

IPSWICH BOROUGH COUNCIL

Tidal and Fresh Water Flood Plan

**River Orwell and River Gipping
Waterfront Areas**

Areas subject to Flash Flooding



IPSWICH

**BOROUGH
COUNCIL**

(Draft subject to exercise test)

**Emergency Planning
Ipswich Borough Council
Grafton House
Ipswich**

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IPSWICH BOROUGH COUNCIL TIDAL AND FRESH WATER FLOOD PLAN

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APPENDICES

(view electronically GIS on NAS2 – emergency planning)

Or hardcopy as below

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1.0 INTRODUCTION

- 1.1 The Ipswich Flood Plan provides specific information and guidance to those involved in responding to a major flooding event within the geographical boundary of Ipswich Borough Council.
- 1.2 The plan should be used in conjunction with Suffolk Resilience Forum (SRF) Strategic Guidance Plans. Both the Suffolk Flood Plan, a multi-agency plan produced by the Environment Agency and the Strategic Guide to Evacuation in Suffolk produced by Suffolk Constabulary are key reference documents that outline multi-agency working arrangements relevant to this plan. These documents are available at (<http://www.suffolkresilience.com>)
- 1.3 The Ipswich Flood Plan focuses on roles and responsibilities assigned to Ipswich Borough Council within the Strategic Guidance Plans and the arrangements necessary for providing assistance to the community and partner agencies in times of flooding.
- 1.4 As a specific hazard plan this document should be read in conjunction with the core generic plan for Ipswich Borough Council (Major Emergency Response Plan (MERP)), the MERP should continue to be used for the purposes of mobilising staff and resources in response to a flood emergency.
- 1.1 In the majority of flooding events a “two phase” response approach will be adopted by all partner agencies. The procedure involves all Category 1 responders sharing information prior to the declaration of a major incident. Following a declaration, a “3 layer” multi-agency emergency management procedure using a Gold, Silver and Bronze command structure will be utilised which will be lead by Suffolk Gold at Suffolk Police HQ.

2.0 AIM

- 1.1 The aim of this plan is to set out the arrangements necessary to facilitate an effective and co-ordinated response by Ipswich Borough Council to a major flooding event occurring within the local authority geographical boundary of Ipswich.
- 1.2 Objectives will generally align themselves with those laid out within the Suffolk Flood Plan in so far as they relate to the roles and responsibilities assigned to Borough and District Councils.

3.0 MAJOR FLOODING IN IPSWICH

- 3.1 Type and cause of Major Flooding in Ipswich

Severe Tidal Flooding (River Orwell)

- Overtopping of the River Orwell defences following tidal surges or major failure of river defences

Severe Fluvial or Fresh Water Flooding (River Gipping)

- Overtopping of the River Gipping defences following heavy rain in the Gipping Valley including Ipswich or major failure of river defences

Severe Flash flooding in specific areas of Ipswich outside the floodplain

- Flooding due to sewers or natural water courses becoming blocked or overwhelmed in all areas of the town (both inside and outside the flood plain) following heavy and prolonged rain.

4.0 ASSESSMENT OF RISK

4.1 Suffolk Risk Matrix

Within the geographical area of Ipswich the Suffolk Resilience Forum “Risk Matrix” identifies tidal flooding as high risk, and fluvial or fresh water flooding as medium risk.

4.2 Outline of Risk Area

The waterfront areas identified as “high risk” include the tidal River Orwell floodplain from Cliff Quay and Bourne Bridge in the south to London / Yarmouth Road sluice in the west. The wet dock area which is protected by lock gates / floodgate is also included in the “high risk” tidal category.

4.3 Freshwater Fluvial flooding identified as “medium risk” includes the River Gipping floodplain from the Norwich Railway Line in the west to the West End Road sluice in close proximity to London Road.

4.4 Pluvial flooding (flash flooding) occurs at a number of locations away from the floodplain area because of sewer surcharging or excessive “water run off” following torrential rain. Because of the potential risk to large numbers of homes flash flooding is also regarded as a “medium” risk category event.

1.0 FLOOD WARNING ARRANGEMENTS FOR IPSWICH

2.1 Flood warnings received by the Borough Council originate from the Environment Agency and Met Office.

2.2 Environment Agency warnings identify the type of main river flooding likely to effect Ipswich (i.e. tidal flooding or freshwater). Tidal River Warnings relating to the River Orwell are provided within warning code DV4A (Shingle Street to Clacton, which includes Felixstowe and Ipswich). Warning code SF4FG covers the River Gipping upstream of London Road Bridge Ipswich and is concerned with fresh water flooding. Environment Agency Warnings are normally provided with longer lead times of up to 12 hours.

2.3 Tidal flood warnings will normally be accompanied by a predicted “flood level” for a given tidal surge, and are relevant to all areas of the River Orwell. Where

river defences are installed (as is the case at Ipswich) the defences will protect the low lying areas behind the defences to the levels stated in 14.4 unless catastrophic failure of defences occur or mechanical breakdown / human error results in the non-closure of flood barriers or flap valves.

- 2.4 Met. Office heavy rain warnings with the potential to produce “flash flooding” are provided by the National Severe Weather Warning Service. These warnings generally have short lead times of around 1 to 2 hours and are less specific in terms of location, UK Counties normally being used.
- 5.5 Little specific information will be provided within each warning received concerning the severity of major flooding expected in a particular location of Ipswich. This is primarily due to the complexity of existing river defences and drainage systems designed to deal with less severe but more regular flooding events.

Environment Agency Warnings to Local Authorities

- 5.6 Warnings concerning tidal and freshwater (fluvial) river flooding originate from the Environment Agency and are received directly by the Emergency Service Centre at Grafton House and also at key officers homes where this facility is requested.
- 5.7 The Flood Warnings Direct (FWD) warnings system is now provided in various formats including e-mail, land line, text messaging and fax and therefore offers a high degree of resilience to the warning service provided.

Environment Agency Warnings to the Public

- 1.1 The FWD system is also offered as a free public service and has now replaced the older Automated Voice Messaging (AVC). It is used to contact occupiers of all properties who have requested the service and are considered to be at risk from flooding (properties adjacent to the Rivers Orwell and Gipping within Ipswich are included in this scheme).
- 5.9 Media – information is also forwarded by the Environment Agency to local radio, local and national television and appropriate weather centres for the specific purpose of warning the public of flooding dangers.
- 5.10 Floodline (0845 988 1188) – this facility permits members of the public to telephone the Environment Agency and obtain the latest flooding information for their area. Where appropriate householders and businesses are encouraged to contact “floodline” for more specific information after being made aware of general flooding dangers by the media or other source.

Suffolk Constabulary

- 5.11 Although the Environment Agency are now responsible for the provision of flood warnings to the public the core police duties of protecting life and property will be maintained. The police will be the lead agency in respect of evacuation and

establish a Flood Control Room at Suffolk Police Headquarters if necessary (see Suffolk Flood Plan).

6.0 FLOOD WARNING CODE SYSTEM

6.1 The Environment Agency operates a four stage system that includes an “all clear” stage, this is provided when any warning is removed.

The same flood warning codes are used in all circumstances:

- **Flood Watch:** Flooding of low lying land and roads is expected. Be aware, be prepared, watch out!
- **Flood Warning:** Flooding of homes and businesses is expected. Act now!
- **Severe Flood Warning:** Severe flooding is expected. There is extreme danger to life and property. Act now!
- **All Clear:** Flood Watches or Warnings are no longer in force for this area

6.2 Further information is available in the Suffolk Flood Plan

1.0 BOROUGH INITIAL ASSESSMENT CHECKLIST

1.1 Severe main river flooding (tidal and fresh water)

- Make assessment of “Flood Warnings” and “Severe Flood Warnings” received from the Environment Agency over the last 24 hrs (section 5)
- Alert Chief Executive or Director if severe flooding has occurred or is likely to occur (section 8)
- Instruct IBC officer to make contact with Suffolk Police and establish whether a Suffolk Gold (Suffolk Strategic Co-ordinating Group (SCG)) has been formed if this task has not already been undertaken by Community Safety Staff
- Consider whether an Emergency Management Team needs to be established and identify an appropriate location to co-ordinate action (section 8)
- Alert senior management and key managers who would form the Emergency Management Team (section 8)
- Refer to IBC intranet site and detail contained within the Strategic Flood Risk Assessment (SFRA)

7.2 Severe fresh water flooding (torrential rain / storm)

- Make assessment of Met Office “Flash Warnings” received
- Alert Chief Executive or Director (section 8)
- Alert senior management and key managers who would form the Emergency Management Team (section 8)

- Refer to IBC intranet site and detail contained within the Strategic Flood Risk Assessment (SFRA)

2.0 ACTIVATION (ALERT AND STANDBY)

8.1 Activation procedures laid out in the **Major Emergency Response Plan (MERP)** are appropriate for responding to major flooding.

8.2 The MERP also contains contact details for Service Area activation relating to major incidents

1.1 Whilst Evacuation is the responsibility of the Police and Fire Service, the emergency services will expect each Local Authority in whose area major flooding has occurred to provide appropriate core service support.

8.4 Managers overseeing the core services provided by the Borough Council should either be alerted and placed on standby or asked to instigate appropriate procedures.

8.5 The initial requirement for key core service activation will include:

- Establishment of an Emergency Management Team (Chief Executive or Director)
- Provision of Engineering advice in respect of flood risk (Drainage Engineering)
- Transportation from evacuation point to a place of shelter (Ipswich Buses)
- Provision of staff to set up and run Rest Centres (Housing and Leisure)
- Provision of vehicles plant and equipment to assist the community and emergency services (StreetCare)
- Advice relating to buildings and structures (Building Control)
- Provision of advice concerning Pollution (Environmental Protection)
- Consideration of the need to alert other Service Managers who may need to instigate Business Continuity Planning arrangements.

1.1 MANAGEMENT, CONTROL AND CO-ORDINATION

1.2 At an early stage following the alerting of Senior Management it will be necessary to assess the suitability of key buildings for the key tasks associated with a major flood event. The current planned location for the Emergency Operating Centre (EOC) is in Grafton House (meeting rooms 2c and 2d) this location will require early consideration as it could be flooded, the Flood Evacuation Plan for the building may assist with this process. Details of back-up EOC's at the Town Hall or Gipping House are contained within the Major Emergency response Plan should these be required.

1.3 The establishment of an EOC will provide a focus for IBC emergency management information gathering and for communication with partner agencies, the media, the community, and local businesses.

- 1.4 To enhance the effectiveness of any response to a major flood emergency it is likely that further more specific detailed information will need to be obtained for each particular event.
- 1.5 The likelihood of major “river related” flooding can normally be predicted well in advance of any occurrence, however failure of river defences, sewer surcharging or failure of mechanical flood control equipment will all impact greatly on the effects of flooding and it should be anticipated that there will be a need for local information to be efficiently collated at an early stage.
- 1.6 More direct forms of information gathering may also prove worthwhile such as the use of direct observation, CCTV monitoring or contact with the Orwell Navigation Service at the Port of Ipswich – (see MERP)

Initial Management Response

7. Consider forming an IBC Emergency Management Team
8. Consider whether there is a need to open an Emergency Operations Room (EOC) as a focus for IBC - Control, Co-ordination and Communication activities (see MERP)
9. Strategically assess the likely implications of Flood Warnings and if relevant Met Office Warnings received by the Emergency Services Centre (CCTV)
10. Alert Key Officers as necessary (see MERP)
11. Make contact with Suffolk Police and ascertain whether Suffolk Gold has been established – if not make contact with Ipswich Police Station to ascertain their involvement and whether there is a requirement for IBC assistance
12. Monitor situation within Ipswich and liaise with partner organisations
13. Ascertain whether there is a requirement for a senior manager representing Ipswich Borough Council to be in attendance at Suffolk Gold / Suffolk Strategic Co-ordinating Group at Martlesham Police H.Q.
14. Consider sending IBC liaison officers to designated safe locations in order to obtain accurate information concerning a developing flood situation (see appendix 7)
15. In conjunction with Suffolk Gold formulate public advice and guidance and make available via the media, help-lines and IBC web-site etc. (see also appendix 1)

Consideration should also be given to the following:

- Obtaining access to the computerised mapping information held by Main Drainage (Transport and Engineering)
- Alerting Heads of Service where BCM plans indicate disruption to core business activity is likely to result from the anticipated flooding
- Alerting Ipswich Buses to the risk of flooding
- Assessing needs associated with temporary flood defence measures and the provision of sandbags to appropriate locations following liaison with partner organisations
- Identification of vulnerable people living in property adjacent to the river (see appendix 9)

- Assessment of needs associated with Flood Evacuation Plans produced by developers for larger waterfront developments

1.7 Under the Civil Contingencies Act 2004 all Category 1 Responders are required to maintain their ability to deliver core business functions during times of emergency. In addition to the core functions identified within Business Continuity Plans the following flood related Roles and Responsibilities have been assigned to Ipswich Borough Council within the Suffolk Flood Plan:

- Community Leadership
- Emergency Transport
- Specialist personnel and advice – flood defence and buildings
- Continued care for people in sheltered housing
- Provision of Rest Centre Management Teams
- Provision of emergency bedding, food and clothes
- Highways support – road and signs etc.
- Provision of an Emergency Co-ordination Centre
- Briefing of Ipswich Borough Councillors
- Deployment of sandbags to vulnerable areas
- Identification of Liaison Officers for the purposes of liaising with other agencies and providing “on-site” information
- Lead recovery process within Ipswich
- Co-ordinate voluntary organisation activities

Appendices 2-6 identify specific risks associated with compartments of the town identified within the floodplain

1.0 RESPONSE TO A MAJOR FLOODING INCIDENT

10.1 Ground levels behind flood defences have generally remained unchanged since the occurrence of previous historical flooding events, river flooding is therefore likely to eventually reach similar areas of the town that have been flooded during such events. There is however a clear risk that because of high river levels being initially held back by river defences, a defence failure could result in significantly higher flow rates and quantities of the floodwater to that experienced in the past. Computer modelling techniques are becoming increasingly available that will produce more detailed information concerning major flooding events in specific areas of the town and the dangers associated with them (refer to Main Drainage).

10.2 There are approximately six miles of built up river frontage within the Ipswich Borough Boundary that could be affected by major tidal or freshwater flooding. These primarily relate to the Rivers Orwell and Gipping and other locations including the wet dock and minor water courses.

1.1 Although failure of flood defences could in extreme cases result in flooding via the wet dock or the River Gipping in the west of the town it is likely that a minimum flood defence level of 4.00m (maODN) or 6.00m (CD Ipswich) will be relevant to most areas adjacent to the river.

- 1.2 Due to varying degrees of deterioration in river defences it is not possible to identify in advance the exact locations likely to be most effected by major flooding. For example, failure of a particular section of defence may result in fast flowing water that could be more hazardous than would be the case during an over-topping event.
- 1.3 It will therefore be necessary to liaise with the Environment Agency and Police on this issue in order to target more specifically particular areas where support may be required. Such liaison is unlikely to provide a complete picture particularly in the early stages of a major flooding event and is likely to require supplementing with information provided by IBC staff and members of the community.

11.0 TIDAL (COASTAL) FLOOD WARNINGS (RIVER ORWELL)

- 1.1 Storm Tide Warnings provided by the Environment Agency are produced from information received from Met Office Storm Tide Forecasting Service (STFS). In Ipswich these warnings are relevant to tidal sections of the River Orwell positioned between the Orwell Bridge and London Road /Yarmouth Road bridges and the Wet Dock area.
- 1.2 With the exception of a Preliminary Situation Report, which may be issued up to 12 hours before the expected highest water, all Storm Tide Warnings are produced in the Flood Warning Code format.
- 1.3 Both Warnings and Situation Reports contain the following information:

Reference and Coastal Division (Felixstowe and Division 4 relate to Ipswich)
 Date
 Predicted High water – *(may vary from tide table)*
 Estimated Flood Level (maODN)
 Surge Residual (height above prediction)
 Wind Direction (from)
 Wind Force

Further local information

- 1.4 Storm Tide Warnings issued by the Environment Agency that relate to Ipswich contain national data predictions given in metres above Ordnance Datum Newlyn (maODN) for the Division 4 reference port of Felixstowe.
- 1.5 Where required a comparison height with Chart Datum Ipswich (as quoted in Port of Ipswich tide tables) should be obtained by adding the Tide Table predictions (taken from EA warnings or tide tables) to the Height (in Metres) above prediction (Surge Residual) supplied with EA warnings. To calculate in the reverse direction i.e. Chart Datum Ipswich to AODN a deduction of 2.07m should be made.

Example

4.3m (from Port of Ipswich tide tables)

+ 1.3m (from EA fax)
= 5.6m – 2.07m = 3.53m AODN (eg this figure indicates a danger level as it is above 3.30m AODN).

12.0 SUFFOLK FRESH WATER RIVERS WARNINGS (RIVER GIPPING)

- 1.1 Fresh Water Fluvial Flood Warnings are produced by the Environment Agency following detailed monitoring of rain gauges, catchment conditions, river flows / levels and Met. Office forecasts, and are also produced in the updated Flood Warning Code format.
- 1.2 The River Gipping and Deben are identified by seven geographical area codes which are identified individually dependant upon risk of flooding. Those relevant to the River Gipping are SF4D to SF4G.
- 1.3 As the rain catchment area for the River Gipping is primarily upstream of Ipswich the majority of information used to produce warnings will not originate from within the Ipswich boundary.
- 1.4 The primary flooding concern associated with the River Gipping in Ipswich will be the ability of the river to flow freely into the River Orwell. Should blockages or mechanical malfunctions of weirs, sluices, or barriers occur or an exceptionally high tide in the River Orwell restrict the passage of water then flooding adjacent to the River Gipping may occur.
- 1.5 A map of the areas of Ipswich likely to be effected by River Gipping flooding can be found in Appendix 2-6 and EA website and <http://maps.environment-agency.gov.uk/wiyby/mapController>,

1.0 FLOODING IN AREAS OF IPSWICH AWAY FROM THE MAIN RIVER (Pluvial Flooding)

- 1.1 The Met. Office National Severe Weather Warning Service provides weather warnings to appropriate areas of the country when extreme weather conditions are expected.
- 1.2 Heavy and prolonged periods of rain likely to cause localised flooding are identified within Met. Office “Early Warning” and “Flash Warning” faxes received by the Emergency Services Centre.
- 1.3 Localised flooding will be dependent upon a number of factors, these may include one or more of the following:
 - Short periods of extremely heavy rain
 - Prolonged periods of heavy rain
 - Blocked Gullies (leaves and debris)
 - Blocked or damaged freshwater drains
 - Buildings and Highways changes

- 13.4 A map generated from previous drainage involvement in fresh water management activities is shown on IBC intranet site and (appendix 8). The map is designed to assist those managing a response to localised flooding with regard to mobilising available resources to best effect.

14.0 ASSESSMENT OF FLOOD EVENT RISK

- 1.1 Due to the infrequent and individual nature of each flood event it is likely that individual assessment of a particular flood event will need to be made.
- 1.2 Factors that will influence the degree of flood water likely to be present at a given location will depend upon tidal heights, fresh water river flow, rainfall and the capability of the defence and drainage infrastructure to mitigate the effects of the potential flooding threat.

Main River - Flood defence levels

- 1.3 Updates to the report “Estuarial Standards of Protection for Ipswich” produced by the Environment Agency in June 2000 provides guidance on flood defence levels appropriate in 2007. Whilst the report indicates levels of protection as outlined in 14.4, two potential areas of weakness are now identified within the updated document together with a number of sections of defence wall with life expectancies well below the 200 year indicative standard of protection figure. All of the areas of potential weakness are identified “down stream” of Stoke Bridge including the wet dock area.
- 1.4 Current Flood Defence levels as supplied by the Environment Agency are as follows;

	Looking down stream -	Left Bank	Right Bank
▪ Cliff Quay to Wet Dock		4.40mAODN	4.07mAODN
▪ Wet Dock to Stoke Bridge (Containing section at risk of failure – New Cut East left bank)		4.25mAODN	4.40mAODN
▪ Stoke Bridge to Horseshoe Sluices		4.65mAODN	4.65mAODN
▪ Horseshoe Sluice to Yarmouth Line Rail Bridge		4.75mAODN	4.75mAODN
▪ Yarmouth Line to Norwich Line Rail Bridge		5.05mAODN	5.05mAODN
▪ Upstream of Norwich Line Rail Bridge		7.03mAODN	7.03mAODN

Tidal predictions of between 3.5mAODN and 4.0mAODN are therefore likely to represent a higher risk to areas behind flood defences downstream of Stoke Bridge including wet dock developments. Areas of the town above Stoke Bridge are better protected at 4.65mAODN, however the danger of flood water entering Grafton Way and Cardinal Park from the wet dock area should not be overlooked.

Main River - Residual life of river defences

- 1.5 A location and residual life expectancy map of river flood defences is shown in Appendix 9. The map uses a “colour coded” system to indicate the life expectancy of individual sections of river defence wall as at August 2002.
- 1.6 A colour coding system of river defence life expectancy is used in conjunction with a “time duration” scale. Due to the nature of the defences a number of life expectancy estimates are quoted for the Ipswich Flood Plain, colour codes are also used for undefended and longer term or unknown life expectancy sections.
- 1.7 A number of sections of river defences are quoted within the map as having a 0-10 year life expectancy and although small in terms of total river frontage these areas are likely to be the focus of attention in relation to possibly river defence failure during exceptionally tidal events.
- 1.8 Monitoring of these sections may well prove beneficial in terms of public information and traffic control measures subject to adequate Health and Safety assessment for any staff involved (Situation Reporting Points are also identified in appendix 9).

Main river - Flood Gates, Sluices and Flap Valves

- 1.9 Flood-gates, sluices and flap valves are present at various locations throughout the area covered by the Ipswich river defences. Sluices and flap valves are either self closing or operated remotely via telemetry systems, the “flood gate” used to protect the wet dock from high river levels is operated manually by the Port Authority on behalf of the Environment Agency who own and maintain the system.
- 1.10 Responsibility for the larger flap valves which are generally associated with drainage of water from road gulleys and emergency overflows from sewage systems are the responsibility of Anglian Water. Barriers and sluices together with a limited number of smaller flap valves are the responsibility of the Environment Agency.

Flash Flooding – All areas of town

- 1.11 Flash flooding is by far the most frequent flood related problem within Ipswich, it is often accompanied by concerns about flood water contaminated with foul sewage entering homes, past history of effected areas is well documented by Drainage Engineering.
- 1.12 Localised flash flooding resulting from torrential rain and thunderstorms is difficult to forecast. The Met Office provide “flash warnings” on a County wide basis, with little specific information about impact areas of towns or populated areas.

- 1.13 “Flash flooding” incidents will usually occur in small isolated pockets of the town and cause considerable distress to residents in one area whilst residents “close by” in other areas will be unaffected.
- 1.14 Adequate preparation for such events will always prove difficult due to the uncertainty of the location likely to be subject to a torrential downpour. The negative impact of continued warnings concerning wider geographical areas where little or no “flash flooding” is experienced will also have a bearing on the ability to provide adequate warning and encourage appropriate response measures by residents of property actually effected by a particular event.
- 1.15 Experience over many years would suggest that it is only when large quantities of rain related flood water are on the ground that requests for assistance will be received and normally at that time it will be too late to obtain protection from sand bags, flood boards etc. that could be provided.
- 14.16 Historical records held by Drainage Engineering may provide valuable information about localised flooding effects from torrential rain (appendices 8).

15.0 EVACUATION NEEDS AND OBJECTIVES

- 15.1 Evacuation within Suffolk will follow the procedures outlined in the Strategic Guide to Evacuation in Suffolk (see <http://www.suffolkresilience.com>).
- 1.1 Guidance contained within the Evacuation Plan indicates that the Police will normally lead the evacuation process. It is however also stated that evacuation is normally considered an action of last resort because of wide ranging difficulties usually associated with the process and the activity will therefore not be undertaken lightly. Agency responsibilities for evacuation are identified in Appendix A of the Evacuation Plan.

Stated Evacuation Objectives

- 1.2 The purpose of evacuation is to move people away from an actual or potential danger area to a safer place without exposing either them or emergency responders to unacceptable risks. Within this, the aims should be:
 - To be comprehensive.
 - To be as fast as the situation requires.
 - To avoid panic, but to persuade people of the need to take action.
 - To maintain order and prevent traffic congestion, crushing and accidents.
 - To cater for special needs.
 - To provide an integrated response involving transport, assistance and accommodation.
- 1.3 In all cases the overall priority must be the safety of the public and emergency responders. This must be the focus of the decision making process and other factors e.g. commercial considerations must not be permitted to interfere in achieving this objective.

- 1.1 Once these issues having been considered, and difficulties resolved as far as possible, movement of people should proceed in an ordered and co-ordinated way. Where time permits, Rest Centres should be ready to receive evacuees as soon as they leave the danger zone.
- 1.2 Site specific plans for the town centre and waterfront evacuation of Ipswich are currently under development. Until these are produced prompting factors contained within the Strategic Evacuation Plan will form the basis of any comprehensive assessment of “waterfront evacuation need” by the lead agency and partner Category 1 responders.
- 15.7 It should be anticipated that the Borough Council will be heavily involved in providing information concerning vulnerability of property adjacent to the waterfront and the impact this will have on residents both in short term and longer term recovery period. Transportation to places of shelter such as Rest Centres will also need co-ordinating particularly if road closures are affecting evacuation routes.

1.0 ROAD CLOSURES AND EVACUATION ROUTES

- 16.1 The degree and number of road closures will be dependant upon the severity of river flooding and or defence failure. In extreme cases it is possible that all river crossings within Ipswich will become impassable to road traffic and that it will be necessary to use the A14 or alternative route to travel from one side of the town to the other.
- 16.2 Previous tidal flooding events have resulted in Stoke Bridge, Princes Street Bridge and London Road Bridge becoming impassable. Flooding would also effect the Wherstead Road and result in the exit route to A14 and Shotley peninsula being closed.
- 16.3 Road closures in the initial phase of a major flood event are a matter for the lead agency (police) they are likely however expect assistance concerning the identification and implementation of road closures.
- 16.4 Pre identified evacuation routes produced by Highways and Transportation are shown in Appendix 10 these will be of assistance with the provision of effective exit routes from waterfront locations whilst at the same time reducing traffic congestion within the centre of Ipswich.
- 16.5 Suggested evacuation routes from the waterfront to designated Rest Centres are also provided in Appendix 10, it should be noted that it is likely to be desirable for evacuees to be sheltered in Centres that avoid the need to journey across the river from one side of the town to the other.

2.0 INFORMATION TO THE PUBLIC AND MEDIA

- 2.1 Good public communication is vital to the successful handling of a major emergency, the Suffolk Major Incident Media Plan provides comprehensive

details of media briefing arrangements that would be put in place following a major flooding incident in Ipswich.

- 2.2 The Media Plan which can be found at <http://www.suffolkresilience.com> contains a range of sections under the following headings:
- General Guidance on the critical lead agency role
 - Media handling strategy
 - Command and Control liaison and location of media and other centres
 - Media related Roles and Responsibilities
 - Key Actions / Quick reference guides
- 2.3 Major tidal flooding effecting Ipswich waterfront will require ongoing evaluation by the Borough Council and other agencies. It is likely that much of this information will need to be collated and disseminated to members of the public in a timely manner if danger to life is to be avoided. It is therefore essential that information is channelled through the lead agency (police) to minimise the chance of confusion and misunderstanding occurring.
- 2.4 The IBC website also provides a public latest information page and guidance information (see extract Appendix 12).

3.0 REST CENTRES AND PRE-IDENTIFIED TEMPORARY SHELTER

- 18.1 Rest Centres located within the Ipswich area are listed in the MERP, the buildings identified are made up primarily of Sport Centre and other Council Buildings, Church Halls and Voluntary Organisations buildings. A guidance map showing the location of designated Rest Centres is provided within appendix 11 of this plan and the MERP.
- 18.2 Further Rest Centre capacity can be made available by utilising school buildings or mutual aid arrangements with other Suffolk local authorities. Access to such buildings would be via the Suffolk Joint Emergency Planning Unit.
- 1.1 The selection of Rest Centres is likely to be influenced by their location relative to the river, particularly where bridges across the river become impassable due to floodwater.
- 18.4 Rest Centre activation procedures are contained within the Housing Services Section of the MERP. It should however be anticipated that large scale flood evacuation shelter requirements are likely to rapidly put extreme pressure upon the resources available from within the Borough Council. Mutual aid arrangements would need to be an early consideration of any such response action.

4.0 PUBLIC UTILITIES CONTACTS

- 4.1 Public Utilities and other agencies emergency contact numbers are provided in the Major Emergency Response Plan “Data Book”.

- 4.2 Further contacts can be found on
<http://extranet.onesuffolk.co.uk/suffolk%20resilience/default.aspx>
- 4.3 Please note the above site is password protected if access is restricted due to non-availability of IBC Emergency Planning personnel then contact should be made with Suffolk Joint Emergency Planning Unit Tel:01473 588933 (24hrs)

5.0 RECOVERY (LEAD LOCAL AUTHORITY)

- 20.1 Upon the completion of life saving phase the Borough Council will take over lead responsibility from the Police in respect of the co-ordination of recovery measures within the Borough of Ipswich.

- 1.1 Recovery measures are likely to include the following activities:

- Rebuilding the community
- Managing the financial implications
- Managing resources
- Responding to community welfare needs
- Developing strategic issues

- 20.3 Recovery from major flooding will extend over several months and be likely to include many issues that have impacted greatly on the community. A number of non-statutory guidance documents are available from HM Government via the UK Resilience web-site which will assist with this process and support training provided, both prior to and after a major incident.

FLOOD RISKS TO PEOPLE

(Guidance from Defra and the Environment Agency)

People are at risk of suffering death and serious injury when flooding occurs. People are unable to stand in deep or fast flowing floodwater. Once they are unable to stand, there is a high risk of death and serious injury.

Adults are unable to stand in still floodwater with a depth of about 1.5m or greater. The depth of flowing floodwater where people are unable to stand is much less. For example, some people will be at risk when the water is only 0.5m if the velocity is about 2mph, most people will be unable to stand in a depth of water 0.6m when the velocity is 4mph.

The risk is further increased when ground levels are uneven and manhole and service access covers are displaced.

There is therefore a high risk that people will be unable to stand in floodwater and be exposed to a risk of death or serious harm.

The chance of people being exposed to floodwater depends upon where they are, outdoors on foot, outdoors in a vehicle, or in a building. If they are in a multi storey building when the flood occurs, they can avoid being exposed to floodwater by staying above the flood level. If they are in a single storey building, below ground level or in a vehicle or caravan they will be at significantly more risk.

Buildings in flood risk areas where people are exposed to flood water should be provided with a safe route of escape.

The degree to which people are exposed to floodwater also depends upon whether the warnings are received and acted upon. Whilst many areas are covered by flood warning schemes, there are many people who do not receive warnings. There are many reasons for this, for example people passing through the area in vehicles or staying at accommodation on a short stay basis.

Whilst warning can reduce the risk of people being exposed to flood water, many will either not receive the warning or not respond in the appropriate way.

The speed with which a flood occurs has a major impact on whether or not people will be exposed to floodwater and therefore the risk of death or serious injury. Where the flood onset is gradual and the rate of rise is slow, people have time to take action and, if necessary leave the flood risk area. Where flooding occurs very rapidly, people have very little time to respond. Examples of rapid flooding that results in a high risk to people are when a flood defence overtops or fails and when a flash flood occurs following heavy rainfall.

Vulnerable people (the old, disabled and sick) are less able to cope with floods than others and are therefore at greater risk.

FLOOD AWARENESS

People may put themselves at risk, or increase the risk to themselves through their own behaviour. This can be a major cause of loss of life and serious injury during a flood event. However people can only behave “rationally” according to the information that they have, and this information may be incomplete or incorrect.

Floods are inherently dangerous

The following guidance is considered relevant the Ipswich Flood Plain

(Walking in floodwater)

- The public should be aware of the dangers of walking in floodwater
- People should avoid walking in flood wherever possible
- People should not attempt to cross rivers or drainage channels during a flood.

(Driving in floodwater)

- The public should be aware of the dangers of driving in floodwater
- People should avoid driving in floodwater
- People should not drive on roads that have been closed because of floods

(Bridges)

- The public should be aware that bridges over flooded rivers can be dangerous
- People can be trapped on a bridge if rising floodwater cuts off the carriage way onto and off the structure
- Bridge structures may become weak during flooding events

(Buildings)

- The public should be made aware that buildings in vulnerable positions (close to flood defences or fast running water) are at risk of being damaged or destroyed during a flood
- The public should be aware that “floodproofed” buildings could collapse if the differential in water levels between the outside and inside becomes too large (of the order of one meter for a brick house)
- Caravans should not be permitted in high hazard areas
- People living in single storey buildings or basements should be aware of flooding risks in flood risk areas

(Asset protection and or recovery)

- People should not delay evacuation in order to try to save personal assets
- People should not enter a flooded property in order to retrieve personal assets
- People should not try to retrieve property in vulnerable locations

(Interest and excitement in major floods)

- People, especially children, young adults and parents, should be made aware of the risks of treating floodwaters as a recreational resource
- People should be made aware of the risks they create, to themselves and others, when they treat a flood disaster as if it were a tourist attraction

(Rescuing people or pets)

- People should be made aware of the dangers of floods so that they are better able to judge the risks when other people are in difficulties or pets are in danger

(Evacuation)

- Avoid evacuation wherever possible
- Where evacuation may be necessary, it should be carefully planned and practised

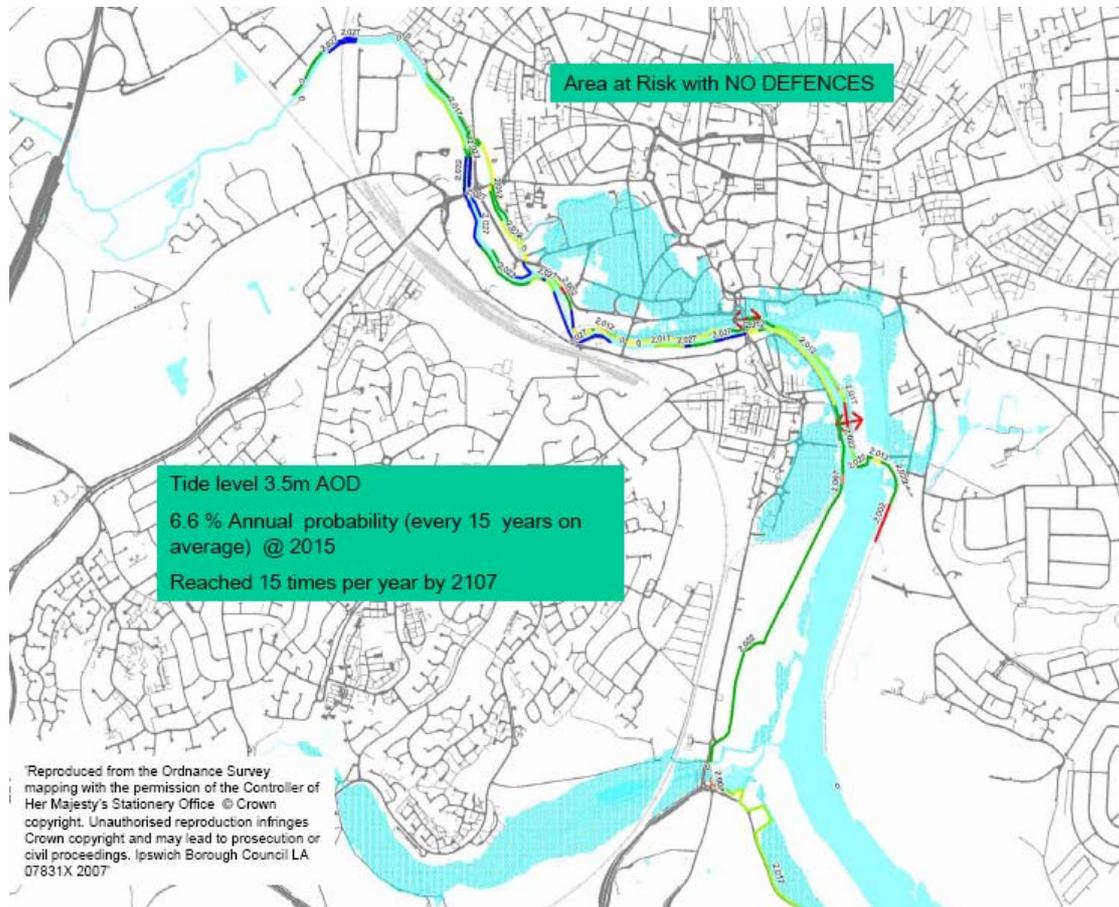
(Vulnerable groups)

- Be aware of vulnerable people and their specific needs in flood events
- The public and politicians should be made aware of the risks to emergency services personnel during floods which should be minimised

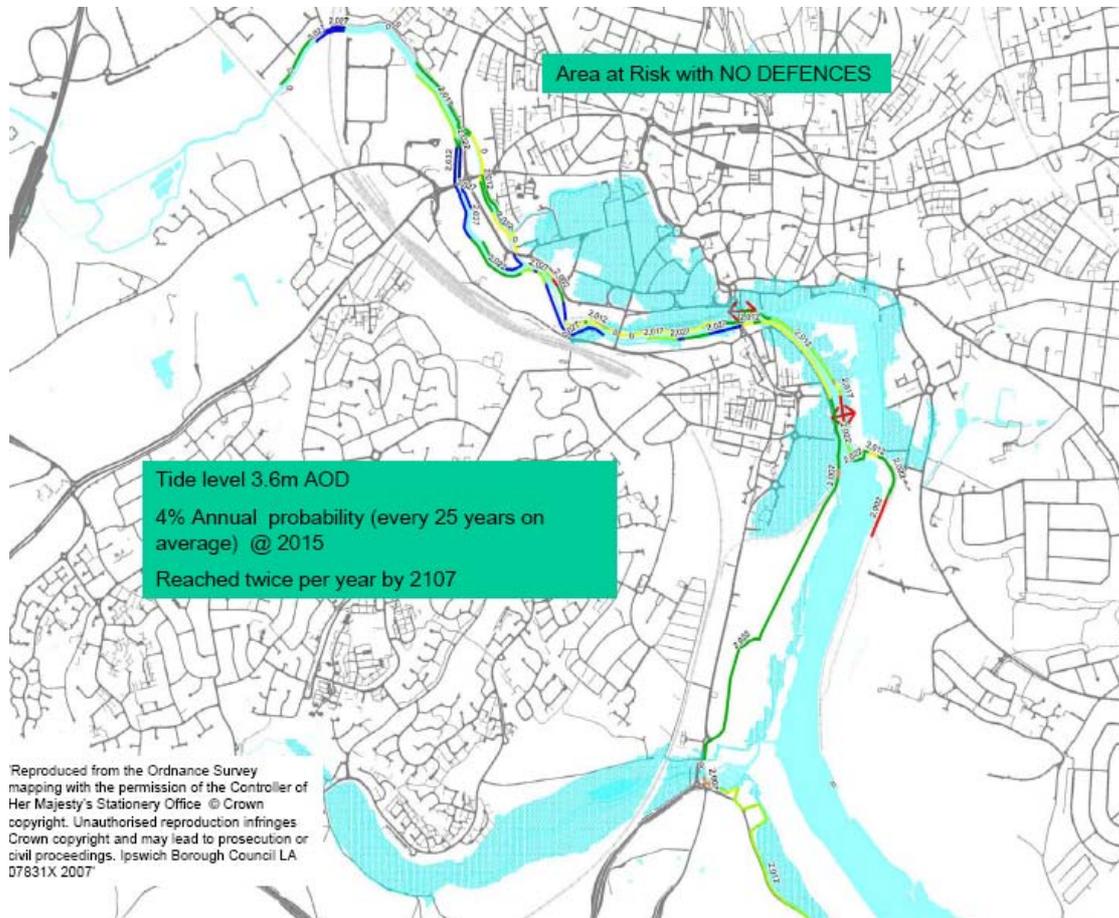
(Other factors)

The public should be aware of other risks that can occur during floods which may include death from exposure, other medical emergencies due to stress and shock, hazards from electricity or falling debris if storms accompany floods

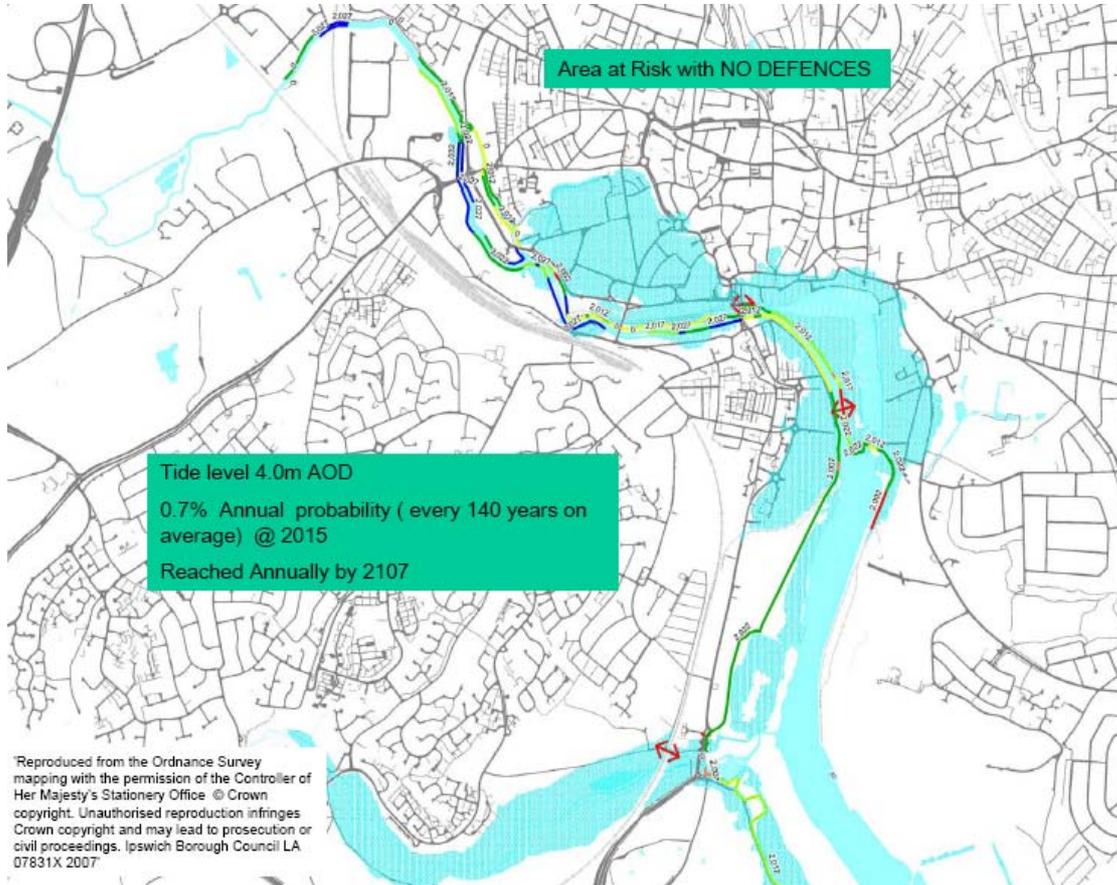
TIDAL RIVER FLOODING AREAS – 3.5 Meter tidal Event (view electronically if available)



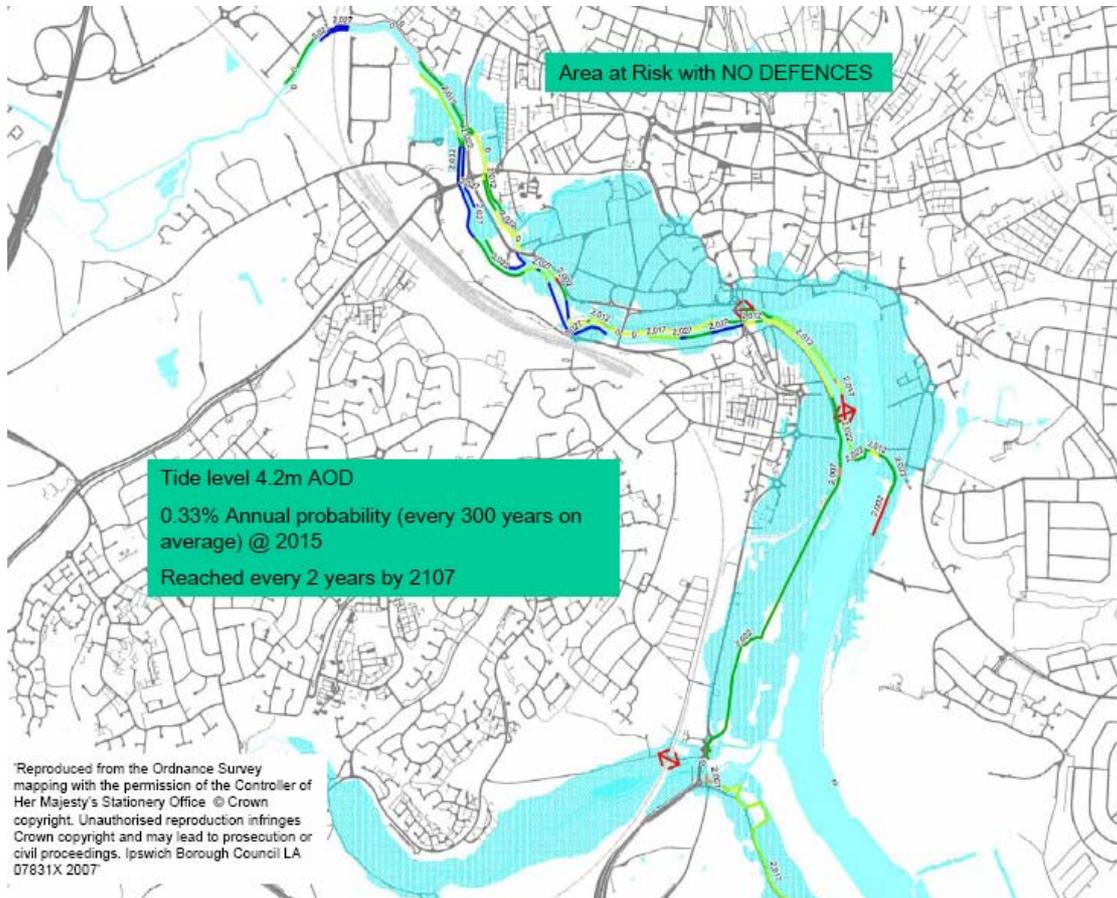
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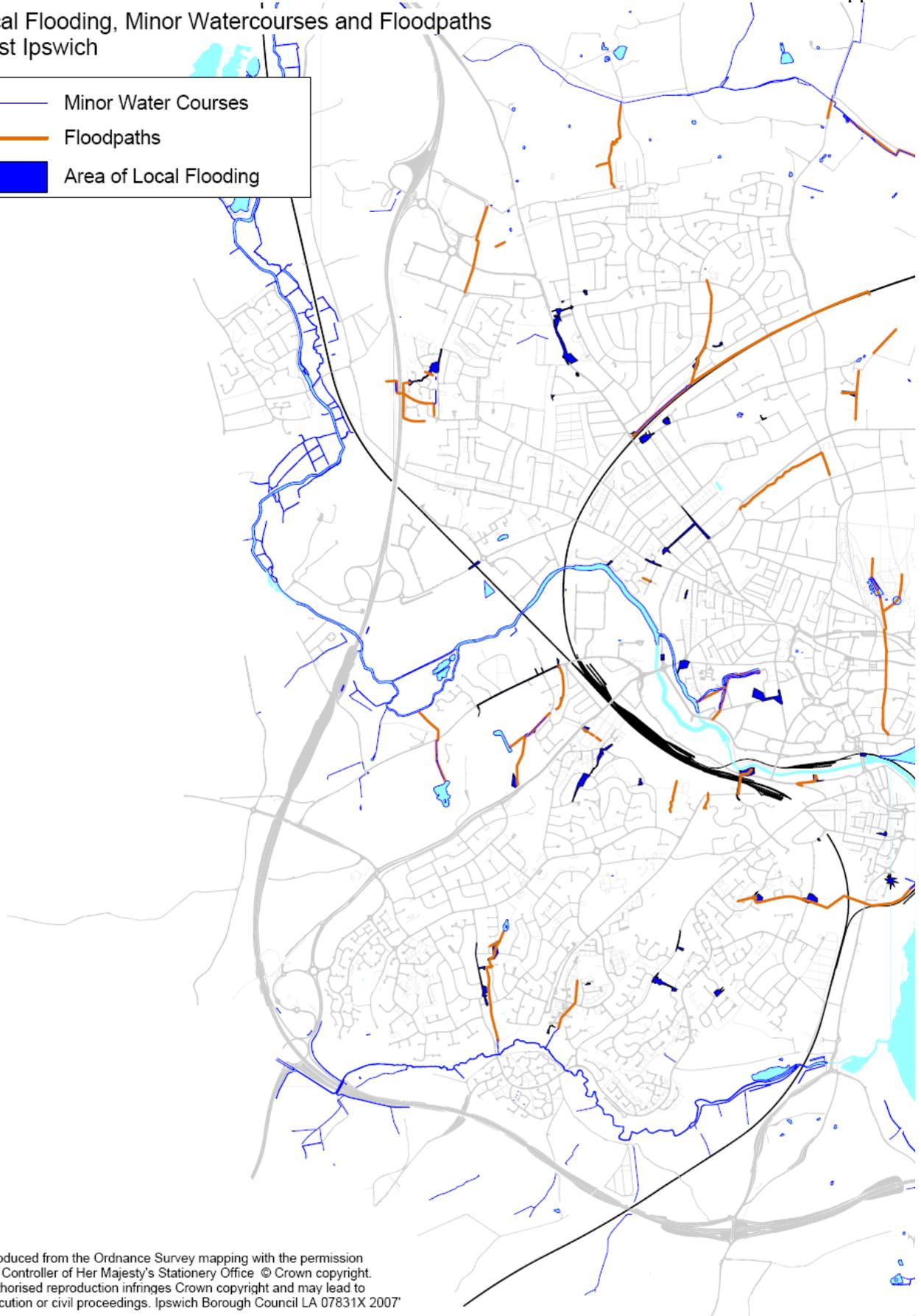
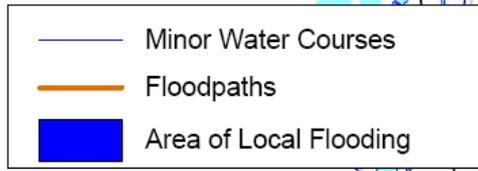
TIDAL RIVER FLOODING AREAS – 4.0 Meter tidal Event (view electronically if available)



TIDAL RIVER FLOODING AREAS – 4.0 Meter tidal Event (view electronically if available)



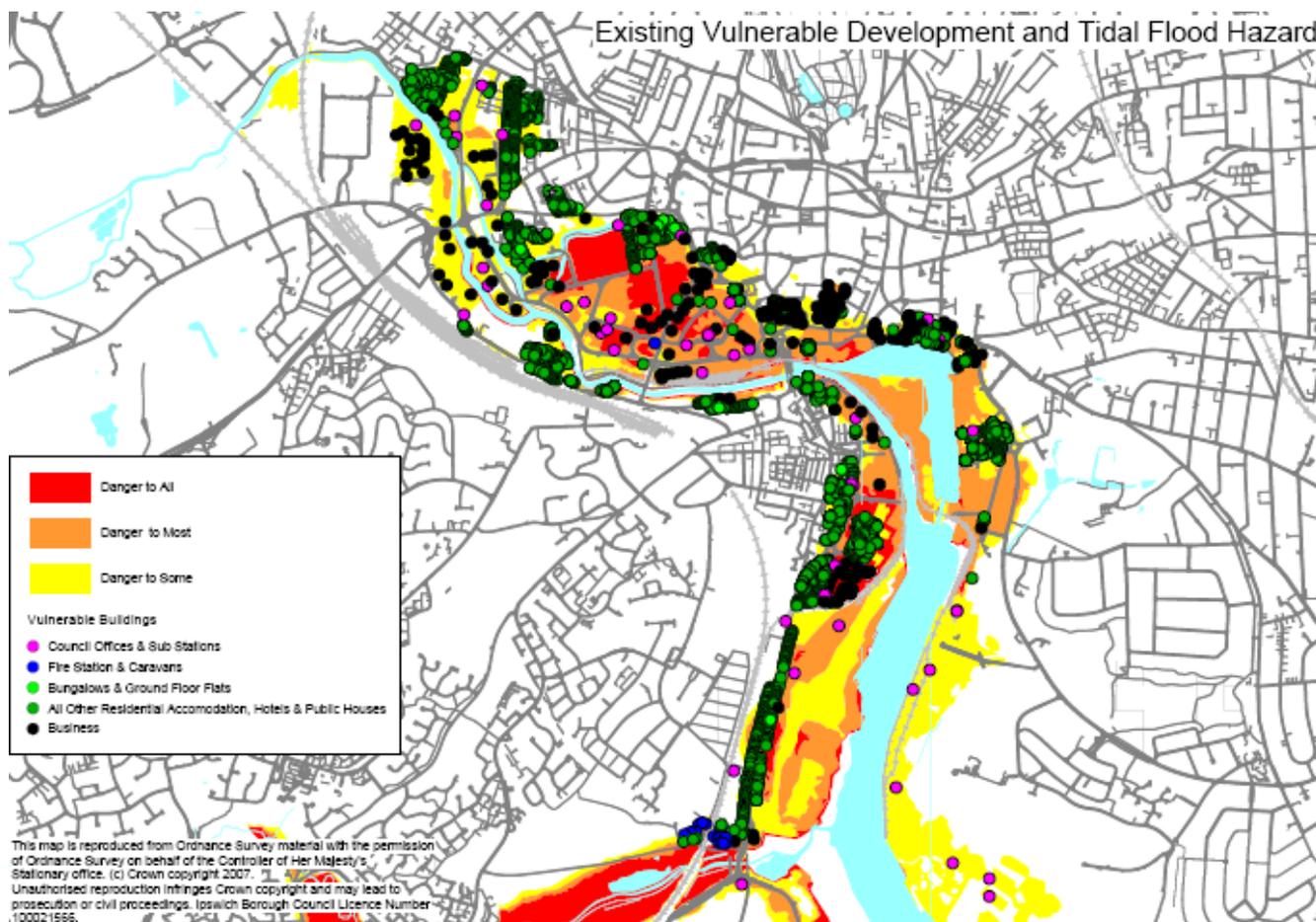
Local Flooding, Minor Watercourses and Floodpaths West Ipswich



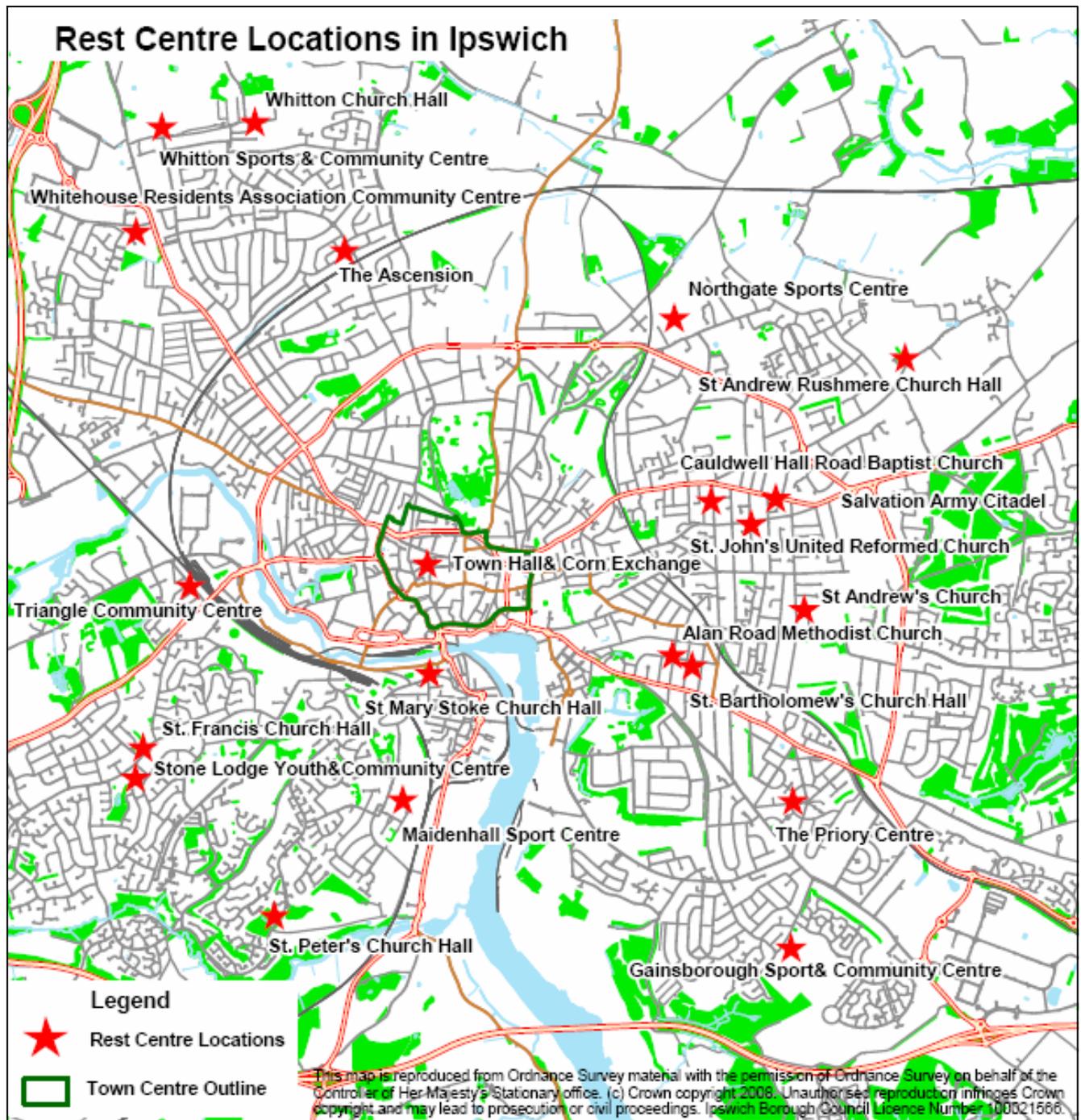
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Local Flooding, Minor Watercourses and Floodpaths East Ipswich





**REST CENTRE AND TOWN CENTRE EVACUATION POINT LOCATIONS
(view electronically if available)**



Flooding Guidance

Flood Warning information and guidance about preparing for floods can be obtained from the Environment Agency free of charge.

Telephone: **Floodline 0845 988 1188** (local rate)

Internet: <http://www.environment-agency.gov.uk/subjects/flood/826674/>

Ipswich Borough Council's Drainage Engineering service area is able to provide specialist flooding advice particularly where the flooding is away from main river locations not covered by the Environment Agency. Guidance and contact information can be obtained from our [Transport and Engineering Department](#). A copy of the Ipswich Drainage and Flood Defence Policy is also available at this location.

The Met Office will also provide local weather warnings on their website at www.metoffice.gov.uk when exceptionally heavy rain is forecast.

Flood Emergencies

Responsibility for protecting individual properties against flooding lies with the householder and not the local authority, in line with most other local authorities the Council does not normally issue filled sand bags to individual members of the public.

During flood emergencies the Council will however endeavour to assist communities who are under threat of internal property flooding by providing filled sandbags wherever this is possible to reduce the effect of floodwater.

Suffolk Fire Service may also be able to assist by pumping out floodwater from homes and in serious cases of flooding the rescue of people stranded by floodwater.

Preparing for Flooding

Householders living in areas that have been flooded in the recent past are strongly advised to give some thought to flood protection measures for their property.

Removable flood boards or gates, although more costly, are significantly more effective than sandbags in preventing water entry through doorways and air bricks and are therefore likely to provide better property protection during floods.

To assist with the process of property protection preparedness the Council will provide guidance literature and empty sandbags (max 10 per property) free of charge to individual householders when collected from the Civic Centre offices.

Please ring the Emergency Planning Officer on (01473) 433434 to arrange.

Further quantities of filled or empty sandbags can be obtained from Builders Merchants listed in the Yellow Pages telephone directory.