RAINCLOUD

WALPOLE BESS

FLOOD RISK ASSESSMENT

DECEMBER 2024

www.raincloud-consulting.co.uk hello@raincloud-consulting.co.uk

CONTROL SHEET

This report has been prepared by Raincloud Consulting Ltd for the sole use of the Client only. Raincloud offer no warranty or liability for the information contained within the report to any other party.

Site ID	Prepared by	Signature	Date	Version	Comment
062	Liam Nevins BSc hons MCIWEM C.WEM		12/12/2024	2-1	Minor updates following review

RAINCLOUD

TABLE OF CONTENTS

1 Introduction ---- 5

Background ---- 5

1.1 - Guidance and Legislation ---- 5

1.2 - Consultation ---- 6

1.3 - Site Characteristics ---- 6

1.4 - Flood Classification ---- 7

1.5 - Flood History ---- 10

1.6 - Flood Defences ---- 11

2 Flood Risk Assessment ---- 8

2.1 - Fluvial and Tidal ---- 8

2.2 - Pluvial ---- 11

2.3 - Groundwater ---- 12

2.4 - Sequential Test and Exception Test ---- 14

3 Conclusion & Recommendations ---- 16

Appendix A: EA Consultation

RAINCLOUD

1 INTRODUCTION

1.1 Background

Raincloud Consulting Ltd ('Raincloud') has been commissioned to undertake a Flood Risk Assessment (FRA) for the proposed Walpole Battery Energy Storage System (BESS) ('the Proposed Development') on land within the existing Sutton Bridge Solar Farm ('the Site'). The Site lies to the east of the River Nene and 500 m south-east of Sutton Bridge Power Station, approximately 1.25 km south and east of the village of Sutton Bridge.

The Proposed Development is for a BESS with associated infrastructure and equipment including fencing, security cameras, cabling and access tracks,SuDS and biodiversity net gain provisions. The Point of Connection (PoC) into the electricity grid is via the existing Sutton Bridge Solar Farm substation.

The Proposed Development is located wholly within the jurisdiction of the South Holland District Council (the Council).

1.2 Guidance and Legislation

This document is intended to meet the requirements of:

- Environment Agency ('EA');
- South East Lincolnshire Strategic Flood Risk Assessment (SEL SFRA) (2017)[1];
- Updated South Holland District Council Strategic Flood Risk Assessment (SH SFRA) (2016);
- Lincolnshire County Council Preliminary Flood Risk Assessment (PFRA) (2017); and
- The revised National Planning Policy Framework (NPPF) (2024).

This FRA has been informed by the Environment Agency Flood Risk Mapping and Data Management: Anglian Region Strategic Flood Risk Management Framework Tidal Nene and Tidal Welland Hazard Mapping (Hyder 2011), Tidal Great Ouse Breach Modelling, Model Development Report, (JBA Consulting 2015); Tidal Great Ouse Breach Modelling, Final Report (JBA 2015) and associated data outputs.

[1] https://southeastlincslocalplan.org/media/23906/South-East-Lincolnshire-Strategic-Flood-Risk-Assessment/pdf/SE-Lincolnshire-SFRA-2017-v6-24th-Jan-2018.pdf?m=1703944317647

1.3 Consultation

Raincloud requested flood data from the EA in June 2023 and received the Tidal Nene model (2011) in August 2023. The flood data differed in flood breach depth from the Tidal Welland model (2006) study used in the Flood Risk Assessment (Arcus 2020) for the operational Sutton Bridge Solar Farm.

Raincloud requested confirmation from the EA on the correct flood dataset to use for design purposes and this was confirmed as the Tidal Nene model (2011) in November 2023 (see Appendix A).

As the Site is located within the "Greater than 2.0 (Danger for All)" area for the 0.1 % annual exceedance probability (AEP) 2115 event, a meeting with the EA was requested to discuss appropriate levels of mitigation for the Development, as per Appendix C – Standing advice of the SEL SFRA[2].

As outlined in Appendix A, it was agreed during the meeting on 18th January 2024 and in subsequent correspondence that the Development would have flood protection of a bund to encircle the BESS compound with a crest height of 2.659 m Above Ordnance Datum (AOD). This equates to a bund height of approximately 0.8 m Above Ground Level (AGL). This will ensure that the BESS infrastructure is provided with a level of flood resilience in the event of a breach of defences, similar to the standard of protection at other electrical infrastructure projects in the area[3].

1.4 Site Characteristics

The Site is located immediately adjacent to the existing Sutton Bridge substation.

The Site is part of the operational Sutton Bridge solar farm and has previously been in arable use.

The Site slopes gently from south to north from approximately 3.7 m above ordnance datum (AOD) to 2.2 m AOD, as shown in Plate 1.

[2] https://southeastlincslocalplan.org/article/25233/SFRA-Appendix-C

[3] planning application 21/01442/FM

Plate 1: Topography at the Site



The Site is drained by a Kings Lynn Internal Drainage Board (IDB) drain approximately 40 m north of the BESS Compound, identified as asset ID DRN039G0103, which in turn discharges to the River Nene via Chalk Lane Sluice[4].

1.5 Flood Classification

The EA Flood Map for Planning[5] shows that the Site is located in Flood Zone 3a and Flood Zone 2, as is much of the wider area, and in an area classed as having a Reduction in risk of flooding from rivers and sea due to the presence of flood defences, as shown in Plate 2.

[4] http://www.wlma.org.uk/uploads/KLIDB_039G_ChalkLane.pdf

[5] https://flood-map-for-planning.service.gov.uk/

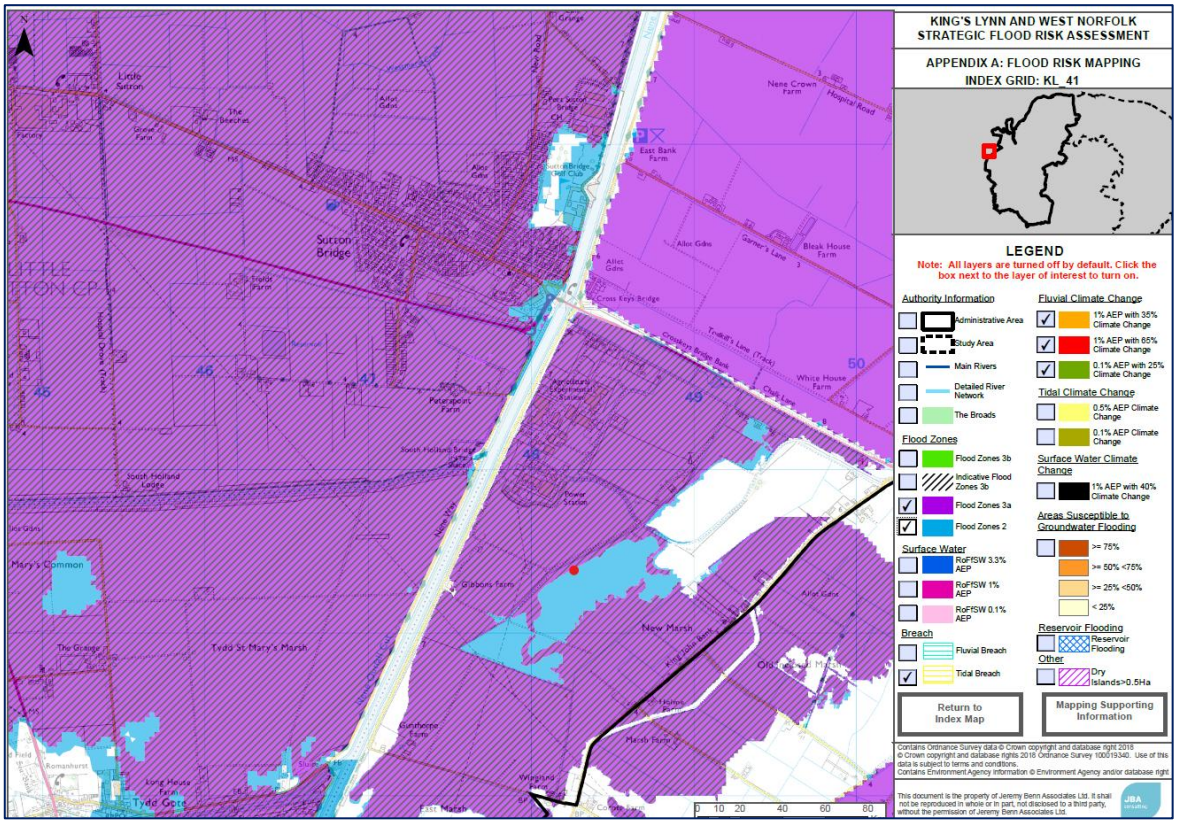
Plate 2: Flood Zones



It should be noted that the Kings Lynn and West Norfolk SFRA mapping[6] shows the Site to be located in Flood Zone 2, as shown on Plate 3.

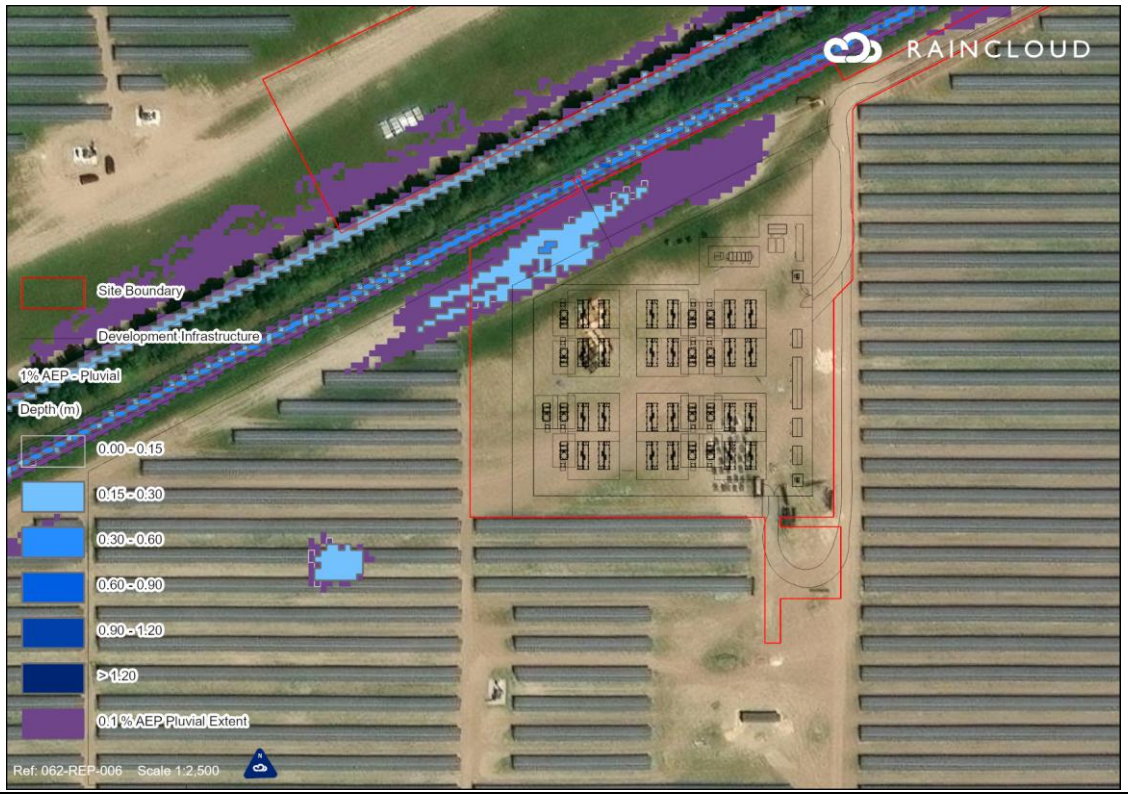
[6] https://www.west-norfolk.gov.uk/info/20173/information_for_planning_agents/391/flood_risk_assessment_-_level_1

Plate 3: Kings Lynn and West Norfolk SFRA mapping extract



No aspects of the Development are shown to be at risk of pluvial flooding during the 3.33 %, 1 % and 0.1 % AEP events, as shown in Plate 4.

Plate 4: Pluvial Flood Extents



The Site is located outside the extents of flooding should there be a breach in the retaining walls of reservoirs within the catchment. As such, reservoir flooding has been scoped out of this assessment.

The Site is greenfield and drainage infrastructure is not observed in proximity. As such, flooding from artificial sources has also been scoped out of this assessment.

1.6 Flood History

Anecdotal evidence suggests that the Site has not previously flooded.

The EA historic flood outline dataset[7] also indicates that the Site has not previously flooded.

[7] https://www.data.gov.uk/dataset/76292bec-7d8b-43e8-9c98-02734fd89c81/historic-flood-map

1.7 Flood Defences

The Site is defended from tidal flooding by EA-maintained flood embankments which provide a standard of protection up to a 0.67 % chance of occurring in any year (1 in 150).

EA Spatial Flood Defence dataset[8] shows that an embankment with a crest level of between 6.95 and 6.62 m AOD is located on the eastern bank of the River Nene and is noted to be in 'Fair' condition. Plate 5 shows the eastern bank defence along the River Nene.

Plate 5: Flood defence embankment on River Nene



[8] https://environment.data.gov.uk/asset-management/index.html?element=http%3A%2F%2Fenvironment.data.gov.uk%2Fasset-management%2Fid%2Fasset%2F504584&layer=all-assets

2 FLOOD RISK ASSESSMENT

Flood risk will be classed as Negligible (where little or no risk is identified), Low (where theoretical risk is identified but mitigating factors may influence flood levels) or Moderate to High (where modelled levels or historical events show risk to the Site).

Several factors will be considered when attributing the residual risk of flooding to the Development, including:

- The depth of flooding;
- The hazard to life during flood water ingress;
- The velocity of floodwater;
- Flooding extent / ingress into site;
- Type of infrastructure affected; and
- Intervening structures / flood protection.

The Conclusion section (Section 3) of this FRA provides justification for the risk category using professional judgement and experience of assessing similar types of projects / scenarios.

2.1 Fluvial and Tidal

Both fluvial and tidal flood risk at the Site are associated with the River Nene, which is tidally dominated as it passes the Site. Therefore, fluvial and tidal risk is assessed together in this section of the FRA.

The overtopping and breach data provided by the EA was modelled with an increase in tidal flood levels of 1,141 mm applied for the year 2115 to account for climate change (CC) for the 0.5 % AEP and 0.1 % AEP events. This allowance was derived from Table B.1 of Planning Policy Statement 25 (PPS), the extant guidance when the mapping was undertaken in 2011.

Given the proposed operational life of the Proposed Development is 40 years, it is considered that the climate change allowance applied to the 2011 model is very conservative.

The Tidal Nene model (2011) study shows that the 0.5 % AEP event would be contained within the embankments of the River Nene and the Proposed Development is not affected by the overtopping of the defences for the present day (2006) scenario.

Flood depth at the BESS compound is 0.17 m for the 0.5 % AEP and 0.84 m for the 0.1 % AEP year 2115 overtopping of food defences scenarios respectively, as shown in Plate 6 and 7.

The Tidal Nene model (2011) study shows that the maximum flood depth at the BESS compound is 1.7 m for the 0.5 % AEP and 1.9 m for the 0.1 % AEP year 2115 breach of food defences scenarios, as shown in Plate 8 and 9.

Plate 6: 0.5 % AEP Overtopping Depth (2115)

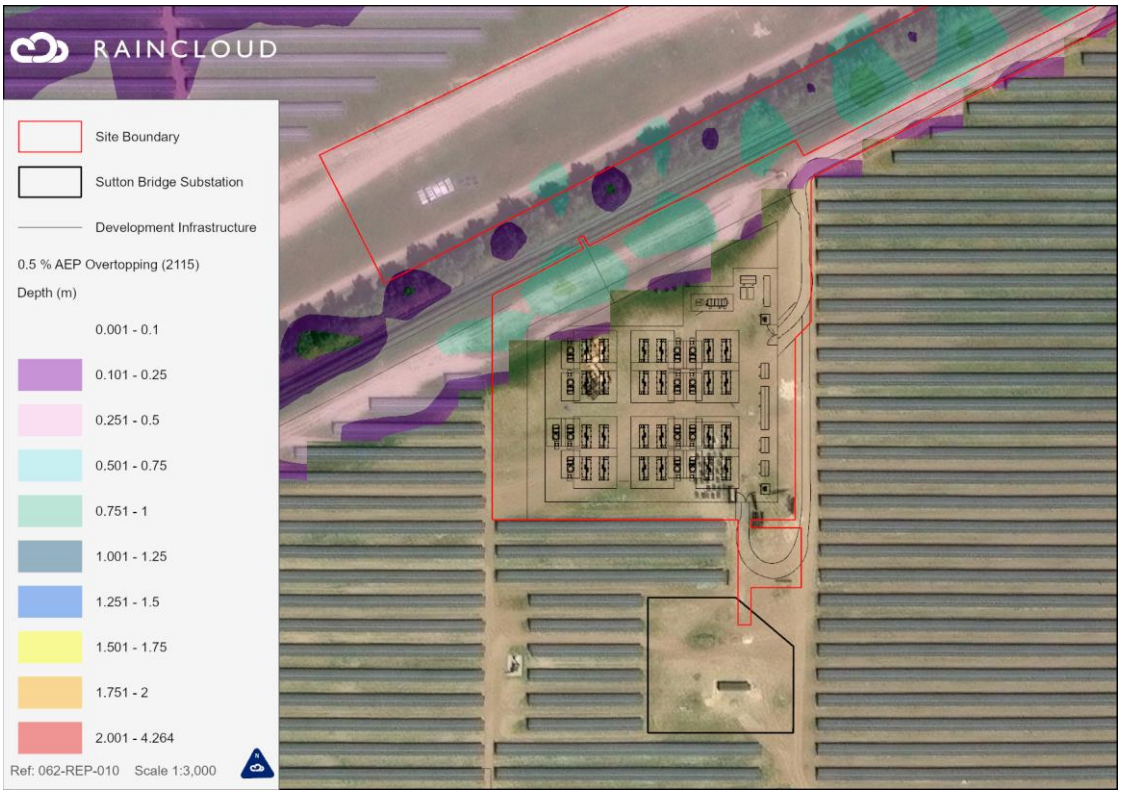


Plate 7: 0.1 % AEP Overtopping Depth (2115)



Plate 8: 0.5 % AEP Breach Depth (2115)

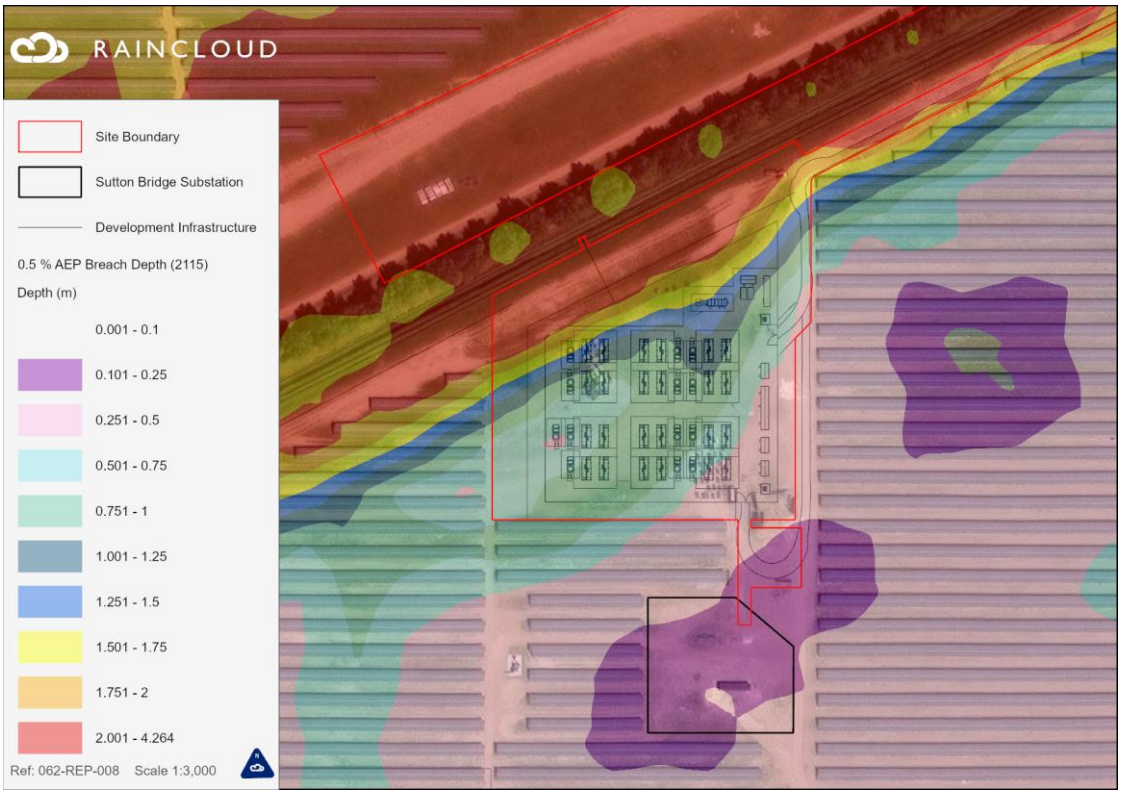
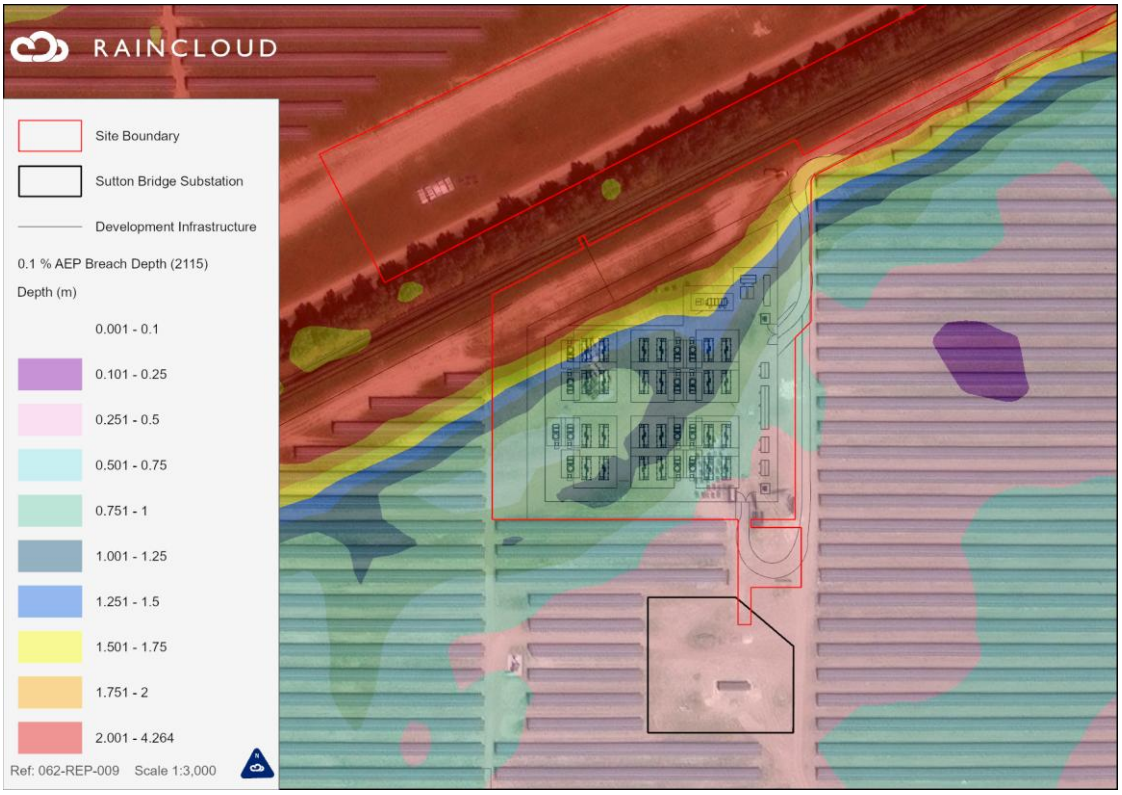


Plate 9: 0.1 % AEP Breach Depth (2115)



In the absence of flood resilience measures, as agreed with the EA, the risk of flooding during an overtopping event and baseline breach event would be Moderate and would be High during a breach event (2115 scenario).

Flood resistance will be provided in the form of an earth bund encircling the BESS Compound, which is the same approach as the flood resilience for the Sutton Bridge Solar Farm substation,. The proposed method for flood resistance is the same as the consented Sutton Bridge Substation. The Proposed Development will be safe for the consented lifetime of the planning permission (40 years), given that a conservative epoch has been used for the climate change allowance (year 2115 *i.e.* 51 years beyond the lifetime of the Proposed Development) and the Proposed Development will have flood resilience for the period in which it will operate and will not perceptibly contribute to offsite flooding during a breach of defences scenario.

As shown in Plate 12, the BESS units are likely to be built on a concrete pads and therefore have additional flood resilience as they will be elevated from ground level in the unlikely event that there is overtopping of the proposed flood bund during a breach of flood defences scenario.

The Proposed Development is not a permanently manned facility. The Proposed Development operator will adhere to an evacuation procedure linked to EA Flood Warnings, meaning there will be no staff onsite during conditions which could give rise to an overtopping or breach of flood defences.

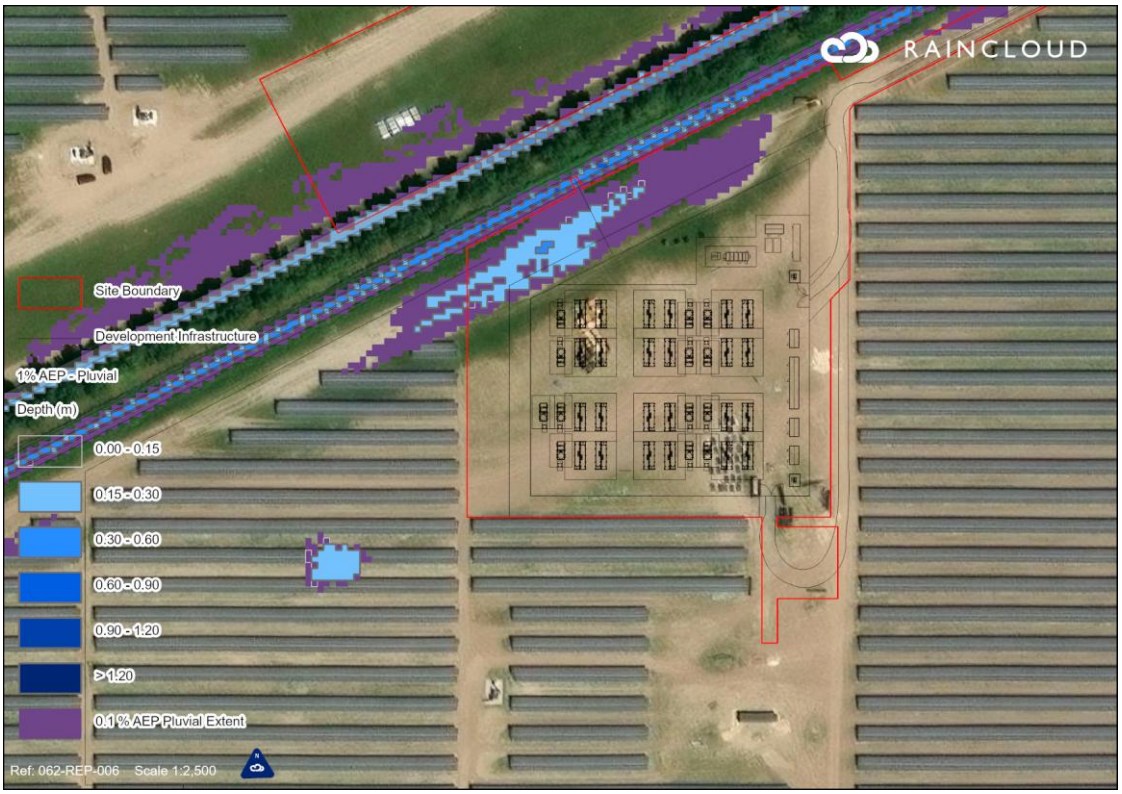
The Proposed Development can be operated remotely and safely shut down in the event that the flood bund is overtopped.

As such, the residual risk of flooding from tidal and fluvial sources is Low.

2.2 Pluvial

Electrically sensitive infrastructure, such as inverters, the BESS units and substation are located outside the 3.3 %, 1 % and 0.1 % AEP surface water flooding extent, as shown in Plate 10 of this FRA.

Plate 10: 1 % AEP pluvial depths



The Site is former agricultural land (greenfield) and is flat. As such, the baseline scenario will not generate substantial surface water run-off rates, and the risk of pluvial flooding is Negligible.

Management of surface water runoff from the Proposed Development is detailed in the SuDS Strategy (Raincloud Consulting Ltd, 2024) which accompanies the planning application.

2.3 Groundwater

The EA Long Term Flood Risk service[9] reports "*Flooding from groundwater is unlikely in this area*" however, ground investigations noted groundwater strikes between 2.3 and 1.2 m BGL in proximity to the BESS compound.

BESS units are generally not located flush to the existing ground and are located on raised foundations elevated from the ground, as shown in Plate 11.

[9] https://check-long-term-flood-risk.service.gov.uk/risk

Plate 11: Typical Corner Pads on BESS units





Should groundwater emanate at ground level within the BESS compound, it is likely to spread over a wide area at shallow depth. As such the risk of groundwater interacting with infrastructure within the BESS compound is Low.

2.4 Sequential Test and Exception Test

Paragraph 173 of the NPPF (2024) states that developments located within Flood Zone 3 should apply a risk based sequential test in order to steer proposed development towards areas classed as having a lower probability of flooding. (*i.e.* in Flood Zone 1). Paragraph 169 of the NPPF (2023) does, however, acknowledge that under certain circumstances it may not be possible to locate the development on land identified as having a lower risk of flooding and infrastructure can be located in Flood Zone 2 or 3 for certain infrastructure, subject to passing the Exception Test.

The land at the Site is immediately adjacent to the operational substation for the Sutton Bridge Solar Farm, meaning proximity to the existing grid connection is a primary consideration during the site selection process.

Key considerations for Site selection have included:

- Proximity to an available grid connection;
- Proximity to local communities;
- Topography;
- Shading;
- Solar irradiation levels;
- Access to the site for construction;
- Archaeological assets;
- Agricultural land classification (ALC);
- Landscape designations; and
- Ecological designations.

It should be noted that the SEL SFRA (March 2017) identifies that approximately 74 % of South Holland lies within the floodplain (68 % in Flood Zone 3, 6 % in Flood Zone 2), meaning the wider area offers no sites available for BESS development in Flood Zone 1, as shown in Plate 12.

Plate 12: Flood Zones within 2 km of substation



Additionally, due to the close proximity of the Site to the point of connection into the existing Sutton Bridge substation to the south there will be minimal environmental disruption and power loss due to the short cable route. Locating the Proposed Development in Flood Zone 1 (assuming a suitable site could be located) would lead to a substantial cable route and associated environmental damage and power loss.

For these reasons the Proposed Development meets the requirements set out in Table 3 of the Planning Practice Guidance and meets the requirements of the Sequential Test of the NPPF (2024).

The two criteria set out in the Exception Test should be applied to developments are:

a) the development would provide wider sustainability benefits to the community that outweigh the flood risk; and

b) the development will be safe for its lifetime taking account of the vulnerability of its users, without increasing flood risk elsewhere, and, where possible, will reduce flood risk overall.

The Proposed Development will contribute to the decarbonisation of energy supply infrastructure, therefore contributing to wider sustainability aims.

The Proposed Development will be safe for the consented lifetime of the planning permission (40 years), given that a conservative epoch has been used for the climate change allowance (year 2115 *i.e.* 51 years beyond the lifetime of the Proposed Development) and the

Proposed Development will have flood resilience for the period in which it will operate and will not perceptibly contribute to offsite flooding during a breach of defences scenario.

As shown in Plate 12, the BESS units are likely to be built on concrete pads and therefore have additional flood resilience, as they will be elevated from ground level, in the unlikely event that there is overtopping of the proposed flood bund during a breach of flood defences scenario.

As such, the Sequential and Exception tests are passed *i.e.* the Site is located appropriately (Essential Infrastructure in Flood Zone 3), as per EA Flood Risk and Coastal Change Guidance (2022)[10].

3 CONCLUSION & RECOMMENDATIONS

The Proposed Development is located immediately adjacent to the operational Sutton Bridge Solar Farm Substation.

The Site is defended from tidal flooding by EA-maintained flood embankments which provide a standard of protection up to a 0.67 % chance of occurring in any year (1 in 150).

The Proposed Development is not affected by the overtopping of the defences for the present day (2006) scenario.

Flood depth at the BESS compound is 0.17 m for the 0.5 % AEP and 0.84 m for the 0.1 % AEP year 2115 overtopping of food defences scenarios respectively.

Flood depth at the BESS compound is 1.7 m for the 0.5 % AEP and 1.9 m for the 0.1 % AEP year 2115 breach of food defences scenarios.

The Proposed Development will be safe for the consented lifetime of the planning permission (40 years), given that a conservative epoch has been used for the climate change allowance (year 2115 *i.e.* 51 years beyond the lifetime of the Proposed Development).

As agreed with the EA, the Proposed Development would have flood protection of a bund to encircle the BESS compound with a crest height of 2.659 m Above Ordnance Datum (AOD). This equates to a bund height of approximately 0.8 m Above Ground Level (AGL). This will ensure that the BESS infrastructure is provided with a level of flood resilience in the event of a breach of defences, similar to the standard of protection at other electrical infrastructure projects in the area.

The Proposed Development is not a permanently manned facility. The Proposed Development operator will adhere to an evacuation procedure linked to EA Flood Warnings, meaning there will be no staff onsite during conditions which could give rise to an overtopping or breach of flood defences.

[10] https://www.gov.uk/guidance/flood-risk-and-coastal-change

The Development is classified as Essential Infrastructure and is therefore compatible with Flood Zone 3.

The Development is compliant with both the NPPF and Policy 4: Approach to Flood Risk, and Policy 31: Climate Change and Renewable and Low Carbon Energy of the Local Plan.

APPENDIX A: EA CONSULTATION

RAINCLOUD

Mr Liam Nevins

Our ref: AN/2024/135197/03-L01

Date: 19 March 2024

Dear Mr Nevins

Follow up response for the meeting to discuss design for proposed solar farm at Sutton Bridge
Sutton Bridge

Thank you for submitting the additional information relating to the Sutton Bridge Solar Farm.

From our conversation, you advised that the flood resilience measures for the substation (approved under H18-1126-20) are to be amended and battery storage area will be introduced.

As the development of a solar farm was approved just south of the site (planning application 21/01442/FM), and you have advised that the development would be considered less vulnerable rather than essential infrastructure, we would be willing to accept the same approach for this development whereby mitigation is set according to the 2115 0.5% tidal flood depths.

Please note that the flood risk assessment should acknowledge the risks associated by reducing the design standard of the flood resilience measures.

Should you require any additional information, or wish to discuss these matters further, please do not hesitate to contact me using the details below.

Yours sincerely

Amelia Crawford
Sustainable Places Planning Advisor
☎ 07387 134115 (mobile)
amelia.crawford@environment-agency.gov.uk
www.gov.uk/environment-agency

End

From:	Crawford, Amelia
To:	Liam Nevins
Subject:	RE: Pre-application: Solar farm at Sutton Bridge AN/2024/135197/03 (South Holland)
Date:	08 May 2024 14:38:31
Attachments:	image001.png image003.png image004.png image005.png image006.png image007.png image010.png image011.png image012.png image013.png image020.png

---

Good afternoon Liam

Apologies for such a delayed response but Heather has gotten back to me and says she is happy with the points you raised in your email dated 25 March 2024.

Kind regards

Amelia Crawford
Planning Advisor

Environment Agency | Sustainable Places | Lincolnshire and Northamptonshire Area
✉ Nene House, Pytchley Lodge Road, Kettering, Northants, NN15 6JQ
☎ 07387 134115 (mobile)
amelia.crawford@environment-agency.gov.uk
www.gov.uk/environment-agency
I am doing the Chartered Town Planner Apprenticeship -if you would like to find out more, please ask

---

From: Crawford, Amelia
Sent: Monday, April 29, 2024 9:30 AM
To: Liam Nevins <liam@raincloud-consulting.co.uk>
Subject: RE: Pre-application: Solar farm at Sutton Bridge AN/2024/135197/03 (South Holland)

Morning Liam

I have chased Heather on this.

When I hear back from her, I'll get in touch asap.

Thanks
Amelia

Amelia Crawford
Planning Advisor

Environment Agency | Sustainable Places | Lincolnshire and Northamptonshire Area
✉ Nene House, Pytchley Lodge Road, Kettering, Northants, NN15 6JQ
☎ 07387 134115 (mobile)
amelia.crawford@environment-agency.gov.uk
www.gov.uk/environment-agency
I am doing the Chartered Town Planner Apprenticeship -if you would like to find out more, please ask
(Please note I am out of office on Wednesdays)

From: Liam Nevins <liam@raincloud-consulting.co.uk>
Sent: Thursday, April 25, 2024 2:56 PM
To: Crawford, Amelia <Amelia.Crawford@environment-agency.gov.uk>
Subject: RE: Pre-application: Solar farm at Sutton Bridge AN/2024/135197/03 (South Holland)

Hi Amelia,

Any update from Heather?

We have a design day next week and feedback before then would allow us to lock in the design and mitigation.

Kind regards,

Liam

Liam Nevins
BSc hons MCWIEM
C.WEM
Director

07931 568853
www.raincloud-consulting.co.uk
liam@raincloud-consulting.co.uk
Independence House, Millfield Ln, York, YO26 6PH

From: Crawford, Amelia <Amelia.Crawford@environment-agency.gov.uk>
Sent: Thursday, April 11, 2024 12:36 PM
To: Liam Nevins <liam@raincloud-consulting.co.uk>
Subject: RE: Pre-application: Solar farm at Sutton Bridge AN/2024/135197/03 (South Holland)

Hi Liam

Heather has been on leave but is back today so hopefully I will hear something soon.

Thanks
Amelia

Amelia Crawford
Planning Advisor

Environment Agency | Sustainable Places | Lincolnshire and Northamptonshire Area
✉ Nene House, Pytchley Lodge Road, Kettering, Northants, NN15 6JQ
☎ 07387 134115 (mobile)
amelia.crawford@environment-agency.gov.uk
www.gov.uk/environment-agency
I am doing the Chartered Town Planner Apprenticeship -if you would like to find out more, please ask
(Please note I am out of office on Wednesdays)

From: Liam Nevins <liam@raincloud-consulting.co.uk>
Sent: Thursday, April 11, 2024 10:08 AM
To: Crawford, Amelia <Amelia.Crawford@environment-agency.gov.uk>
Subject: RE: Pre-application: Solar farm at Sutton Bridge AN/2024/135197/03 (South Holland)

Hi Amelia,

Just a quick email to see if you've heard from Heather Tysoe?

Hopefully we can get this bottomed out so we can proceed with drafting the FRA.

Kind regards,

Liam

Liam Nevins
BSc hons MCWIEM
C.WEM
Director

07931 568853
www.raincloud-consulting.co.uk
liam@raincloud-consulting.co.uk
Independence House, Millfield Ln, York, YO26 6PH

From: Crawford, Amelia <Amelia.Crawford@environment-agency.gov.uk>
Sent: Thursday, April 4, 2024 10:54 AM
To: Liam Nevins <liam@raincloud-consulting.co.uk>
Subject: RE: Pre-application: Solar farm at Sutton Bridge AN/2024/135197/03 (South Holland)

Morning Liam

Apologies for a delayed response, I have been playing catch up since returning from leave.

I will forward your points across to Heather for clarification.

Kind regards

Amelia Crawford
Planning Advisor

Environment Agency | Sustainable Places | Lincolnshire and Northamptonshire Area
✉ Nene House, Pytchley Lodge Road, Kettering, Northants, NN15 6JQ
☎ 07387 134115 (mobile)
amelia.crawford@environment-agency.gov.uk
www.gov.uk/environment-agency
I am doing the Chartered Town Planner Apprenticeship -if you would like to find out more, please ask
(Please note I am out of office on Wednesdays)

From: Liam Nevins <liam@raincloud-consulting.co.uk>
Sent: Monday, March 25, 2024 8:42 PM
To: Crawford, Amelia <Amelia.Crawford@environment-agency.gov.uk>
Subject: RE: Pre-application: Solar farm at Sutton Bridge AN/2024/135197/03 (South Holland)

Hi Ameila,

Thank you for the latest response from Heather.

There are two points in the letter which we would like to clarify:

1. The Development is for Essential Infrastructure and is not Less Vulnerable. EDF mentioned on the call that the site will be flood resilient and components could be replaced quickly, similar to the BESS and Solar development (planning application 21/01442/FM), which is also identified in the FRA as Essential Infrastructure.
2. We will acknowledge the residual risk of defence failure in the FRA and design to parameters set out in my email on 12th February 2024 i.e. design to 800 mm resilience for the BESS site.

Please let me know if anything above isn't clear and we will proceed as per the design criteria below unless we hear differently.

Kind regards,

Liam

Liam Nevins
BSc hons MCWIEM
C.WEM
Director

07931 568853
www.raincloud-consulting.co.uk
liam@raincloud-consulting.co.uk
Independence House, Millfield Ln, York, YO26 6PH

From: Crawford, Amelia <Amelia.Crawford@environment-agency.gov.uk>
Sent: Tuesday, March 19, 2024 10:09 AM
To: Liam Nevins <liam@raincloud-consulting.co.uk>
Subject: RE: Pre-application: Solar farm at Sutton Bridge AN/2024/135197/03 (South Holland)

Morning Liam

Please find attached our response following the additional information provided on 14 March 2024.

If you have any questions or queries, please don't hesitate to get in touch.

Kind regards

Amelia Crawford
Planning Advisor

Environment Agency | Sustainable Places | Lincolnshire and Northamptonshire Area
✉ Nene House, Pytchley Lodge Road, Kettering, Northants, NN15 6JQ
☎ 07387 134115 (mobile)
amelia.crawford@environment-agency.gov.uk
www.gov.uk/environment-agency
I am doing the Chartered Town Planner Apprenticeship -if you would like to find out more, please ask
(Please note I am out of office on Wednesdays)

From: Liam Nevins <liam@raincloud-consulting.co.uk>
Sent: Thursday, March 14, 2024 10:33 AM
To: Tysoe, Heather <Heather.Tysoe@environment-agency.gov.uk>
Cc: Crawford, Amelia <Amelia.Crawford@environment-agency.gov.uk>
Subject: RE: Pre-application: Solar farm at Sutton Bridge AN/2024/135197/03 (South Holland)

Hi Heather,

Please find attached a plan showing the proposed battery storage areas and the consented substation (under construction) overlain on the 0.5 % AEP (2115) breach event. I've also attached the infrastructure overlain on the flood zones.

The consented substation protection has been derived as follows:

Flood protection bund height to the 0.5 % AEP (1:200) 2115 year breach event:

4.18 m AOD (0.33 m depth (highest depth at substation) + 3.55 m AOD + 0.3 m freeboard (taken from EA Report – SC120014):



This equates to 0.63 m AGL (0.33 m depth + 0.3 m freeboard).

Please feel free to give me a call if you wish to discuss any aspect of the information provided before you respond.

Best regards,

Liam

Liam Nevins
BSc hons MCWIEM
C.WEM
Director

07931 568853
www.raincloud-consulting.co.uk
liam@raincloud-consulting.co.uk
Independence House, Millfield Ln, York, YO26 6PH

From: Tysoe, Heather <Heather.Tysoe@environment-agency.gov.uk>
Sent: Wednesday, March 13, 2024 2:03 PM
To: Liam Nevins <liam@raincloud-consulting.co.uk>
Cc: Crawford, Amelia <Amelia.Crawford@environment-agency.gov.uk>
Subject: Pre-application: Solar farm at Sutton Bridge AN/2024/135197/03 (South Holland)

Hi Laim I hope you are well. I am just looking at the previous planning application that you referenced in your last email to determine what approach was used and the advice we provided. I was wondering if you could do me a favour though please? Can you please send me the redline boundary of the proposed site as well as the locations of battery storage or substations etc. Can you also please advise how you derived a level of 600mm for the substation (although it may become clear when I see the location of it)

Many thanks

Heather Tysoe
Partnerships and Strategic Overview Advisor | Lincolnshire and Northamptonshire | Welland and Nene
Environment Agency | Nene House, Pytchley Road Industrial Estate, Pytchley Lodge Road, Kettering, NN15 6JQ

heather.tysoe@environment-agency.gov.uk | psown@environment-agency.gov.uk
Direct Dial: 020 30253480 | Team Dial: 020 302 53535



Information in this message may be confidential and may be legally privileged. If you have received this message by mistake, please notify the sender immediately, delete it and do not copy it to anyone else. We have checked this email and its attachments for viruses. But you should still check any attachment before opening it. We may have to make this message and any reply to it public if asked to under the Freedom of Information Act, Data Protection Act or for litigation. Email messages and attachments sent to or from any Environment Agency address may also be accessed by someone other than the sender or recipient, for business purposes.
Information in this message may be confidential and may be legally privileged. If you have received this message by mistake, please notify the sender immediately, delete it and do not copy it to anyone else. We have checked this email and its attachments for viruses. But you should still check any attachment before opening it. We may have to make this message and any reply to it public if asked to under the Freedom of Information Act, Data Protection Act or for litigation. Email messages and attachments sent to or from any Environment Agency address may also be accessed by someone other than the sender or recipient, for business purposes.
Information in this message may be confidential and may be legally privileged. If you have received this message by mistake, please notify the sender immediately, delete it and do not copy it to anyone else. We have checked this email and its attachments for viruses. But you should still check any attachment before opening it. We may have to make this message and any reply to it public if asked to under the Freedom of Information Act, Data Protection Act or for litigation. Email messages and attachments sent to or from any Environment Agency address may also be accessed by someone other than the sender or recipient, for business purposes.
Information in this message may be confidential and may be legally privileged. If you have received this message by mistake, please notify the sender immediately, delete it and do not copy it to anyone else. We have checked this email and its attachments for viruses. But you should still check any attachment before opening it. We may have to make this message and any reply to it public if asked to under the Freedom of Information Act, Data Protection Act or for litigation. Email messages and attachments sent to or from any Environment Agency address may also be accessed by someone other than the sender or recipient, for business purposes.
Information in this message may be confidential and may be legally privileged. If you have received this message by mistake, please notify the sender immediately, delete it and do not copy it to anyone else. We have checked this email and its attachments for viruses. But you should still check any attachment before opening it. We may have to make this message and any reply to it public if asked to under the Freedom of Information Act, Data Protection Act or for litigation. Email messages and attachments sent to or from any Environment Agency address may also be accessed by someone other than the sender or recipient, for business purposes.

From:	Tan, Alexander
To:	Liam Nevins
Subject:	RE: CCN-2023-314624
Date:	27 November 2023 12:02:17
Attachments:	image001.png image004.png image006.png image007.png image009.png image010.png image002.png image005.png image011.png

---

Hi Liam,

Apologies for not getting back sooner, I had to take some unplanned leave last week.

The model which we would expect you to use to inform a flood risk assessment for the site would be the Tidal Nene model, which was what Annabelle originally sent you in CCN-2023-314624. Would you like us to send that data to you again?

Kind regards,
Alex

Alexander Tan
FRCM Officer, Partnerships and Strategic Overview (Welland & Nene)
Lincolnshire and Northamptonshire
Environment Agency | Nene House, Pytchley Lodge Road, Kettering, NN15 6JQ

alexander.tan@environment-agency.gov.uk | Team Email: PSOWN@environment-agency.gov.uk
Direct Dial: +447788327202 | Team Dial: 020 302 53535

From: Liam Nevins <liam@raincloud-consulting.co.uk>
Sent: 21 November 2023 16:33
To: Tan, Alexander <Alexander.Tan@environment-agency.gov.uk>
Subject: RE: CCN-2023-314624

Hi Alex,

Thank you for the update.

In the absence of data which informed the South Holland SFRA, please could you provide breach data for the Wash and Tidal Welland, as provided in 2019 for data request CCN/2019/152524?

Kind regards,

Liam

Liam Nevins
BSc hons MCWIEM
C.WEM
Director

07931 568853
www.raincloud-consulting.co.uk
liam@raincloud-consulting.co.uk
Independence House, Millfield Ln, York, YO26 6PH

From: Tan, Alexander <Alexander.Tan@environment-agency.gov.uk>
Sent: Tuesday, November 21, 2023 4:16 PM
To: Liam Nevins <liam@raincloud-consulting.co.uk>
Subject: RE: CCN-2023-314624

Hi Liam,

I've looked at this with some colleagues. The hazard mapping which caused the worst case scenario was actually produced from the South Holland SFRA, which was incorporated into our hazard mapping. We cannot provide more detailed data from these breach points. Please could you instead use the Tidal Nene model data to inform the FRA.

We apologise for all this confusion.

Kind regards,
Alex

Alexander Tan
FRCM Officer, Partnerships and Strategic Overview (Welland & Nene)
Lincolnshire and Northamptonshire
Environment Agency | Nene House, Pytchley Lodge Road, Kettering, NN15 6JQ

alexander.tan@environment-agency.gov.uk | Team Email: PSOWN@environment-agency.gov.uk
Direct Dial: +447788327202 | Team Dial: 020 302 53535

From: Tan, Alexander
Sent: 20 November 2023 16:22
To: Liam Nevins <liam@raincloud-consulting.co.uk>
Subject: RE: CCN-2023-314624

Hi Liam,

I'll be in the office tomorrow so I can have a look at the full model files on the physical hard drive and speak to a colleague with better knowledge of this model.

Kind regards,
Alex

Alexander Tan
FRCM Officer, Partnerships and Strategic Overview (Welland & Nene)
Lincolnshire and Northamptonshire
Environment Agency | Nene House, Pytchley Lodge Road, Kettering, NN15 6JQ

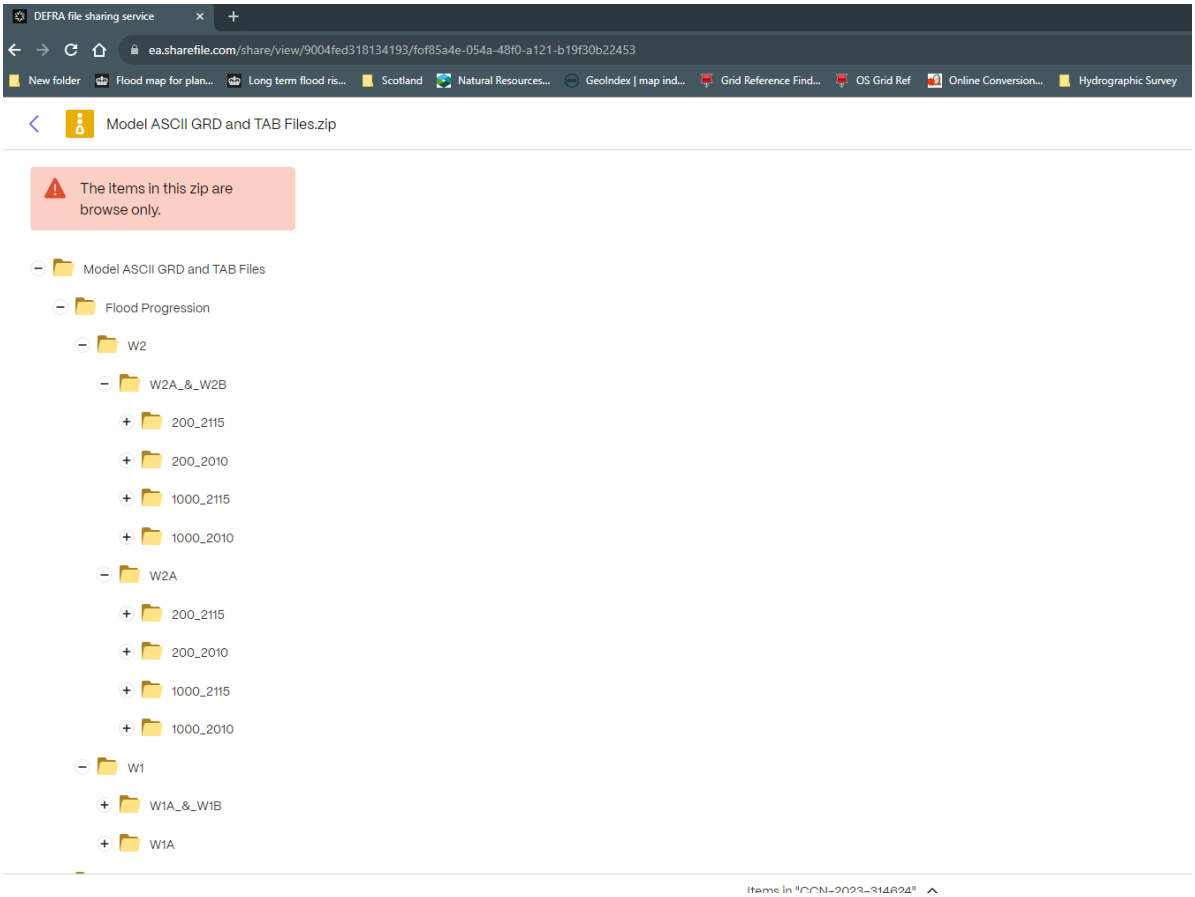
alexander.tan@environment-agency.gov.uk | Team Email: PSOWN@environment-agency.gov.uk
Direct Dial: +447788327202 | Team Dial: 020 302 53535

From: Liam Nevins <liam@raincloud-consulting.co.uk>
Sent: 20 November 2023 13:37
To: Tan, Alexander <Alexander.Tan@environment-agency.gov.uk>
Subject: RE: CCN-2023-314624

You don't often get email from liam@raincloud-consulting.co.uk. Learn why this is important

Hi Alex,

As shown in the screenshot of the data provided, all breach data has been provided for the Welland (e.g. W1, W2 etc):



I specifically need data for breach ID N0R (Gunthorpe Farm) on the Nene.

Kind regards,

Liam

Liam Nevins
BSc hons MCWIEM
C.WEM
Director

07931 568853
www.raincloud-consulting.co.uk
liam@raincloud-consulting.co.uk
Independence House, Millfield Ln, York, YO26 6PH

From: Tan, Alexander <Alexander.Tan@environment-agency.gov.uk>
Sent: Monday, November 20, 2023 11:24 AM
To: Liam Nevins <liam@raincloud-consulting.co.uk>
Subject: RE: CCN-2023-314624

Hi Liam,

Apologies, I am not an expert with these models/data and have not actually accessed the product data myself. But it's my understanding that our Tidal Hazard Mapping (which also covers the Welland) model files in the link provided includes breaching scenarios on the Nene up to Foul Anchor which covers your site. Is this not the case?

The Tidal Nene model was sent to you by my colleague originally, but as discussed earlier, does not present the worst case scenario.

Kind regards,
Alex

Alexander Tan
FRCM Officer, Partnerships and Strategic Overview (Welland & Nene)
Lincolnshire and Northamptonshire
Environment Agency | Nene House, Pytchley Lodge Road, Kettering, NN15 6JQ

alexander.tan@environment-agency.gov.uk | Team Email: PSOWN@environment-agency.gov.uk
Direct Dial: +447788327202 | Team Dial: 020 302 53535

From: Liam Nevins <liam@raincloud-consulting.co.uk>
Sent: 20 November 2023 10:57
To: Tan, Alexander <Alexander.Tan@environment-agency.gov.uk>
Subject: FW: CCN-2023-314624

> You don't often get email from liam@raincloud-consulting.co.uk. Learn why this is important

Hi Alex,

That link works, however only data for the River Welland has been provided.

We really ned breach data for the tidal Nene.

Kind regards,

Liam

Liam Nevins
BSc hons MCWIEM
C.WEM
Director

07931 568853
www.raincloud-consulting.co.uk
liam@raincloud-consulting.co.uk
Independence House, Millfield Ln, York, YO26 6PH

From: mail@sf-notifications.com <mail@sf-notifications.com>
Sent: Monday, November 20, 2023 10:23 AM
To: Liam Nevins <liam@raincloud-consulting.co.uk>
Subject: CCN-2023-314624

[redacted]

Information in this message may be confidential and may be legally privileged. If you have received this message by mistake, please notify the sender immediately, delete it and do not copy it to anyone else. We have checked this email and its attachments for viruses. But you should still check any attachment before opening it. We may have to make this message and any reply to it public if asked to under the Freedom of Information Act, Data Protection Act or for litigation. Email messages and attachments sent to or from any Environment Agency address may also be accessed by someone other than the sender or recipient, for business purposes.
Information in this message may be confidential and may be legally privileged. If you have received this message by mistake, please notify the sender immediately, delete it and do not copy it to anyone else. We have checked this email and its attachments for viruses. But you should still check any attachment before opening it. We may have to make this message and any reply to it public if asked to under the Freedom of Information Act, Data Protection Act or for litigation. Email messages and attachments sent to or from any Environment Agency address may also be accessed by someone other than the sender or recipient, for business purposes.
Information in this message may be confidential and may be legally privileged. If you have received this message by mistake, please notify the sender immediately, delete it and do not copy it to anyone else. We have checked this email and its attachments for viruses. But you should still check any

attachment before opening it. We may have to make this message and any reply to it public if asked to under the Freedom of Information Act, Data Protection Act or for litigation. Email messages and attachments sent to or from any Environment Agency address may also be accessed by someone other than the sender or recipient, for business purposes.

RAINCLOUD

FLOOD RISK

SuDS

EIA

www.raincloud-consulting.co.uk

hello@raincloud-consulting.co.uk