

Phoenix Wharf Flood Consequences Assessment

Version 1

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**LanzaTech UK Limited
c/o TMF Group
8th Floor
20 Farringdon Street
LONDON
EC4A 4AB**

JBA Project Manager

Faye Tomalin
Kings Chambers
7-8 High Street
NEWPORT
South Wales
UNITED KINGDOM
NP20 1FQ

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This report describes work commissioned by LanzaTech UK Limited, by an email dated 20th April 2022. Hannah Booth of JBA Consulting carried out this work.

Prepared by Hannah Booth BSc (Hons)
Flood Risk Analyst

Reviewed by Faye Tomalin BSc (Hons) MSc MCIWEM C.WEM
Principal Analyst

Purpose

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1 Introduction

JBA Consulting were commissioned by LanzaTech UK Limited to prepare a Flood Consequence Assessment (FCA) to support a planning application for the construction of an Ethanol to Sustainable Jet Fuel production facility at a site located adjacent to Port Talbot Docks.

This FCA demonstrates the suitability of the proposed development and describes the flood mitigation measures recommended to manage flooding at the site.

1.1 FCA requirements

This FCA follows the Welsh Government guidance on development and flood risk set out in the Technical Advice Note 15: Development and Flood Risk (TAN15). Where appropriate, the following aspects of flood risk should be addressed in all planning applications over their expected lifetime:

- The likely mechanisms of flooding
- The likely source of flooding
- The depths of flooding through the site
- The speed of inundation of the site
- The rate of rise of flood water through the site
- Velocities of flood water across the site
- Overland flow routes
- The effect of access and egress and infrastructure, for example, public sewer outfalls, combined sewer outflows, surface water sewers and effluent discharge pipes from wastewater treatment works
- The impacts of the development in terms of flood risk on neighbouring properties and elsewhere on the floodplain

2 Site Description

2.1 Site Summary

The proposed development site is located to the south of the wider harbour and dock facilities in Port Talbot. It is set within an established, heavily industrialised area and is bound to the north and east by a private road, a disused railway line section to the south, and brownfield land to the west. Further to the east and south of the proposed development site lies the operational Port Talbot Steelworks and the Hanson Cement Works lies to the north of the proposed development site. The development site forms part of the wider harbour and dock facilities of Port Talbot operated by Associated British Ports (ABP).

The proposed development site comprises brownfield industrial land that has slowly re-greened over a prolonged period of no use. A significant area of hardstanding (associated with historical uses and now demolished buildings) lies in the centre of the site and connects to the main access point to the north. The site is accessed from a private road from Harbour Way and the M4, as shown in Figure 2-1.

Table 2-1 Site Summary

Site name	Phoenix Wharf
Site area	9.08ha
Existing land use	Brownfield land
Purpose of development	Ethanol to Sustainable Jet Fuel production facility
OS NGR	SS 76442 88661
Local Planning Authority	Neath Port Talbot Council
Lead Local Flood Authority	Neath Port Talbot Council



Figure 2-1 Proposed development site

2.2 Site topography and watercourses

AP Land Surveys undertook a topographic survey of the site in December 2021, and this is contained in Appendix A. Natural Resources Wales (NRW) 1m LiDAR data has been used as an alternative illustration of site topography and is shown in Figure 2-2.

The topographic survey shows that the site shows that a crescent shaped embankment on the southern boundary, slopes gently down towards a low point at the central and northern part of the site. Ground levels on the embankment reach a maximum of 10.4mAOD before falling to a low of 7.0mAOD in the central northern area of the site. There is also a slight slope from west to east across the site, with a fall from 10.4mAOD to 8.8mAOD.

Due to the site's brownfield nature there are localised areas of raised ground on the site. The client has informed JBA that these are piles of rubble from demolished buildings that will be removed/ levelled during the development of the site.

Two NRW designated Main Rivers are located in close proximity to the site, as shown in Figure 2-3. The River Afan is located 740m to the north west of the site and the Ffrwd Wyllt 230m north of the site. The Ffrwd Wyllt flows into the Port Talbot Docks approximately 200m from the proposed development.

The Port Talbot Docks is located approximately 25m to the north of the site.

The proposed development does not benefit from the presence of flood defences.

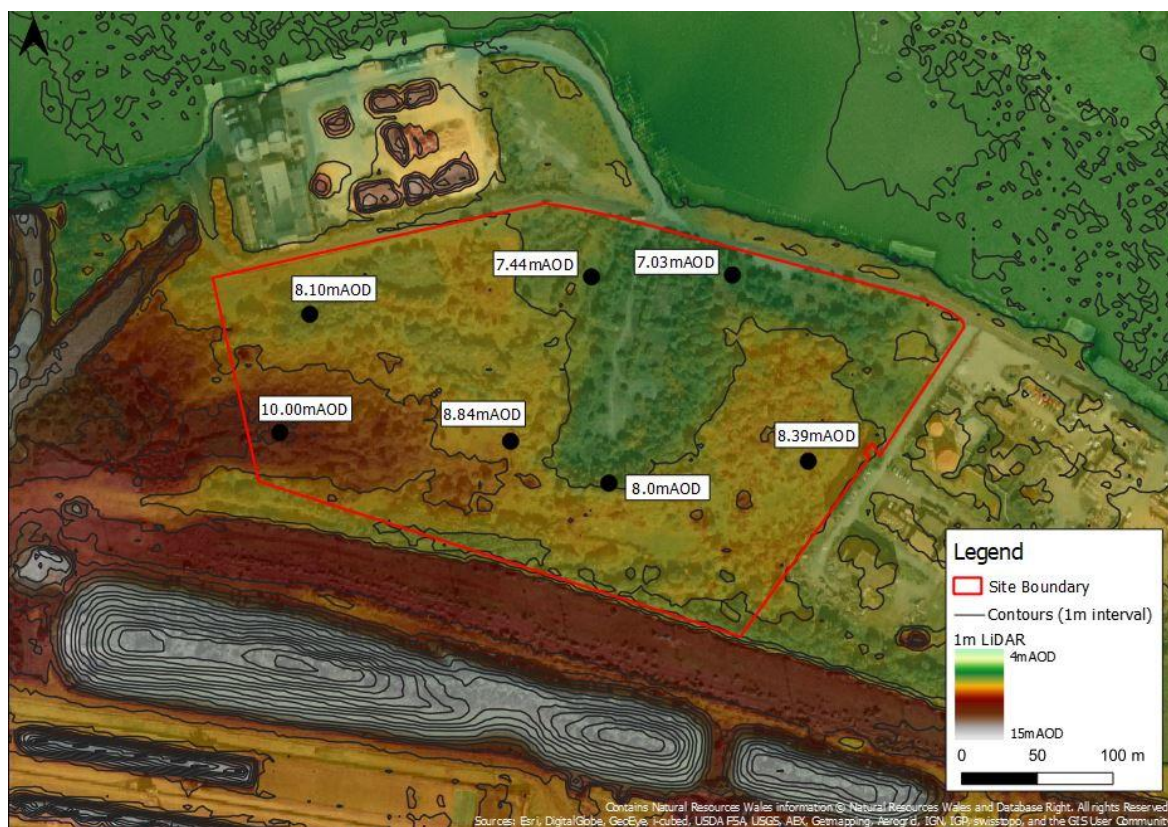


Figure 2-2 Topography



Figure 2-3 Watercourses

2.3 Soils and geology

The geology of the site has been assessed using the BGS Geology of Britain Viewer¹. The bedrock geology is shown to be South Wales Middle Coal Measures Formation comprised of mudstone, siltstone and sandstone. Superficial deposits overlaying the bedrock are Tidal Flat Deposits comprised of clay, silt and sand.

The soils on the site have been assessed using the Cranfield University Soilscales Viewer² and are shown to be loamy and clayey soils of coastal flats with naturally high groundwater.

2.4 Proposed development

Development proposals for the site are to construct an Ethanol to Sustainable Jet Fuel production facility. Facilities will include a flare stack, storage tanks, pipework and electrical equipment installation, office, warehouse and laboratory buildings. Also included will be car parking and transport infrastructure, including a new rail loading facility and works, a replacement wharf, and other associated works. A full description of the built development and structures is provided in Appendix B, along with a proposed development plan.

¹ Geology Viewer. https://geologyviewer.bgs.ac.uk/?_ga=2.75172241.266172825.1657115636-2037829421.1650550580

² Cranfield Soilscales Viewer. <https://landis.org.uk/soilscales/>

3 Planning Policy and flood risk

3.1 Planning context

Planning Policy Wales (PPW) sets out the land use planning policies of the Welsh Government. It is supplemented by a series of Technical Advice Notes (TANs), Welsh Government Circulars, and policy clarification letters, which together with PPW provide the national planning policy framework for Wales. These policies have the aim that all development in Wales is sustainable and improve the social, economic, environmental, and cultural wellbeing of Wales as set out in the Wellbeing of Future Generations Act 2015.

PPW uses a series of Technical Advice Notes to provide more guidance on areas of planning and development in Wales. Technical Advice Note 15 (TAN15), introduced by the Welsh Government in 2004, provides technical guidance relating to development planning and flood risk in Wales.

The initial requirements of TAN15 are to identify the vulnerability classification(s) and flood zones relevant to the proposed development, and to apply this information to the application of the justification tests.

An update for TAN15 was released in October 2021 and was due to come in force on the 1st December 2021. However, Welsh Government have since suspended the implementation of the new TAN15 until 1st June 2023. Although the new TAN15 is not a material consideration, Welsh Government and NRW are advising that some consideration is given to the draft Flood Map for Planning (FMfP) as best available information. Therefore, where a site is located in a FMfP flood risk zone it is recommended that an FCA is carried out, even where the site is not shown to be at risk on the Development Advice Map.

As a result of the above, both the DAM and the FMfP are considered in this FCA.

3.2 Vulnerability classification

As shown in Table 3-1, TAN15 assigns one of three flood risk vulnerabilities to development. The proposed development is classified under TAN15 as 'less vulnerable' development.

Table 3-1 Development categories as defined by TAN15

Development category	Types
Emergency services	Hospitals, ambulance stations, fire stations, police stations, coastguard stations, command centres, emergency depots and buildings used to provide emergency shelter in time of flood.
Highly vulnerable development	All residential premises (including hotels and caravan parks), public buildings, (e.g. schools, libraries, leisure centres), especially vulnerable industrial development (e.g. power stations, chemical plants, incinerators), and waste disposal sites.
Less vulnerable development	General industrial , employment, commercial and retail development, transport and utilities infrastructure, car parks, mineral extraction sites and associated processing facilities, excluding waste disposal sites.

3.3 Development Advice Map classification

Figure 3-1 shows that the proposed development site falls into Zone B of the DAM. The DAM zone classification is used to trigger different planning actions based on a precautionary assessment of flood risk. Zone B which is described as areas known to have been flooded in the past evidenced by sedimentary deposits. Zone B indicates areas which are generally

suitable for most forms of development and there is no requirement for the application of the Justification Test for any proposed development located within DAM Zone B.

Zone B is used as part of a precautionary approach to indicate where site levels should be checked against the extreme (0.1%) flood level. If site levels are greater than the flood levels used to define adjacent extreme flood outline there is no need to consider flood risk further.



Figure 3-1 Development Advice Map

3.4 Draft TAN-15 (Expected Release 2023) - Flood Map for Planning

The Flood Map for Planning (FMfP) is used to trigger different planning actions based on a precautionary assessment of flood risk.

As shown in Figure 3-2, a small part of the proposed development site is located in Flood Zone 2 (between a 0.1% and 1% chance of flooding in any given year) of the Flood Map for Planning for Rivers. The rest of the proposed development site is located in Flood Zone 1 (less than a 0.1% chance of flooding in any given year).



Figure 3-2 Flood Map for Planning Rivers

As shown in Figure 3-3, part of the proposed development site is located in Flood Zone 2 (between a 0.1% and 1% chance of flooding in any given year) and Flood Zone 3 (0.5% or greater chance of flooding in any given year) of the Flood Map for Planning for Sea. The rest of the proposed development site is located in Flood Zone 1 (less than a 0.1% chance of flooding in any given year).

NRW have advised that any site located within Flood Zone 3 will require an assessment of flood risk. It is for this reason that this FCA has been prepared.



Figure 3-3 Flood Map for Planning Sea

3.5 Local Development Plan

The Neath Port Talbot Local Development Plan (LDP), adopted in 2016, provides land use policies and proposals to encourage sustainable growth within the Neath Port Talbot Council area until 2026.

Overarching Objective 1 (OB1) aims to “*adapt to climate change through consideration of its effects in the design and location of new development*”. The proposed development aims to raise the site levels to reduce the flood risk to future new development and therefore contributes to OB1.

The proposed development also complies with ‘Policy EC 3 Employment Area Uses’ which specifies that within existing employment areas, only uses within specific employment land use classes will be deemed appropriate for development. As the proposed development is located in an existing employment area which is surrounded by industrial uses, it meets the criteria of this policy.

The proposed development also supports the LDP vision that ‘previously developed, underused, and unsightly former industrial and commercial areas are redeveloped’. The proposed development will redevelop an existing brownfield land site that was previously used for industrial use therefore it supports the LDP vision.

3.6 Justification Test

The site is located within DAM Zone B and therefore the Justification Test is not required. However, for the sake of completeness, the Justification Test has been included below.

TAN-15 states that development will be justified if it can be demonstrated that:

Its location in zone C is necessary to assist, or be part of, a local authority regeneration initiative or a local authority strategy required to sustain an existing settlement;

or

Its location in zone C is necessary to contribute to key employment objectives supported by the local authority, and other key partners, to sustain an existing settlement or region;

and

It concurs with the aims of Planning Policy Wales and meets the definition of previously developed land;

and,

The potential consequences of a flooding event for the particular type of development have been considered and found to be acceptable.

The proposed development site is not located in Zone C but as it is in Flood Zone 3 for the Flood Map for Planning for the Sea, it has been included for completeness, with the results summarised in Table 3-2.

Table 3-2: Justification Test applied to the proposed development

TAN 15 Justification Criteria	Comments	Achievable?
<i>Its location is necessary to assist a local authority regeneration initiative or strategy, or contribute to key employment objectives, necessary to sustain an existing settlement or region.</i>	The proposed development will assist with the relevant policies listed in the Local Development Plan as well as supporting the overall vision of the LDP.	✓
<i>The site meets the definition of previously developed land (i.e., it is not a Greenfield site) and concurs with the aims of Planning Policy Wales (i.e., the presumption in favour of sustainable development).</i>	The site is located on previously developed brownfield land. (ref. Section 2.1). The site therefore concurs with the aims of Planning Policy Wales.	✓
<i>A Flood Consequence Assessment has been produced to demonstrate that the potential consequences of a flood event up to the extreme flood event (1 in 1000 chance of occurring in any year) have been considered and meet the [Acceptability Criteria] ... in order to be considered acceptable.</i>	The flood consequences have been assessed and are detailed further in Sections 4 and 5.	✓

4 Flood Risk Assessment

This section assesses the risk to the proposed development from all sources of flooding, the risk of increased flooding to others, and how flood risks can be managed. This FCA is based solely on a desk-based analysis of existing flood risk data.

4.1 Review of existing flood risk data

The latest available information on flood risk at the site is summarised in Table 4-1 below.

Table 4-1 Summary of flood risk

Source of Flooding	Onsite Presence	Description
Flood Risk from Rivers	×	The site is at very low risk of flooding from rivers. Further assessment is required to assess the potential implications of climate change on river flooding.
Flood Risk from the Sea	×	The site is at very low risk of tidal flooding. Further assessment is required to assess the potential implications of climate change on tidal flooding.
Flood Risk from Surface Water and Small Watercourses	✓	The site is at low risk of surface water flooding.
Flood Risk from Groundwater	✓	The site is at low risk of flooding from groundwater.
Flood Risk from Reservoirs	✓	The site is at very low risk of flooding from reservoirs.
Flood Risk from Sewers	×	The site is at very low risk of sewer flooding.

4.2 Historical flooding

NRW's map of recorded flood extents does not show any evidence of historic flooding on the site. No other historic flooding records were identified at the site in the Neath and Port Talbot Flood Risk Management Plan. In the Neath and Port Talbot Preliminary Flood Risk Assessment, historical flood events from a local source of flooding are indicated. In Neath and Port Talbot, 749 surface water flooding events occurred between April and December 2010. The proposed development site is located in this general area, but it is unclear whether historic flooding has occurred at the site.

4.3 Flood Risk from Rivers

The site is at a very low risk of flooding from rivers, according to NRW's Flood Risk Assessment Wales (FRAW) Flood Risk from Rivers map. This means there is less than a 0.1% AEP chance of fluvial flooding in any given year. This is shown by a transparent layer on the FRAW mapping, as shown in Figure 4-1.

To better understand the potential implications of climate change on the risk of river flooding, further assessment using modelled data has been undertaken and is discussed in Section 5.



Figure 4-1 Risk of flooding from Rivers

4.4 Flood Risk from the Sea

The site is at **very low risk** of flooding from the Sea, according to NRW's FRAW Flood Risk from the Sea map. This means that there is less than a 0.1% AEP chance of tidal flooding in any given year. This is shown by a transparent layer on the FRAW mapping, as shown in Figure 4-2. Tidal flood water in all flood events is confined to the Port Talbot Docks.

To better understand the potential implications of climate change on the risk of tidal flooding, further assessment using modelled data has been undertaken and is discussed in Section 5.



Figure 4-2 Risk of flooding from the Sea

4.5 Flood Risk from Surface Water and Small Watercourses

The site is predominantly at a **very low risk** of flooding from Surface Water and Small Watercourses according to NRW's FRAW Flood Risk from the Surface Water and Small Watercourses map shown in Figure 4-3. This means there is less than a 0.1% AEP chance of flooding from these sources in any given year. A small area of surface water ponding is present along the southern boundary of the proposed development site. This area of ponding is only present in the **low-risk** scenario (between 1 in 1000 (0.1%) and 1 in 100 (1%)). The NRW National Flood Hazard mapping shows that flood depths in this area of surface water ponding are between 0.15-0.3m.



Figure 4-3 Risk of flooding from Surface Water and Small Watercourses

4.6 Flood Risk from Groundwater

Groundwater flooding is caused by unusually high groundwater levels, and it occurs as excess water emerges at the ground surface or within manmade structures such as basements. Groundwater flooding tends to be more persistent than surface water flooding, sometimes lasting for weeks or months, and can damage property. This risk of groundwater flooding depends on the nature of the site's geological strata and the local topography.

The Envirocheck Report included as part of the desk study³ undertaken by Tweedie Evans Consulting Ltd identifies that the BGS Groundwater Flooding Susceptibility dataset shows that the majority of the proposed development site has the potential for groundwater flooding to occur in properties situated below ground level. Small sections along the northern boundary of the site is categorised as having the potential for groundwater to occur at the surface. It can therefore be concluded that the risk of groundwater flooding at the site is **low**.

4.7 Flood Risk from Reservoirs

NRW flood maps indicate that the proposed development site is not at risk of flooding due to reservoir failure, as shown in Figure 4-4. Therefore, there is a **very low risk** of reservoir flooding at the site.

³ Tweedie Evans Consulting Ltd (2022) *Phoenix Wharf, Port Talbot Desk Study*



Figure 4-4 Risk of flooding from Reservoirs

4.8 Flood Risk from Sewers

The Neath Port Talbot County Borough Council Flood Risk Management Plan does not contain evidence of historic sewer flooding on or close to the site. It can therefore be concluded that the risk of sewer flooding at the site is very low.

5 Detailed Fluvial and Tidal Flood Risk Assessment

As identified in Section 4 a better understanding of the potential implications of climate change on the risk of fluvial and tidal flooding is required. The following section, therefore, assesses these sources of flood risk in more detail.

5.1 JBA Flood Model Updates

The detailed fluvial and tidal flood risk modelling data for Port Talbot is sourced from a flood model, which was updated for another location close to the proposed development (planning reference P2020 0303). The model consisted of the 1D-2D linked ESTRY-TUFLOW Model of Port Talbot, developed by JBA Consulting in August 2017.

Updates to the modelling include:

- Updating the building representation to be based solely on the OS Mastermap layer with a 90% blockage factor applied.
- Run the model with the latest version of TUFLOW.
- Update the tidal boundary conditions to be uplifted to 2021 to represent present-day conditions and consider the impact of the 2096 climate change epoch.

In accordance with Welsh Government Guidance on Climate Change Allowances for Planning Purposes⁴ the 75-year cumulative Sea Level Rise needs to be considered for commercial land uses. To account for the impact of sea level rise over the lifetime of the development a further uplift was calculated for the 2096 scenario based on the Higher Central allowance (70th percentile) of the UKCP 18 for 2100, RCP 8.5 dataset. Table 5-1 summarises the sea level rise uplifts applied to the tidal boundary conditions and the resulting peak tide levels.

Table 5-1 Sea level rise uplifts and peak tide levels

Scenario	Sea level rise uplift (m)	Peak tide level (m AOD)	
		0.5% AEP	0.1% AEP event
2096	0.711	7.08	7.40

The model is using TUFLOW executable 2020-01-AB. Whilst it is acknowledged that this is not the most recent version of the software, subsequent software updates have focused on the TUFLOW HPC solver, not TUFLOW classic, which has been used as part of this modelling.

Within the updated flood model, the initial conditions have been updated so that the use of restart files is no longer required, noted as a model improvement. 1D Negative depths are experienced however these are at the start on the simulation. Whilst it would be preferable for these to not be present, their location at the downstream end of the River Afan, and occurrence at the start of the simulation means that they have no impact on the peak results at the site of interest.

The results for the 0.5% AEP plus climate change and 0.1% plus climate change were used to assess the risk of tidal flooding and 0.1% AEP defended events were used for this assessment to assess the risk of fluvial flooding. The results from these return periods are detailed below.

⁴ Welsh Government Guidance on Climate Change Allowances for Planning Purposes: <https://gov.wales/sites/default/files/publications/2018-11/flood-consequence-assessments.pdf>

5.1 Fluvial Flood Risk

5.1.1 Baseline Flood Risk

0.1% AEP event

The baseline modelling shows that the proposed development site is predicted to be flood free in the 0.1% AEP fluvial flood event, as shown in Figure 5-1.

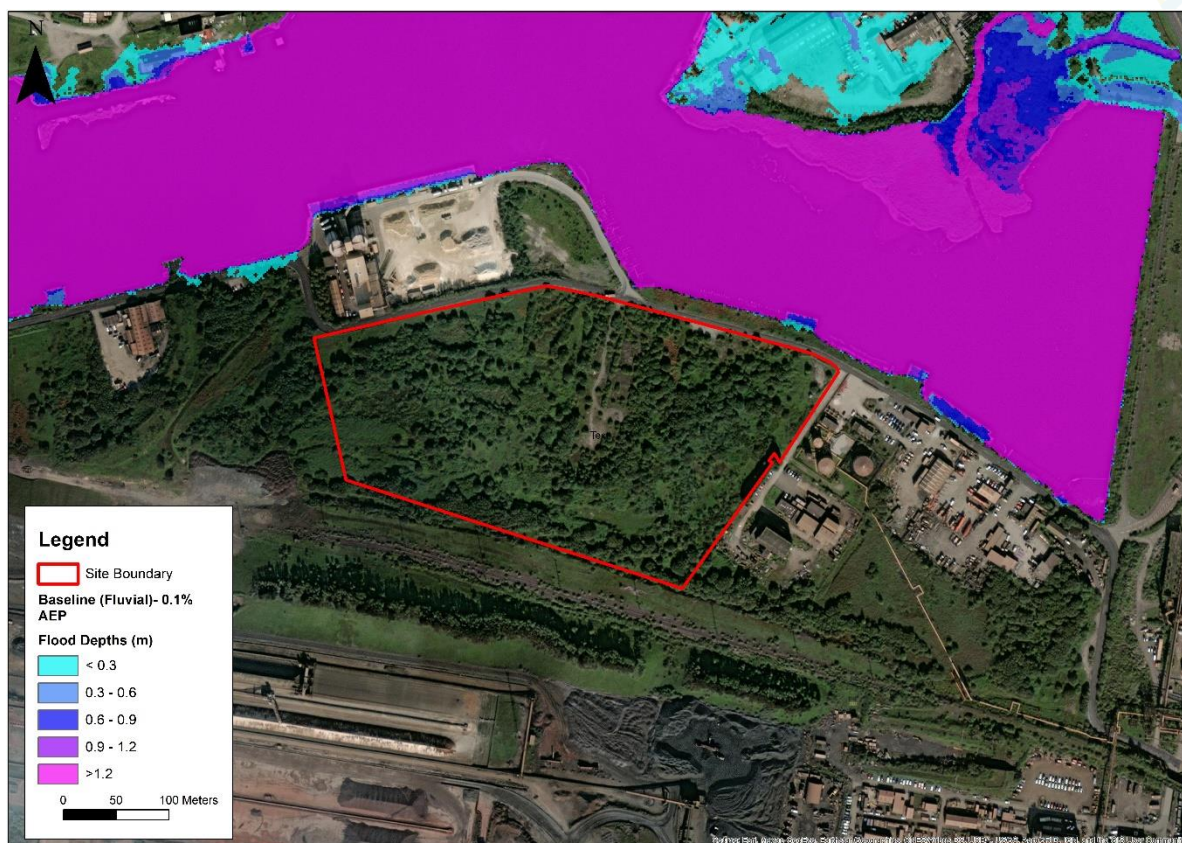


Figure 5-1 0.1% AEP flood depths

As the proposed development site is not predicted to flood in the 0.1% AEP, no further assessment of the post development scenario has been undertaken.

5.2 Tidal Flood Risk

5.2.1 Baseline Model Results

The present day 0.5% AEP and 0.1% AEP event show that the site will be flood free and as a result, have not been presented.

0.5% AEP 2096 event

The baseline modelling shows that the site is not predicted to flood in the 0.5% AEP 2096 tidal flood event, as shown in Figure 5-2.

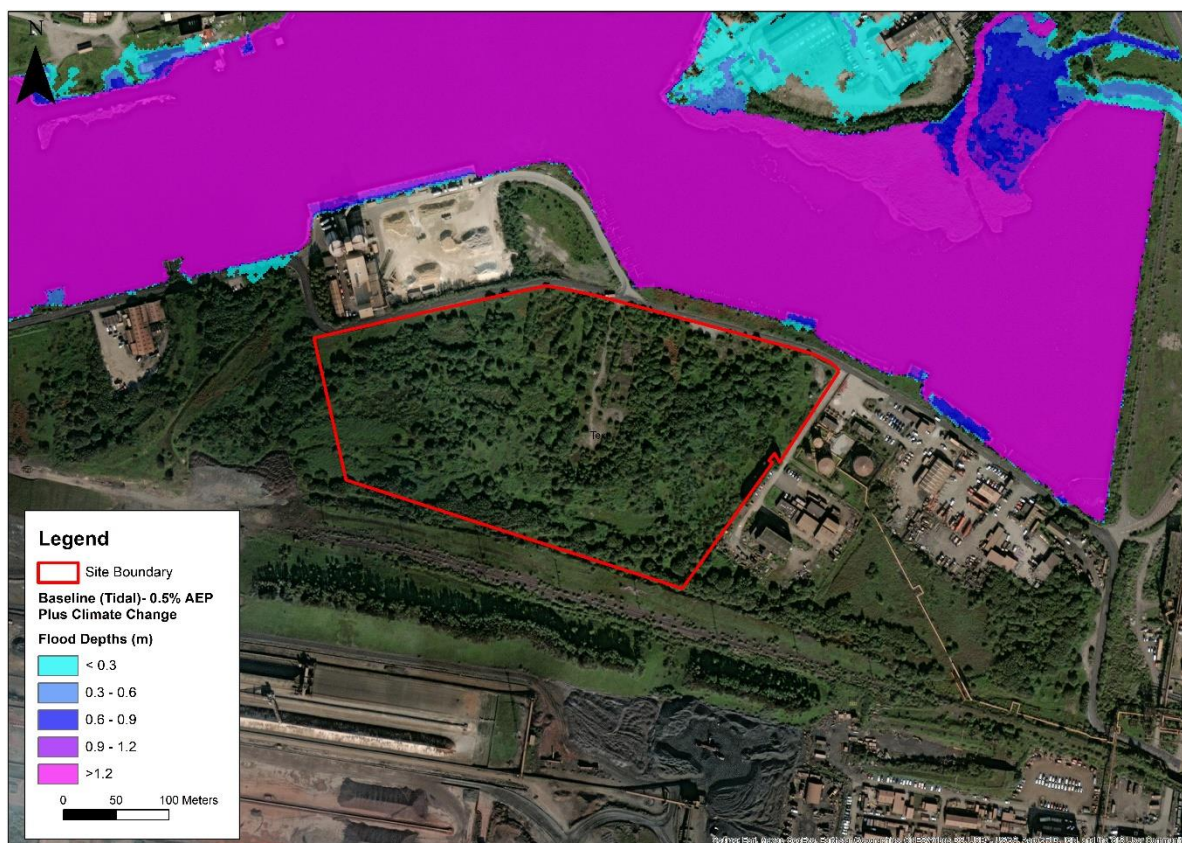


Figure 5-2 0.5% AEP plus climate change baseline flood depths

0.1% AEP 2096 event-

The baseline modelling shows that a small area of the northern boundary of the proposed development site is predicted to flood in the 0.1% AEP 2096 event, as shown in Figure 5-3 below. During this event, the majority of the site is flood-free, with a small amount of flood water overtopping from the Port Talbot Docks onto the access roads to the north of the site and flowing in a southerly direction before ponding into the topographic depression in the north of the site.

Predicted flood depths across the site are shallow and are less than 300mm with a maximum flood depth of 250mm. Water levels remain consistent across the site, with a level of 7.30mAOD.

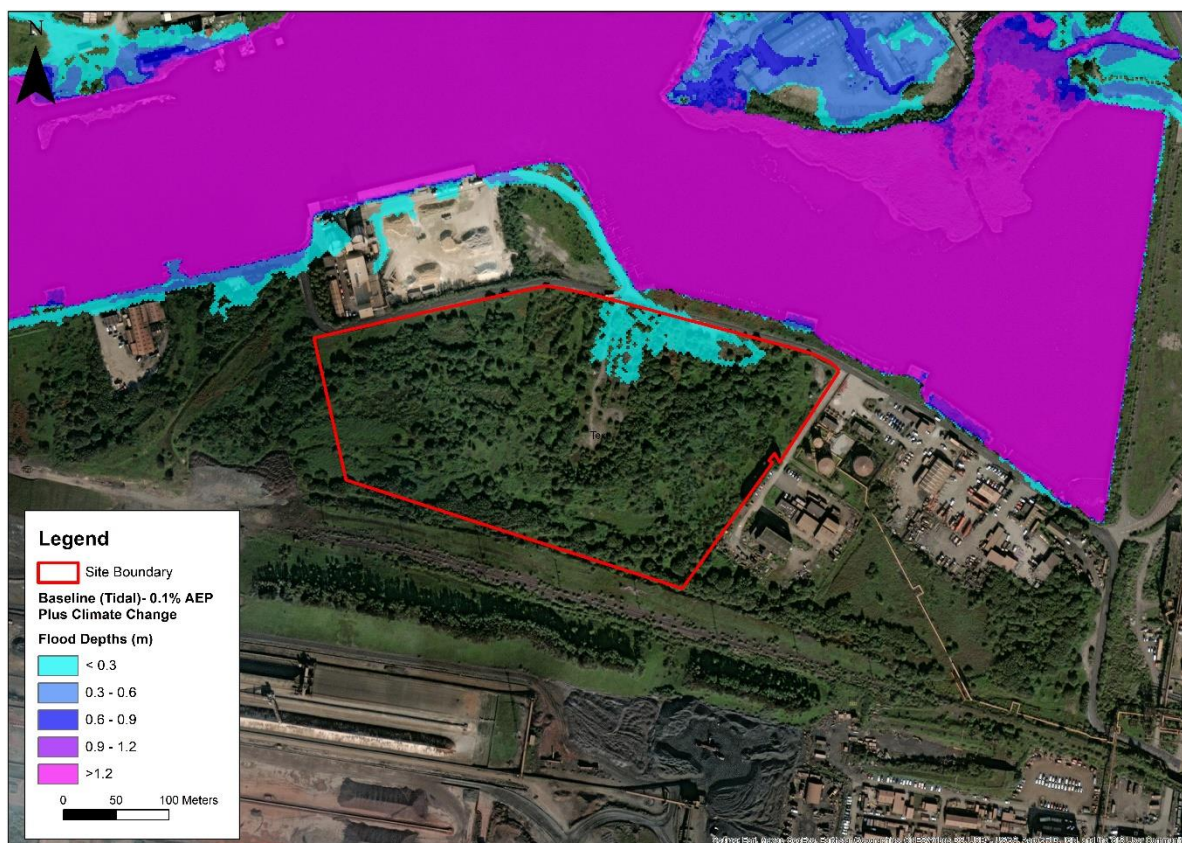


Figure 5-3 0.1% AEP plus climate change baseline flood depths

5.2.2 Post-Development Model Results

As a result of the predicted flood depths across the site in the 0.1% AEP 2096 event, modest ground raising to a minimum ground level of 7.7mAOD (where ground levels do not already exceed this) across the proposed development site is proposed.

As the proposed development site is not predicted to flood in the 0.5% AEP 2096 event, this event is not presented below for the post-development scenario.

0.1% AEP 2096 event

As a result of ground raising to the proposed development site, the site is predicted to be flood free in the 0.1% AEP 2096 event, therefore complying with the requirements of A1.15 of TAN15. The predicted flood event for the 0.1% AEP 2096 event post-development scenario is shown in Figure 5-4.

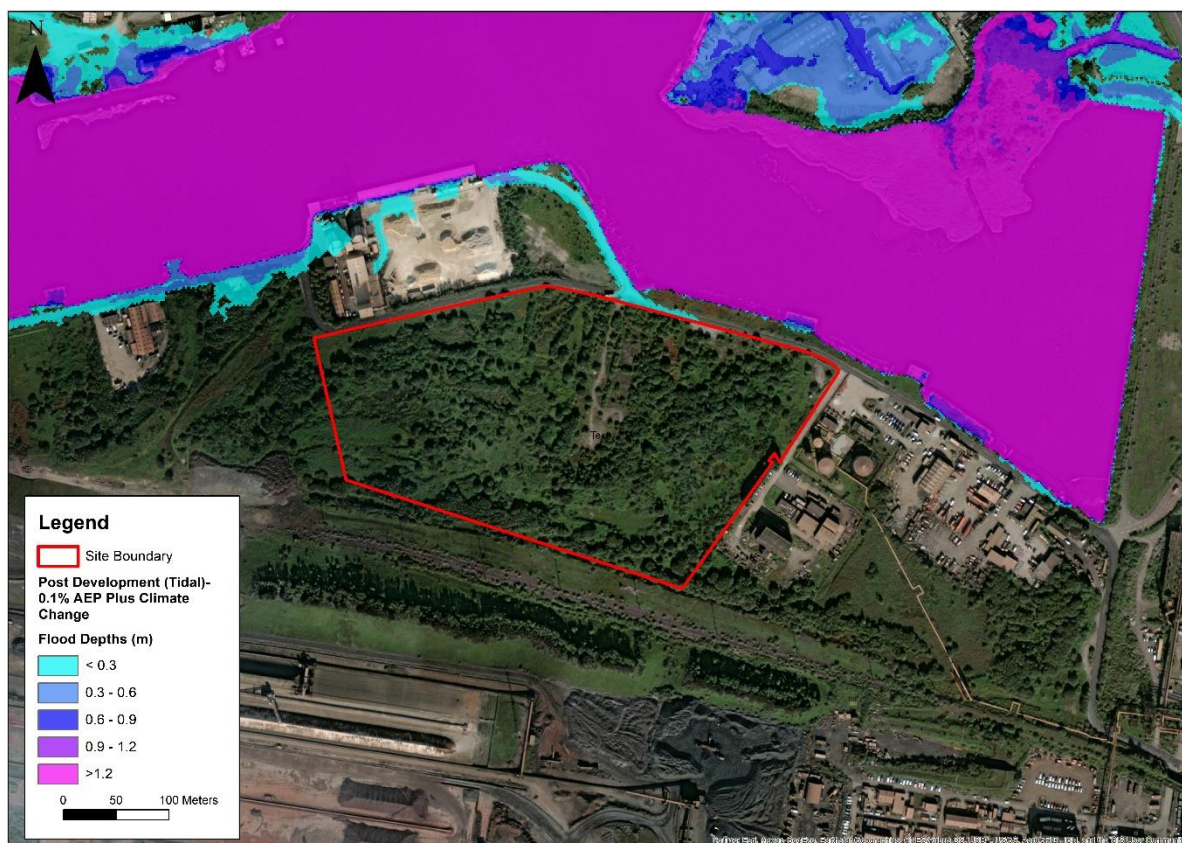


Figure 5-4 0.1% AEP plus climate change post development flood depths

5.2.3 Third-Party Impacts

TAN-15 Section 7.3 requires that new development should ensure 'minimal impact of the proposed development on flood risk generally'. Although TAN-15 provides little guidance on how off-site impacts should be assessed and evaluated, NRW has published guidance on 'Modelling for Flood Consequence Assessment'⁵, which provides guidance on the measurable limits of flood models and assessment of off-site impacts.

A comparison of maximum water depths from the baseline and post-development model results was undertaken to determine the impacts of the proposed development on off-site flood risk.

0.1% AEP 2096 event

Figure 5-5 shows the impact on water depths during the 0.1% AEP plus climate change tidal flood event. The analysis shows that there is predominantly no change to flood depths around the site as a result of the proposed development. A small area along the access road to the north of the site is predicted to increase in flooding as a result of the proposed development by 36mm.

There shall be no change to the frequency or extent of flooding as a result of the proposed development. Flood depths along the road are still predicted to be less than 300mm which are within the tolerable conditions as stated in A1-15 of TAN-15. The access road is owned by ABP and therefore there will be no impact to any third parties land as a result of the proposed ground raising.

⁵ Modelling for Flood Consequence Assessments (Ref. GN028). Natural Resources Wales, Jan 2020

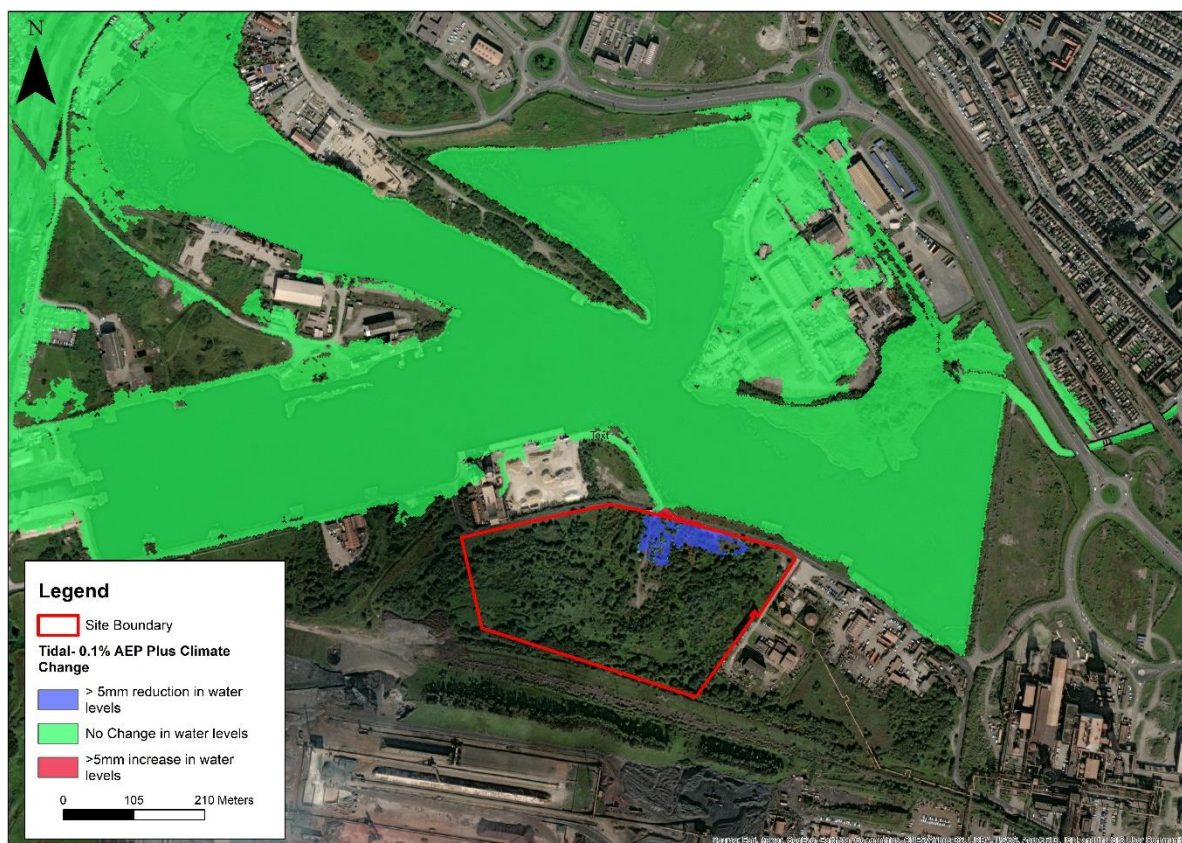


Figure 5-5 0.1% AEP plus climate change Depth Comparison Grid

6 Assessment of Acceptability Criteria

Table 6-1 below details the acceptability criteria required by TAN-15.

Table 6-1 TAN-15 Acceptability Criteria

TAN-15 Acceptability Criteria	Comments	Satisfied
Developer is required to demonstrate that the site is designed to be flood free for the lifetime of development for a 1 in 100(1%) chance (fluvial) and 1 in 200 (0.5%) chance (tidal) flood event including an allowance for climate change, in accordance with Tan-15 Table A1.14.	The proposed development will be flood free in the 1% AEP plus climate change fluvial flood event and the 0.5% AEP plus climate change tidal flood event.	Yes
In respect of the residual risk to the development it should be designed so that in an extreme (1 in 1000 chance) fluvial flood event and 0.1 plus climate change tidal flood event there would be less than 600mm of water on access roads and within property.	In the 0.1% AEP fluvial flood event, the development will be flood free. In the 0.1% plus climate change tidal flood event, the proposed development will also be flood free following ground raising to a minimum ground level of 7.7mAOD.	Yes
No flooding elsewhere	The proposed development has a negligible impact on flood risk to third parties (Section 5.2.3)	Yes
Flood defences must be shown by the developer to be structurally adequate particularly under extreme overtopping conditions (i.e. that flood with a 1 in 1000 chance of occurring in any given year).	The proposed development site is not protected by the presence of flood defences.	Yes
Effective flood warnings are provided at the site.	The site is not located in a Flood Warning or Flood Alert area. The proposed development site is predicted to be flood free under all conditions.	Yes
The developer must ensure that future occupiers of the development are aware of the flooding risks and consequences.	The site is predicted to be flood free therefore there is no risk of flooding to the site.	Yes
Escape/evacuation routes are shown by the developer to be operational under all conditions.	In the 1% plus climate change fluvial flood event and the 0.5% plus climate change tidal flood event, safe access/egress from the site is maintained.	Yes

	In the most extreme and exceptional 0.1% AEP plus climate change tidal flood event, flooding is shallow and will not affect access to and from the site.	
The development is designed by the developer to allow the occupier the facility for rapid movement of goods/possessions to areas away from flood waters.	The proposed development site is predicted to be flood free for all fluvial and tidal design flood events.	Yes
Development is designed to minimise structural damage during a flooding event and is flood proofed to enable it to be returned to its prime use quickly in the aftermath of the flood.	The proposed development site is predicted to be flood free for all fluvial and tidal design flood events.	Yes

7 Conclusions

- JBA Consulting were commissioned by LanzaTech UK Limited to undertake a Flood Consequence Assessment to support a planning application for the construction of an Ethanol to Sustainable Jet Fuel production facility in the Port Talbot Docks.
- The proposed development site is located to the south of the wider harbour and dock facilities of Port Talbot. It is set within an established heavily industrialised area and is bound to the north and east by a private road, to an unused section of railway line to the south and brownfield land to the west.
- The proposed development site comprises brownfield industrial land.
- Development proposals are to construct an Ethanol to Sustainable Jet Fuel production facility. Facilities will include a flare stack, storage tanks, installation of pipework and electrical equipment, office, warehouse and laboratory buildings, new access, car parking and transport infrastructure including, new rail loading facility and works, replacement wharf, hard and soft landscaping and associated development
- The proposed site is located in Zone B of Natural Resources Wales (NRW) Development Advice Map (DAM). Zone B is defined as areas of the floodplain that is known to have flooded before, as evidenced by sedimentary deposits. Development within Zone B can occur subject to the acceptability of consequences being satisfied.
- The site is at little or no risk of flooding from reservoir failure and a low risk of groundwater and surface water flooding.
- The dominant flood risk to the site is tidal and fluvial. An up-to-date model of Port Talbot has been used to gain a better understanding of the potential implications of climate change on the risk of tidal and fluvial flooding
- During the pre-development scenario, the proposed development site is predicted to be flood free during the tidal 0.5% AEP plus climate change and fluvial 1% AEP plus climate change and 0.1% AEP events.
- During the 0.1% AEP plus climate change tidal event, the proposed development is predicted to experience shallow flooding, to a maximum depth of 250mm. To manage this, the ground levels of the site will be raised to a minimum ground level of 7.7mAOD.
- In the post-development scenario, the proposed development site is predicted to remain flood free during the 0.1% plus climate change tidal flood event as a result of ground raising works.
- An assessment of third-party impacts as a result of the development has been undertaken and demonstrates that the result of ground raising across the site has a negligible impact on flood depths off-site.
- In conclusion, this FCA demonstrates that the proposed development satisfies the Justification Test requirements, including managing flood risk in line with the acceptability criteria. It is therefore concluded that the development meets the principles and requirements set out in TAN15 and the aims of Planning Policy Wales.

Appendices

A Topographic Survey

B Proposed Development Design

Offices at

Coleshill
Doncaster
Dublin
Edinburgh
Exeter
Haywards Heath
Isle of Man
Limerick
Newcastle upon Tyne
Newport
Peterborough
Saltaire
Skipton
Tadcaster
Thirsk
Wallingford
Warrington

Registered Office
1 Broughton Park
Old Lane North
Broughton
SKIPTON
North Yorkshire
BD23 3FD
United Kingdom

+44(0)1756 799919
info@jbaconsulting.com
www.jbaconsulting.com
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Jeremy Benn Associates Limited

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