

From: [PSC-WaterResources](#)
To: [Taylor, Ryan](#)
Subject: Application number - NPS/WR/041115
Date: 08 April 2024 13:29:00

Dear Ryan

Application number - NPS/WR/041115
Site name - Auckley Gauging Station

I confirm that we have received your application for a new licence.

We will check your application is technically valid, that the application is correct and decide whether it needs to be advertised or not. We will contact you again if you need to do anything else relating to your application.

If there are no problems with your application, we will send you a letter to let you know that your application is technically valid and when we expect to reach a decision.

Currently, applications are taking on average 6 weeks to be allocated to a permitting officer. This is an average estimate, meaning that some applications take longer and some are allocated more quickly than this timescale. We are taking action to resolve these delays, including recruiting more staff and reviewing our processes for efficiencies.

We aim to respond to all enquiries asking for updates, and at busy times this can have a significant impact on our ability and capacity to progress applications. Please rest assured that we will contact you as soon as there is any update on your application.

If you have any questions about your application, please contact a member of the Permitting Support Team on 0208 4748939.

Kind Regards
Lorraine Mendez
Permitting Support Advisor
Water Resources, Integrated Permitting Services

Environment Agency | Water Resources, Integrated Permitting Services, Quadrant 2, 99 Parkway Avenue, Parkway Business Park, Sheffield, S9 4WF

(Water Resources Team: **0208 474 8939**

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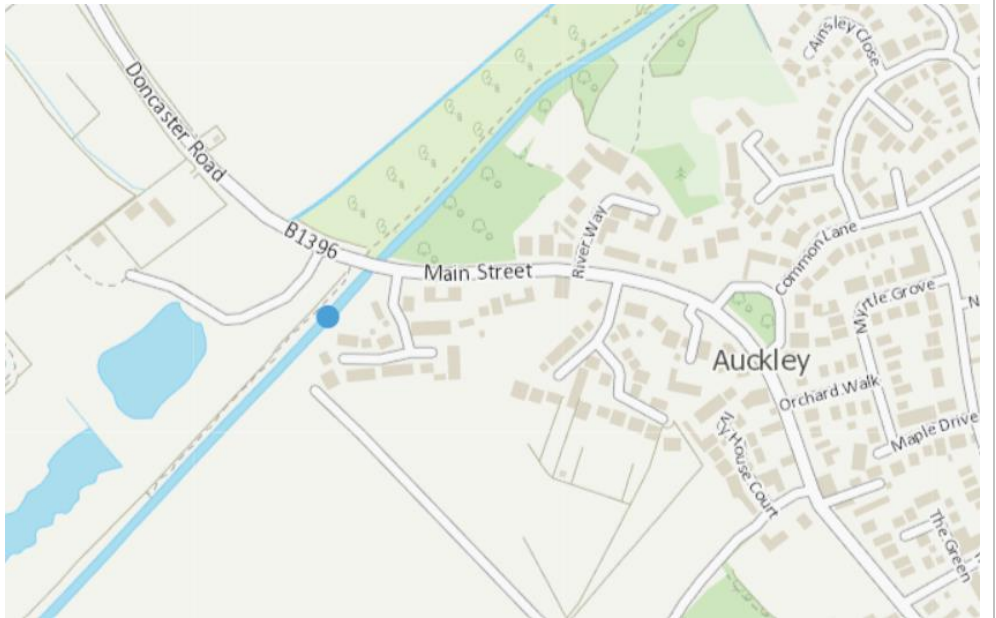
Auckley Gauging Weir, Fish Passage, Initial Screening Determination

1. Screening Determination

<p>(1) Present status of determination</p>	<p>Initial Determination, additional information is required to make a final determination on this project. The information available indicates that:</p>	<p>Comments: No information is known about access routes or construction methods.</p>
<p>(2) Maintenance or improvement / development?</p>	<p>Development/Improvement</p>	<p>Comments: The project is a development project.</p>
<p>(3) Permitted Development or Planning Permission?</p>	<p>This project is likely to be permitted development</p>	<p>Comments: The Environment Act 1995, Section 10 provides powers to the EA to build fish passes on existing weirs. This will need to be confirm by the LPA.</p>
<p>(4) Consenting regime (tick all that apply)</p>	<p><input checked="" type="checkbox"/> The Environmental Impact Assessment (Land Drainage Improvement Works) Regulations 1999 No. 1783 (As amended)</p> <p><input checked="" type="checkbox"/> The Town and Country Planning (Environmental Impact Assessment) Regulations 2017 No. 571 (as amended)</p> <p><input type="checkbox"/> Other EIA Regulations. Please detail below:</p> <p>List other Regs:</p> <p>Part 13, Class D (a) or (b) of the GDPO (Town and Country Planning (General Permitted Development) (England) Order 2015).</p> <p>Comments: No EIA Regulations apply. No EIA Required.</p>	
<p>(5) Level of assessment</p>	<p>The environmental issues on this project can be managed by an appropriate</p>	<p>Comments: Environmental risks can be managed by the project through securing appropriate environmental support (FBG or Consultant).</p>

	environmental management regime.	
(6) Is an advert required? (Land Drainage Regs only)	No an advert isnt required.	Comments: None.
(7) NEAS ongoing involvement	NEAS will not retain this project	Comments: None.
(8) Does CEEQUAL apply?	No, CEEQUAL has been screened out	Comments: At present the project is not being delivered through the Collaborative Delivery Framework (CDF). Small value project.

2. Project Information

Reference/SOP code	ENV0004914C
Location	<p>Auckley Gauging Weir is located along the River Torne.</p> <p>Location of weir in relation to the village of Auckley and the River Torne (Figure 1).</p>  <p>Figure 1: <u>Project Location in relation to Auckley Village and the River Torne</u></p>
Grid reference	SE6459301217

Local authority	Auckley Parish Council Doncaster County Council
Objectives	To remove barriers to natural migration of fish and eel species.
Description	<p>The project will design and install a fish passage solution at Auckley Gauging Weir. The weir is an Environment Agency owned asset but no longer required as a gauging station. It has been replaced with newer technology further downstream.</p> <p>The fish passage is currently being designed by JBA and two options are present.</p> <p>Option 1: Baffles and Tiles - Installation of a fish passage solution of low-cost baffles and eel tiles to the weir.</p> <p>Option 2: Partial Weir Removal - Remove the middle of the weir or lower the weir crest to support fish passage.</p>
Cost and timescale	<p><u>Cost</u></p> <p>Option 1 – Approximately £15-25k</p> <p>Option 2 – Approximately £30-50k</p> <p><u>Timescales</u></p> <p>Option 1 and Option 2</p> <p>Design – 2022/2023</p> <p>Construction – Summer 2024</p>
Advice Note completed by	Evelyn Prosser, NEAS East Midlands Team
Date of Determination	14/12/22
Name of NEAS Qualified CEEQUAL Assessor who has signed of CEEQUAL Scope	Not Applicable.

Date CEEQUAL scope signed off	Not Applicable.
Stage of project when note completed	Outline Design.

3. Justification of determination

The initial determination takes into account the following:

- That the project is likely to be permitted development.
- Key environmental risks include potential impact to water voles and spread of INNS.
- The project will not be retained by a NEAS Project Manager.

Note: The Project Manager should re-consult the NEAS Midlands Team when the design is complete and a preferred option is chosen.

4. CEEQUAL Scoping

Not Applicable.

5. Consents, assurance and further consultation

5.1 Consents/permissions/licences

Based on the available information in Section 6 of this determination, the following products may be needed to inform the project's appraisal. This list is indicative and will need to be aligned with updated Minimum Technical Requirements (MTRs). Environment Agency MTRs set out environmental and sustainability standards which should be adhered to by all suppliers under the relevant framework. This should also be informed by ongoing engagement with internal and external stakeholders.

- WFD compliance assessment;
- Flood Risk Activity Permit;
- Method Statements;
- Watervole Displacement Licence (Natural England/ Organisational Licence);
- Confirmation with LPA that planning permission is not required;
- Approval of the fish pass design by the Area Fisheries Team. Area will co-ordinate approval from the National Fish Pass Team.

In developing the project early consideration will also need to be given to how it will support the delivery of targets set out in the Midlands Hub Sustainability Plan. See Appendix 1 for a summary.

5.2 Assurance

The project will need to comply with the requirements of the Environmental Agency's Minimum Technical Requirements (MTRs) including those covering sustainability, cultural heritage and landscape.

As outlined in section 1, this screening determination indicates that the environmental issues on this project can be managed by an appropriate management regime.

5.3 Further consultation

Based on the available information detailed in Section 6, it is recommended that the following key internal and external stakeholders are consulted with:

Internal

- FBG – for ongoing advice on ecological sensitivities, design approval, WFD assessment, opportunities and supporting WFD objectives. Seasonal constraints and programming for surveys and construction work.
- PSO – for flood risk activity permit.
- Water Resources Team – for updates on the change in use of the asset.
- Area Waste Management Team – requirements for waste management.

External

- Landowner;
- Auckley Parish Council
- Doncaster County Council
- Yorks Wildlife Trust

6. Baseline environmental information

The following baseline is provided as part of the screening request information.

The baseline environmental information outlined in this section is as a result of NEAS Easimap screening of the general study area surrounding the proposed project. NEAS Landscape and Heritage specialists, as well as the FBG team, have made comment on the proposed works – these comments are outlined in the below sections.

6.1 Biodiversity (including protected sites, habitats and species)

Protected sites

There are no statutory designated sites located within or immediately adjacent to the proposed works area.

Auckley Guaging Weir is located within Torne Valley Local Wildlife Site (LWS). Old Springs Wood LWS and Ancient Woodland is located approximately (500m) north-west of the site.

Protected habitats

Torne Valley LWS is Coastal and Floodplain Grazing Marsh a protected habitat.

Area of deciduous woodland is located (450m) south-east of Auckley Gauging Weir. Deciduous woodland is a protected habitat of principal importance.

Protected species

Records for the following species near to site:

- Watervole
- Brown Hare
- Bats species (Various)
- Common Cudweed
- Common Frog
- Crosswort
- Grass Snake
- Harvest Mouse
- Scarese Vapouerer
- Scot's pine
- Shepherd's Cress
- White Letter Hairstreak
- Oxalis acetosella
- Common Wood Sorrel
- European eel
- Spinned loach
- Bull head fish

Invasive non-native species (INNS)

Records indicate the presence of INNS including the Nuttalls Waterweed, Northern River Crangonycid, New Zealand Pigmyweed and Azolla.

The following comments have been provided from the FBG Biodiversity specialist, who notes that:

- Support is given to the proposal to install a fish pass at the weir.

- Main concern would be the presence of water vole and the impact the project could have on them and their burrows. Therefore, we recommend two surveys as per guidance on water vole surveying. FBG can undertake the surveys.
- If water voles are found to be present, FBG can organise a displacement of water voles over short distances and within certain times of the year.
- Check Clean Dry is essential to stop the spread of INNS.

Water Framework Directive

The site is within the following waterbody; River Torne/ Three Rivers from Mother Drain to River Trent (GB104028064340). The waterbody is artificial. Overall moderate ecological status. Ecological classification, moderate. Chemical classification, fail.

A WFD monitoring site is located at Auckley Bridge.

The following comments have been provided from the FBG Fisheries specialist, who notes that:

- Final design and methodology to be agreed with the fisheries team.
- Time constraints apply to in channel works (course fish spawning season). No in river works during 15th March – 15th June (Inclusive).
- The River Torne is an eel migratory route, therefore, appropriate mitigation will need to be implemented to avoid any negative impacts on eel populations. E.g. pumps will need to be suitably screened.
- If applicable, the PM will give notice of the works to angling clubs that have fishing rights in close proximity to the work location.

No comments have been provided from the FBG Geomorphology specialist.

6.3 Heritage

Designated heritage assets

The nearest designated heritage assets within the vicinity of the proposed works is Grade II Listed Mounting Block adjacent to the Eagle and Child Public House (National Heritage List Entry No. 1415774) approximately 211m north-east of the gauging weir.

The works do not lie within a Conservation Area.

Auckley Gauging Weir does not appear on the latest Historic Ordnance Survey maps for the area and was therefore constructed after 1950.

Non-designated heritage assets

The South Yorkshire Sites and Monuments Record indicate various findspots from the Roman and medieval periods as well as a former post-medieval mill within the area. Any working areas or construction compounds should be sited on areas of hard standing where possible to avoid the potential for encountering unknown archaeological remains.

The gauging weir is not considered to be of heritage value due to its age and lack of association to any other modern water management features nearby. Therefore, no recorded is necessary prior to the construction of a fish passage at its location.

6.4 Landscape

There are no landscape specific designations pertaining to the site.

The only concern would relate to existing trees and vegetation. However, it is understood that there will be no tree or vegetation removal.

Consideration should be given to the site compound location, site access and works' parking and potential implications on existing vegetation.

Private Property

If access to the site is required through private properties, consideration should be given effects upon the existing landscape features (planting, lawn, paving, fencing) and the potential requirements for re-instatement after the works are completed. If there are concerns in this respect, please contact NEAS Landscape Architects to discuss.

6.5 Other

Public rights of way (PRoW) and access

There is no known PRoW through this area. The Doncaster County Council Public Right of Way map is not available on-line. Therefore, further consultation with the Council is required.

7. Potential environmental effects and environmental improvements / outcomes

The potential environmental effects of the proposals will need to be informed by early engagement with stakeholders as well as further surveys and assessments. Based on available information potential environmental effects for Option 1 and Option 2 are likely to relate to the following:

Option 1: Baffles and Tiles

- Biodiversity – Protected species including water vole, and INNS. Surveys are likely to be required for wolverines which will have seasonal constraints. The results of these surveys may lead to additional management requirements including licences.
- Fisheries – Protected species of fish including the bull head and spined loach. It is also an eel migratory route. Seasonal constraints and particular working methods will apply during construction. Positive outcomes on completion of project.
- Water Framework Directive – impacts require further consideration.
- Eels Regulations – positive outcomes on completion of project.

Option 2: Partial Weir Removal

- Biodiversity – Protected species including water vole, and INNS. Surveys are likely to be required for wolverines which will have seasonal constraints. The results of these surveys may lead to additional management requirements including licences. The construction methodology is unknown at this time however it is anticipated that this option would have greater negative environmental effects during construction due to in-channel, bank works and possible de-watering.
- Fisheries – Protected species including Salmonid and coarse fish. Seasonal constraints and particular working methods will apply during construction. Positive outcomes on completion of project.
- Eels Regulations – positive outcomes on completion of project.
- Water Framework Directive – impacts require further consideration.
- Waste Management – Site Waste Management Plan will be required and consents.

Environmental Improvements

Considerations of opportunities for improvement:

FBG

The works will take place within the Torne Valley Local Wildlife Site (LWS). There will be multiple opportunities to improve this LWS. FBG could work with the landowner to implement improvements from within the management plan, if the site has one. Otherwise, FBG can work with Doncaster County Council and Works Wildlife Trust to implement improvements.

8. Management of environmental issues during project lifecycle

An Environmental Project Manager from NEAS will have completed Section A of the following table. Section B should be completed by the Project Manager. This table aims to:

- Demonstrate that consideration has been given to the actions proposed by NEAS
- Provide a clear audit trail of how each action has been, or will be, implemented
- Give the NPAS confidence that the advice given by NEAS has been appropriately and proportionately acted upon (or is planned to be acted upon) to meet the expected outcome
- Ensure where external suppliers are required, that appropriate costs have been included within any submission
- Ensure that any mitigation actions are passed on to contractors as appropriate, for application during project implementation

Part A) NEAS to Complete			Part B) Project Manager to Complete		
Objective	Action(s)	Reference	Description of how action has been / or will be implemented	Who will deliver the action (PM or supplier)?	Expected outcome
Environmental Risk management	Prepare and follow an Environmental Action Plan or Method Statement to demonstrate how environmental risks will be managed.				
Ensure compliance with protected species legislation	Consult and follow advice received from FBG for all protected species. Protected species surveys are required for the water vole.				
No adverse impact on Torne Valley Local Wildlife Site (LWS)	Permanent and temporary works to avoid adverse impact to Local Wildlife Site. Consult with FBG.				

	Explore options for environmental improvements.				
Management of INNS and Bio-security	<p>Consultation with FBG.</p> <p>Ensure Method Statements and Risk Assessments allow for INNS.</p> <p>All operatives should adhere to the Check, Clean and Dry Good Practice Guides. Working methods to be agreed with FBG.</p>				
Manage the potential for unknown archaeological remains.	<p>Any working areas or construction compounds should be sited on areas of hard standing where possible to avoid the potential for encountering unknown archaeological remains.</p> <p>Consult with Heritage Specialist as required. Zara Burns (NEAS).</p>				
Manage PRoW and Access	<p>Consider potential PRoW and access.</p> <p>Obtain necessary consents.</p>				

<p>Compliance with WFD</p>	<p>Consult with FBG.</p> <p>Likely that a preliminary WFD screening compliance assessment will be required to identify and record the current status, future objectives and any relevant activities that may influence the waterbody in the locality of the proposed works.</p>				
<p>Manage Water Quality</p>	<p>Continued liaison with FBG to ensure mitigation measures are in place to control silt disturbance downstream of the works</p>				
<p>Manage Waste Disposal</p>	<p>Develop appropriate waste management strategy.</p> <p>Confirm and ensure compliance with any waste permitting requirements.</p> <p>Follow advice from FBG, Area Waste Management and National Permitting team.</p>				

Appendix 1 – Midlands Hub Sustainability Plan

Midlands Hub Sustainability Plan



ARUP



Purpose:

This plan sets out the Midlands Hub ambition to build the most sustainable flood risk management schemes across the East Midlands, West Midlands, Lincolnshire and Northamptonshire. We want to take a different approach that reduces carbon emissions, supports the local economy, improves communities and wildlife alongside providing protection against flooding in a changing climate.

Principles:

Our sustainability approach is made up of four themes that align to the UN Sustainable Development Goals, the 25 Year Environment Plan and the Environment Agency’s Emission 2030 ambition.

Our four long term goals are :



Net zero carbon

We will deliver lower carbon projects using fewer materials, circular and natural solutions and offsets. We will aim to deliver net zero solutions on 30% of projects.



Net biodiversity gain

We will increase the value of habitats that are affected by the projects we deliver. Across the programme we will demonstrate a 20% net biodiversity gain.



Communities & Place (social value)

Through the delivery of our projects, we unlock additional wider benefits associated with place, jobs, economic value and wellbeing.



CEEQUAL

We will use CEEQUAL to systematically address sustainability issues across the programme. We will aim to achieve over 75% of the credits available (equivalent to excellent rating) for a quarter of our projects.

Culture:

Sustainability is a way of working that needs to be embedded alongside innovation and collaboration. We will promote innovation to find sustainable solutions that are ambitious and align with our focus themes. We will work with our delivery partners to embed the culture and develop the innovation to deliver our flood risk management schemes in the most sustainable way.

Approved February 2020..... Midlands Hub Area Directors: Mike Grimes, Louise Cresswell, Norman Robinson

Auckley Weir: Weir Removal Analysis

Draft

S3.P01

01/12/2023

Prepared for:

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**Environment
Agency**

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Contract

JBA Project Manager	Robert Beresford
Address	No 1 Broughton Park, Old Lane North, Skipton BD23 3FD
JBA Project Code	2023s1153

This report describes work commissioned by the Environment Agency, by an instruction dated 5 September 2023. The Client's representative for the contract was Ryan Taylor of the Environment Agency. Ryan Williams and Gregory Brown of JBA Consulting carried out this work.

Purpose and Disclaimer

Jeremy Benn Associates Limited ("JBA") has prepared this Report for the sole use of (Environment Agency) and its appointed agents in accordance with the Agreement under which our services were performed.

JBA has no liability for any use that is made of this Report except to the Environment Agency for the purposes for which it was originally commissioned and prepared.

No other warranty, expressed or implied, is made as to the professional advice included in this Report or any other services provided by JBA. This Report cannot be relied upon by any other party without the prior and express written agreement of JBA.

The conclusions and recommendations contained in this Report are based upon information provided by others and upon the assumption that all relevant information has been provided by those parties from whom it has been requested and that such information is accurate. Information obtained by JBA has not been independently verified by JBA, unless otherwise stated in the Report.

The methodology adopted and the sources of information used by JBA in providing its services are outlined in this Report. The work described in this Report was undertaken between September 2023 and November 2023 is based on the conditions encountered and the information available during the said period. The scope of this Report and the services are accordingly factually limited by these circumstances.

Where assessments of works or costs identified in this Report are made, such assessments are based upon the information available at the time and where appropriate are subject to further investigations or information which may become available.

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Unless otherwise stated in this Report, the assessments made assume that the sites and facilities will continue to be used for their current purpose without significant changes.

Where field investigations are carried out, these have been restricted to a level of detail required to meet the stated objectives of the services. The results of any measurements taken may vary spatially or with time and further confirmatory measurements should be made after any significant delay in issuing this Report.

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1 Introduction

1.1 Overview

Jeremy Benn Associates (JBA) has been commissioned by the Environment Agency (EA) to undertake an analysis for a proposed removal for the Auckley Gauging Weir. This study follows previous work completed by JBA in early 2023 which designed a fish passage solution for Auckley Weir.

The intention of the weir removal to restore the River Torne to a more natural watercourse and improve fish access along the watercourse. This report provides a summary of the potential hydraulic impact from the removal of the Auckley Weir.

1.2 Weir location

Auckley Weir is located on the River Torne to the west of the village of Auckley and 50m upstream of the B1396 road bridge. The weir location is shown in Figure 1-1.

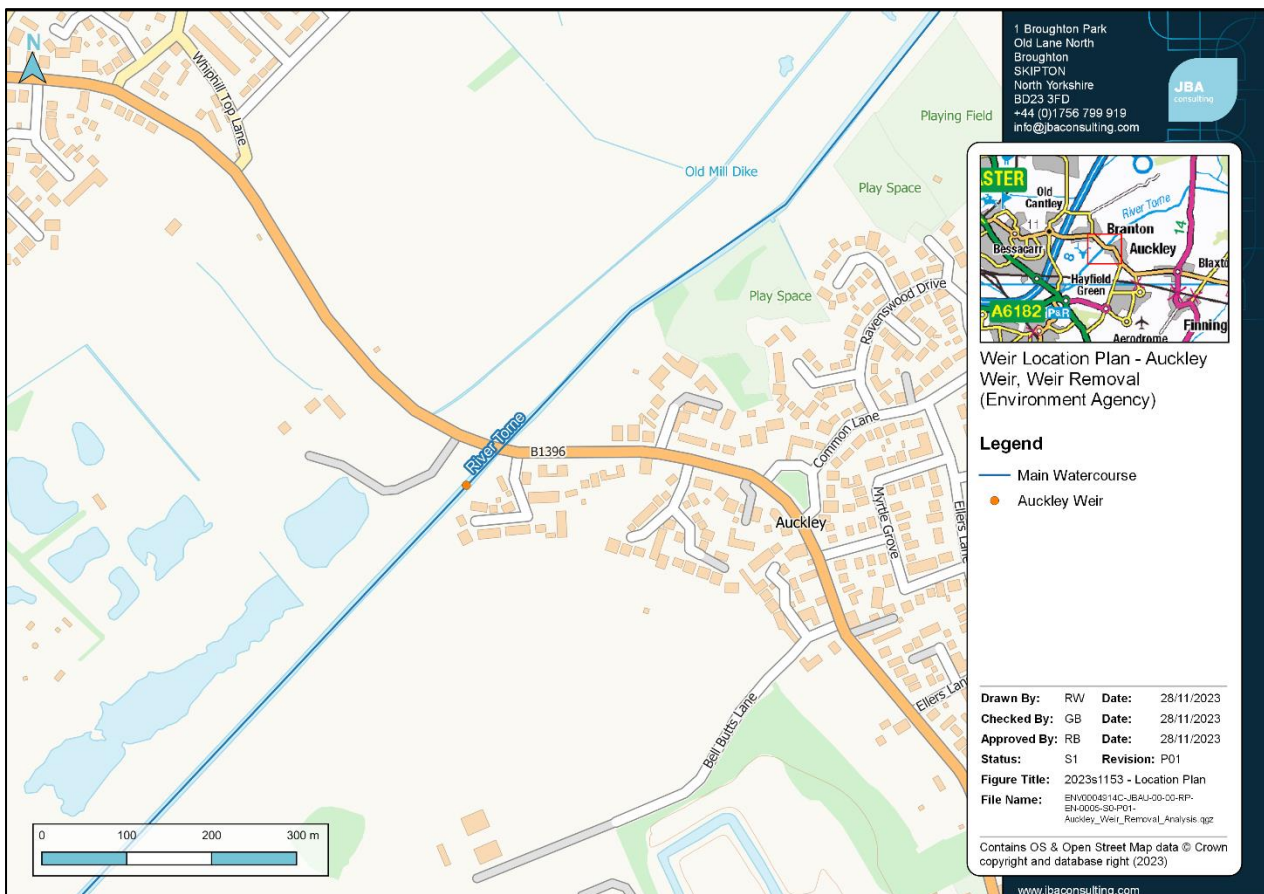


Figure 1-1: Weir location plan

2 Model details

2.1 Model details

The EA's existing River Torne model¹ formed the basis of this study. This model is a coupled one-dimensional (1D) - two-dimensional (2D) model in Flood Modeller and TUFLOW software. The model covers the River Torne catchment west of Doncaster from Harworth to the confluence with the River Trent. The modelling in this study was completed in Flood Modeller version 5.1 - TUFLOW 2020-10-AD.

2.2 Methodology

The hydraulic modelling considered both the baseline (existing conditions with weir in place) and the post-weir removal scenarios. Given the flat channel profile of the River Torne, there was no requirement to re-profile the bed with the removal of the weir. For weir removal, all model aspects in relation to the Auckley Weir were removed. In the baseline model, the weir crest at 1.24mAOD produced a head difference of over 0.5m across the weir in model starting water levels. Such a head difference would not exist following the weir removal, therefore initial conditions were updated accordingly. The model does not allow for any possible changes in channel morphology which could be arise from the removal of the Auckley Weir.

By running the model with the weir removed, an issue was identified in original River Torne model where incorrect bed levels were used at the railway bridge. The model was updated to use correct surveyed levels. This change was also applied to the baseline scenario.

Both model scenarios were run for various design events. Climate Change (CC) uplifts were also considered using the Idle and Torne management catchment 2080s epoch Central flow allowance (plus 27%)². The modelled events that were used are listed below:

- 1 in 2-year (50% Annual Exceedance Probability (AEP))
- 1 in 20-year (5% AEP)
- 1 in 100-year (1% AEP)
- 1 in 2-year (50% AEP) + CC (27%)
- 1 in 20-year (5% AEP) + CC (27%)
- 1 in 100-year (1% AEP) + CC (27%)

¹ River Torne Hazard Mapping Modelling (Capita AECOM, November 2017)

² [Flood risk assessments: climate change allowances - GOV.UK \(www.gov.uk\)](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/444444/flood_risk_assessments_climate_change_allowances.pdf)

3 Results

The following section assesses the baseline and weir removal scenarios to determine the potential impact.

3.1 Water levels

Table 3-1 provides the peak modelled water levels immediately upstream and downstream of the weir for the baseline and weir removal scenario in the design events tested. The model results show a decrease in water level upstream of the weir with its removal (up to 0.12m). Downstream of the weir most events show no change in water level as flows along the watercourse remain the same. The exception is the 1-in-100 CC event which has a minor increase of 0.01m; this is due to the lower water levels upstream meaning reduced channel exceedance flow and more water flowing along the channel (0.5m³/s increase at the peak).

Table 3-1: Modelled water level results at weir, Baseline vs Removal Scenario

Design event	Baseline - upstream of weir water level (mAOD)	Baseline - downstream of weir water level (mAOD)	Weir removal water level (mAOD)	Water level difference (m)
1 in 2-year (50% AEP)	2.20	2.12	2.12	U/S: -0.08 D/S: 0.00
1 in 20-year (5% AEP)	2.49	2.38	2.38	U/S: -0.11 D/S: 0.00
1 in 100-year (1% AEP)	2.61	2.49	2.49	U/S: -0.12 D/S: 0.00
1 in 2-year (50% AEP) + CC (27%)	2.38	2.29	2.29	U/S: -0.09 D/S: 0.00
1 in 20-year (5% AEP) + CC (27%)	2.59	2.47	2.47	U/S: -0.12 D/S: 0.00
1 in 100-year (1% AEP) + CC (27%)	2.72	2.58	2.60	U/S: -0.12 D/S: +0.01

Interrogation of results further illustrates that this lowered water levels as result of the weir removal extend up to 5km upstream. This analysis considers water levels 1km upstream and downstream of the Auckley Weir. Table 3-2 shows the difference in water level at away

from the weir between the baseline and weir removal scenarios. There is a smaller reduction in water level upstream of the weir following its removal (0.03-0.05m). Looking 2km upstream of the weir, water level reductions after its removal are less than 0.02m. Downstream of the weir, most events continue to show no change, with the exception being the 1-in-100 CC event with a minor increase 0.01.

Table 3-2: Modelled water level results away from weir, Baseline vs Removal Scenario

Design event	Water level difference 1km upstream of weir (m)	Water level difference 1km downstream of weir (m)
1 in 2-year (50% AEP)	-0.04	0.00
1 in 20-year (5% AEP)	-0.05	0.00
1 in 100-year (1% AEP)	-0.05	0.00
1 in 2-year (50% AEP) + CC (27%)	-0.05	0.00
1 in 20-year (5% AEP) + CC (27%)	-0.05	0.00
1 in 100-year (1% AEP) + CC (27%)	-0.03	+0.01

Long profile plots for the 1-in-100 event (Figure 3-1) and 1-in-100 CC event (Figure 3-2) demonstrate the reduction in water levels upstream of the weir, and either no or limited change downstream.

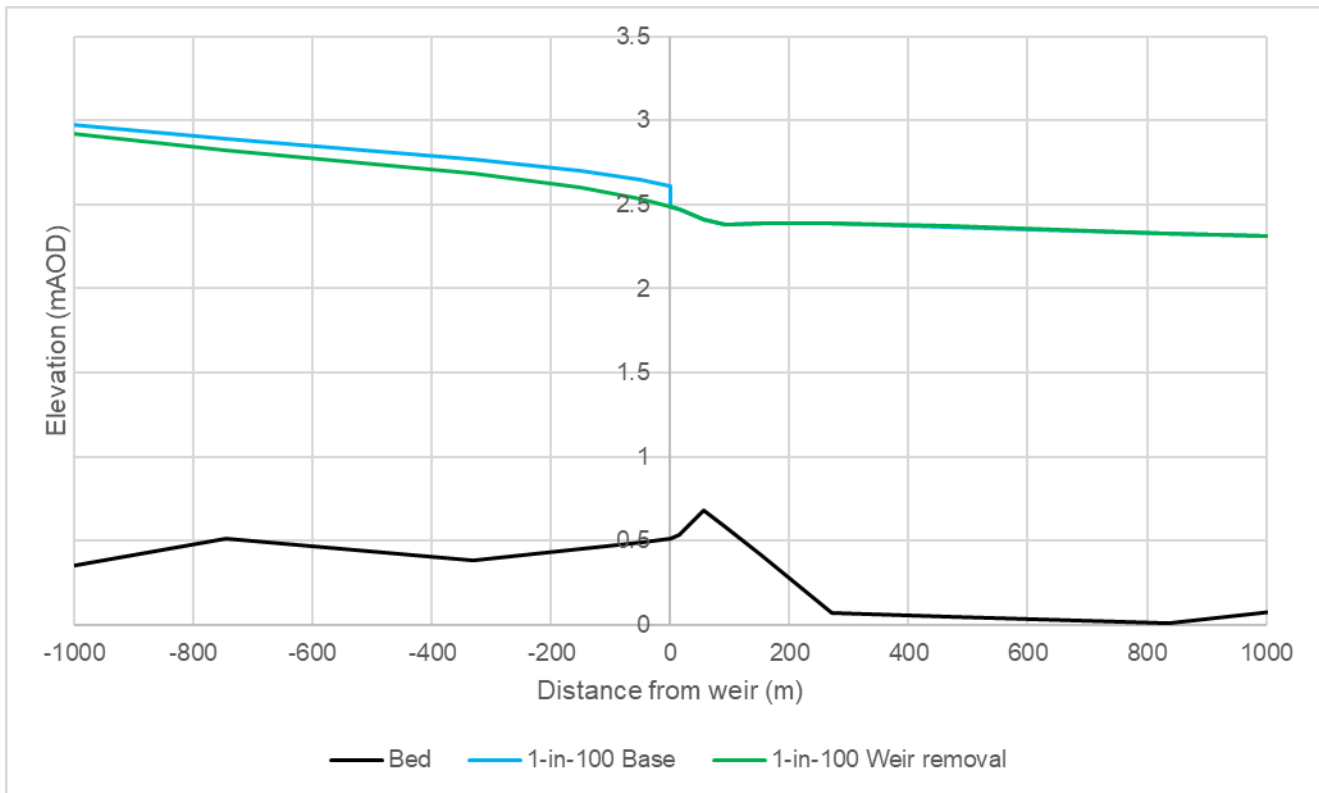


Figure 3-1: 1-in-100 AEP long profile - Baseline vs Weir Removal

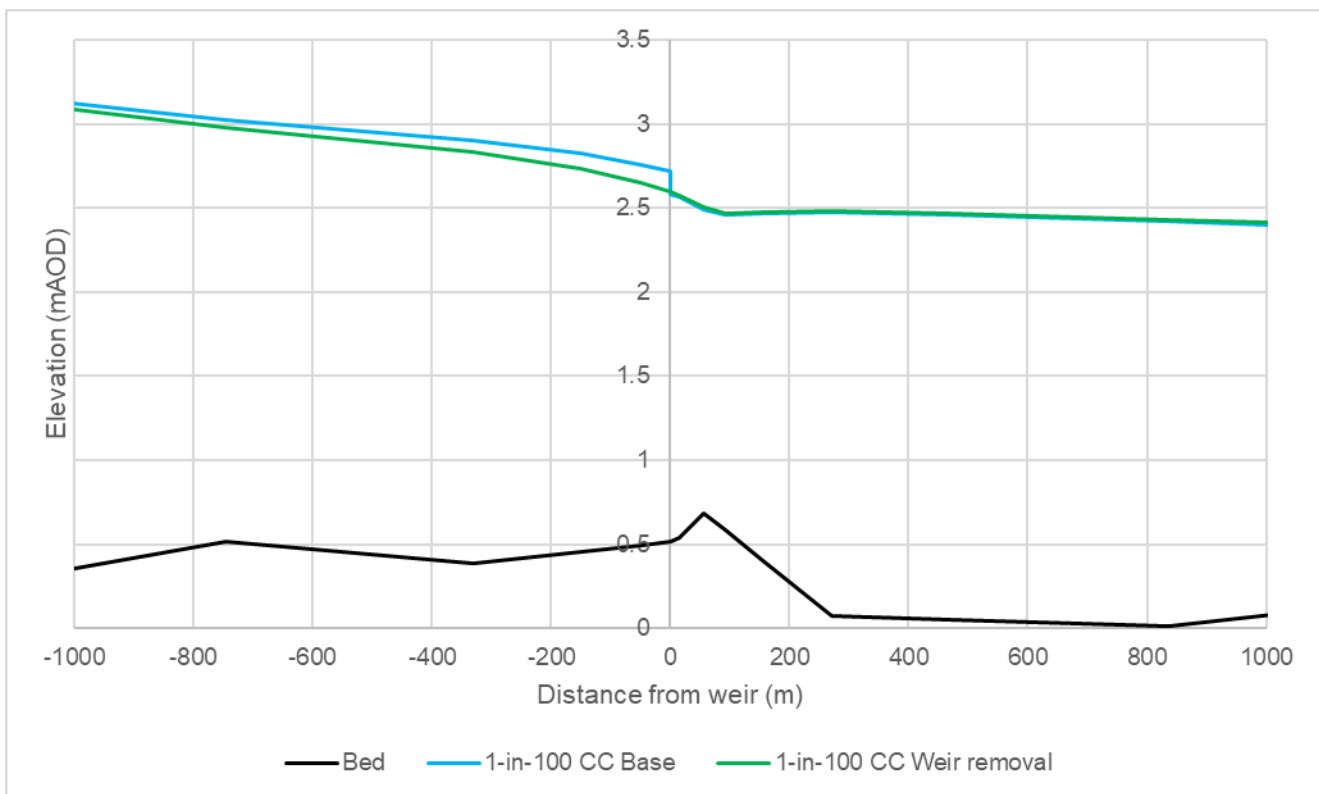


Figure 3-2: 1-in-100 AEP +CC (27%) long profile - Baseline vs Weir Removal

3.2 Flood extents

The modelled flood extents indicate only limited change in flood extent between the baseline and weir removal scenario with a slight reduction over the right bank approximately 300m upstream of the weir after its removal due to the lower water levels in the watercourse (see Figure 3-3). The lower water levels upstream of the weir observed in the 1-in-100 AEP CC event are below left bank levels meaning a large reduction in the left overbank floodplain (see Figure 3-4).

Downstream of weir, there is no significant change in flood extent with the weir removal. Slightly larger flood extents are observed in the 1-in-100 AEP CC event following the weir removal around ponds in the North Ring Drain area (5km downstream of the weir); depth changes at this location are less than 0.01m.

There is no change in risk to property because of the proposed weir removal in all events tested.

Appendix A provides the flood extents for all events tested.

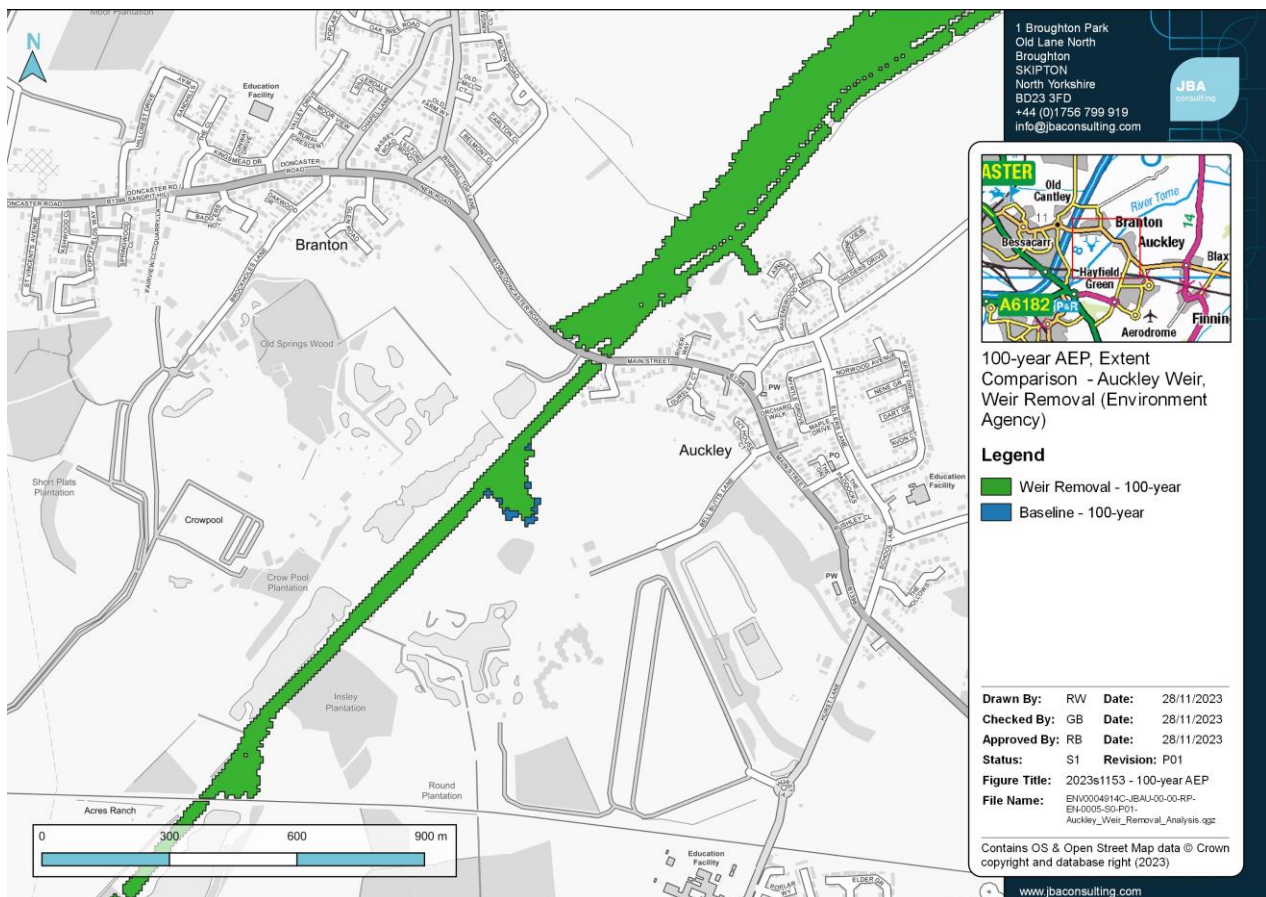


Figure 3-3: 1-in-100 AEP flood extent - Baseline vs Weir Removal

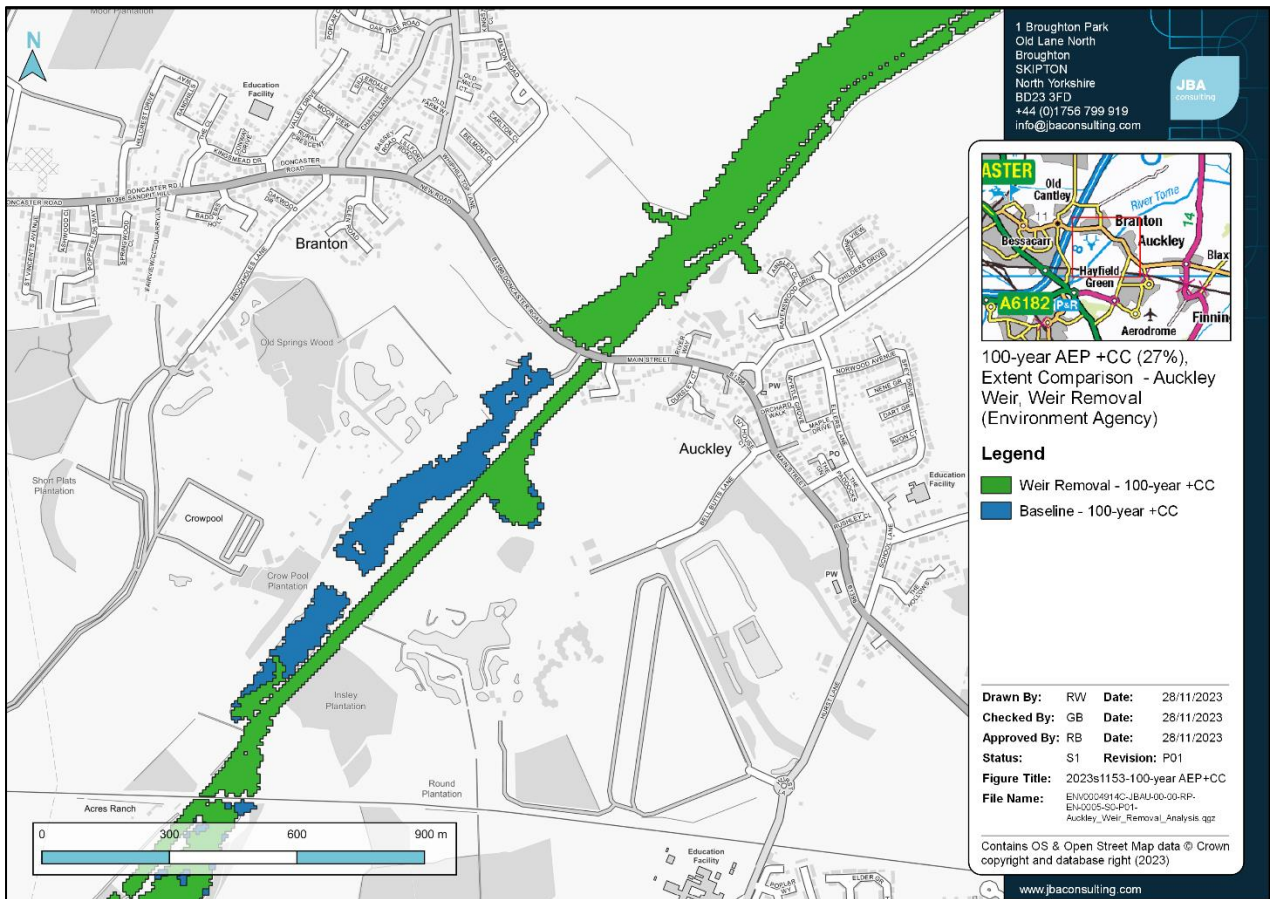


Figure 3-4: 1-in-100 AEP +CC (27%) flood extent - Baseline vs Weir Removal

3.3 Water velocity / shear stress

For the baseline scenario with weir included, peak water velocities around the weir range from 0.55-1.04m/s. Removing the weir results in water velocity increases of up 0.16m/s (see Table 3-3). Away from the weir, water velocity 1km upstream of the weir is approximately 0.03m/s faster after the weir removal compared to the baseline scenario. Downstream of the B1396 road bridge, there is no change in peak water velocities following the removal of the Auckley Weir.

Table 3-3: Modelled water velocity results at weir, Baseline vs Removal Scenario

Design event	Baseline - upstream of weir water velocity (m/s)	Baseline - downstream of weir water velocity (m/s)	Weir removal water velocity (m/s)	Water velocity difference (m/s)
1 in 2-year (50% AEP)	0.59	0.55	0.63	U/S: +0.04 D/S: +0.09
1 in 20-year (5% AEP)	0.81	0.76	0.87	U/S: +0.06 D/S: +0.11
1 in 100-year (1% AEP)	0.94	0.89	1.02	U/S: +0.08 D/S: +0.13
1 in 2-year (50% AEP) + CC (27%)	0.66	0.61	0.70	U/S: +0.04 D/S: +0.09
1 in 20-year (5% AEP) + CC (27%)	0.94	0.89	1.02	U/S: +0.08 D/S: +0.13
1 in 100-year (1% AEP) + CC (27%)	1.04	0.99	1.15	U/S: +0.11 D/S: +0.16

Changes in average shear stress within the River Torne channel are provided in Table 3-4. This indicates the largest increase in shear stress (approximately +5N/m²) occurs along a short stretch of watercourse downstream of the weir. There are also increase in shear stress 150m upstream of the weir. Beyond these areas, the change in shear stress is minimal.

Table 3-4: Changes in shear stress along River Torne with the weir removal

Distance from weir (m)	50% AEP Shear stress change (N/m ²)	5% AEP Shear stress change (N/m ²)	1% AEP Shear stress change (N/m ²)	50% AEP + CC Shear stress change (N/m ²)	5% AEP + CC Shear stress change (N/m ²)	1% AEP + CC Shear stress change (N/m ²)
1,350 US	-0.91	3.87	-1.05	-0.96	-1.07	-0.86
1,122 US	-0.09	0.28	0.00	-0.05	0.00	-0.25
746 US	0.35	0.36	0.35	0.33	0.34	0.35
330 US	0.00	0.05	-0.01	-0.04	-0.01	0.00
150 US	1.30	1.34	1.30	1.27	1.29	1.30
50 US	1.33	1.37	1.33	1.30	1.32	1.33
At weir	-1.19	-1.10	-1.21	-1.30	-1.22	-1.21
16 DS	5.11	5.34	5.08	4.86	5.04	5.07
56 DS	0.80	1.25	0.74	0.38	0.67	0.73
76 DS	0.04	1.68	0.03	0.02	0.01	0.17
112 DS	0.03	1.39	0.02	0.02	0.01	0.14
172 DS	0.03	0.96	0.00	0.01	0.00	0.00
292 DS	0.01	0.00	-0.01	0.00	0.01	0.31

4 Summary

Hydraulic modelling analysis was carried to establish the potential impact of removing the Auckley Weir. This demonstrates that the weir removal would reduce water levels upstream. This in turn results in a reduction in out-of-bank flooding during the 1-in-100 AEP CC event. Smaller events show only a minor reduction in flood extent.

Downstream of the weir, there is no significant change in pass-on flow along the River Torne following the weir removal in most events tested. The exception is the 1-in-100 AEP CC event which sees 0.5m³/s increase at the peak of the event; this causes a minor rise in peak water level (+0.01).

The weir removal also leads to slight increases in water velocity and shear along the River Torne within 150m of the Auckley Weir.

None of the changes observed cause a change in flood risk to property in the surrounding area.

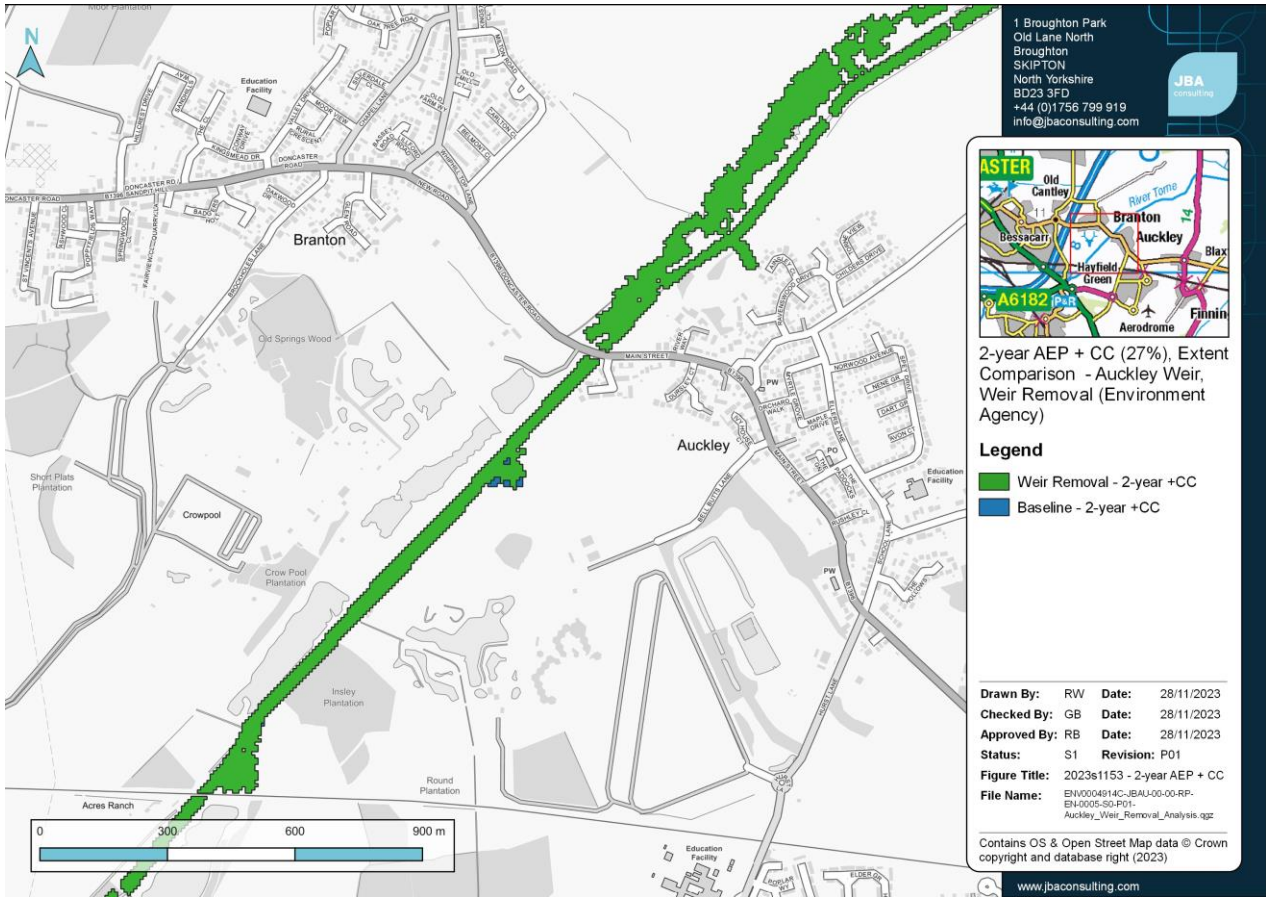
A Appendix



1-in-2 AEP flood extent - Baseline vs Weir Removal



1-in-20 AEP flood extent - Baseline vs Weir Removal



1-in-2 AEP +CC (27%) flood extent - Baseline vs Weir Removal



1-in-20 AEP +CC (27%) flood extent - Baseline vs Weir Removal

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Auckley Gauging Weir Removal

Design Philosophy & Buildability Statement

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Contract

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JBA Project Code	2023s1153

This report describes work commissioned by the Environment Agency, by an instruction dated 1st September 2023. The Client's representative for the contract was Ryan Taylor of the Environment Agency. George Diggle and Samuel Liddy of JBA Consulting conducted this work.

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Where specific products have been specified by the Designer, a suitable replacement may be used. The Contractor should refer to the data sheets of the specified and proposed products to ensure the replacement is suitable for use.

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Abbreviations

GI	Ground Investigations
HV	High Voltage (electrical service)
JBA	JBA Consulting (Designer)
LV	Low Voltage (electrical service)
PDSA	Pre-desk Study Assessment (UXO)
PCI	Pre-construction Information
UXO	Unexploded Ordnance
BT	British Telecom
EA	Environment Agency
CC	Climate change uplift factor
AEP	Annual Exceedance Probability

Executive Summary

This document provides the design philosophy and buildability statement for the Auckley weir removal project. This document discusses the site overview, constraints, assumptions and design process considered by JBA. The document also contains a high-level buildability statement, outlining JBA's assumed construction methodology.

The proposed design includes the full removal of the concrete gauging weir with retention of the existing concrete cill and retaining wing walls, in addition to channel bed modification immediately downstream of the cill. The need for a visual condition assessment or full structural assessment has been identified, with the possibility of further design of channel side slope stabilisation works, depending on the results of the assessment undertaken. The assessment and any further design relating to channel side and wingwall stabilisation is not within the scope of these works, however in this document JBA suggest solutions which may be considered in by the Designer in any future design work relating to channel side stabilisation works.

1 Introduction

This document provides a description of the proposed works and the Designers' assumptions made during design development and in construction methodology. This document should be read in conjunction with the Designers' Risk Register ENV0004914C-JBAU-00-00-RR-C-0001.

The site is located on the River Torne east of the village of Auckley, South Yorkshire, at SE 64593 01222, as shown in Figure 1-1. The site includes a concrete gauging weir (of unknown construction) sat on a concrete cill situated between sloped concrete banks within an approximately nine-metre-wide channel. The channel is extensively modified, with large lengths of channel straightening employed upstream and downstream of the site. The channel is heavily vegetated with aquatic plants both floating on the surface and growing from the bed and sides. The entire site, including the access track, is located within Flood Zone 3. The site is owned and operated by the Environment Agency as shown on the landownership maps in ENV0004914C-JBAU-00-00-MP-C-0001

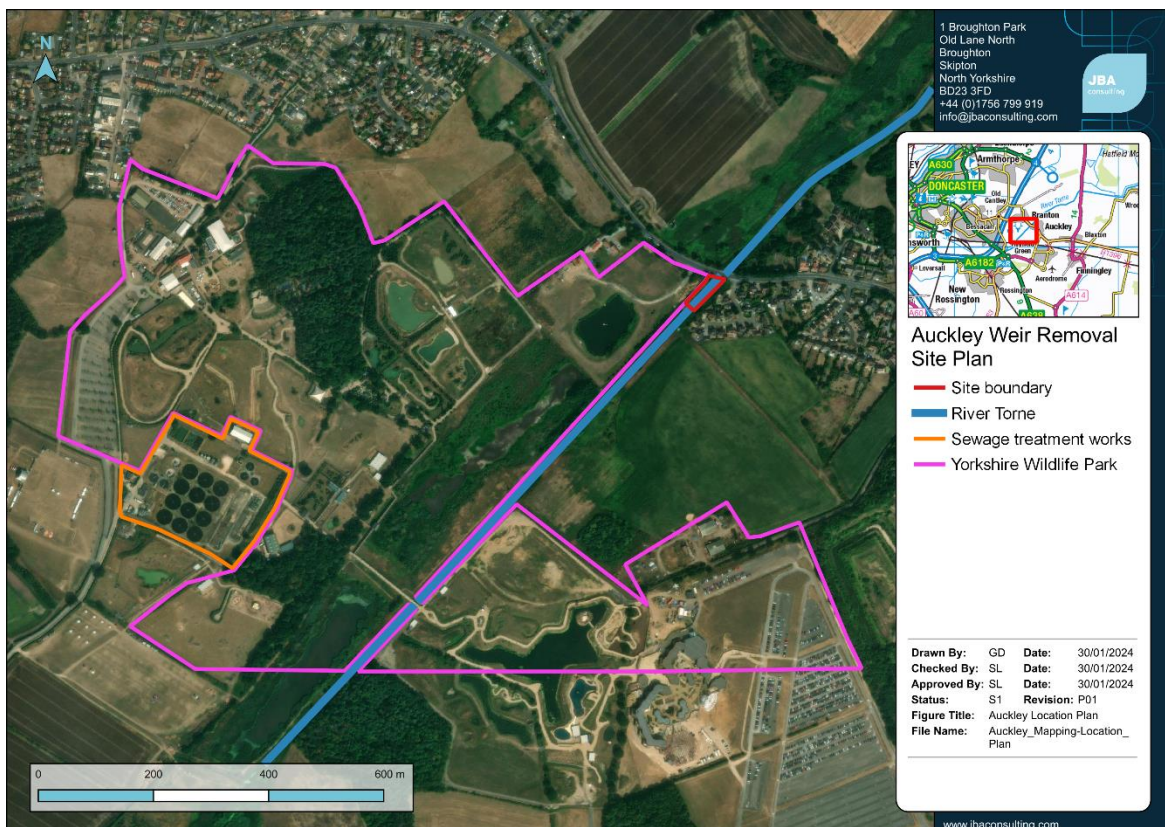


Figure 1-1: Site Location

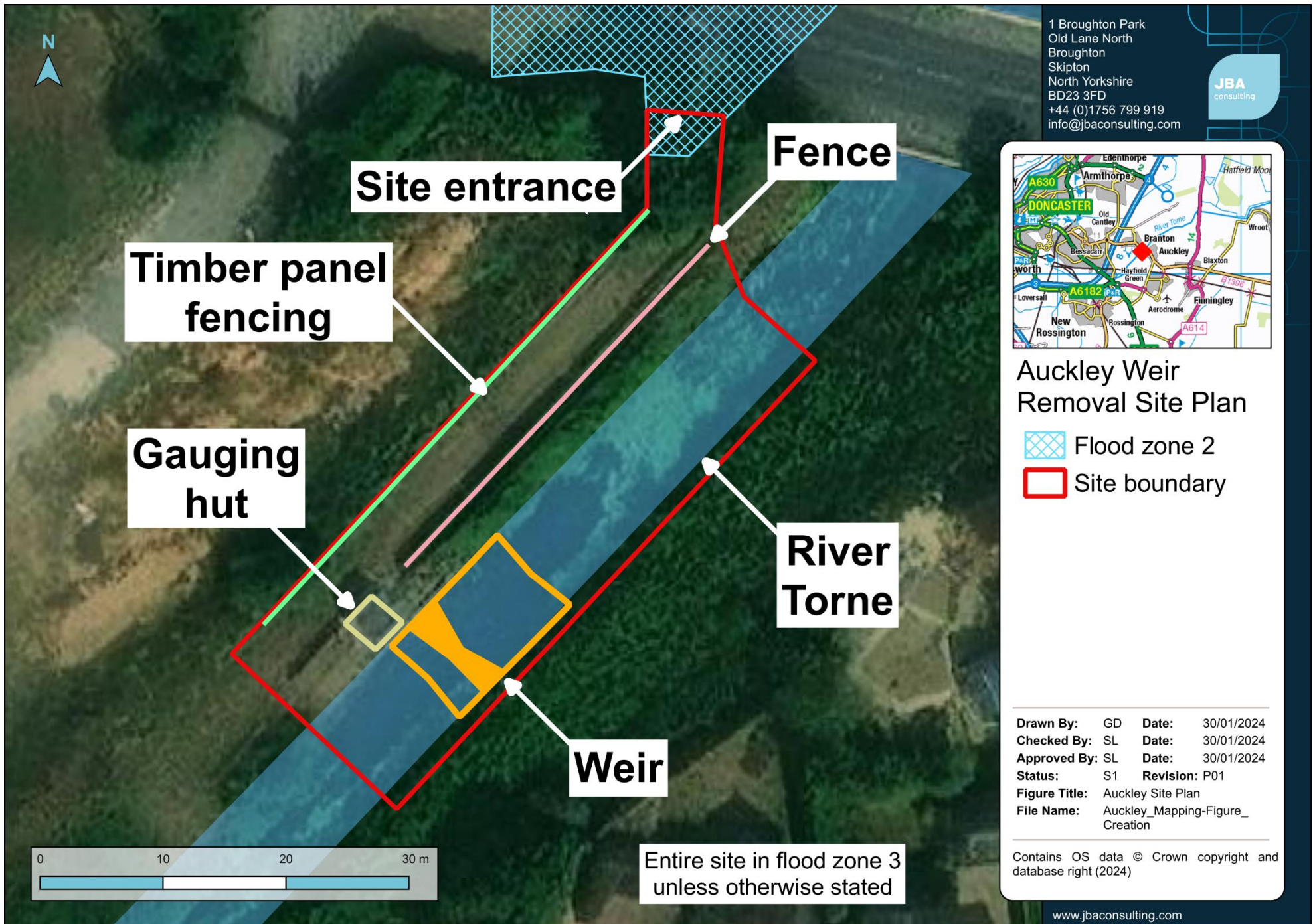


Figure 1-2: Site Arrangement

1.1 Project objectives

A comprehensive list of project objectives is provided in the scope; the key project objectives for developing the design are:

- To remove the existing gauging weir (retaining existing cill and wingwalls), to reduce the need for maintenance and reduce health and safety risks,
- To improve access for channel and vegetation management, and
- To improve fish passage and geomorphological processes.

1.2 Scope of design

The Environment Agency specified that the full removal of the weir is required to achieve a more naturalised channel width and improve instream habitat upstream. The weir removal also improves accessibility to and through the channel to facilitate channel and vegetation management, while removing liability associated with the health and safety risks of owning and operating the asset. The weir cill and wing walls are to be retained to remove the need for bank stabilisation (if the weir is found to be an independent structure). Full extent of removal is between SE 64591 01224 and SE 64597 01218, approximately 7.6 metres in width.

If the weir structure is found to be independent of the cill and wing walls, it is expected that no provision of channel stabilisation will be required. However, if the weir is found to be part of a greater structure, or the wingwalls are not in a suitable condition or cannot sufficiently support the channel sides, provision of channel side stabilisation will likely be required to compensate for the loss of stability currently provided by the weir. Design of any stabilisation works is not within the scope of these works.

1.3 Deliverables

The following deliverables should be read in conjunction with this document.

1.3.1 Documentation

- | | |
|--------------------------------|----------------------------------|
| • Designers Risk Register | ENV0004914C-JBAU-00-00-RR-C-0001 |
| • Pre-Construction Information | ENV0004914C-JBAU-00-00-HS-C-0001 |

1.3.2 Drawings

- | | |
|--------------------------------|----------------------------------|
| • Site Location Plan | ENV0004914C-JBAU-00-00-DR-C-0001 |
| • Hazards and Constraints Plan | ENV0004914C-JBAU-00-00-DR-C-0002 |
| • General Arrangement | ENV0004914C-JBAU-00-00-DR-C-0003 |
| • Long Sections | ENV0004914C-JBAU-00-00-DR-C-0004 |
| • Cross Sections | ENV0004914C-JBAU-00-00-DR-C-0005 |

2 Design Philosophy

2.1 Key standards and specification

All design and construction Works shall adhere to CESWI 7th Edition.

2.2 Data acquisition and review

All data and information held by JBA was reviewed and considered during the design phase. The following was either provided by the EA or gathered by JBA:

- Topographic survey (DTM 1M LiDAR data) (07/12/2022)
- Auckley fish pass NEAS screen determination (15/12/2022)
- Previous Auckley fish passage design drawings (03/03/2023)
- Previous Auckley fish pass design calculations and summaries (03/03/2023)
- Auckley fish pass Red and Green list (14/04/2023)
- Auckley Designer's Risk Register (05/09/2023)
- Flood zone map (05/09/2023)
- UXO risk maps (06/09/2023)
- Auckley buildability statement (21/07/2023)
- Site photographs (22/09/2023)
- PAS 128 Part D desktop services search (19/10/2023)
- PAS 128 Part C site reconnaissance / walkover (22/09/2023)
- Flow and level data

2.3 Constraints and considerations

Constraints identified during design are recorded in the Designers' Risk Register (ENV0004914C-JBAU-00-00-RR-C-0001). Site-specific risks, beyond those which can be expected for a project of this type, are presented on the Hazards and Constraints Plan (ENV0004914C-JBAU-00-00-DR-C-0002).

2.3.1 Existing Structures

At the weir, the channel sides consist of concrete wingwalls, upholding a slope surfaced with concrete bagwork and obscured by excessive vegetation, as shown in Figure 2-1. It is assumed the cill of the weir is also constructed from concrete; however this could not be verified on site due to the built up silts on the channel bed.



Figure 2-1: Weir, wingwalls and channel sides

The left bank of the weir appears to be formed of concrete bagwork containing a set of concrete steps leading from the top of the bank to the weir. The top of the left bank immediately adjacent to the weir is fitted with kee-klamp fencing equipped with signage, and a gate to access the steps leading to the right hand crest of the weir, which also feature kee-klamp handrailing, as shown in Figure 2-2.

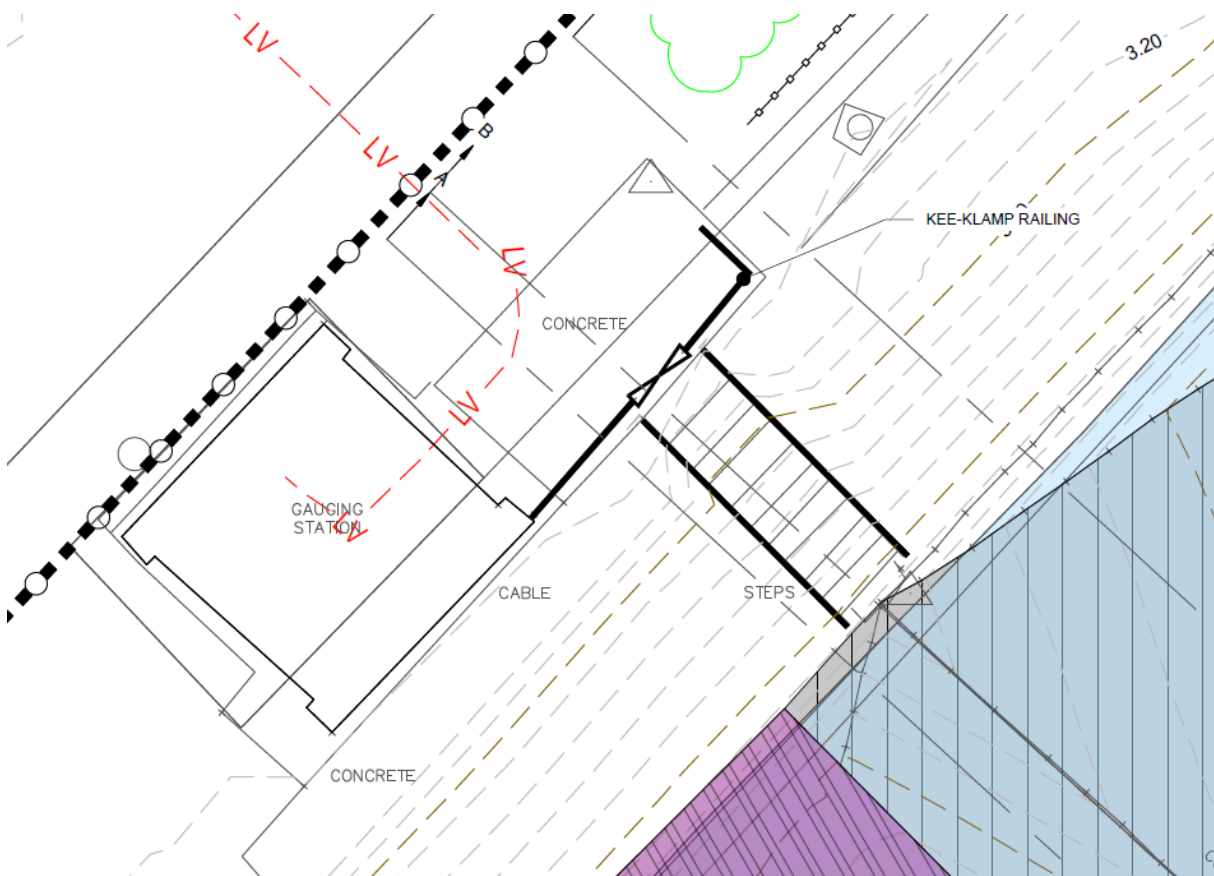


Figure 2-2: Kee-klamp railing

At the top of the left bank, approximately one metre upstream of the weir, is an operational gauging station kiosk/building. The building is sat on a concrete pad and fitted with anti-climb rotating blades. There are visible cracks and subsidence concrete pad, possibly due to the settlement of the building and pad. It is assumed the construction of the right bank is also of formed concrete bagwork, however this could not be verified on site due to the excessive vegetation cover. The removal of this structure or its associated equipment is not within the scope of the current project, therefore an exclusion zone should be implemented offset by 1 metre from the gauging station kiosk perimeter to prevent damage to the structure.

The gauging station is still an active site with a mains power connection and access is required throughout the Works for the new flow gauge located under the road bridge. The EA H&T team cannot fully shut down and disconnect the gauge as a result of various licenses associated with the gauging.

Without the option for a full DNO disconnection, the Client has advised it would be feasible to power down during working periods (day-time), and switched back on at the end of the day to allow the backup batteries an opportunity to recharge. Without a full DNO disconnection, there is a residual risk of striking a chartered live buried service.

2.3.2 Access

Access from the right bank was discounted due to excessive vegetation, reducing the footprint of the works area, and avoiding working within close proximity to the residential properties located on the right bank.

2.3.3 Geotechnical

2.3.3.1 Ground Investigations

No ground investigations were conducted on the site, and since there are no plans to introduce new structures as part of the project, the necessity for ground investigation is not strictly required. The EA communicated that the bed is believed to be predominantly sand and fine sediments sat atop rocks and shales.

2.3.3.2 Contaminated Land

A desk based contaminated land assessment was undertaken by JBA. This document can be found in ENV0004914C-JBAU-00-00-RP-EN-0001. A review of historical mapping indicates that development on and immediately around site is limited to housing settlements and construction of the weir. The local area has a history of urban development from the mid-19th Century onwards including the nearby Yorkshire Wildlife Park to the west. Within 1km of the site boundary is additional urban development (housing developments and road networks). There is one recorded category three minor pollution incident within 500m of the site boundary.

Potential sources of contamination at the sites and surrounding areas are associated with the following activities:

- Made Ground within the site, associated with weir construction and its associated buildings.
- Potentially contaminated sediments immediately upstream of the weir in the riverbed.
- Made Ground associated with residential and commercial construction within the surrounding area (e.g. formerly stockpiled materials to west).
- Sewage Works present 0.8km southwest of site.

Testing of river won sediments may be undertaken prior to the works to assess the risk of contamination. Testing should be undertaken to enable disposal of the waste in the correct manner and identify any risks to human and environmental safety during the Works period. When testing river sediments, sampling should be alike to taking a core, as not to miss any layers of contaminated materials which may be sitting in the lower layers of the sediment deposits in the channel.

2.4 Design parameters

2.4.1 Weir removal

Full extent of the removal is between SE 64591 01224 and SE 64597 01218, approximately 7.6 metres in total length and 8 metres wide. If in good condition and independent of the weir, the existing concrete wingwalls and cill are to be retained. The wingwalls should be monitored for movement during the works. If it is identified that the weir is not an independent structure, or the wingwalls and cill are in poor condition, the design proposed by JBA in this design pack should not be taken forward to construction until stabilisation works were considered and introduced into the design. JBA recommend a structural investigation is undertaken in addition to further design work to consider these constraints. Section 2.5.1 outlines potential methods to make good the channel to facilitate the weir removal, however these options, among others, should be considered and designed appropriately, which is not part of the scope of the current works.

2.4.2 Channel modification

Vegetated sediment buildup upstream of the weir on the right bank is to be removed from the weir to 10 metres upstream of the weir. If bank stabilisation works are required, this area may be increased to facilitate additional works.

To protect the channel side walls downstream of the existing concrete weir cill from scour resulting from changes in the channel flow dynamics, replacement of the existing bed materials may be required, as detailed in sections 2.5.3. There is already some evidence of scouring of the downstream wingwalls (approximately 10 metres downstream of the weir) present at the interface between the wall and the water surface.

2.5 Design approach

2.5.1 Weir removal, wingwalls & channel sides

The weir is to be removed in full, and as a result, the width of the weir removal will match the width of the channel itself. The vertical extent of the weir removal was designed to create a smooth transition between the current upstream and downstream bed levels. This transition is achieved by lowering the weir to the level of the upper face of the cill, promoting a smoother water flow profile.

It is expected that the weir is independent of the cill and wingwalls. It is also assumed that the wingwalls, cill and channel side slopes are in good condition. Prior to the weir removal, structural investigation of the weir should be undertaken. During this investigation, the condition of the wingwalls and cill should be assessed. If it is found that the weir is an independent structure, and the wingwalls are in suitable condition,

the removal of the weir may proceed with no additional works done. This approach not only minimises waste, but also reduces the requirement for imported materials, labour, on-site time, and the need for modifications to the existing channel side slopes.

If the weir is not found to be an independent structure, the wingwalls are found to be in poor condition, or the existing wingwalls are not sufficient to support the slope with the removal of the weir, slope stabilisation works should be considered. Three solutions that may be considered, depending on the extent of the poor condition of the wing walls, are outlined in sections 2.5.1.1 and 2.5.1.2. Further design of these solutions should be undertaken after a structural investigation and condition assessment. Design of these additional works are not included in the current scope of work.

2.5.1.1 Channel side stabilisation

If the channel side walls are in good condition, but there is concern about the stability provided to the slope by the walls, application of anchor plates may be utilised to stabilise the channel sides in-situ. In this case, the Contractor should seek advice from the Designer before proceeding with the Works.

2.5.1.2 Bank regrading or wall replacement

A more intensive solution would be to remove the wingwalls and regrade the slope to fit in with the surrounding banks. It is assumed this would be sufficient as it is in line with the existing channel and slope profile where signs of failure are not immediately apparent, although this could not be verified without geotechnical investigation or design. Another solution may be to remove the existing retaining walls and install new walls designed to support the slope in the absence of the weir, however it should be considered how this may impact the gauging kiosk building at the top of the left bank channel slope. Other options may be available and should be fully explored.

2.5.2 Hydraulic modelling

Hydraulic modelling was undertaken to assess the impact of the weir removal on the channel, provided in ENV0004914C-JBAU-00-00-RP-EN-0005. The change in water levels and velocities evaluated between the extents of 1 kilometre upstream and downstream of the weir, over the following events:

- 1 in 2-year (50% Annual Exceedance Probability (AEP)),
- 1 in 20-year (5% AEP),
- 1 in 100-year (1% AEP),
- 1 in 2-year (50% AEP) + CC*,
- 1 in 20-year (5% AEP) + CC*,
- 1 in 100-year (1% AEP) + CC*,

* **CC**: *Climate change uplift factor, valued at 27% as per the Idle and Torne catchment 2080's epoch central flow allowance.*

Table 2-1: Modelled water level results at weir, Baseline vs Removal Scenario

Design event	Baseline - upstream of weir water level (mAOD)	Baseline - downstream of weir water level (mAOD)	Weir removal water level (mAOD)	Water level difference (m)
50% AEP	2.20	2.12	2.12	U/S: -0.08 D/S: 0.00
5% AEP	2.49	2.38	2.38	U/S: -0.11 D/S: 0.00
1% AEP	2.61	2.49	2.49	U/S: -0.12 D/S: 0.00
50% AEP + CC (27%)	2.38	2.29	2.29	U/S: -0.09 D/S: 0.00
5% AEP + CC (27%)	2.59	2.47	2.47	U/S: -0.12 D/S: 0.00
1% AEP + CC (27%)	2.72	2.58	2.60	U/S: -0.12 D/S: +0.01

Table 2-2: Modelled water velocity results at weir, Baseline vs Removal Scenario

Design event	Baseline - upstream of weir water velocity (m/s)	Baseline - downstream of weir water velocity (m/s)	Weir removal water velocity (m/s)	Water velocity difference (m/s)
(50% AEP)	0.59	0.55	0.63	U/S: +0.04 D/S: +0.09
(5% AEP)	0.81	0.76	0.87	U/S: +0.06 D/S: +0.11
(1% AEP)	0.94	0.89	1.02	U/S: +0.08 D/S: +0.13
(50% AEP) + CC (27%)	0.66	0.61	0.70	U/S: +0.04 D/S: +0.09
(5% AEP) + CC (27%)	0.94	0.89	1.02	U/S: +0.08 D/S: +0.13
(1% AEP) + CC (27%)	1.04	0.99	1.15	U/S: +0.11 D/S: +0.16

2.5.2.1 Temporary Works

The model was trialled for a 1 in 10 year event, both in the baseline and weir removed scenarios. The flow in the channel output by the model for this event is 11m³/s, the velocity and water levels are provided in below.

Table 2-3: 1 in 10 year model outputs

Scenario (1 in 10 year)	Velocity (m/s)	Water Level (mAOD)
Baseline	0.75	2.45
Weir removed	0.80	2.35

To prevent the Temporary Works from increasing flood risk in the area, the over pumping solution should be sized to provide capacity for the 11m³/s flow with a 15% uplift for factor of safety, therefore the pump capacity should be no less than 12.65m³/s. It is the responsibility of the Contractor to develop the Temporary Works Design with consideration of the information provided in this report. In channel temporary works should be designed to be easily removable, or to be safely inundated in a high flow event.

2.5.3 Scour Protection

As the wingwalls and cill in the location of the weir are of concrete construction, the risk of scour in this area is not deemed significant, due to concrete's ability to resist high flows. Upstream and downstream of the weir however, the bed materials assumed to be of a natural composition. Scouring of the bed may induce undermining of the channel side retaining walls, ultimately resulting in failure of the walls and the retained slopes.

Replacement of the natural bed materials downstream of the concrete cill was specified. This new material was sized with consideration of the shear stresses calculated using the hydraulic model outputs. A specification for the material is provided below.

Due to limitations in the modelling, the distances between the cross sections modelled is too great to accurately determine the extent of the channel bed where engineered fill is required. The outputs of the modelling in nodes at and immediately adjacent to the weir do not give sufficient detail, as the nodes are interpolated within the model.

Shear stresses were determined in the baseline and weir removed scenarios for the 1 in 2 year + CC (27%) and 1 in 100 year + CC (27%) at the downstream node closest to the weir with sufficient data available (RT-21561). The greatest shear stress experienced in the channel was calculated as 12.074 N/m² for the 74.417-hour time interval on the 1 in 100 year + CC (27%) event with the weir removed. For reference, the greatest shear stress calculated for this location in the same event with the weir is

place was 12.027 N/m² for the 73.500-hour time interval. This represents an increase of 0.39% with the weir removed.

The required grain size to resist transport for this event was calculated as 17mm. Smaller materials should be included in the replacement bed mix, to create an interlocking matrix to increase the resistance of the bed to movement.

The specification of the bed replacement material was described as well graded 10mm - 40mm mix of locally quarried gravels. This mix was selected as it is a readily available mix, which provides smaller materials to fill gaps and create an interlocking matrix, while meeting and exceeding the required 17mm grain size calculated from the model outputs. The thickness of the bed replacement layer was designed as 150mm. The extent of channel bed replacement was specified at 10 metres from the downstream edge of the concrete cill to protect the wingwalls immediately downstream of the weir from further scour and undermining.

2.6 Indicative costs of site works

Table 2-4 provides indicative estimates of the costs of the site works. The costs are derived from Spon's 2019 Pricing Handbook, with a 25% uplift for inflation adjustment. The costs assume a six-week programme, with five working days per week. These do not include any further work relating to stabilising the existing wingwalls, slopes or concrete cill.

The Principal Contractor should provide a quote prior to the works.

Table 2-4: Cost estimate

Category	Assumptions	Estimated cost
Labour	145 total days on site, equivalent to 4.8 FTE per day	£41,000
Plant and vehicles	A car for site engineer, a 14.5T BackAcker with 1000kg breaker attachment with driver and banksman, labourer transport, and a wheeled tractor and trailer with operator	£23,000
Materials (inc. excavation and disposal)	Includes excavation, purchase, and disposal (where relevant)	£6,200
Mobilisation, demobilisation and site enabling works	Includes welfare units, fencing, access tracks, vegetation clearance, setting out, site clearance and signage	£17,500
Total		£87,700
Total (inc. 10% risk allowance)		£96,500

3 Buildability Statement

3.1 Demolition works

Demolition works shall be carried out in accordance with BS 6187:2011 'Code of Practice for Full and Partial Demolition', published by the BSI. Demolition is to be conducted in such a manner as to ensure that all suitable stones/materials are preserved in a condition, size and shape appropriate for incorporation into the area of bed replacement, if feasible.

3.2 Assumed methodology

The following is the Designer's assumed methodology based on certain assumptions arrived at during the detailed design. Where applicable, this highlights aspects of the design that the Contractor shall consider as part of their construction methodology and sequencing. The Principal Contractor's Risk Assessment Method Statements and Construction Phase Plan will cover the works on site. Buildability sequencing diagrams are provided at the end of the section, depicting the spatial arrangement of the enabling, temporary and construction works (Figure 3-1 to Figure 3-3).

3.2.1 Enabling works

1. Arrange access with Environment Agency and notify land users of the planned entry date and timescale (where required).
2. Pre-construction survey.
3. Following the full PAS-128 survey, the alignment of the buried electrical cables associated with the gauging hut (and any other buried services present) which intercept the compound, access track or working area shall be demarcated as a DNO disconnection is not permitted.
 - a. At the start of every working day, prior to any works on site, the electrical equipment in the gauging structure shall be shut down. At the end of each working day, the electrical equipment in the gauging structure shall be reactivated.
4. Remove and store stile, gate and gate posts at site entrance and kee-klamp gate and rails on left bank adjacent to gauging building.
5. Undertake branch trimming or tying of overhanging branches at site entrance.
6. Install temporary fencing, site security and signage.
7. Undertake vegetation clearance on access track and left bank adjacent to weir.
8. Handover the site to the Contractor.
9. Set up regular water level (upstream of the influence of the weir) and weather monitoring and sign up to Environment Agency flood alerts.

10. Determine baseline dissolved oxygen and turbidity parameters of the channel adjacent to B1396 road bridge.
 - a. Agree the maximum allowable dissolved oxygen and turbidity limits with the Environment Agency. Throughout the works, testing for dissolved oxygen and turbidity should be undertaken, with works temporarily halted if the agreed limit is reached to allow the channel dissolved oxygen and turbidity to reduce.
11. Conduct sampling and testing of river sediments where sediment removal is due to be undertaken.

3.2.2 Mobilisation

1. Deliver and install site welfare and storage units in the site compound.
2. Instate traffic management.

3.2.3 Construction works (Dewatering)

1. Install fish stop nets 15 metres upstream and 30 metres downstream of the weir and undertake fish rescue.
2. Install silt screens across the channel, 25 metres downstream of the weir.
3. Undertake removal of material deposits on right bank of channel immediately upstream of the weir.
4. Removal of material deposits on the channel bed in the location of the temporary dams to facilitate dam installation.
5. Install portable dam system 15 metres downstream of the concrete weir cill.
6. Install portable dam system 12 metres upstream of the weir heel.
7. Over pump from upstream of the upstream dam to downstream of the downstream dam,
 - a. The 1 in 10-year event channel flow is 11m³/s, the over pumping pump should have capacity to move at least 11m³/s plus an additional 15%, as not to increase flood risk in a 1 in 10 year event or lower due to Temporary Works. Temporary dam crest levels should also be considered against the outputs of the 1 in 10 year model (2.45mAOD) plus an additional freeboard allowance.
 - b. Temporary Works should be designed to safely overtop in a high flow event.
8. Dewater dammed weir area with pump and undertake fish rescue.
9. Remove deposited channel materials with a long reach excavator to expose concrete cill, weir and channel sides. River sediments are to be removed from site and disposed of off-site.

10. Undertake non-intrusive structural investigation and visual condition assessment to determine the condition of the wing walls and cill,
 - a. At this stage, determine if the weir can be removed with no stabilisation worked required on the wingwalls. If stabilisation works are required, these should be designed prior to weir removal. Section 3.2.4 lists the assumed sequence for removal of the weir with no stabilisation works.

3.2.4 Construction works (weir removal)

1. Using an excavator fitted with breaker attachment, breakdown the weir in 100mm layers to expose the concrete cill,
 - a. The weir should be removed in three sections. First the weir centre, then the section on the right bank, and finally the section on the left bank.
2. Implement channel side stabilisation works (if specified - see Section 3.2.3 - 10.a).
3. From the downstream extent of the concrete weir cill for 10 metres, remove 150mm depth of the surface of the channel using an excavator.
4. Refill the area excavated during the previous step with a mixture of 10mm - 40mm locally sourced gravels to a height of 150mm to achieve the former bed level,
 - a. Gravels should be sufficiently mixed before laying into the channel.
5. All materials generated in the demolition and sediment clearing works are to be tested for contaminants and separately loaded by excavator into a dumper and removed from site as waste (if not reusable on site, in this case testing is still required).
6. Refill the dewatered area to equalise with the water level in the surrounding channel.
7. Remove portable dams from channel.
8. Remove silt screens from channel.
9. Reinstall kee-klamp railing and gate adjacent to gauging building.
10. Reinstall gate and stile at access point.
11. Reinstall hedgerow and fencing

3.2.5 Demobilisation

1. Dismantle site welfare and storage units and remove from site.
2. Remove site fencing and guarding, and associated signage.
3. Remove traffic management.

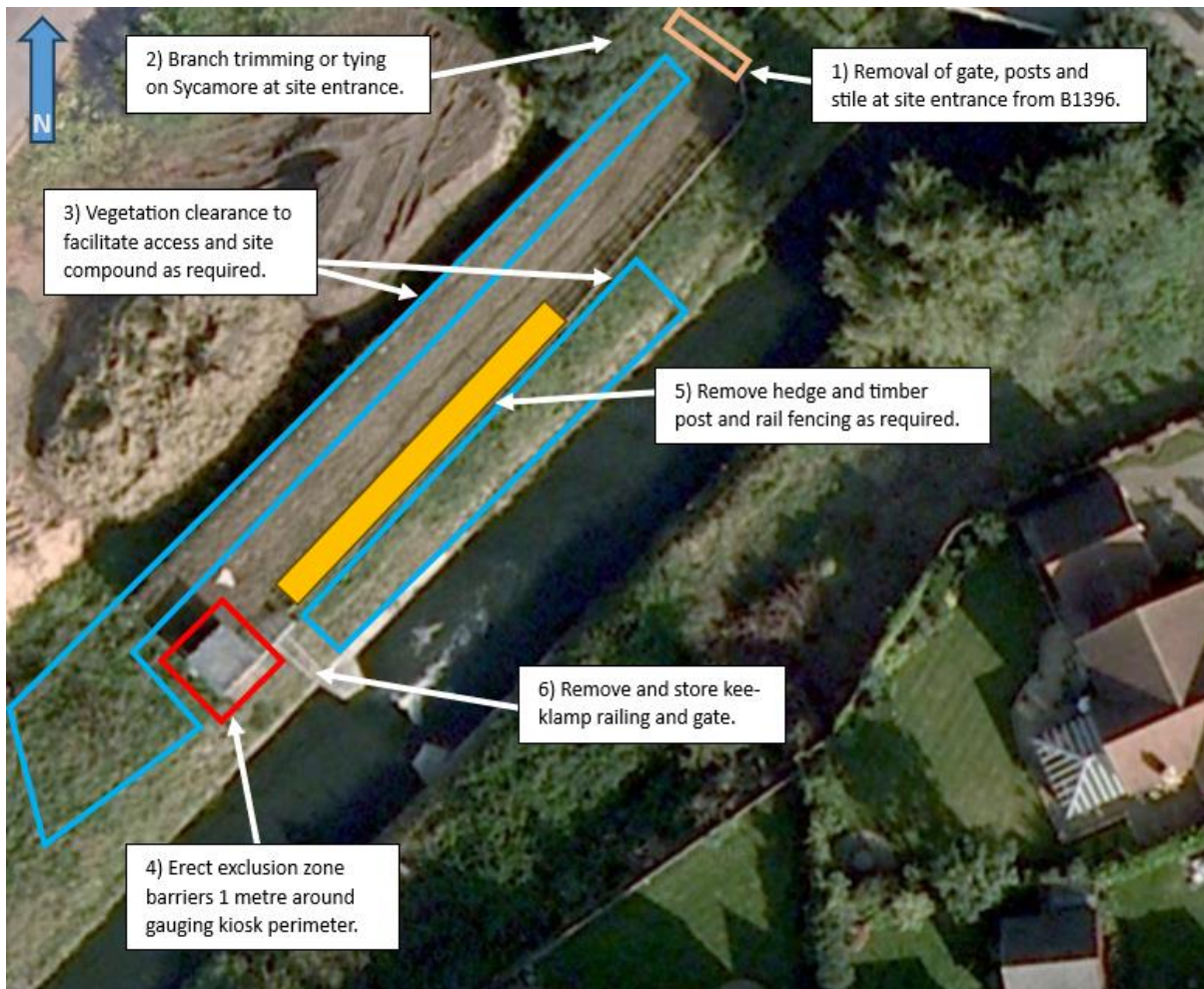


Figure 3-1: Enabling Works

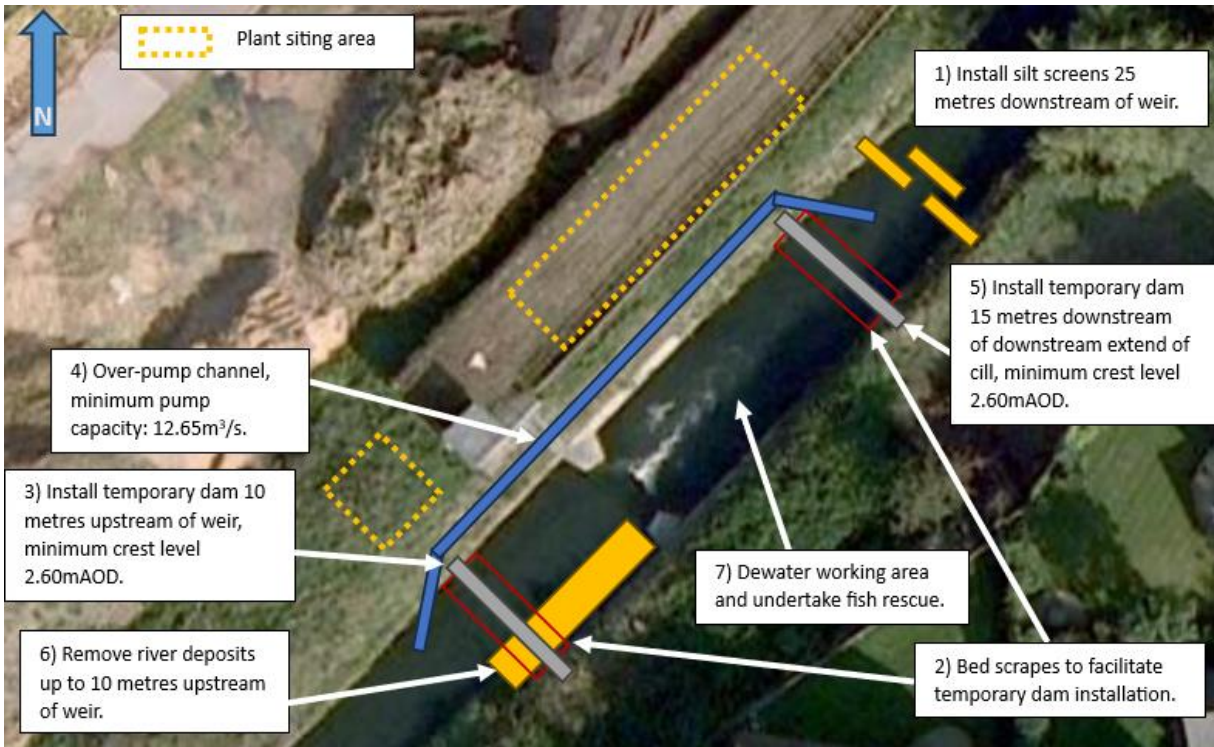


Figure 3-2: Temporary Works

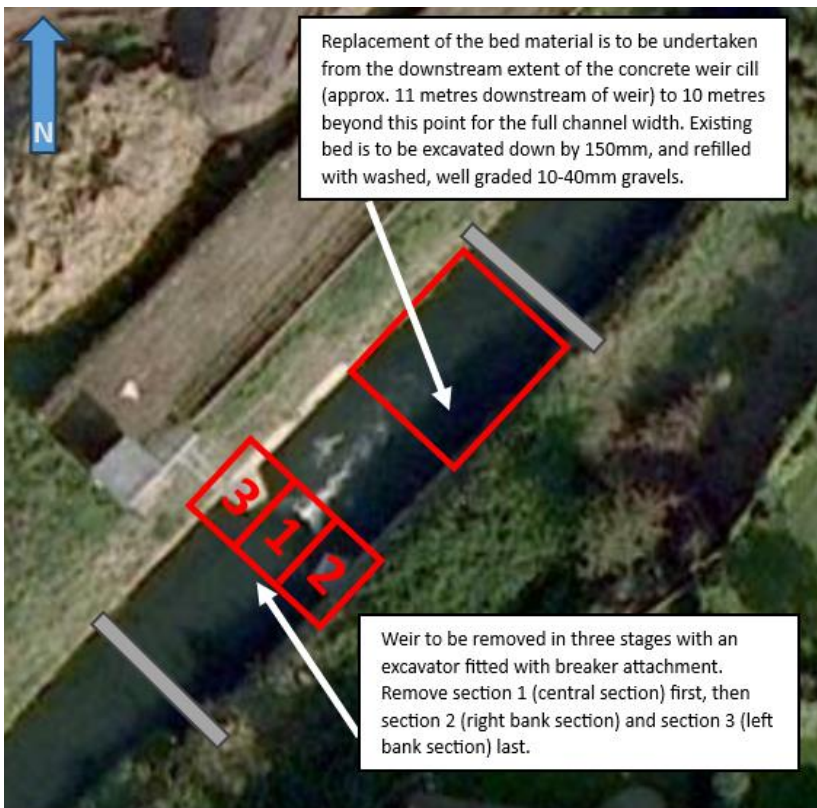


Figure 3-3: Weir removal and bed replacement

Offices at

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Edinburgh
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Glasgow
Haywards Heath
Leeds
Limerick
Newcastle upon Tyne
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Sub100k Business Case

Template: LIT 55190

Published: 26/03/2021

Audience: Environment Agency Project Manager (& Delivery Partner where appropriate)

Fish Passage at Auckley Gauging Weir



Recommendation

The project will design and install a fish passage solution for the EA owned Auckley Gauging Weir linked to Water Resources priority - "Fish and eel passage maintenance at WLB assets". This project will contribute towards the requirement that EA assets don't cause barriers to natural migration of fish species in East Midlands WFD waterbodies. Auckley Gauging Weir on the River Torne, at SE6459301217 and is located on the WFD Waterbody [Torne/Three Rivers from Mother Drain to Trent](#) (GB104028064340). Once delivered the project will also provide benefit to a further 5 WFD water bodies, 2 of which have RNAGs related to fish failures and barriers to migration (GB104028058440 & GB104028058410).

Auckley Gauging Weir has a DIAP split of 56.7% WR, 40.4% FCRM and 2.9% FBG.

Feasibility, design and build - will be a phased approach to address the barrier to fish migration. This project links to EMD Area Local Outcome Plan and the draft Trent catchment fish pass strategy.

Once completed the project will open up 17km of river to fish.

This business case seeks approval to spend £57,000 to deliver fish passage at Auckley Gauging Weir, this financial spend is from £32,000 WR Capex and £25,000 FCRM GiA.

Version control/assurance log

Date	Version* (e.g. 0.1, 0.2, 1.0)	Amendments	Approved/agreed by

FINANCIAL SCHEME OF DELEGATION (FSoD) APPROVALS

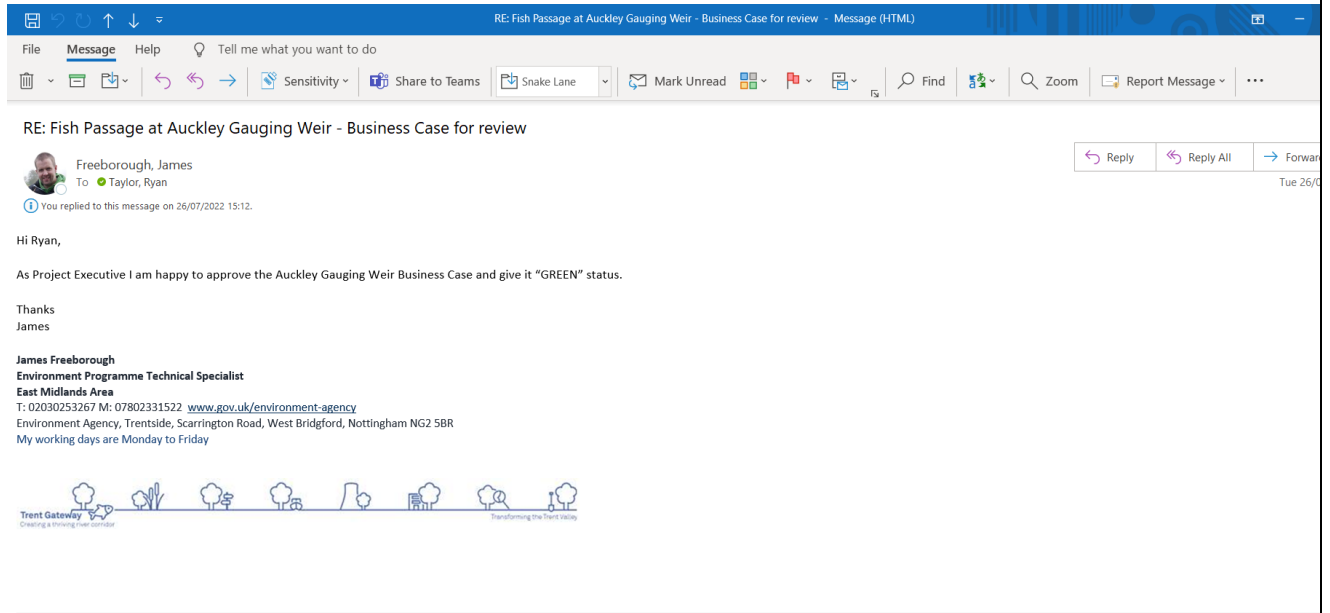
A	Project name	Fish Passage at Auckley Gauging Weir		
	SOP Code	ENV0004914C	Project start date	May 2022
	Programme	WR Capex & FCRM GiA	Project end date	March 2025
	Lead delivery organisation name	Environment Agency		
	EA Area name (e.g. KSL) or 'National'	East Midlands		
	EA Team	Environment Programme		

B	Role	Name
	Delivery organisation Project Manager	N/A
	EA Project Manager	Ryan Taylor

C	Key consultees (e.g. FBG, Finance Business Partner, Legal, NEAS, NE, Commercial, etc.)			
	Role	Name	Date	Summary of discussion outcome

D1	Assurance			
	Lead assurer name James Freeborough	Delivery Confidence Assessment (select RAG status by clicking the relevant box)		Date
	Project Executive	RED <input type="checkbox"/>	AMBER <input type="checkbox"/>	GREEN <input checked="" type="checkbox"/>

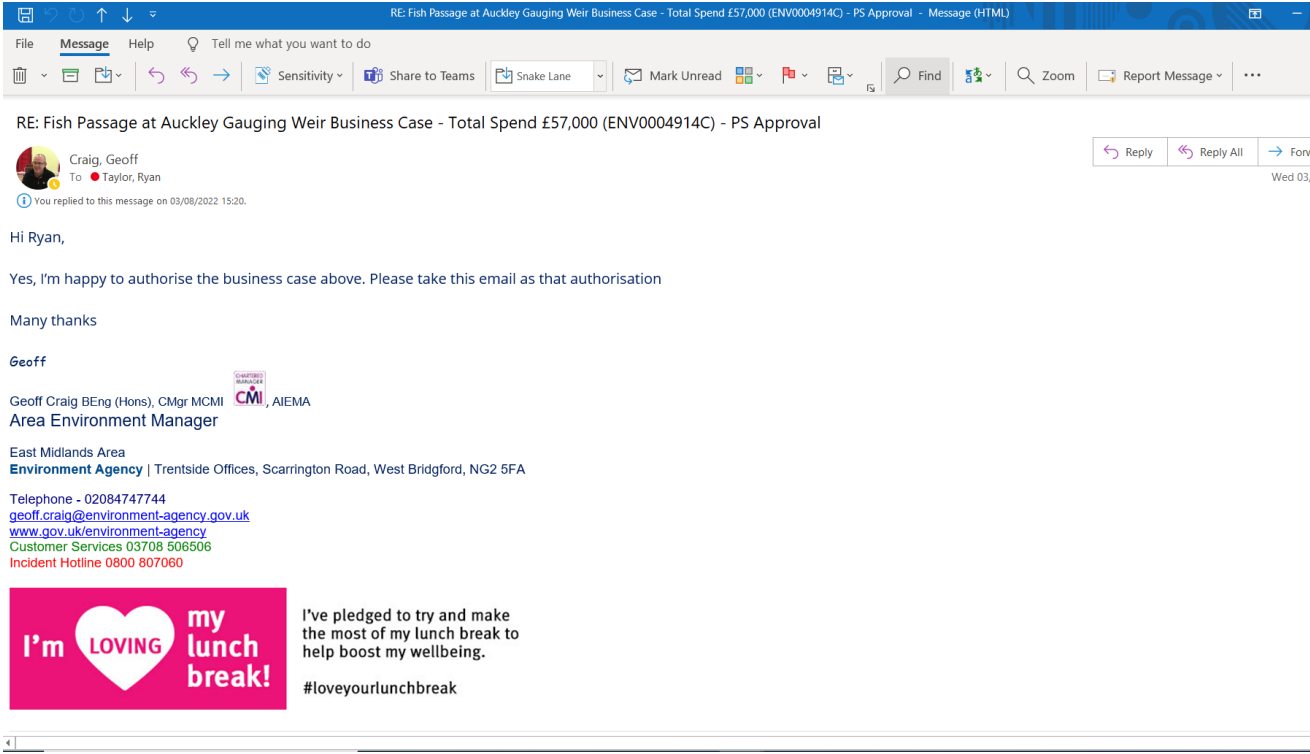
D
2



E1	FSoD approval		
	Document	Value for FSoD approval	Cumulative total of EA contributions £k
	Sub100	£57,000	£57,000
	Variation V1		
	Variation V2		

E2	Sub 100 FSoD approver name	Post title	Date email approval received
	Geoff Craig	AEM	03/08/22

Variation FSoD approver name	Post title	Date email approval received

E3	<p>Screenshot of approval email (s) (Subject header must clearly state project code, name & award amount. This must come directly from the G7 approver).</p> 	
F	Does the business case contains sensitive or commercial information or data that should be restricted (see Government Security Classifications)?	No

Sub100k Business Case

1. Background (where and why)

The project will design and install a fish passage solution for the EA owned Auckley Gauging Weir linked to Water Resources priority - "Fish and eel passage maintenance at WLB assets". This project will contribute towards the requirement that EA assets don't cause barriers to natural migration of fish species in East Midlands WFD waterbodies. Auckley Gauging Weir on the River Torne, at SE6459301217 and is located on the WFD Waterbody [Torne/Three Rivers from Mother Drain to Trent](#) (GB104028064340). Once delivered the project will also provide benefit to a further

5 WFD water bodies, 2 of which have RNAGs related to fish failures and barriers to migration (GB104028058440 & GB104028058410).

Auckley Gauging Weir has a DIAP split of 56.7% WR, 40.4% FCRM and 2.9% FBG.

Feasibility, design and build - will be a phased approach to address the barrier to fish migration and use best technologies to reduce impact on the waterbody. This project links to EMD Area Local Outcome Plan and the draft Trent catchment fish pass strategy.

Once completed the project will open up 17km of river to fish.

2. Project details (what and how)

a. Project objectives

- Complete design of fish pass option
- Complete permits and permission for fish pass option
- Complete construction of fish pass option

b. Benefits

- Once completed the project will open up 17km of river to fish.
- Supported WFD improvements (to be assessed via routine WFD programme)

c. Other considerations

- Internally, fish pass options have been reviewed by EP, FBG and H&T and low-cost fish baffles and eel tiles should be considered as the preferred fish pass option. This fish pass solution has been delivered successfully at other East Midlands gauging weirs.
- The Partnership Funding Calculator has been completed (See Appendix A), the project has a Project benefit to cost ratio of 16.4 to 1 and a Maximum eligible FCERM GiA of £186,798.

d. Carbon

- A record will be kept of all site visits, this will enable the carbon cost of the project to be estimated for end of year reporting.
- An estimate of the carbon cost of the project will be completed using the Carbon Cost Calculator Tool once the fish pass option has been designed and method statement completed.
- Carbon savings will be made wherever possible, e.g., using local contractors, use of local materials, avoiding use of carbon expensive methods (steel/concrete) and using online meeting options where possible.

Table 1 – Total Carbon Emissions

*Capital Carbon Tonnes of CO2	**Operational Carbon Tonnes of CO2
TBC	N/A

*Capital carbon = emissions arising from the project activities.

**Operational carbon = ongoing carbon emissions following project completion, such as operation and maintenance of assets.

3. Project procurement

- This is an EA led project, with Environment Programme providing the Project Management.
- The project will use framework suppliers for the design of the fish pass option. Further use of the framework for construction will be reviewed once the fish pass option has been designed and costed.

4. Project finances

Table 2- Project budget

	Previous Years (£)	Yr 1 (£) 2022/23	Yr 2 (£) 2023/24	Yr 3 (£) 2024/25	Yr 4 (£) 2025/26	TOTAL (£)
EA Funding (£)*						
WEIF Capital	-	-	-	-	-	-
WR CAPEX	-	£10,000	£2,000	£20,000	-	£32,000
FCRM GiA	-	£8,000	£1,000	£16,000	-	£25,000
EA staff time/in kind	-	-	-	-	-	-
Total EA funding (£)	-	£18,000	£3,000	£36,000	-	£57,000
Partner Funding (£)*						
Partner cash	-	-	-	-	-	-
External cash	-	-	-	-	-	-
Partner in kind	-	-	-	-	-	-
Total partner contributions (£)	-	-	-	-	-	-
TOTAL PROJECT BUDGET	-	£18,000	£3,000	£36,000	-	£57,000

Table 3- Project expenditure

Expenditure Type	Previous Years (£)	Yr 1 (£) 2022/23	Yr 2 (£) 2023/24	Yr 3 (£) 2024/25	Yr 4 (£) 2025/26	TOTAL (£)
Staff time	-	-	-	-	-	-
Design	-	£18,000	-	-	-	£18,000
NEAS Review & Permitting (including EPR)	-	-	£3,000	-	-	£3,000
Construction	-	-	-	£36,000	-	£36,000
TOTAL PROJECT EXPENDITURE (£)	-	£18,000	£3,000	£36,000	-	£57,000

5. Project management

a. Roles and responsibilities

Table 4 – Project roles

Role	Summary of responsibilities
EA Project Manager	<ul style="list-style-type: none"> • The project manager is responsible for running the project on a day-to-day basis on behalf of the project executive and project board. • They ensure the project produces the required products, to the required standard of quality and within the specified constraints of time and cost. • They ensure the project delivers results capable of achieving the business benefits set out in the business case.

EA Project Executive	<ul style="list-style-type: none"> • Project executives are accountable to the project sponsor for delivery of the project as set out in the business case. • Their role is to ensure that the project is focussed on achieving its objectives and delivers a product that will achieve the forecasted benefits. • The executive has to ensure that the project gives value for money, ensuring a cost-conscious approach to the project, balancing the demands of the business, user and supplier. • Throughout the project, the executive is responsible for the business case.
EA Project Sponsor	<ul style="list-style-type: none"> • The project sponsor is the recognised owner of the overall business change being delivered by the project. • They have accountability for the ensuring the project aligns to corporate objectives and delivers what the business requires. They work closely with the senior user(s). • Project sponsors act at a strategic level and delegate the responsibility for tactical decision making to the project executive, within agreed tolerances of quality, cost and time. • Project sponsors ensure that the project maintains its business focus, has clear authority, and is aware of any business changes that could impact on successful delivery of the change. • They are accountable for benefits realisation, ensuring the project maintains a focus on benefits and secures business ownership for each benefit.

b. Milestones

Table 5 – Project milestones

Milestone Description	Owner	Estimated start date (mm/yy)	Estimated end date (mm/yr)
Design	EA	05/22	03/23
NEAS Review & Permitting (including EPR)	EA	04/23	03/24
Construction	EA	04/24	03/25

c. Project risks

Table 6 – Identified project risks

#	Key Risks	Owner & role (e.g Project Manager, Sponsor, Executive)	Mitigation	Likelihood / impact post mitigation (high/medium/low)
1	Design of fish pass option interferes with flow gauging	Project Manager	Fish pass baffle passes have been installed at other EA gauging weirs in EMD with no issues, if an issue is identified the top most baffle can be moved further down the weirs slope as per EA guidance	Low
2	Scope of works incorrect/incomplete, which could have impacts on fish pass sign off via the fish pass panel and delay in EPR permitting	Project Manager	Seek national advice on scoping for the fish pass design and ensure a sufficient lead time (~6 months) between permit submission and start of construction	Medium
3	High river levels impact in river works, e.g., surveying and fish pass construction	Project Manager	Ensure sufficient time between project phases. Aim to deliver in river works (survey & construction) before November in each year, in an effort to avoid higher flows and issues with end of year spend.	Medium

List of Appendices

A Partnership Funding Calculator

Auckley Weir: Weir Removal Low Flow Analysis

Draft

August 2024

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Contract

JBA Project Manager	Robert Beresford
Address	No 1 Broughton Park, Old Lane North, Skipton BD23 3FD
JBA Project Code	2023s1153

This report describes work commissioned by the Environment Agency, by an instruction dated 29 April 2024. The Client's representative for the contract was Ryan Taylor of the Environment Agency. Gregory Brown of JBA Consulting carried out this work.

Purpose and Disclaimer

Jeremy Benn Associates Limited ("JBA") has prepared this Report for the sole use of (Environment Agency) and its appointed agents in accordance with the Agreement under which our services were performed.

JBA has no liability for any use that is made of this Report except to the Environment Agency for the purposes for which it was originally commissioned and prepared.

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The conclusions and recommendations contained in this Report are based upon information provided by others and upon the assumption that all relevant information has been provided by those parties from whom it has been requested and that such information is accurate. Information obtained by JBA has not been independently verified by JBA, unless otherwise stated in the Report.

The methodology adopted and the sources of information used by JBA in providing its services are outlined in this Report. The work described in this Report was undertaken in July 2024 is based on the conditions encountered and the information available at the time. The scope of this Report and the services are accordingly factually limited by these circumstances.

Where assessments of works or costs identified in this Report are made, such assessments are based upon the information available at the time and where appropriate are subject to further investigations or information which may become available.

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Unless otherwise stated in this Report, the assessments made assume that the sites and facilities will continue to be used for their current purpose without significant changes.

Where field investigations are carried out, these have been restricted to a level of detail required to meet the stated objectives of the services. The results of any measurements taken may vary spatially or with time and further confirmatory measurements should be made after any significant delay in issuing this Report.

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1 Introduction

1.1 Overview

Jeremy Benn Associates (JBA) previously completed fluvial hydraulic modelling analysis to determine flood risk impact removing the Auckley Weir from the River Torne in November 2023. The findings are summarised in document 'ENV0004914C-JBAU-00-00-RP-EN-0005-S3-P01-Auckley_Weir_Removal_Analysis'. JBA were since commissioned by the Environment Agency (EA) to undertake additional analysis considering low flow events.

1.2 Weir location

Auckley Weir is located on the River Torne near Auckley, South Yorkshire, as shown in Figure 1-1. The national grid reference for this weir is 464,596mN, 401,221mE.

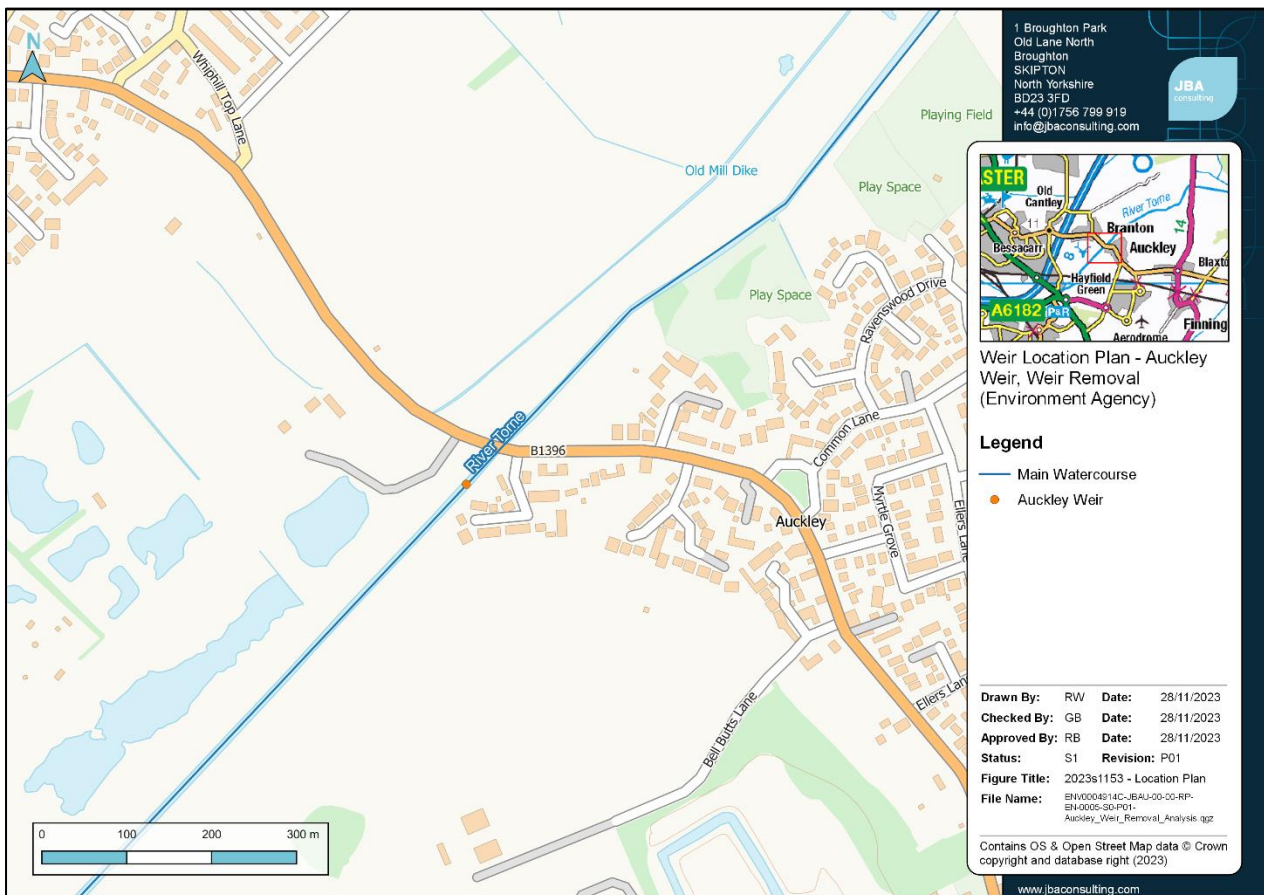


Figure 1-1: Weir location

2 Methodology

2.1 Available modelling

The EA's existing model for the River Torne produced as part of the River Torne Hazard Mapping Study (Capita AECOM, 2018) formed the basis of the low flow modelling analysis.

2.2 Low flows

Initially, the intended approach was to truncate the existing River Torne model to the immediate catchment surrounding the Auckley Weir to reduce the low flow estimation requirements, as the full model contains 25 separate catchments. However, review of the 50% annual exceedance probability (AEP) event found that there was a backwater effect from the outlet at the Keadby pumping station which extended as far upstream as Auckley Weir. This meant that it would be difficult to achieve a justifiable downstream boundary for any truncated model. It was therefore decided to retain the full downstream catchment in the modelling analysis.

The study scope requested the following low flow events to be considered:

- 95% exceedance event (also known as Q95)
- 70% exceedance event (also known as Q70)
- 50% exceedance event (also known as Q50)
- 10% exceedance event (also known as Q10)
- 5% exceedance event (also known as Q5)

The existing flow gauge (28050 - Torne at Auckley¹) at Auckley Weir provides a flow record between 1971 and 2022. No other flow gauges exist within the River Torne catchment. Based on this gauge record the UK Centre for Ecology & Hydrology (CEH) have calculated the above low flow events at the weir as listed in Table 2-1. These gauge estimates were used as the design flows.

For the other ungauged sub-catchments included in the hydraulic model (see Figure 2-1), a data transfer method was used based on the Torne at Auckley gauge estimates. A weighted adjustment based on the Auckley Weir gauge catchment area (135.5m²) against each respective sub-catchment area.

An alternative method would have been to use the CEH Low Flows software to estimate low flows for the necessary catchment. This software uses underlying catchment descriptors to calculate flows and is the standard software used by the EA to provide estimates in ungauged catchments. The CEH Low Flows software was used to generate

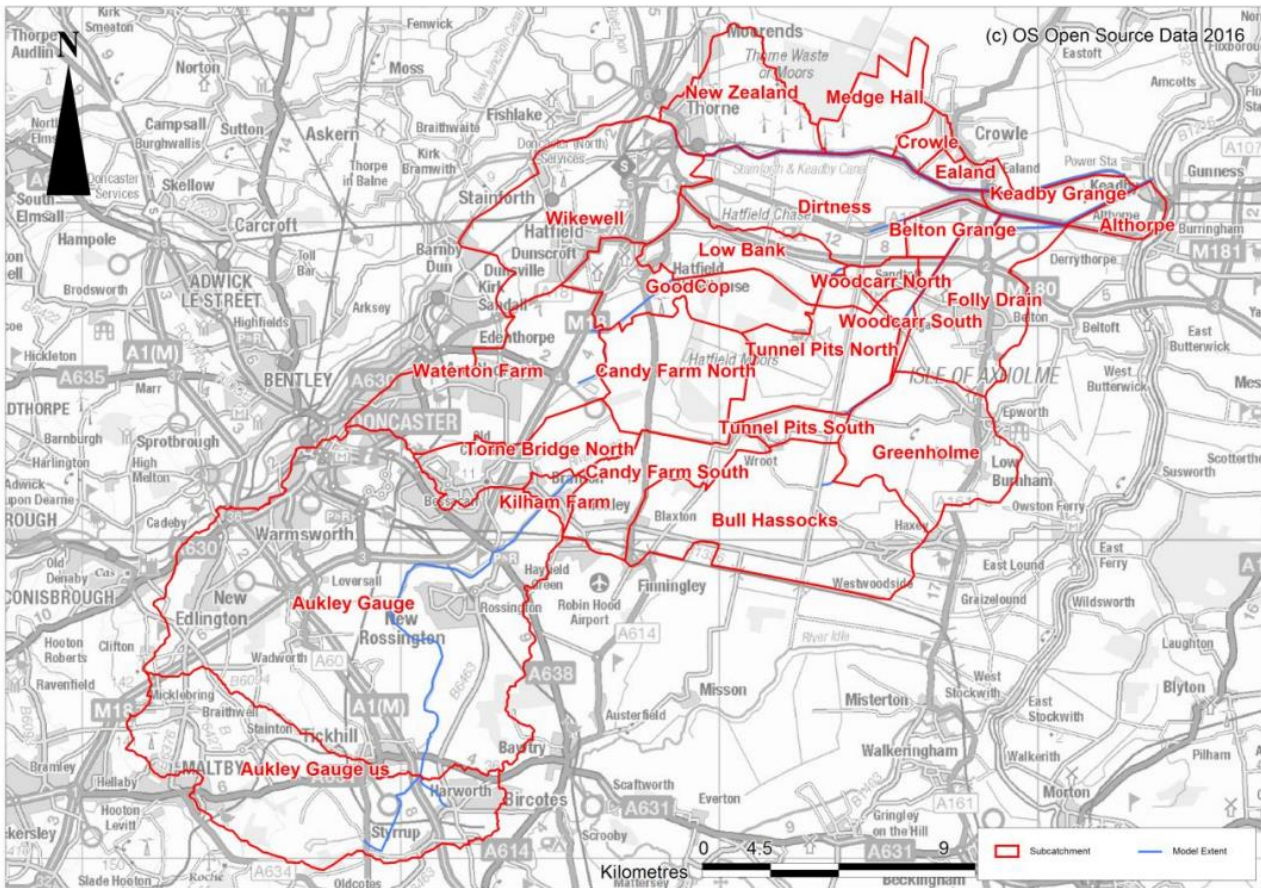
1 [NRFA Station Data for 28050 - Torne at Auckley \(ceh.ac.uk\)](https://ceh.ac.uk/data/nrfa-station-data-for-28050-torne-at-auckley)

flows for Auckley which were then compared against CEH's gauge record-derived estimates (see Table 2-1). The CEH Low Flows software underestimates the Q95 to Q50 events and overestimates the Q10 and Q5 compared to the gauge record. Despite these differences, the overall estimates calculated were relatively similar.

Most of the River Torne catchment is classed as highly permeable which suggests that there should not be a significant difference in flow generated. Given the purposes of this study and the requirements to provide flows for the downstream sub-catchments to provide a downstream boundary alone, the data transfer method from the Torne at Auckley gauge was deemed appropriate.

Table 2-1: Low flow estimates

Column heading	Gauge estimates	CEH Low Flows software	Ratio (LF/CEH)
95% Exceedance (Q95)	0.33	0.11	0.35
70% Exceedance (Q70)	0.52	0.26	0.49
50% Exceedance (Q50)	0.66	0.44	0.66
10% Exceedance (Q10)	1.58	1.91	1.21
5% Exceedance (Q5)	2.25	2.91	1.29



Extract from River Torne Hazard Mapping Study report (Capita AECOM, 2018) [Fig 3-2]

Figure 2-1: River Torne subcatchments

2.3 Additional model updates

The baseline (with weir included) and proposed weir removal model scenarios as tested during JBA's November 2023 study and based the EA's existing model for the River Torne (Capita AECOM, 2018). Hydraulic models typically experience instability if too little flow is applied to them. Initial testing identified this as an issue in the upper catchment upstream of Auckley Weir. To rectify this issue, the hydraulic model was truncated at the model node 'RT-31874' (approximately 10km upstream of Auckley Weir - National Grid Reference 461,000mE, 395,639mN). Flow remained in channel at this point during the 50% AEP event and was identified as a suitable truncation point. Flows from the upper catchment was applied at this location.

2.4 Design runs

Both the with-weir and weir removal model scenarios were tested with the five low flow events as listed in Section 2.2.

2.5 Model stability

Model stability is generally good. There are short periods of non-convergence in the low flow events as indicated in Figure 2-2. However, the occurrences of non-convergence are significantly less than in the design flood events in the original model.

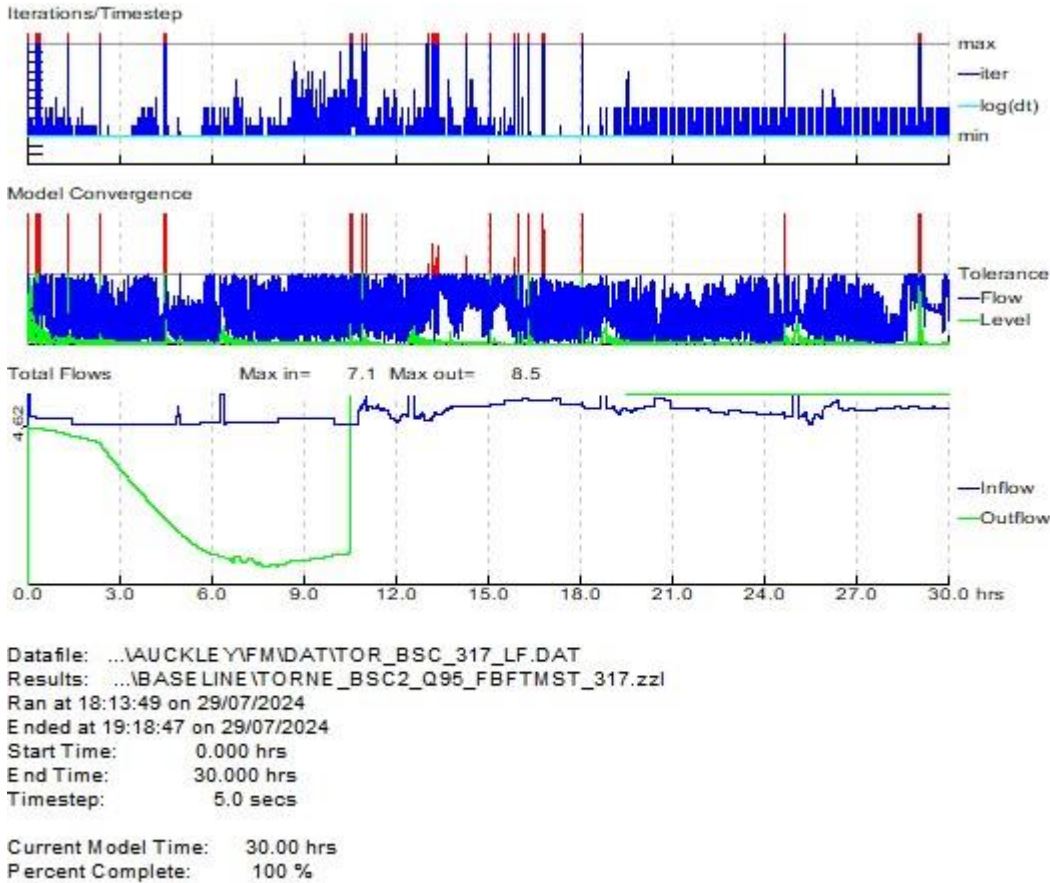


Figure 2-2: 1D stability plot - Q95 low flow event (with weir)

2D mass balance error shows a spike at the outset of the simulation which likely relates to the application of initial water to the 2D domain, but then this error reduces to be within the acceptable +/-1% threshold. Again, this occurs in the original EA provided model, and is not related to the model update.

A review of the model results indicates that there are no issues in the vicinity of the Auckley Weir study such as oscillations in water level or flow as a result of the 1D non-convergence or 2D mass balance error.

3 Results

The following section assesses the baseline and weir removal scenarios to determine the potential impact.

3.1 Low flow event water levels

Table 3-1 provides the peak modelled water levels immediately upstream and downstream of the weir (model node - RT-21617) for the baseline and weir removal scenario in the design events tested. The model results show a decrease in water level upstream of the weir with its removal (up to 0.49m). Downstream of the weir all events show no change in water level as flows along the watercourse remain the same.

Table 3-1: Modelled water level results at weir, baseline versus proposed weir removal scenario

Design event	Baseline - upstream of weir water level (mAOD)	Weir removal water level (mAOD)	Water level difference (m)
95% Exceedance (Q95)	1.47	0.98	-0.49
70% Exceedance (Q70)	1.51	1.03	-0.48
50% Exceedance (Q50)	1.54	1.06	-0.48
10% Exceedance (Q10)	1.66	1.27	-0.39
5% Exceedance (Q5)	1.73	1.41	-0.31

Design event	Baseline - downstream of weir water level (mAOD)	Weir removal water level (mAOD)	Water level difference (m)
95% Exceedance (Q95)	0.98	0.98	0.00
70% Exceedance (Q70)	1.03	1.03	0.00
50% Exceedance (Q50)	1.06	1.06	0.00

Design event	Baseline - downstream of weir water level (mAOD)	Weir removal water level (mAOD)	Water level difference (m)
10% Exceedance (Q10)	1.27	1.27	0.00
5% Exceedance (Q5)	1.41	1.41	0.00

Interrogation of results indicates that this reduction of water levels with the weir removal extends 2km upstream.

Table 3-2 shows the difference in water level between the baseline and weir removal scenarios 1km upstream/downstream from the weir. Water levels 1km upstream of the weir continue to show a reduction with the weir removal compared to the baseline scenario. Greater reductions are observed in the smaller magnitude events (i.e Q95). Looking further upstream, there is not a significant difference between the two scenarios after 2.5km upstream. Downstream of the weir, there is no difference in water level following the removal of the weir.

Table 3-2: Modelled water level results away from weir, baseline versus proposed weir removal scenario

Design event	Water level difference 1km upstream of weir (m)	Water level difference 1km downstream of weir (m)
95% Exceedance (Q95)	-0.41	0.00
70% Exceedance (Q70)	-0.38	0.00
50% Exceedance (Q50)	-0.36	0.00
10% Exceedance (Q10)	-0.25	0.00
5% Exceedance (Q5)	-0.19	0.00

Long profile plots for the Q95 event (Figure 3-1) and Q5 event (Figure 3-2) demonstrate the reduction in water levels upstream of the weir, and lack of change downstream. The long profile plots for all low flow events tested are provided in Appendix A.1.

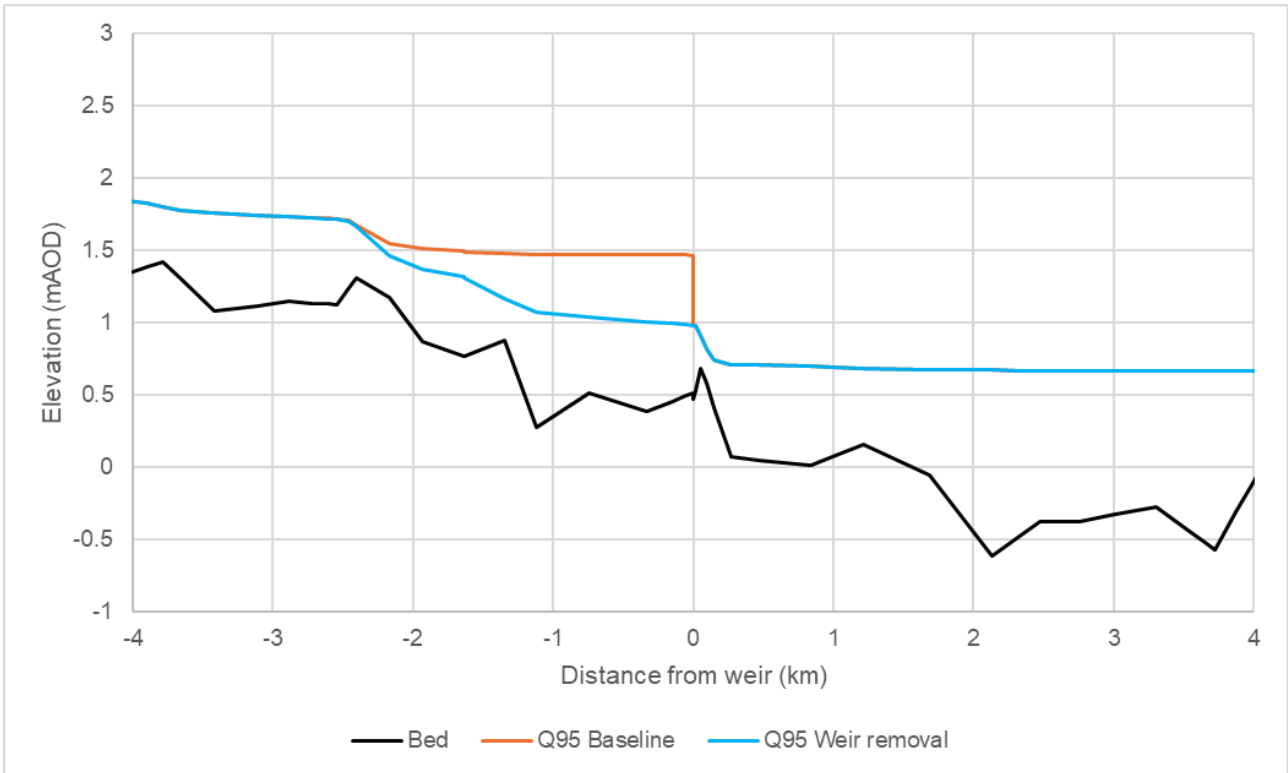


Figure 3-1: Q95 low flow event long profile - baseline versus proposed weir removal

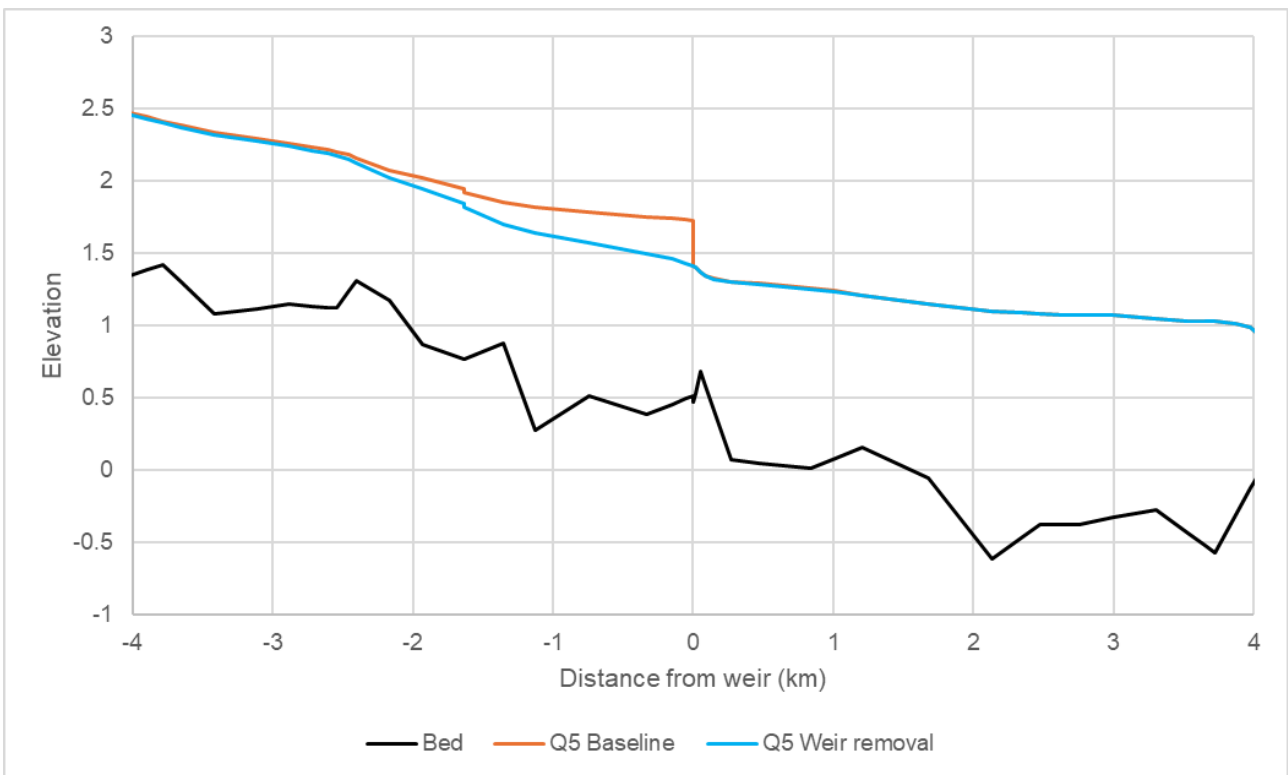


Figure 3-2: Q5 low flow event long profile - baseline versus proposed weir removal

3.2 Low flow event flood extents

The modelled flood extents show flows up to the Q5 low flow event remain confined to the River Torne in both the with weir and weir removed scenarios. (see Figure 3-3). Looking at the rest of the modelled River Torne catchment, there is no difference in flood extent following the removal of the weir (see Figure 3-4). Flood extents remain unchanged for all low flow events tested as shown in Appendix A.2.

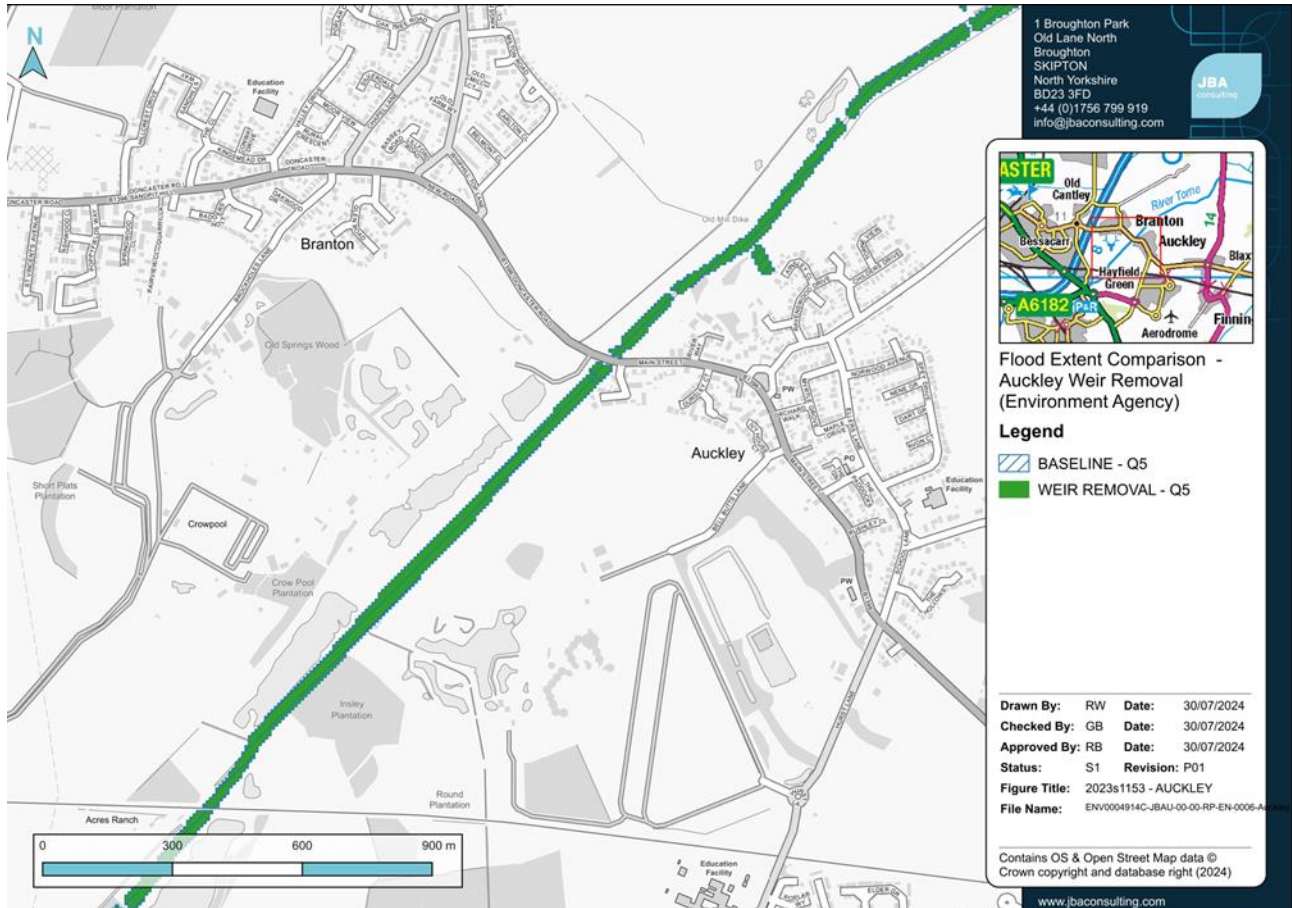


Figure 3-3: Q5 low flow event flood extent - baseline versus proposed weir removal

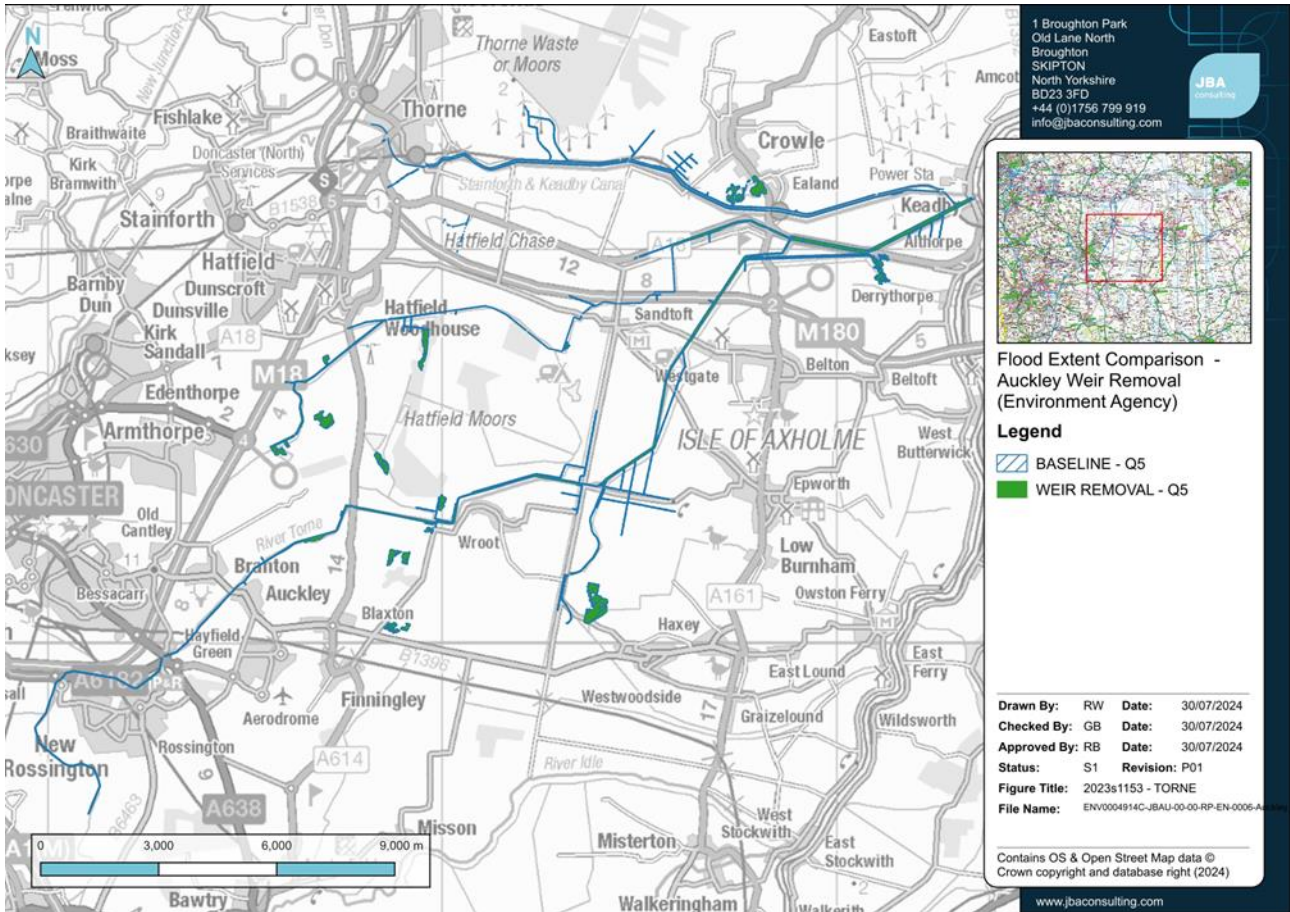


Figure 3-4: Q5 low flow event flood extent - baseline versus proposed weir removal

4 Summary

Hydraulic modelling analysis was carried to establish the potential impact of removing the Auckley Weir. This demonstrates that the weir removal would reduce water levels upstream of the weir, but downstream levels would remain unchanged.

There are no changes in the low flow event flood extents as result of the weir removal in any of the low flow events.

A Appendix

A.1 River Torne long profiles

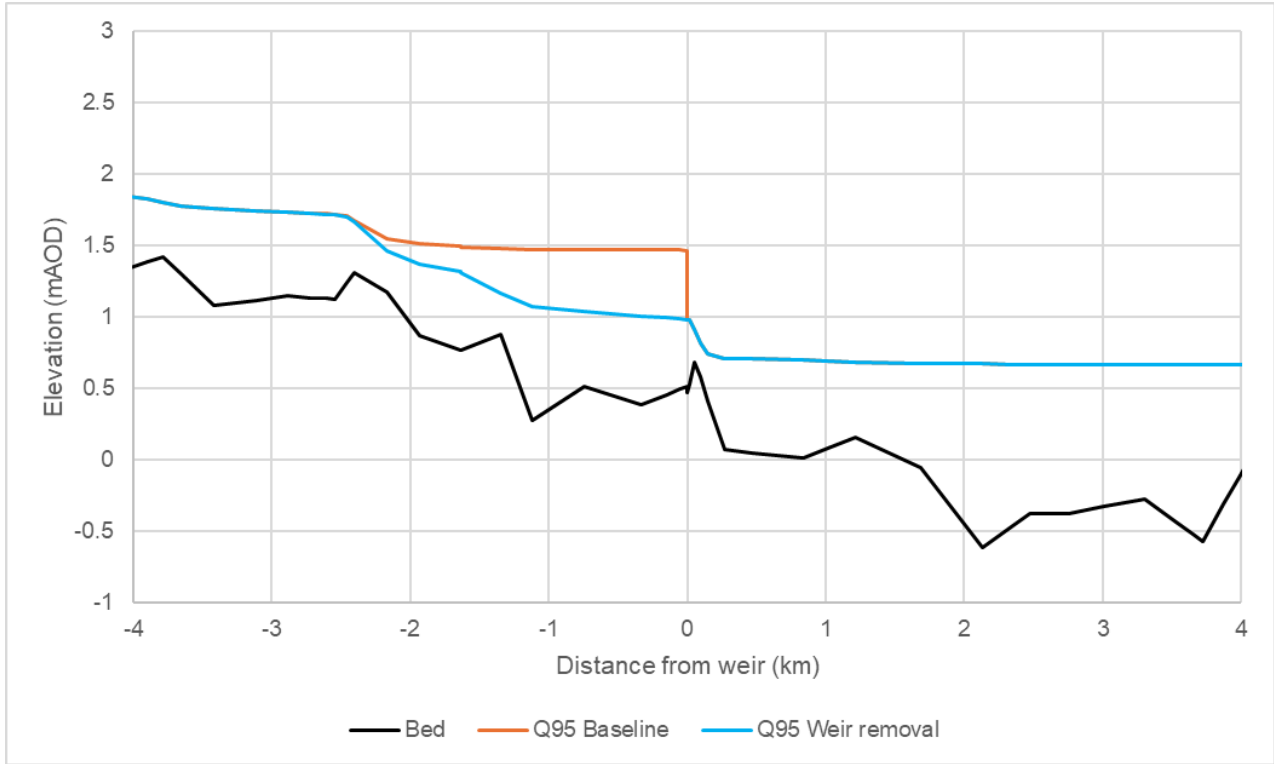


Fig. A-1: Q95 low flow event long profile - baseline versus proposed weir removal

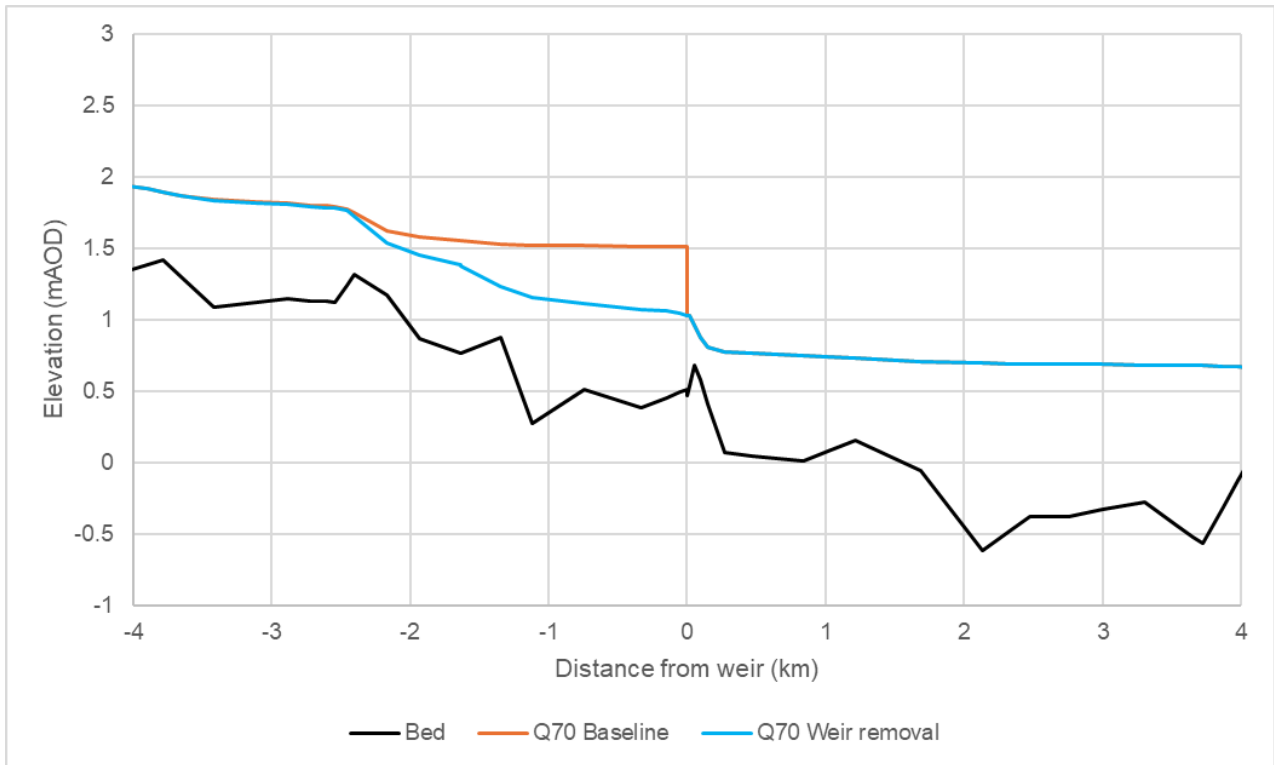


Fig. A-2: Q70 low flow event long profile - baseline versus proposed weir removal

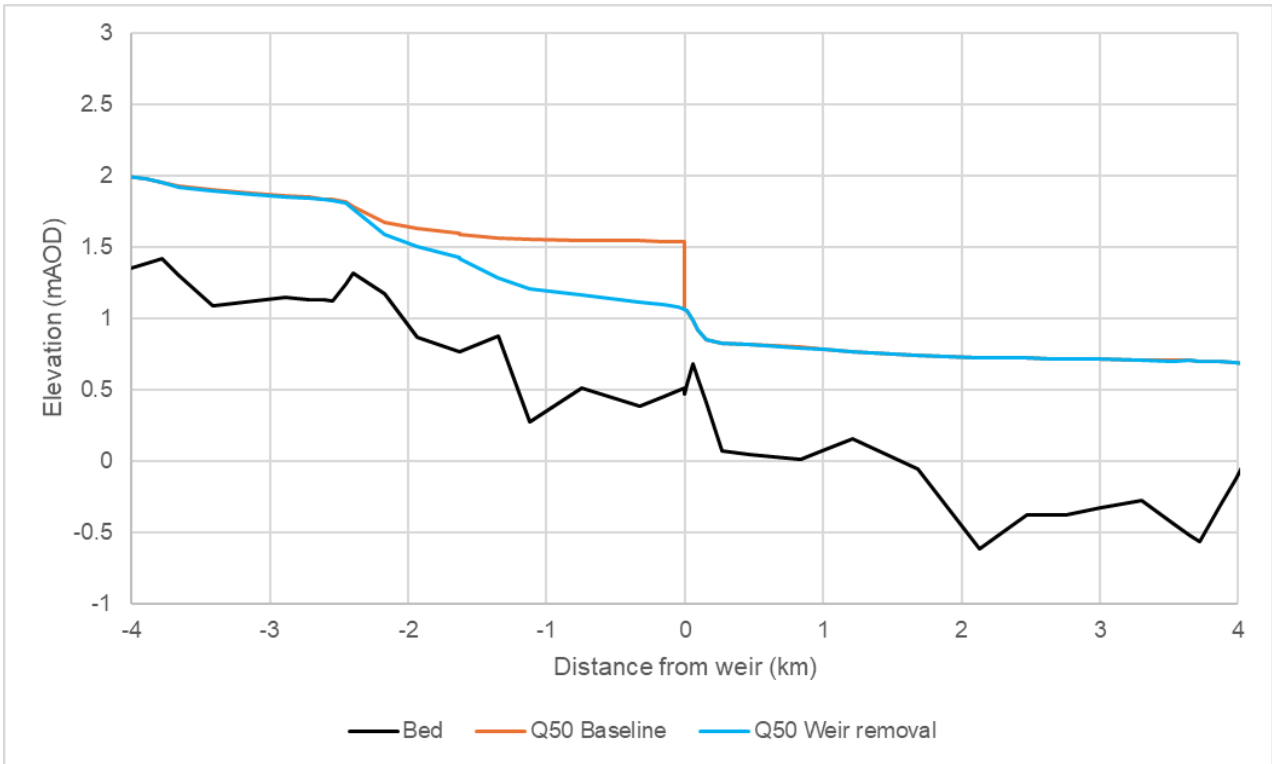


Fig. A-3: Q50 low flow event long profile - baseline versus proposed weir removal

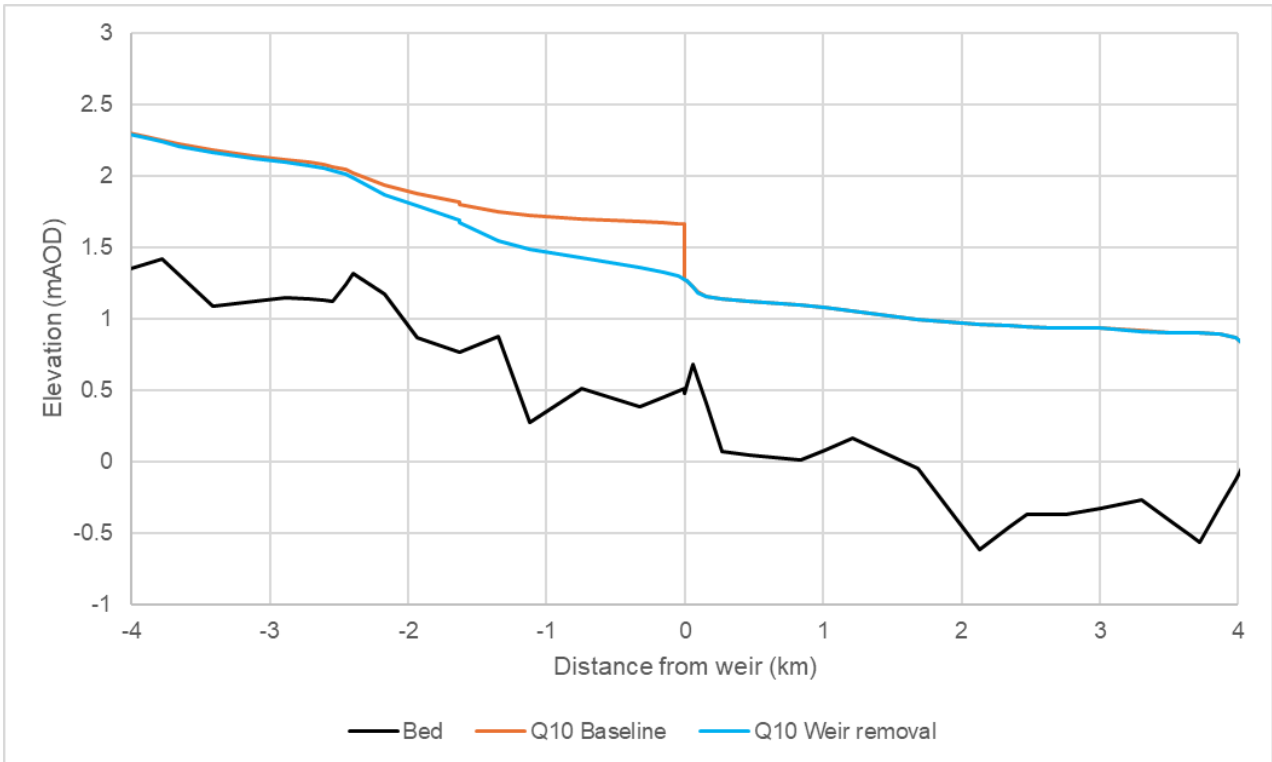


Fig. A-4: Q10 low flow event long profile - baseline versus proposed weir removal

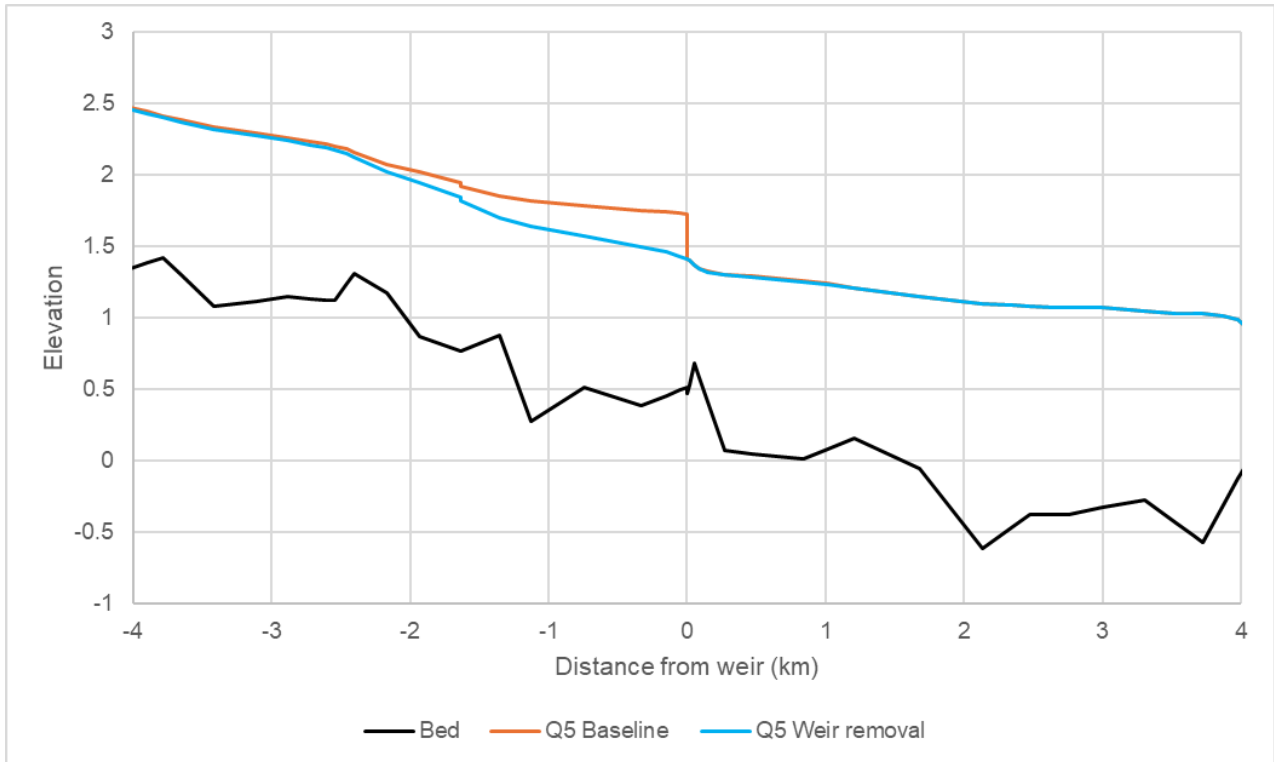


Fig. A-5: Q5 low flow event long profile - baseline versus proposed weir removal

A.2 Low flow event flood extents



Fig. A-6: Q95 low flow event flood extent - baseline versus proposed weir removal

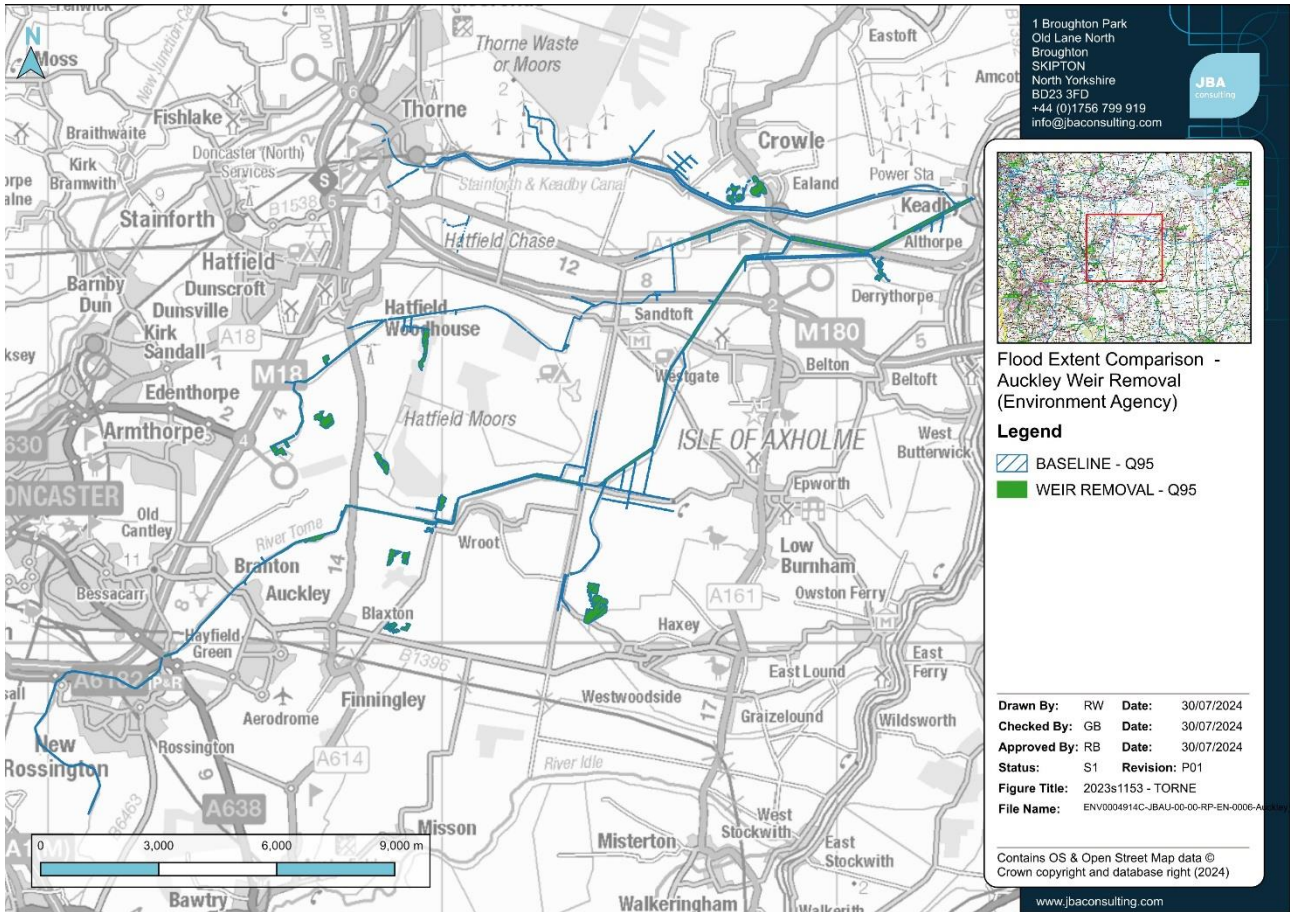


Fig. A-7: Q95 low flow event flood extent (full catchment) - baseline versus proposed weir removal

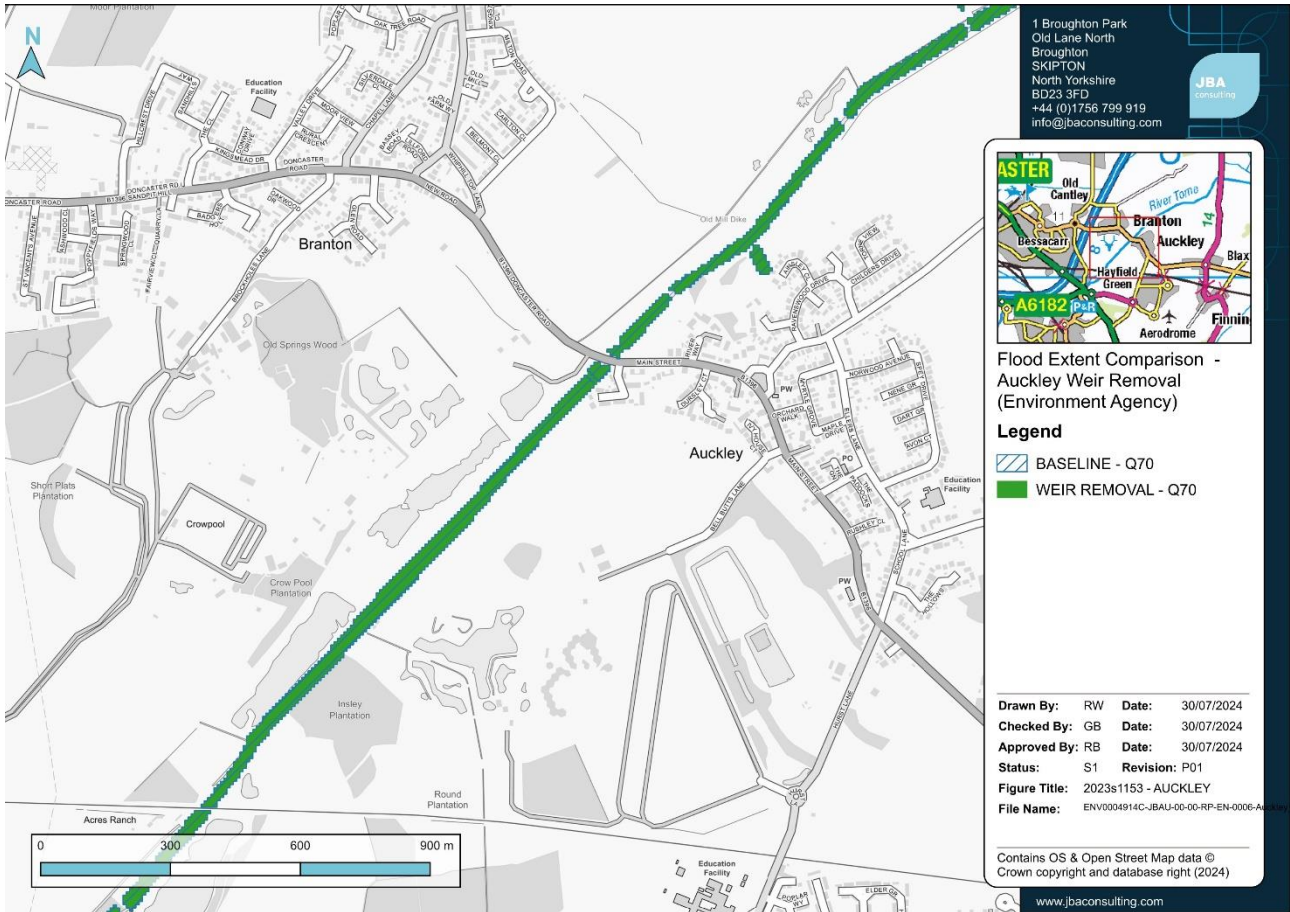


Fig. A-8: Q70 low flow event flood extent - baseline versus proposed weir removal

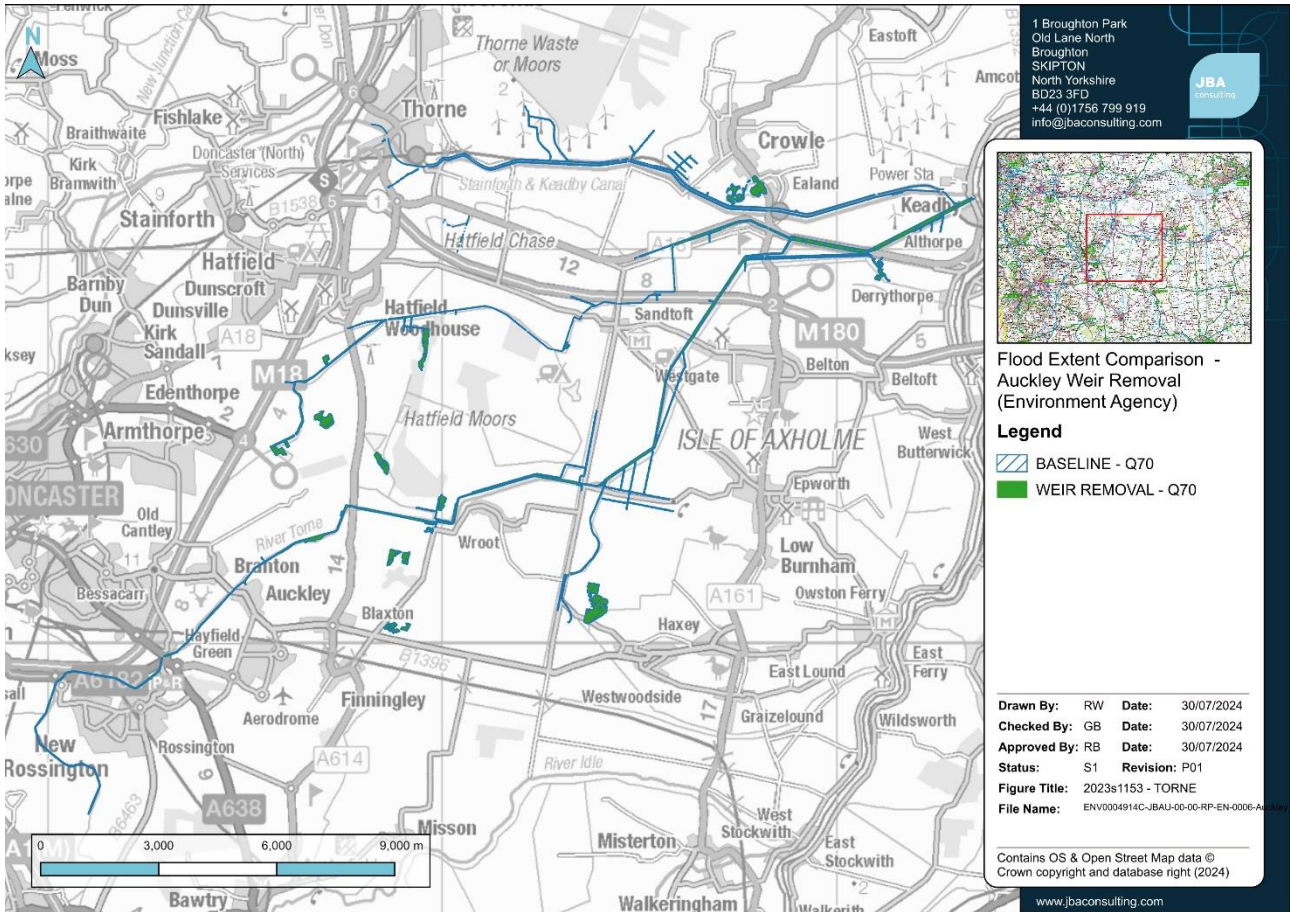


Fig. A-9: Q95 low flow event flood extent (full catchment) - baseline versus proposed weir removal

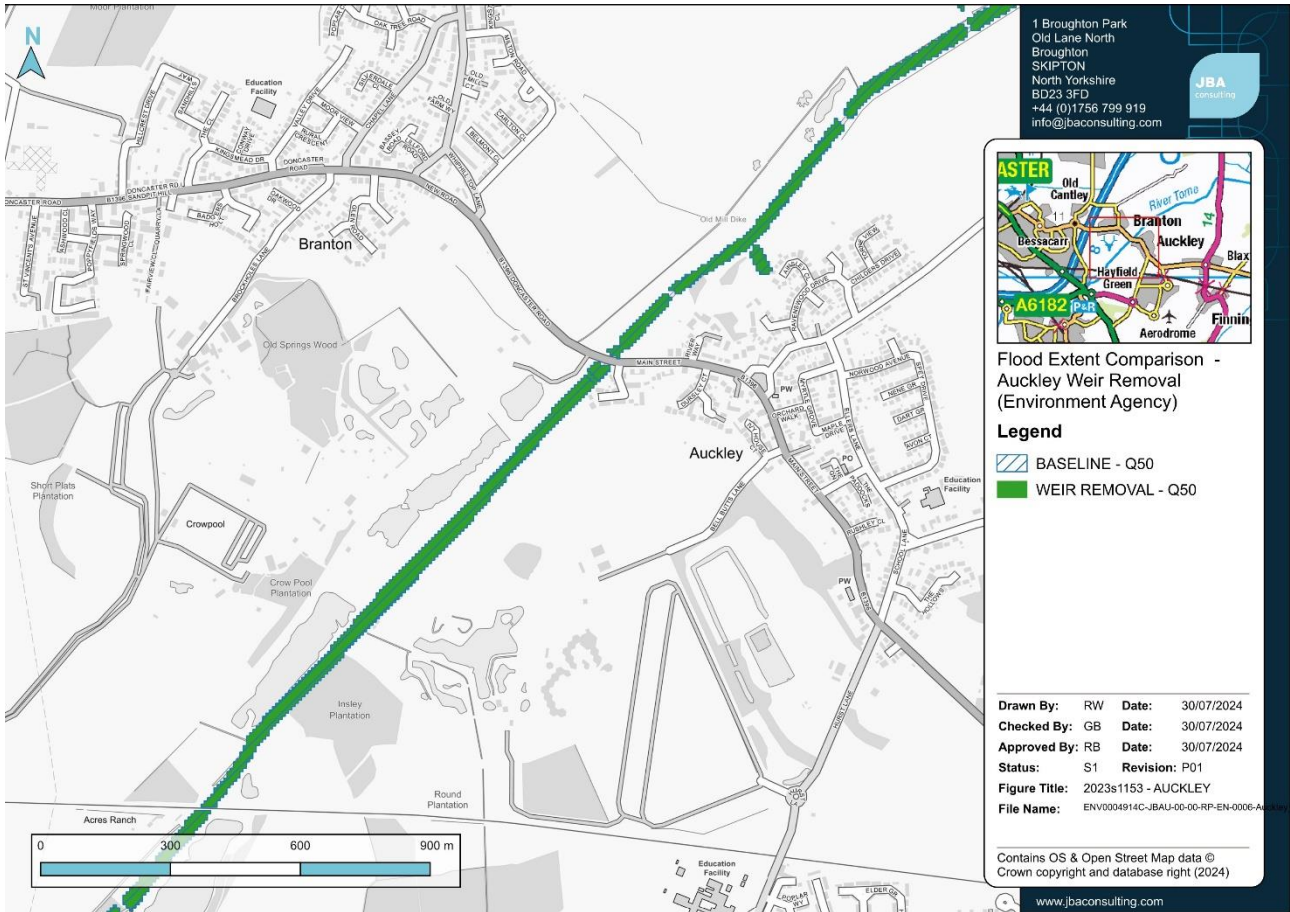


Fig. A-10: Q50 low flow event flood extent - baseline versus proposed weir removal

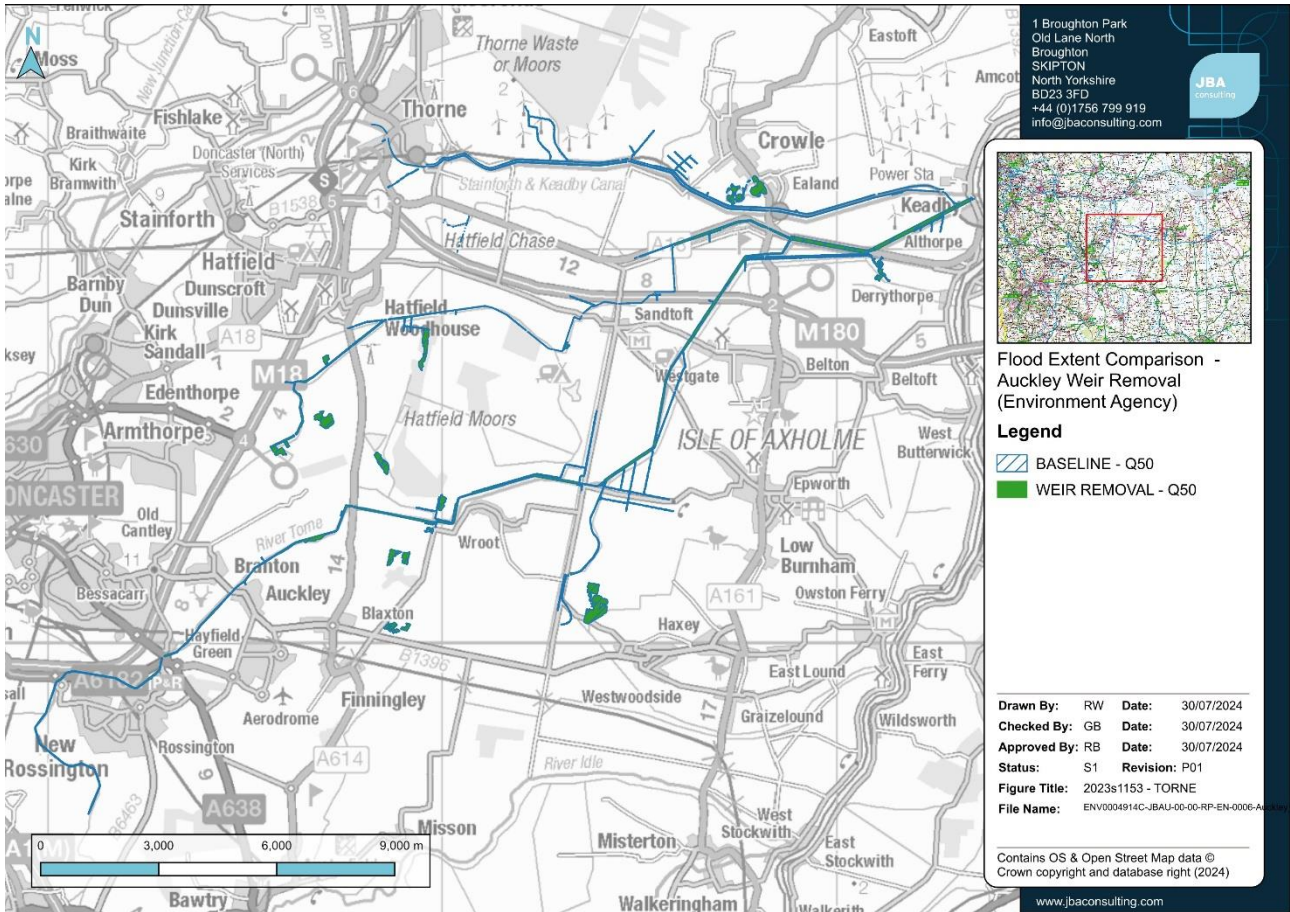


Fig. A-11: Q50 low flow event flood extent (full catchment) - baseline versus proposed weir removal

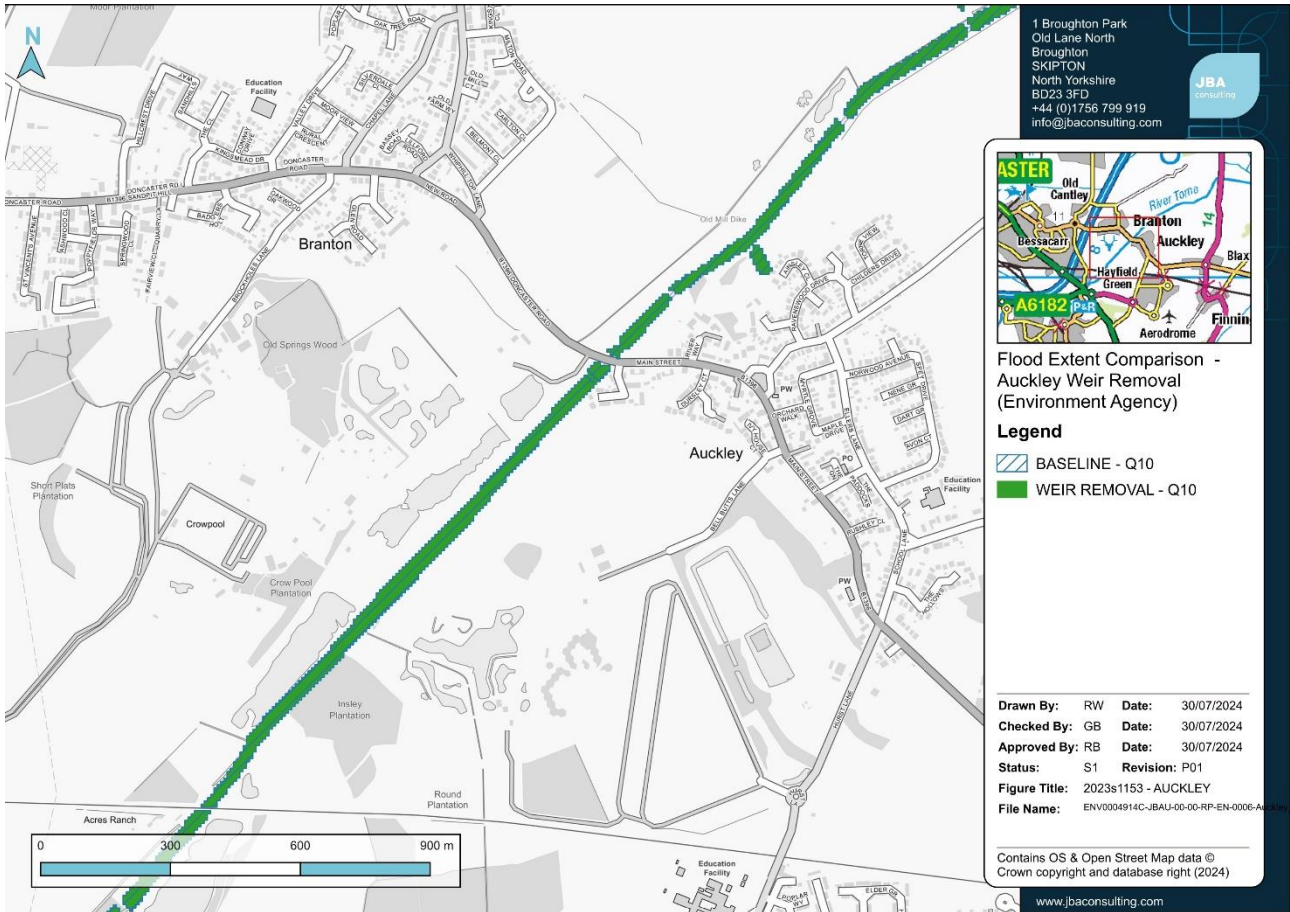


Fig. A-12: Q10 low flow event flood extent - baseline versus proposed weir removal

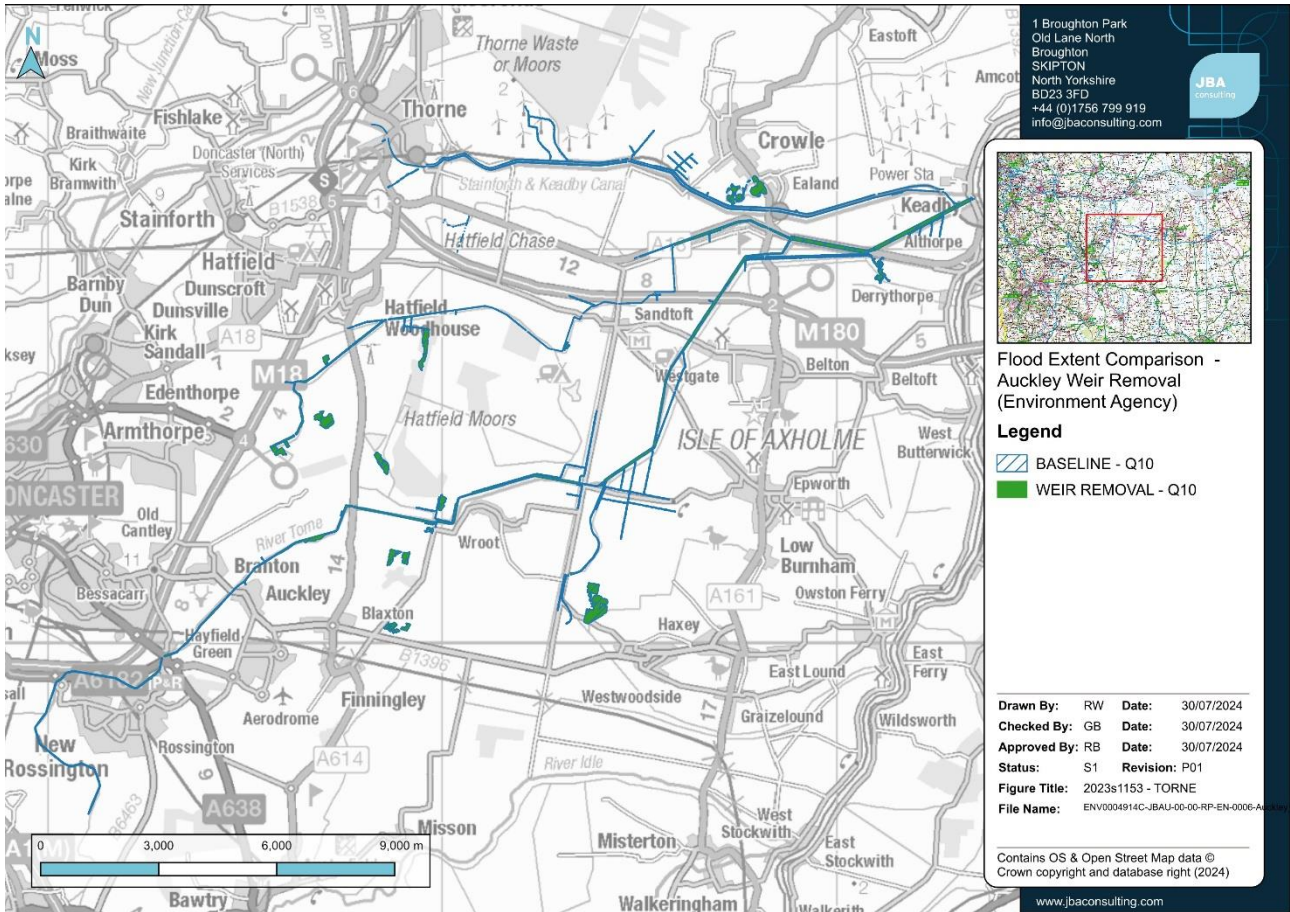


Fig. A-13: Q10 low flow event flood extent (full catchment) - baseline versus proposed weir removal

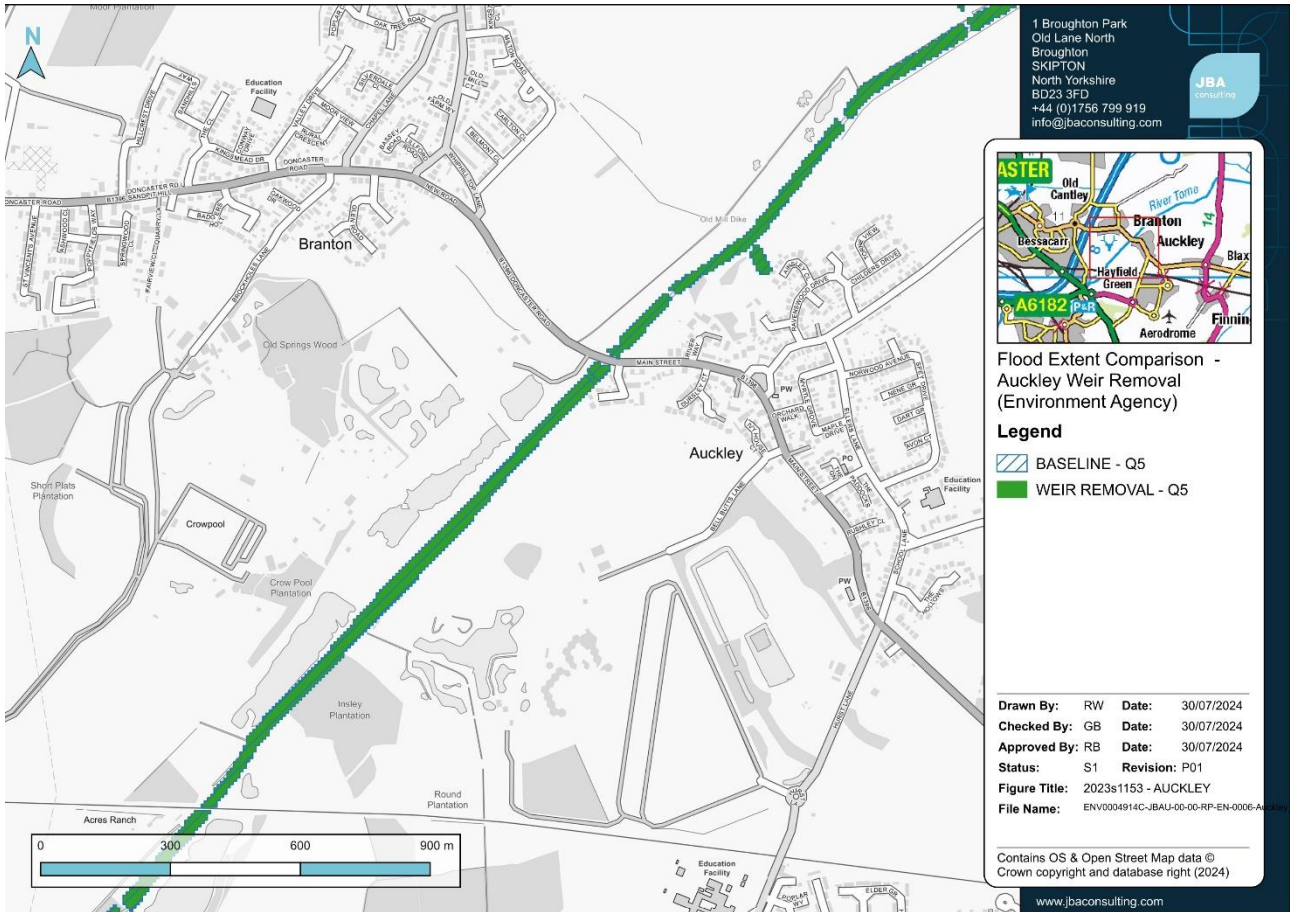


Fig. A-14: Q5 low flow event flood extent - baseline versus proposed weir removal

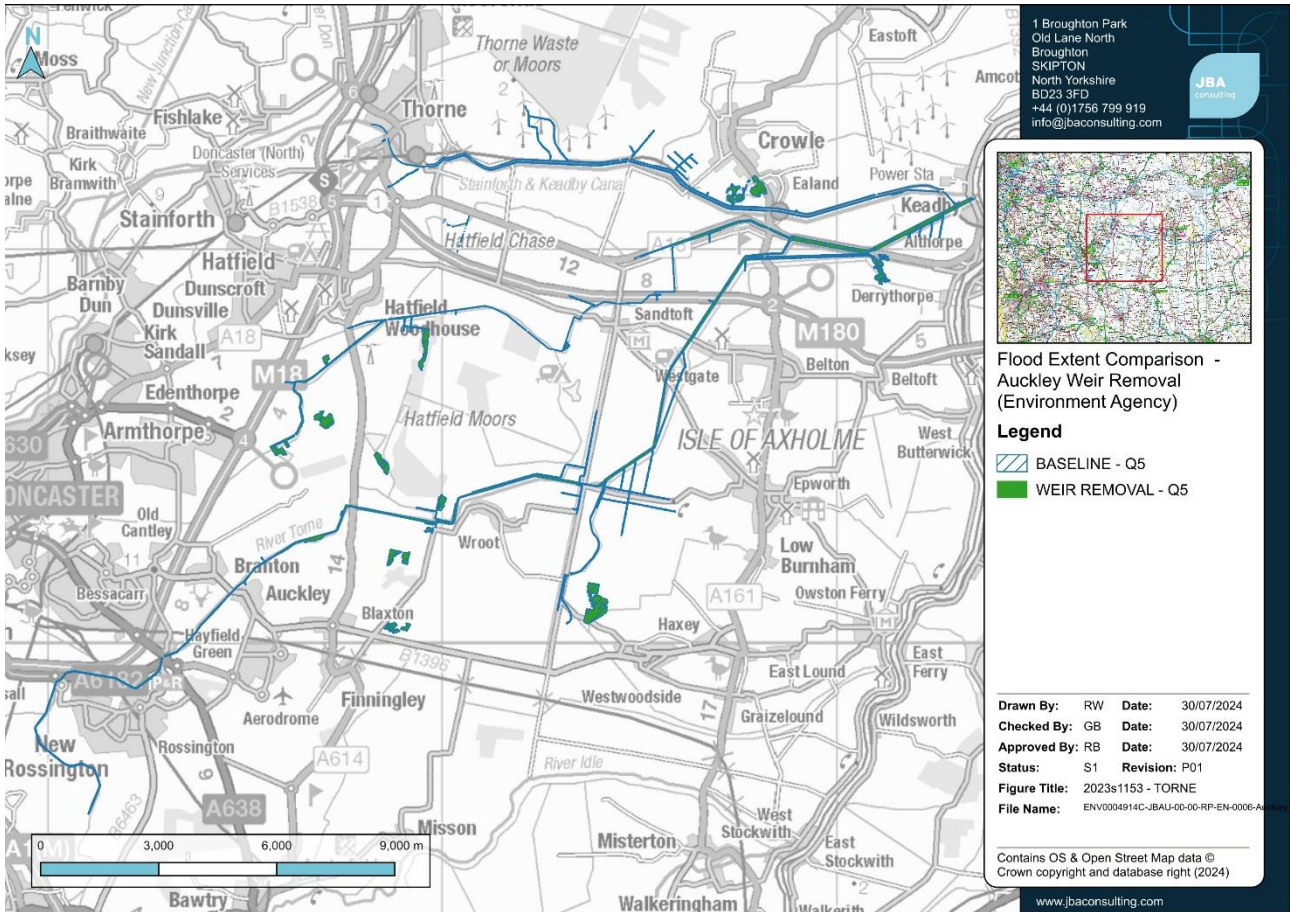


Fig. A-15: Q5 low flow event flood extent (full catchment) - baseline versus proposed weir removal

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ISO 45001:2018



**Water Resources
LICENCE TO**

IMPOUND

WATER

DRAFT

Environment Act 1995
Water Resources Act 1991 as amended by
the Water Act 2003
Water Resources (Abstraction and
Impounding) Regulations 2006

IMPORTANT NOTES

Need for safekeeping

This licence is an important document. The permission or right to impound water may be valuable to your landholding. So -

- Keep the licence safe, preferably with your deeds etc.
- Read these notes and the licence conditions carefully to ensure you have a full understanding of its meaning.

This is to ensure that the permission and any rights granted by the licence continue if you need to pass it on to someone else.

The impounding works may also be conditional on, or otherwise involve, you entering into a related agreement with the Environment Agency. This may be registered and will bind you and any change in owner of your land. This licence and any such Agreement should therefore be disclosed on any change of title or occupation.

If you want to:

- **revoke (cancel) the licence;**
- [notify us of the death or bankruptcy of the licence holder;](#)
- [vary \(change/amend\) the licence in any way](#)
- [change the owner of the licence](#) or
- [change your contact address \(but you continue to hold the licence\).](#)

You can find our forms on [.GOV.UK](#) or alternatively contact us for advice on how to make any changes by calling our National Customer Centre on 03708 506 506

Scope of this licence

This licence has effect only for the purposes of Part II of the Water Resources Act 1991 as amended by the Water Act 2003. In granting this licence, and in considering any drawings submitted, you should assume that the Environment Agency has taken into account only considerations relevant to the conservation and proper use of water resources in the area. Grant of this licence does not imply that the Environment Agency has approved the details of construction of the impounding works, including whether the proposed construction is adequate or safe. The licence holder is entirely responsible for ensuring compliance with all other requirements. Grant of this licence does not in any way suggest that these have been fulfilled.

Changes to the impounding works or revocation of this licence

If you want to alter the impounding works and/or the way you operate them, you will need to vary the terms of the licence (and, if applicable, any related agreement). If you want to revoke this licence, you may be required to satisfy certain conditions that the Environment Agency may specify for the removal of the works.

Contact us for advice if you want to vary or revoke this licence by calling our National Customer Centre on 03708 506 506.

Transfer of this licence

If you need to pass this licence to someone else, you must contact the Environment Agency and obtain the appropriate application forms. The licence holder remains responsible for compliance with the terms of the licence until it has been transferred.

Death or bankruptcy of the licence holder

'Vesting' is the transfer of responsibility and ownership of a licence when an existing licence holder is no longer able to hold the licence either through death or bankruptcy.

If a licence has been 'vested' in you, as a result of the death or bankruptcy of the licence holder, please contact the Environment Agency in writing, telling us the licence number(s) and the date that the licence vested in you as a personal representative or trustee of the licence holder. This is necessary in order to enable you to subsequently transfer the licence.

You must notify us in writing within **15 months** of the date of vesting, being either death or bankruptcy of the licence holder giving the full names of all personal representatives or trustees and a contact address

Other requirements for impoundments

Depending on circumstances, you may also have to comply with other legal requirements, i.e. apart from obtaining this licence, before carrying out or operating the impoundment. These may include:

- obtaining a [flood risk activities: environmental permit](#) (relating to structures on main rivers);
- obtaining consent under section 23 Land Drainage Act 1991 from the relevant internal drainage board or lead flood authority (relating to obstructions in watercourses);
- obtaining planning permission from your local [planning authority](#);
- complying with requirements of the Reservoirs Act 1975 (in relation to

safety of larger raised reservoirs). The Environment Agency became the regulatory body on 1 October 2004;

- obtaining consent from the owner of the other bank of the watercourse to the proposed impoundment;
- not contravening pollution control provisions of the Water Resources Act 1991, particularly in relation to allowing matter to be carried away in suspension when sluices etc. are opened;
- complying with the provisions of the Salmon and Freshwater Fisheries Act 1975 relating to the passage of fish.

Some of these matters are under the control of the Environment Agency, but for administrative and legal reasons are kept separate from the issue of this licence. If you require information or assistance about them, contact the Environment Agency, and you will be directed to the right person to help you.

For advice about planning permission contact your local planning authority.

Offences

This impounding licence authorises you, the licence holder, to obstruct or impede the flow of a specified inland water at a specified point by means of impounding works.

"Impounding works" means either, any dam, weir or other works by which water may be impounded; or, any works for diverting the flow of waters in connection with the construction or alteration of such dam, weir or other works.

Under the Water Resources Act 1991 it is an offence to construct or alter, or cause or permit any other person to construct or alter, any impounding works in inland waters or cause or permit the flow of any inland waters to be impeded or obstructed at any point by means of impounding works unless:

- an impounding licence is in force;
- the flow of the inland waters is not obstructed or impeded except to the extent and in the manner authorised by a licence;
- any other requirements of the licence, whether as to provision of compensation water or otherwise, are complied with.

It may be an offence not to comply with the other legal requirements mentioned above. For details, check with the Environment Agency or the authority concerned.

Right of appeal

If you are dissatisfied with our decision on your licence application, you have the right to appeal against our decision.

You should write to the Secretary of State for the Environment, Food and Rural Affairs, care of The Planning Inspectorate at:

Environment Appeals
The Planning Inspectorate
3A Eagle Wing
Temple Quay House
2 The Square
Temple Quay
Bristol
BS1 6PN

Alternatively you can obtain an online appeal form at:

<https://www.gov.uk/government/publications/water-abstraction-and-impoundment-appeal-form>

You must serve notice of appeal within 28 days of the date of receipt of this licence (although the Secretary of State has power to allow a longer period for serving notice of appeal). See [Water Resources Act 1991, section 43](#)

Disclosure of Information

Details of this licence are placed on a register, kept by the Environment Agency and open for inspection by the public. The public may also obtain further details about it by virtue of the Environmental Information Regulations 2004, except in special cases (for advice please contact us at the address shown on the front page of the licence).

Members of the public are also entitled to ask us for other "environmental information" we hold, including any activities likely to affect "the state of any water" or any "activities or other measures designed to protect it". That would include the information additional to the licence document e.g. any related Agreement. In certain restricted circumstances it is possible to claim that information should be kept confidential. If you require more information about keeping this information off the public register because it is confidential, please contact us by writing to the address shown on the front page of the licence within 28 days of receiving this licence.

Licence Serial No:	MD/028/0083/064
--------------------	-----------------

Please quote the serial number in all correspondence about this licence



LICENCE TO IMPOUND WATER

The Secretary of State for the Environment, Food and Rural Affairs is hereby deemed to grant a licence to:-

Environment Agency ("the licence holder")

Horizon House
 Deanery Road
 Bristol
 BS1 5AH

This licence authorises the licence holder to obstruct or impede the flow of the inland water described in the schedule of conditions (to extent and manner authorised by those conditions) to this licence and subject to the provisions of that Schedule.

The licence commences from the effective date shown below.

Signed..... **Date of issue** <day/month/2024

Deputy Director of Water Resources **Date effective** <day/month/2024

Horizon House
 Deanery Road
 Bristol
 BS1 5AH

This licence should be kept safe, and its existence disclosed on any sale of the land and the impounding works to which it relates.

Note: References to "the map" are to the map which forms part of this licence.
 References to "the Agency" are to the Environment Agency or any successor body.

SCHEDULE OF CONDITIONS

1. NAME OF INLAND WATER TO BE IMPOUNDED

- 1.1 Inland water known as the River Torne at Auckley Gauging Station, Auckley, Doncaster, South Yorkshire.

2. POINT OF IMPOUNDMENT

- 2.1 At National Grid Reference SE 64593 01217 marked 'A' on the map.

3. MANNER AND EXTENT OF IMPOUNDMENT

- 3.1 The Licence Holder shall carry out work to remove the existing impounding works and restore the site of the impounding works to the configuration and levels shown on the attached drawings so that there is no obstruction of, or impediment to, the flow of the inland water at any time after completion of the authorised works:

- i. Auckley Weir Removal, Cross Sections, revision C02, Drawing number: ENV0004914C-JBAU-00-00-DR-C-0005, dated 14 March 2024,
- ii. Auckley Weir Removal, Site Location Plan, revision C02, Drawing number: ENV0004914C-JBAU-00-00-DR-C-0001, dated 14 March 2024,

copies of which are appended to this licence document, or such minor amendments to those documents that are accepted in writing by the Agency prior to the date of commencement of construction.

4. FURTHER CONDITIONS

- 4.1 The Licence Holder shall ensure that at all times during the period from commencement to the completion of the works authorised by this licence the flow of the inland water immediately upstream of the works shall be released immediately downstream of the works undiminished in quantity or quality.
- 4.2 The Licence Holder shall remove the impoundment specified in condition 3.1 in accordance with the 'Auckley Gauging Weir Removal, Design Philosophy & Buildability Statement,' dated 27 March 2024, submitted to and approved by the Agency or such minor amendments to these documents that are accepted in writing by the Agency prior to the date of commencement of construction.
- 4.3 The Licence Holder shall, in the event of an emergency, cease the works authorised by this licence with immediate effect when so directed by the Agency, and shall not re-commence the works until further directed in writing by the Agency.
- 4.4 The Licence Holder shall notify the Agency in writing 14 calendar days inclusive before commencement of the impoundment works authorised by this licence.
- 4.5 The Licence Holder shall notify the Agency in writing 14 calendar days inclusive after the completion of the works authorised by this licence and shall provide written confirmation to the Agency from an independent qualified civil engineer, or other suitably qualified person, that the impounding works have been removed in accordance with the submitted drawings and specification specified

in conditions 3.1 and 4.2, respectively, of this licence (or such minor amendments to these documents that have been accepted in writing by the Agency).

- 4.6 This licence shall cease to be of any effect if the impounding works authorised by it have not commenced by **<<actual date 3 years from licence issue>>**.

DRAFT

ADDITIONAL INFORMATION

REASONS FOR CONDITIONS

To enable the Agency to carry out its functions under the Water Resources Act 1991 as amended.

The licence includes a 'self-destruct' condition in order to secure the proper use of water resources and to avoid commitment of water resources to an abstraction right which cannot be exercised.

IMPORTANT NOTES

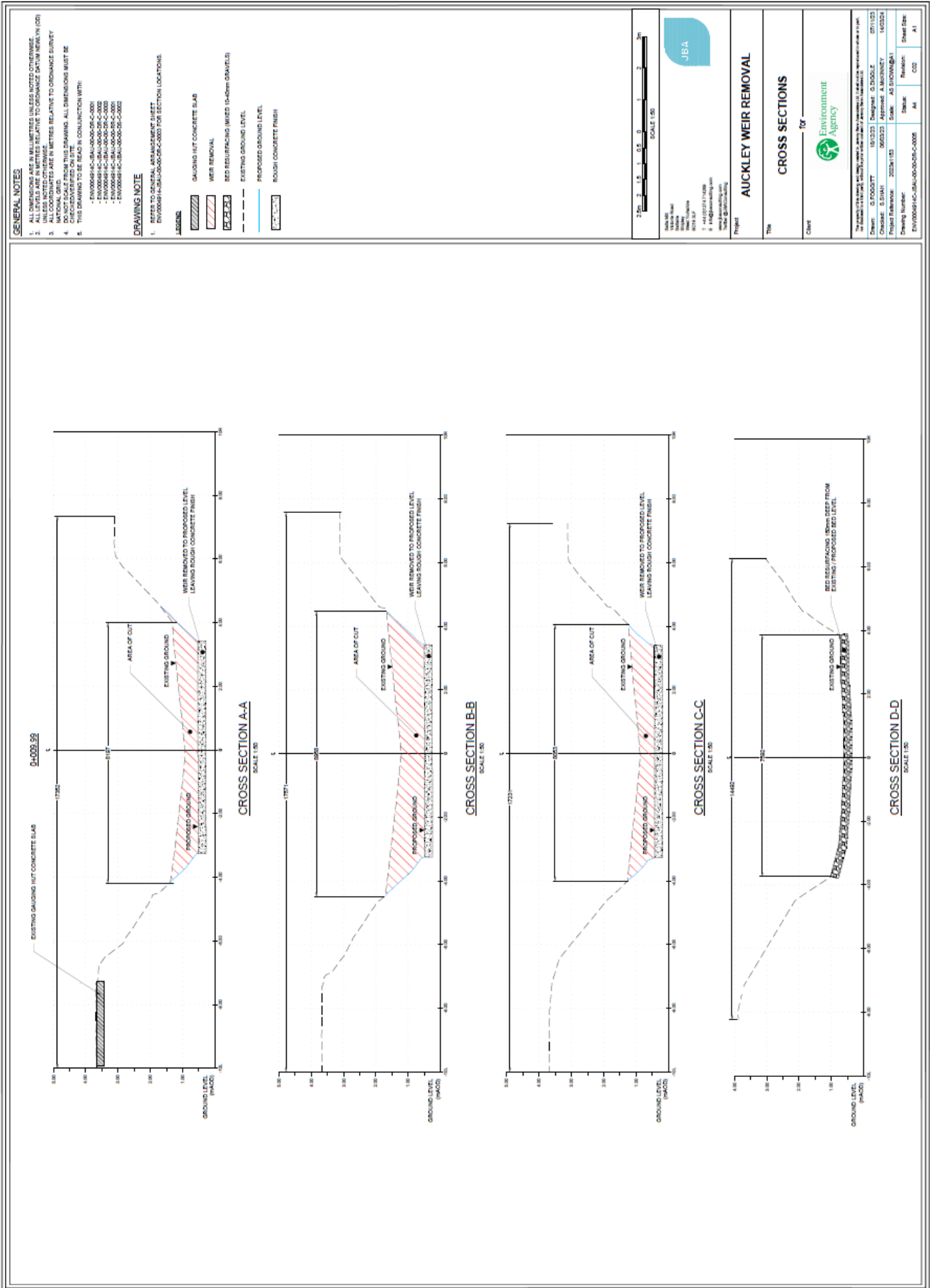
Contact details

For the purpose of condition 3.1, 4.4 and 4.5 the Licence Holder should contact the Integrated Environment Planning by email sent to waterresources.dbntls@environment-agency.gov.uk including the licence number in any correspondence.

Water voles

Water voles are located within this area and the abstraction reach is likely to be inhabited by populations of water voles. Water voles are afforded full protection under Schedule 5 of the Wildlife and Countryside Act 1981 (as amended). It is an offence to intentionally injure, kill or take a water vole or to intentionally or recklessly damage or obstruct access to their places of shelter or protection, or to disturb them whilst they are using such a place. Therefore, before any changes are made to the weir, the Licence Holder shall produce a species action plan for the works and post works and carry out any mitigation set out in that plan (such as mink trapping and planting of native species at recommended locations). Throughout the works, care should be taken to not disturb any obvious burrows and minimise disturbance of bankside vegetation and any adverse impacts on water voles' habitat.

- i. Licence number: MD/028/0083/064 - Auckley Weir Removal, Cross Sections, revision C02, Drawing number: ENV0004914C-JBAU-00-00-DR-C-0005, dated 14 March 2024.





MAP ACCOMPANYING LICENCE NUMBER

MD/028/0083/064

Scale 1: 10,000



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Permitting Decisions- Abstraction or Impounding licence

The Secretary of State for the Environment, Food and Rural Affairs is deemed to have granted this application in accordance with section 64 of the Water Resources Act 1991 for the licence for Auckley Gauging Station owned by the Environment Agency.

In determining this application, the Environment Agency has exercised its duties and powers under the Water Resources Act 1991 (as amended) and the Environment Act 1995.

The licence number is MD/028/0083/64. The application number is NPS/WR/041115.

The application is for a new impoundment licence to remove Auckley Gauging Station; a pre-existing crump weir made of concrete on the River Torne at Auckley, near Doncaster, South Yorkshire. The weir was built in 1970 and constructed to gauge the flow of the river however, the weir gauge was superseded about two years ago by newer technology a few metres downstream and once it has been licensed work will begin to remove the structure.

The removal of the weir is required to achieve a more naturalised channel width and improve instream habitat upstream. It also aims to improve accessibility to and through the channel to facilitate channel and vegetation management, while removing the liability associated with the health and safety risks of owning and operating the asset. The project will contribute towards the requirement that the Agency's assets don't cause barriers to natural migration of fish species in East Midlands WFD waterbodies. Auckley Gauging Weir is located on the WFD Waterbody Torne/Three Rivers from Mother Drain to Trent (GB104028064340).

The full extent of the removal is between SE 64591 01224 and SE 64597 01218 (approximately 7.6 metres in length and 8 metres wide). Proposed works consist of removing the weir with an excavator fitted with a breaker attachment, and it will be removed in three sections: first the centre, then the section on the right bank and finally the section on the left bank. If needed, the channel side stabilisation works will then begin. The work is expected to start in summer 2025 however, the timing of this is dependent on funding so the applicant has said it's more likely to be summer 2026. Regardless of when the work starts, the weir must be licensed before it can be removed and there are conditions included on the licence to ensure that the Environment Agency is informed before the work begins and after work has been completed.

We consider that in reaching our decision we have taken into account all relevant considerations and legal requirements and that the licence will ensure that the appropriate level of environmental protection is provided.

Purpose of this document

This decision document provides a record of the decision-making process. It:

- summarises the decision-making process in the [decision considerations](#) section to show how the relevant factors have been taken into account
- highlights [key issues](#) in the determination
- shows how we have considered the [consultation responses](#)

Unless the decision document specifies otherwise, we have accepted the applicant's proposals.

Read the permitting decisions in conjunction with the application and supporting information and the licence.

Key issues of the decision

The key issues in this determination were:

Low Flow Impacts

We questioned and investigated the impact that the weir removal would have on low flows in the River Torne and other licence holders particularly, 03/28/83/0134, 03/28/83/0109 and 03/28/83/0095 which are immediately upstream of the weir and have no hands-off flow (HOF).

The initial weir removal analysis and hydrometric modelling that the applicant submitted with their application only looked at water levels at high flows. There were concerns about the impact of the weir removal in terms of impacts to low flows and drought conditions.

The applicant submitted further analysis that looked more closely at low flow events. The study looked at low flow events at Q95 and Q70, as well as higher flows at Q50, Q10 and Q5, and the flow gauge at Auckley Weir provided the flow record. The modelling found that there were no changes in the low flow event flood extents because of the weir removal in any low flow model. There were no changes to the water levels downstream however, the weir removal would reduce the water levels upstream of the weir.

The low flow report shows the drop in water level at Q70 flows is close to Q95 flows and there was concern that upstream licence holders would struggle to

abstract at Q95 flows. The stretch of impact was expected to be up to 2km upstream, which includes three licences:

03/28/83/0134, Baxter Farms Limited –

A reach, approximately 350m long between 0.05km and 0.4km upstream of the weir. The authorised abstraction volume of this licence is 0.0189 cubic metres (m³) per second which is close to Q99 flow at Auckley weir. The HOF for this licence is 20MI/day which is equivalent to 0.231m³/second which is below Q95 at Auckley weir. Therefore, we conclude that there will be no significant impact to this abstractor as a result of the weir removal.

03/28/83/0109, Higgins Agriculture Limited –

A point, 2km from the weir removal and at the end of the upstream impacted reach. This licence has a hands-off flow (HOF) of 17.3MI/day which equates to 0.200m³/second. This is below the Q95 flow at Auckley weir, so we have concluded there to be no significant impact to this abstractor due to the weir removal.

03/28/83/0095, Yorkshire Wildlife Park –

A reach, spanning 0.28km and 1.3km upstream of the weir. This licence does not have a HOF and is a summer abstraction licence for spray irrigation. Water depth reduction could make it harder for the licence holder to abstract at low flows. However, the licence authorises abstraction at 1.14m³/minute which equates to 0.019m³/second, this is well below Q95 (0.33m³/second) so the licence holder will be able to abstract even if the flow is at Q95.

For the reasons discussed, we have concluded that there will not be significant impact on the licences upstream as a result of licensing and removing the weir.

Water Voles

The Water Resources Screening Tool (WRST) highlighted the presence of European water voles 0.08km downstream of the weir. If the water levels drop when the weir is removed it could impact the water voles as their burrow entrances may become more exposed and put them at higher risk of predation. To mitigate this, we suggested mink trapping and strategic planting of native species where vegetation along the banks is missing. A species action plan will outline what needs to be done so this will not form part of the further conditions on the impoundment licence. However, we will be adding text relating to this to the 'Important notes' section of the impoundment licence which will reference the mitigation plan.

Decision considerations

Advertising, Notification and Consultation

The advertising, notification and consultation requirements were identified in accordance with the relevant sections of the Water Resources Act 1991 (as amended) and The Water Resources (Abstraction and Impounding) Regulations 2006.

The application was advertised in a newspaper and on the GOV.UK website.

We notified the following organisations:

Statutory Water Undertaker: Yorkshire Water

Include the most appropriate option. Comments could be in response to advertising, notification or consultation:

||No responses were received.||

||The comments in response to advertising, notification and consultation and the way in which we have considered these in the determination process are summarised in the [consultation responses](#) section and in relevant sections throughout this document.||

Environmental risk

We have reviewed the applicant's assessment of the environmental risk from the impoundment.

The application included Weir Removal Analysis that used hydraulic modelling, it considered both the baseline (existing conditions with the weir in place) and the post-weir removal scenario to assess the impact of the removal. This report showed that the weir removal would reduce water levels upstream and lead to a slight increase in water velocity along the River Torne within 150m of the weir. None of the observed changes caused a change in flood risk to property in the surrounding area and the reduction of water levels led to a small reduction in flood extent.

The applicant carried out further hydraulic modelling to consider low flow events. This analysis concluded that although the weir removal would reduce water levels upstream of the weir there would be no changes to the downstream levels and no change in the low flow event flood extents as result of the weir removal in any of the low flow event models assessed. We have assessed the impact of the reduced water levels on other licence holders which has been discussed in the [Key Issues](#) section above.

The applicant's risk assessment is satisfactory and shows that all risks may be screened out as environmentally insignificant, as discussed above.

Water Environment (Water Framework Directive) Regulations 2017

The application includes an activity affected by the requirements of the regulations. A full assessment of the application and its potential to affect the water bodies has been carried out as part of the permitting process.

The removal of the weir will positively contribute towards the requirement that the Agency's assets do not cause barriers to natural migratory fish species in the East Midlands WFD waterbodies. Furthermore, once delivered, the project will benefit a further five waterbodies, two of which (GB104028058440 & GB104028058410) have reasons for not achieving good related to fish failures caused by barriers to migration.

We consider that the application will not cause deterioration within the relevant water bodies, nor prevent objectives being met.

The decision was taken in accordance with LIT 13436 'Incorporating Water Framework Directive objectives into abstraction and impoundment licensing'.

Nature conservation, landscape, heritage and protected species and habitat designations

We have assessed the application and its potential to affect sites of nature conservation, landscape, heritage and protected species and habitat designations identified in the Water Resources Screening Tool (WRST) report as part of the permitting process.

The designated sites from the WRST are:

- Humber Estuary SAC, Ramsar, SPA and SSSI –23.01km downstream from the impoundment.
- Hatfield Moors SSSI – 4.17km downstream from the impoundment.
- Hatfield Chase Ditches – 9.88km downstream from the impoundment.
- Crowle Borrow Pits – 16.99km downstream from the impoundment.

Protected species from the WRST are:

- European eel migratory route – 0.00km from the impoundment. This migratory route is not associated with a designated site where this species is a feature.
- Bullhead – 0.08km downstream from the impoundment.

- European Water Vole – 0.08km downstream from the impoundment, this has been discussed in the [Key Issues](#) section above.
- European Eel – 3.09km downstream from the impoundment.
- Mire Pill Beetle – 4.18km downstream from the impoundment.

The following migratory routes are not present at the impoundment, and we do not consider that the impoundment or its removal will have an impact on them:

- Atlantic Salmon migratory route – 7.01km downstream from the impoundment.
- River Lamprey migratory route – 7.01km downstream from the impoundment.
- Sea Lamprey migratory route – 7.01km downstream from the impoundment.
- Allis Shad migratory route – 7.02km downstream from the impoundment.
- Twaite Shad migratory route – 7.02km downstream from the impoundment.
- Smelt migratory route – 7.02km downstream from the impoundment.
- Tubular Water-dropwort – 16.87km downstream from the impoundment.

The hydraulic modelling used in both the Weir Removal Analysis and the Low Flow Analysis demonstrated that the downstream water levels would remain unchanged. Furthermore, the weir is being licensed to then be removed to improve fish passage in the channel.

We consider that the application will not affect any site of nature conservation, landscape and heritage, or protected species or habitats identified, and no further assessment was needed.

The decision was taken in accordance with LIT 12467 'Screen & assess new WR permissions for conservation, heritage & landscape impacts'.

Protected rights and lawful users

We have assessed the application and its potential to affect protected rights and lawful users identified via the Water Resources Screening Tool and manual screening as part of the permitting process.

We consider that the impoundment will not affect any identified protected right or lawful user. This is discussed in more detail in the [Key Issues](#) section above.

Other considerations

We have carried out an assessment of the environmental risk of the impoundment, including flood risk, archaeology, recreation/amenity, subsidence

and desiccation. The assessment shows that all risks may be screened out as environmentally insignificant.

Justification of Need

The weir removal project will provide a fish passage solution for the EA owned Auckley Gauging Weir linked to Water Resources policy “Fish and eel passage maintenance at WLB assets”.

The impoundment is an Environment Agency owned asset, built in 1970, but is no longer required as a gauging station and has been replaced with newer technology downstream. The project will contribute towards the requirement that the Environment Agency assets don't cause barriers to natural migration of fish species in the East Midlands WFD Waterbody Torne/Three rivers from Mother Drain to Trent (GB104028064340). It will also work to create a more naturalised channel width and improve instream habitat upstream. The weir removal will improve accessibility to and through the channel to facilitate channel and vegetation management, while removing the liability from the Environment Agency associated with the health and safety risks of owning and operating the asset. Once delivered the project will also provide benefit to a further five WFD waterbodies, two of which have RFNAGs related to fish failures and barriers to migration (GB104028058440 & GB104028058410) and open up 17km of river to fish.

The business case for this project was approved by the Environment Programme Technical Specialist on 26 July 2022 and by the Area Environment Manager on 3 August 2022.

Water efficiency

We consider the techniques proposed by the applicant to be appropriate techniques for the activity.

Licence Conditions

The conditions incorporated on the licence are considered to be necessary and reasonable in the light of the available and presented evidence. The conditions are also considered to be clear enough to be enforced by us and understood by the Licence Holder.

Operating techniques

We have reviewed the design specifications proposed by the applicant for the impoundment and we consider them to be appropriate in order to carry out the work to achieve a more naturalised channel at the Auckley Gauging Station Weir.

Consultation Responses – to be completed once the licence has been advertised.

This section is only for if we received external consultation responses or representations. All internal consultation responses should be included in the relevant earlier sections, written in the Agency voice.

We should only consider issues raised through consultation once. If you have discussed the issue in another section already, just summarise the comments received here and refer back to the other section.

||The following summarises the responses to consultation with other organisations, [newspaper advertising and statutory notifications,] and the way in which we have considered these in the determination process.||

||Responses from organisations listed in the consultation section:

Response received from [insert name of organisation].

Brief summary of issue[s] raised: [summarise issues raised].

Summary of action[s] taken: [add actions or show how this has been covered].||

Only add the actions we have done, not third-party actions.

Repeat for each response.

||Representations from individual members of the public, community and other organisations||

Common responses can be considered and summarised together.

||Brief summary of issue[s] raised: [summarise issues raised]||

Do not name individuals.

||Summary of action[s] taken: [add actions or show how this has been covered]||

Only add the actions we have done, not third-party actions.

Repeat for each **issue raised**, not response received.

We need to publish a decision statement and include the below sentence if we receive more than 10 representations. The decision statement is published to our website.

Refer to [LIT 15722 How to publish water resources licence decision statements to the internet](#)

||More than 10 representations were received so a decision statement has been published to Gov.uk website on [Insert date].||

The application was referred to Defra on XX XX 202X. Defra replied by <email / letter> on XX XX 202X to confirm they are not calling the application in for the Secretary of State to determine (see DMS).

DRAFT