchase / Generate On-Site Carbon-Free / Renewable Energy		State Requirement (2022 California Energy Code)
	Cannabis Cultivation Type	Nonresidential Buildings	
01/01/22	3A Indoor 3B Mixed-light		
01/01/23	2A Small indoor 2B Mixed-light	>500 kW monthly demand	<ul style="list-style-type: none"> • New Nonresidential / High-Rise Residential Building Solar and Storage • Cannabis Cultivation Dehumidification and Lighting (New / Additions / Alterations)
01/01/24	1A Specialty indoor 1B Mixed-light	200 kW – 500 kW monthly demand	
01/01/25		20 kW – 200 kW monthly demand	



Ordinance Implementation

- City Manager or designee(s) may adopt rules and regulations for implementation, including for verification of compliance with requirements.
- City Manager may modify or suspend requirements if carbon-free / renewable energy not available or price premium over base product exceeds 25%.
- City Manager can also suspend requirements if they conflict with or are similar to or less comprehensive than a renewable energy requirement adopted by the State or Federal governments – Energy Code is updated every three years and SB 100 sets a 2045 goal of powering all retail electricity sold in California with renewable and zero-carbon resources.



Next Steps

- Direction from Planning and Sustainability Commissions.
- Discussions with DCE and SCE on availability of carbon free / renewable energy and number and load profile of covered energy users.
- Discussions with cannabis cultivation facilities on energy and water requirements – Office of Sustainability and Department of Special Program Compliance are working on a sustainability forum for cannabis cultivation facilities, to be held in the early fall.
- Stakeholder and DCE / SCE input to be reflected prior to presenting draft ordinance for approval by Planning and Sustainability Commissions and then City Council.





MEMORANDUM

DATE: October __, 2021

SUBJECT: Palm Springs Existing Home Energy Sustainability Ordinance Proposal

TO: City Council
Patrick Tallarico, Manager, Office of Sustainability

FROM: David Freedman, Sustainability Commission Vice Chair

Background: Homes in Palm Springs have been built over the years to meet the applicable energy-related building codes, which were first put in place in 1978. Since then, new homes have gotten healthier and more efficient while some existing homes, particularly those built before 2011 that represent most of the Palm Springs housing stock, have been left behind. To help address this situation, this proposal would require homes built before 2011 undergoing additions, alterations, or remodels to make certain targeted upgrades, where applicable and feasible, to bring them closer to 2019 and 2022 Energy Code provisions. As a result of the upgrades, these homes can expect lower energy bills, a more comfortable house, and a lower carbon footprint. Community-wide greenhouse gas (GHG) emissions and energy consumption would be reduced.

This proposal is based on and combines features from ordinances in Carlsbad and Chula Vista (San Diego County) and Piedmont (Alameda County) that have been approved by the California Energy Commission (CEC), as required by state law. If an ordinance embodying this proposal is approved by City Council and then the CEC, it would be effective January 1, 2023, simultaneously with the 2022 Energy Code.

Who Would Need to Comply: These energy saving improvements are something any home can benefit from, but because newer homes have already been built to meet more recent Energy Codes, the focus of this proposal is homes built in Palm Springs before 2011 that are doing additions, alterations or remodels that trigger the need for a building permit. Potential examples of what projects would need to comply are:

- Adding square footage
- Adding windows and doors
- Moving interior walls
- Reroofing
- Electric panel upgrades
- Kitchen / bath / laundry room remodels
- HVAC replacement
- Solar PV or thermal installation

These projects would NOT trigger this requirement:

- Projects that are medically necessary

- Repairs to existing equipment
- Additions, alterations, or remodels to homes built after 2010
- Homeowners on the CARE / FERA utility discount programs or eligible for those programs

Based on the type and value of the building permit, different energy saving measures would be required. LED lighting would be required (if not already installed) regardless of permit value. Qualifying projects having a permit value of at least \$10,000 would also be required to install the water heating package described below. Further thresholds using a scoring system based on energy savings would be set for qualifying projects exceeding permit value thresholds of \$25,000, \$50,000 and \$100,000.

The table below provides details about each potential measure that may be required, or qualify as an alternative measure, when a home built before 2011 undertakes a qualifying project. However, all homes in Palm Springs should implement some level of the energy measures listed below to reduce their energy bill, improve home air quality, and lower their carbon footprint.

What Does Energy Efficiency Mean? Below is a table that reviews the home energy efficiency standards that the proposal is trying to ensure homes meet.

Name	Description	Benefit	Implementation Notes
LED Lighting	Replace screw-in halogen, incandescent or CFL light bulbs with LED light bulbs.	LED lights can use up to 75% less energy than incandescent bulbs and are 15% more efficient than average Compact Fluorescent Light (CFL) Bulbs.	Not applicable to lights plugged into outlets. Energy Star bulbs recommended. Historic fixtures exempt if not compatible with LED bulbs.
Water Heating Package	<p>A. Water Heater Blanket - Add R-6 insulation to the exterior of existing residential tank storage water heaters. manufactured before April 2015.</p> <p>B. Hot Water Pipe Insulation - Insulate all accessible hot water pipes with R-3 pipe insulation.</p> <p>C. Low Flow Fixtures - Upgrade sink and shower fittings to maximum flow rates of 1.8 gallons per minute (gpm) for showerheads and kitchen faucets, and 1.2 gpm for bathroom faucets.</p>	Water heating can account for up to 50% of an average home's natural gas usage. By insulating the tank (if not already insulated) and exposed piping, homeowners can minimize the amount of heat that is lost on its way to homeowners. By utilizing low-flow faucets, aerators, and low-flow showerheads, homeowners not only save water but also save the energy used to heat up that water.	Only accessible hot water pipes need to be insulated. Historic fixtures exempt if not compatible with water efficiency measures.
Attic Insulation	Add attic insulation in buildings with vented attic spaces to meet R-49.	Attic insulation helps homes maintain a stable temperature.	Homes with existing insulation greater than R-19 or without vented attics are exempt.

Raised Floor Insulation	In existing homes with raised floors and no insulation, add R-19 insulation.	Insulating crawl space ceilings will make homes more efficient and comfortable.	Homes without raised floors are exempt.
Duct Sealing	Air seal all accessible ductwork with a goal of reducing duct leakage to be equal to or less than 10% of system airflow. -or- Replace existing ductwork with entirely new ductwork to meet 2022 Energy Code requirements.	Duct leakage can be as high as 30% in average California homes. This means that up to 30% of the air homeowners are paying to heat or cool is being lost before it reaches its destination. Additionally, leaky ducts can allow a pathway for dust or other indoor air quality concerns to enter rooms.	The 2022 Energy Code will require duct sealing when more than 25 feet of new or replacement space-conditioning system ducts are installed. This measure would apply if not already required by Code.
Air Sealing	Apply air sealing practices throughout all accessible areas of the building. Homes with one or more vented combustion appliances MUST have a Building Performance Institute (BPI) Combustion Appliance Safety Inspection performed after air sealing.	Houses built over the past five years are over 20 percent tighter than those built a decade earlier. This means the air homeowners pay to heat or cool can escape, increasing energy bills and allowing outside pollutants to enter the home. By sealing homes, owners can make it safer and healthier.	Only accessible areas need to be sealed. Attics with crawl space are considered accessible. Combined with other building envelope measures to be cost effective.
Wall Insulation	Blow-in R-13 wall insulation in existing homes that currently have no insulation in the walls (pre-1978 vintages).	Without wall insulation, the air homeowners paid to heat or cool can escape.	
Cool Roof	Only applicable if project includes re-roofing or addition of steep-slope roofs. Install a roofing product rated by the Cool Roof Rating Council (CRRC) with an aged solar reflectance of 0.25 or higher and thermal emittance of 0.75 or higher.	Cool roofs help save energy by increasing the amount of solar energy that gets reflected away from homes and minimize the need for cooling on hot days.	Only for steep-slope roofs (shallow slope roofs already covered).

Windows	Replace existing single pane windows with a dual pane product (pre-1978 vintages).	Energy efficiency windows not only reduce heating and cooling costs they can also reduce the ability of moisture and noise to enter your home.	Look for U-factor equal to 0.30 Btu/hour-ft ² or lower and a Solar Heat Gain Coefficient (SHGC) equal to 0.23 or lower.
Water Heater Replacement	High Efficiency Heat Pump Water Heater: Replace natural gas storage water heater, or, tankless water heater having an Energy Factor of .81 or less, with Heat Pump Water Heater -or- High Efficiency Tankless Water Heater: Replace natural gas storage water heater, or, less efficient tankless water having an Energy Factor of .81 or less with tankless water heater.	About 18% of an average home's energy is used for heating water. Heat Pump Water heaters are on average 200% to 300% more efficient than traditional water heaters while tankless units are 8% to 34% more efficient. Additionally, because heat pump water heaters store their hot water, they can minimize energy usage during peak periods.	Heat Pump Water Heater with Uniform Energy Factor (UEF) of at least 3.1 (Northwest Energy Efficiency Alliance Tier 3). -or- Tankless water heater with a minimum Energy Factor of 0.96.
Air Conditioner Replacement	High Efficiency Air Conditioner: Replace an existing air conditioner having a SEER rating of 13 or less with a high efficiency air conditioner having a SEER of at least 18. -or- High Efficiency Heat Pump Air Conditioner: Replace an existing air conditioner having a SEER rating of 13 or less with a Heat Pump Air Conditioner having a SEER of at least 18.	When running air conditioners can be the biggest energy user in a home so installing high efficiency units can prevent higher bills. It is also important to ensure ducting is sealed and installed and filters are regularly changed.	Install an air conditioner or heat pump air conditioner rated to at least 18 SEER.
Exterior Lighting Controls	Install a screw-in photosensor control in outdoor lighting luminaires.	Photosensor controls reduce operating hours on average 20 percent each day. This helps Palm Springs achieve its dark sky objectives.	

PV + Electric-Ready Measures	Add electric-ready measures for future replacement of natural gas furnace and water heater with heat pumps, along with installation of an on-site PV system.	Enables buildings initially equipped with natural gas appliances to replace them with electric appliances later.	Electric-ready measures only required when already installing an on-site PV system.
Electric Panel Upgrade /Kitchen / Laundry Room / + Electric-Ready Measures	Add electric-ready measures for future replacement of cooktop and clothes dryer with electric appliances, along with electric panel upgrade or kitchen / laundry room remodel.	Enables buildings initially equipped with natural gas appliances to replace them with electric appliances later.	Electric-ready measures only required when already doing an electric panel upgrade or kitchen / laundry room remodel.

Benefits: As mentioned in the table above there are numerous benefits that these upgrades can provide depending on the home. Below is some more information about the main benefits.

- Energy Bill Reductions – Over the expected life of the products all the measures (except kitchen / laundry room + electric-ready) are expected to save energy and reduce the home’s energy bills by more than the cost of installing them. A summary of cost-effectiveness findings is provided in Attachment 1.
- Improved Indoor Air Quality – Leaky homes and ducts are one of the largest ways that outdoor pollutants like dust and pollen can enter a home. Properly sealing homes and ducts can help increase indoor air quality. But all homes need ventilation, especially homes using fuel-fired appliances – gas water heaters, heating systems and stoves need ventilation, but homes can be sealed up too tight to allow this. If homeowners seal homes beyond the recommended 15% of system airflow, the home may need mechanical ventilation to ensure it is still receiving fresh air. Residents can have a third party verify their home’s air leakage.
- Reduce Carbon Emissions – Home energy use is one of the largest contributors to climate change in Palm Springs. By saving energy residents will also reduce GHG emissions. The model included with the cost-effectiveness analysis estimates community-wide GHG emission reductions.

Compliance credits: If homeowners have already made these, or similar, upgrades, or the upgrades will be a part of the homeowner’s addition, alteration or remodel project, homeowners will be benefiting from a more energy efficient home and do not need to make any additional upgrades. Potential examples of compliance credits are:

- Similar measures have already been completed, including participation in a low-income weatherization program (a deferment will be provided to qualifying homes that have applied for weatherization programs but not received the work yet).
- Home achieves a Home Energy Score (HES) score of at least 8 out of 10 or a HERS whole-house rating score of 85 or lower. The Office of Sustainability offers a rebate of up to \$100 on the cost of a home energy assessment.
- Home has on-site photovoltaics (PV) offsetting at least 95% of the annual electricity and gas-equivalent usage.

- An alternative, voluntary, set of energy measures is concurrently being completed that will achieve equivalent energy savings to the prescriptive packages.
- Homes on an eligible carbon-free electricity plan, such as Desert Community Energy's Carbon Free program or Southern California Edison's Green Rate at the 100% level, could receive compliance credit for the LED lighting measure.

What if These Upgrades Will Not Work for the Project: Because of unique characteristics of some homes, these upgrades may not work as intended for all residents. To help ensure that residents are not negatively impacted by this requirement, the following additional exemptions would also be allowed.

- A measure is beyond the authority of the homeowner because of an HOA covenant.
- Prescribed measures would be technically infeasible or not be cost-effective due to unique characteristics of the home or other special circumstances (e.g., historic preservation rules).

Palm Springs Existing Home Energy Sustainability Ordinance Proposal

Summary Cost-Effectiveness Results

Background

The energy efficiency requirements in the proposed Palm Springs Existing Home Energy Sustainability Ordinance (EHESO) were derived from statewide cost-effectiveness studies produced by California's major utility companies.¹ The studies evaluated a variety of measures for homes of various ages and each climate zone in the state, estimating the total installation cost and utility bill savings for each. These estimates were based on a prototype single family home and prototype multi-unit building considered typical of California's older housing stock and standard construction practices during the periods evaluated.² From these studies the measures that indicated a good payback have been selected.

Measuring Cost Effectiveness

There are two common measures of cost effectiveness.

Simple Payback divides the up-front installation cost of a measure by the expected utility bill savings each year.³ The result is a simple measure of the number of years it takes to "pay back" the initial investment. The lower the number, the quicker a measure pays back and the more cost effective it is. *Simple Payback* does not take into account financing costs.

Benefit-to-Cost Ratio divides the on-bill lifecycle benefits over the one-time costs. Lifecycle benefits are summed over the lifecycle (generally 30 years).⁴ *Benefit-to-cost ratios* above 1.0 are considered cost effective and the higher the ratio, the better.

Results

The table below shows the cost effectiveness for certain measures or packages of measures under the proposed ordinance.⁵

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- ¹ The Codes and Standards Program under the auspices of the California Public Utilities Commission has issued cost-effectiveness studies to help local jurisdictions determine which measures save energy and are cost effective and support the cost-effectiveness finding required by state law to adopt measures that exceed the California Energy Code. The most recent Codes and Standards Program cost-effectiveness study for single-family home upgrades (*2019 Cost-Effectiveness Study: Existing Low-rise Residential Building Efficiency Upgrades* (August 2021)) considered three unique building vintages: pre-1978, 1978-1991, and 1992-2010. The vintages were defined based on review of historic Energy Code requirements and selecting year ranges with distinguishing features. Multifamily energy efficiency measures were reviewed in *2019 Cost-Effectiveness Study: Existing Low-rise Residential Building Efficiency Upgrade* (February 2020). The full studies can be accessed at <https://localenergycodes.com/content/resources>.
- ² The Cost-Effectiveness Study prototypes for existing single-family residential buildings are 1,665 ft² for a three-bedroom single-family home and 960 ft² per two-bedroom unit for a multifamily building.
- ³ The 2021 Cost-Effectiveness Study for single-family homes uses electricity rates from Southern California Edison (SCE) effective February 1, 2021, and gas rates from Southern California Gas (SoCalGas) for the 12-month period ending March 2021 (see pages 59-61). The 2020 Cost-Effectiveness Study for multifamily homes describes the SCE and SoCalGas rates it used on pages 24-26. Utility savings could potentially be higher for Desert Community Energy (DCE) customers on its Carbon Free product or SCE customers on its Green Rate at the 100% level and slightly lower for DCE customers on its Desert Saver product. The on-bill cost data do not include either the social cost of higher greenhouse gas emissions leading to air and water pollution, droughts and wildfires or the non-energy benefits of improved public health and a sustainable economy.
- ⁴ The calculations generally assume an escalation of utility rates. Maintenance costs were not included for any measures because there are no incremental maintenance costs expected for any of the measures evaluated. Replacement costs were factored in for lighting measures.
- ⁵ The figures in the table are derived from the Codes and Standards Program's online Cost-Effectiveness Explorer (<https://explorer.localenergycodes.com>), which uses single-family study data from the August 2021 version and multifamily data from the February 2020 version of the studies referred to in footnote 1. The Codes and Standards Program has developed the Cost-Effectiveness Explorer as an online tool using data from the cost-effectiveness studies that local jurisdiction staff and other stakeholders could use to simplify initial reach code research. The tool allows users to identify cost-effective reach code options as well as to better understand the impacts on their local communities of different possible scenarios.

EHESO Proposal Summary Cost Effectiveness Results

Measure	Year Built	Cost Effectiveness		Per Home Results		
		Benefit / Cost Ratio	Simple Payback (years)	Incremental Cost	Annual Bill Savings	Lifecycle Savings
Single family						
LED Lighting ⁶	Before 2011	3.73	11.2	\$23.96	\$2.13	\$50.54
Water Heating Package	Before 2011	1.43	8.64	\$208	\$12.06	\$335
R-49 Attic Insulation	Before 1978	3.71	5.70	\$3,332	\$584	\$13,877
	1978-1991	2.35	8.98	\$2,874	\$320	\$7,596
	1992-2010	1.10	19.1	\$1,852	\$96.79	\$2,298
Duct Sealing	Before 1978	26.8	0.788	\$683	\$866	\$20,530
	1978-1991	17.5	1.21	\$683	\$566	\$13,412
	1992-2010	5.95	3.54	\$423	\$119	\$2,827
New Ducts	Before 1978	7.42	2.84	\$3,986	\$1,401	\$33,203
	1978-1991	5.78	3.65	\$3,986	\$1,093	\$25,888
	1992-2010	1.81	11.6	\$3,986	\$342	\$8,109
Cool Roof (when reroofing)	Before 1978	7.82	2.06	\$577	\$280	\$6,637
	1978-1991	5.96	2.70	\$577	\$214	\$5,058
	1992-2010	2.85	5.65	\$577	\$102	\$2,416
R-13 Wall Insulation	Before 1978	2.13	9.97	\$3,360	\$337	\$8,018
Windows	Before 1978	2.29	9.20	\$9,810	\$1,067	\$25,264
	1978-1991	1.86	11.4	\$9,810	\$864	\$20,468
Exterior Lighting Controls ⁷	Before 2011	1.11	4.97	\$85.17	\$4.01	\$94.86

⁶ Assumes six CFL bulbs are replaced with LED bulbs in a home.

⁷ For two devices.

EHESO Proposal Summary Cost Effectiveness Results

Measure	Year Built	Cost Effectiveness		Per Home Results		
		Benefit / Cost Ratio	Simple Payback (years)	Incremental Cost	Annual Bill Savings	Lifecycle Savings
PV + Electric-Ready Measures	Before 1978	2.14	8.93	\$15,228	\$1,705	\$40,370
	1978-1991	2.11	9.05	\$15,228	\$1,683	\$39,840
	1992-2010	1.92	9.93	\$15,228	\$1,533	\$36,297
R-49 Attic + Air Sealing ⁸	Before 1978	2.91	7.28	\$4,806	\$660	\$15,686
	1978-1991	1.77	11.9	\$4,348	\$365	\$8,660
R-49 Attic + Duct Sealing	Before 1978	7.37	2.87	\$4,015	\$1,401	\$33,221
	1978-1991	5.05	4.18	\$3,557	\$850	\$20,153
	1992-2010	1.96	10.8	\$2,275	\$211	\$5,005
R-49 Attic + Air Sealing + Duct Sealing ⁸	Before 1978	5.66	3.73	\$5,489	\$1,471	\$34,897
	1978-1991	3.75	5.63	\$5,031	\$894	\$21,186
	1992-2010	1.33	15.9	\$3,749	\$236	\$5,593
R-49 Attic + Air Sealing + New Ducts ⁸	Before 1978	4.86	4.35	\$8,792	\$2,023	\$47,970
	1978-1991	3.59	5.88	\$8,334	\$1,417	\$33,595
	1992-2010	1.30	16.2	\$7,312	\$450	\$10,675
Attic + Air + Duct Seal + Wall + Windows ⁸	Before 1978	2.81	7.52	\$18,659	\$2,482	\$58,889
Multifamily (per unit data)						
LED Lighting ⁹	Before 2011	3.73	11.2	\$23.96	\$2.13	\$50.54
Water Heating Package	Before 2011	2.92	8.91	\$168	\$9.44	\$254
	Before 1978	6.00	3.82	\$594	\$156	\$3,695

⁸ Does not include \$350 for BPI Combustion Safety Testing.

⁹ Assumes six CFL bulbs are replaced with LED bulbs in a home.

EHESO Proposal Summary Cost Effectiveness Results

Measure	Year Built	Cost Effectiveness		Per Home Results		
		Benefit / Cost Ratio	Simple Payback (years)	Incremental Cost	Annual Bill Savings	Lifecycle Savings
R-38 Attic Insulation ¹⁰	1978-1991	3.33	6.87	\$526	\$76.54	\$1,816
	1992-2010	2.79	8.20	\$526	\$64.13	\$1,521
Duct Sealing	Before 1978	57.1	0.401	\$120	\$299	\$7,101
	1978-1991	28.2	0.812	\$120	\$148	\$3,501
	1992-2010	24.5	0.931	\$120	\$129	\$3,051
Envelope & Duct Package ¹¹	Before 1978	9.67	2.37	\$1,054	\$445	\$10,568
	1978-1991	5.26	4.35	\$987	\$227	\$5,382
	1992-2010	4.51	5.07	\$987	\$195	\$4,613
Cool Roof (when reroofing)	Before 1978	14.0	1.63	\$184	\$113	\$2,666
	1978-1991	10.9	2.09	\$184	\$87.91	\$2,080
	1992-2010	9.00	2.54	\$184	\$72.46	\$1,714
Windows	Before 1978	2.26	10.1	\$5,873	\$581	\$13,772

A model shows the aggregate City-wide effects of this proposal.¹² Over the five-year period that it would be in effect (based on CEC guidance that cost-effectiveness data would need updating after five years), City-wide compliance costs would be approximately \$2 million. Over that five-year effectiveness period plus the 30-year lifecycle, City-wide lifecycle on-bill savings would be approximately \$6.5 million. Over that same time frame, City-wide electricity consumption would be reduced by approximately 15 million kilowatt hours, and City-wide natural gas consumption would be reduced by approximately 1.6 million therms. Residential GHG emissions would be reduced by approximately 9,000 MTCO_{2E}. Most of the GHG emissions reductions would come from the water heating package, while most of the on-bill and energy savings would come from duct and air sealing and attic insulation because of the large number of DCE customers using carbon-free electricity.

¹⁰ The 2020 Cost-Effectiveness Study is based on the 2019 Energy Code standard of R-38 insulation and has not yet been updated for multifamily homes to reflect the 2022 Energy Code standard of R-49 insulation.

¹¹ This is the combination of R-38 Attic Insulation, Air Sealing, and Duct Sealing upgrade measures. Does not include \$350 for BPI Combustion Safety Testing.

¹² The model was developed by local energy policy consultant Eric Engelman, who developed the Cost-Effectiveness Explorer for the Codes and Standards Program and whose assistance was provided by the Codes and Standards Program at no cost to the City. The model is derived from the calculations reflected in the Codes and Standards Program 2020 and 2021 residential retrofit cost-effectiveness studies referred to in footnote 5, residential permit data from January 1, 2015, to May 25, 2021, provided by the Building Division and assumptions on how many residences would be required to carry out the various energy efficiency upgrades and which measures they would choose based on work Mr. Engelman carried out as a consultant for the City of Chula Vista on its Existing Home Energy Sustainability Ordinance, on which this proposal is based. [TBA after 08/21 data are available.]