Appendix A1

Cyfoeth Naturiol Cymru
Natural Resources Wales

Rossett Flood Map Enquiry

Background

Natural Resources Wales' (NRW) Flood Map is updated quarterly. It identifies locations at risk of flooding from rivers and sea and encompasses them into Flood Zones. Flood zones are areas which would naturally be affected by flooding from rivers and the sea. Flood Zones do not provide information on flooding from groundwater or other sources. These flood zones refer to the probability of river flooding, ignoring the presence of defence.

Flood Zone 3:

- the extent of a flood from rivers with a 1% (1 in 100) chance or greater of happening in any given year
- the extent of a flood from the sea with a 0.5% (1 in 200) chance or greater of happening in any given year

Flood Zone 2:

- the extent of a flood from rivers or from the sea with up to a 0.1% (1 in 1000) chance of happening in any given year
- contains areas recorded to have flooded in the past
- Flood Zone 2 is important from a planning context as it forms the basis of Zone C in the Welsh Government Development Advice Map (DAM)

Development Advice Map:

The Development Advice Map is for land use planning purposes. It should be used alongside Planning Policy Wales and Technical Advice Note (TAN) 15 to direct new development with respect to flood risk. Together, they form a precautionary framework to guide planning applications.

The map is based on Natural Resource Wales' extreme flood outlines (Zone C) and the British Geological Survey drift data (Zone B). Zone B data originally published 2004, updated in 2017, Zone C data revised quarterly. The online maps shown here are limited to a scale above 1:25,000 and not designed for small-scale investigations but as a trigger for policy advice in TAN 15.

Introduction

An external source Mr J.[redacted] has contacted NRW regarding a newly proposed development site in Rossett Wrexham shown in Figure 1 (Wrexham CBC Ref P/2018/0560). He believes that the site and areas near the River Alyn has suffered from flooding dating back to 1976 which is not fully represented in our current Flood Map (181019).

Figure 1: Outline drawn of from Proposed site development plans.

The current NRW flood map does show that parts of Rossett are at flood risk. However, our flood map does not show the Proposed development site at risk of flooding see Figure 2. The town is at a fluvial risk from the River Alyn which is a tributary of the River Dee and from pluvial flood risk also.

Figure 2: Flood Zone 2 in Relation to the Proposed site.

Requests

Mr[redacted] has requested the following:

- To update the area as Zone B in the Development Advice Map (DAM).
- Potential to carry out further generalised modelling in Rossett.
- Amendments to the current flood map based on information he provided to NRW including historic flood photos and documentation regarding a planning appeal from 2002 where development was proposed on Alyn Drive, Rossett.

Conclusions and Response

In response to Mr [redacted] queries NRW are unable to make amendments to Zone B on the DAM map as Zone B is created from Fluvial Drift maps created by the British Geological Survey, not NRW, and therefore no changes would be made on this basis.

The current Flood Map is under revision and to be updated across the nation in 2019. This has modelled the River Alyn as part of the update project, and therefore, a further modelling study would not be carried out in Rossett.

After careful evaluation of Data Provided from Mr J. [redacted] we are proposing an amendment to the current public facing flood map (Figure 3). This would subsequently update DAM Zone C. This would include increasing the outline onto Alyn Drive and Harwoods Lane, this is based on the photographs in Appendix 1.

Figure 3: Proposed amendments to the current Flood map.

Prepared by: A [redacted] 6/11/2018

Appendix 1:
Flooding Photographs at Alyn Drive

Alyn Drive Flooding outside of No.56, Alyn Drive.

Alyn Drive Flooding outside of No.56, Alyn Drive.

Alyn Drive Flooding outside of No.58 Alyn Drive.

Alyn Drive Flooding outside of No.36 Grosvenor Crescent.

Alyn Drive Flooding outside of No.56, Alyn Drive.

Alyn Drive Flooding from Harwoods Lane.

Harwoods Lane Flooding, From Alyn Drive View point.

Harwoods Lane Flooding

Appendix A2 National Resources Wales

NRW wrote to the developers agent on the 28th February 2017 in response to a pre-planning consultation regarding Land adjacent to Lane Farm, Rossett Road/Holt Road, Rossett. (Known in the LDP as P/2018/0560)

Senior Development Planning Advisor MR wrote on a number of topics and on the *topics of foul drainage and flood risk she wrote as follows:-*

"FOUL DRAINAGE

The site is located on a Secondary A aquifer and within a Source Protection Zone 3, and as such is considered sensitive with respect to controlled waters. Source Protection zones are designated by Natural Resources Wales to identify those areas close to drinking water sources where the risk associated with groundwater contamination is greatest."

"FLOOD RISK Fluvial flood risk
Both proposed development sites are in Zone A as defined in TAN 15 Development & Flood Risk (2004) and shown on Welsh Government's Development Advice Map. This is confirmed by Natural Resources Wales' Floodmap which shows that the site has a risk of flooding less than 0.1% in any year. Based on this, the submitted flood consequences assessment (FCA) has not considered fluvial flood risk further. However, our Floodmap at this location is based on broad-scale generalised hydraulic modelling and as such no detailed modelled flood level information is available for this location.

We provided a pre-application opinion in 2015 to XXXXX Consultants (who produced the FCA) that, given the scale and nature of the proposed development, the proximity of the site to the edge of the extreme flood risk outline, and based on the 'precautionary approach' advocated in TAN 15, our view is that detailed hydraulic modelling should be undertaken to more accurately assess the potential flood risks, especially when climate change is considered over the lifetime of the development. While we cannot insist that this is done as part of any flood consequences assessment (FCA), we would strongly recommend it so that detailed evidence is produced to truly discount flood risk at the site."

NRW wrote further to WCBC on the 30th July 2018 again regarding Protected Species, Flood Risk, Environmental Management, Ground Water & Waste. On flood risk NRW wrote:

"…….The application is supported by a Flood Consequence Assessment (XXXXX Consultants. June 2018 2nd Issue) which addresses fluvial flooding by stating that the adjacent (off-site) extreme flood zone boundary is 600mm below adjacent site levels. Although the flood zones are based on a nationalised modelling technique and are not site specific, we appreciate that the Extreme Flood Outline (0.1% or 1 in 1000) used flow values much greater than the 1% plus climate change allowance design event required to be flood free. We would however strongly advise that your colleagues acting as the Lead Local Flood Authority should be consulted regarding the surface water flood risks associated with the proposal. We do not provide advice on surface water flood risk or any localised flood risk issues (along with surface water drainage arrangements).

On the topic of Ground Water NRW wrote:

Groundwater

"The proposal site is within a source protection zone (SPZ).

- Discharge of clean roof water to ground (G12) The discharge of clean roof water to ground is acceptable both within and outside SPZ1, provided that all roof water down-pipes are sealed against pollutants entering the system from surface run-off, effluent disposal or other forms of discharge. The method of discharge must not create new pathways for pollutants to groundwater or mobilise contaminants already in the ground. No permit is required, if the above criteria can be met. - Sustainable Urban Drainage Systems (G13) The Government's expectation is that sustainable drainage systems (SUDS) will be provided in new developments wherever this is appropriate. NRW supports this expectation. Where infiltration SUDS are to be used for surface run-off from roads, car parking and public or amenity areas, they should: • be suitably designed • meet Governments non-statutory technical standards for sustainable drainage systems – these standards should be used in conjunction with Planning Policy for Wales • use a SUDS management treatment train – that is, use drainage components in series to achieve a robust surface water management system that does not pose an unacceptable risk of pollution to groundwater

Where infiltration SUDS are proposed for anything other than clean roof drainage (see G12) in a SPZ1, a hydrogeological risk assessment should be undertaken, to ensure that the system does not pose an unacceptable risk to the source of supply.

This position statement G13 needs to be read in conjunction with position statement G10." [Sic]

NOTE

Since the above advice was given by NRW in July 2018 it has been accepted by NRW that the adjacent (off-site) extreme flood zone boundary is not 600mm below adjacent site levels, but as being level with the boundary. This acceptance by NRW threw into doubt the validity of the FCA submitted by recent developers. With Climate change factored in with taking into account measured flood lines the southern parcel of Site P/2018/0560 will be subject to substantial flooding and run off. If the site is ever developed, exceedance will occur and there will be extreme run off into surrounding properties. The FCA mentioned above has now been superceded by a new FCA which has been submitted to support P/2021/0110 and P/2021/0111 pursuant to P/2018/0560.

Appendix B

Document B1: Statement from DH

[redacted]

[redacted]

5 September 2018

Flooding Rossett 6th/7th November 2000

Dear Sir/Madam,

I, Mr DH of [redacted] Rossett witnessed at first hand the River Alyn flooding in 2000. As a former Chief Officer of Wrexham CBC, I was part of the Council's Management Team and also part of the Authority's Emergency Management Response Team during those floods. In this role, I acted as a lead officer during the shift responses to the floods and I also acted as one of the lead officers for the Authority in Rossett at this time.

The floods which completely blocked Station Road, parts of the main Chester Road and Gun Street caused significant flooding of properties, including the basement of The Golden Lion Public House and reached the front doors of a couple of properties in Alyn Drive see below. The flood covered parts of Alyn Drive and Trevalyn Way, completely covered the Alyn Drive flood plain and crossed Harwoods Lane, close to the cottages, thereby starting to encroach on the fields abutting Lane Farm.

I have looked at the proof of evidence prepared by John Filce for the 2002 UDP Planning Inquiry and confirm that the flood levels described in the text and as confirmed by witness statements in that proof of evidence, are correct. The flood water level reached a maximum height at No 37 Alyn Drive, almost breaching the threshold of the conservatory at the rear of the property. If the water level had risen any further the bungalow would have been totally at risk of flooding.

I can confirm that Wrexham Council supplied sandbags to the properties close to 37 Alyn Drive and Brandon Grove in an attempt to restrict the floodwaters entering those dwellings. Some properties in Trevalyn Way also received sandbags. The peak of the flooding was reached late into the night and by the following morning on 7th November 2000, the waters had started to recede.

The flood waters presented themselves elsewhere, crossing the road in Harwoods Lane on the afternoon of the 6th November and continued to rise during the afternoon and evening at that location. I confirm that the photographs showing the early afternoon flooding in Harwoods Lane and in Trevalyn Way are correct but I cannot say what the final flood height was in these 2 locations.

I therefore wish to advise that from my examination of the latest NRW Development Flood Map for the Rossett area, it does not totally accord with the extent of flooding apparent in November 2000 and should be the subject of review to show the areas actually flooded at the time. [redacted]

Page 1 of 1

Document B2: Statement from DR [redacted]

[redacted]

1st January 2019

Flooding Rossett 6th/7th November 2000

Dear Sir/Madam,

I, Mr DR of [redacted], Rossett [redacted] witnessed at first hand the River Alyn flooding in 2000. During the daytime of the 6th November 2000 I filmed on video the flooding in Rossett which covered the complete village area from Station Road and Mill Lane right through to Cooks Bridge and Daisy Lane at Parkside. I have lived in Rossett for all of my life and have never seen flooding to the extent of that which took place in November 2000, although severe flooding occurred in 1976 but I was working on the night shift at Shotton Steel works at the time and did not witness the severe overnight flooding on that occasion.

Regarding the 2000 flooding I can confirm that Wrexham Council and the Army supplied sandbags to the properties all around Station Road, which suffered extensive flooding and other local areas in an attempt to restrict the floodwaters entering those dwellings. The flood covered parts of Alyn Drive and Trevalyn Way, completely covered the Alyn Drive flood plain and crossed Harwoods Lane, close to the cottages, thereby starting to encroach on the fields abutting Lane Farm. The peak of the flooding was reached late into the night and by the following morning on 7th November 2000, the water had started to recede in many areas.

The River Alyn reached a very high level on Harwoods Lane and sandbags were deployed at the highest point of the lane just short of the first Cottages in Harwoods Lane at Trevalyn Hall View. I have marked the high point on the attached map and confirm that the water rose to a height that made Harwoods Lane impassable for a considerable period of time.

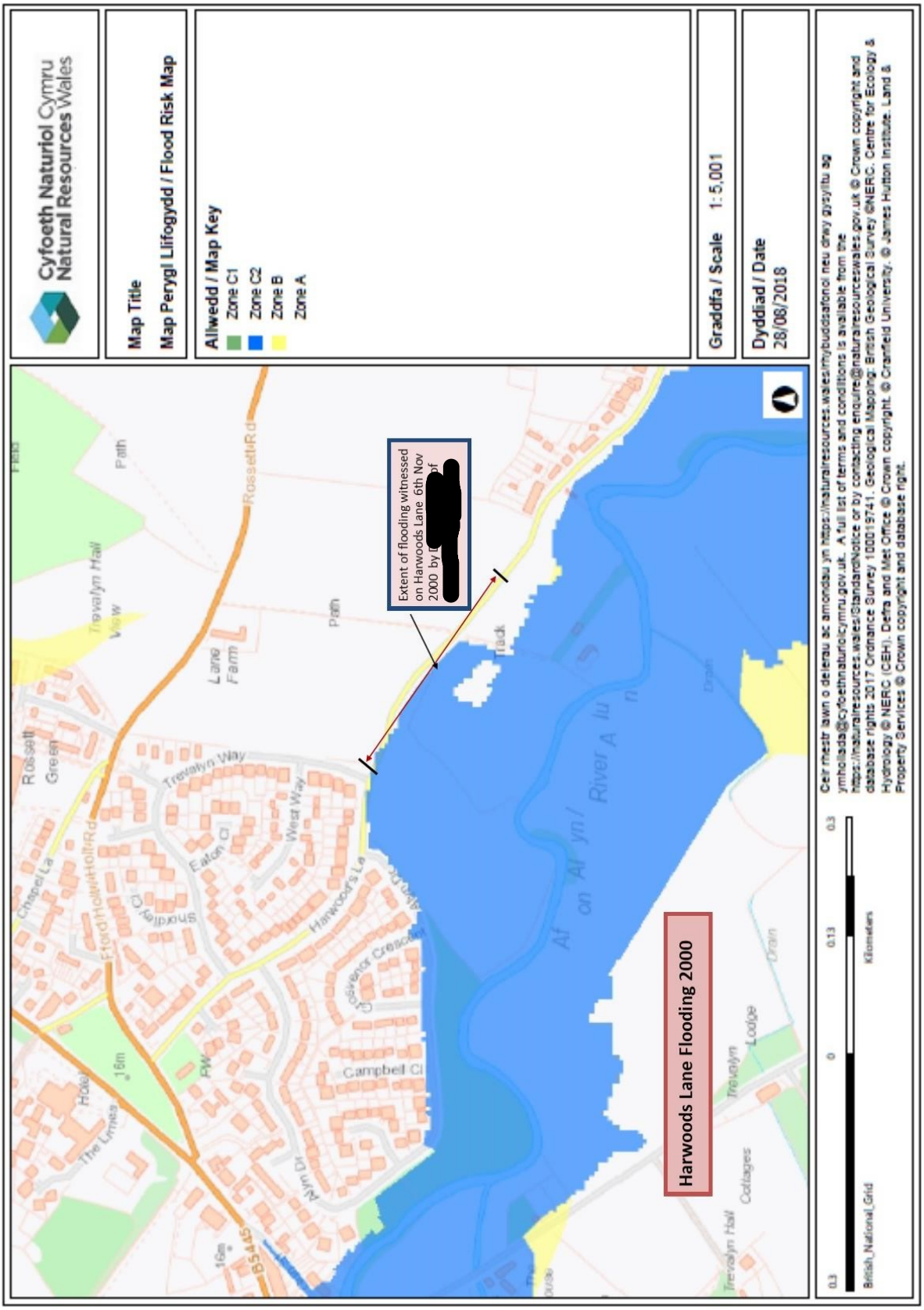
I have a copy of the video, which was taken between 10-00am in the morning until about 4-00pm on the afternoon of the 6th November 2000 showing the vast areas covered by the flooding including the shear volumes of water entering the floodplain which I will be pleased to make available to the Council.

Yours sincerely

[redacted]

Page 1 of 2

Document B2: Statement from DR



Document B3: Statement from DG

17th February 2019

Dear Sir/Madam

Flooding to Harwoods Lane and Fields adjacent to Lane Farm and Trevalyn Hall View.

I, Mr [redacted], Rossett [redacted] witnessed at first hand the River Alyn flooding in the last few years. I have lived in Rossett all my life and have seen flooding to the River Alyn on a number of occasions the worst two events were about 20years ago and before that sometime in the 1970s. I cannot remember the exact dates but both events resulted in the closure of Harwoods Lane for a period of about 1 week. On the most recent event I recall that the flood water rose gradually during the day and reached the high point in the evening on Harwoods Lane quite close to the [redacted] Cottages where I live. The road was sandbagged at the highest point on the road and the water reached about 1" just below the sandbag line. There was serious concern at the time that the flood water would overtop the road at its highest point and flood the cottages that were somewhat lower on the road that slopes gradually down towards Broad Lane. I confirm that I have indicated to [redacted] & [redacted] [redacted] the highest point to which the flood water reached on the lane closest to [redacted] Cottages. The high water mark I indicated is shown on the attached plan.

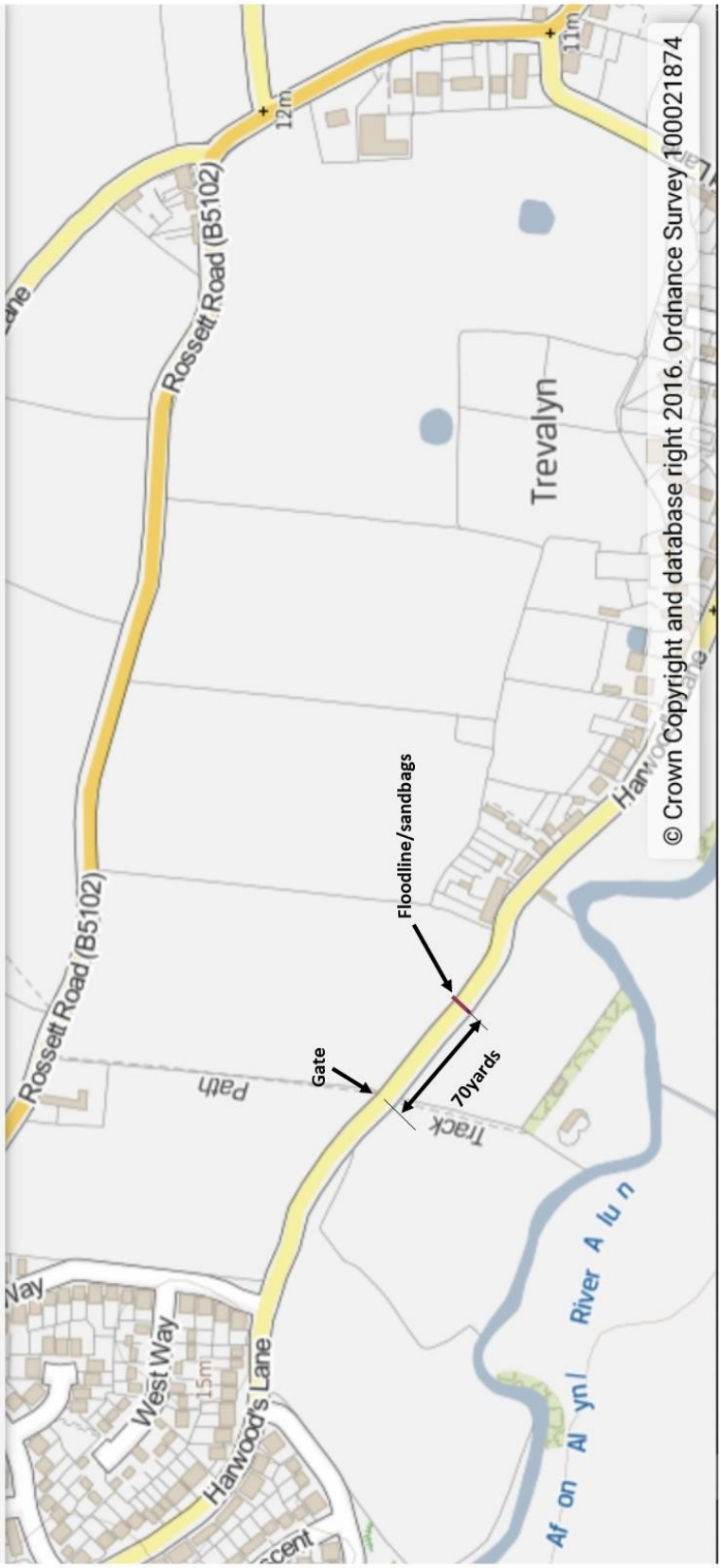
I wish also to record that the upper field adjacent to Trevalyn Hall View had problems with a natural spring in the field. The problem was so great that in the late 1950s the newly built houses in Trevalyn Hall Way had to be evacuated within days of completion as the natural spring lifted the floors of the houses. The floors were taken up and lots of remedial work was carried out before the tenants were allowed back in. As far as I can recall the spring in the adjacent field was the reason why the roadway was never completed at Trevalyn Hall Way and why further building on the estate was abandoned. The upper field has always shown that it is prone to flooding and standing water particularly from the centre towards the end closest to the Darland School Playing Field.

Yours Sincerely

DG

Document B3: Statement from DG

Harwoods Lane—Flooding High watermark and sandbag line Nov 2000



Note : The road was sandbagged at the highest point on the road and the water reached about 1" just below the sandbag line during the 2000 flooding.

Page 2 of 2 [redacted] Statement 17th Feb 2019

Document B4 Run Off in Trevalyn Way Early afternoon 6th Nov 2000

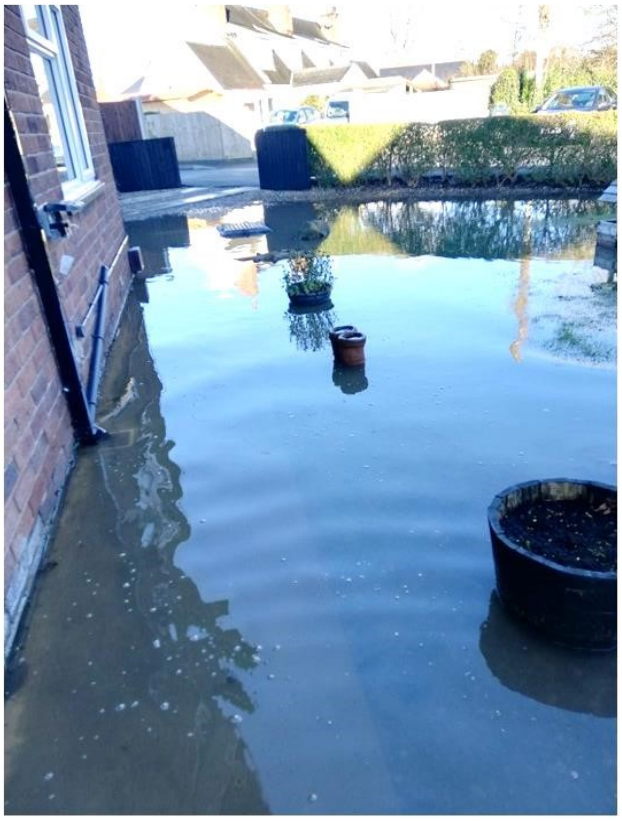
Outside [redacted] Trevalyn Way

Outside [redacted] Trevalyn Way

Document B5 Run Off in Darland View Jan 2021

Above: [redacted] Darland View Rossett Flooding on the evening 20th January 2021. Note sandbagging to doorway!

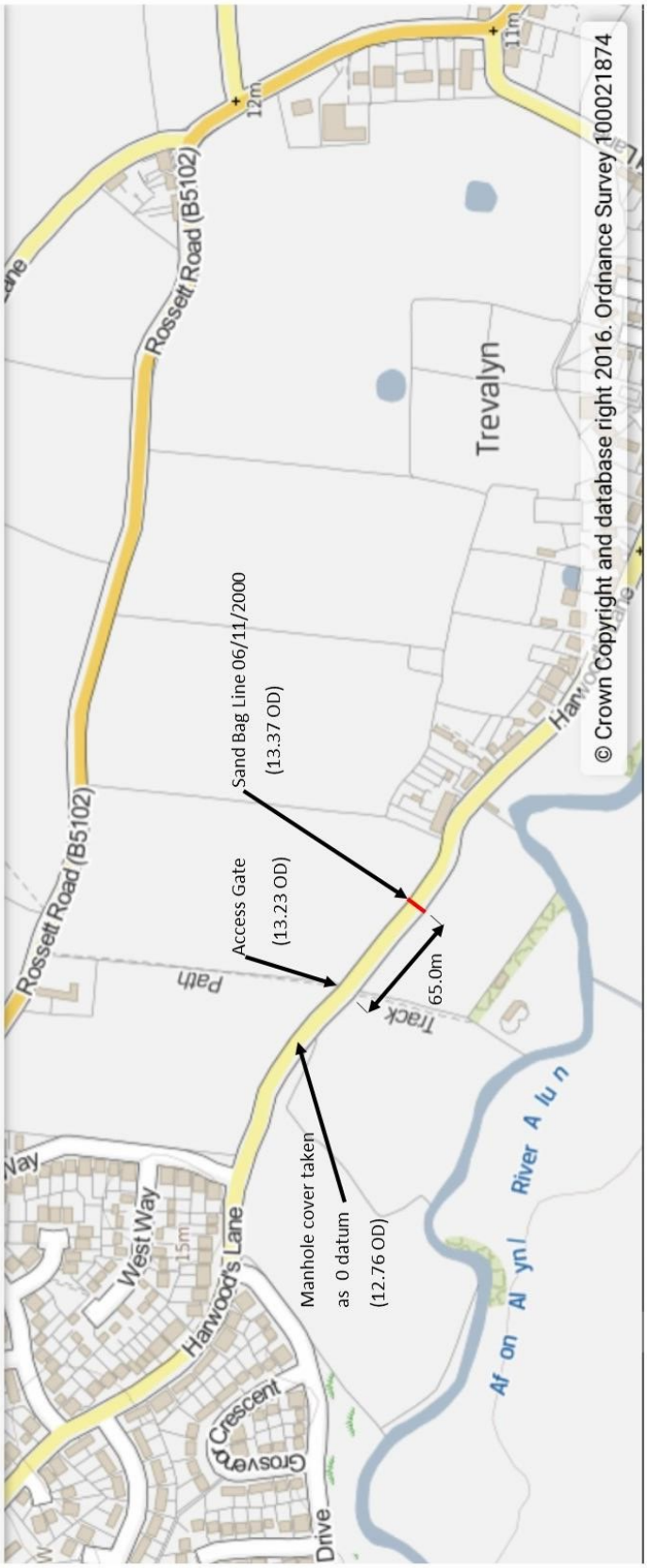
Below: Run off flooding to garden [redacted] Darland View 21st January 2021. (All gardens in Darland View run-off flooded).



Top Photograph Courteousy and Copyright Wrexham Leader

Appendix C1

LAND NORTH & SOUTH OF ROSSETT ROAD—SITE RO004AS :- SOUTHERN PARCLE OF LAND



SURVEY MEASUREMENTS TAKEN 07 Feb 2019 by [redacted], [redacted] and [redacted].

Level change taken between the entrance gate and the sandbag line identified by [redacted] & [redacted]

Both of Trevalyn at the time of the most recent River Alyn Flood on 6th November 2000. Sandbag line location

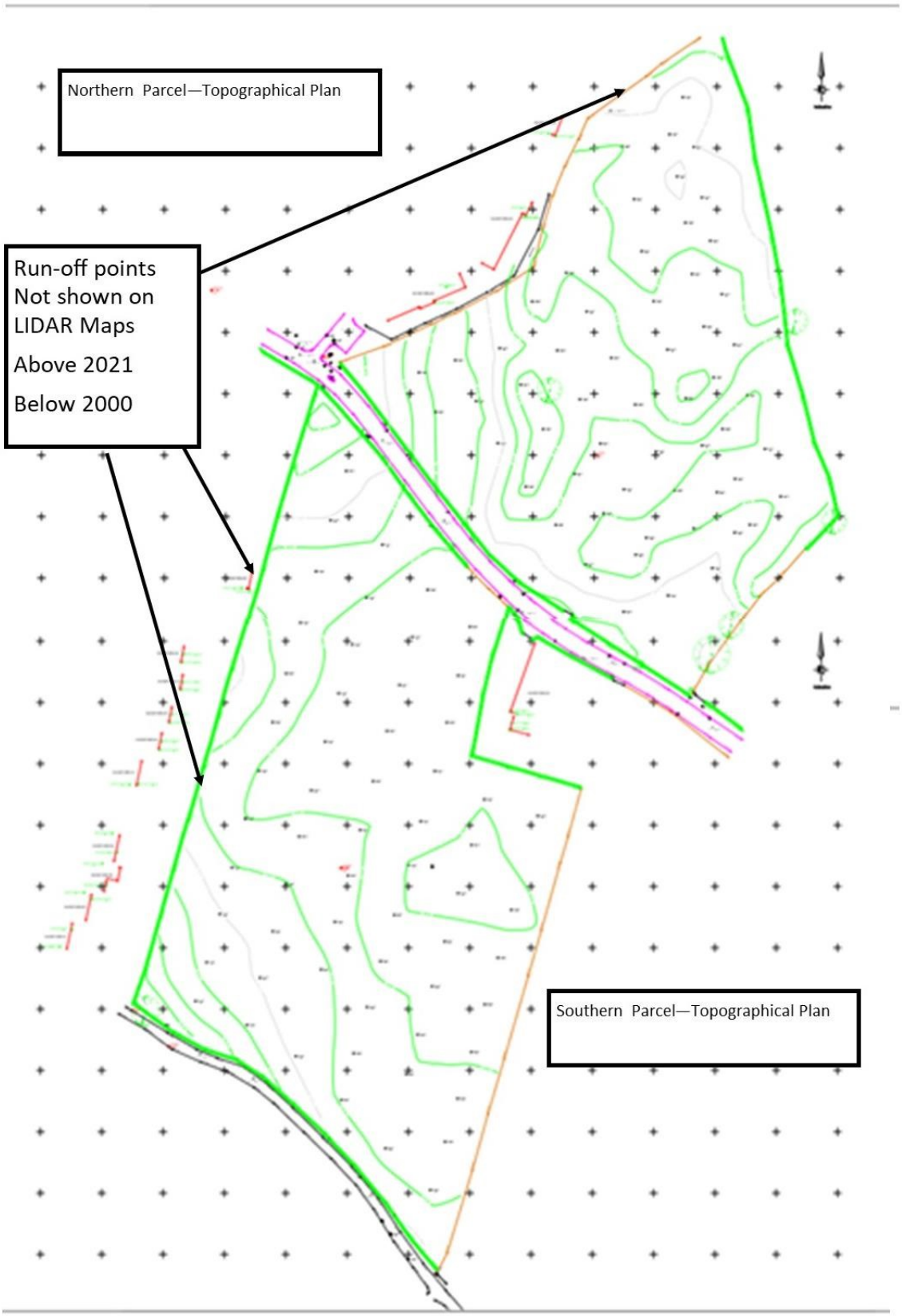
Confirmed by [redacted] WCBC Duty Flood officer for 6th November 2000. Difference in levels:-

Gate threshold to Southern parcel of land 140mm lower than sandbag line on Harwoods Lane.

(Gate Threshold + 470mm above manhole 12.76 OD datum, sandbag line 610mm above manhole datum.)

Sketch by [redacted]

Appendix C2


Northern Parcel—Topographical Plan
Run-off points
Not shown on
LIDAR Maps
Above 2021
Below 2000
Southern Parcel—Topographical Plan

Topographic Plan showing historic Run-off to Trevalyn Hall View & Trevalyn Way Appendix D1 Historical Map of P/2018/0560 Circa 1937

Appendix D2 : Geophysical Survey Site P/2018/0560

Appendix D3 Example below of Standing Surface Water 12th June 2019

Above Southern Land Parcel between Lane Farm and Harwoods Lane Example below of Standing Surface Water 21st Jan 2021

Flooding to the rear of Lane Farm (Southern Land Parcel) towards Trevalyn Way.

Appendix E: NRW FOI Responses

Cyfoeth Naturiol Cymru
Natural Resources Wales

Mr [redacted]

Ein cyf/Our ref: ATI-19893a
Date: 7th September 2020

Dear [redacted]

YOUR REQUEST FOR INFORMATION
I am writing in respect of your request for information (**ATI-19893a**) dated 10th August 2020 under the provisions of the Environmental Information Regulations (EIR) (2004).

You requested NRW to provide you with a response to the following queries:

1. **Please will you provide a copy of your records (electronic or otherwise) of the 1964 incident showing how and where the evidence was gathered, when and by whom. In addition, please indicate the extent of the flood outlines on any maps of the day that extended beyond the village centre of Rossett.**

We do not hold any information for Rossett from the 1964 flood event.

Regulation 12(4)(a) Environmental Information Regulations (2004) applies. Information not held.

2. **Please will you provide a copy of your records (electronic or otherwise) of the 1976 incident showing where the evidence was gathered, when and by whom. In addition, please indicate the extent of the flood outlines on any maps.**

We do not hold any information for Rossett from the 1976 flood event.

Regulation 12(4)(a) Environmental Information Regulations (2004) applies. Information not held.

3. **Please will you provide a copy of your records (electronic or otherwise) of the 2000 incident showing where the evidence was gathered, when and by whom. In addition, please indicate the extent of the flood outlines on any maps.**

Attached is a copy of the flood event outline for Rossett taken from our Historic Flood Outline digital GIS Layer. This was digitised from aerial footage captured by the North Wales Police Helicopter during the event together with a number of additional areas following the evidence submitted previously by yourself.

4. **With respect to the claimed hydraulic modelling carried out on the River Alyn post 2000 incident to inform the C1 Zone protection works undertaken in Station Road**

[redacted]
Cymorth Technegol Cyswllt Cyfoeth / Customer Hub Technical Support
E-bost / E-mail [redacted]naturiolcymru.gov.uk/[redacted]@naturalresourceswales.gov.uk
Gwefan/Website:www.cyfoethnaturiolcymru.gov.uk/www.naturalresourceswales.gov.uk

& Gun Street Rossett in 2006 will you please provide details of the 1 in 100-year and 1in 1000-year climate change modelling showing the extreme flood outlines in relation to AOD.

The detailed hydraulic modelling produced for the scheme did not consider climate change. As such the requested information does not exist and cannot be provided.

5. **Will you please explain why the letter from NRW [redacted] dated 2017 details that NRW Hydraulic Modelling is only generalised modelling and that the developer should carry out more detailed hydraulic modelling to more accurately assess the potential flood risks, especially when climate change is considered over the lifetime of the development. Whilst NRW did not insist that this is done as part of any flood consequences assessment (FCA), it was strongly recommended so that detailed evidence was produced to truly discount flood risk at the site. If NRW models can be relied upon as explained in the earlier complaint response why was detailed modelling that was carried out in earlier years so unreliable at this location so that at least 11years later in 2017 the modelling did not adequately inform the latest Rossett development. A copy of [redacted] Letter attached for easy reference.**

From our previous response and further review of the model extents the flood outlines downstream of Rossett merge from the detailed model outputs back into broadscale modelling. This occurs in the area adjacent to the development site previously referred to.

In relation to NRW's Flood Risk advice in our letter (Our ref: CAS-29322, [redacted], 28 February 2017), which was provided in response to a Pre-application Consultation, we re-iterate that the advice we provided recommended that detailed hydraulic modelling be undertaken. Our advice did not require hydraulic modelling be produced in support of the Developer's Flood Consequences Assessment. Our advice at that time was conservative and went beyond what was required by TAN15 and NRWs role / remit.

If you are dissatisfied with our response you are entitled to pursue this matter through our appeals procedure, a copy of which is below

Yours sincerely

M. [redacted]

[redacted]
Customer Hub Technical Support

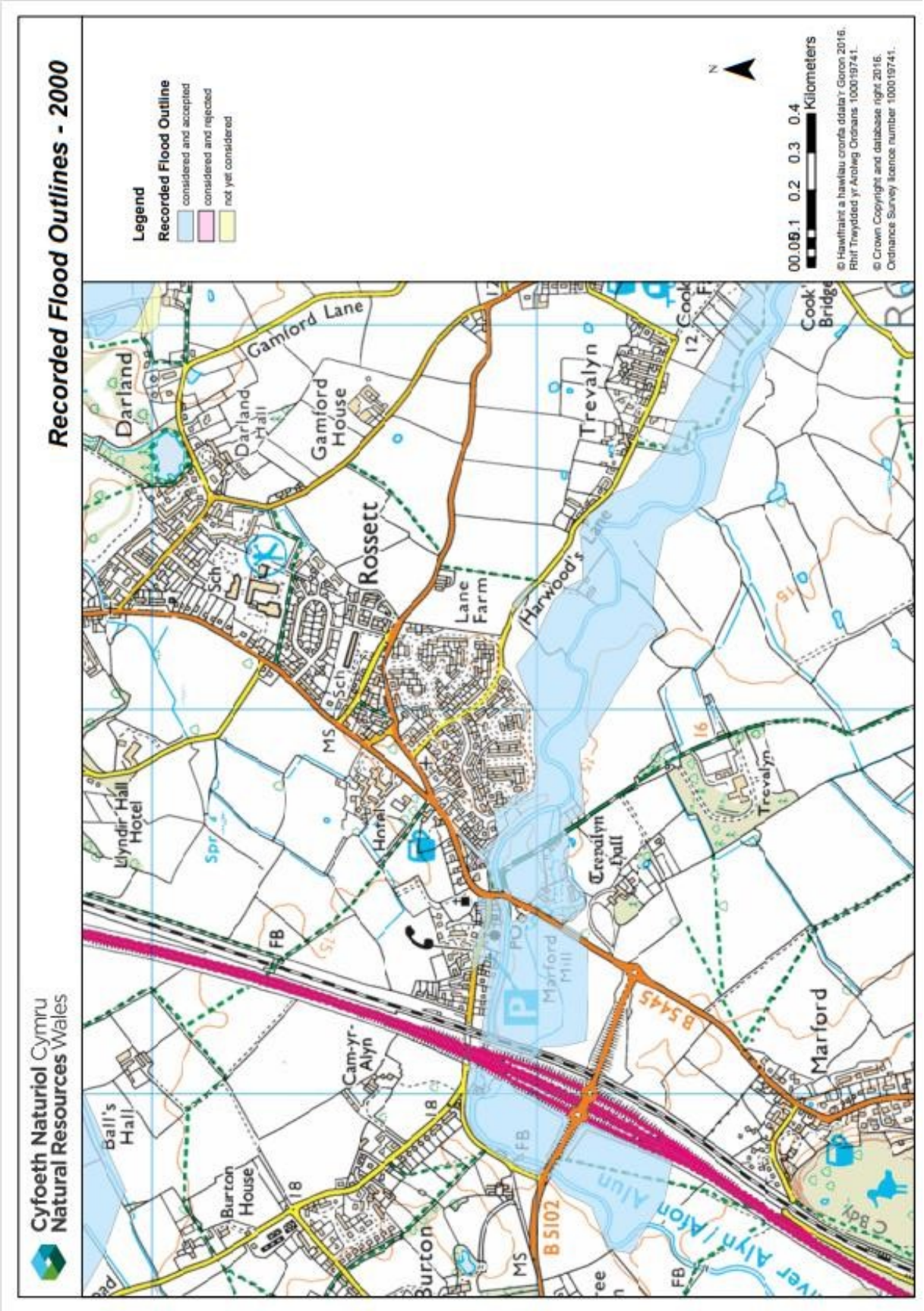
Rights of appeal
If you are not satisfied with our response to your request, you can contact us to ask for our decision to be reviewed, please write to:

[redacted]
Team Leader, Customer Hub
Natural Resources Wales,
Ty Cambria, 29 Newport Road, Cardiff CF24 0TP
accesstoinformationteam@naturalresourceswales.gov.uk

If you are still not satisfied following this, you can make an appeal to the Information Commissioner, who is the statutory regulator for Freedom of Information. The address is:
Office of the Information Commissioner,
Wycliffe House, Water Lane,
Wilmslow, Cheshire SK9 5AF.

[redacted]
Cymorth Technegol Cyswllt Cyfoeth / Customer Hub Technical Support
E-bost / E-mail : mari.llewelyn@cyfoethnaturiolcymru.gov.uk [redacted] @naturalresourceswales.gov.uk
Gwefan/Website:www.cyfoethnaturiolcymru.gov.uk/www.naturalresourceswales.gov.uk

Recorded Flood Outlines 2000



Cyfoeth Naturiol Cymru
Natural Resources Wales

Mr[redacted]

[redacted]

Ein cyf/Our ref: ATI-19893b

Date: 8th of October 2020

Dear[redacted],

YOUR REQUEST FOR INFORMATION

I am writing in respect of your request for information (**ATI-19893b**) dated 14th of September 2020 under the provisions of the Environmental Information Regulations (EIR) (2004).

You requested NRW to provide you with:

I have now taken the opportunity to fully examine NRW response and find that the detailed 2000 Flood Map information is somewhat inadequate and fails to accord with photographic records of the time in the Rossett locality. As a result I have attached a letter on behalf of Rossett Focus Group (RFG), including photographic evidence pointing out the deficiencies in the record and seeking clarification on the overlap between answers to Q4 and Q5. I shall therefore be pleased if you will let me have your valued response from NRW to totally close the FOI request.

NRW produce the Development Advice Map (DAM) based on our 0.1% Annual Flood Probability map (Flood Zone 2, undefended map). This is a modelled ouline suplimented in some areas by historic flood outlines where they extend beyond the boundary of the modelled outline.

The information you have provided does not show the development site off Harwoods Lane flooded and the additional flood photos you provided in your recent response only confirm areas already identified at risk in our Flood Zone 2 outline, and also documented in our DAM. These are the maps used by NRW as part of the planning advice service.

With regards flood levels at the edge of the flood outline the Broadscale modelling does not produce peak water levels, only outlines, so I cannot provide a level for these. The more detailed modelling produces a water level within the channel which would not be relevant. However, for your information we are in the process of completing a more detailed modelling study for Rossett which will be used for a new all Wales Flood Risk Map (Flood Risk Assessment Wales). This is due to be published later this year, replacing the current information. It will replace both the broadscale and detailed modelling information for this reach of the River Alyn. For reference I have indicated peak flood levels for this study on the attached map. Whilst I cannot yet share these outlines I can confirm they produce a similar outline to the current maps. Outlines for this work will be available in the new maps once published.

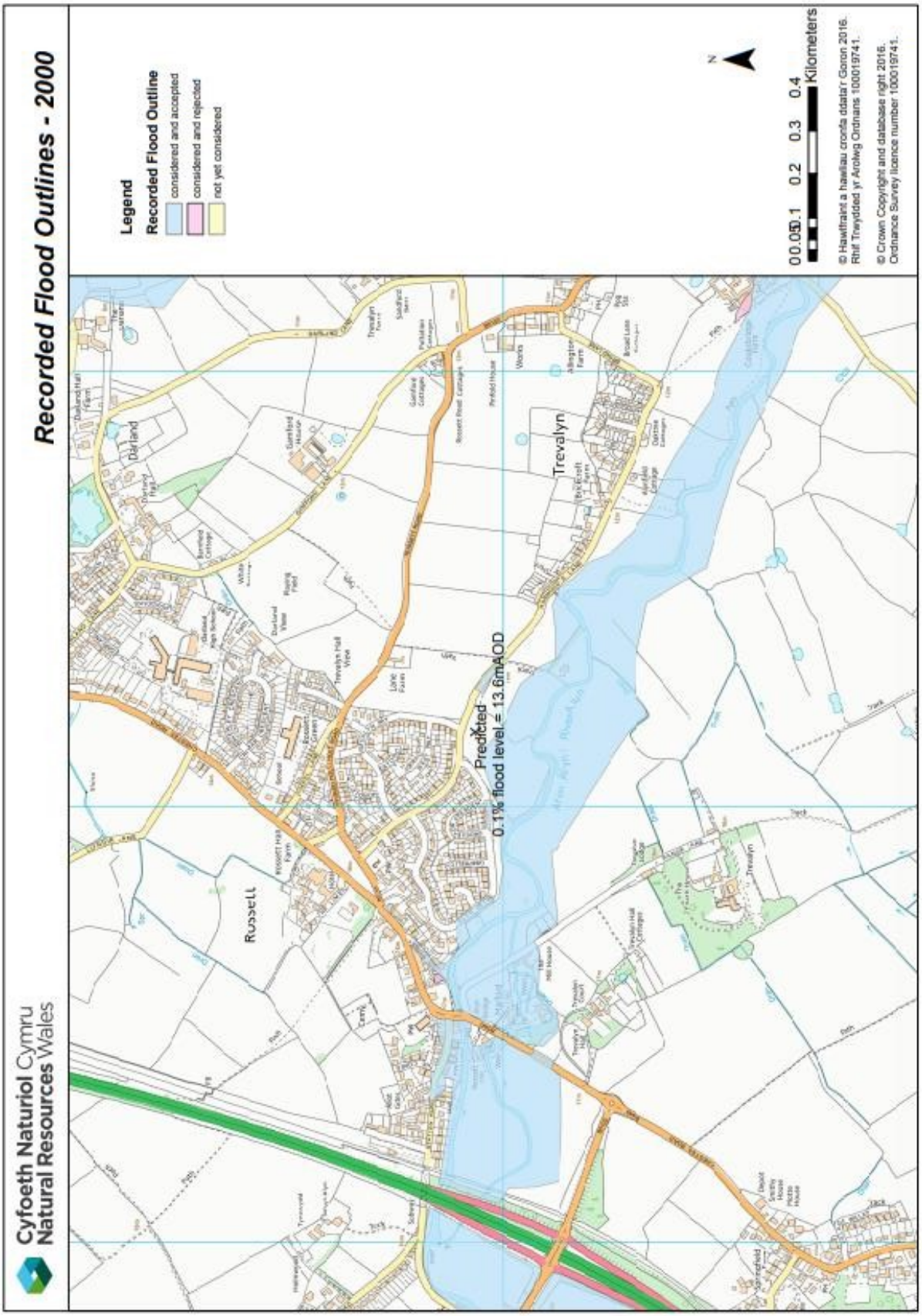
If you are dissatisfied with our response you are entitled to pursue this matter through our appeals procedure, a copy of which is below

Yours sincerely

[redacted]

Cymorth Technegol Cyswllt Cyfoeth / Customer Hub Technical Support

NRW - Reorded Flood Outlines -2000



Note This NRW Flood Outline map does not accord with the agreed NRW Flood Outline Nov 2018 on Page 9.

Cyfoeth Naturiol Cymru
Natural Resources Wales

Mr [redacted]

[redacted]

Ein cyf/Our ref: ATI-19893c

Date: 4th of November 2020

Dea[redacted]

YOUR REQUEST FOR INFORMATION

I am writing in respect of your request for information (**ATI-19893c**) dated 9th of October 2020 under the provisions of the Environmental Information Regulations (EIR) (2004).

You requested NRW to provide you with a response related to **NRW confirm that the broad hydraulic modelling location shown on the Flood Outline Map at 13.60m AOD can be interpreted as the peak level that will be included in the revised Development Advice Mapping to be released later this year and that the height of 13.60m AOD will now be used to indicate a peak level on Harwoods Lane on your 0.1% Annual Flood Probability map (Flood Zone 2, undefended map):**

The 13.6mAOD water surface level provided is taken from the hydraulic model at that specific location. This level cannot be used to project upstream or downstream as these levels will vary significantly based on the topography and predicted water surface profile.

We are unable to provide any further information in relation to this request other than what has already been provided.

Any further information requests related to this matter will be considered as vexatious under the provisions of regulation 12(4)(b) manifestly unreasonable and a refusal notice may be issued.

If you are dissatisfied with our response you are entitled to pursue this matter through our appeals procedure, a copy of which is below

Yours sincerely

[redacted]

[redacted]

Cymorth Technegol Cyswllt Cyfoeth / Customer Hub Technical Support