

A Personal Action Guide

HOW CAN YOU BECOME CLIMATE-RESILIENT?

An Aquarium Report prepared by Bowman Change, Inc. and the Aquarium of the Pacific

This is the third in a series of reports by the Aquarium of the Pacific designed to help make Long Beach a model of a climate resilient city. All three reports can be found on the Aquarium's website:

[AquariumofPacific.org/conservation/climate_resilient_long_beach](https://www.aquariumofpacific.org/conservation/climate_resilient_long_beach).

We thank the members of the Long Beach community who reviewed and helped improve this guide.



Our climate is changing in ways that will become increasingly harmful. The City of Long Beach is taking steps to make the community more resilient, which means being able to function in the face of climate challenges, and recover quickly from disruptions. This guide will help you become more climate resilient.

What does “climate resilient” mean? It means being able to withstand or recover quickly from challenging weather or climate conditions.

A Guide to Becoming More Climate-Resilient

What can you do for yourself and your loved ones?

What about your workplace and your neighborhood? How can you improve your quality of life *right now* and also prepare for the changing future?

The answers are simple and straightforward if we follow a proven strategy:

- Take steps that make your household and workplace more resilient while helping to reduce the carbon pollution that causes climate change. That's a win-win.
- Take steps that make a big difference for you. Don't waste time on actions that yield very small results.
- Start with actions that will save you money and improve your quality of life right away. If you wish to go further, you can plan ahead to make larger investments down the line.

This guide is designed for everyone who lives or works in Long Beach, but our suggestions also apply throughout most of Southern California.



What Are Our Goals?

- Our supply of electric power is already stressed by high demand during hot summer afternoons. Our goal is to stay cool without using more electricity.
- Our goal is to use less water. Saving water also saves energy because it takes energy to bring water to your tap.
- Driving creates both harmful air pollution and the carbon pollution that causes climate change. Our goal is to make transportation as clean, healthful, and cost-effective as possible.
- Some of us have easier access to cool spaces and clean air than others do. Our goals are to help everyone avoid health risks and, when necessary, care for one another.

What Tools Do We Have?

Our recommendations come from the best sources.

- Electric utility companies have studied the best ways to cut your costs, save energy, and stay cooler in hot weather. Check their websites for valuable rebates and incentives.
- Water utility companies have studied the best ways to conserve water without sacrificing our lifestyles. Check their websites for money-saving rebates.
- The federal Energy Star program highlights the most energy-efficient products on the market. Energy Star standards keep improving, so a new Energy Star-rated product is usually more efficient than an older one. Look for the Energy Star logo.
- A U.S. Department of Energy's *FuelEconomy.gov* website (<http://www.fueleconomy.gov>) helps you find the most fuel-efficient vehicles on the road. Meanwhile, the U.S. Environmental Protection Agency's Green Vehicle Guide (<https://www.epa.gov/greenvehicles>) helps you find models with the lowest carbon emissions.



I. Prepare for Drought and Water Shortages



Key Ideas:

- Saving water by changing a few habits is free.
- Replacing outdated, thirsty fixtures and appliances with newer, more efficient models might be easier than changing old habits.

These Free and Low-Cost Actions are High Priorities:

1. Take a 5-minute, “one song” shower and save about 10 gallons over a “two song,” 10-minute shower.
2. Turn off the tap while brushing your teeth and save almost 10 gallons per day.
3. Fix leaky faucets to keep water from constantly running down the drain.

Consider Moderately-Priced Upgrades:

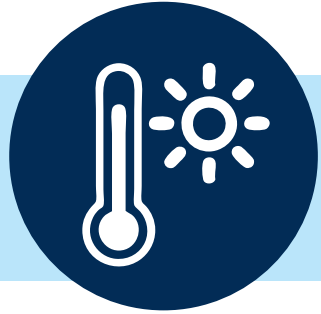
Check the water department website for rebates on these actions.

4. Indoors, replace older toilets with new, high-efficiency toilets that use 1.28 gallons or less per flush.
5. Outdoors, install a rain sensor on your sprinkler system to slash landscape water use by about half.
6. When the time comes, replace the old dishwasher with an Energy Star-rated model that uses about half as much water per load.
7. When the time comes, replace the old clothes washer with an Energy Star-rated model that uses about one-third as much water per load.

Lawn-to-Landscape Conversation is a Top Priority:

8. If you have a lawn, replace it with a California-friendly landscape. You'll save up to 80% of the 9,000 gallons the average household uses every week to water the front lawn. This is such a high priority that water utility companies offer helpful information and money-saving rebates.

II. Prepare for Higher Temperatures and More Extremely Hot Days



If you have air conditioning at home or at work, the goal is to stay cool without using it very often. For everyone else, the goal is to stay cool without spending money to install air conditioning.

Key Ideas:

- Using less electricity saves money and reduces carbon pollution.
- Cooling a home or workplace with shade and fans costs much less than cooling a hot building with air conditioning.
- As electric companies shift to “time of use” pricing, electricity will cost less in the early morning and evening than during the hot afternoon hours.

Start by Saving Money

1. Plug TVs, DVD and game consoles, computers, mobile device chargers, printers, standby coffee makers, and electronics with clocks or standby lights into smart power strips to save an average of \$100 per year on electricity bills.

2. About 10% of the average household’s electricity bill is for lighting. Switching all of our light bulbs to LED bulbs will eliminate most of this cost. LED bulbs last for decades, so over 25 years you will spend about 80% less than with incandescent bulbs and 20% less than with compact fluorescents (CFLs).
3. A spare refrigerator or freezer—especially in your hot garage—is an energy hog. Take advantage of utility incentives to have it removed.
4. Turn your air conditioning off when nobody is home.

Keep the Heat Out

5. Shade windows with plants or blinds on the outside. This works better than closing the curtains indoors.
6. Plant California-friendly shade trees close to your home or workplace to reduce temperatures by up to 15 percent.
7. Inspect insulation for gaps, fill them, and weather-strip around doors and windows.



Stay Cool Inexpensively

8. Use natural ventilation, especially by opening windows on upper floors, to let hot air escape.
9. Use fans and ceiling fans to slowly circulate the air in a room. Gentle circulation will keep you comfortable as temperatures rise.
10. Install a “whole-house fan.” Use it briefly in the evening to pull cool outside air in and blow hot attic

air out. Even if you use air conditioning, running a whole-house fan first will reduce air conditioning costs.

11. Have your air conditioner serviced every year. Checking for leaks and installing a new filter will keep it running most cost-effectively.

Upgrade Your Comfort with Moderate Investments

12. Upgrade insulation, starting with the attic. Under the floors is the next priority, followed by the walls.
13. Take advantage of rebates on Energy Star-rated refrigerators and high-efficiency air conditioners that use less electricity.
14. When it's time to reroof, choose materials that keep the heat out. For a flat roof, install a heat-reflecting "cool roof." For a pitched roof, install a rooftop insulation layer and heat-reflecting shingles.
15. If you own your home, replace old windows with so-called "low-e" energy-efficient windows.

Make Bigger Investments Count

16. The Energy Upgrade California® Whole Home Upgrade program connects homeowners with specially trained contractors who eliminate guesswork by analyzing each home and recommending calculated energy-saving upgrades (<https://www.energyupgradeca.org>).

Going solar?

17. Making your home or workplace more energy efficient first will reduce the size of your solar investment.

III. Prepare for More Air Pollution



Key Ideas:

- Smog is created in sunshine, so pollution builds throughout the day. Smog usually blows inland, away from coastal neighborhoods.
- Smog levels are higher on hotter, sunnier days.
- In contrast, fine particle pollution can be high anytime diesel engines are on the roads.
- Air pollution is highest within 1,000 feet of freeways.
- Air pollution can also be higher during wildfires and Santa Ana winds. Climate change is making wildfires more frequent.

Plan Outdoor Activities to Avoid High Pollution Levels

1. Exercise or work outdoors early in the day, before smog builds.
2. Avoid outdoor exercise and work on hot, smoggy afternoons.
3. Exercise outdoors away from freeways, especially when traffic is heavy.

Create Less Pollution

4. Walking, cycling, or riding public transportation around town reduces pollution.
5. When it's time to replace your vehicle, choose the most fuel-efficient model that meets your needs. For example, a car that gets 40 miles per gallon emits 50% less toxic pollutants and carbon dioxide as a car getting 20 miles per gallon.

Trees Help Clean the Air

6. Planting California-friendly shade trees close to your home or workplace provides cooling shade and helps remove both toxic pollutants and carbon from the air.



IV. Prepare for Coastal Flooding and Sea Level Rise

Key Ideas:

- Temporary flooding during storms, especially at high tides, is a growing risk in low-lying coastal neighborhoods.
- Permanent inundation is probably inevitable in some of these neighborhoods later in this century.

Near-Term Actions

1. Make sure street drains are clear and pumps are in working order.
2. Use sandbags to prevent flooding through doorways.

Long-Term Actions

3. Retreating inland from some low-lying coastal neighborhoods will probably be necessary later in this century.
4. Get involved in civic planning by contacting your city council member or neighborhood association.

V. Prepare to Protect the Health of Others



Key Ideas:

- We live in a community, and we can help one another during extreme events.
- Our most vulnerable neighbors include the elderly and very young, people with disabilities, people with chronic health conditions, those who lack financial resources, and people who are socially isolated.

Know Who Might Need Your Help

1. Identify family members, friends, coworkers, neighbors, and others who might need assistance during extreme heat, storms, or other events.

Make Plans Ahead of Time

2. Know where the nearest public cooling centers, such as public libraries and community centers, are located (<http://www.longbeach.gov/health/services/directory/diseases-and-other-public-health-hazards/cooling-centers/>).

3. Plan ahead to help others when and if the need arises.
4. Get involved in civic planning by contacting your city council member or neighborhood association.



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