Summary/Overview

It is not possible to engineer a way out of this as you disconnect the river and a natural flood plane which acts as a sponge in most event. this is a natural event. however this is compounded by anthropogenic activities.

Going to get worse as climate change and faster run off means rate of change of water is faster and higher than will have been in the past

Actions what can we do ?

- personal actions - secure and protect their property, not necessarily their land
- collective action better flood warning - authorities undertaking their statutory duties and giving adequate warning (this was no shock as they knew it was coming as the structures being managed in diss etc were already being operated so they knew this was happening) all level remotely monitored and controlled in Peterbrough
- fundamental failure of EA to warn
- emergency service coordination was poor

Local coordination was poor and why we are meeting now

The biggest individual policy that could be adopted is not to effect flood storage capacity

No flood plane development in disaster area no matter what !

Better land use and management to increase flood storage capacity !

What causes flooding and could contribute to the 2020 floods

1. Urbanization (hard surfaces)
2. Land use agricultural
    a. land change from marsh to harvesting land
    b. land use in order of lowest impact marsh shrubs and tree < grassland < grazing land < crops < urban development

    Land use residential impacts

    c. drives patios etc
    d. roofs and water barrels (positive)
    e. new development to have green spaces as slow drainage capacity
    f. no development in flood plane or flood resource ie area behind pilgrims way is flood resource, fields either side of the river is flood plane
    g. restrict hard surface development on ground that feed directly into river system ie the flint river, drainage dikes and or the Waveney itself
3. Upstream towns and fore warning and reciprocal agreements

2020 floods

1. Continual rain water logging ground reducing flood capacity and drainage
2. Reduced flood capacity from development over the last 20+ years and faster run off
3. Potentially release of water from upstream from Diss etc - check EA for sluice release
4. Over whelming of drainage system contributing to direct run off and swelling of rivers
5. Blockage of the mill stream causing the river to burst banks
6. Blockage from floating debris clogging sluice
7. Sluices over topped thus no longer under control by EA
8. Choice of potentially to flood Bungay and surrounding meadows and was least bad option compared to densities of properties and lives in Beccles D/S (down stream) and Diss upstream (U/S)
9. Sluices potentially not lowered to relieve build up at Bungay town

10. High tides or winds could have contributed to build up of water downstream causing backing up of the river and causing localized flooding
11. Other contributing factors was agricultural run-off seen at Shipmeadow etc also causing backing up of river D/S as outlined in point above
12. Meadows already flooded at time of mass rainfall so reduced flood capacity
13. Blockages to flood structures such as sluices and mill streams and inlets (staithe)
14. High water table causing ingress from the ground

Other issues with 2020 floods

1. Lack of coordination between services
2. Spanning two county and district boarders
3. Fire and rescue not joined up (Norfolk and Suffolk)
4. Same for police^^^

   Lack of availability of suitable flood protection equipment (proper sand bags etc
5. Potential poor or faulty management of flood structures due to oversight of entrainment of debris
6. Pinch point of Ditchingham Dam & Bridge Street area left it isolated and at risk
7. No database of houses likely to flood or people to contact held locally that could be of use to town or emergency services - maybe a register locally could be set up and could be made available to emergency service etc to better coordinate help in the future
8. The Tin River had breaches at st Johns Rd bends cutting off part of access from Halesworth
9. Access to Earsham cut off from Bungay, normal route
10. Earsham gravels (source of san)d which were willing to help were flooded and could only provide limited support and access to which was difficult
11. Sand bags had to be received from EA - Hadiscoe from a volunteer and his truck
12. Flood warning far too late cars etc already being rescued because of flooding up stream and yet the town had not received an official flood warning)
13. Major incident declared

Planning going forward for future flood events and decisions

1. **Town “emergency responders” cost free / minimum**
    a. call signal
        a.i. town bells?
        a.ii. alarm bells
        a.iii. whats app group
        a.iv. fire service style response / app / text group?
    b. test drill twice a year
    c. basic items all responders should have ready
        c.i. head torch
        c.ii. boots or wellies
        c.iii. high vis vest
        c.iv. mini first aid kit
        c.v. water bottle
    d. order of responsibilities and priority's
        d.i. raise alert
        d.ii. notify East suffolk emergency services etc
        d.iii. life
        d.iv. animals live stock
        d.v. medications or essentials
        d.vi. residence
        d.vii. lively hood
        d.viii. possessions
2. **Town flood prevention resource cost circa £ 600**
    a. agreement to have items stored at central location or with a builders merchant such as Coopers or Earsham building supplies (Earsham might have logistic issues with flooding cutting off Earsham)
        a.i. items to store / resources

a.i.1. 3-4 tonne/bulk bags of cheapest sand

a.i.2. 8 sheets of marine grade plywood 2400mmx1200mm

a.i.3. airated blocks like breeze blocks (to cut and raise white goods and or furniture)

a.i.4. 6 hand saws

a.i.5. hammers and nails

a.i.6. c16 2x4 timber 2.4m long 20 lengths

a.i.7. polyethylene sheeting

a.i.8. buckets

a.i.9. screws

a.i.10. drills

a.i.11. rawl plugs

a.i.12. empty sand bags

a.ii. idea to store sand in key locations under tree / planters in key strategic locations in place of bollards etc ie Earsham street opposite the old post office etc locations such as roundabout opposite Whitemans

b. **flood storage** could utilized the type of black planters present around town being replaced with wooden planters such as those in Beccles that were used to block the market during in Covid. The bottoms of the planters could have door in to hold sand bags and be deployed on Bridge Street, Earsham Street etc (after walker over survey 6 such ares identified for such deployment have been identified) input from council would be helpful here

3. **Flood warning cost variable on option**

   a. get town council / committee based alerts from the EA (Environment Agency) cost none

   b. advanced notice when the EA releases flood water or lowers flood gates / sluices at Diss to give us a head up (see flooding issue in the 80's involving preventing flooding at Diss causing near flash flooding here)

   c. early detection hydrology systems cost circa £15k per system (guesstiamte) (basically the same as installed at falcons meadow by the EA for the town under town control if the above is not accessible or alerts given too late) to be installed in 1 to 2 places preferably before the town. (can inquire at cost and feasibility if necessary) meteor communications is the company

4. **Information and education on flood prevention cost minimal leaflets and or website space**

a. how to make and install stop logs on door frames gates and or entrances to properties (galvanized brackets with rubber seals mean volunteers only have to hammer in the planks in an emergency)

b. educate to help your neighbor (in event elderly people might not be physically able to move furniture etc or could be asleep etc when flooding happened)

c. wedges available to lift furniture if needed

d. no return valves on all brown or grey water that could “reenter the property “

e. if possible make sure all electrical routing is not in potential flood area (this is circumstantial and not something everyone could adopt) ie not underfloor

f. how to install a proper flood barrier (stop logs -> polythene sheet -> sandbags)

g. education of where water ingress could occur (ie on suspended floor through floorboards)

5. **Promotion of good practices / increase flood capacity cost free or initial investment if following *Sheffield* program**

    a. increase flood promote water butts in town

    b. towns above Bungay text alert when to empty them etc

    c. encourage the correct choice for development out of flood plane and not immediately adjacent

    d. chose better options for hard surfaces gravel etc rather than tarmac for drives

6. **Identify areas at risk of flooding in following scenarios**

    a. in the flood event “under some control by flood defense systems “

    b. “in breach of flood defense systems” such as 2020

    c. isolated area that might be left by services due to lower population density such as maltings etc

7. **Vulnerable people**

8. **Safe areas/refuges**

9. **Evacuated housing help**

    a. following 2020 flood lots of proprieties vacated with no way to contact residents to be able to assist with resources etc

    b. have a number where people can leave their details so people can help or coordinate clean up

10. **Emergency contact point (council from here access or 24 hour phone to access support or flood resources**

11. **After flood clean up**
    a. accommodation
    b. food medication support
    c. protection and recovery of possessions
    d.
12. **Post event support**
    a. see BECS (Bungay Emergency Community Support) response here at what people found useful sportive and what they could have done with at the time ??
13. **Encourage use of flood bags ?**?? (mentioned in open meeting 11/01/2021
14. **Council give right to stoplog close a road** (ie around a dip in the road etc)
15. **Property flood protection has low environmental cost** compared to refurbish, gutting of properties and the manufacture, supply and fitment of these materials in the first instance

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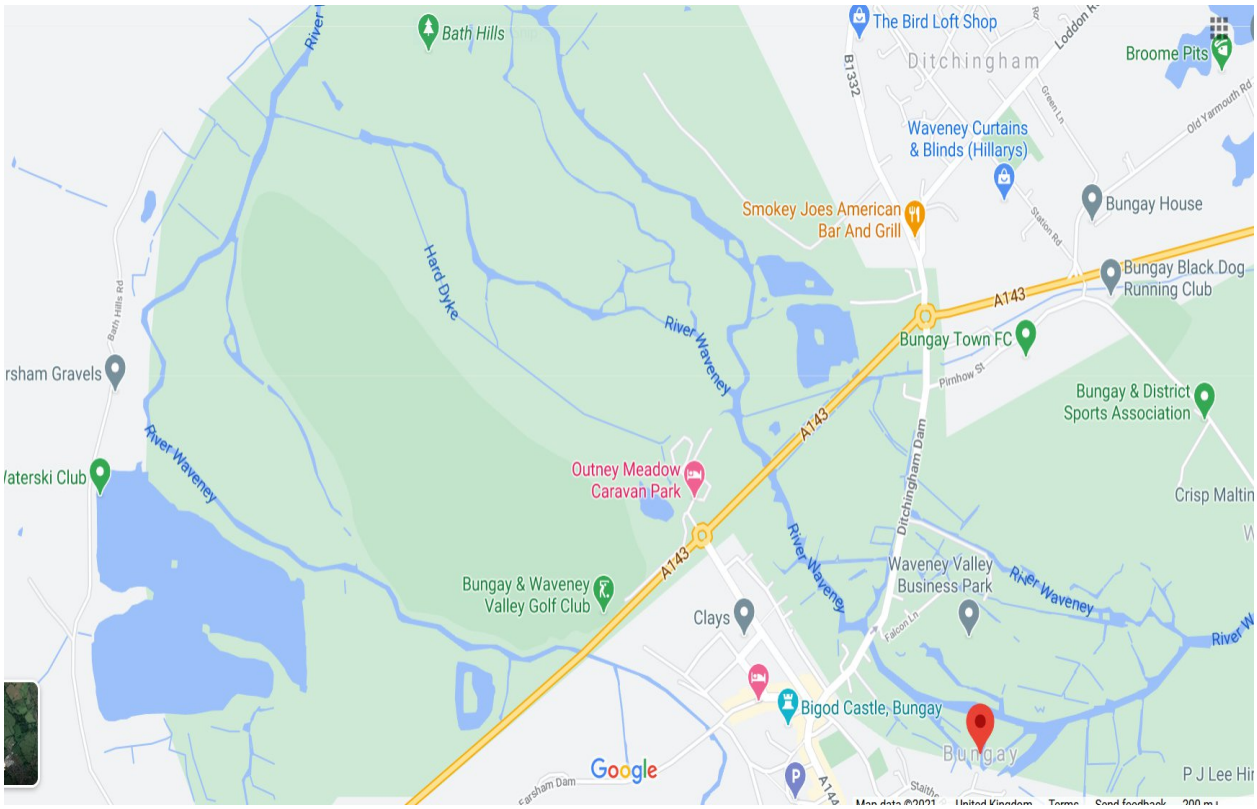
Development planning

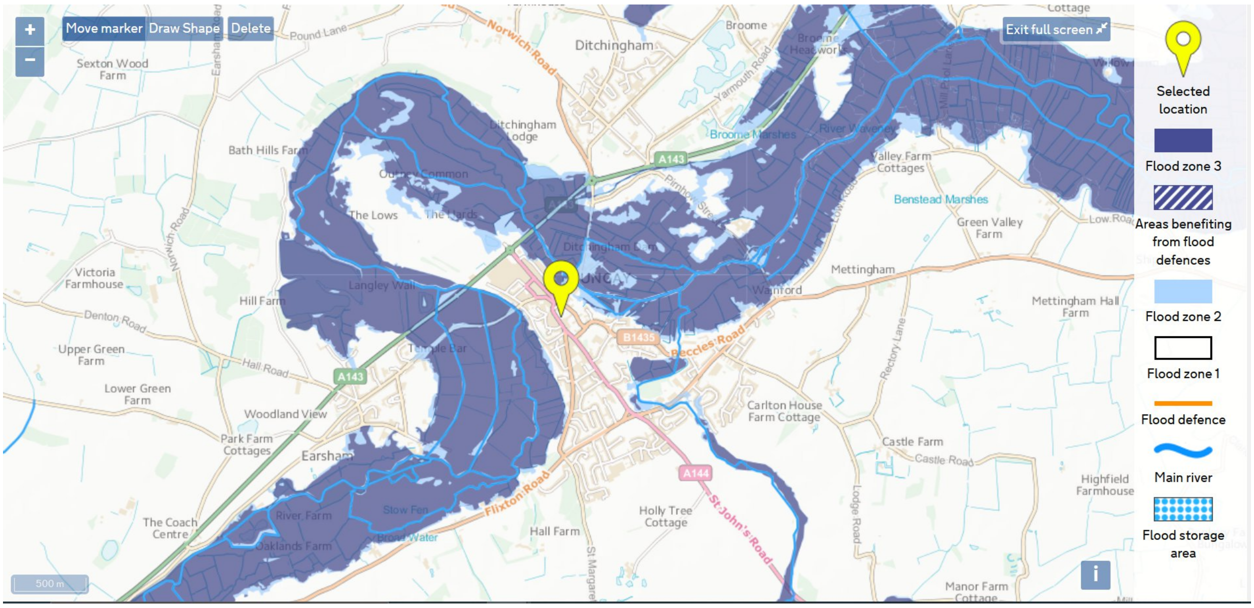
1. Planning should preliminary be refused in flood plane as this causes the following
    a. faster run off
    b. more risk of flooding and sets example that the development of flood plane is ok
    c. this causes resources to try to defend properties that shouldn't be defended
2. Flood resources such as flood meadows etc adjacent to streams tribs dikes etc that feed into river systems or that are on slopes adjacent to such area should not be allowed to have any change of use that would introduce further hard surfaces that would casue faster watershed (ie residential developments, car parks, drive ways or barns
3. If planning granted in area substantial and relevant work to help reduce any development impact on run off in adverse conditions #
4. If granted permission it becomes part of local governments responsibility to defend these properties. - thought should be given to how and if this is feasible and if this would detract/split resources from other current at risk areas
5. No hard surface developments:- try to find a better lower impact compromise ie. Tarmac drive= NO, gravel might be yes (slower run off, more soak away etc)
6. Ask for political support Peter Aldous to help provide weight to the actual planning laws concerning development in flood planes and adjacent to such area
7. Stop further development in *green field* sites in or immediately adjacent to flood plane with agreement up and down the valley as its is an arrangement that benefits the people downstream of the location in question and thus Bungay is at the "mercy" of any such decisions U/S (up stream)

Maps of key strategic areas and overlays

overlay link

https://www.google.com/maps/d/u/0/edit?mid=110eLcimc9LKin-uNCmDXUu7oAa2bHvUv&usp=sharing




Move marker
Draw Shape
Delete
Exit full screen
Sexton Wood Farm
Pound Lane
Norwich Road
Ditchingham
Broome
Bath Hills Farm
Ditchingham Lodge
Broome Marshes
River Waveney
A143
Valley Farm Cottages
Outney Common
The Lows
Benstead Marshes
Green Valley Farm
Victoria Farmhouse
Langley Wall
Hill Farm
Mettingham
Wainford
Mettingham Hall Farm
Denton Road
Upper Green Farm
Hall Road
B1435
Beccles Road
Rectory Lane
Lower Green Farm
Woodland View
Carlton House Farm Cottage
Park Farm Cottages
Earsham
Castle Farm
Castle Road
A144
Highfield Farmhouse
Stow Fen
Flixton Road
Holly Tree Cottage
River Farm
Hall Farm
St John's Road
Lodge Road
The Coach Centre
Oaklands Farm
Manor Farm Cottage
500 m
Selected location
Flood zone 3
Areas benefiting from flood defences
Flood zone 2
Flood zone 1
Flood defence
Main river
Flood storage area


Ditchingham Dam
Golf Course
A144
Trinity Street
Staithe Road
Bungay Primary School
B1435
Beccles Road
St John's Road
Olland's Plantation
BUNGAY
Bungay Middle School
Selected location
Flood zone 3
Areas benefiting from flood defences
Flood zone 2
Flood zone 1
Flood defence
Main river
Flood storage area

Environment Agency

Flood map for planning

Your reference	Location (easting/northing)	Created
bungay map 1	**633543/290026**	**6 Jan 2021 12:30**

Your selected location is in flood zone 3, an area with a high probability of flooding.

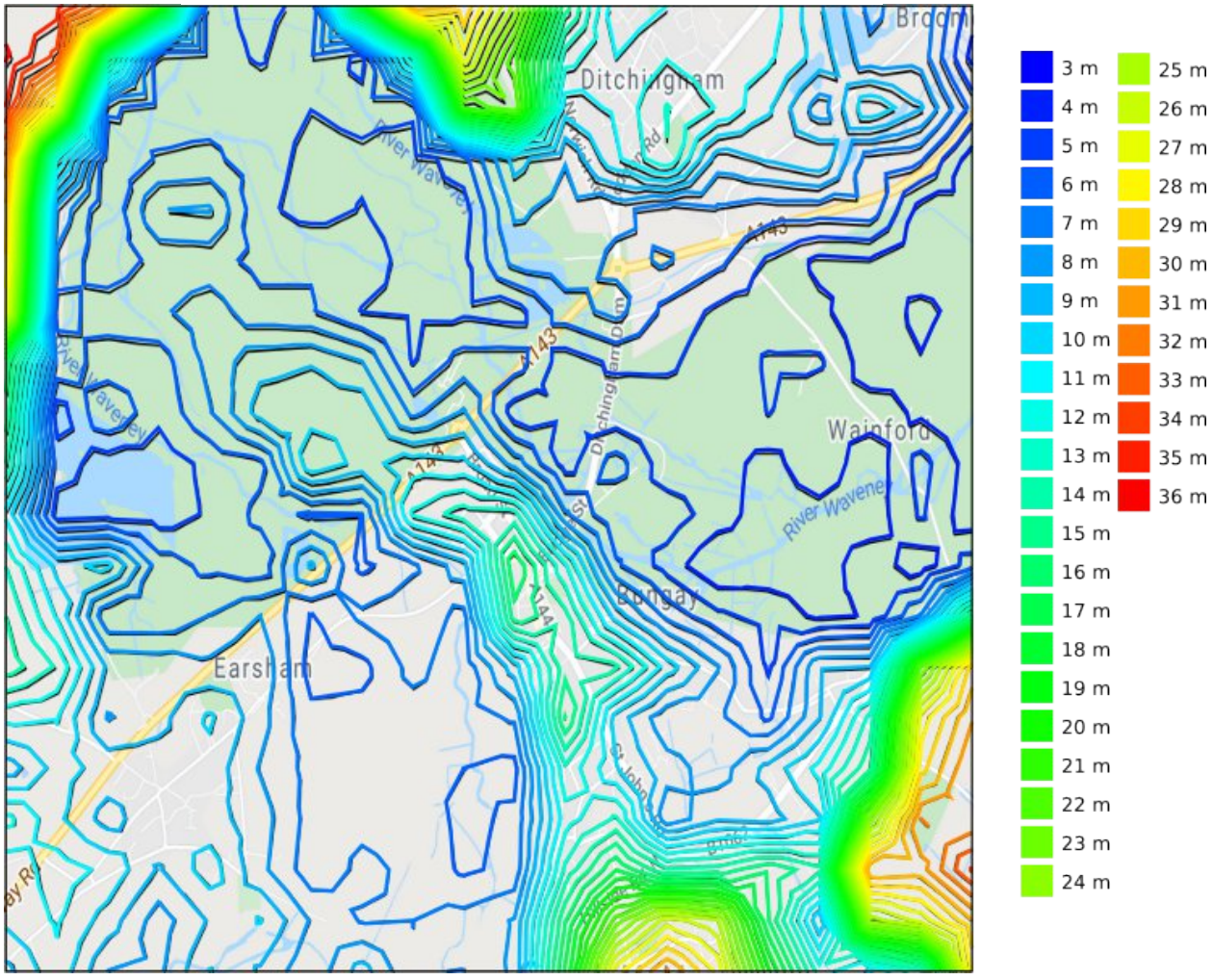
This means:

- you must complete a flood risk assessment for development in this area
- you should follow the Environment Agency's standing advice for carrying out a flood risk assessment (see www.gov.uk/guidance/flood-risk-assessment-standing-advice)

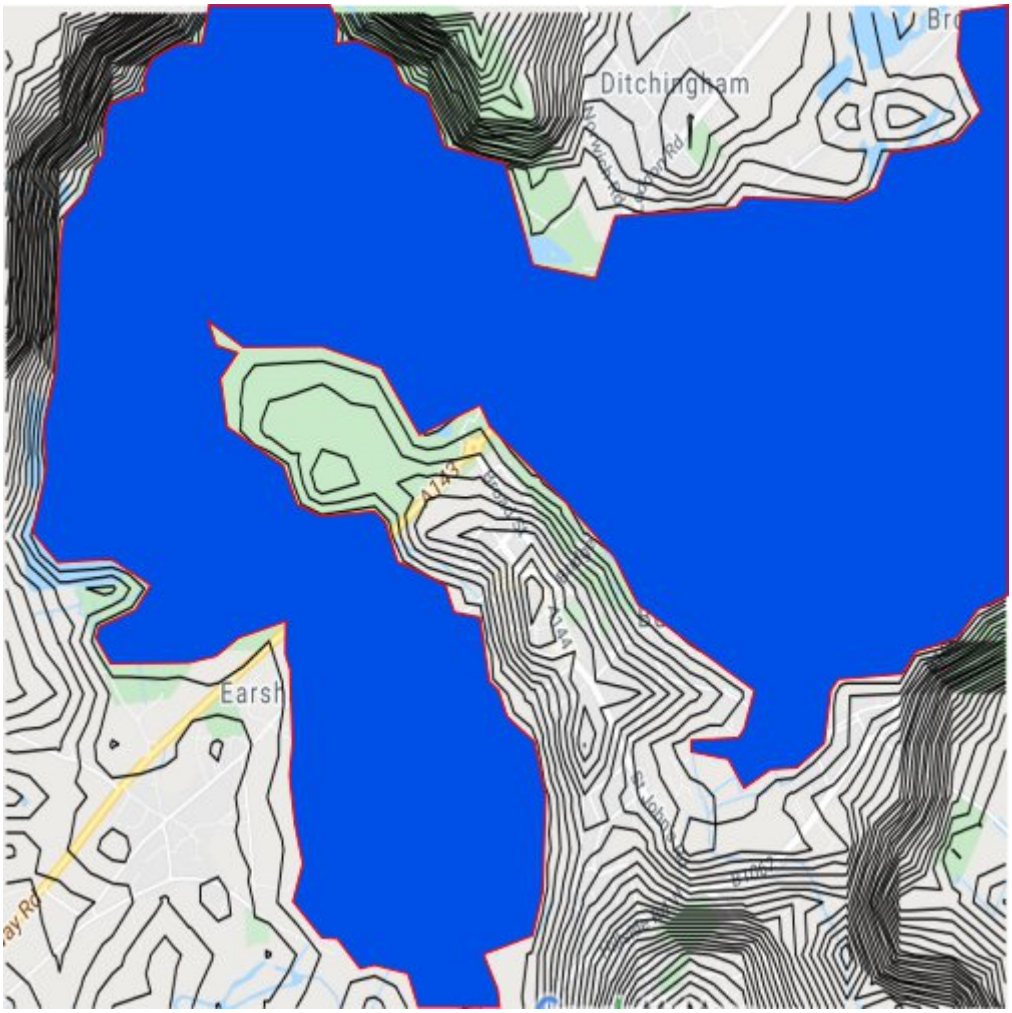
Notes

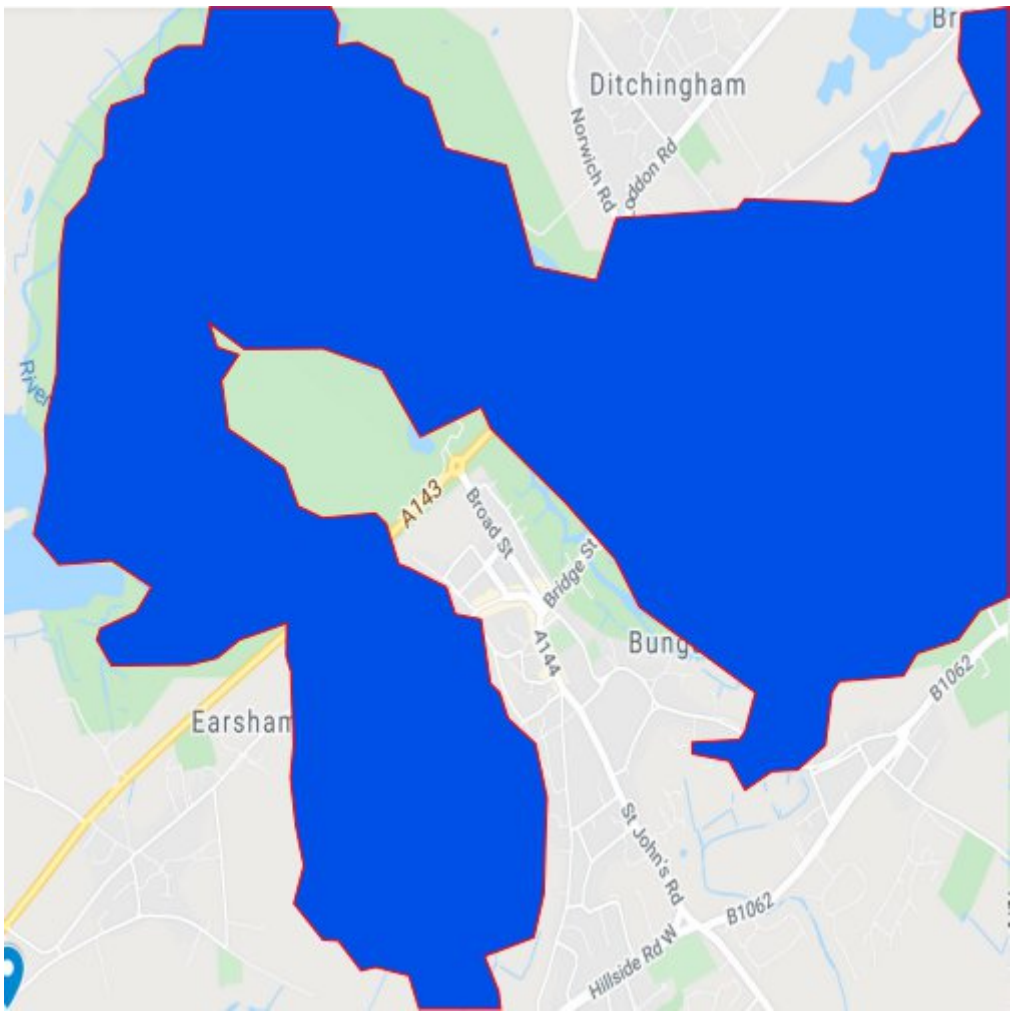
The flood map for planning shows river and sea flooding data only. It doesn't include other sources of flooding. It is for use in development planning and flood risk assessments.

This information relates to the selected location and is not specific to any property within it. The map is updated regularly and is correct at the time of printing.



the flooding came up to the 7m mark as shown in the arial photographs obtained from the 2020 floods.



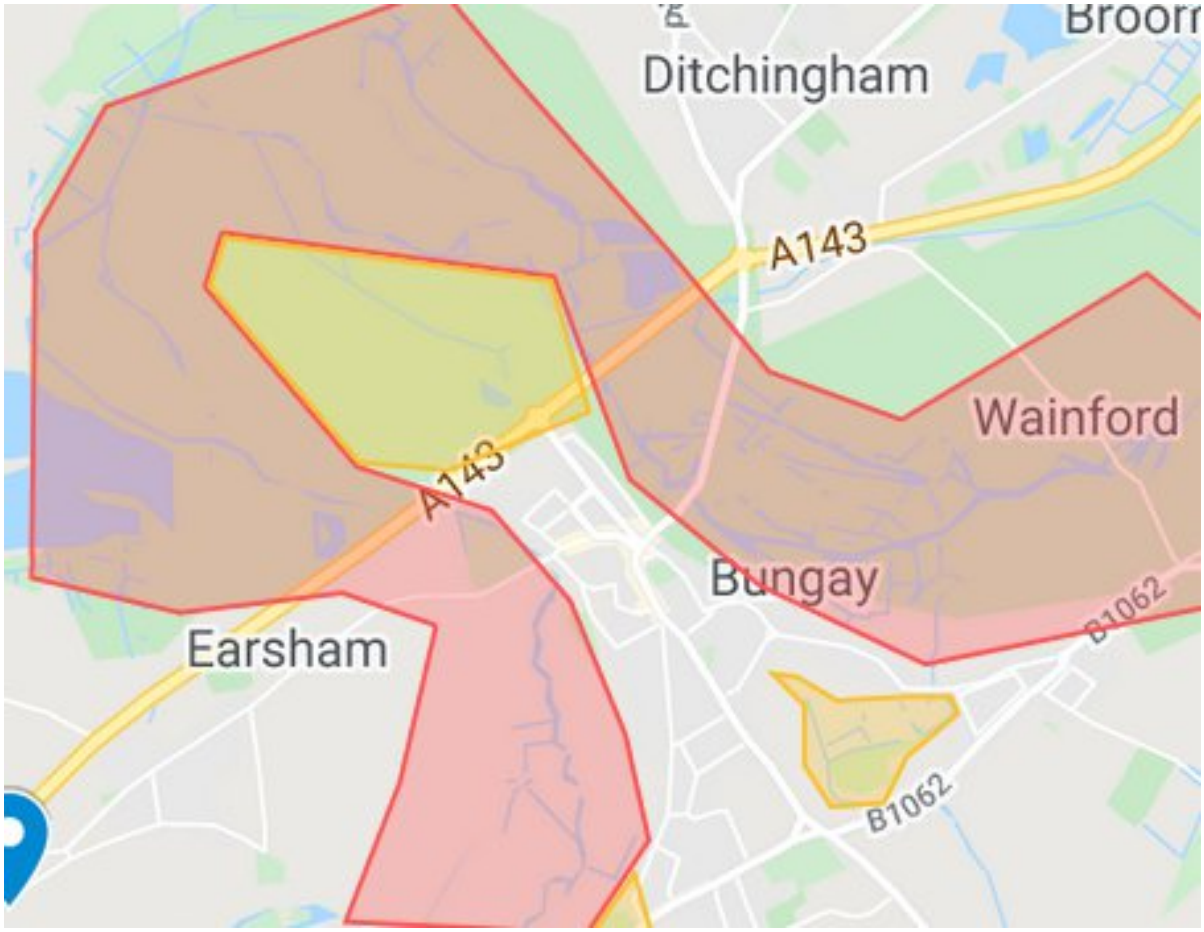

Ditchingham
Norwich Rd
Loddon Rd
A143
Broad St
Bridge St
A144
Earsham
St John's Rd
B1062
Hillside Rd W

Key areas highlighted

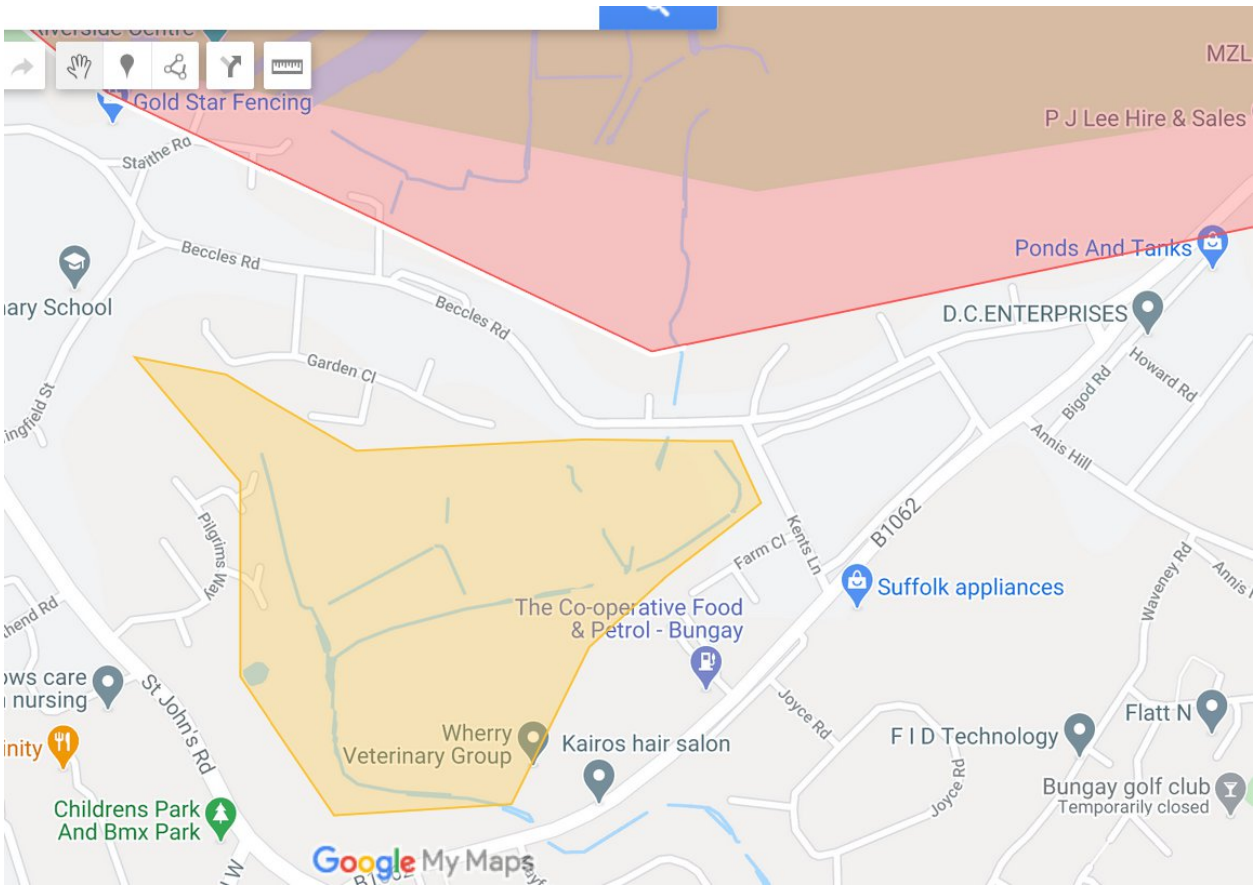
All area highlighted should seriously consider denial of any hard surface. Roofing such as barn or further development, such as outlined in the causes of flooding

Red shows flood plane

Orange shows flood resource that shows where water shed is faster at entering the river system etc



item 2



Orange here shows the end of a main tributary coming down from St Johns road etc. This is as yet undeveloped and could exacerbate this further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Flood defense and key strategic infrastructure

Flood management

1. Sluices
2. Mills
3. Flood storage
4. Flood planes and meadows
5. No more flood storage available (the flood planes were already full) and we are in a valley only land usage can change to hold more water

Civil flood defense structures and associated issues

1. Typical flood defense structures focus on moving water downstream where this might not be the best case
    a. this causes faster flooding with less warning as the water is narrowed and funneled DS
    b. this gives the water more velocity which causes more damage to property and can drag more debris into flood management structures
    c. DS towns will be worse effected which means propagation of more structure continually to down stream to other towns compounding issues further down
    d. eventual flood water can meet the tidal stretch where incoming tide can back up the whole system causing catastrophic breaches in these new flood defence ie. the perfect storm.... in this instance it would fallout at beccles etc.
2. Flood defense structure tend to be very poor for local habitats and environmental concerns
3. Flood defense disconnect the river from it flood plane thus further restricting flood capacity

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