

Hydro and Wind Consultancy, Design & Installation Securing a clean energy future, profitably

Worth House Hydroelectric Power Scheme

Flood risk assessment.

Document Control

| Version | Date of Issue | Author(s) |
|---------|---------------|--------------|
| 01 | March 2023 | Adrian Ezard |



 Renewables First Ltd
 Phone
 +44 (0)1453 88 77 44

 The Mill
 Fax
 +44 (0)1453 88 77 84

 Brimscombe
 Email
 info@renewablesfirst.co.uk

 Stroud, Glos, GL5 2QG
 www.
 renewablesfirst.co.uk

-Intentionally blank-



Renewables First – Company

Renewables First is one of the UK's leading hydro and wind power specialists and has been delivering hydro and wind projects for over ten years. We provide all of the services from in-house resources to take a project from initial feasibility stage, through all of the consenting and engineering design stages and on to construction and commissioning. We use our experience of the installation and operational phases to provide feedback into the design stages of the next projects, ensuring that our customers benefit from our whole-project exposure.

Contents

| 1 | INTRODUCTION | 2 |
|---|--------------|---|
| 2 | FLOOD RISK | 2 |
| 3 | CONCLUSIONS | 3 |



1 Introduction

This document accompanies the water resources abstraction licence application and hydroelectric power scheme application for the proposed hydroelectric power (HEP) scheme located at Worth House, Lower Washfield, Tiverton, Devon.

An overshot waterwheel system is proposed for installation just downstream of the weir on the site.

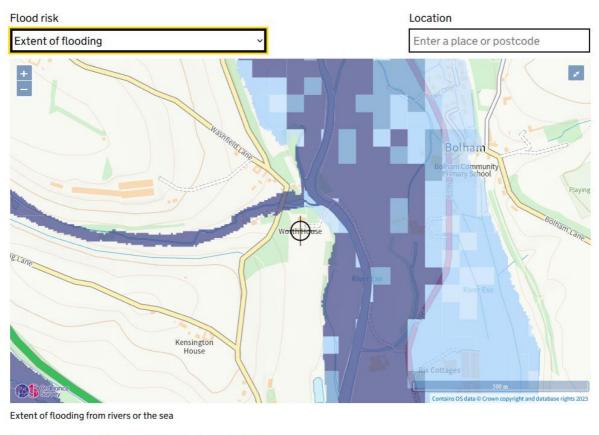
The installation will transfer the water from the upstream pond via the waterwheel to the bed of the stream below. The rotating wheel will drive a gearbox to run a generator and produce power.

The proposed installation has been assessed for possible flood risk and the flowing assessment made.

This summary is to be read alongside the Product 4 Report

2 Flood Risk

The image below shows the extent of flooding from Rivers or the Sea as indicated by the <u>https://check-long-term-flood-risk.service.gov.uk/</u> website.



● High ● Medium ● Low ● Very low ↔ Location you selected

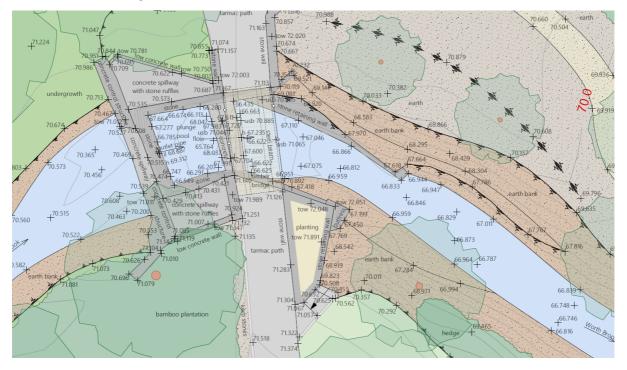
The 1% AEP with 85% climate change allowance flood level for the River Exe adjacent to the site is 69.67 mAOD (refer to the Product 4 Report for the site). All control equipment will be located in an existing building on site above this flood level.

All of the equipment located within the river will be flood resilient with the exception of the generator. It is not practical to locate the generator above the 1% AEP with climate change allowance level.



However, it is possible to locate it above the 1% AEP. If the flood level were to exceed this, the generator would be replaced as it is a low-cost item.

The topographic survey below shows the area where the wheel will be located. This confirms the wheel would be nearly fully submerged during a 1% AEP event but there would be no other impact outside of the existing channel.



3 Conclusions

This proposed HEP scheme would not affect the modelled flood levels, or be affected by them in any way that has not been catered for in the design.