

Scrutiny Committee

Item No: 8

Report Title: Review of Norfolk Flood Prevention Activity

Date of Meeting: 20 November 2024

Responsible Cabinet Member: Cllr James Bensly - Cabinet Member for Environment & Waste

Responsible Director: Grahame Bygrave, Lead Director - Infrastructure

Executive Summary

Following the widespread flooding threat across Norfolk, exacerbated by the excess rainfall of autumn and winter 2023/24, work has been underway to shore up defences and clean existing systems in advance of this coming autumn and winter. The County Council and the Norfolk Strategic Flooding Alliance (NSFA) have been proactive in engaging multi-agency groups to look at specific 'hard to fix' projects, and progress has been made in locations where activities seem to have stalled; and residents and businesses have also come forward, taking on their own flood-prevention measures, to make sure their communities are well prepared against future flooding.

This year, groundwater levels remain high across East Anglia, with all catchments experiencing above normal, notably or exceptionally high levels compared to the long-term averages. If intense rainfall begins to fall, this will leave less capacity for the water to be soaked up by the ground, increasing the risk of flooding.

The three months to June 2024 saw abnormally high levels of rainfall in the country, compounding the previous six months' worth of exceptional rain: as a result, this year Norfolk is at greater risk of flooding which could come earlier than in previous years.

With 20% of Norfolk at or below sea-level, and predictions that water levels will continue to rise, the county needs a strategic approach to prepare for what is to come. The NSFA and its partners are working with 'communities on the ground' to ensure residents and businesses are as prepared as possible. But there also needs to be a focus on legislation to make sure it is fit for purpose, and the agencies in Norfolk are working with MPs from all parties to scrutinise the rules that bind and guide us.

Recommendations

To:

1. **Note the high flood risk that persists across Norfolk. Flooding may come earlier and be more widespread than normally expected.**
2. **Consider the ongoing flood protection work of NSFA multi agency members to help prepare communities for all types of flooding and make them more resilient, and encouraging residents to be prepared**

1. Background and Purpose

1.1 The Norfolk Strategic Flooding Alliance was founded in 2021 after significant surface water flooding issues in December 2020 led to over 350 properties being flooded in Norfolk and 120 settlements being affected. The aim of the Alliance is to ensure that residents of Norfolk have confidence that inland and coastal flood risks are as low as reasonably practicable and are being well managed, and that consideration is also being given to water as a resource.

1.2 Recent weather trends:

- East Anglia had its warmest and wettest February on record in 2024 with an average of 106.4mm of rainfall across the month, beating the previous record of 95.2mm set in 1916, and a mean temperature of 8.2C, surpassing the previous record of 7.6C set in 1990
- The top 10 warmest winters on record for the UK include 2024, 2022, 2020, 2016 and 2014, and the top 10 wettest 2024, 2020, 2016 and 2014

Average: 282mm

Rainfall records (mm)

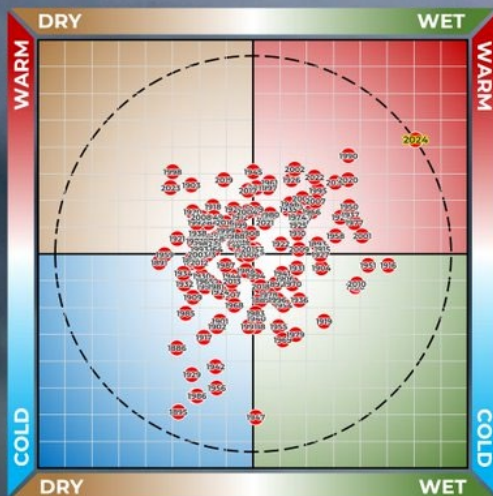


Oct 2000 - Feb 2001	437
Oct 2023 - Feb 2024*	411
Oct 1960 - Feb 1961	409
Oct 1882 - Feb 1883	408
Oct 1914 - Feb 1915	403
Oct 2020 - Feb 2021	401

Data: Met Office

EAST ANGLIA FEBRUARY

@danholley_



TOP 5 WETTEST

OCTOBER TO FEBRUARY

1	439mm	2024
2	437mm	2001
3	409mm	1961
4	408mm	1883
5	403mm	1915

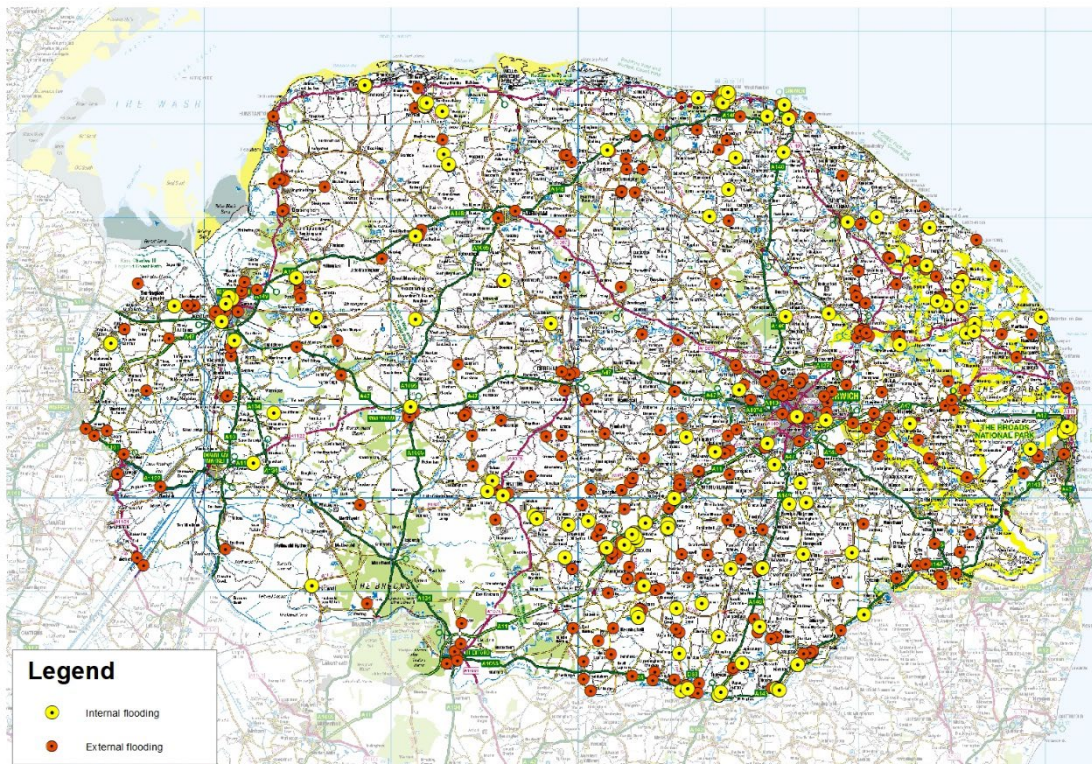
Data: Met Office HadUK-Grid

2. Summary of flooding affecting Norfolk 2023-24

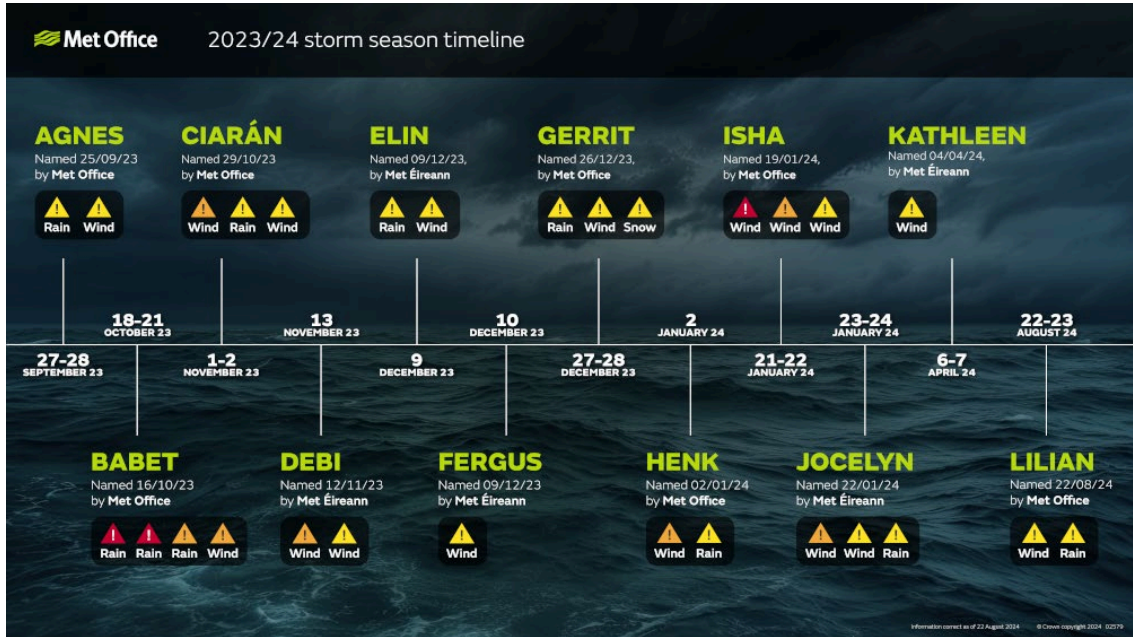
2.1 Since October 2023, the County Council's Flood and Water Team has received just over 880 reports of flooding across the county. Nearly 280 of these have been verified as meeting the thresholds for a formal flood investigation which are:

- Any loss of life or serious injury
- Internal flooding to one or more properties
- Flooding affecting critical infrastructure, for example a hospital or school
- One or more properties rendered inoperable, or their functions severely compromised due to the access to the premises being impassable
- Flooding to priority roads, for example, gritting roads

2.2 145 properties were flooded directly as a result of Storm Babet in October 2023. The epicentre of this storm within Norfolk was around north Attleborough and Besthorpe.



2.3 Over the autumn/winter period several named storms affected the country, with Storms Ciaran and Henk particularly adding to the already high-water levels in Norfolk. Communities across the northern area of the county suffered flooding and prolonged loss of facilities such as toilets, showers and washing machines.



3. Response to the Flooding by the County Council

3.1 How we have spent the Flood Reserve

Between 2021/22 and 2024/25, the flood reserve allocated £1.5m each year to help reduce the flooding experienced across the county. A large proportion of the flood reserve has been spent bolstering the routine maintenance works across the county, specifically drainage grip cleansing, drainage cleaning/rodding/jetting, road cleansing, gully emptying, ditch maintenance and also routine drainage.

The money has been used to conduct drainage surveys, to better understand the assets in place, investigating why they may not be working efficiently, and also spent on rectifying issues found.

Funding has been used to create the Norfolk Strategic Flood Alliance headed up by Henry Cator, DL OBE and pay for a range of initiatives including partnership schemes, the establishment of the emergency 'one number for Norfolk' phone line, for those experiencing flooding, and other flooding specific communications and leaflets.

A number of capital drainage schemes have also been completed, which would not have been possible without this funding.

3.2 Proactive & reactive approach to maintenance

Due to the nature of the issue, we must think carefully about how the funding is allocated. It is cost efficient to rectify the root causes of frequent flooding in the county by proactively maintaining the assets. The flood reserve has allowed the County Council to carry out more targeted maintenance of highways assets, along with increased frequency of cleansing. It is recognised that although the asset is receiving a better level of maintenance, there will still be areas in the county where flooding occurs, and that defects need to be resolved during storm and poor weather conditions. During this time, a reactive response is required, and although this is less cost efficient than proactive maintenance, it is necessary to clear Norfolk's highways and keep the network moving.

3.3 Inclement weather process

A specific protocol was created to provide Highways maintenance teams with guidance on what to do during inclement weather. This document shares information about dealing with network emergencies due to inclement weather (summer and winter but not ice/snow related as this is covered in other plans). This includes monitoring and key actions required, during both normal office hours and out of office hours. Depending on the level of rain expected, additional tankers are put on standby. Placing of flood warning boards is something the Highways teams can do, as well as dealing with surface water issues, which may include travelling the network, letting off water etc.

3.4 Resources

During a flood event, the following resources are put into place:

- Teams in depots to liaise directly with contractors and to triage calls from the Customer Service Centre (CSC) and inspect online reports of flooding and other highway related issues;
- Staff proactively scouting the Primary, Main Distributor, and Access roads (PMDA) to deal with 3rd party reports from customers and identify issues for the contractor to attend;
- Drainage Hit Teams (Norse Highways) visiting "hot-spot" locations to inspect and deal accordingly;
- Norse Highways gangs proactively traveling the network to let off water as observed;
- Tarmac can stand up their gully emptying contractors (Tankers & NR Gullies);
- Out of Hours Duty Officer resource bolstered and Norse Highways resource increased.

3.5 Tackling drainage hotspots

"Drainage hit teams" were introduced in May 2022. These are Norse Highways crews, which work proactively to clear floods and known hotspots. They are sent out following instruction from the Highways maintenance teams. The

Highways area teams will also have reactive work orders for these teams too, as required.

4. Works to reduce the impact of flooding and increase community resilience in Norfolk

- 4.1 The Norfolk Strategic Flooding Alliance (NSFA) was formed in early 2021 following recognition that the county-wide response to flooding and flood-related risks required improvement to help further protect and reassure Norfolk communities. Its members (see Appendix A) work collaboratively and transparently across boundaries and structures to improve the response to flooding and flood risk management. It represents a single point of focus for all flood-related challenges facing our county.

The NSFA aims to coordinate actions of the authorities, agencies, land and property owners, communities and individuals themselves, with the aspiration that the people of Norfolk will have a high level of confidence that flood and drought risks are as low as reasonably practicable and are being managed within the overall context of improved water management.

4.2 NSFA activity

Following on from the widespread floods of autumn and winter 2023/24, work has been underway to shore up defences, and bolster flood-preparedness in advance of this autumn/ winter. Many agencies have worked together to coordinate works, contributing to making communities better prepared, should flooding threaten again. Residents and businesses are also being encouraged to take their own flood-prevention measures, so they are well prepared.

4.3 Multi- Agency Group progress:

The following locations are examples of projects underway, involving multi-agencies and local residents, to address various flooding issues, including blocked ditches and culverts, overwhelmed sewage systems, extensive flooding to properties, businesses and roads

- 4.3.1 **Tunstead:** multiple issues with high groundwater affecting foul sewers and flooding property – NSFA met with Anglian Water, Highways, Internal Drainage Boards and local flood rep to agree potential solutions, such as installing new culverts and lining sewers, and joined up funding options. Partners have agreed to carry out all planned works in the same timeframe to minimise the impact on community.
- 4.3.2 **Dereham flood storage basins:** 48 properties that suffered internal flooding in June 2016 – Awaiting signing of the legal agreements and the commencement of works. This project has been beset by delays and is at

a critical stage, but those barriers have now been resolved. Additionally, 25 properties have had flood resilience measures, such as flood doors, air brick covers, installed as part of this wider flood alleviation scheme. 3 more properties should be completed by the end of November 2024.

- 4.3.3 **Hickling:** multiple issues with high groundwater and river levels affecting foul sewers, sanitary facilities and flooding property – this is a great example of where many agencies have worked together to co-ordinate works. The engagement from the parish and local residents has really driven proactivity and what's really pleasing has been maintenance on culvert / ditch pipe work and the removal of surface water from the foul system. There is still work to do however this is exactly what we need to see and should be used as the exemplar.
- 4.3.4 **Potter Heigham:** multiple issues with high groundwater and river levels affecting foul sewers, sanitary facilities and flooding property – work is ongoing with the IDB's and Anglian Water to address some of the chronic flooding issues. Multi Agency Group meeting with flood wardens and parish councillors was well received.
- 4.3.5 **Burn catchment:** multiple issues with high groundwater and river levels affecting foul sewers, sanitary facilities and flooding property A Multi Agency Group meeting has taken place where Anglian Water the Environment Agency, IDB, Natural England, Highways department and other vested interested parties have come together to work through what tactical improvements can be made on the ground (whilst modelling for long term groundwater mitigation measures continues).
- 4.3.6 Linked into the **local resilience forums** in Norfolk so that, should the worst happen again the residents of Norfolk are in a far better position. We now have demonstrable evidence of things happening on the ground, which will improve the position. Education and communication with affected communities almost as important as doing the work.
- 4.3.7 **Gayton:** issues with high groundwater affecting foul sewers and sanitary facilities – the working group has also done some great work collectively to remove issues in the surface water network that were affecting the foul sewers and we are now linking in the landowners who are interested in water storage.

4.4 **Media coverage/ planned media coverage:**

- 4.4.1 **July 2024 Groundwater** News coverage in TV, radio and electronic media regarding continuing high ground water level message and asking residents to 'Be prepared' for the autumn/winter ahead. Suggestions of measures that homeowners and businesses can take to make their properties more resilient. Henry Cator, Chairman of NSFA interviewed for TV & radio.

4.4.2 **Flood Week comms (14th – 18th October 2024)** A number of media stories were covered during flood week – which is also the anniversary of Storm Babet. New pieces will continue throughout the autumn and winter, to keep success stories and messages of preparedness uppermost in the minds of residents and businesses.

4.5 Completed works and schemes

Attleborough and Besthorpe: 65 properties flooded internally from Storm Babet.

This is a multi-agency scheme involving Norfolk County Council, Breckland Council, Attleborough Town Council, National Highways, East Harling IDB and the Hills Group.

Around 70 tons of material has been removed from culverts between Mill Lane and Norwich Road (much of which is privately owned) in a one-off gesture to improve the flow of water. A new and improved trash screen has been installed at the Mill Lane end. Costs are circa £100,000 for all works

Alongside the agency work, the Town Council have gathered resident support to set up an organisation to collect funds and maintain the watercourse and culvert in the future. The residents have also set up a Flood Action Group and with the Town Council have a flood response plan

The IDB and National Highways have completed clearance work on their main drain and culverts. Further clearance work is planned by the Hills Group

Future Natural Flood Management works higher in catchment if agreement with landowners can be reached



Clearance work in the culvert



New Trash Screen at Mill Lane

Beighton Road, Acle: this location has suffered repeat flooding to 9 properties. Work is underway to install a new culvert to convey flood flows away from the properties and into a recently cleared out section of Main River.



Green Lane, Great and Little Plumstead: This location has suffered from repeat flooding and cars stranded in flood water. A new drainage system has been installed to prevent standing water on the road under the railway bridge. This NSFA priority scheme was funded by the County Council and cost £375,000.



- 4.6 In addition to work in Norfolk, the NSFA is making a **robust case to Government**, through All Party engagement with the Norfolk MPs, with a focus on legislation change.

5. Financial Implications

- 5.1 Government funding has typically focussed larger capital schemes that prioritise urban areas and reactive repairs in response to flooding events, rather than proactive maintenance and small-scale works, despite each £1 spent in flood defence preventing £14 worth of damage.

We need to ensure that we get the very best returns for what we do spend therefore it is key that we pool resources with NSFA partner and other stakeholders for lower cost options and ensure maintenance of existing assets is carried out.

6. Resource Implications

6.1 Workforce: None as a result of this report.

6.2 Property: None as a result of this report.

6.3 IT: Work is underway to develop a shared flood risk mapping resource and asset register that would provide partners of the Norfolk Strategic Flooding Alliance with access to a Geographical Information System mapping tool for use in emergency planning, scheme development, flood investigations and other related functions

7. Other Implications

7.1 Legal Implications: Preparation work of the potential implementation of Schedule 3 of the Flood & Water Management Act – Sustainable Drainage, is currently on hold until we receive confirmation from Government on its progress and timescales.

Currently the powers for works and regulation on ordinary watercourses, outside IDB areas, are split between the County and District Councils. The NSFA has made representations to Central Government to amend this and enhance the powers needed to require better watercourse maintenance

7.2 Human Rights Implications: None as a result of this report.

7.3 Equality Impact Assessment: None as a result of this report.

7.4 Data Protection Impact Assessments (DPIA): None as a result of this report.

7.5 Health and Safety implications (where appropriate): The work of the Norfolk Strategic Flooding Alliance and the County Council in its roles as a Lead Local Flood Authority and Highway Authority has direct benefits for the safety of our communities and infrastructure by reducing the impact and frequency of flooding.

7.6 Sustainability implications: The work of the Norfolk Strategic Flooding Alliance and the County Council in its roles as a Lead Local Flood Authority and Highway Authority has a positive impact on both the environment and sustainability of Norfolk and its communities, by reducing flood risk and flood damage and improving water management across Norfolk including improving its use as a resource.

Furthermore, there is genuine cross cutting potential from linking Sustainable Drainage Systems and Natural Flood Management to improved biodiversity and habitat creation

7.7 Any Other Implications: None as a result of this report.

8. Risk Implications / Assessment

- 8.1 Assessment of surface water flood risk mapping shows that over 12,000 properties in Norfolk are at risk from a 1:30 (3.3% Annual Exceedance Probability) rainfall event and that over 30,000 properties are at risk from a 1:100 (1% Annual Exceedance Probability) rainfall event.

The risk of flooding from rivers and the sea shows an additional 4,000 properties at risk in a 1:30 event and over 19,000 in a 1:100 event.

(Source: [Risk of Flooding from Rivers and Sea - key summary information - data.gov.uk](#))

- 8.2 The effects of climate changes on weather patterns, sea level rises, all contribute to different extents, and sometimes combine, to increase the apparent frequency and severity of incidents of flooding in Norfolk.
- 8.3 A shortage of the significant external funding necessary for many capital flood mitigation measures is a serious concern for the long-term flood protection of communities in Norfolk.
- 8.4 Funding made available for flood mitigation works and projects will be affected by cost escalations, which will put pressure on the amount of money available for schemes.

9. Recommendations

To:

1. **Note the high flood risk that persists across Norfolk. Flooding may come earlier and be more widespread than normally expected.**
2. **Consider the ongoing flood protection work of NSFA members to prepare communities for all types of flooding and make them more resilient, and encouraging residents to be prepared**

10. Background Papers

- 10.1 None

Officer Contact

If you have any questions about matters contained within this paper, please get in touch with:

Officer name: Fiona Johnson
Telephone no.: 01603 306390

Email:



If you need this report in large print, audio, braille, alternative format or in a different language please contact 0344 800 8020 or 0344 800 8011 (textphone) and we will do our best to help.

Appendix A: Norfolk Strategic Flooding Alliance members

The (Independent) NSFA Executive
Norfolk County Council
Breckland District Council
Broadland District Council
South Norfolk District Council
North Norfolk District Council
Norwich City Council
Borough Council of Kings Lynn and West Norfolk
Borough of Great Yarmouth Council
Anglian (Great Ouse) Regional Flood and Coastal Committee
Anglian (Eastern) Regional Flood and Coastal Committee
Association of Drainage Authorities
Anglian Water
Broads Authority
Coast Partnership East
Environment Agency
Highways Agency
National Farmers Union
Norfolk Resilience Forum
Norfolk Association of Local Councils
Water Resources East
Water Management Alliance
Norfolk Rivers Trust