

Cambridge Homeowner

Ready for Extreme Weather?

CLIMATE RESILIENCE TOOLKIT

**GET STARTED:** Once you have determined best actions for you, use this resource sheet to inform how you can get started implementing some of the identified actions to better prepare your home and your family for climate change.

Action <small>*not ranked</small>		When to implement	Cost range	Help
1	Install solar panels on roof	Anytime	\$\$	Sunny Cambridge: <a href="https://www.energysage.com/sunnycambridge">https://www.energysage.com/sunnycambridge</a>
2	Replace asphalt roofing with light-color reflective shingles	When you need to replace your roof	\$	Cool Roof Rating Council: <a href="https://coolroofs.org/resources/leed">https://coolroofs.org/resources/leed</a>
3	Have a rain garden	Anytime	\$	
4	Replace asphalt with porous surface	Anytime	\$	Learn about stormwater management: <a href="https://www.cambridgema.gov/theworks/ourservices/sewermaintenance/homeownerresponsibilities">https://www.cambridgema.gov/theworks/ourservices/sewermaintenance/homeownerresponsibilities</a>
5	Replace or complement your boiler with a ductless minisplit system	When you are ready to install or update your A/C	\$\$	Cambridge Energy Alliance: <a href="http://cambridgeenergyalliance.org/wp-content/uploads/Cambridge-residential-lenders.pdf">http://cambridgeenergyalliance.org/wp-content/uploads/Cambridge-residential-lenders.pdf</a>
6	Make your windows and doors airtight	Anytime or when renovating	\$	Cambridge Home Improvement Program: <a href="https://www.cambridgema.gov/CDD/housing/forhomeowners/hip.aspx">https://www.cambridgema.gov/CDD/housing/forhomeowners/hip.aspx</a>
7	Install electric subpanel to allow critical utilities to operate on back-up power	Anytime or when renovating	\$\$	Cambridge DPW/Flooding: Is Your Property Protected? <a href="https://www.cambridgema.gov/theworks/ourservices/engineering">https://www.cambridgema.gov/theworks/ourservices/engineering</a>
8	Elevate/relocate main utilities	When renovating	\$\$	Cambridge DPW/Flooding: Is Your Property Protected? <a href="https://www.cambridgema.gov/theworks/ourservices/engineering">https://www.cambridgema.gov/theworks/ourservices/engineering</a>
9	Use flood-resistant materials	When renovating your basement	\$	FEMA flood resistant material brochure: <a href="https://www.fema.gov/media-library-data/20130726-1502-20490-4764/fema_tb_2_rev1.pdf">https://www.fema.gov/media-library-data/20130726-1502-20490-4764/fema_tb_2_rev1.pdf</a>
10	Clean storm drain(s) close to your home	Before the next predicted rainstorm	\$	Why clean storm drains? <a href="https://www.cambridgema.gov/theworks/ourservices/sewermaintenance/preventivemaintenance">https://www.cambridgema.gov/theworks/ourservices/sewermaintenance/preventivemaintenance</a>
11	Plant/preserve trees	Anytime	\$-\$	Cambridge tree planting program: <a href="https://www.cambridgema.gov/Services/treeplantingprogram">https://www.cambridgema.gov/Services/treeplantingprogram</a>
12	Insulate roof, basement and exterior walls	When you feel uncomfortable in your home	\$\$	MassSaves: <a href="https://www.masssave.com/">https://www.masssave.com/</a>

Cambridge Homeowner V.1


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WHAT IS YOUR RISK?

The City has assessed future flood and heat risks from climate change, which show that in the future, temperature will be warmer and extreme flood events are likely to be more intense than they are today. The results from the City’s Climate Change Vulnerability Assessment (CCVA) show that everyone is at risk of higher temperatures, while some properties are more prone to flooding. In all cases, we need to prepare for a new normal best suited for homeowners. This toolkit can help you think through how to be prepared for climate change.

1. UNDERSTAND YOUR PROPERTY RISK

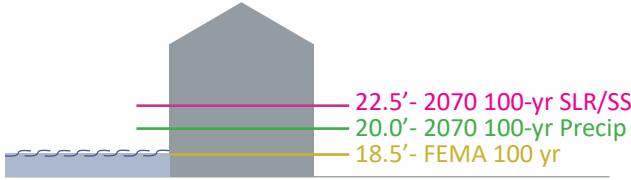
Look up your address in the Cambridge FloodViewer here:  
  
<https://www.cambridgema.gov/Services/FloodMap>  
The FloodViewer does not include all types of storms (e.g. microbursts), so your property may still experience flooding, even though it is not identified in a flood zone in the FloodViewer.

2. UNDERSTAND YOUR PERSONAL RISK

Part of being prepared is understanding if you or a family member are at greater risk. Stressors that can increase vulnerability include:

- Finances and lack of emergency funds.
- Family members with poor health or limited mobility.
- Limited ability to understand English with no access to warning information.
- Household includes children (under age 5) that need constant supervision.
- Household includes adults over age 62 at risk of isolation.

3. GET INFORMED ABOUT YOUR FLOOD RISKS



**You are in an identified flood zone:** Focus on protection and prevention to minimize impacts on you and your property.

**You are not in an identified flood zone:** Focus on prevention to minimize impact on your property.

4. POSSIBLE FLOOD IMPACTS:

☐ Your 1st floor or basement unit floods

☐ Loss of food/medication due to power shortage


☐ You are unable to travel to work

☐ Your building heating systems are damaged

☐ You are not insured for flood damage

☐ You do not have emergency funds for recovery

GET INFORMED ABOUT YOUR HEAT RISKS



- You live in a home with **little or no insulation** and have old windows.
- Your **air conditioner cannot meet the demand**, or you do not have air conditioning.
- Your property does **not have much vegetation**.

POSSIBLE HEAT IMPACTS:

☐ Indoor temp. reaches 80 degrees & is unbearable

☐ Loss of food/medication due to power shortage

☐ Mold grows in your building caused by heat & humidity

☐ You suffer from heat sickness

☐ Your childcare or school closes

☐ Your pets are affected

## What can you do to prepare?

Now that you have identified your climate risk and how you could be impacted by **flooding** and **extreme heat**, you are informed to identify which actions might be best suited to your specific conditions to best prepare you for a “new normal” and even help relieve climate change. This image shows some options to improve the resiliency of your home through routine maintenance and home improvements. This is not a comprehensive list of all the ways you can prepare and protect, but rather a starting point of practical actions that you can take to make your home more resilient in the future.

## 1. Install solar panels on roof

**How:** Discover your sun potential by using the City's solar map at <https://www.mapdwell.com/en/solar/cambridge> then contact a solar installer. for panels and a storage power system.

**Why:** This will reduce the risk of brownout during **extreme heat** and could provide your building autonomy during energy shortages due to **flooding** or **extreme heat** if you also install storage power systems and separate circuits.

**2.** Replace asphalt roofing with **light-color reflective shingles** to meet LEED standards

**How:** Use light color material to minimize heat gain. Ask your roofer about the rating of proposed material for solar reflectance.

**Why:** This will maintain your roof at cooler temperature and help your house be more comfortable during **extreme heat** and potentially reduce your energy bill.

### 3. Have a rain garden

**How:** Replace your landscaping in the low areas of your property with native plants and soil that can temporarily hold and soak in rain water runoff that flows from roofs, driveways, or patios.

**Why:** By capturing stormwater away from your house foundation, you will reduce your **flooding risk**. If you are replacing asphalt, you will also make your yard cooler during **extreme heat**.

#### 4. Replace asphalt with **porous surface**

**How:** Pave your driveway and pathways with light color material such as pavers or gravel that let water filter.

**Why:** This will maximize water getting directly into the ground and will reduce your house **flooding risk** and **street flooding**. It will also make your yard cooler during **extreme heat**.

## 5. Replace or complement your boiler with a **ductless mini-split system**

**How:** Contact a contractor specialized in air-heat pumps for a condenser outside your home — above the identified flood elevation -- and air handlers that provide heat and cooling. No ductwork is required for easy and unobtrusive installation.

**Why:** Your system will be protected from **flooding** and will provide clean energy for cooling during **extreme heat**.

## 6. Make your **windows and doors** airtight

**How:** Replace all the caulking around your windows and doors. Or when replacing, ask how they perform for energy loss. Make sure that replacement windows meet or exceed energy requirements.

**Why:** It will keep your house cooler during **extreme heat** and will also maintain interior temperature during energy shortage due to **flooding**.

## 7. Install electric subpanel for critical utilities to operate on back-up power

**How:** Decide which electrical loads are critical to power during a blackout to be connected to a separate sub-panel. Circuits feeding the refrigerator, lighting circuits and any other necessary loads will be pulled from the main breaker panel into the isolated subpanel to be powered from a generator or solar panel.

**Why:** This will maintain minimal comfort in your home during a blackout or power outage due to **flooding** or **extreme heat**.

## 12. Insulate roof, basement and exterior walls

**How:** Ask an energy auditor or utility provider to complete an attic-to-basement evaluation and provide a custom home energy report outlining recommended energy efficiency improvements. Select which measures could be most effective for your home.

**Why:** It will keep your house cooler during **extreme heat** and will also maintain interior temperature during energy shortage due to **flooding**.

## 11. Plant/Preserve trees

**How:** Water and trim trees as needed

**Why:** To improve urban tree canopy, reduce extreme **heat** in the city, and save energy.

## 10. Clean storm drains(s) close to your home

**How:** Remove leaves and dirt that clog the grates.

**Why:** This will allow for the City's infrastructure to best capture stormwater and reduce **flood risk**.

## 9. Use flood-resistant materials

**How:** When rebuilding your basement, use water resistant material such as terrazzo, or ceramic tile floor and cement board.

**Why:** This will reduce **flooding damage** to your home and will allow you to recover/be back to normal faster. These materials are also often mold-resistant and would protect from condensation.

## 8. Elevate or relocate main utilities

**How:** When replacing or upgrading your heating and electrical utility systems, raise all components at least 1 foot above the anticipated flood level if you are in a flood area, and as much as affordable otherwise.

**Why:** Avoid costly **flood damage** by preventing your electrical system components, including service panels (fuse and circuit breaker boxes), meters, switches, and outlets to be in contact with flood water. These are easily damaged by flood water.