

## **PREVENTING FLOODING**

### **Prevention**

Whether you're a homeowner, business owner, community or landowner there are a whole host of ways to help reduce the impacts of flooding and protect your property and land.

There are a number of ways to help reduce the risk of flooding to your community and in turn reduce the risk of flooding to your own home. By acting as a community using the information in the points below, you'll feel better prepared when heavy rainfall and flooding comes.

### **Things the Community and Landowners Can Do**

#### **1. Reduce Soil Compaction**

Avoid working the land with heavy machinery and high stocking densities when it's wet to reduce compaction of the soil. Compacted soil increases the amount and speed of water runoff from the land, which will increase soil erosion and decrease the soil's productivity.

#### **2. Ditch Clearance**

Maintain the ditches by removing any accumulated silt, cutting grass, maintaining any trees or shrubs on the banks and removing any debris, this will help to reduce the rate of runoff flow across the land which leads to soil erosion and flooding.

#### **3. Contour Ploughing**

Plough across a slope rather than down the slope. This reduces the rate at which runoff flows off the land, reducing the risk of flooding and limiting soil erosion.

#### **4. Watercourse Maintenance**

Maintain watercourses by removing any accumulated silt, maintaining vegetation on the banks and removing any debris from the watercourse or structures. This ensures that the watercourse is in the best condition to cope with heavy rainfall and reduce the risk of flooding.

#### **5. Structures Inspection**

Inspect structures. Authority-owned structures like bridges, culverts and grilles/trash-screens are inspected on a regular basis, but private or community-owned structures also need to be checked for any blockages, build-up of silt or signs of damage.

#### **6. Flood Defences**

Land owners or communities may be responsible for maintaining existing defences on their land as riparian owners. Communities may also be able to raise funds towards the construction of new flood defences where they are proven as needed to defend properties.

#### **7. De-Culverting**

Culverted watercourses (piped watercourses) are prone to blockages and restrict the flow of water during a flood. De-culverting or 'daylighting' watercourses can reduce the risk of flooding as well as providing biodiversity benefits and helping to maintain water quality.

## **8. Underground Storage**

Where there is insufficient land available for open flood storage such as swales or wetlands, consider storing flood water underground; such as under car parks, to slow down and reduce the amount of runoff entering the drainage system.

## **9. Green Roofs**

Install green roofs help soak up rain water and reduce water runoff from built up areas. Green roofs also increase biodiversity and wildlife, improve air and water quality, insulate the building and can provide amenity space.

## **10. Bank Cutting/Tree Felling**

Maintain vegetation such as shrubs and trees on the banks of a watercourse to ensure that the watercourse is in a condition to cope with heavy rainfall and reduce the risk of flooding

## **11. Swales/Infiltration**

Swales are open channels which catch runoff and either store it to let the water infiltrate into the ground or transfer it somewhere safe. This reduces water runoff, restricts flood water, provides biodiversity benefits, and helps to maintain water quality.

## **12. Permeable Paving of Car Parks**

Surface Car Parks with more permeable materials to reduce water runoff

## **13. Green Spaces**

Open green spaces can form a crucial part of flood management by providing space for managed flooding

## **14. Tree Planting/Hedgerow Maintenance**

Plant tree belts, hedges and wooded areas to slow water runoff and absorb rainfall

## **15. Wetlands and Flood Attenuation**

Maintain existing wetlands by not draining them. Wetlands function as natural sponges and reduce runoff

## **16. Rain Gauges, Telemetry and Warning Systems**

Install these systems in areas with little or no flood warning. They can be used to alert the community should there be an imminent risk of flooding.

## **17. Water butts**

Water butts are used to collect rainfall from roofs. The water can be used straight in the garden or carefully filtered and stored for reuse within the home.

## **18. Local Flood Representative**

Nominate a local flood representative to receive flood warnings and pass these onto the community. Flood representatives will be trained to help the community prepare for flooding

and know what to do during a flooding. South Gloucestershire will launch this scheme after the current round of community engagement projects.

## Things That Home Owners Can Do

### 1. Landscape Gardens

Landscape or profile gardens to divert surface runoff away from properties and towards areas of open space to limit the damage caused by flooding.

### 2. Protect Garages

Install barriers to prevent flood water entering and protect equipment. Garages may be attached to the property by a door and therefore represent a key route for flood water to enter the property. Garages themselves may also store valuable equipment which could be damaged by flooding.

### 3. Protect Air Bricks

Temporary covers can be fitted over the air bricks in time of flood, or new air bricks can be installed which are flood proof to prevent flood water entering the property.

### 4. Protect External Walls

Render or seal external walls with a suitable product to make them more water-proof. Repoint brick buildings to prevent infiltration. Some house constructions may allow flood water to seep through the walls, damaging the building.

### 5. Protect Basements

Seal basements using a “tanking” system to make them waterproof or consider installing a pump for any water that may seep through. Basements or cellars may be at risk of flooding from rising groundwater levels.

### 6. Protect Doorways

Doorways are the most obvious route for flood water to enter a building. Install purpose-built doors, which are flood proof, or consider purchasing removable barriers which can be installed against the door opening.

***You can buy flood protection measures for your home, such as door barriers, air brick covers and pumps, from a number of providers.***

## Things a Business Can Do

In addition to the above, businesses should consider the following additional measures to protect their property

### 1. Sump and Pump

Built-in sumps with pumps are used for the removal of flood water which may enter the building. They can be used for seepage of groundwater into basements or for removing leakage through flood-resistant products

### 2. Protect Low Windows

Similar to doorways, install purpose-built windows or place removable barriers against window openings. Note that some buildings cannot withstand flood water deeper than 0.3m/1ft

### 3. Perimeter defences

Place standalone permanent defences around the perimeter of the building or land to protect a larger area, which won't rely on the strength of the building to hold back the flood water.