

FLOOD RISK ASSESSMENT

IN RELATION TO A

PLANNING APPLICATION

**FOR INSTALLATION OF GROUND SOURCE HEAT PUMP AND
ASSOCIATED WORKS**

FORMING PART OF:

BILSHAM FARM, BILSHAM LANE, PILNING, BRISTOL, BS35 4HD

APPLICANT: MR & MRS K MCEWEN-SMITH

PREPARED BY:

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JANUARY 2021

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1.0 Development Site & Location

- 1.1 The address of the site is Barn at Bilsham Farm, Bilsham Lane, Pilning, Bristol, BS35 4HD.
- 1.2 The current site used for agricultural purposes. The site falls within Flood Zone 3 – an area with a high probability of flooding that benefits from flood defences. The presence of flood defences do, however, reduce the likelihood of a flood event affecting the area, which would otherwise be the case without the provision of flood defences.
- 1.3 The site is situated approximately 1.5 miles (2.4 kilometres) from the River Severn and its associated flood defences, which can be seen on Appendix 1 and 2.
- 1.4 The building is situated at approximately 6m above ordnance datum and is situated approximately 1km from Flood Zone 1, which is approximately 12m above ordnance survey datum.

2.0 Development Proposals

- 2.1 The proposal is an application for the installation of a ground source heat pump and associated plant via a full planning application.
- 2.2 In terms of vulnerability to flooding, the development is classified as not being vulnerable.
- 2.3 The estimated lifetime of the proposal is 25 years at which point it will be renewed.

3.0 Sequential Test

- 3.1 No other locations with a lower risk of flooding have been considered for this proposal as there are no other alternatives available.
- 3.2 This is due to the proposal being to provide space heating and hot water for the residential dwellings at Bilsham Farm.
- 3.3 The proposal cannot be located in Flood Zone 2, as this is not where the associated residential dwellings are located. While in Flood Zone 3, the site benefits from flood defences.
- 3.4 The long term flood risk from rivers or the sea and surface water have both been considered in this Flood Risk Assessment. Surface water shows a ‘very low’ risk of flooding while rivers and sea shows a ‘low’ risk of flooding, see Appendix 10 and 11. Appendix 12 provides an alternative surface water risk map.

4.0 Climate Change

- 4.1 According to the Avonmouth/Sevenside Strategic Flood Risk Assessment – Level 2, climate change is expected to make around a 1m difference in sea levels over the next

100 years. Rainfall intensity and fluvial flooding is also expected to increase. The increase in sea levels will reduce the standard of protection provided by many of the flood defences. Details of these defences can be seen at Appendix 1 and 2. Without an improvement to the flood defences tidal flooding is expected to affect a large proportion of Avonmouth/Sevenside in the future. The risk of defence failure may also increase as a result of higher sea levels and associated wind and wave action.

4.2 The areas at the greatest risk are:

4.2.1 Land adjacent to the Severn Estuary is most at risk from tidal flooding, particularly north of the M4.

4.2.2 Some inland areas east of Avonmouth village and north of the railway are most at risk of fluvial flooding from the Rhine network.

4.2.3 With climate change the majority of Avonmouth/Sevenside is at risk of tidal flooding, with the highest depths and hazard generally experienced west of the M49.

4.2.4 The breach hazard bandwidth encompasses the majority of Avonmouth and the western frontage of the study area – this area is particularly vulnerable to a breach in the defences.

4.3 The Avonmouth Sevenside Enterprise Area Ecology Mitigation and Flood Defence Project has been granted planning permission. This will bring 17km of improved sea defences and 85 hectares of wetland areas for ecological mitigation. The main construction works are scheduled to take place in late 2020. Appendix 7 shows the site as being near the Northwick Wetland Habitat Area, an area which will benefit from a raised flood bank, reinforced concrete flood wall and reinforced concrete flood wall with glass panels. The flood defence is to be raised by 1.4m, 1.6m and 2m in various places along this section. This will overcome issues that climate change may bring relating to rising sea levels.

5.0 Site Specific Flood Risk

5.1 The main source of flood risk to the site is rivers and the sea, more specifically a breach in defences along the River Severn, as seen on Appendix 1, as a result of a high tide or surge. This will only be as a result of exceptional weather conditions, the likes of which can be predicted days in advance by the Met Office.

5.2 Tides are accurately predictable, which reduces the risk of unpredicted flooding to an absolute minimum. If there was a breach in defences along the River Severn, the normal tidal cycle would promote the dispersal of flood water over the entire flood plain (which

is at a lower level to the site). Tidal cycles are approximately 11 hours, which would allow a significant time period for safe retreat.

- 5.3 The presence of motorways, nationally important industrial sites, large residential areas and nuclear power stations suggest that existing flood defences are sufficient, however we understand that local flood defences will be improved and added to as a result of plans for a new nuclear power station at Oldbury on Severn. The presence of such infrastructure promotes an appropriate, and high profile, network of flood and weather warnings.
- 5.4 According to the Environment Agency Flood Map for Planning, attached at Appendix 8, the proposed site, indicated with a yellow marker, is within Flood Zone 3, however it is in an area which benefits from existing flood defences. This can be seen more clearly on the map at Appendix 9 showing the areas benefitting from flood defences, the site shown with a red circle. According to the Environment Agency Flood Risk for Planning Map, the definition of Zone 3 is:
'Land assessed as having a 1 in 100 or greater annual probability of river flooding (>1%), or a 1 in 200 or greater annual probability of flooding from the sea (>0.5%) in any year.'
- 5.5 According to the Environment Agency Long Term Flood Risk Maps, the risk of flooding from rivers and the sea is low, and from surface water is very low, see Appendix 10, 11 and 12.
- 5.6 According to Gloucestershire County Council's Strategic Flood Risk Assessment the site is not within SFRA Level 1 Flood Zone 2, 3aCC, 3a or 3b.
- 5.7 Historic flooding records show the site and surrounding area have not been known to flood since records began in 1946, see Appendix 13.
- 5.8 The applicant has never known the site at Bilsham Farm to flood. There has been an adjoining house on site for many years and other barn conversions undertaken in more recent years. None of these properties have ever been affected by flooding. An existing drain already runs around three sides of Bilsham farmyard, removing excess surface water from the site.
- 5.9 Data has been obtained from the Environment Agency, see Appendix 14, which shows the following results for the design flood with existing defences for 2076:

- The maximum level at 0.5% - 9.28mAOD
- The maximum level at 0.1% - 9.64mAOD

However, the defences are set to be improved, and the results following installation of the new improved defences are significantly lower:

- The maximum level at 0.5% - 6.52mAOD
- The maximum level at 0.1% - 8.70mAOD

Looking even further ahead, the design flood data for 2098 does not show a large increase in levels:

- The maximum level at 0.5%- 6.52mAOD
- The maximum level at 0.1%- 9.74mAOD

- 5.10 The site is protected by existing Flood Defences and shows a maximum flood level of 9.28m AOD. The applicant will include a first floor which will have a finished floor level of 9.3m which is above the 1:200 year flood level. Under the Avonmouth Severnside Enterprise Area Ecology Mitigation and Flood Defence Project, flood defences in the Northwick Wetland Habitat Area are to be raised by 1.4m, 1.6m and 2m in various places along this section, starting in 2020, and as such will reduce the 1 in 200 flood level to 6.52m AOD.
- 5.11 We are not aware of any other sources of flooding that may affect the site.
- 5.12 The Environment Agency were unable to comment on whether properties will flood internally as modelling is not property specific. For this reason no internal depths can be given.
- 5.13 We are not able to include any flood prevention measures within this development and we would not see this as being necessary. This is because no residential space will be created from this development and therefore no lives would be at risk. Although we would ensure the heating and hot water system automatically cuts out if flooded.
- 5.14 On site there are areas above the flood level which anyone could access if on site in connection with the ground source heat pump. It is at a height of 9.3m, this is above the current 1:200 year flood level, however, under the Avonmouth Severnside Enterprise Area Ecology Mitigation and Flood Defence Project, flood defences in the Northwick Wetland Habitat Area are to be improved. They will be raised by 1.4m, 1.6m and 2m in various places along this section, starting in 2020, and as such will reduce the 1 in 200 flood level to 6.52m AOD.
- 5.15 The development and measures to protect the site from flooding will not cause an increase in flood-risk elsewhere as surface water will be collected in and directed towards the existing field drainage ditches and internal drainage board watercourse network. This is regularly maintained to aid surface water and field drainage and mitigate chances of flooding occurring. Domestic drainage systems will include non-return valves, where appropriate, to prevent a backflow of water in case of flooding.
- 5.16 The development looks to reduce the causes and impacts of flooding through its layout and design which includes the existing drainage system on site and the potential use of a sustainable drainage system.

- 5.17 The closest high ground within Flood Zone 1 would be approximately 1.00km to the north east of the site on the edge of Ingst. This is considered to be within an acceptable distance to evacuate to in the event of flooding, see evacuation route at Appendix 15.

6.0 Surface Water Management

- 6.1 The existing surface water drainage arrangements for the site are surface water is collected and directed to the existing road drainage. This will be maintained to prevent run-off from the development to prevent impact elsewhere.
- 6.2 The development will make use of a sustainable drainage system if necessary.
- 6.3 See section 5.18 above for more detail on surface water arrangements.

7.0 Occupants and Users of the Development

- 7.1 There will be no increase in occupants or users of the site from this development, once the works have been completed.

8.0 Exception Test

- 8.1 The proposed development will provide wider sustainability benefits to the community, as highlighted in New South Gloucestershire Local Plan (2018 – 2036) Sustainability Appraisal Scoping Report Consultation.
- 8.2 These benefits are considered to outweigh the flood risk as the site is in an area which benefits from flood defences which are to be upgraded, see Appendix 1 and 2. The site has not flooded since records began in 1946 and the five residential properties adjoining have never been known to flood, two of which are single storey in height.
- 8.3 The barn conversions already carried out at Bilsham Farm have not increased the flood risk elsewhere due to maintenance of the existing drainage and internal drainage board. It is therefore considered that the proposal will remain safe over its lifetime and not cause an increase to flood risk elsewhere.
- 8.4 The proposal aims to help to reduce the overall flood risk. The existing drainage and a sustainable drainage system will be used. The layout of the site will not change due to this development.

9.0 Residual Risk

- 9.1 In the event of a flood, anyone on site will retreat to the first floor available on site, only in extreme circumstances. Otherwise it will be recommended residents do not stay on the property, but seek higher ground in Ingst, at an agreed meeting point, which is in Flood

Zone 1. This will allow access to emergency and evacuation services in case of extreme events.

- 9.2 It is anticipated that an extreme flood event, whereby the flood waters rise above ground floor height, would only occur with significant prior warning. The property is situated within a flood risk zone that benefits from sea and flood defences. Sea defences are situated at 7m above mean sea level, and the ground floor level of the building is approximately 6m above mean sea level. This means that an uncommon weather phenomenon, which would undoubtedly be forecast, would need to raise the sea level by at least 7m before existing flood defences are breached and even then, flood waters would need to travel approximately 1.5 miles (2.4 kilometres) to reach the property. If such an event did occur in sufficient time to prevent escape from ground floor level, it would be recommended that an evacuation is coordinated by local emergency and rescue services, if an alternative means of escape (such as being lifted down by the fore-end loader of the tractor, or ladders) was deemed unsafe due to the conditions.
- 9.3 Any risks associated with the development will be managed throughout the lifetime of the ground source heat pump. A Flood Risk Management Plan has been prepared to reduce the risk in case the property were to be flooded, this can be seen attached at Appendix 16. This plan is to be kept at the property and read and updated regularly by the owners. This management plan provides evacuation routes in case of flooding which all occupants must be aware of.
- 9.4 Additionally, the Environment Agency Floodline Warnings Direct and Met Office Weather Warnings will be monitored by residents of the property. This will increase the likelihood of receiving any flood warnings in good time, to allow the Flood Risk Management Plan to be followed. All visitors to the property will be briefed on what to do in event of a flood and evacuation, and how they will be informed of any impending flood.
- 9.5 Additional flood emergency measures can be added to the Flood Risk Management Plan by agreement with the Environment Agency and South Gloucestershire Council's Flood Officer.

10.0 Flood Risk Assessment Credentials

- 10.1 This Flood Risk Assessment has been prepared by WebbPaton, The Dairy, Hook, Royal Wootton Bassett, Wiltshire, SN4 8EF.
- 10.2 It has been prepared as part of the application for a ground source heat pump.
- 10.3 This document has been prepared in accordance with the following documents:

- The National Planning Policy Framework (NPPF)
- The Site-specific flood risk assessment checklist
- Gloucestershire County Council’s Strategic Flood Risk Assessment
- The Avonmouth/Sevenside Strategic Flood Risk Assessment – Level 2
- New South Gloucestershire Local Plan (2018 – 2036) Sustainability Appraisal Scoping Report Consultation

10.4 This assessment was undertaken in January 2021.

11.0 Conclusion

11.1 The site has been classified within Flood Zone 3 according to the Environment Agency Flood Risk map however, the proposed site benefits from flood defences and is within 1.00km of Flood Zone 1, being 1.2km via road.

11.2 The risk of flooding has been identified due to the proposal to install a ground source heat pump and associated plant under full planning permission, and to reduce the risk, a Flood Risk Management plan has been prepared alongside this report for the applicant.

11.3 The proposal provides additional mitigation by provisions of a first floor refuge area available at Bilsham Farm, evacuation procedures and monitoring weather and flood warnings.

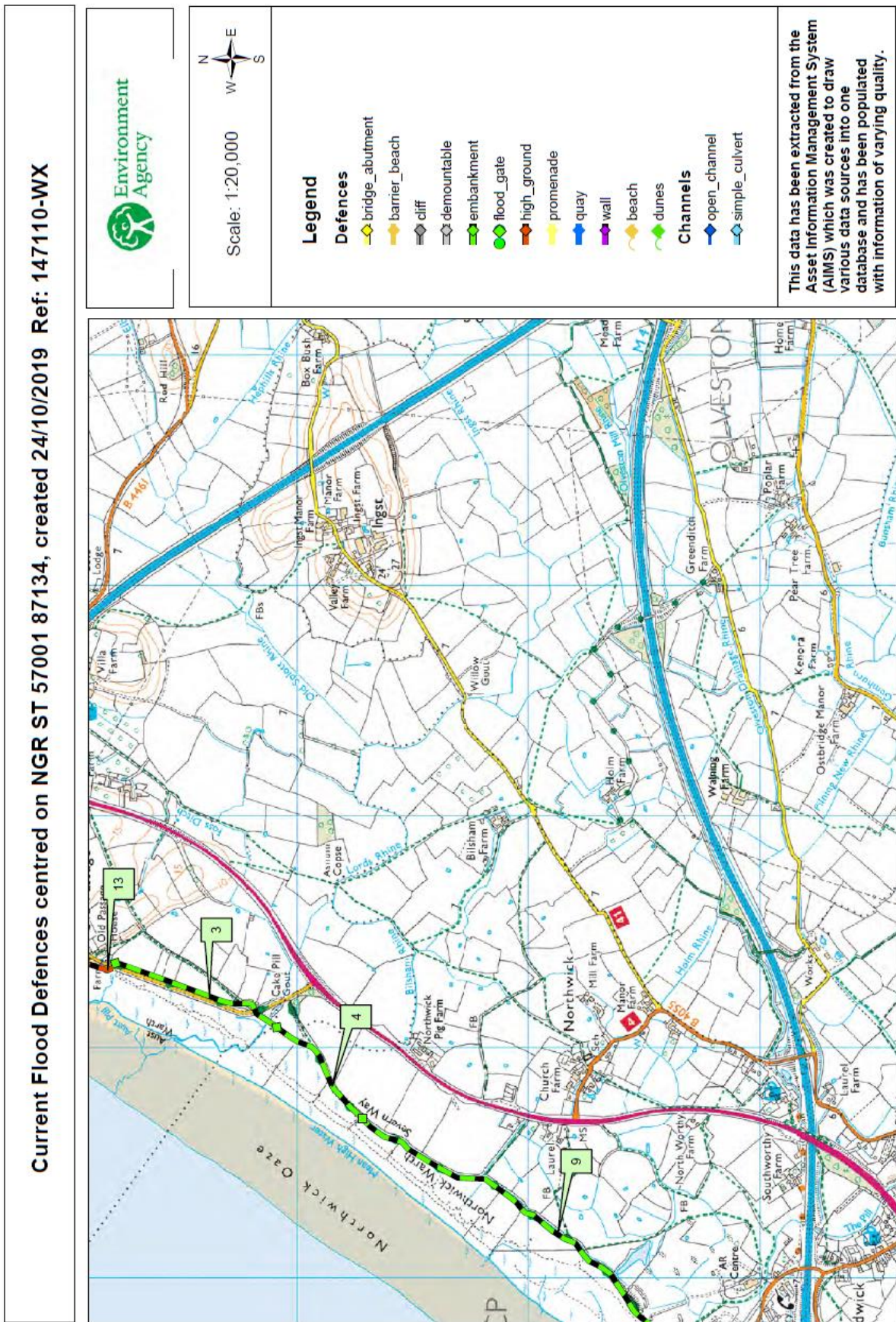
11.4 With consideration of the above points, the proposal is deemed appropriate and acceptable in relation to the potential flood risk.

There is no anecdotal flood history of the site since records began in 1946.

The site is at very low risk of surface water flooding.

The site is at low risk of river and sea flooding.

Appendix 1: Environment Agency Current Flood Defences



Appendix 2: Asset Information Management System (AIMS) Information

147110-WX - AIMS data

Product 4 - AIMS Information

147110-WX

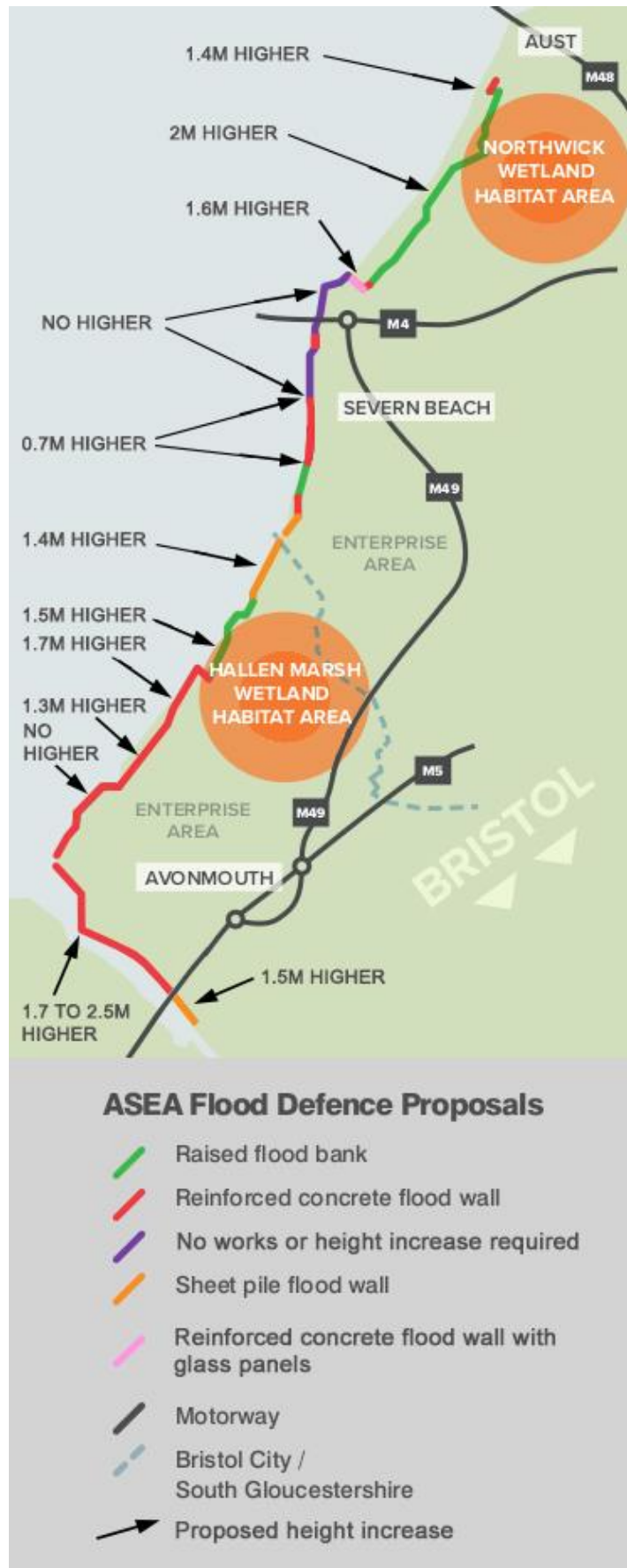
Date: 24/10/2019

Map Ref	Asset ID	Asset Type	Asset Description	Approx length (m)	Right or left bank	Actual fluvial downstream crest level (mAOD)	Actual fluvial downstream crest level accuracy	Actual fluvial upstream crest level (mAOD)	Actual fluvial upstream crest level accuracy	Actual fluvial coastal crest level (mAOD)	Actual fluvial coastal crest level accuracy	NGR	Most recent inspection	Overall condition
3	11058	embankment	Earth Embankment Def	777.32	coastal	9.20	+/->75cm	9.20	+/->75cm	8.84	+/- 1 to 5cm	510000000000	25/01/2017	2
4	24888	embankment	Earth Embankment Def	561.02	coastal	9.20	+/->75cm	9.20	+/->75cm	8.86	+/- 1 to 5cm	510000000000	25/01/2017	3
9	38594	embankment	Earth Embankment Def	1980.87	coastal	9.20	+/->75cm	9.20	+/->75cm	8.48	+/- 1 to 5cm	510000000000	25/01/2017	3
13	72793	high_ground	Erosion protection wall for access road & HG	183.96	coastal	8.35	+/->75cm	DNR	DNR	DNR	DNR	510000000000	27/11/2007	2

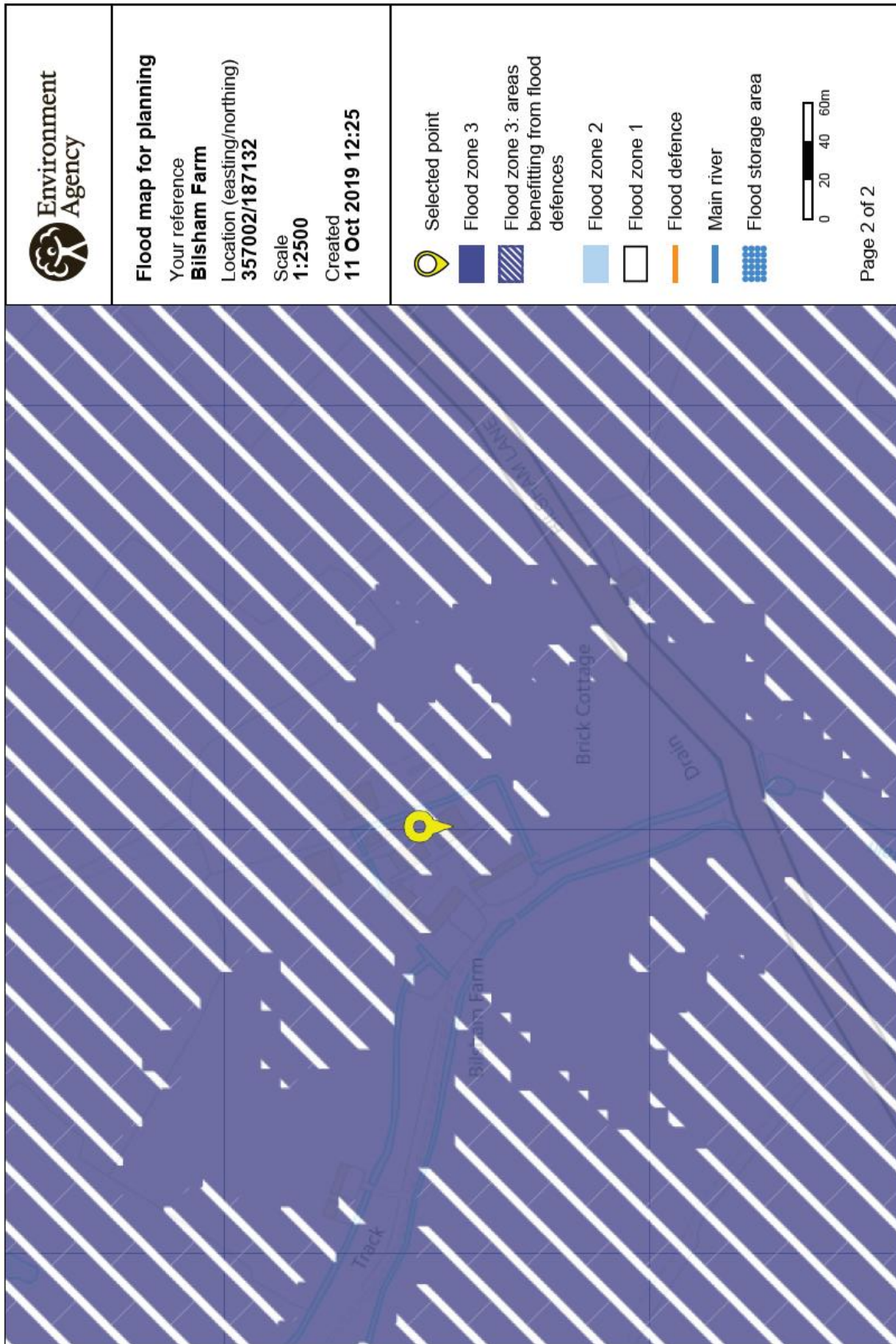
Notes

- * Overall Condition has been taken from the most recent inspection
- * Inspections are of a purely visual nature and do not necessarily reflect the true condition of the asset
- * Condition 1 = very good, Condition 2 = good, Condition 3 = fair, Condition 4 = poor, Condition 5 = very poor
- DNR = data not recorded

Appendix 3: ASEA Flood Defence Improvements

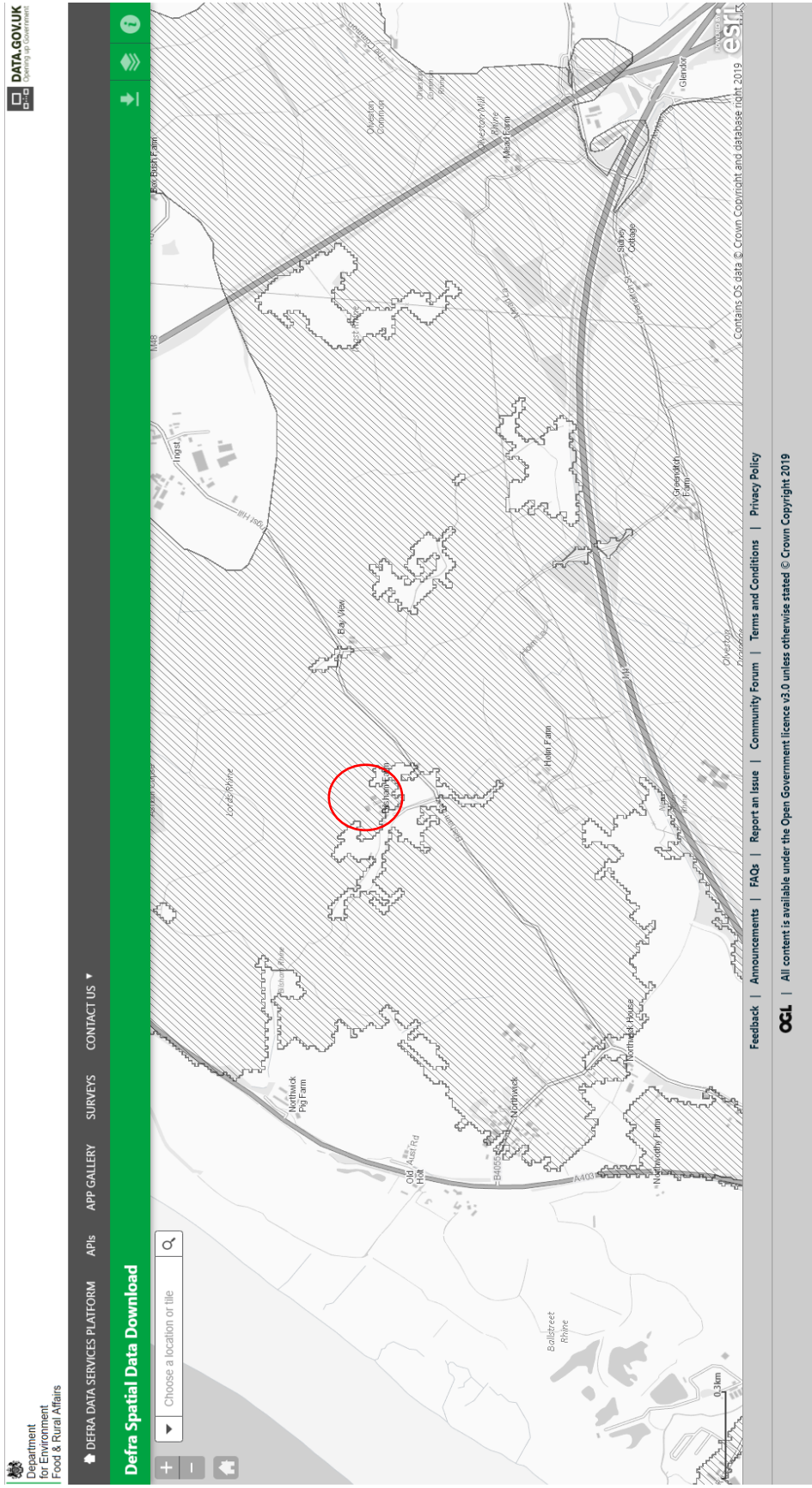


Appendix 4: Environment Agency Flood Map for Planning (Rivers and the Sea)

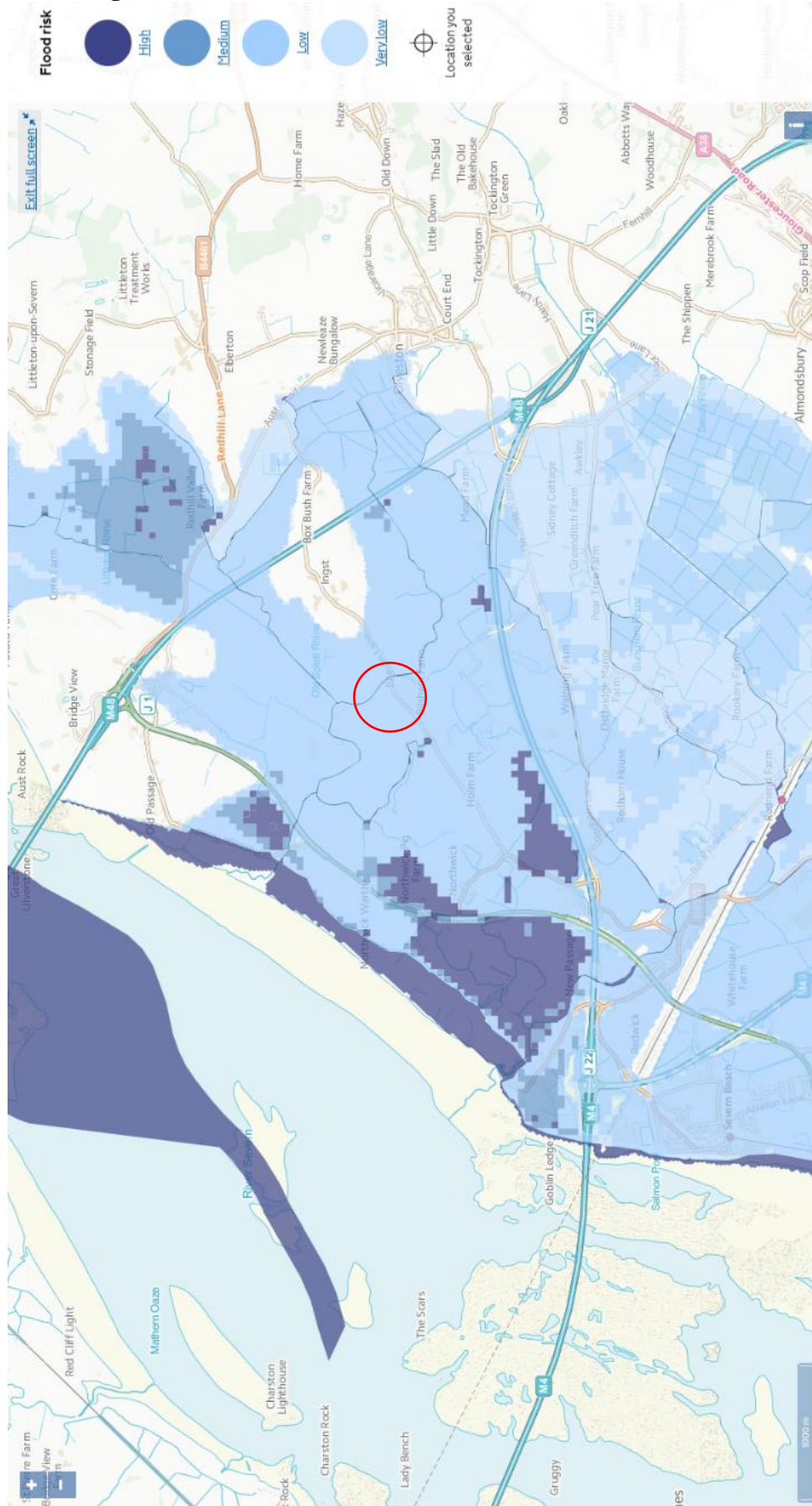


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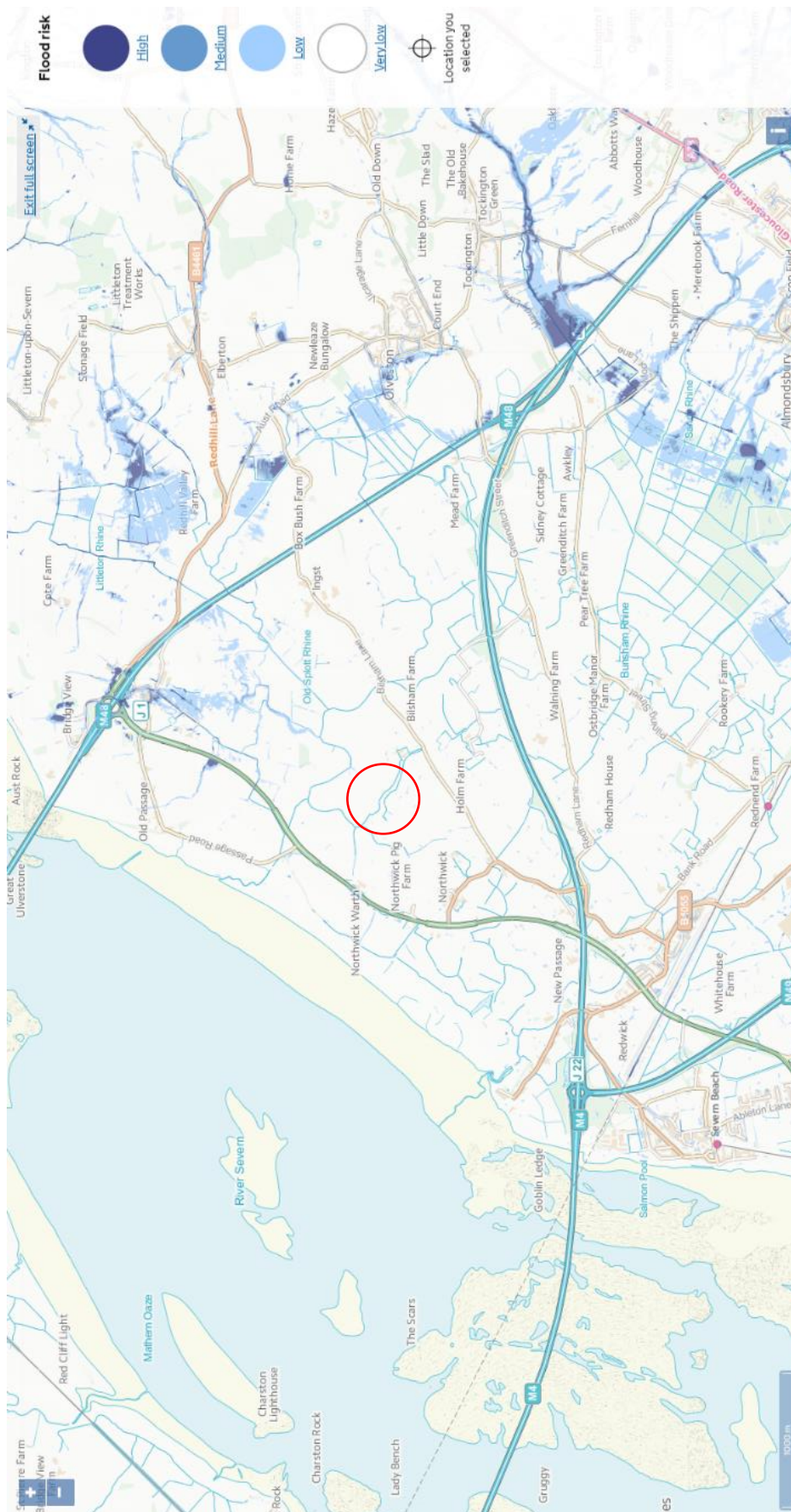
Appendix 5: DEFRA Flood Map for Planning (Rivers and the Sea) – Areas Benefiting from Defences



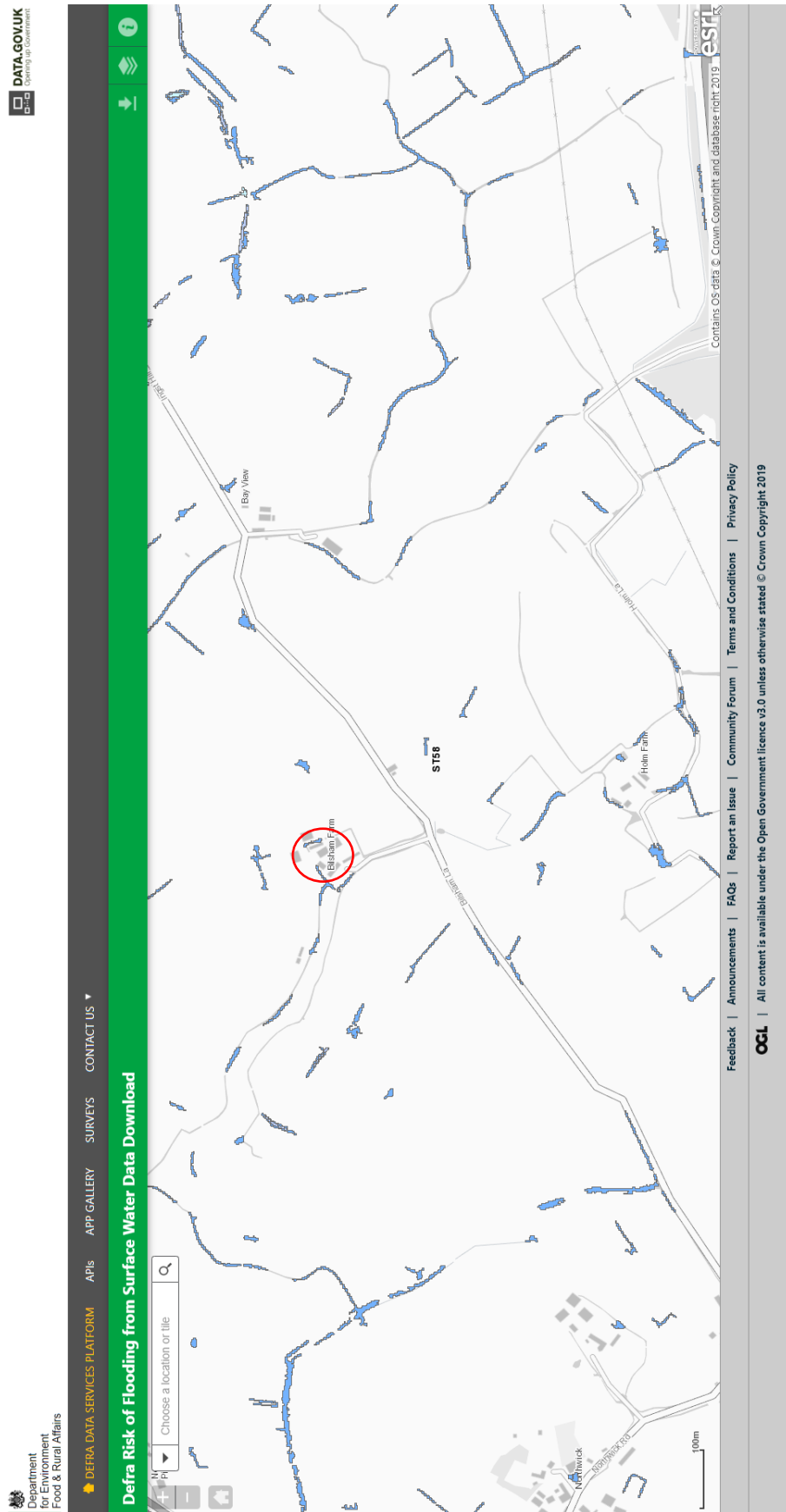
Appendix 6: Long Term Flood Risk from Rivers or the Sea




Appendix 7: Long Term Flood Risk from Surface Water



Appendix 8: DEFRA Risk of Flooding from Surface Water Extent 0.1 Percent Annual Chance



Appendix 9: DEFRA Historic Flood Map



Department for Environment
Food & Rural Affairs

DEFRA DATA SERVICES PLATFORM

APP GALLERY SURVEYS CONTACT US

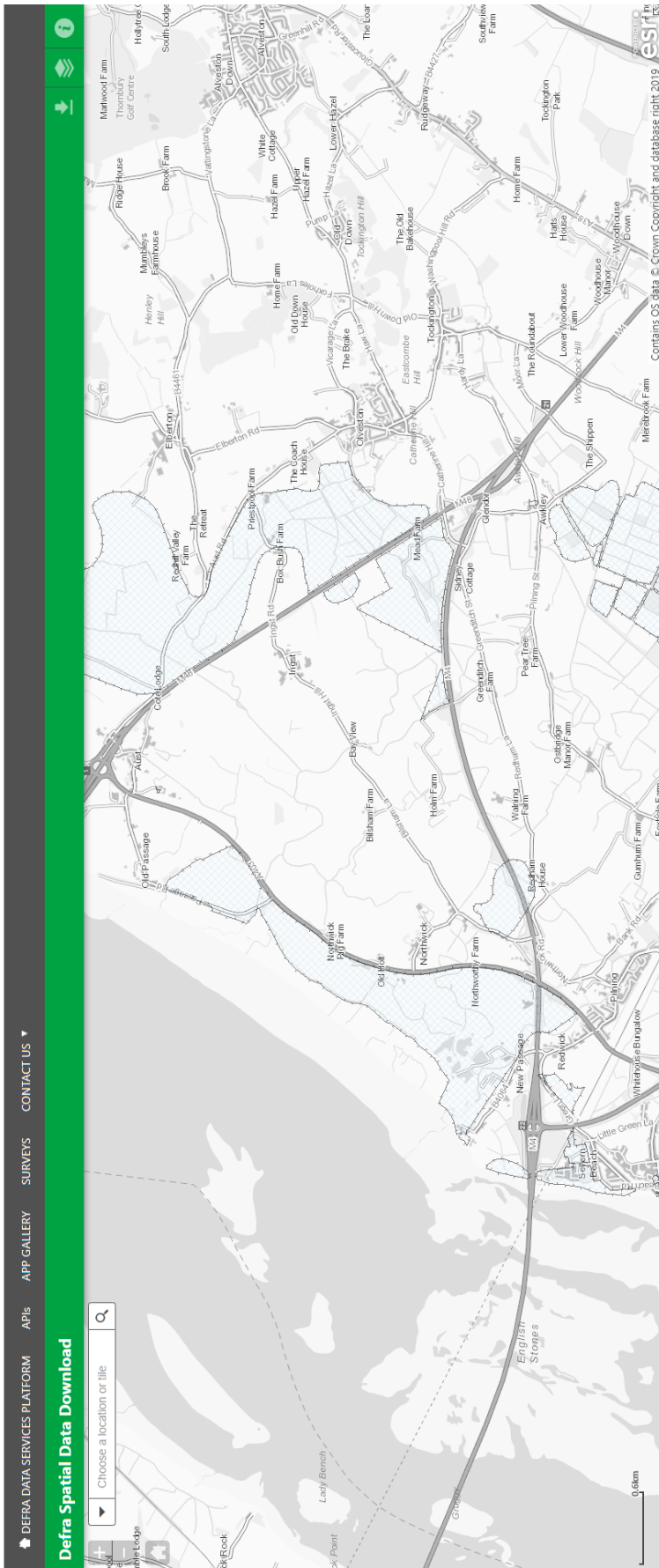
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Appendix 10: Existing and New Defences Flood Levels & Depths

The tables below show the flood level and depth for the pre and post development 2076, post development 2098 and breach 2098 for the site. These are from the Avonmouth Severnside Enterprise Area model.

Pre Development 2076 (with existing defences)

Pre Development 2076 0.5% (1 in 200 year) AEP Depth	3.43m	Depth
Pre Development 2076 0.1% (1 in 1000 year) AEP Depth	3.79m	Depth
Pre Development 2076 0.5% (1 in 200 year) AEP Level	9.28mAOD	Level
Pre Development 2076 0.1% (1 in 1000 year) AEP Level	9.64mAOD	Level

Post Development 2076 (new defences in place)

Post Development 2076 0.5% (1 in 200 year) AEP Depth	0.67m	Depth
Post Development 2076 0.1% (1 in 1000 year) AEP Depth	2.85m	Depth
Post Development 2076 0.5% (1 in 200 year) AEP Level	6.52mAOD	Level
Post Development 2076 0.1% (1 in 1000 year) AEP Level	8.70mAOD	Level

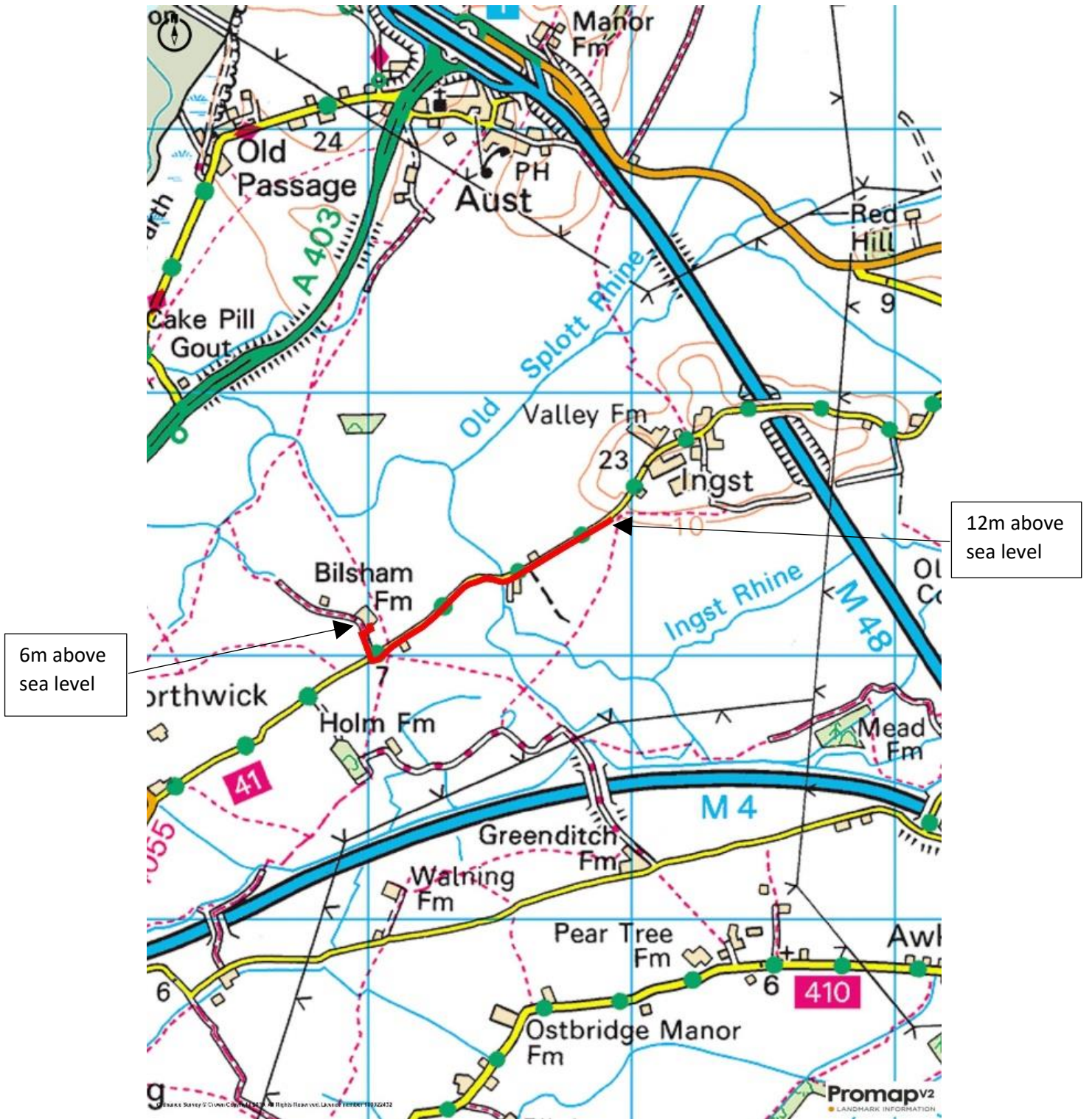
Post Development 2098 (new defences in place)

Post Development 2098 0.5% (1 in 200 year) AEP Depth	0.67m	Depth
Post Development 2098 0.1% (1 in 1000 year) AEP Depth	4.00m	Depth
Post Development 2098 0.5% (1 in 200 year) AEP Level	6.52mAOD	Level
Post Development 2098 0.1% (1 in 1000 year) AEP Level	9.74mAOD	Level

Post Development Breach of new defences 2098

Post Development 2098 0.5% (1 in 200 year) AEP Depth (Breach Composite)	1.24m	Depth
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Appendix 11: Foot & Car Evacuation Route



Appendix 12: Flood Management and Evacuation Plan

FLOOD RISK MANAGMENT AND EVACUATION PLAN
FOR
SITE OF GROUND SOURCE HEAT PUMP AND ASSOCIATED PLANT
AT
BILSHAM FARM
BILSHAM LANE
PILNING
BRISTOL
BS35 4HD

This plan is to ensure the effective evacuation of the above site in the event of a flood.

To the owner of Bilsham Farm to be provided to any third part visiting the site in connection with this development – this Flood Warning and Evacuation Plan should be read and kept in a safe place where it can be located in a hurry if required. When a new copy of this plan is issued the old copy

1.0 Planning and Procedures for Management and Users of the Site

This plan has been produced to ensure the owners of the proposed site are satisfactorily prepared for a flood event. The site will take an ‘evacuate’ policy in the event of a flood if it’s deemed safe to do so as the nearest point of high ground is located approximately 1.2km north east at the edge of Ingst. This site can be easily accessed by foot or vehicle.

This edition of the flood risk management and evacuation plan has been written prior to the gaining of planning permission so a number of assumptions have had to be made; these are listed below. It is recommended that this plan be revised before the building is occupied.

1. For this plan to be effective under most conditions it has been assumed that immediately prior to any flooding it is winter, dark, raining, blowing a gale, that there is a widespread electrical power failure and also a consequential failure of the mobile phone network.
2. It is presumed that the owners of the property would be responsible for the following:
 - Periodic revision of this plan. It is suggested that this be carried out every three years or when there is a significant change in circumstances. The revision should be carried out by suitably qualified and experienced persons.
 - Maintain a list of persons who have been issued with a copy of this plan. This will help to ensure that when the plan is revised, the new version is issued to all the relevant people.
 - Signing up with the Environment Agency Flood Warning Scheme and Met Office Weather Warnings (and any successor schemes) and distribute contact details to the residents occupying the building.
 - Maintenance of a pedestrian emergency evacuation route in perpetuity.
 - The appointment of one Flood Warden for the site. The main duties of the Flood Warden would be to monitor the EA flood warnings, inform the other residents of the issue of a severe flood warning and to marshal people to be evacuated if required. It would therefore be a requirement that the Flood Warden and Deputy were familiar with the pedestrian evacuation route under all weather conditions. They should also be aware of any people who are likely to require special attention in the event of a flood such as the very young, the elderly or the infirm.
 - Maintain an emergency contact list for residents and make it available to the Flood Warden.

2.0 Source of Flooding

As shown on the Environment Agency website plan attached at Appendix 8 the site is situated within an area at risk of flooding by the River Severn. The proposed dwelling is situated in Zone 3, but also an area which benefits from flood defences.

It should be considered that the Environment Agency (EA) say that the risk of the area flooding is 'high', that flooding is likely to occur greater than once in every 30 years. However, the site is within an area which benefits from flood defences. If a flood was to occur, there is a significant potential for the loss of life. There will also be financial losses to the residents and owners of premises located in the flood area.

3.0 Flood Warning from the Environment Agency

The owner/third party visiting site should sign up to the automated flood warnings direct service provided by the Environment Agency and Met Office weather warnings. The possibility of flooding of the area will trigger an automatic 24 hour warning service to the owner/manager's mobile number via text.

The warning service relates to the likelihood of flooding affecting the roads, properties and bridges in the area and is not specific to the site at Bilsham Farm. This service is the best available at the moment and may trigger concern that is not specifically relevant to the site, however this will provide the owner/occupier with current information on the Environment Agency evaluation of conditions in the area and serve as a warning to them to monitor potential flood conditions.

Additional information can be found via the Environment Agency:

Call Floodline 24 hours a day on 0345 9881188

Web site: <https://www.gov.uk/sign-up-for-flood-warnings>

When the situation is serious, flood warnings will also be broadcast on local television and radio news.

Any information received through the various sources must be relayed to any other occupants at the soonest appropriate time.

4.0 Environment Agency Flood Warning Levels

If flooding is forecast, warnings are issued using a set of four easily recognisable codes. Each of the codes indicates the level of danger associated with the warning. The codes are not always issued in sequence: for example in the case of a flash flood, a severe flood warning may be issued immediately, with no other warning code preceding it. See page 33 for the flood warning codes.

5.0 Preparation for Flood Event

- Put procedures in place for owner/third party to receive flood information as discussed in section 3.0.
- Those identified should follow advice given by the Environment Agency, in particular regarding to evacuation
- Those identified should always be aware of the contents of this document and prepare their own flood plan
- Make up a flood kit for those identified – including key documents, torch, mobile phone, rubber gloves, waterproof clothing, first aid kit and ensure blankets are available.
- Make a list of useful numbers that occupants may need along with emergency services.
- Make sure the owners/third parties have adequate insurance.
- Be aware that in the event of a flood, the property is likely to be deprived of drinking water and electrical power and the heating and toilets are likely to be inoperable

6.0 Personal Safety in a Flood Event

The actions described in the following sections should be carried out with personal safety considered first and foremost. If any of the actions cannot be carried out without undue risk then they should be ignored in favour of protecting people. All owners/third parties of the site should bear in mind the following;

- Stay safe in a flood.
- Floods can kill, don't walk or drive through flood waters. Six inches of fast flowing water can knock you over and two feet of water will float a car. Manhole covers may have come off and there may be other hazards unseen.
- Don't walk on river banks or cross bridges if possible. These may collapse in extreme situations or you may be swept away.
- Avoid contact with flood water as it may be contaminated.
- If it is not safe or not necessary to evacuate the site, seek refuge with bottled water and flood kit. In extreme flood events where there is a threat to safety in attempting to evacuate the building contact emergency services (tel.999) and await rescue.

7.0 Response to Flood Warnings

The owner/third party should be signed up to receive flood warnings via the phone by text to relevant mobile phones via the Floodline Direct Service. As discussed in section 4.0 this service issues 4 easily recognisable codes which are shown in detail on page 33. All those identified will be informed immediately if the Floodline Direct Service issues any code other than 'all clear'. The required response from the owner/ third party to this information will depend on the code.

In the event of a 'flood watch' code, the owner/third party will continue to monitor local news, weather forecasts and be aware of local water levels. This information should be relayed to any other occupiers.

If a 'flood warning' or 'severe flood warning' code is given then this will act as the trigger point for the owner/occupiers to evacuate the site and seek refuge at high ground if considered safe to do so.

Once all young, elderly or mobility impaired occupiers are safely to the refuge point the following procedures should be followed in order to protect the occupiers and property, whilst minimising the damage flooding can cause. These actions should only be carried out if the individual deems it safe to do so as discussed in section 6.0.

a) Protecting the site

- Be prepared to cut off electricity.
- Weigh down manhole covers to prevent them lifting and leaving a hazardous hole.
- Move anything not fixed down into a safe location e.g. dustbins, chemicals.

b) Protecting buildings/properties

- Move vehicles to higher ground to avoid damage.

c) Electricity and water

- If applicable plug sinks/baths and weigh them down with something heavy and put sandbags in toilet bowls to prevent back flow.
- Unplug all electrical items and store as high as possible.

d) Reduce flood water entering buildings

- Install flood boards in doorways.

e) Important documents

- Keep important documents in a sealed bag and in a location safe from flood water.

8.0 Evacuation

The flood defences surrounding the Severn protect a large area and as such it should be considered that any breach of the flood defences could lead to extensive flooding. In view of this, the emergency services are likely to be very thinly spread and so it cannot be assumed they will regard the surrounding area as a top priority. In view of this, if a Severe Flood Warning is issued, Bilsham Farm should be evacuated.

The medical condition of the people who might be evacuated should be considered and if children, the elderly or infirm are to be evacuated this should be via road transport. The evacuation of these people should not be delayed since they may not be able to undertake the suggested pedestrian route. As a general point it is not possible to give detailed advice now to cover all situations apart from to suggest that the advice given by the Environment Agency at the time be followed.

8.1 Evacuation before start of flooding (via road)

- Before flooding starts to occur a suitable evacuation route would be via road along Bilsham Lane to Ingst, as this is in Flood Zone 1. It is suggested that you drive directly to Ingst and take care. Do not delay.
- Be aware that roads may be flooded and you may have to seek an alternative route.
- On leaving, make sure the building is secure. The services to the building (water supply, electricity and gas if applicable) should also be turned off.

8.2 Evacuation after start of flooding (by foot only)

- If flooding has already started the safest evacuation route is by foot along Bilsham Lane to Ingst as shown by the red line on the plan as shown at Appendix 15.
- Very foggy conditions could make the pedestrian flood emergency route difficult to follow and this should be considered before undertaking this journey during such conditions.
- It is suggested that if the building is being evacuated via the pedestrian access route that the state of the tide should be considered. It would be better to evacuate the building when the tide is falling rather than rising. A copy of the current tide tables should be located within the building.
- On leaving, make sure buildings are secure and the services to building (water supply, electricity and gas if applicable) are turned off.

8.3 Staying in the building - SUGGESTED ONLY IF THERE IS NO ALTERNATIVE

- People who were not evacuated via road earlier and who are not able to make the foot journey over the pedestrian evacuation route (young children, the elderly and the infirm) should stay on upper floors at Bilsham Farm and the emergency refuge area and inform emergency services.
- The services to the building (water supply, electricity and gas if applicable) should be turned off.

8.4 In case of injury, contact Ambulance and Police (999)

8.5 Stand-down

- If the building has been evacuated and then the EA Flood Warning is removed with no flooding having taken place, the building can be reoccupied if safe to do so.
- It is suggested that the EA Flood Warnings should still be monitored even after the building has been reoccupied.

8.6 Reoccupation after a flood

- If the plant/ building has been flooded then it should only be reoccupied when the emergency services declare it safe to do so.
- It may take some time before the plant can be used again after the flood water has subsided.
- Not only will the plant (electricity, etc) need to be made safe but the parts of the building which have been flooded would require work to be carried out. This is likely to include decontamination since the flood waters may contain harmful material and the replacement of damaged plasterwork and timber. The fabric of the relevant parts of the building and plant would also need to be allowed to dry out.

9.0 After a flood

- Commission immediate emergency pumping/repair work where appropriate to prevent further damage.
- If applicable open doors and windows to ventilate the property.
- Find out where you can get help to clean up. Check with local authority or health authority in the first instance.

- If applicable contact your electricity and water company. Have your power supplies checked before using them to make sure they have dried out and are safe for use. Wash taps and run them for a few minutes before use.
- Throw away any food which may have been in contact with flood water. Contact your local Environmental Health department for advice.
- Keep a record of flood damage (especially photographs and/or video footage) and retain correspondence with insurers after a flood.
- Call your insurance companies' emergency helpline. They will be able to provide information on dealing with your claim.
- Restock emergency supplies.
- An advice guide to repairing and restoring flood damaged property, 'After a flood', is available from Floodline (0345 9881188)

Flood Warning

The site at Bilsham Farm is located within an Environment Agency Flood Warning Area. The owners and third parties should sign up with the Environment Agency Flood Warning Scheme and Met Office and distribute contact details. This free service allows flood warnings to be received by phone, text or email.

Contact Details for the Environment Agency:




Call Floodline 24 hours a day on 0345 9881188

Web site: <https://www.gov.uk/sign-up-for-flood-warnings>

When the situation is serious, flood warnings will be broadcast on local television and radio news.

The owners and third parties of the site at Bilsham Farm should follow the advice given below for each stage of flood warning.

What the flood warning codes mean and what action to take. They can be issued in any order.

<p>1. Flood Alert</p> 	<p>What it means Flooding is possible. Be prepared.</p> <p>When it's used Two hours to two days in advance of flooding.</p> <p>What to do</p> <ul style="list-style-type: none"> • Be prepared to act on your flood plan. • Prepare a flood kit of essential items. • Monitor local water levels and the flood forecast on the Met Office website.
<p>2. Flood Warning</p> 	<p>What it means Flooding is expected. Immediate action required.</p> <p>When it's used Half an hour to one day in advance of flooding.</p> <p>What to do</p> <ul style="list-style-type: none"> • Move family, pets and valuables to a safe place. • Turn off gas, electricity and water supplies if safe to do so. • Put flood protection equipment in place.
<p>3. Severe Flood Warning</p> 	<p>What it means Severe flooding. Danger to life.</p> <p>When it's used When flooding poses a significant threat to life.</p> <p>What to do</p> <ul style="list-style-type: none"> • Stay in a safe place with a means of escape. • Be ready should you need to evacuate from your home. • Co-operate with the emergency services. • Call 999 if you are in immediate danger.