

Local Flood Risk Management Strategy for North Somerset

Part A – Introduction and Local Flood Risk Reduction Actions in North Somerset



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1.0 Introduction



The Flood and Water Management Act 2010 states that North Somerset Council must implement a local flood risk management strategy.

Preparing for flooding is vital in North Somerset because there are around 4300 properties at medium risk of flooding (between 1% and 3.3% chance of happening each year, also known as a 1 in 100 year event). Flooding to low-lying land from the sea and tidal estuaries is a principal flood risk source within North Somerset. Without defences in place, approximately a quarter of the area of North Somerset is at risk of flooding. However, the tidal flood defence network across the study area is well-developed and extensive; therefore, flooding rarely occurs due to high tidal levels alone. Climate change and associated sea level rise will increase this risk. By 2080, without improvements to flood defences, as many as 63000 properties could be at risk.

This strategy sets out our objectives and actions to make your community more resilient to local flooding.

Although this strategy does not cover flooding from the sea or larger watercourses and rivers, as that is the responsibility of the Environment Agency, some of the measures discussed will apply to any flooding.

'Local' flooding in North Somerset means the risk of excess water from manufactured drainage systems, small watercourses, rainfall flowing off the land and when water rises from below ground to above the surface. This is referred to as surface water flooding and groundwater flooding throughout this strategy.

2.0 Understanding the risk of flooding in North Somerset

A significant part of North Somerset is at risk of flooding.

Flooding can be from different sources:

The sea (also known as tidal or storm surge)



North Somerset has flood defences along the coast that provide a level of protection from storms. The defences are a mixture of walls, earth embankments and dunes. However, there is always a small risk that the storm will be larger than the defences have been designed for and could be overtopped, or a defence could fail.

Parts of the moors in North Somerset are also below sea level. Nailsea Moor is 2.5 metres below some of the highest tides that happen each year. There would be considerable flooding if the sea defences were not along the coast.

Rivers (sometimes called fluvial)



Large rivers flow through North Somerset, such as the Blind Yeo, The River Axe and The Portbury Ditch. These tidal rivers have gates and flaps to prevent high tides from flowing in land and flooding low-lying areas. It also means that water cannot flow out to sea at certain times of the day. This is known as tide locking and can cause the rivers to flood with heavy rainfall.

Many rivers in North Somerset have been straightened, widened and moved from their original natural course. This means they are slow-moving and, combined with tide locking, can lead to flooding. Any flooding will also take a long time to drain away after the storm has passed.



Small watercourses (can be called fluvial, pluvial or surface water flooding)



North Somerset is full of minor watercourses, often called rhynes, that artificially drain the levels and moors. These have slow-moving water and are more like small canals. The water levels are actively managed and can overflow in prolonged heavy rainfall.

The water levels are managed through numerous weirs that hold the water higher in the summer months for agricultural and ecological benefits. Water levels are lowered in winter to provide additional storage for winter rainfall.

Surface water (also known as flash flooding and sometimes called pluvial)

When heavy rain ponds, pools and flows across land and roads, finding its way to low spots and overwhelms drains and small watercourses and causing flooding. This often happens suddenly without warning, is difficult to predict and therefore to protect properties from.

Surface water flooding is a risk because many people don't know they are at risk. Flooding is often associated with rivers and the sea, but even properties on hills can be affected by this type of flooding. Rain that falls on the summit of hills can flow very fast down steep slopes and cause properties to flood. In dry weather, there is often no indication that this may be a risk to some areas.

One of the most obvious impacts of heavy rainfall is flooding of the highway. We regularly empty and clean gullies on public land and their connections to the drainage system along roads. If you notice a problem please report it to the highway team, through the channels available. <https://www.n-somerset.gov.uk/my-services/nuisances-pollution-environmental-issues/flooding-drainage/drainage>

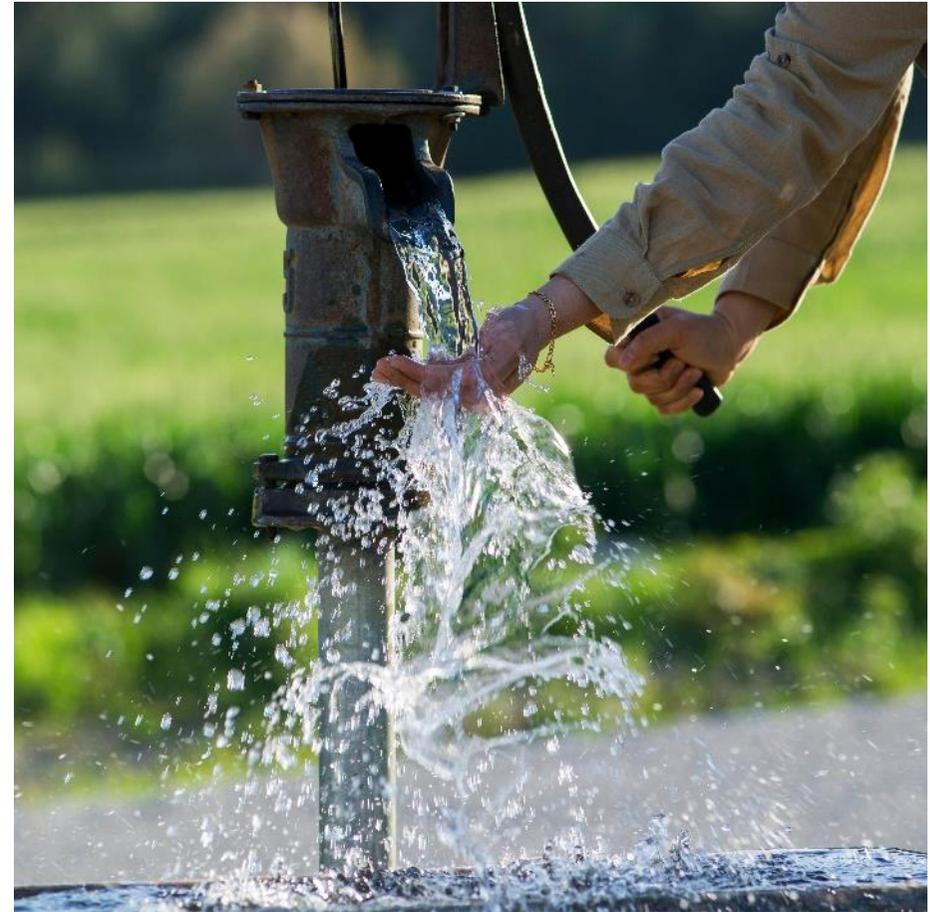
More serious flooding is that which affects homes and businesses, and it is essential that all such incidents are recorded to assist with the development of this strategy and the planning of future works. If your home or business has experienced surface water flooding inside your home please report it to the flood risk team via this link: <https://www.n->

[somerset.gov.uk/my-services/nuisances-pollution-environmental-issues/flooding-drainage/reporting-flood](https://www.n-somerset.gov.uk/my-services/nuisances-pollution-environmental-issues/flooding-drainage/reporting-flood)



Groundwater

Water flows through the pores in rocks such as limestone and sometimes meets the surface and is visible as springs. If there is prolonged heavy rainfall, these underground water reservoirs can become full and flood the land. Much of North Somerset's drinking water comes from these underground reservoirs. If your property has a well, it will have been dug into the groundwater.



Although not a big issue in North Somerset, there are areas where springs can be problematic and cause property flooding after prolonged heavy rainfall. Springs can sometimes appear long after the rain has passed.

Reservoirs



Reservoirs are where water is stored above normal ground levels. There is a slight risk that an embankment that holds the water above ground level could fail, and the water could escape and cause flooding. The management of reservoirs is heavily regulated to make sure the risk of any failure is minimal. Inspections are carried out by government appointed independent engineers.

Haywood Reservoir in Weston-super-Mare is primarily dry, but because it can still hold water above the average ground level, it is still managed by North Somerset as a reservoir. After prolonged rainfall, the reservoir fills with water from Cross Rhyne and Hutton and Locking Rhyne and will slowly release it when the storm has passed.

Other reservoirs in North Somerset store water drinking water supplies for the region and have a permanent water level.



2.1 Why does flooding happen?

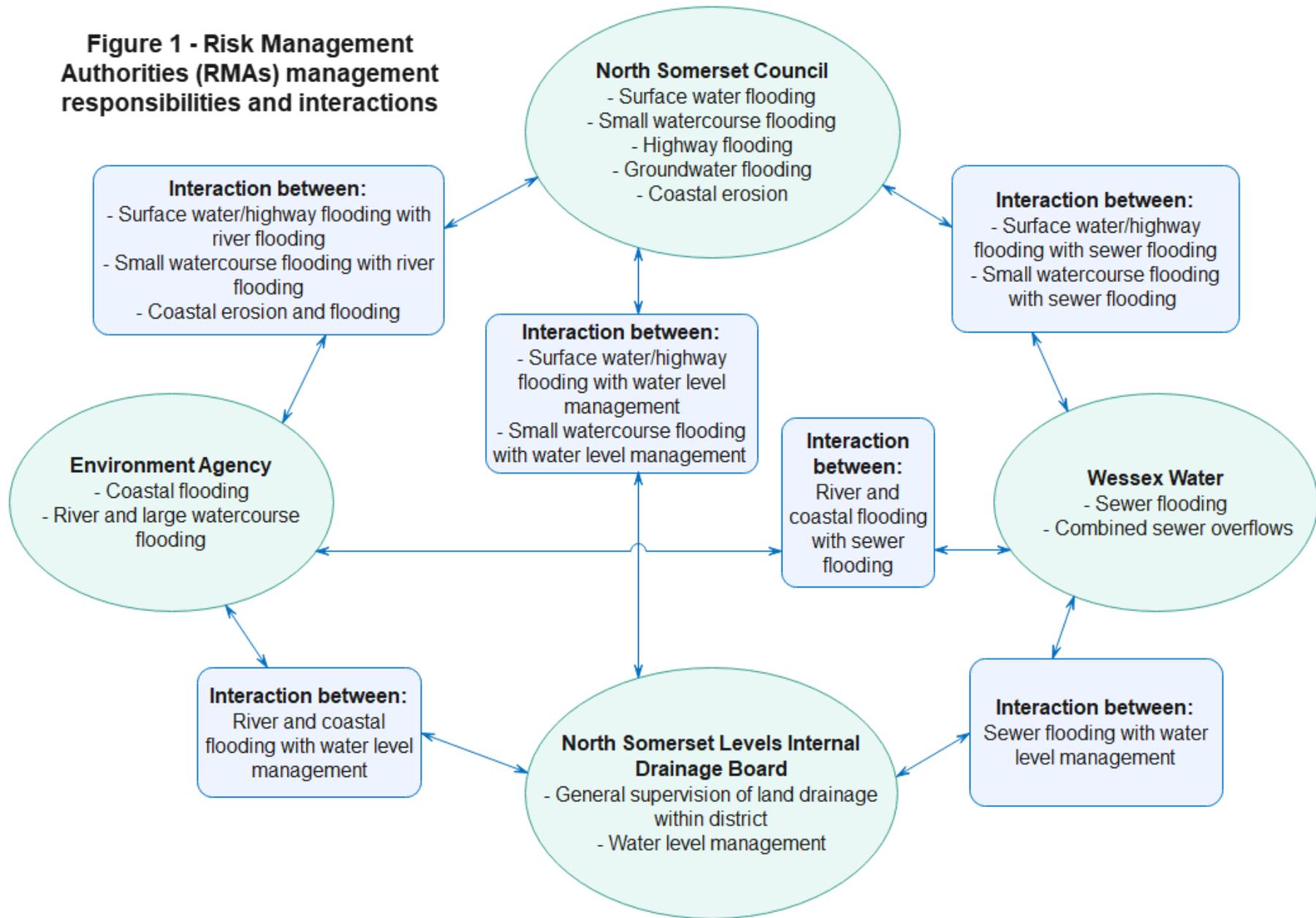
Flooding happens due to storms and too much rainfall. Flooding can happen if the rainfall is heavy over a short amount of time, and it can also happen if there is constant rainfall over an extended amount of time. Flooding from the sea can also happen due to storms that cause sea levels to rise and large waves to form.

Sometimes flooding comes from more than one source, and there is a complex interaction between each one. Very often, not one thing will fix the problem. To further complicate matters, different organisations are responsible for managing different sources of flooding. These organisations are known as risk management authorities, and what they do can be found in **Part B – A Guide to North Somerset Flood Risk Management Authorities**. A summary is provided below.

The chance of somewhere flooding is known as **the risk of flooding**.



Figure 1 - Risk Management Authorities (RMAs) management responsibilities and interactions



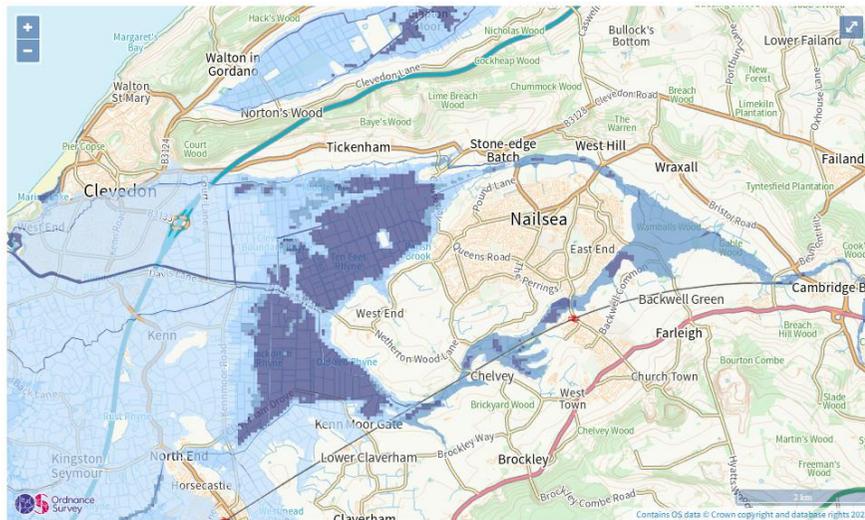
3.0 Risk of flooding explained

The risk of flooding in North Somerset is the percentage chance of flooding each year.

For example, a flood likely to happen yearly is described as having a 100% chance of happening. The bigger the flood, the less likely it is to happen yearly.

The Environment Agency has computer models that have produced maps showing what flood risk looks like across North Somerset. These can be found at:

<https://www.gov.uk/check-long-term-flood-risk>

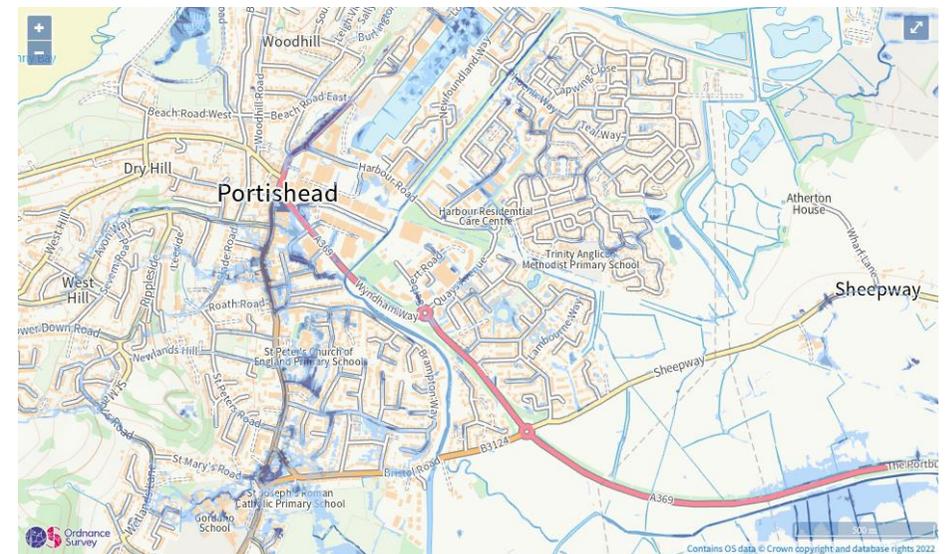


Extent of flooding from rivers or the sea

- High
- Medium
- Low
- Very low

These flood maps, such as the one here, show the area likely to be covered by water for a flood with a particular chance of happening each year.

The risk of flooding is also sometimes explained as a flood that would only happen once in 100 years or a 1 in 100 year flood. This does not mean that it will only happen once in 100 years; that is just an expression of the chance of it happening, and each year there is the same chance of that flood happening. This is better explained as having a 1% chance of happening each year.



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Extent of flooding from surface water

- High
- Medium
- Low
- Very low

The table below explains what this might look like for different chances and severity of flooding.

	Very high risk of happening	High risk of happening	Low risk of happening	Very low risk of happening
	1 in 1 year flood	1 in 30 year flood	1 in 100 year flood	1 in 1000 year flood
Chance of flood happening each year	100%	3.33%	1%	0.1%
What this looks like for surface water flooding, river flooding and tidal flooding	<ul style="list-style-type: none"> • Large puddles on roads • Watercourses bank full • Large waves but no overtopping of sea defences 	<ul style="list-style-type: none"> • Shallow, locally deep flooding on roads • Watercourses flooding • Isolated property flooding • Large waves and small rural areas of the coast flooded. The promenade at Weston-super-Mare flooded 	<ul style="list-style-type: none"> • Large areas of deep flooding on roads • Most rivers and watercourses flooding • Large numbers of property flooding • Large waves and overtopping along the coast. Roads closed, and some properties flooded 	<ul style="list-style-type: none"> • Extensive road flooding and impassable • All rivers and watercourses flooding • Extensive flooding across North Somerset • Overtopping of all sea defences and significant flooding of properties

The table shows the commonly available flood maps and the chance of flooding that they show, and where to find them.

Map of flood risk from surface water	Map of flood risk from rivers and the sea
High Risk or 3.3% chance of flooding each year	High Risk or 3.3% chance of flooding each year
Medium Risk or between 1% and 3.3% chance of flood each year	Medium Risk or between 1% and 3.3% chance of flood each year
Low Risk or between 0.1% and 1% chance of flooding each year	Low Risk or between 0.1% and 1% chance of flooding each year
Very Low Risk or less than 0.1% chance of flooding each year	Very Low Risk or less than 0.1% chance of flooding each year

Map of flood risk from reservoirs
When river levels are normal
When there is also flooding from rivers
Reservoir flood maps only show where water may go in the unlikely event of a dam or reservoir failure.

These can be found at:

<https://www.gov.uk/check-long-term-flood-risk>

You only need to put in your postcode.

4.0 Flood risk in North Somerset

From the maps above, the tables below show what the flood risk is in North Somerset.

4.1 Flooding from rivers and the sea

The number of buildings, roads, railways and designated nature sites at risk of flooding from rivers and the sea are listed in the table below.

Category	High (greater than 3.3%)	Medium (between 1% and 3.3%)	Low (between 0.1% and 1%)	Low (less than 0.1%)
Residential Properties	120	749	30408	39945
Non-residential properties, including businesses, schools and hospitals	512	1015	9742	14406
Listed buildings	7	16	46	113
Length of road (km)	18	38	330	478
Length of railway (km)	0.4	1.6	15.8	34.8
Designated sites (ha)	453	507	797	828

4.2 Flooding from surface water

The number of buildings, roads, railways and designated nature sites at risk of flooding from surface water flooding are listed in the table below.

Category	High (greater than 3.3%)	Medium (between 1% and 3.3%)	Low (between 0.1% and 1%)
Residential Properties	121	529	2993
Non-residential properties, including businesses, schools and hospitals	627	2096	6708
Listed buildings	5	19	63
Length of road (km)	70	251	783
Length of railway (km)	2.6	5.8	10.6
Designated sites (ha)	29	95	280

5.0 North Somerset local flood risk management objectives

Our objectives are how we will collectively manage the risk of flooding in North Somerset. We have taken these from the Environment Agency's National Flood and Coastal Erosion Risk Management Strategy for England and Wales and changed them to suit North Somerset.

OB1 - A flood resilient North Somerset

OB2 - Today's growth and infrastructure in North Somerset being resilient in tomorrow's climate

OB3 - North Somerset ready to respond and adapt to flooding

6.0 How North Somerset Council will turn the objectives into actions

Our strategy and subsequent parts explain how the objectives are turned into actions and consist of seven parts. All are self-contained documents and can be read independently to help navigate the complex strategy. These are:

Part A Local Flood Risk Reduction Actions in North Somerset

This explains what all the organisations are working together aim to achieve. It also explains the flooding risks North Somerset faces now and in the future and how to interpret and understand national mapping that is available online at <https://www.gov.uk/check-long-term-flood-risk>

There is also a detailed action plan explaining what the organisations with responsibilities for managing flood risk will do.

Part B A Guide to North Somerset Flood Risk Management Authorities

Many organisations, including landowners, have different rights and responsibilities when managing flood risk. This part is an explanation of who does what in North Somerset.

Part C A Guide to Flood Risk Funding

Flood risk funding is complicated. An explanation of how flood risk activities are funded locally and nationally is explained in this part and what this means to us in North Somerset.

Part D	North Somerset Natural Flood Management	Natural flood management uses natural features and planting to store and slow water flow. Across a large area, this can reduce flood risk downstream. This part explains how this approach will be used in North Somerset.
Part E	Flood Resilient North Somerset	Flood resilience is “the capacity of people and places to plan for, better protect, respond to, and recover from flooding and coastal change”. This part describes how communities in North Somerset can be more resilient to flooding and adapt and recover more quickly when flooded.
Part F	Small Watercourse Maintenance Good Practice	Watercourses are essential to flood risk management, and if they are not functioning or blocked, this can cause flooding. This part is a guide to maintaining small watercourses for flood risk and wildlife.
Part G	North Somerset Coastal Flood Risk Awareness	This part explains the risk of coastal flooding and the impact of climate change and sea level rise on North Somerset.

The Environment Agency’s national strategy can be found here:

<https://www.gov.uk/government/publications/national-flood-and-coastal-erosion-risk-management-strategy-for-england--2>

7.0 Climate change impacts



One of the most significant impacts of climate change on North Somerset is that flooding is likely to be more frequent and intense. Existing flood and drainage infrastructure may be overwhelmed. It might be unaffordable to replace and increase the capacity of all flood and drainage

infrastructure across North Somerset. Therefore, in some places, we may have to live with the impact, adapt, and be resilient to flooding happening more often.

A partnership effort involving the flood risk management authorities, communities and landowners will be needed to address the challenges we face in the future. This strategy sets out actions needed to adapt to the heavier and more intense rainfall that will happen more often in North Somerset in the future.

8.0 Local flood reduction risk actions

This section explains what actions are being taken in North Somerset to manage local flood risk.

A detailed explanation of what organisations do in managing local flood risk in North Somerset can be found in **Part B - A Guide to North Somerset Flood Risk Management Authorities.**

The type of flooding doesn't matter when you need our help. So one of our actions is to help the communities of North Somerset to become resilient to all types of flooding.

The seven actions below only aim to reduce local flood risk, which is surface water flooding and groundwater flooding.

8.1 Local flood risk reduction action A1 – appropriately maintaining assets

There is around 1,700 km of watercourses in North Somerset, the same distance as Portishead to Gibraltar. Over 80% of the watercourses are in the levels and moors.

1,375 km of watercourses are not maintained by a risk management authority and are, therefore, the landowner's responsibility to maintain.

All flood risk and drainage infrastructure assets need maintenance to ensure it functions as initially intended. Infrastructure assets can be many things, including natural features such as watercourses, ponds and wetlands and

artificial structures such as drains, pipes, culverts, weirs etc. The below highlights the amount of day to day maintenance that happens in North Somerset.

North Somerset Council maintains drainage on 1,100 km of road and strategic infrastructure, including the reservoir near Haywood Village in Weston super Mare and flood storage areas such as those at Wrington and Summer Lane in Weston super Mare. The council owns and maintains some sea defences along the coast, especially at Clevedon, Weston-super-Mare and Portishead.

The North Somerset Levels and Axe Brue Internal Drainage Board maintains 209 km of strategic watercourses and culverts.

Wessex Water maintains 525km of surface water sewers and 1,190km of public foul and combined sewers.

National Highways maintains drainage for 30 km of the M5.

Network Rail maintains 36 km of track and associated drainage.

The Environment Agency maintains 116 km of rivers (flooding from these rivers is not part of this strategy) and sea defences.

Private landowners - If a watercourse (even if it is dry most of the time) flows through, next to or under your land, you may have rights and responsibilities. One of these responsibilities is to maintain the flow of the watercourse. North Somerset Council have a guide on good watercourse

maintenance practice and forms part of this strategy. Find out more about your watercourse rights and responsibilities in **Part B - A Guide to North Somerset Flood Risk Management Authorities and Part F – Small Watercourse Maintenance Good Practice.**

The main action is to continue the high standard of maintenance across North Somerset, regularly reviewing what is maintained, how it is maintained and co-ordinating activities with other relevant organisations

8.2 Local flood risk reduction action A2 – inputting on planning

New developments can increase the risk of surface water flooding without suitable mitigation. Risk Management Authorities such as North Somerset Council as the Lead Local Flood Authority, The Environment Agency, Wessex Water, and the Internal Drainage Boards all comment on planning applications. All risk management authorities also provide flood risk and drainage specific advice to the local planning authority when writing their local plan.

In responding to planning applications, we want to ensure that the increased risk of surface water flooding is lessened by promoting sustainable drainage (SuDS), which can improve water quality and provide wildlife benefits. Ensuring enough space to maintain drainage features or existing watercourses is essential, as is ensuring that proposals meet national policy and local standards requirements.

8.3 Local flood risk reduction action A3 – regulating surface water activities

If you plan on starting any work affecting or changing an ordinary watercourse, you may require permission from us before you begin the work. We will check that your plans are necessary and won't increase flood risk. We want to keep our watercourses open, clean, and free of obstacles, so they are in the best possible working order when water levels rise. This permission is called land drainage consent; consent is also required from the Internal Drainage Board, the Environment Agency and Wessex Water.



The main action is to continue to provide relevant comments on planning applications and to develop further guidance that assist with decision making.



In North Somerset, outside of the Internal Drainage Board District and away from main rivers (shown in figure 2), consent is required from North Somerset Council for:

- making alterations to a watercourse
- placing obstructions (in, over or under) a watercourse
- carrying out work that will affect the flow of an ordinary watercourse

More details and how to apply can be found here:

<https://www.n-somerset.gov.uk/business/licences-permits/other-licences-permits/land-drainage-consent>

email: landdrainage@n-somerset.gov.uk



Inside the Internal Drainage Board District and away from main rivers (shown in figure 2), more details and how to apply can be found here:

<https://somersetdrainageboards.gov.uk/development-control-byelaws/land-drainage-consents/>

email: admin@somersetdrainageboards.gov.uk



If your works are near or on a main river (shown in figure 2), you will need permission from the Environment Agency.

<https://www.gov.uk/guidance/flood-risk-activities-environmental-permits>



If your works are close to a public sewer, you may need permission from Wessex Water.

<https://www.wessexwater.co.uk/services/building-and-developing/building-near-or-over-a-minor-public-sewer>

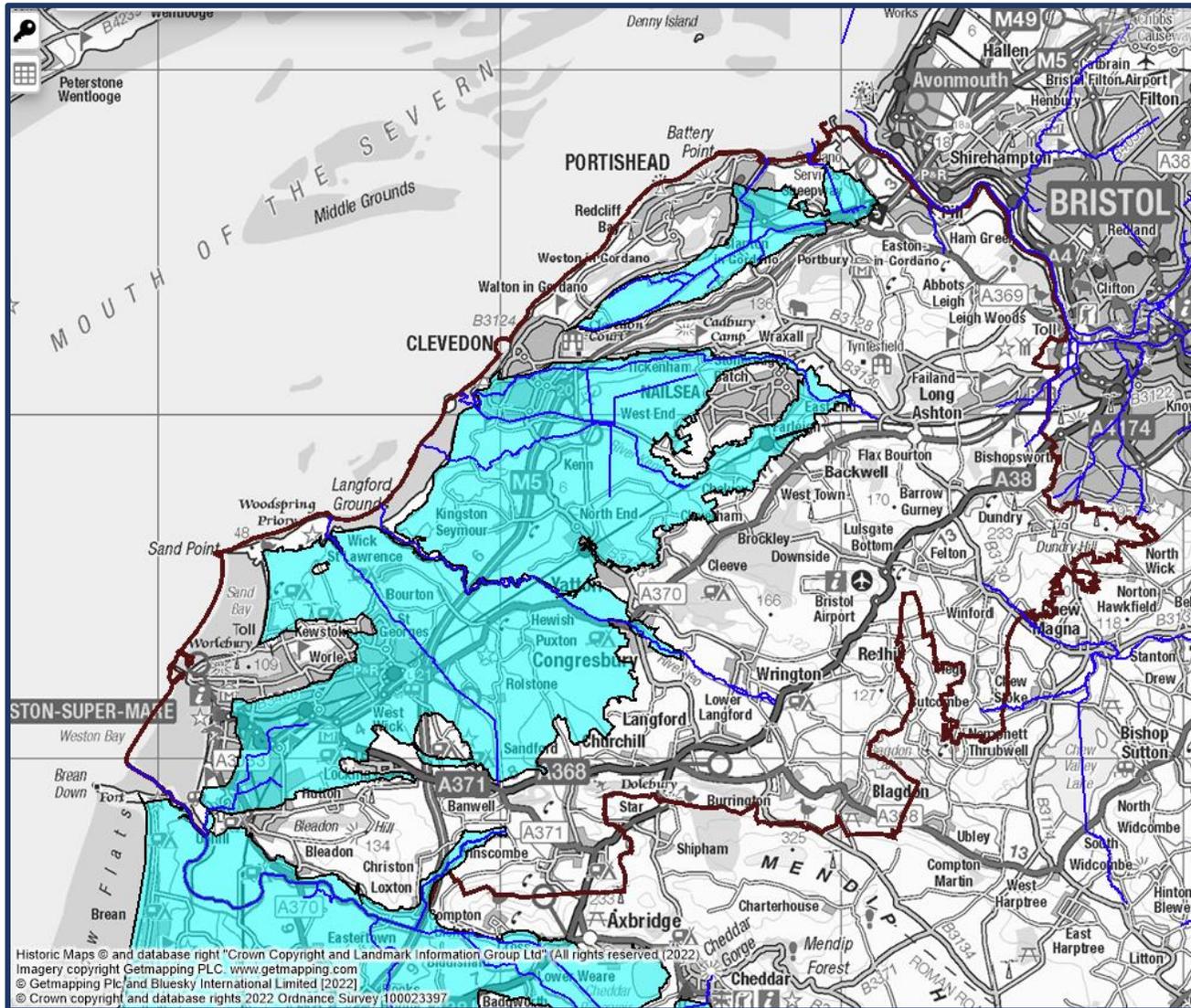


Figure 2- Plan showing where the IDB District and EA Main River are. The IDB districts are in light blue, and main rivers are in dark blue.

8.4 Local flood risk reduction action A4 – making north somerset flood resilient

A flood resilience approach aims to reduce the impact and damage caused by floodwater. This can mean a combination of several small actions, such as:

- Being prepared for a flood
- Knowing what to do in a flood
- Being able to recover from a flood quickly
- Changing a property so there is less damage when it floods
- Adapting a community so that flooding has less of an impact

This action is described in detail in **Part F – Flood Resilient North Somerset**

North Somerset will work with residents and businesses to increase the resilience of North Somerset to flooding.

8.5 Local flood risk reduction action A5 – investigating surface water flooding and assets

The drainage and flood risk infrastructure in North Somerset has been constructed over many years. Not all of it has been recorded, so we don't know its condition. Knowing where places flood and why they have flooded is key to understanding if any actions can be taken to reduce the impact of the flooding. This can be as simple as ensuring

landowners clean their ditches to investigating Victorian culverts in our towns.

8.5.1 Flood risk assets

To manage flood risk in North Somerset infrastructure includes:

- pipes and drains to keep water off roads
- culverts and bridges to allow passage across rivers and watercourses
- weirs and sluices to control the level of water, especially on the Levels and Moors
- areas of land that store water when rivers and watercourses flood
- ponds, basins and tanks to store water when there is extreme rainfall
- embankments and walls to hold back flood water or tidal water

Altogether these are known as flood risk assets. These have been built over many years and are owned by different organisations and individuals. The condition of these is varied, and some assets are likely unknown.

North Somerset Council will update the information in the asset list (called an asset register) to improve the understanding of these. This will include collecting more information about ownership and condition.

8.5.2 Mapping surface water flow routes and modelling

During heavy rainfall, water flows across land and eventually finds its way into a watercourse, road, and drain. When there is heavy rainfall, the flow can be fast and deep. Some of these flow routes are known as they have been modelled using a computer, and some are not.

North Somerset Council will survey and map surface water flow routes to provide more detailed and accurate information. This information can then feed into a continuous update of the computer models used to create maps of surface water flood risk. This will enable a greater understanding of the risk faced by communities across North Somerset and enable measures to help reduce the risk of flooding to be formulated and constructed.

8.5.3 Surface Water Flood Investigations

North Somerset Council has a duty to investigate flooding if it is considered necessary or appropriate to understand if the relevant risk management authorities have done what they are reasonably expected to do in a flood. Investigations are usually only undertaken if:

- five or more properties have internal flooding
- a property or properties are impacted by frequent flooding
- significant infrastructure, such as schools and hospitals, are flooded

External flooding is not generally investigated unless it is significant or frequent.

8.6 Local flood risk reduction action A6 – using natural flood management

How land is managed can make a big difference in the flooding of communities. Using natural features such as these can help slow the flow of water and reduce the impacts of flooding:

- Planting of trees in the suitable locations
- Slowing the flow in watercourses in hilly places
- Providing additional areas to hold water for a short time after heavy rainfall

Natural flood management also benefits wildlife by increasing the variety and variability of where animals and plants live. How these and other methods will be used is explained in **Part D North Somerset Natural Flood Management**

North Somerset Council will work with landowners to deliver natural flood management schemes.

8.7 Local flood risk reduction action A7 – scheme opportunities assessment

North Somerset Council will undertake a high-level assessment of what measures would reduce the impact of flooding to these communities. The review will look for intervention opportunities and determine how much they would cost to build. This will then be compared to how much funding could be applied for from central government. An

explanation of how flood risk work is funded can be found in **Part C - A Guide to Flood Risk Funding**.

The assessment result will show which potentially viable opportunities could be developed into a scheme to reduce flood risk.

There may be many reasons that a scheme is not taken forward, including:

- The availability of land - a landowner, may not wish to have a scheme built on their land, and we cannot force them to do so.

- Constraints that prevent construction include electricity or gas cables and pipes in the way, protected wildlife sites where works could harm wildlife and heritage assets that the works could damage.
- Having the resources to manage the work - managing a scheme takes up much time, and we have limited resources on top of all the other things that we do. One scheme typically takes 3-5 years from design through to construction.



Appendix A – Local flood risk management strategy action plan (reviewed annually)

The action plan below for all risk management authorities defines more specific detailed actions and how they relate back to the objectives for managing flood risk in North Somerset.

OB1 - A flood resilient North Somerset

OB2 - Today's growth and infrastructure in North Somerset being resilient in tomorrow's climate

OB3 - North Somerset ready to respond and adapt to local flooding

Short-term is 0-5 years, medium-term is 5-10 years, and long-term is 10 years plus. All actions are subject to funding and resources being available to be able to deliver them.

Action	Meets objective	North Somerset Council as LLFA	North Somerset Council as Highway Authority	Internal Drainage Board	Wessex Water	Environment Agency	National Highways	By when	Funding source
General									
0.1 Continue attendance and contribute to actions associated with the North Somerset Flood Risk Management Partnership.	OB1 OB2 OB3	✓	✓	✓	✓	✓	✓	Ongoing	Internal

Action	Meets objective	North Somerset Council as LLFA	North Somerset Council as Highway Authority	Internal Drainage Board	Wessex Water	Environment Agency	National Highways	By when	Funding source
0.2 Work with partners to deliver flood risk reduction actions in North Somerset.	OB1 OB2 OB3	✓	✓	✓	✓	✓	✓	Ongoing	Internal
A1. Appropriately maintained assets									
1.0 Continue with a high standard of maintenance across North Somerset.	OB1 OB3	✓	✓	✓	✓	✓	✓	Ongoing	Internal
1.1 Regularly review the maintained asset list for appropriateness of activity, timing and risk.	OB1 OB3	✓	✓	✓	✓	✓	✓	Annually	Internal
1.2 Share asset maintenance schedule with other RMAs.	OB1 OB3	✓	✓	✓	✓	✓	✓	Annually	Internal
A2. Inputting on planning									
2.0 Continue to provide relevant comments on planning applications	OB1 OB2	✓	✓	✓	✓	✓		Ongoing	Internal

Action	Meets objective	North Somerset Council as LLFA	North Somerset Council as Highway Authority	Internal Drainage Board	Wessex Water	Environment Agency	National Highways	By when	Funding source
2.1 Develop a Flood Risk Supplementary Planning Document (SPD), including guidance on flood resilient construction.	OB1 OB2	✓	✓	✓	✓	✓		Short term	Internal
2.2 Define Coastal Change Management Areas (CCMAs).	OB1 OB2	✓				✓		Short term	Internal
2.3 Update standing advice to take account of recent planning guidance changes.	OB2	✓		✓		✓		Short term	Internal
A3. Regulating surface water activities									
3.0 Continue regulation of activities and improve co-ordination between organisations when decisions are made.	OB1 OB2	✓		✓	✓	✓		Ongoing	Internal
3.1 Create common standards for watercourse culverting.	OB1 OB2	✓		✓				Medium term	Internal

Action	Meets objective	North Somerset Council as LLFA	North Somerset Council as Highway Authority	Internal Drainage Board	Wessex Water	Environment Agency	National Highways	By when	Funding source
3.2 Investigate NSC having byelaws.	OB2	✓						Medium term	Internal
3.3 Improve coordination of consents between risk management authorities.	OB2	✓	✓	✓	✓	✓		Medium term	Internal
A4. Making North Somerset flood resilient									
4.1 Undertake property flood resilience schemes on highest-risk properties.	OB1 OB3	✓						Ongoing	Internal/external
4.2 Prepare a risk management authorities flood recovery plan.	OB1 OB3	✓	✓	✓	✓	✓	✓	Medium term	Internal
4.3 Prepare a flood resilience communication plan for North Somerset.	OB1 OB3	✓	✓	✓	✓	✓		Medium term	Internal

Action	Meets objective	North Somerset Council as LLFA	North Somerset Council as Highway Authority	Internal Drainage Board	Wessex Water	Environment Agency	National Highways	By when	Funding source
4.4 Improve telemetry coverage across North Somerset and sharing data between risk management authorities.	OB1 OB3	✓		✓	✓	✓		Medium term	Internal
4.5 Investigate remote automation of manually operated structures.	OB1 OB3	✓		✓				Medium term	Internal/external
4.6 Work with Wessex Water on joint schemes as part of their Drainage and wastewater management plan (DWMP).	OB1 OB3	✓	✓	✓	✓	✓	✓	Ongoing	Internal/external
A5. Investigating surface water assets									
5.1 Update the North Somerset asset database and ensure that all RMAs record a consistent level of detail in their asset databases	OB1 OB3	✓	✓	✓	✓	✓	✓	Long term	Internal/external
A6. Using Natural Flood Management (NFM)									

Action	Meets objective	North Somerset Council as LLFA	North Somerset Council as Highway Authority	Internal Drainage Board	Wessex Water	Environment Agency	National Highways	By when	Funding source
6.1 Implement recommendations of feasibility studies for Burrington Coombe and Goblin Coombe. Investigate the feasibility of NFM at Dolebury.	OB1 OB3	✓						Medium term	Internal/external
6.2 Increase engagement with landowners regarding Natural Flood Management	OB1 OB2 OB3	✓						Medium term	Internal
A7. Scheme opportunity assessment									
7.1 Define a short list of communities that are to be assessed.	OB1 OB3	✓						Short term	Internal
7.2 Define scheme options for each community.	OB1 OB3	✓						Short term	Internal
7.3 Appoint consultant to undertake costing and cost-benefit assessment of schemes.	OB1 OB3	✓						Short term	Internal/external

Action	Meets objective	North Somerset Council as LLFA	North Somerset Council as Highway Authority	Internal Drainage Board	Wessex Water	Environment Agency	National Highways	By when	Funding source
7.4 Develop detailed plans for each viable scheme and apply for external funding.	OB1 OB3	✓						Medium to long term	Internal/external

The action plan will be reviewed annually, and the strategy will be reviewed and updated as needed every six years.