SITE:	Land to the east of Titley Wastewater Treatment Works, Titley, Herefordshire
TYPE:	Planning Permission
DESCRIPTION:	Proposed creation of an Integrated Constructed Wetland.
APPLICATION NO:	222619
GRID REFERENCE:	OS 348961 - 263522
APPLICANT:	Mr David Jones
AGENT:	Mr Ed Thomas

Our knowledge of the development proposals has been obtained from the additional sources following our initial consultation response in October 2022 and subsequent correspondence with the Agent:

- Topographical survey;
- Indicative Section Through the Outfall (11.1.23);
- Titley Wetland Cell Design Options (10.11.22);
- WUF Response to Titley Planning Queries (06.10.22).

Overview of the Proposal

The Applicant proposes the creation of an Integrated Constructed Wetland (ICW) on arable farmland. The ICW will be connected to the final effluent discharged from the local Wastewater Treatment Works (WWTW) to provide enhanced treatment to benefit the local watercourses.

The site covers an area of approx. 0.72ha with 0.28ha to be directly utilised for two shallow wetland cells, with surface areas of 2,800m² and 2,346m² and will be excavated to an average depth of 400-700mm. They will be planted with dense emergent vegetation surrounded by seasonally inundated wet grassland areas.

A drainage ditch on the western boundary of the site flows north to south. There are three shallow ditches in the southern area of the site.

The topography of the site slopes gently to the southeast.

Flood Risk

Fluvial Flood Risk

Review of the Environment Agency's Flood Map for Planning (Figure 1) indicates that the site is located within the low probability Flood Zone 1. This is summarised in Table 1:

Table 1: Scenarios requiring a FRA

	Within Flood Zone 3	Within Flood Zone 2	Within Flood Zone 1
Site area less than 1ha	FRA required	FRA required	FRA not required*
Site area greater than 1ha	FRA required	FRA required	FRA required

**except for changes of use to a more vulnerable class, or where they could be affected by other sources of flooding*

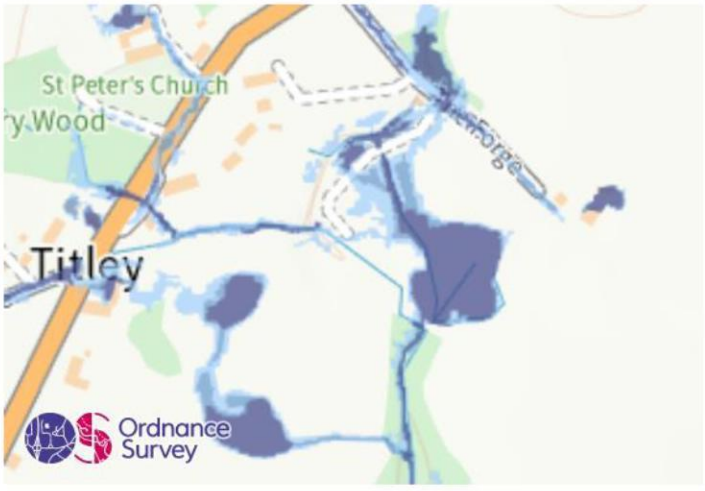
Site Location

Figure 1: Environment Agency Flood Map for Planning (Rivers and Sea), October 2022

Surface Water Flood Risk

Review of the EA's Risk of Flooding from Surface Water map indicates that the site is at risk of surface water flooding.

Figure 2: EA Surface Water Flood Map, October 2022



Extent of flooding from surface water

High Medium Low Very low

We understand that any excavated material as part of the development will not be used to build up the land and existing overland flow routes will not be impeded or diverted. However, given the nature of the proposed development, the risk of surface water flooding is not a significant cause for concern.

Other Considerations

Review of the EA's Groundwater map indicates that the site is not located within a designated Source Protection Zone or Principal Aquifer.

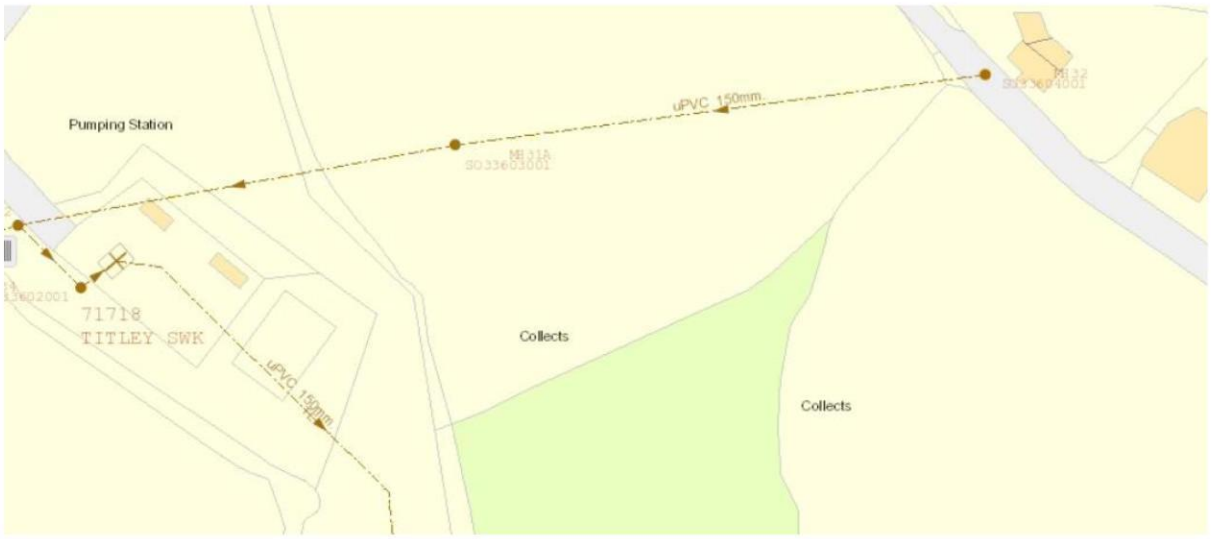
Wetland Scheme Design

The Applicant has stated that the site topography will allow the wetland to be gravity fed from the Wastewater Treatment Works into the ditch to the west of the wetland, which feeds into the River Arrow and ultimately the River Lugg. The two ponds will have a piped connection between them as well as a piped connection from the WWTW into Cell 1 and then to the outfall into the ditch from Cell 2.

The underlying clay will be rolled to make it impervious, and a clay cut-off wall has been recommended.

We note that there are no civil engineering drawings within the submission, however we not that sufficient evidence has now been submitted to suggest that a gravity fed discharge through the wetlands is viable.

The location of the wetland cells have been revised and reduced in size to avoid the Dwr Cymru pipeline, leaving at least 3m between the pipeline and edge of the wetland cells.



We note the proposals to divert effluent from the treatment works, across the watercourse via a pipeline, to the wetlands. The pipe material is not specified. The pipe will need to be flanged to avoid the risk of effluent leaking from pipe joints into the watercourse. Most watercourses are less than 2m deep.

We understand that vehicle access for the site will not need to cross any watercourses.

Effluent will discharge via the respective outlet pipe into the open ditch. The size of the discharge pipe is shown as been 200mm. During rainstorms water will drain out of the wetland, this may impact the selection of pipe size. There is a risk that sediment will be disturbed during storms, so a Civil Engineering design will need to be developed for the headwall.

The Applicant will need to request Ordinary Watercourse Consent for any civil engineering structures on the banks of the watercourse.

Overall Comment

Although sufficient evidence has been submitted to suggest a gravity fed discharge is viable, we note that detailed drainage design has yet to be completed for the site and that the feasibility study is incomplete. These are fundamental elements of the design proposal which will need to be addressed at Discharge of Condition.

We understand that the Applicant has responded to our request for further information, however as levels etc are subject to change as the project progresses, the following information will need to be requested in suitably worded conditions:

- Civil engineering drawings and cross sections, including details of the inlet pipe crossing the watercourse.
- Submission of correspondence with Welsh Water to confirm the location of the rising main, pipe diameter and the invert level of the existing outlet pipe from the treatment works, to confirm a gravity fed design.
- Confirmation of how discharge flows into both the wetlands and final outflow into the ditch will be restricted to prevent scouring.
- Confirmation that a request will be made to Welsh Water for the sewer mapping to updated with the private asset.
- The Applicant should confirm future plans for the existing foul water discharge outfall into the ditch and whether a phased approach will be implemented to start utilising the wetland area.