

Norfolk Strategic Flood Plan 2015

Version	7
Author	NRF Severe Weather and Flood Risk Working Group
Reviewed by	NRF Severe Weather and Flood Risk Working Group
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Foreword

This plan has been developed by the Flood Risk Planning Group of the Norfolk Resilience Forum and agreed by the members of the Norfolk Resilience Forum Executive Board. It has been prepared in consultation with Category 1 and 2 responders and resilience partners in Norfolk.

It provides a framework by which Norfolk can be suitably prepared to respond to an actual or potential major flooding emergency, whereby the combined resources of numerous agencies are required. It is directed towards the strategic level response and augments the detailed guidance in the Tactical Flood Plan and the Norfolk Emergency Response Guidance.

It will be particularly relevant should we face the threat of major coastal and tidal flooding that could affect parts of more than 2 UK regions. The east coast is more susceptible to this, and the national risk register identifies this as having the potential to cause the most widespread impact from a natural disaster in a single event in the UK.

Norfolk Constabulary will coordinate the procedures outlined in this plan after consultation with appropriate partners.



Tom McCabe
NRF Executive Lead – Protection Capability Workstream
Norfolk County Council
July 2015

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Purpose

The purposes of the arrangements outlined within this document are to ensure the:-

- Saving and protecting of human life
- Relief of suffering
- Containment of the emergency – limiting its escalation or spread and mitigating its impacts
- Provision to the public and businesses of warnings, advice and information
- Protection of the health and safety of responding personnel
- Safeguarding of the environment
- Protection of property (as far as is reasonably practicable)
- Maintenance and restoration of critical activities
- Maintenance of normal services at an appropriate level
- Promotion and facilitation of self-help in affected communities
- Facilitation of investigations and inquiries (e.g. by preserving the scene and effective records management)
- Facilitation of the recovery of the community (including mitigating the humanitarian, economic, infrastructure and environmental impacts)
- Evaluation of the response and recovery effort
- Identification of, and taking action to implement lessons identified

(The above are an extract from Emergency Response and Recovery guidance document)

- Upholding the rule of Law – Joint Emergency Services Interoperability Principles (JESIP)

Protocols

This plan will take effect 1st July 2015. It will be reviewed every three years. This process will be advanced should legislation, best practice guidance change or if lessons are identified following activation for an emergency or exercise. The master copy of this document and a record of the review and decision-making process will be held by the NRF Business Manager, and will be made available for audit as necessary. Contributing organisations are asked to notify the NRF Business Manager of any changes that may impact on the content or procedures outlined in this guidance. Prior to publication, the Norfolk Resilience Forum will consider all amendments to this guidance.

Plan Activation

This plan provides guidance for the strategic level response to a threatened or actual serious flooding event. It should be activated whenever this level of response is required.

The flow chart on the following page illustrates how elements of our response will be implemented.

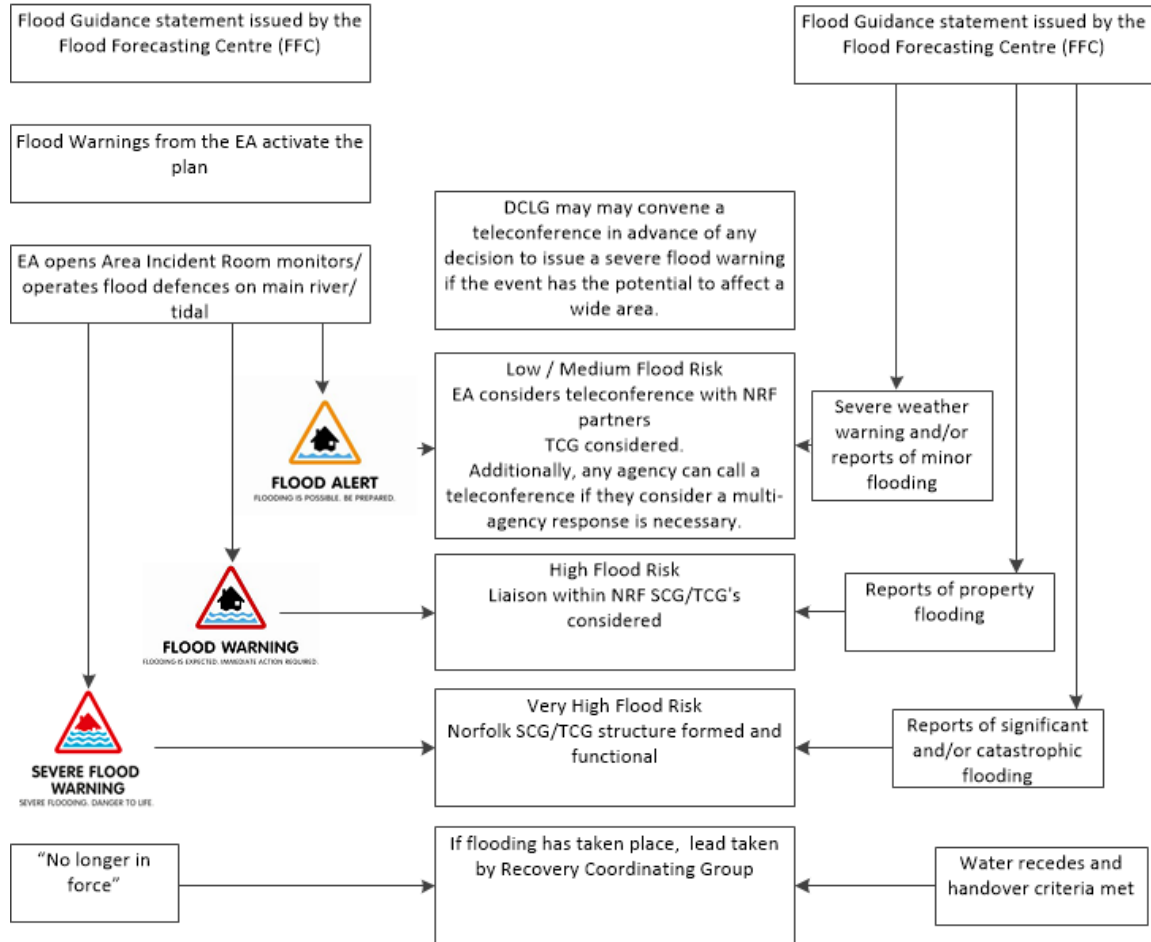
If the threat is from a Wide Area Coastal Flood Event, see page 15, then the plan will be triggered automatically.

Responders should be aware that detailed guidance relating to the coordinated response to incidents is contained in the Norfolk Emergency Response Guidance which forms the basis of integrated emergency management training and exercises undertaken within the County.

Activation Flow Chart

Triggers in areas covered by the Flood Warning Service

Triggers in areas not covered by the Flood Warning Service



References

- Environment Agency Local Flood Warning Plan
- Norfolk Emergency Response Guidance
- Norfolk Resilience Forum Tactical Flood Plan
- Flood Rescue Concept of Operations PB13676
- Emergency Response and Recovery – Civil Contingencies Act 2004
- Government Coastal Flooding Group Response and Recovery Guide – July 2013
- National Flood Emergency Framework – October 2013
- Multi Agency Major Incident Communications Plan
- East Coast Flood Emergency Management Framework January 2013
- NRF Recovery Guidance Document
- Multi-Agency Support Group (East) Framework of Operations
- Health and Safety Laboratory, East Coast Flooding Impact Analysis MSU/2011/43 (8 March 2012)
- National Risk Register of Civil Emergencies 2015 edition
- NRF Community Risk Register – H19 major coastal and tidal flooding that could affect parts of more than 2 UK regions
- Multi-Agency Support Group (East) Framework of Operations

Record of Amendments

Date	Details	Amended By
March 2011	Issue of Version 3	NRF Partners
June 2012	Issue of Version 4	NRF Partners
September 2012	Issue of Version 5	NRF Partners
February 2014	Amendments to plan as per changes in organisational/national requirements. Debrief recommendations of the December 2013 Coastal Tide Surge	NRF Business Manager
May 2015	Amendments based on final consultation, strategic workshop that took place 19 th May 2015.	NRF Business Manager

Norfolk Resilience Forum Business Manager
 Norfolk Constabulary
 Operations and Communications Centre
 Wymondham
 NR18 0WW

Web: www.norfolkprepared.gov.uk
 Email: nrf@norfolk.pnn.police.uk
 Telephone: 01603 222016

Records of Plan Validation and Training Schedule

Date	Details	Exercise/Training /Incident
July 2007	Joint County Flooding Response & Recovery Exercises	Exercise Pontus
November 2007	East Coast Tidal Surge – 8 – 9 th November	Incident
March 2009	Central Area (Broadland, Norwich and South Norfolk), Western Area (Kings Lynn & West Norfolk and Breckland), Great Yarmouth and North Norfolk	Exercise Bunyip
August 2010	SCG TTX for Flooding (48 & 24 hours prior) – Sugared Lit 1	Exercise Sugared Lit 1 & 2
November 2010	SCG TTX for Flooding (7 & 2 hours prior) – Sugared Lit 2	
January 2011	SCG TTX for Flooding	Exercise Honest Direction
March 2011	National Flooding Exercise	Exercise Watermark
December 2013	East Coast Tidal Surge 5 – 6 th December 2013	Incident

Distribution List

No.	Recipient	No.	Recipient
1	Norfolk Constabulary – Operational Planning	16	Construction Industry Training Board (Bircham Newton)
2	Norfolk Fire & Rescue Service – Emergency Planning	17	Robertson Barracks (Swanton Morely)
3	East of England Ambulance Service NHS Trust – Resilience Team	18	Defence Joint Regional Liaison Officer (Army) 49 (East) Brigade
4	Maritime & Coastguard Agency	19	Royal Norfolk Showground
5	Norfolk County Council – Resilience Team Intranet Site (unrestricted version)	20	Norfolk Resilience Forum website (unrestricted version)
6	Borough Council of King’s Lynn & West Norfolk – Emergency Planning	21	RAF Regional Liaison Officer (RAF Marham)
7	Breckland Council – Emergency Planning	22	Public Health England – Thetford Office
8	Broadland District Council – Emergency Planning	23	NHS Norfolk and Waveney Clinical Commissioning Groups (via EPRR Lead)
9	Great Yarmouth Borough Council – Emergency Planning		
10	North Norfolk District Council – Emergency Planning		
11	Norwich City Council – Emergency Planning		
12	South Norfolk Council – Emergency Planning		
13	NHS England East Anglia Area Team		
14	Environment Agency – Essex, Norfolk and Suffolk (Ipswich)		
15	Environment Agency – Cambridgeshire and Bedfordshire (Brampton)		

Abbreviations

COBR	Cabinet Office Briefing Room	MASHA	Multi-Agency Strategic Holding Area
CRR	Community Risk Register	MCA	Maritime and Coastguard Agency
DCLG RED	Department Communities & Local Government Resilience and Emergency Department	MLO	Military Liaison Officer
DCLG ResCG	Department Communities & Local Government Resilience Coordination Group	MO PWSA	Met Office Public Weather Service Advisor
DEFRA	Department for the Environment, Food and Rural Affairs	NACC	National Ambulance Coordination Centre
EA	Environment Agency	NCCEC	Norfolk County Council Emergency Centre
EPDO	Emergency Planning Duty Officer	NCC	Norfolk County Council
EDW	Extended Direct Warnings	NHS	National Health Service
CES	Environment, Transport and Development (NCC)	NERG	Norfolk Emergency Response Guidance
FAS	Flood Advisory Service	PEN	Precautionary Evacuation Notice
FFC	Flood Forecasting Centre	PWS	Public Weather Service
FGS	Flood Guidance Statement	RAFRLO EE	RAF Regional Liaison Officer (Eastern England)
FWD	Floodline Warnings Direct	RAYNET	Radio Amateur Emergency Network
FRSNCC	Fire and Rescue Service National Coordination Centre	RES CG	Response co-ordinating group
HART	Hazardous Area Response Team – Ambulance Service	RM	Resilience Manager
GLO	Government Liaison Officer	RNLI	Royal National Lifeboat Institution
JESIP	Joint Emergency Services Interoperability Principles	RWG	Recovery Working Group
JRLO E	Joint Regional Liaison Officer East (Military)	SAR	Search and Rescue
LA	Local Authority	SCC	Strategic Coordination Centre

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LALO	Local Authority Liaison Officer	SCG	Strategic Coordinating Group
LO	Liaison Officer	SMS	Short Messaging Service
MACA	Military Aid to the Civil Authorities	TCG	Tactical Coordinating Group
MASG(E)	Multi Agency Support Group (East)	UKCMF	UK Coastal Monitoring and Forecasting

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Introduction

This document outlines the arrangements which should be implemented to ensure an efficient and effective response to a potential or actual severe flooding incident. A map is provided at Annex A which gives an indication of the potential extent of flooding in the county.

Using established procedures, activities will be co-ordinated by the Police working in partnership with Local Authorities, the other Emergency Services, the Environment Agency (EA), and other agencies that are appropriate to the response.

To avoid the likelihood of duplication this strategic flood plan only contains information that is specific to a flooding event. Where necessary, the plans as shown in the following chart should be cross referenced:-

LRF Strategic response documents	NERG	NRF Strategic Flood Plan	
LRF Plans and Guidance	NRF Major Incident Communications Plan.	EA Local Flood Warning Plan for Norfolk	NRF Recovery Guidance
	NRF Humanitarian Assistance Plan	Community Risk Register	NRF Resilient Telecommunications Plan
Multi-Agency Flood Plans	NRF Tactical Flood Plan Part One	NRF Tactical Flood Plan – Part Two – Borough / City /	
Organisational Plans	Emergency services operational plans	Local Authority Plans	EA Local Plans and Procedures
	Community Emergency Plans	District Rest Centre Plans	

The Threat

Generally

The Norfolk Community Risk Register identifies the threat of flooding as “High and Very High” risk. It is therefore imperative that strategies be developed mitigate the risk, and that preparation to respond to an incident in the form of multi-agency planning, exercising and training should be undertaken.

Types of Flooding

In total, some 42,200 properties in Norfolk are in main river or tidal floodplains and are considered to be at risk of flooding. In addition, the risk of property from surface water flooding countywide is estimated in the region of 36,000 properties. Many more people work in, visit or travel through areas potentially vulnerable to flooding and may be unfamiliar with the risk.

Flooding in Norfolk can occur from a number of sources:

Coastal (Tidal) Flooding

The primary factors for coastal flooding in Norfolk are the low lying nature of the land, length of the coastline and the proximity of the population to that coastline.

Major coastal and tidal flooding

The most significant threat is from a north sea tidal surge event. This occurs when a combination of strong winds, low atmospheric pressure and high tides cause extreme high tides levels in the North Sea. These have the potential to breach defences and cause significant flooding along the East Coast. This risk (referred to in National and Community Risk Registers as H19) is deemed as being the most significant natural disaster that the UK faces.

The effects will be exacerbated by later tides making repairs difficult to effect and flood water being unable to drain back to the sea.

Monitoring equipment and tidal prediction are such that there should be advance warning of such an event.

Annex B further describe this type of event.

River (Fluvial) Flooding

River flooding occurs as a result of water overflowing from river channels. This is influenced by two key factors: - the volume of rainfall and the capacity of the ground and rivers to absorb and transport the water.

The rivers in Norfolk that could be affected are:-

- River Waveney which forms much of the southern border with Suffolk.
- River Great Ouse and its tributaries, including the Wissey, Nar & Gaywood Rivers, in the west of the county and drain a large part of Cambridgeshire and Bedfordshire, flowing into The Wash estuary at Kings Lynn.
- The 9 chalk rivers Burn, Stiffkey, Glaven, Gaywood, Hun, Mun, Babingley, Heacham, Ingol on the west and north Norfolk coast
- Broadland rivers (Tud, Tas, Wensum, Waveney, Yare, Bure)
- The rest of the rivers in Norfolk flow east through the city of Norwich, Waveney, Yare, Bure, Ant and Thurne, into the complex tidal Norfolk Broads system and exit into the sea at Great Yarmouth.

Specific details of areas at risk are detailed in the Borough / City / District Tactical Flood Plans in Part Two, and the EA Local Flood Warning Plan.

Surface Water (Pluvial) Flooding

Surface water flooding usually occurs quickly, without warning and is hard to predict. It occurs when natural and man-made drainage systems have insufficient capacity to deal with the volume of rainfall. The critical factors for surface water flooding are the volume of rainfall, where it falls and its intensity. In urban areas sudden and intense rainfall cannot drain away as quickly as it can in rural areas.

Accurate predictions are very difficult for example thunderstorms can cause flooding in one location whilst others only a short distance away are unaffected. For this reason the focus must be on the response element, but the local response should be recorded and shared, where multi agencies are responding.

Responders should be aware that because this can be a localised event other organisations may not be aware of the situation. The activation chart on page 7 should be followed. This shows that where there are reports of property flooding, agencies should consider the activation of a tactical coordinating group to deal with the response.

Work is ongoing to mitigate the effects of surface water flooding. Significant surface water flood events should be responded to in a similar manner, if the risk of flooding to properties is elevated.

Groundwater Flooding

Groundwater flooding occurs when the level of water underground (the 'water table') rises and water emerges above the natural surface. It generally happens in low-lying areas, particularly those which sit above layers of permeable rock such as chalk.

In some parts of Norfolk due to underlying geology, very high ground water levels can see ephemeral springs develop or ground water levels to be such that basement cellars can occasionally be inundated.

As work under the Flood and Water Management Act 2010 (see section 4) matures identified areas of risk can be added to Borough/City/District plans in Part Two.

The Broads

The Broads form a complex system of waterways in east Norfolk comprising the tidal rivers Waveney, Yare, Bure, Ant and Thurne which can only drain out into the North Sea at Great Yarmouth. The tidal reaches of rivers in the Broads are particularly susceptible to tidal surges especially when high water affects the ability of fresh water to drain to the sea, or salt water is forced deeper into fluvial systems.

The Broads are also vulnerable to flooding from any of the other events listed above.

Coastal Erosion

No single agency is currently responsible for issuing warnings of possible coastal erosion. The likelihood of erosion must therefore be judged based on a combination of forecast conditions.

A tidal surge accompanied by severe winds may lead to rapid erosion of dunes, shingle beaches and cliffs around the Norfolk coast. The extent of erosion and the impact on coastal dwellings will depend upon a combination of factors which include:

- The magnitude of the tidal surge
- The timing of the surge in relation to the high tide levels around the coast
- The direction and strength of the wind which influences the impact of wave action

Hence, a strong north easterly or easterly wind combined with a tidal surge coinciding with a high tide on the east coast of Norfolk as described in previous sections would pose a threat of erosion to the exposed, unprotected soft dunes of the east coast.

Therefore responders should monitor include Met Office weather forecasts & EA Flood Warnings for the relevant coastal Flood Warning Areas.

If the monitoring of forecasts and conditions indicate the likelihood of coastal erosion in locations posing a threat to life then appropriate steps should be taken to warn residents, farmers and visitors. If necessary, evacuation of homes and the relocation of vehicles should be encouraged as for a flood response. Continuous monitoring of the situation during critical high tide periods is recommended with the deployment of emergency services personnel to assist if required.

Reservoirs

There is also a threat from reservoirs in circumstances where the failure of a dam or overtopping could cause effects similar to those from other types of flooding. Norfolk County Council and the Environment Agency have details of the locations of these reservoirs; these will be made available to other responders if required. Currently the reservoirs are being re-classified on a risk basis into “high risk” and “not high risk” reservoirs. When this process is complete, a generic off-site plan will be produced and a specific off site plan for each high risk reservoir.

Forecasting

The Flood Advisory Service (FAS) is provided by the Flood Forecasting Centre (FFC) which is a joint centre run by the EA and the Meteorological Office. It provides early and coordinated information on a potential flood event.

Flood Guidance Statement

- The flood guidance service provides information for Category 1 and 2 Responders to help with planning decisions. It is issued daily at 10:30.
- It presents an overview of flood risk across England and Wales for 5 days.
- It gives an assessment of the probability and impact of flooding based on meteorological information and an understanding of the situation across river catchments and the coast.
- If the Flood Guidance Statement is coloured amber or red the Environment Agency would initiate a teleconference with partners known as the Flood Advisory Service.
- If the Flood Guidance Statement is coloured yellow the Environment Agency may send an email to partners containing more information on local actions that may be taken and/or clarification of the potential situation.
- The teleconference will involve contacts from our Category 1 and 2 partners and will be run by Local Resilience Forum boundaries, not Environment Agency Areas.

- If available the Met Office Public Weather Service Advisor will attend the partner teleconference. If unavailable an update will be provided via the Environment Agency.
- Notification of a Flood Advisory Service teleconference, agenda and minutes will be sent to Local Resilience Forum contacts via pre-arranged email addresses.

Environment Agency Flood Warning Messages

The Environment Agency will issue flood warning messages at the appropriate time in order to give professional partners and the public as much notice as practicable.

The messages are categorised according to the threat, in brief they are:-

Flood Alert - Flooding is possible. Be prepared

Flood Warning - Flooding is expected. Immediate action required

Severe Flood Warning - Severe flooding. Danger to life

Annex C provides full details of these messages.

The activation flow chart on page 7 shows the likely response at the different warning levels.

Command and Control

Wherever practicable command and control arrangements will follow those laid down in the Norfolk Emergency Response Guidance.

Strategic Coordinating Group (SCG)

The threat of severe flooding will require a multi-agency response. A Strategic Coordinating Group (SCG) comprising commanders and executive officers from appropriate organisations will be formed.

In order to effectively carry out this function a Strategic Coordination Centre (SCC) will be established. Unless agreed differently the location for this will be the Police Operations and Communications Centre (OCC) at Wymondham.

Response Coordinating Group (ResCG)

Where the threat is a wide area coastal threat the Department for Communities and Local Government – Resilience and Emergencies Division (DCLG-RED) may convene a multi-SCG Response Coordinating Group with those SCGs in the areas potentially affected. This will enable an effective flow of communication between local and national levels to ensure the national input is coordinated with the local effort.

The NRF will be represented by the SCG chair or nominee.

Tactical Coordinating Groups (TCG)

Where an SCG is set up it is probable that Tactical Coordinating Groups will be established in the areas involved. Norfolk Constabulary currently has TCG facilities at King's Lynn, North Walsham, Great Yarmouth and Norwich Police Stations, from where they could co-ordinate the tactical management and response to an emergency. Other locations could be considered depending on the needs of the incident and the facilities required (for example Local Authority facilities).

The police will advise other organisations of the locations of the command and control locations.

Roles and Responsibilities

During the response to a flood event, organisations have specific roles and responsibilities to carry out. These are fully detailed within the Norfolk Resilience Forum Tactical Flood Plan Part One.

Situation Report

It is essential that all responding organisations have a shared situational awareness so that decisions can be made based on common information / intelligence. An information / intelligence cell will be set up and a situation report prepared and circulated to all responders.

Evacuation

Overview

The evacuation of people from areas at risk is a primary concern and will be considered by the Tactical Coordinating Group(s). Any evacuation must take place in a timely manner in order to significantly reduce the number of people who may require rescue. The underlying strategy must be to evacuate all those at risk, in order to avoid the need for rescue, and consequent additional risk to responders.

Experience has shown that where necessary Tactical Coordinating Group(s) should set up an 'Evacuation Cell' to fully address this issue, involving all agencies that have a role to play.

The Norfolk Emergency Response Guidance provides a comprehensive overview of the processes that are required when carrying out an evacuation. The Evacuation Cell should make reference to that document when formulating their actions.

The media will have a key role to play during any evacuation, close liaison with the media cell – if established – will be vital.

Precautionary Evacuation Notice (PEN)

There are a large number of caravans and properties that lie between the flood embankments on the North West Norfolk coastline between Snettisham and Hunstanton. If evacuation of this area is required then at least 8 - 10 hours is required to complete the task safely.

The Environment Agency, Borough Council of King's Lynn and West Norfolk and the Norfolk Constabulary have put in place an improved flood warning evacuation procedure called the Precautionary Evacuation Notice (PEN). The PEN is issued to registered properties within this area in the form of a flood warning and signage is displayed to encourage residents and visitors evacuate safely and in a timely manner. The PEN will be issued between 8 and 24 hours before the high tide to ensure the evacuation occurs during daylight hours. This will be managed locally by a TCG although strategic commanders should be aware of the process.

Holding Areas

Dependant on the scale of the emergency, it may be necessary for the SCG and/or TCG(s) to immediately establish Holding Areas to which resources can be marshalled ready for deployment. The use of these locations will be dictated by the extent of the flood risk.

They will be particularly required if Fire and Rescue Service national assets are deployed to Norfolk during the preparatory stages of a response. The holding areas or an alternative location designated by Fire and Rescue Service commanders can be used to marshal these resources.

A full list of pre-identified Holding Areas, together with information on their management is in Annex D. The contact details for these sites are contained in the NRF Tactical Flood Plan part two.

In addition, the Royal Norfolk Showground, Norwich has been identified as a location suitable for use as a Multi-Agency Strategic Holding Area (MASHA). The decision to establish a MASHA would be made at SCG level. Utilisation of the Showground site for this purpose is detailed within a Memorandum of Understanding.

Please also note that in the event of a large scale incident National HART Mutual Aid may be requested by East of England Ambulance Service NHS Trust – these assets may utilise the agreed MASHA.

Water Rescue and Specialist Assets

Flood Rescue

The lead agency for flood rescue is the Fire and Rescue Service. They will work to the Flood Rescue Concept of Operations which details specialist resources, deployment and command and control of these assets. The response model is modular and can be scaled up or down as appropriate to the situation. These assets will integrate with the command and control structure that will already be in place.

Ambulance Service HART – Specialist assets are available from the Ambulance Service to work alongside Fire and Rescue, RNLI and Military colleagues during a water based incident. Team members are Swift Water Rescue Technician trained but would ideally work within a multi-agency team to provide a clinical mitigation during the rescue phase.

National Assets

If it is anticipated by the SCG that assets such as high volume pumps or water rescue are likely to be required a request will be made by Norfolk Fire and Rescue Service via their Control Room. From there it will go to the Fire and Rescue Service National Coordination Centre (FRSNCC) which will coordinate the national response and deploy requested assets once a decision to release them has been made.

Military Assistance

Military Aid to the Civil Authority (MACA) can be sought to support the civil authorities when they have an urgent need for help to deal with an emergency arising from a natural disaster or a major incident. However, assistance is provided on an 'as available' basis and the Armed Forces cannot make a commitment that guarantees assistance to meet specific emergencies.

Requests for Military support made through the Joint Regional Liaison Officer East (JRLO E) should always be 'effects-based'. This means that the request should outline what the current problem is and the resulting outcome that is being sought. Full information regarding Military Assistance can be found in the Norfolk Emergency Response Guidance.

Recovery

In line with the response to any major crisis, the SCG will address the issue of recovery, and where appropriate convene a Recovery Working Group (RWG). The intention being to consider, at an early stage, management of recovery related issues, such as resourcing and rebuilding affected communities and infrastructure in the aftermath of a major flooding event.

The procedure will follow local and national guidelines, details of which can be found in the NRF Recovery Guidance document, which is supplemented by a summary of issues within the NERG.

Infrastructure / Utilities

Norfolk's critical infrastructure comprises a range of sectors, including water, energy, transport, communications, health, food and financial services. It is imperative that these areas receive attention and appropriate action; the formation of an Infrastructure Cell at Strategic and / or Tactical level should be considered, with the caveat that Category 2 responders may not be in a position to provide staff to attend them.

In addition to any local arrangements, the Utilities may decide to set up the Multi Agency Support Group (East) (MASG (E)). This allows organisations that have responsibility for delivering goods, services, transport or logistics on which the public rely and which could be threatened or disrupted by a civil emergency or major incident across multiple counties to establish and maintain situational awareness and co-ordinate their response.

Further information can be found in the Multi-Agency Support Group (East) Framework of Operations document.

Communications – Warning and Informing

The provision of accurate and timely information is a crucial element of the response to a flooding event. Strategic / Tactical Commanders will decide on the most appropriate way to deal with this element. A media response structure, including a media cell at the Strategic Coordinating Group (and Tactical Coordinating Groups as necessary), will normally be set up. This will ensure consistency of messages that are sent out.

It is highly likely that the risk of a wide area coastal flood event will become a major media story on both traditional and social media. An effective, coordinated public information and media response is essential, where necessary reflecting national messages and the Multi Agency Major Incident Communications Plan should be activated.

The Norfolk Emergency Response Guidance provides guidance regarding general public advice at times of flooding. This should be used in conjunction with the Multi Agency Major Incident Communications Plan which provides guidance with regard to this issue and also templates for potential public information messages.

Community Impact

A major flooding event could have a significant impact on many thousands of people in the County. Many will be more vulnerable than others and it must also be recognised that in some of the flood risk areas the population is multi-cultural, and English is not their first language.

It is important therefore that the needs of all elements of the community are considered when dealing with these events. If necessary the SCG should establish a separate cell, staffed by appropriate personnel, and tasked with the provision of advice and guidance. A key output from this group would be a Community Impact Assessment. This assessment would be fed back into the SCG to form part of the Situation Report.

At the operational and tactical levels, a key element of the response is the early identification of vulnerable people or premises.

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This information is often contained within other Category 1 and 2 responders' plans and Community Emergency Plans, and supported by local knowledge. Norfolk County Council has access to information relating care and residential homes, and other vulnerable people in the community. This information may be of use in supporting work to identify those people at additional risk.

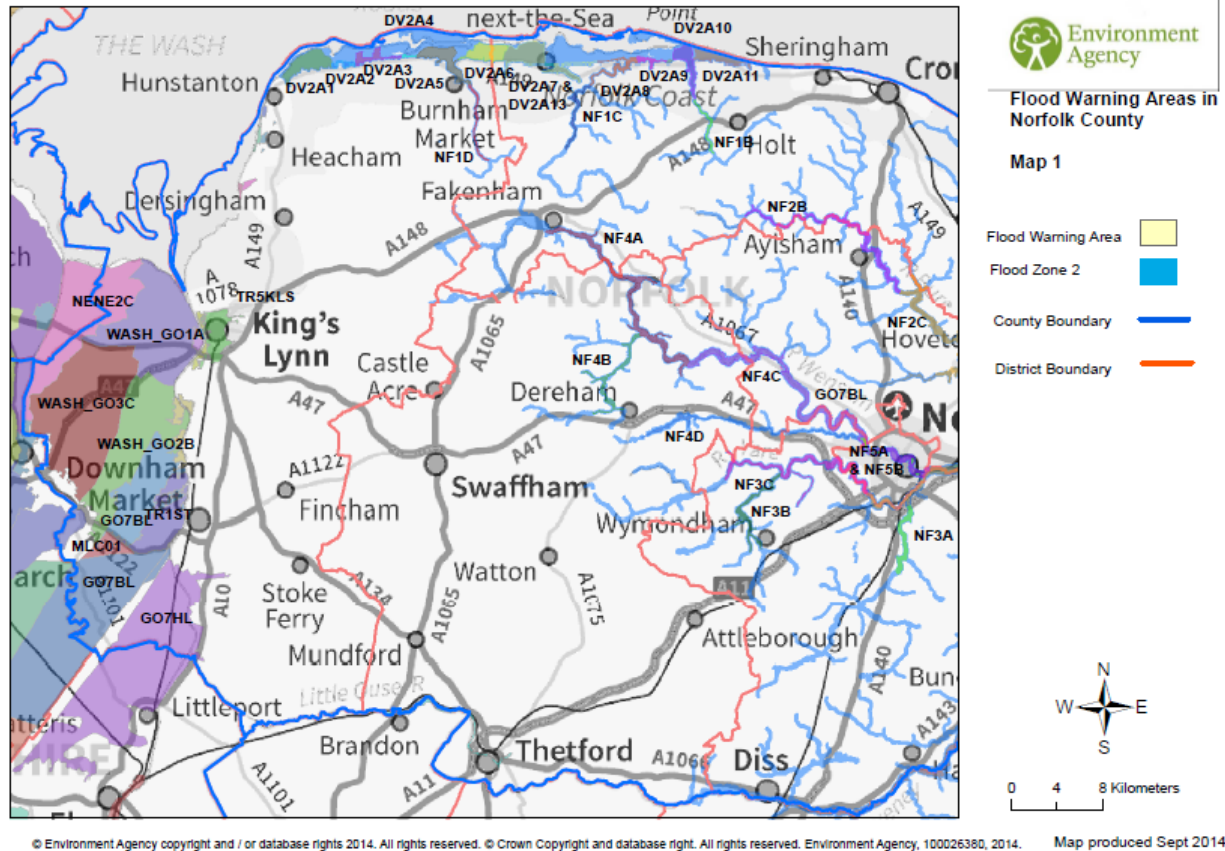
The NERG document also provides generic advice regarding meeting the needs of those affected. (Section 6) Annex A.

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Annex A – Flood Warning Areas for Norfolk

Please note

The maps in the Environment Agency Local Flood Warning Plan for Norfolk contain much more detail; however it does give an overview of the extent of areas in Norfolk that could be affected.



Annex B – Wide Area Coastal Flood Event

Overview

This type of event is classified as H19 in the National and Local Risk Registers and is described as :-

Major coastal & Tidal flooding affecting parts of more than two UK regions.

The impacts of such an event would be greatest on the east coast although other areas of the UK could be affected. It is considered to be the greatest natural hazard faced by the UK.

The most recent closest example as the Dec 5/6th 2013 tidal surge could be argued as being H19 in scale as the impacts covered more than 2 UK regions but it did not reach the impact levels described in the risk assessment.

Causes

It will be triggered by a surge induced by a cyclonic Atlantic depression tracking into the North Sea, strong winds and low atmospheric pressure. The surge is increased as it passes shallow areas in the North Sea. The scale and risk of the flooding is increased if the surge coincides with High natural tides and where extremely strong on-shore winds cause large waves. The combination of these can cause overtopping or breaching of flood defences.

Many coastal regions & tidal reaches of rivers will be affected by overtopping or failure (breach) of coastal and/or estuary defences, plus consequential “back up” of drainage. Inundation from breaches in defences would be rapid and dynamic with minimal warning & no time to evacuate. Inundation from overtopping of defences would allow as little as 4 hours to evacuate. Widespread structural damage would be caused.

Response

The response to this threat is likely to require action across a number of local resilience fora, Department for Communities and Local Government (DCLG) Resilience and Emergencies Division (DCLG RED) and Cabinet Office Briefing Room (COBR). A document, "East Coast Flood Emergency Framework" and “Government Coastal Flooding Group Response and Recovery Guide – July 2013” has been produced to outline the details, potential consequences and response to this threat.

Key Strategies

The following three key strategies will need to be implemented in response to the threat of a wide area coastal flood event:

Pre-deployment of national assets

- Coordination of national special assets
- Coordination of mutual aid

Remove people from danger

- Preventative / prioritised sheltering or evacuation
- Flood rescue or assistance in situ

Protect Infrastructure

- Critical National infrastructure
- Critical Local Infrastructure
- Essential Services

Timelines

It is not likely that a wide area coastal flood event will occur without warning. In all probability there will be limited notice with up to 5 days of weather and three days of flood forecasts. Accuracy (what will happen, where and when) and certainty (confidence that the forecast will be accurate) will increase nearer the event.




This period of notice will enable the appropriate level of planning, for example, establishment of command and control processes, evacuation, pre-deployment of rescue assets and public information messages.

The deployment of mutual aid and national resources is factored into this timeline. It should be recognised that each LRF area has its own specific requirements. For instance, Lincolnshire has to take action, particularly in respect of evacuation of certain areas, sometime before Norfolk has to due to the terrain / topography of the areas at risk.

This point is important when considering our own actions and part of any media message must emphasise that we are taking the action that is appropriate for our own area.

It also applies when decisions regarding the deployment of national assets are taken. These are not based on "first come first served" but following an evaluation of the potential needs of each area.

Annex C – Flood Warning Service Codes

 <p>FLOOD ALERT FLOODING IS POSSIBLE. BE PREPARED.</p>	<p>The Flood Alert stage is to warn people of the possibility of flooding and encourage them to be alert, stay vigilant and make early preparations for flooding.</p>
 <p>FLOOD WARNING FLOODING IS EXPECTED. IMMEDIATE ACTION REQUIRED.</p>	<p>The Flood Warning stage is to warn people of expected flooding and encourage them to take action to protect themselves and their property. Customers should only receive one Flood Warning telling them to take action.</p>
 <p>SEVERE FLOOD WARNING SEVERE FLOODING. DANGER TO LIFE.</p>	<p>The Severe Flood Warning stage is to warn people of a significant risk to life, or significant disruption to communities, and encourage them to take action to protect themselves and follow the advice of the emergency services.</p> <p>Significant risk to life means that death or serious injury is a likely risk for people in the area, rather than just a possible risk, as is always present with flooding.</p> <p>Significant disruption to communities means that people maybe without essential services which could result in harm to their health, or people are put at risk by the extent of flooding and the inability of emergency services and the authorities to cope with it. Significant disruption to communities will often be a result of flooding being widespread.</p>

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Appendices

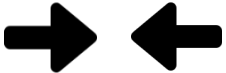
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Abbreviations

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