

ORDINANCE NO. _____

AN ORDINANCE OF THE CITY OF PALM SPRINGS, CALIFORNIA, ADDING SECTION 8.04.066 OF THE PALM SPRINGS MUNICIPAL CODE TO REQUIRE SINGLE FAMILY BUILDINGS BUILT BEFORE 2011 UNDERGOING ADDITIONS, ALTERATIONS OR REMODELS TO MAKE CERTAIN TARGETED ENERGY EFFICIENCY UPGRADES.

City Attorney's Summary

This Ordinance amends the 2022 California Energy Code, Title 24, Part 6 California Code of Regulations. It adds Section 8.04.066 to the Palm Springs Municipal Code, requiring single-family buildings built before 2011 undergoing additions, alterations or remodels to make certain targeted energy efficiency upgrades, where applicable and feasible, to bring them closer to 2022 California Energy Code provisions.

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

WHEREAS, according to the greenhouse gas (GHG) inventory prepared by the City's consultant, residential buildings contributed 22.6% of the estimated 2020 citywide GHG emissions.

WHEREAS, the Sustainability Plan adopted by City Council in June 2016 establishes a vision that Palm Springs is resilient and carbon neutral and 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, the Safety Element of the Palm Springs General Plan adopted by City Council on [September 26], 2024, pursuant to California Government Code Section 65302(g) (Safety Element), sets a goal of making Palm Springs a community resilient to climate-change-related hazards.

WHEREAS, in addition to the above Sustainability Plan and General Plan goals, SB 350 signed in 2015 codified California's goals of doubling energy efficiency savings in electricity and gas end uses by 2030. SB 32 signed in 2016 and AB 1279 signed in 2022 respectively require 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 85% below 1990 levels by 2045. 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 nonresidential building stock by at least 40 percent below 1990 levels by January 1, 2030.

WHEREAS, a report issued in 2021 by the United Nations Intergovernmental Panel on Climate Change has warned that climate change impacts are accelerating faster than expected and that drastic action is needed to avoid worst-case scenarios.

WHEREAS, the 2022 California Energy Code effective January 1, 2023, has set minimum building energy efficiency standards. Local government entities retain discretion, pursuant to Health and Safety Code Section 17958 to exceed the standards established by the California Energy Code based on express findings that such changes or modifications are reasonably necessary because of local climatic, topographical, or geological conditions pursuant to Health and Safety Code Sections 17985.5, 17958.7, and 18941.5.

WHEREAS, the local amendments and changes to the California Energy Code are reasonably necessary because of the following climatic, geologic, and topographical conditions, as set out in the Safety Element:

1. Climatic conditions:
2. Climate change is expected to affect future occurrences of natural hazards in and around Palm Springs. Many of these hazards will likely become more frequent and intense in coming years and decades. In some cases, these trends have already begun, such as droughts, extreme heat, and wildfires. According to California's Fourth Climate Change Assessment,¹ Palm Springs can expect to experience various changes to climate change hazards.
3. Both droughts and floods are expected to become more frequent because precipitation is expected to occur in fewer, more intense storms. Although Palm Springs is likely to experience only a slight increase in overall annual precipitation levels, the region is expected to see an increase in the number of extreme precipitation events. As a result, floods are expected more often in Palm Springs, and climate change may expand the parts of the city that are considered flood

¹ Bedsworth, Louise, Dan Cayan, Guido Franco, Leah Fisher, Sonya Ziaja. (California Governor's Office of Planning and Research, Scripps Institution of Oceanography, California Energy Commission, California Public Utilities Commission). 2018. Statewide Summary Report. California's Fourth Climate Change Assessment. Publication number: SUMCCCA4-2018-013.

prone. Climate change is also expected to increase the frequency and severity of droughts, straining aquatic habitats and water supplies in the city.

4. Warmer temperatures are projected to cause an increase in extreme heat events, which are days when the high temperature significantly exceeds normal levels. The number of extreme heat days is expected to rise in Palm Springs, in addition to an increase in the average daily high temperatures.² Extreme heat poses a significant human health risk, especially to children, outdoor workers, seniors, persons experiencing homelessness, and undocumented persons. Some infrastructure and community services may be damaged by very high temperatures, constraining their ability to meet community needs.
5. Climate change can increase the rates of infection for various diseases because many of the animals that carry diseases are more active during warmer weather. There are several diseases that are linked to climate change and can be harmful to the health of Palm Springs community members, such as hantavirus pulmonary syndrome, Lyme disease, and West Nile virus. Many of these diseases are carried by animals, such as mice and rats, ticks, and mosquitos, which are usually seen as pests even if they do not cause infections. Warmer temperatures earlier in the spring and later in the winter can cause these animals to be active for longer periods, increasing the time that these diseases can be transmitted.
6. Severe weather events, such as high winds, sandstorms, and heavy rainfall, may become more frequent and intense. Climate change is expected to cause an increase in intense rainfall, which can cause flash flooding. In Palm Springs, most severe weather is linked to high winds. These winds can also pick up dust and other particulate matter from the desert or dry lakebed of the Salton Sea, causing sandstorms that lower visibility and cause toxic particulate matter to get into buildings and cause respiratory illnesses. The types of dangers posed by severe weather vary widely and include injuries or deaths, damage to buildings and structures, and roads blocked by debris or sand.
7. Wildfires can be sparked by lightning, malfunctioning equipment, vehicle crashes, and many other causes. Warmer temperatures, an increase in drought conditions, and extreme wind events are likely to create more fuel for fires in natural and rural areas, leading to a greater chance that a spark will grow into a dangerous blaze.

² In late June and early July 2024, Palm Springs experienced high temperatures of 110 degrees or above for 22 straight days, the second longest stretch in its recorded weather. The National Weather Service reported that in July 2024 Palm Springs set a new record for the highest monthly average temperature (of any month) at 100.0 degrees.

8. Geologic conditions:

- a) Geologic hazards may increase due to increases in severe weather and heavy precipitation events due to climate change. Scientists project that climate change will increase the frequency and intensity of heavy rainfall in Palm Springs, which will likely increase landslides, debris flows, erosion, and sedimentation.
- b) More frequent drought conditions could lead to a heavier reliance on groundwater, increasing the probability of ground subsidence. Ground subsidence can cause earth fissures, sinkholes, depressions, and disruption of surface drainage. Permanent (irreversible) subsidence can occur if groundwater is removed from clay and silt layers in an underlying aquifer.
- c) The City of Palm Springs is in an area with numerous active faults. At least two active faults, the San Andreas and Garnet Hill Faults, extend through the northern portions of the city. Both fault zones, along with other faults in the greater region, such as the San Gorgonio Pass and San Jacinto Faults, also have the potential to produce strong seismic shaking in Palm Springs.

9. Topologic conditions:

- a) Erosion is a significant geologic hazard in the Palm Springs area due to topography and weather conditions. Erosion and sedimentation are influenced by several factors, including climate, topography, soil and rock types, and vegetation.
- b) Because of the high topographic relief in and around Palm Springs, erosion and sedimentation are significant elements of the natural setting. Erosion may eat away at the mountains of western Palm Springs, and sedimentation may deposit the eroded material into eastern Palm Springs via water or wind.

10. Climate change is also expected to extend the fire season throughout much (or even all) of the year. Because wildfires burn the trees and other vegetation that help stabilize a hillside and absorb water, more area burned by fire may also lead to an increase in landslides and debris flows.

WHEREAS, the City acts to address environmental conditions that impact public health and welfare. Sustainability and resiliency are core values of the City's Sustainability Plan and General Plan. Energy efficiency promotes public health and welfare by enhancing the environmental and economic health of the City through green practices in maintenance and operation of buildings. Installation of energy efficient systems in homes

built before 2011 protects the public health and welfare by reducing air pollution, GHG emissions, average and peak energy demand, and adverse impacts from power outages.

WHEREAS, amendments to the California Energy Code, including the provisions of the 2025 Energy Code, are reasonably necessary to promote energy efficiency and conservation in the City, reduce GHG emissions, promote green development patterns, and maintain a long-term balance between environmental, social, and economic impacts that protect public health and welfare.

WHEREAS, Public Resources Code Section 25402.1(h)(2) and Section 10-106 of the California Energy Code establish a process by which local governments may adopt more stringent energy efficiency standards provided that the more stringent standards are cost effective and the CEC finds that the standards will require buildings to be designed to consume no more energy than permitted by the California Energy Code.

WHEREAS, the California Energy Codes & Standards Program 2022 Cost-Effectiveness Study: Existing Single-Family Residential Building Upgrades demonstrates that the local amendments are cost-effective and do not result in buildings consuming more energy than is permitted by the California Energy Code.

WHEREAS, the Palm Springs City Council at its public meeting held on [January 23], 2025, hereby adopts its determination that the proposed standards are cost-effective, are more stringent than the California Energy Code and will require buildings to be designed to consume less energy than permitted by the California Energy Code.

WHEREAS, improving the energy efficiency of homes built before 2011 undergoing additions, alterations, or remodels and increasing their resilience to climate change while reducing energy costs for the building owner or occupant are significant steps the City can take to continue reducing community-wide GHG emissions and meet the above Sustainability Plan, General Plan and state goals.

WHEREAS, the Sustainability Commission of the City of Palm Springs, by vote of _ to _ at its meeting of November 19, 2024, 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. Article I of Chapter 8.04 of the Palm Springs Municipal Code is amended and restated to read as follows:

Article I. Building Codes

8.04.005 Citation of Building Code.

- 8.04.010 California Building Code-Adopted.
- 8.04.015 California Building Code-Additions, Amendments and Deletions.
- 8.04.016 California Residential Code-Adopted.
- 8.04.017 California Residential Code-Additions, Amendments and Deletions.
- 8.04.020 California Mechanical Code-Adopted.
- 8.04.021 California Mechanical Code-Additions, Amendments and Deletions.
- 8.04.030 California Plumbing Code-Adopted.
- 8.04.031 California Plumbing Code-Additions, Amendments and Deletions.
- 8.04.035 International Property Maintenance Code-Adopted.
- 8.04.036 International Property Maintenance Code-Additions, Amendments and Deletions.
- 8.04.040 California Existing Building Code-Adopted.
- 8.04.045 California Historic Building Code-Adopted.
- 8.04.050 California Electrical Code-Adopted.
- 8.04.055 California Electrical Code-Additions, Amendments and Deletions.
- 8.04.065 California Energy Code-Adopted.
- 8.04.066 California Energy Code-Additions and Amendments.
- 8.04.070 California Green Building Standards Code-Adopted.
- 8.04.072 Reserved.
- 8.04.080 Reserved.

SECTION 3. Section 8.04.066 of the Palm Springs Municipal Code is hereby added to read as follows:

8.04.066. California Energy Code-Amendments and Additions

The California Energy Code adopted herein by reference is hereby modified by the following additions and amendments:

Section 100.0 is modified to add new sections (i) as follows:

(i) Single-Family Building Remodel Energy Reach Code - Purpose and Intent. In addition to all requirements of the California Energy Code applicable to Single-Family building additions and alterations, the energy efficiency and renewable energy measures specified in Section 150.0(w) shall be required for Covered Single-Family Projects.

Section 100.1(b) is modified by adding the following definition:

COVERED SINGLE-FAMILY PROJECT shall mean a Single Family residential project in a building originally permitted for construction before 2011 that includes any of the following: 1. Any additions, or any change, rearrangement or addition, other than a repair, of the structural elements of an existing building including foundations, footing, sub-floors, lintels, beams, columns, girders, slabs, roof trusses, staircases, load bearing walls, door frames, window frames, or any other part of the building that resists force or moment. 2. Change or rearrangement of the plan configuration of walls and full-height partitions of an existing building. 3. Modification of the electrical system, heating or cooling equipment or gas plumbing. A Covered Single-Family Project shall not include a project that is considered to be a newly constructed building under the California Energy Code, Title 24, Part 6.

The first two paragraphs of Section 150.0 SINGLE-FAMILY RESIDENTIAL BUILDINGS – MANDATORY FEATURES AND DEVICES are modified to read as follows:

Single-family residential buildings shall comply with the applicable requirements of Sections 150(a) through 150.0(v); in addition, Covered Single Family Projects shall comply with the applicable requirements of Section 150.0(w).

NOTE: The requirements of Sections 150.0(a) through 150.0(v) apply to newly constructed buildings. Sections 150.2(a) and 150.2(b) specify which requirements of Sections 150.0(a) through 150.0(v) also apply to additions or alterations, with the exception that Covered Single Family Projects shall also be required to comply with Section 150.0(w).

A new Section, (w), is added to Section 150.0 as follows:

(w) A Covered Single Family Project shall install a set of measures based on the building's vintage and the project's permit value from the Measure Menu Table, Table 150.0-J, to achieve a total Measure Point Score that is equal to or greater than the Target Score in Table 150.0-I. In addition, all mandatory measures listed in Table 150.0-J shall be installed. Measure verification shall be explicitly included as an addendum to the Certificate of Compliance to be filed pursuant to the 2022 California Energy Code Title 24, Part 6, Section 10-103. Installed measures shall meet the specifications in Table 150.0-K.

Building vintage is defined as the year in which the original construction permit for the building was submitted, as documented by building department records, or the permit issue date of an addition or alteration that satisfied the Performance Standards (California

Energy Code, Title 24, Part 6, Section 150.1(b)) that were in effect at that time. Unless otherwise specified, the requirements shall apply to the entire dwelling unit, not just the additional or altered portion. Measures from the Measure Menu table that already exist in the home may be counted towards compliance with these requirements. Measures from the Measure Menu table that are to be installed to satisfy requirements under the California Energy Code, Title 24, Part 6, may not count towards compliance with these requirements. Where these requirements conflict with other California Energy Code requirements, the stricter requirements shall prevail.

The permit value of a covered single-family project shall be calculated using the total sum of all addition or alteration permits issued within the past three years, except that additions or alterations made prior to the initial adoption of this ordinance shall not be counted towards the permit value for the project for the purposes of this Section.

Exception 1 to Section 150.0(w): If the applicant demonstrates that the Energy Budget of the Proposed Building Design would be less than or equal to the Energy Budget of the building under the project if it included any set of measures that would achieve compliance under this Section 150.0(w).

Exception 2 to Section 150.0(w): Mobile Homes, Manufactured Housing, or Factory-built Housing as defined in Division 13 of the California Health and Safety 12 Code (commencing with Section 17000 of the Health and Safety Code).

Exception 3 to Section 150.0(w): Due to conditions specific to the project, including historic preservation design guidelines pursuant to Chapter 8.05, it is technically or economically infeasible to achieve compliance, the Chief Building Official or such official's designee may reduce the Target Score and/or waive some or all the mandatory requirements.

Exception 4 to Section 150.0(w): A measure that is necessary for compliance is prohibited because of a covenant or other deed restriction on the property, such as a homeowners association covenant.

Exception 5 to Section 150.0(w): The Chief Building Official or such official's designee may reclassify the vintage of the building based on existing conditions.

Exception 6 to Section 150.0(w): A Covered Single-Family Project that is limited solely to a newly created attached Accessory Dwelling Unit (ADU) or Junior Accessory Dwelling Unit (JADU). A newly created ADU and JADU shall include either additions or conversions of existing space. Note, this exception does not apply to a Covered Single-Family Project of an existing ADU or JADU.

Exception 7 to Section 150.0(w): A dwelling unit that is occupied by a resident who can demonstrate that they qualify as a low-income utility customer by being eligible for the California Alternative Rates for Energy (CARE) or Family Electric Rate Assistance Program (FERA) programs is exempt from the requirements of this Section 150.0(w) other than those in Table 150.0-K Items E1 and E2 if the cost of the set of measures that

would be required for compliance is not fully funded without recourse to the residents of such housing.

Exception 8 to Section 150.0(w): A Covered Single Family Project, other than an addition, that would not otherwise be subject to this Section 150.0(w) but for installation of a solar photovoltaic (PV) system, solar water heating, electric vehicle (EV) charging, electrical upgrades for solar PV or EV charging, or energy storage.

Exception 9 to Section 150.0(w): A Covered Single-Family Project that consists solely of medically necessary improvements or solely of seismic safety improvements.

Table 150.0-I Target Score			
	Building Vintage		
	Pre-1978	1978 - 1991	1992 - 2010
Permit Value	Target Score		
All Projects	LED + Photosensors	LED + Photosensors	LED + Photosensors
\$10,000 - \$24,999	+ Water Heating Package	+ Water Heating Package	+ Water Heating Package
\$25,000 - \$49,999	+ Water Heating Package & 16 points	+ Water Heating Package & 12 points	+ Water Heating Package & 6 points
\$50,000 - \$99,999	+ Water Heating Package & 32 points	+ Water Heating Package & 25 points	+ Water Heating Package & 12 points
\$100,000 +	+ Water Heating Package & 48 points	+ Water Heating Package & 37 points	+ Water Heating Package & 17 points

Table 150.0-J: Measure Menu				
		Building Vintage		
Table 150.0-K ID	Measures	Pre-1978	1978 - 1991	1992 - 2010
E1	Lighting Measures	Mandatory		

E2	Water Heating Package	Mandatory for all projects with a permit value of \$10,000 or more		
E3	Air Sealing	1	1	--
E4.A	R-38 Attic Insulation	7	3	1
E4.B	R-49 Attic Insulation	8	4	1
E5	Duct Sealing	9	10	1
E6.A	New Ducts, R-6 Insulation + Duct Sealing	17	13	5
E6.B	New Ducts, R-8 Insulation + Duct Sealing	18	14	5
E7	Windows	12	10	3
E8	Wall Insulation	5	--	--
E9	Reserved for future use	--	--	--
E10.A	R-19 Raised floor insulation	4	4	--
E10.B	R-30 Raised floor insulation	4	4	--
E11	Cool Roof	2	2	1
E12	Radiant Barrier Under Roof	4	3	1
FS1	Heat Pump Water Heater Replacing Gas	11	11	11
FS2	High Eff. Heat Pump Water Heater Replacing Gas	11	11	11
FS3	Heat Pump Water Heater Replacing Electric	4	4	4

FS4	High Eff. Heat Pump Water Heater Replacing Electric	4	4	4
FS5	Heat Pump Space Conditioning System	2	1	1
FS6	High Eff. Heat Pump Space Conditioning System	5	3	2
FS7	Dual Fuel Heat Pump Space Conditioning System	2	1	1
FS8	Heat Pump Clothes Dryer	1	1	1
FS9	Induction Cooktop	1	1	1
PV	Solar PV	17	17	17
ER1	Electric-Readiness – Service Upgrade	Mandatory (see Note 2 below)		
ER2	Electric-Readiness – End Uses	Mandatory (see Note 3 below)		

Notes to Table 150.0-J

Note 1: Cool Roof (Measure E11) and Radiant Barrier (Measure E12) required when replacing 50% or more of an existing roof.

Note 2: Electric Readiness Service Upgrade (Measure ER1) required to claim Solar PV credit.

Note 3: Electric Readiness – End Uses (Measure ER2) required for the following project scopes:

- If the service panel is being upgraded or to claim the Solar PV credit, satisfy any [one / two] of the electric-readiness measures from ER2 in Table 150.0-K.
- If the kitchen is being remodeled, make the range electric ready as specified in ER2, Item D in Table 150.0-K and upgrade the panel board as specified under ER1 in Table 150.0-K. Exception: If an electrical permit is not otherwise required for the project other than compliance with this Item.

- If the laundry room is being remodeled, make the dryer electric ready as specified in ER2, Item C in Table 150.0-K and upgrade the panel board as specified under ER1 in Table 150.0-K. Exception: If an electrical permit is not otherwise required for the project other than compliance with this Item.

The measures in the Measure Menu table shall conform to the specifications in Table 150.0-K.

Table 150.0-K: Measure Specifications

ID	Measure Specification
Energy Measures	
E1	Lighting Measures – Replace all interior and exterior screw-in incandescent, halogen, and compact fluorescent lamps with LED lamps. Install photocell controls on all exterior lighting luminaires.
E2	<p>Water Heating Package: Insulate all accessible hot water pipes with pipe insulation a minimum of ¾ inch thick. This includes insulating the supply pipe leaving the water heater, piping to faucets underneath sinks, and accessible pipes in attic spaces or crawlspaces. Upgrade fittings in sinks and showers to meet the California Green Building Standards Code (Title 24, Part 11) Section 4.303 water efficiency requirements.</p> <p>Exception: Upgraded fixtures are not required if existing fixtures have rated or measured flow rates of no more than ten percent greater than the California Green Building Standards Code (Title 24, Part 11) Section 4.303 water efficiency requirements.</p>
E3	<p>Air Sealing: Seal all accessible cracks, holes, and gaps in the building envelope at walls, floors, and ceilings. Pay special attention to penetrations including plumbing, electrical, and mechanical vents, recessed can light luminaires, and windows. Weather-strip doors if not already present. Verification shall be conducted following a prescriptive checklist³ that outlines which building aspects need to be addressed by the permit applicant and verified by an inspector. Compliance can also be demonstrated with blower door testing conducted by a certified HERS Rater no more than three years prior to the permit application date that either: a) shows at least a 30 percent reduction from pre-retrofit conditions; or b) shows that the number of air changes per hour at 50 Pascals pressure difference (ACH50) does not exceed ten for Pre-1978 vintage buildings, seven for 1978 to 1991 vintage buildings and five for 1992-2010 vintage buildings. If combustion appliances are located within the pressure boundary of the building, conduct a combustion safety test by a professional certified by the Building Performance</p>

³ Template available at localenergycodes.com.

	Institute in accordance with the ANSI/BPI-1200-S-2017 Standard Practice for Basic Analysis of Buildings, the Whole House Combustion Appliance Safety Test Procedure for the Comfortable Home Rebates Program 2020 or the California Community Services and Development Combustion Appliance Safety Testing Protocol.
E4.A	<p>R-38 Attic Insulation: Attic insulation shall be installed to achieve a weighted assembly U-factor of 0.025 or insulation installed at the ceiling level shall have a thermal resistance of R-38 or greater for the insulation alone. Recessed downlight luminaires in the ceiling shall be covered with insulation to the same depth as the rest of the ceiling. Luminaires not rated for insulation contact must be replaced or fitted with a fire-proof cover that allows for insulation to be installed directly over the cover.</p> <p>Exception: In buildings where existing R-30 is present and existing recessed downlight luminaires are not rated for insulation contact, insulation is not required to be installed over the luminaires.</p>
E4.B	<p>R-49 Attic Insulation: Attic insulation shall be installed to achieve a weighted assembly U-factor of 0.020 or insulation installed at the ceiling level shall have a thermal resistance of R-49 or greater for the insulation alone. Recessed downlight luminaires in the ceiling shall be covered with insulation to the same depth as the rest of the ceiling. Luminaires not rated for insulation contact must be replaced or fitted with a fire-proof cover that allows for insulation to be installed directly over the cover. Exception: In buildings where existing R-30 is present and existing recessed downlight luminaires are not rated for insulation contact, insulation is not required to be installed over the luminaires.</p>
E5	<p>Duct Sealing: Air seal all space conditioning ductwork to meet the requirements of the current California Energy Code (Title 24, Part 6) Section 150.2(b)1E. The duct system must be tested by a HERS Rater no more than three years prior to the Covered Single Family Project permit application date to verify the duct sealing and confirm that the requirements have been met. This measure may not be combined with the New Ducts and Duct Sealing measure in this Table.</p> <p>Exception: Buildings without ductwork or where the ducts are in conditioned space.</p>
E6.A	<p>New Ducts, R-6 insulation + Duct Sealing: Replace existing space conditioning ductwork with new R-6 ducts that meet the requirements of Section 150.0(m)11. This measure may not be combined with the Duct Sealing measure in this Table. To qualify, a preexisting measure must have been installed no more than three years before the Covered Single Family Project permit application date.</p>

E6.B	New Ducts, R-8 insulation + Duct Sealing: Replace existing space conditioning ductwork with new R-8 ducts that meet the requirements of Section 150.0(m)11. This measure may not be combined with the Duct Sealing measure in this Table. To qualify, a preexisting measure must have been installed no more than three years before the Covered Single Family Project permit application date.
E7	Windows: Replace at least 50% of existing windows with high performance windows with an area-weighted average U-factor no greater than 0.30.
E8	Wall Insulation: Install wall insulation in all exterior walls to achieve a weighted U-factor of 0.102 or install wall insulation in all exterior wall cavities that shall result in an installed thermal resistance of R-13 or greater for the insulation alone.
E9	Reserved for future use
E10.A	R-19 Floor Insulation: Raised-floors shall be insulated such that the floor assembly has an assembly U-factor equal to or less than U-0.037, or shall be insulated between wood framing with insulation having an R-value equal to or greater than R-19.
E10.B	R-30 Floor Insulation: Raised-floors shall be insulated such that the floor assembly has an assembly U-factor equal to or less than U-0.028, or shall be insulated between wood framing with insulation having an R-value equal to or greater than R-30.
E11	<p>Cool Roof:</p> <p>Install a cool roof on at least 50% of the roof area. For steep-sloped roofs (ratio of rise to run greater than 2:12) install a roofing product rated by the Cool Roof Rating Council to have an aged solar reflectance equal to or greater than 0.20, and a thermal emittance equal to or greater than 0.75. For low-sloped roofs, install a roofing product meeting the requirements of Section 150.2(b)1liia, and insulate the roof in accordance with Section 150.2(b)1liib.</p> <p>Exceptions for Cool Roof as a mandatory requirement: All exceptions as stated in Section 150.2(b)1li for steep-sloped roofs and Section 150.2(b)1liia for low-sloped roofs are allowed.</p>
Fuel Substitution Measures	
FS1	Heat Pump Water Heater (HPWH) Replacing Gas: Replace existing natural gas water heater with a heat pump water heater.

FS2	High Efficiency Heat Pump Water Heater (HPWH) Replacing Gas: Replace existing natural gas water heater with heat pump water heater with a Northwest Energy Efficiency Alliance (NEEA) Tier 3 or higher rating.
FS3	Heat Pump Water Heater (HPWH) Replacing Electric: Replace existing electric resistance water heater with a heat pump water heater.
FS4	High Efficiency Heat Pump Water Heater (HPWH) Replacing Electric: Replace existing electric resistance water heater with heat pump water heater with a Northwest Energy Efficiency Alliance (NEEA) Tier 3 or higher rating.
FS5	Heat Pump Space Conditioning System: Replace all existing gas and electric resistance primary space heating systems with an electric-only heat pump system.
FS6	High Efficiency Heat Pump Space Conditioning System: Replace all existing gas and electric resistance primary space heating systems with one of the following: A. A ducted electric-only heat pump system with a SEER2 rating of 16.5 or greater, an EER2 rating of 12.48 or greater and an HSPF2 rating of 9.5 or greater; or B. A ductless mini-split heat pump system with a SEER2 rating of 14.3 or greater, an EER2 rating of 11.7 or greater and an HSPF2 rating of 7.5 or greater
FS7	Dual Fuel Heat Pump Space Conditioning System: Either A. Replace all existing gas and electric resistance primary heating systems with a hybrid gas and electric heat pump system, or B. Install an electric-heat pump system in tandem with a gas furnace and install controls to operate the heat pump to use the existing gas furnace for backup heat only.
FS8	Heat Pump Clothes Dryer: Replace existing electric resistance clothes dryer with heat pump dryer with no resistance element and cap gas line.
FS9	Induction Cooktop: Replace all existing gas and electric resistance stove tops with inductive stove top and cap the gas line.
FS10	All-Electric Home: Replace all gas appliances with electric appliances that meet the standards in this table.
Solar PV and Electric-Readiness Measures	

PV	Solar PV + Electric Ready Pre-Wire: Install a solar PV system that meets the requirements of Section 150.1(c)14. In addition, upgrade the panelboard to meet the requirements of Item ER1 in this Table and install any [one / two] other measure[s] from Item ER2.
ER1	Electric Readiness - Service Upgrade. Upgrade the panelboard serving the individual dwelling unit to provide circuit breaker spaces for a heat pump water heater, heat pump space conditioning system, electric cooktop and electric clothes dryer with the capacities specified in Section 150.0(n), (t), (u) and (v); or, provide electrical load calculations and appliance specifications for serving all of these end-uses with a minimum 100-amp panel.
ER2	<p>Electric Readiness - End Uses. Meet the requirements below, that otherwise apply to newly constructed buildings:</p> <ul style="list-style-type: none"> A. Heat Pump Water Heater Ready, as specified in Section 150.0(n)1. B. Heat Pump Space Conditioning System Ready, as specified in Section 150.0(t). C. Electric Cooktop Ready, as specified in Section 150.0(u). D. Electric Clothes Dryer Ready, as specified in Section 150.0(v). E. Energy Storage Systems (ESS) Ready, as specified in Section 150.0(s). F. EV Charger Ready. Install a dedicated 208/240-volt branch circuit as specified in the California Green Building Code (Title 24, Part 11), Section A4.106.8.1, which otherwise applies to new construction.

SECTION 4. 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 5. 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 establishes standards that are more stringent than the state energy standards, there are no reasonably foreseeable adverse impacts, there is no possibility that the activity in question may have a significant effect on the environment, and such activity is not considered a "project," as that term is defined in Section 15378 of the State Guidelines.

SECTION 6. 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. Building permit applications submitted after CEC approval of these amendments to the California Energy Code shall be required to comply with the requirements set forth herein.

ADOPTED THIS ____ DAY OF _____, 2025.

RON DEHARTE
MAYOR

ATTEST:

BRENDA PREE, CMC
CITY CLERK

CERTIFICATION

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

I, BRENDA PREE, 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 _____, 2025, and adopted at a regular meeting of the City Council held on _____, 2025, 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 _____, 2025.

BRENDA PREE, CMC
CITY CLERK



Staff Memo to the Sustainability Commission

Date: 15 October 2024

Subject: Existing Home Energy Efficiency Ordinance

From: Office of Sustainability

Summary

The Sustainability Department would like to provide an update toward the goal to develop an ordinance to require homes built before 2011 undergoing renovations to make certain targeted energy efficiency upgrades as mentioned in the [2021 Climate Action Roadmap](#). This memo highlights staff's work developing program and the next steps the City could take to achieve the goal.

Recommendation

Create and add an ordinance to create a new section, 8.04.066, in the Palm Springs Municipal Code requiring single family buildings built before 2011 undergoing additions, alterations or remodels to make certain targeted energy efficiency upgrades. This ordinance will be a "reach code" - a local building energy code that "reaches" beyond the state minimum requirements for energy use in building design and construction.

Background

The Warren-Alquist Act authorizes the California Energy Commission (CEC) to adopt rules and regulations, as necessary, to reduce the inefficient consumption of energy and water in newly constructed buildings and certain additions and alterations to existing buildings. One of the ways the CEC satisfies this requirement is through the California Energy Code. The Energy Code includes all the energy efficiency requirements applicable to newly constructed buildings and additions and alterations to existing buildings. As a portion of the California Building Code (Title 24), the Energy Code (Title 24, Part 6) follows the same three-year update cycle. The California Building Energy Efficiency Standards Title 24, Part 6 (Title 24) (CEC, 2019) is maintained and updated every three years by two state agencies: the California Energy Commission (the Energy Commission) and the Building Standards Commission (BSC).

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. The city has over 10,000 residential buildings built before 1978, 8,000 between 1978-1991, 4,000 between 1992-2010, and 1,000 2010 to present.

To help address this dichotomy, this proposal would require single-family homes built before 2011 undergoing additions, alterations, or remodels to make certain targeted upgrades, where applicable and feasible, to bring them closer to the provisions of the 2022 California Energy Code which went into effect on January 1, 2023. The ordinance is also tailored to the requirements of the 2025 California Energy Code, which the CEC adopted on September 11, to be effective on January 1, 2026. The City Council and Sustainability Commission directed City staff to investigate such an ordinance as part of the 2021 Climate Action Roadmap. Staff have collaborated with former Commissioner and current CVAG/Inland Regional Energy Network (I-REN) Program Manager David Freedman to develop a responsive ordinance draft.

This ordinance would also align with our [2016 Sustainability Master Plan](#) as it will contribute to the following goals:

- reduce GHG emission by 80% from our 1990 levels
- encourage one million sq feet of green buildings
- help PS become more climate resilient - efficient homes are better able to withstand extreme temperatures and use less energy.

The ordinance would also align with the Safety Element of the Palm Springs General Plan scheduled for adoption by City Council at its November 12 meeting, which sets a goal of making Palm Springs a community resilient to climate-change-related hazards.

Additionally, the California Air Resources Board is required to ensure that statewide GHG emissions are reduced at least 40 percent below 1990 levels by December 31, 2030, and 85% below 1990 levels by 2045. According to our 2018 GHG Inventory, residential buildings make up 25% of our GHG emissions just behind Transportation with 45%, meaning that action to reduce emissions from residential buildings will be essential to achieving our compliance goals

Staff Analysis

Reach Codes

Enacting a reach code that requires upgrades at the point of renovation or alteration is one of the few ways to improve energy efficiency and reduce carbon output of existing buildings.

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 single-family 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 modification or 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
- Accessory Dwelling Units
- Projects in mobile homes, manufactured housing, or factory-built housing

The ordinance as currently drafted also proposes that residents receiving the CARE/FERA discounted rates for electricity will be exempted from the requirements of the reach code. The reach code also only applies to single-family, not multi-family, housing as drafted.

Counties, cities, and towns throughout California are actively implementing or exploring the ordinances similar to ours. Marin County has adopted Ordinance No. [3776](#) and the Town of Corte Madera has implemented [Ordinance No. 1040](#). Both of these ordinances base their requirements or triggers on additions and alterations to existing single- and two-family residential buildings that are 750 square feet or large, while our ordinance will be based on project value of additions and alterations to existing single-family residential buildings.

Requirements

Based on the type and value of the building permit and year in which the home was built, different energy saving measures would be required. LED lighting and photosensors 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, consisting of hot water pipe insulation and shower and sink fitting upgrades. In addition to those required measures, residents will have flexibility of which additional measures they want to combine.

Measures fall roughly into two categories – energy efficiency and reduction in fossil fuel use. Especially in our harsh desert climate, improving the energy efficiency of older buildings is paramount to make sure that energy bills and energy demand can be controlled. Efficiency and fossil fuel reduction measures will improve thermal comfort in the buildings, improve indoor air quality, and, as is discussed in more detail below the table, save money over time.

Table 1 - Additional Measures			
Air Sealing	R-38 Attic Insulation	R-49 Attic Insulation	Duct Sealing
New Ducts, R-6 Insulation + Duct Sealing	New Ducts, R-6 Insulation + Duct Sealing	Windows	Wall Insulation
R-19 Raised floor insulation	R-30 Raised floor insulation	Cool Roof	Radiant Barrier Under Roof
Heat Pump Water Heater Replacing Gas	High Eff. Heat Pump Water Heater Replacing Gas	Heat Pump Water Heater Replacing Electric	High Eff. Heat Pump Water Heater Replacing Electric

Heat Pump Space Conditioning System	High Eff. Heat Pump Space Conditioning System	Dual Fuel Heat Pump Space Conditioning System	Heat Pump Clothes Dryer
Induction Cooktop	Solar PV	Electric-Readiness-Service Upgrade	Electric-Readiness-End Uses

Under Section 10-106 of the Energy Code, local jurisdictions adopting reach codes must demonstrate that the requirements of the proposed ordinance are cost-effective and do not result in buildings consuming more energy than is permitted by the Energy Code. Cost-effectiveness is based on the 2022 Cost-effectiveness Study: Existing Single Family Building Upgrades prepared for the California Codes and Standards Reach Codes program of the state’s three investor-owned utilities. Data specific for Palm Springs are derived from the program’s online Cost-Effectiveness Explorer.

The Cost-Effectiveness Explorer produces a target metric that represents a user-defined fraction of the total site energy savings for all cost-effective retrofit measures – the Target Score. The Explorer also produces a table of all available measures, including those that are not cost-effective, that are weighted using the same site energy metric. Using these values, specific to each home vintage, an applicant may install any combination of efficiency, solar and electrification measures that meet or exceed the target value. The study supports separate Target Scores for three different vintages, all of which are pre-2011. Please see the Ordinance Summary for more details on the scores and measures.

Impacts

Based on a review of recently issued building permits, approximately 50-60% are qualified for additional measures under the current the proposed ordinance. This figure aligns with the estimates made by our building leadership. Of those qualified permits, 40-50% are for homes built pre-1978. The following tables outline the potential annual bill savings and GHG emission reductions for the estimated numbers of qualified home projects:

Permit Value	Number of home projects	Measures	Annual Bill Savings	Total GHG Emission Reduction (MTCO2e/year)
\$10,000- \$24,999	500	Lighting and Water Heating Package	\$0	42
\$25,000-\$49,999	250	+16 point of additional measures	\$1,500	46
\$50,000-\$99,999	125	+32 point of additional measures	\$3,000	48
\$100,000+	5	+48 point of additional measures	\$4,400	3

Table 3 – Estimated Minimum Annual Bill Savings & GHG Emission for 1978-1991 Homes				
Permit Value	Number of home projects	Measures	Annual Bill Savings	Total GHG Emission Reduction (MTCO ₂ e/year)
\$10,000- \$24,999	400	Lighting and Water Heating Package	\$0	33
\$25,000-\$49,999	200	+12 point of additional measures	\$1,000	37
\$50,000-\$99,999	100	+25 point of additional measures	\$1700	38
\$100,000+	5	+37 point of additional measures	\$3400	20

Table 4 – Estimated Minimum Annual Bill Savings & GHG Emission for 1992-2011 Homes				
Permit Value	Number of home projects	Measures	Annual Bill Savings	Total GHG Emission Reduction (MTCO ₂ e/year)
\$10,000- \$24,999	200	Lighting and Water Heating Package	\$0	17
\$25,000-\$49,999	100	+6 point of additional measures	\$500	37
\$50,000-\$99,999	50	+12 point of additional measures	\$1000	14
\$100,000+	5	+17 point of additional measures	\$800	1

Based on an assessment from these tables of homes by building vintage and permit value, we can project a total minimum reduction of 336 MTCO₂e per year. This reduction is equivalent to:

- Avoiding the GHG emission from 106 tons of waste that would otherwise be recycled or landfilled, or
- Removing 80 gas-powered passenger vehicles from the road per year.

If we assumed a similar pace of projects over 10 years, the collected emissions reductions would represent just under 1% of the estimated 2020 emissions from Palm Springs.

Implementation Considerations

This ordinance will impact residents/residential building owners, contractors, and City staff.

Residents and building owners are likely to incur additional cost if their initial retrofit project triggers the ordinance. While all measures are cost-effective, meaning that they pay for themselves over time via savings, many building owners are price-sensitive when implementing a new project. Benefits will need to be clearly communicated, especially for more expensive packages, and supporting resources will need to be available to help with compliance.

Contractors and staff will need additional training and clarification of the ordinance to effectively communicate the components of the ordinance and to support the benefits of implementing these changes in buildings. Residents will need help identifying which packages make sense for them, and contractors represent their primary source of advising and guidance on many projects of this scale.

We can consider a few different resources that might help fill some of these gaps:

- Federal, state, and local rebates are available for certain types of equipment that can be used to comply with the ordinance including heat pumps and heat pump water heaters. [insert current rebate value]. Rebates are generally not available for things like LED lighting or insulation, but depending on a building owner or tenant's income level, weatherization programs might be available to assist with some funding for these types of measures.
- The Sustainability Department still offers a scholarship program which currently includes a \$100 rebate for a qualifying home energy audit. While energy audits are not required under the reach code, they can be very helpful in identifying which types of work will most benefit a particular home. We can consider adding to or making changes to the scholarship program to support the ordinance and would welcome recommendations from the Subcommittee.
- Training is available via I-REN for contractors and Building department staff. We would plan to supplement this with our own resources and are consulting with the Building department to identify the best ways to support them as the ordinance goes into effect. Training courses are also available from the College of the Desert.

To ensure that the codes created would have minimal negative impact on stakeholders and to ensure that there is a positive impact for community members, we are actively holding consultative meetings over the next quarter with entities such as the Sustainability Commission, the Building Department, Public Works, Homeowners, Local contractors, and any others who are interested the matter. These meetings will help us refine the potential ordinance and support programs to maximize benefit and minimize cost while also building support for the new initiative.

Next Steps

Following input from the Subcommittee, staff are presenting the ordinance concept to the Commission at its October 15 meeting. If the Commission so recommends, once a full draft has been reviewed by the City's legal team, the ordinance text will return to the Commission for review and approval and, if approved, will be presented to City Council for consideration. Following adoption of the ordinance by City Council, the City must obtain approval from the CEC and file the ordinance with the Building Standards Commission for the ordinance to be legally enforceable.

Conclusion

As many buildings in Palm Springs were built long before an Energy Code was ever conceptualized, the Sustainability Department would like to push forward its pursuit of improving the livability of our aging homes. Updating and expanding our current energy regulations for aging single-family buildings will lower energy bills, create a more comfortable house that is better adapted to extreme heat, and lower our individual and collective carbon footprint. Livable and climate-smart homes are an essential component of our sustainable future.

Appendix A – Ordinance Framework Summary

Appendix B - Single Family Residential Building Cost-Effectiveness Explorer – Palm Springs

Possible Palm Springs Existing Home Energy Efficiency Ordinance – Or, “Energy Efficient Renovations”

Overview: An ordinance of the City of Palm Springs, California, adding section 8.04.066 of the Palm Springs Municipal Code to require single family buildings built before 2011 undergoing additions, alterations or remodels to make certain targeted energy efficiency upgrades. This ordinance will be a reach code - a local building energy code that “reaches” beyond the state minimum requirements for energy use in building design and construction.

Main concept: The permit amount of an alteration to a home will require or “trigger” Energy Efficient (EE) measures.

Background: From our 2020 GHG Inventory, residential buildings make up 22.6% of our GHG emissions. This was a suggested action in our 2021 Climate Action Plan. In the 2016 Sustainability Plan, established a vision that Palm Springs is resilient and carbon neutral and set the following goals:

- reduce GHG emission by 80% from our 1990 levels
- encourage one million sq feet of green buildings
- reduce energy and carbon use from new homes and buildings
- supply 50% of energy from renewable sources by 2030
- help PS become more climate resilient - efficient homes are better able to withstand extreme temperatures and use less energy

Additionally, the California Air Resources Board is required to ensure that statewide GHG emissions are reduced at least 40 percent below 1990 levels by December 31, 2030, and 85% below 1990 levels by 2045 through AB 1279.

As every city is unique in terms of the climatic, geologic, and topographical conditions, amending the California Energy Code to fit local needs would be reasonable. Enacting a reach code of this type is one of the few ways (other than bans on connections, sale of appliances, etc.) to improve energy efficiency and reduce carbon output of existing buildings.

Key Provisions and Implications: A section will define a Covered Single-Family Project as a project that was constructed before 2011 has been permitted for any of the following:

- Any additions, or any change, rearrangement or addition, other than a repair, of the structural elements of an existing building including foundations, footing, sub-floors, lintels, beams, columns, girders, slabs, roof trusses, staircases, load bearing walls, door frames, window frames, or any other part of the building that resists force or moment.
- Change or rearrangement of the plan configuration of walls and full-height partitions of an existing building.

- Modification of the electrical system, heating or cooling equipment or gas plumbing

The exceptions include the following:

- Specific house conditions like historic preservation design guidelines
- HOA covenant/deed restrictions on the property
- Mobile Homes, Manufactured Housing, or Factory-built Housing
- Individuals who receive CARE/FERA via the utilities
- building vintage reclassification
- medically necessary improvements or solely of seismic safety improvements, etc.

Based on the permit value, you have to do the mandatory measures plus a combo of additional measures as long it totals the minimum points. It will give flexibility to residents of which additional measures they want to combine.

Additional measures include Air Sealing, R-49 Attic Insulation, Duct Sealing, New Ducts, R-6 Insulation + Duct Sealing, New Ducts, R-8 Insulation + Duct Sealing, Windows, Wall Insulation, Cool Roof, Heat Pump Water Heater Replacing Gas, High Efficiency Heat Pump Water Heater Replacing Gas, Heat Pump Water Heater Replacing Electric, High Efficiency Heat Pump Water Heater Replacing Electric, Heat Pump Space Conditioning System, High Efficiency Heat Pump Space Conditioning System, etc. These measures will have different value points based on cost-effectiveness and GHG emission reduction.

Table 150.0-I Target Score			
	Building Vintage		
	Pre-1978	1978 - 1991	1992 - 2010
Permit Value	Target Score		
All Projects	LED + Photosensors	LED + Photosensors	LED + Photosensors
\$10,000 - \$24,999	+ Water Heating	+ Water Heating	+ Water Heating
\$25,000 - \$49,999	+ Water Heating & 16 points	+ Water Heating & 12 points	+ Water Heating & 6 points
\$50,000 - \$99,999	+ Water Heating & 32 points	+ Water Heating & 25 points	+ Water Heating & 12 points
\$100,000 +	+ Water Heating & 48 points	+ Water Heating & 37 points	+ Water Heating & 17 points

Table – Proposed Measure Scores

Table 150.0-J: Measure Menu				
		Building Vintage		
Table 150.0-K ID	Measures	Pre-1978	1978 - 1991	1992 - 2010
E1	Lighting Measures	Mandatory		
E2	Water Heating Package	Mandatory for all projects with a permit value of \$10,000 or more		
E3	Air Sealing	1	1	--
E4.A	R-38 Attic Insulation	7	3	1
E4.B	R-49 Attic Insulation	8	4	1
E5	Duct Sealing	9	10	1
E6.A	New Ducts, R-6 Insulation + Duct Sealing	17	13	5
E6.B	New Ducts, R-8 Insulation + Duct Sealing	18	14	5
E7	Windows	12	10	3
E8	Wall Insulation	5	--	--
E9	Reserved for future use	--	--	--
E10.A	R-19 Raised floor insulation	4	4	--
E10.B	R-30 Raised floor insulation	4	4	--

E11	Cool Roof	2	2	1
E12	Radiant Barrier Under Roof	4	3	1
FS1	Heat Pump Water Heater Replacing Gas	11	11	11
FS2	High Eff. Heat Pump Water Heater Replacing Gas	11	11	11
FS3	Heat Pump Water Heater Replacing Electric	4	4	4
FS4	High Eff. Heat Pump Water Heater Replacing Electric	4	4	4
FS5	Heat Pump Space Conditioning System	2	1	1
FS6	High Eff. Heat Pump Space Conditioning System	5	3	1
FS7	Dual Fuel Heat Pump Space Conditioning System	2	1	1
FS8	Heat Pump Clothes Dryer	1	1	1
FS9	Induction Cooktop	1	1	1
PV	Solar PV	17	17	17

ER1	Electric-Readiness – Service Upgrade	Mandatory (see Note 2 below)
ER2	Electric-Readiness – End Uses	Mandatory (see Note 3 below)

Note 1: Cool Roof (Measure E11) and Radiant Barrier (Measure E12) required when replacing 50% or more of an existing roof.

Note 2: Electric Readiness Service Upgrade (Measure ER1) required to claim Solar PV credit.

Note 3: Electric Readiness – End Uses (Measure ER2) required for the following project scopes:

If the service panel is being upgraded or to claim the Solar PV credit, satisfy any [one / two] of the electric-readiness measures from ER2 in Table 150.0-K.

If the kitchen is being remodeled, make the range electric ready as specified in ER2, Item D in Table 150.0-K and upgrade the panel board as specified under ER1 in Table 150.0-K. Exception: If an electrical permit is not otherwise required for the project other than compliance with this Item.

If the laundry room is being remodeled, make the dryer electric ready as specified in ER2, Item C in Table 150.0-K and upgrade the panel board as specified under ER1 in Table 150.0-K. Exception: If an electrical permit is not otherwise required for the project other than compliance with this Item.



Cost-Effectiveness Results Summary

City of Palm Springs

Climate Zone 15

Generated October 03, 2024 from the Cost-Effectiveness Explorer

https://explorer.localenergycodes.com/jurisdiction/palm-springs-city/study-results/15-SCE?only_study_type=existing-buildings

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Single Family | Built before 1978 (12,598 units)

 Study Source: Existing Single Family Building Upgrades¹ | Release Date: 05/23/2024 | Newest Version | Code Cycle: 2022

Table 1 of 2

Measure	Benefit/Cost Ratios			Per Home Results		
	On-Bill (2022 Esc) ≥ 1.0 is cost effective	On-Bill (2025 Esc) ≥ 1.0 is cost effective	2022 TDV ≥ 1.0 is cost effective	LSC ≥ 1.0 is cost effective	Incremental Cost	Annual Bill Savings (on-bill)
Heat Pump Space Conditioner	--	0.1	--	0.4	\$1,324	\$8
Dual fuel heat pump space conditioner	--	0.3	--	0.7	\$1,906	\$14
R-19 Raised Floor Insulation	2.5	2.8	--	2.0	\$3,633	\$335
R-30 Raised Floor Insulation	2.5	2.8	--	2.0	\$4,113	\$377
R-13 Wall Insulation	3.8	4.2	--	2.7	\$2,950	\$413
R-38 Attic insulation	2.6	2.8	--	1.7	\$6,762	\$625
R-49 Attic insulation	2.6	2.8	--	1.7	\$7,446	\$697
Windows	2.9	3.1	--	1.7	\$11,463	\$1,170
Radiant Barrier Under Roof (when re-roofing)	11.2	12.0	--	6.5	\$893	\$358
Cool roof .20 Solar Reflectance	6.0	6.4	--	3.3	\$893	\$255

Single Family | Built before 1978 (12,598 units)

 Study Source: Existing Single Family Building Upgrades¹ | Release Date: 05/23/2024 | Newest Version | Code Cycle: 2022 (Continued)

Table 1 of 2

Measure	Benefit/Cost Ratios			Per Home Results		
	On-Bill (2022 Esc) ≥ 1.0 is cost effective	On-Bill (2025 Esc) ≥ 1.0 is cost effective	2022 TDV ≥ 1.0 is cost effective	LSC ≥ 1.0 is cost effective	Incremental Cost	Annual Bill Savings (on-bill)
New Ducts, R-6 Insulation + Duct Sealing	10.0	10.7	--	6.1	\$4,808	\$1,715
New Ducts, R-8 Insulation + Duct Sealing	7.8	8.3	--	4.7	\$6,311	\$1,749
Duct sealing	9.0	9.6	--	5.4	\$2,590	\$832
Heat Pump Water Heater	1.7	2.3	--	1.7	\$4,332	\$510
High Eff Heat Pump Water Heater	1.5	2.0	--	1.5	\$5,193	\$541
High Eff Heat Pump Space Conditioner	0.7	0.9	--	0.8	\$4,346	\$222
Solar PV	3.0	3.2	--	1.7	\$9,608	\$1,249
Air sealing	0.6	0.6	--	0.4	\$4,684	\$99
Heat pump water heater with Elec Base	3.3	3.5	--	1.1	\$3,829	\$732
High Eff Heat Pump Water Heater (repl electric)	2.8	3.0	--	1.0	\$4,690	\$764

Single Family | Built before 1978 (12,598 units)

Study Source: Existing Single Family Building Upgrades¹ | Release Date: 05/23/2024 | Newest Version | Code Cycle: 2022 (Continued)

Table 1 of 2

Measure	Benefit/Cost Ratios				Per Home Results	
	On-Bill (2022 Esc) <small>≥ 1.0 is cost effective</small>	On-Bill (2025 Esc) <small>≥ 1.0 is cost effective</small>	2022 TDV <small>≥ 1.0 is cost effective</small>	LSC <small>≥ 1.0 is cost effective</small>	Incremental Cost	Annual Bill Savings <small>(on-bill)</small>
Water Heating Package	1.4	--	--	--	\$229	\$0

Single Family | Built before 1978 (12,598 units)

 Study Source: Existing Single Family Building Upgrades¹ | Release Date: 05/23/2024 | Newest Version | Code Cycle: 2022

Table 2 of 2

Measure	Per Home Results	City-Wide Estimates		
	Flexible Score annual energy savings	Affected Units (lifecycle)	Emissions Reductions (lifecycle MTCOe)	Lifecycle Savings (on-bill)
Heat Pump Space Conditioner	2	1,575	4,684	\$238,292
Dual fuel heat pump space conditioner	2	1,575	4,494	\$385,583
R-19 Raised Floor Insulation	4	1,575	3,127	\$9,414,409
R-30 Raised Floor Insulation	4	1,575	3,525	\$10,607,745
R-13 Wall Insulation	5	1,575	3,962	\$11,618,140
R-38 Attic insulation	7	1,575	5,269	\$17,603,584
R-49 Attic insulation	8	1,575	5,817	\$19,603,735
Windows	12	1,575	7,770	\$32,919,002
Radiant Barrier Under Roof (when re-roofing)	4	1,575	2,612	\$10,071,119
Cool roof .20 Solar Reflectance	2	1,575	1,166	\$7,190,038
New Ducts, R-6 Insulation + Duct Sealing	17	1,575	11,494	\$48,274,761

Single Family | Built before 1978 (12,598 units)

 Study Source: Existing Single Family Building Upgrades¹ | Release Date: 05/23/2024 | Newest Version | Code Cycle: 2022 (Continued)

Table 2 of 2

Measure	Per Home Results	City-Wide Estimates		
	Flexible Score <small>annual energy savings</small>	Affected Units <small>(lifecycle)</small>	Emissions Reductions <small>(lifecycle MTCOe)</small>	Lifecycle Savings <small>(on-bill)</small>
New Ducts, R-8 Insulation + Duct Sealing	18	1,575	11,845	\$49,234,496
Duct sealing	9	1,575	5,772	\$23,417,345
Heat Pump Water Heater	11	1,575	18,360	\$14,348,178
High Eff Heat Pump Water Heater	11	1,575	18,610	\$15,230,046
High Eff Heat Pump Space Conditioner	5	1,575	6,255	\$6,250,004
Solar PV	17	1,575	10,616	\$35,149,002
Air sealing	1	1,575	1,000	\$2,777,884
Heat pump water heater with Elec Base	4	1,575	2,219	\$20,609,440
High Eff Heat Pump Water Heater (repl electric)	4	1,575	2,469	\$21,492,246
Water Heating Package	1	1,575	1,336	\$0

Single Family | Built from 1978 to 1991 (6,245 units)

 Study Source: Existing Single Family Building Upgrades¹ | Release Date: 05/23/2024 | Newest Version | Code Cycle: 2022

Table 1 of 2

Measure	Benefit/Cost Ratios			Per Home Results		
	On-Bill (2022 Esc) ≥ 1.0 is cost effective	On-Bill (2025 Esc) ≥ 1.0 is cost effective	2022 TDV ≥ 1.0 is cost effective	LSC ≥ 1.0 is cost effective	Incremental Cost	Annual Bill Savings (on-bill)
Heat Pump Space Conditioner	--	--	--	0.2	\$1,324	-\$75
Dual fuel heat pump space conditioner	--	--	--	0.4	\$1,906	-\$72
R-19 Raised Floor Insulation	2.5	2.7	--	1.9	\$3,633	\$324
R-30 Raised Floor Insulation	2.5	2.7	--	1.9	\$4,113	\$370
R-38 Attic insulation	2.9	3.2	--	1.8	\$2,555	\$269
R-49 Attic insulation	2.6	2.8	--	1.6	\$3,612	\$332
Windows	2.3	2.5	--	1.3	\$11,463	\$937
Radiant Barrier Under Roof (when re-roofing)	7.8	8.3	--	4.3	\$893	\$248
Cool roof .20 Solar Reflectance	4.6	4.8	--	2.5	\$893	\$193
New Ducts, R-6 Insulation + Duct Sealing	7.6	8.1	--	4.6	\$4,808	\$1,305

Single Family | Built from 1978 to 1991 (6,245 units)

 Study Source: Existing Single Family Building Upgrades¹ | Release Date: 05/23/2024 | Newest Version | Code Cycle: 2022 (Continued)

Table 1 of 2

Measure	Benefit/Cost Ratios			Per Home Results		
	On-Bill (2022 Esc) ≥ 1.0 is cost effective	On-Bill (2025 Esc) ≥ 1.0 is cost effective	2022 TDV ≥ 1.0 is cost effective	LSC ≥ 1.0 is cost effective	Incremental Cost	Annual Bill Savings (on-bill)
New Ducts, R-8 Insulation + Duct Sealing	6.0	6.4	--	3.6	\$6,311	\$1,338
Duct sealing	10.9	11.6	--	6.7	\$2,590	\$1,004
Heat Pump Water Heater	1.0	1.6	--	1.7	\$4,332	\$344
High Eff Heat Pump Water Heater	0.9	1.4	--	1.5	\$5,193	\$375
High Eff Heat Pump Space Conditioner	0.3	0.4	--	0.6	\$4,346	\$99
Solar PV	2.6	2.8	--	1.7	\$9,608	\$1,079
Air sealing	0.4	0.5	--	0.3	\$4,684	\$71
Heat pump water heater with Elec Base	2.5	2.7	--	1.1	\$3,829	\$566
High Eff Heat Pump Water Heater (repl electric)	2.2	2.3	--	1.0	\$4,690	\$597
Water Heating Package	1.4	--	--	--	\$229	\$0

Single Family | Built from 1978 to 1991 (6,245 units)

 Study Source: Existing Single Family Building Upgrades¹ | Release Date: 05/23/2024 | Newest Version | Code Cycle: 2022

Table 2 of 2

Measure	Per Home Results	City-Wide Estimates		
	Flexible Score annual energy savings	Affected Units (lifecycle)	Emissions Reductions (lifecycle MTCOe)	Lifecycle Savings (on-bill)
Heat Pump Space Conditioner	1	781	1,256	-\$1,047,309
Dual fuel heat pump space conditioner	1	781	1,216	-\$1,007,314
R-19 Raised Floor Insulation	4	781	1,447	\$4,516,637
R-30 Raised Floor Insulation	4	781	1,657	\$5,161,206
R-38 Attic insulation	3	781	1,073	\$3,746,967
R-49 Attic insulation	4	781	1,322	\$4,633,366
Windows	10	781	3,138	\$13,075,552
Radiant Barrier Under Roof (when re-roofing)	3	781	892	\$3,462,817
Cool roof .20 Solar Reflectance	2	781	450	\$2,694,542
New Ducts, R-6 Insulation + Duct Sealing	13	781	4,179	\$18,208,855
New Ducts, R-8 Insulation + Duct Sealing	14	781	4,352	\$18,673,448

Single Family | Built from 1978 to 1991 (6,245 units)

Study Source: Existing Single Family Building Upgrades¹ | Release Date: 05/23/2024 | Newest Version | Code Cycle: 2022 (Continued)

Table 2 of 2

Measure	Per Home Results	City-Wide Estimates		
	Flexible Score <small>annual energy savings</small>	Affected Units <small>(lifecycle)</small>	Emissions Reductions <small>(lifecycle MTCOe)</small>	Lifecycle Savings <small>(on-bill)</small>
Duct sealing	10	781	3,146	\$14,007,527
Heat Pump Water Heater	11	781	9,106	\$4,796,136
High Eff Heat Pump Water Heater	11	781	9,229	\$5,234,685
High Eff Heat Pump Space Conditioner	3	781	1,889	\$1,379,360
Solar PV	17	781	5,263	\$15,050,186
Air sealing	1	781	349	\$992,432
Heat pump water heater with Elec Base	4	781	1,103	\$7,892,953
High Eff Heat Pump Water Heater (repl electric)	4	781	1,227	\$8,331,967
Water Heating Package	1	781	662	\$0

Single Family | Built from 1992 to 2005 (2,318 units)

 Study Source: Existing Single Family Building Upgrades¹ | Release Date: 05/23/2024 | Newest Version | Code Cycle: 2022

Table 1 of 2

Measure	Benefit/Cost Ratios			Per Home Results		
	On-Bill (2022 Esc) ≥ 1.0 is cost effective	On-Bill (2025 Esc) ≥ 1.0 is cost effective	2022 TDV ≥ 1.0 is cost effective	LSC ≥ 1.0 is cost effective	Incremental Cost	Annual Bill Savings (on-bill)
Heat Pump Space Conditioner	--	--	--	0.1	\$1,324	-\$157
Dual fuel heat pump space conditioner	--	--	--	0.2	\$1,906	-\$155
R-38 Attic insulation	1.0	1.1	--	0.6	\$1,781	\$63
R-49 Attic insulation	1.7	1.9	--	1.1	\$1,827	\$113
Windows	0.7	0.7	--	0.4	\$11,463	\$271
Radiant Barrier Under Roof (when re-roofing)	3.5	3.7	--	1.9	\$893	\$111
Cool roof .20 Solar Reflectance	2.3	2.4	--	1.3	\$893	\$96
New Ducts, R-6 Insulation + Duct Sealing	2.8	3.0	--	1.8	\$4,808	\$484
New Ducts, R-8 Insulation + Duct Sealing	2.3	2.4	--	1.5	\$6,311	\$509
Duct sealing	2.2	2.3	--	1.4	\$1,400	\$109

Single Family | Built from 1992 to 2005 (2,318 units)

Study Source: Existing Single Family Building Upgrades¹ | Release Date: 05/23/2024 | Newest Version | Code Cycle: 2022 (Continued)

Table 1 of 2

Measure	Benefit/Cost Ratios			Per Home Results		
	On-Bill (2022 Esc) ≥ 1.0 is cost effective	On-Bill (2025 Esc) ≥ 1.0 is cost effective	2022 TDV ≥ 1.0 is cost effective	LSC ≥ 1.0 is cost effective	Incremental Cost	Annual Bill Savings (on-bill)
Heat Pump Water Heater	--	0.3	--	1.7	\$4,332	\$65
High Eff Heat Pump Water Heater	--	0.4	--	1.5	\$5,193	\$97
High Eff Heat Pump Space Conditioner	--	--	--	0.4	\$4,346	-\$24
Solar PV	1.9	2.0	--	1.6	\$9,608	\$763
Air sealing	0.2	0.2	--	0.2	\$4,684	\$37
Heat pump water heater with Elec Base	1.3	1.3	--	1.1	\$3,829	\$279
High Eff Heat Pump Water Heater (repl electric)	1.1	1.2	--	1.0	\$4,690	\$311
Water Heating Package	1.4	--	--	--	\$229	\$0

Single Family | Built from 1992 to 2005 (2,318 units)

 Study Source: Existing Single Family Building Upgrades¹ | Release Date: 05/23/2024 | Newest Version | Code Cycle: 2022

Table 2 of 2

Measure	Per Home Results	City-Wide Estimates		
	Flexible Score annual energy savings	Affected Units (lifecycle)	Emissions Reductions (lifecycle MTCOe)	Lifecycle Savings (on-bill)
Heat Pump Space Conditioner	1	290	318	-\$811,825
Dual fuel heat pump space conditioner	1	290	300	-\$801,468
R-38 Attic insulation	1	290	94.7	\$324,523
R-49 Attic insulation	1	290	174	\$584,659
Windows	3	290	411	\$1,403,562
Radiant Barrier Under Roof (when re-roofing)	1	290	149	\$576,891
Cool roof .20 Solar Reflectance	1	290	84.6	\$496,451
New Ducts, R-6 Insulation + Duct Sealing	5	290	577	\$2,504,177
New Ducts, R-8 Insulation + Duct Sealing	5	290	605	\$2,634,332
Duct sealing	1	290	121	\$562,219
Heat Pump Water Heater	11	290	3,381	\$334,017

Single Family | Built from 1992 to 2005 (2,318 units)

Study Source: Existing Single Family Building Upgrades¹ | Release Date: 05/23/2024 | Newest Version | Code Cycle: 2022 (Continued)

Table 2 of 2

Measure	Per Home Results	City-Wide Estimates		
	Flexible Score <small>annual energy savings</small>	Affected Units <small>(lifecycle)</small>	Emissions Reductions <small>(lifecycle MTCOe)</small>	Lifecycle Savings <small>(on-bill)</small>
High Eff Heat Pump Water Heater	11	290	3,427	\$499,903
High Eff Heat Pump Space Conditioner	2	290	497	-\$123,595
Solar PV	17	290	1,953	\$3,950,031
Air sealing	--	290	66.9	\$193,851
Heat pump water heater with Elec Base	4	290	410	\$1,446,198
High Eff Heat Pump Water Heater (repl electric)	4	290	457	\$1,612,085
Water Heating Package	1	290	246	\$0