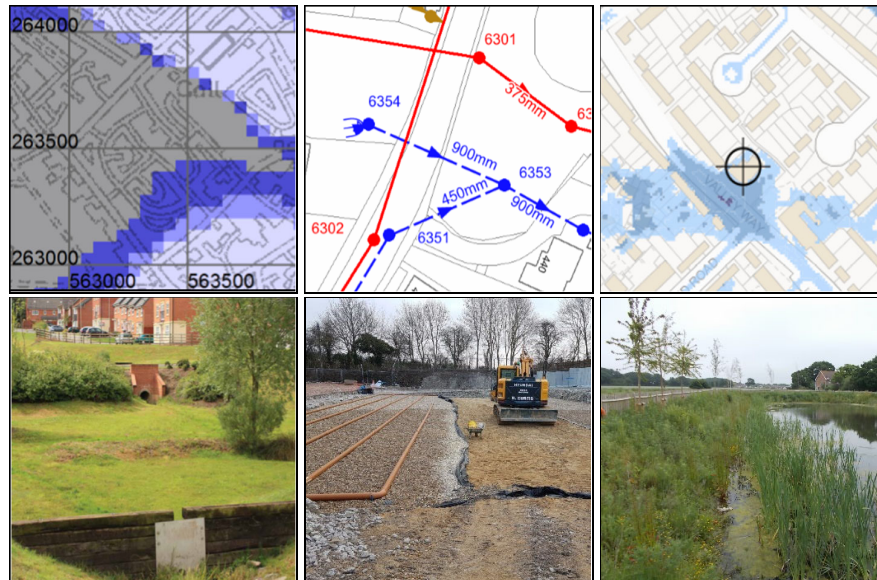




Nutrient Assessment & Budget

Swan Orchard, Swan Meadow Pewsey, Wilts

Reference: 25234

Issue: **Date:**

1	22/12/2025	To NE 16/03/2022 methodology with replacement NE calculator May 2025
2	5/1/2026	Land use revised

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B	Wastewater Treatment Information
C	Nutrient Assessment & Mitigation
D	Conditions & Limitations

1. Introduction

- 1.1 Instructions were received from Fowler Architecture and Planning to undertake an assessment of the nutrient impact for the development of 2 dwellings on land at Swan Orchard, Swan Meadow, Pewsey Wilts.
- 1.2 This assessment has been undertaken by A P Traves BSc CEng MIStructE MCIHT.
- 1.3 The client's attention is drawn to the conditions and limitations contained in Appendix D.

2. Development Description & Location

- 2.1 The site comprises 0.13Ha of greenspace at Swan Orchard, Swan meadow, Pewsey, Wilts. The site is indicated on Fowler Architecture and Planning location plan 231214-01 contained in Appendix A of this report.
- 2.2 It is proposed to develop the site for 2 dwellings. The proposed layout out is shown on Fowler Architecture and Planning site plan 231214-02 contained in Appendix A of this report.

3. Background to Nutrient Assessment

- 3.1 The background to the issue is set out in current Natural England- Nutrient Neutrality Generic Methodology dated 1 February 2022 (NE-gen1). NE- gen1 was issued to LPAs on 16 March 2022 and the calculator was replaced in January 2024 to take account of upgrade of public Wastewater Treatment Works (WwTW) defined by the Levelling Up and Regeneration Act 2023. The calculator was replaced again in May 2024 and most recently May 2025 to reflect further scheduling from the Levelling Up and Regeneration Act 2023.
- 3.2 The Hampshire Avon Special Area of Conservation (SAC) is is protected under the Water Environment Regulations and the Conservation of Habitats and Species Regulations. There are high levels of phosphorus nutrients in these waters and the evidence indicates these nutrients are causing eutrophication of the waters (excess mats of dense green algae which deplete oxygen as these subsequently decay)
- 3.3 The total nutrient content comes from a number of component parts:
 - i. Agricultural use of fertilisers, particularly in the latter half of the 20th century
 - ii. General coastal background content
 - iii. Nutrient within final discharge from sewage treatment works
 - iv. Diffuse urban rainfall runoff from urban surfaces
- 3.4 Since the late 1980's and early 1990's the agricultural sector has reduced the nutrient content in applied fertiliser by around 35%. However, the Chalk aquifers which underly the region and which are the dominant source of river flows into The Solent contain a massive amount of legacy nitrogen mainly in the form of soluble nitrate, from decades of previous agricultural practice. It is anticipated that it will take decades from now for the nutrient content in groundwater to gradually reduce.
- 3.5 It has been recognised by the Environment Agency, water companies and OFWAT for some time that improvement of the Total Phosphorus (TP) content of discharge needs to be addressed. The water industry works in 5 year spending cycles/programmes referred to as Asset Management Plans (AMPs) and these three parties agree between them how much investment (which comes from increases in sewage bills) can be made in any AMP and what will be delivered in terms of improvement for the investment permitted (affordable). It is not practicable to strip 100% of the Phosphorus from the sewage, and the previously upgraded treatment works typically operate to a new TP permit level of around 1 mg/L compared to typical value of around 8 mg/L for traditional works without TP permit limits.

- 3.6 Treatment works upgrades are difficult and complex to plan and deliver in the context of three of the main constraints:
- There is little space at most works for the finished new infrastructure
 - The existing works has to continue to operate during the upgrade and there is little room for this and the working space needed to construct the new infrastructure.
 - The investment cashflow is regulated by OFWAT against bill increases and notwithstanding this there are a finite number of specialists to plan and deliver this so there can only be a limited rate at which the upgrades are delivered.
- 3.7 The introduction of WwTW upgrades through the Levelling Up and Regeneration Act 2023 appears to have been programmed to match the AMP cycle in that the initial tranche of upgrades have been scheduled in January 2024 which coincides with Price Review 2024 (PR24) in which OFWAT and the water industry agree the AMP8 2025-2030 works programme. The initial tranche of upgrades now required have to be delivered by 2030 which coincides with the end of the AMP8 period. It seems likely that the Secretary of State would in future review and update scheduling in the year preceding the next PR ie in 2028 for PR 2029 as the Levelling Up and Regeneration Act requires a minimum period of 7 years allowed for upgrades from scheduling which would coincide with the period of the impending AMP at that time ie AMP9 2030-2035.
- 3.8 The NE-Avon-v1 methodology is aimed at planning permissions for proposed developments and does not address agricultural practice or the water industry AMP process. The NE-Avon-v1 methodology is built off a single fundamental premise. This assumes that persons at work or using non-residential offices and commercial/retail premises must also live in the catchment. In the round this is a reasonable basis on which to look at the total sewage volume. However in zero rating commercial development from phosphorus loading it inherently means that residential developers fund the Phosphorus nutrient mitigation of all non-residential commercial development in the region.
- 3.11 Natural England nutrient assessment methodology NE-Avon-v1 considers phosphorus for:
- 1) Land use with regard to phosphorus contained in surface water run-off and infiltration.
 - 2) Sanitation with regard to nutrient content in the final treated discharge from the WwTW serving the development.
- The assessment compares pre and post development quantities on nutrient for the land use (1) and sanitation (2) to establish a final figure and then adds a 20% buffer to this.
- 3.12 Natural England advise the NE-Avon-v1 methodology is advised for all types of development that would result in a net increase in population served by a wastewater system, including new houses, student accommodation, tourism attractions and tourist accommodation.

4. Derivation of Sewage Load

- 4.1 The NE-Avon v1 methodology used a blunt 2.4 average household occupancy and 110 litres per person per day (LPD) for housing.
- 4.2 NE-Avon-v1 now recognises that water consumption on sites varies:
- Building Regulations maximum 125 LHD
 - Building Regulations higher standard 110 LHD
 - Higher standard by water efficiency calculation
- NE-gen1 directs that the level of proposed water usage is increased by 10 LPD *“to account for changes to less water efficient fittings through the lifetime of the development”*. This direction is contrary to the industry direction of travel, Southern Water’s own water supply policies which NE recognise in their February 2022 advice note regrading water neutrality within the Sussex North Water Supply Zone and associated Frequently Asked Questions document (December 2021) in which this demonstrates explicit awareness of Southern Water’s Target 100 *“to reduce water consumption in Southern Water’s whole water supply*

area in the long term (not just Sussex North), as set out in their Water Resources Management Plan.” The evidence therefore points to a long term reduction in use NOT a long term increase.

- 4.3 There is a further fundamental error in that sewage load is less than not equal to water use. Water efficiency calculations include a 5 LPD for external use that is not returned to the sewer so does not form part of the sewage load. In water metered properties sewage bills are calculated at 95% of the water supply volume in recognition of this.
- 4.4 The calculations attached to this report have been undertaken on the basis of 110 LPD unless a water efficiency calculation has been provided to us and is attached. A +10 LPD has been added as directed by Natural England. The liability and accountability for the impact of this direction rest with Natural England as current evidence set out in 4.2 and 4.3 above indicates their current approach is unsound.

5. Wastewater Treatment Works

- 5.1 Foul water discharge from the site will outfall to the public sewer network and will be conveyed to Wessex Water’s Pewsey WwTW about 1km west of the site. The Natural England calculator uses a Total Phosphorus permit limit of 1.0 mg/L for Pewsey WwTW. The WwTW location plan is contained in Appendix B.
- 5.2 Pewsey WwTW has been scheduled under the Levelling Up and Regeneration Act 2023 (LURA) to implement upgrade of TP performance to 0.25 mg/L TP by April 2030. The Minister for Housing, Planning and Building Safety issued a letter dated 19th December 2023 to LPAs identifying to them that LURA would come into force from 26th January 2024 and that “*The Act also requires planning decision-makers to consider these upgrades as certain for the purposes of an assessment under the Habitats Regulations.*”.

6. Land Use Component

- 6.1 The site comprises 0.13 Ha of greenspace. There will be a small change in nutrient from the land use component as a result of the proposed development.
- 6.2 It is not at this time known for certain if SUDS provision on the site would meet all the criteria to qualify for any discount/reduction in the post development (Stage 3) figure from the base calculation load in surface water runoff. Ergo for assessment purposes a precautionary approach has been taken and no reduction in the post development (Stage 3) figure from the base calculation load in surface water runoff to which 6.1 relates has been claimed. This part of the calculator therefore has a null value for the assessment.

7. Nutrient Assessment

- 7.1 The NE-gen 1 sewage loading, WwTW performance for TP and land use component are included in the calculations contained in Appendix C.
- 7.2 Due to the enactment of the **Levelling Up and Regeneration Act 2023**, the Secretary of State has set a default TN upgrade performance of 0.25 mg/L TP for Pewsey WwTW to be achieved by a default 1 April 2030 date.

The calculations therefore indicate two values one pre upgrade (notionally 2030) and one post upgrade.

	2026-2030 (4 years)	2030-perpetuity (∞ years)
TN	+0.48 Kg TP/yr	+0.31 Kg TP/yr

- 7.3 The nutrient credit market is evolving in response to the interim differential pre and post 2030 from the Levelling Up and Regeneration Act 2023 scheduling. We understand that

credit providers are evolving their contracts to part buy part rent basis to address the ever decreasing transitional period until 2030. The required credits for part buy part rent are:

Permanent credits (buy)	0.31 Kg TP/yr
Rental credits 2025-2030 period	<u>0.17 Kg TP/yr</u>
	0.48 Kg TP/yr

8. Mitigation

8.1 NEv5 Figure 1 subdivides the overall Solent catchment into 6 sub catchments. A copy of this Figure is contained in Appendix C.

8.2 Wiltshire Council has a strategic approach in place for planned development.

(Planned development is defined as 'applications that comply with housing site allocation policies (Appendix D, Wiltshire Core Strategy) and or Core Policy 2 (Delivery Strategy) of the Wiltshire Core Strategy with the exception of Core Policy 37 (Military Establishments). These include:

- *Allocations within the development plan - Wiltshire Core Strategy (including saved policies), Wiltshire Housing Site Allocation Plan and Neighbourhood Plans (Core Policy 2)*
- *Proposals within settlement boundaries and infill at Small Villages (Core Policy 2)*
- *Rural exception sites (Core Policy 44)*
- *Outside settlement boundaries - only specialist accommodation, gypsy and travellers, rural workers dwellings, conversion and re-use of rural buildings consistent with policy (Core Policy 46,47 and 48)*

This means that speculative greenfield applications outside of settlement boundaries that are contrary to the development plan (Core Policy 2) are not classified as planned development.

8.3 Wiltshire Council Hampshire Avon; Strategic mitigation scheme:

Strategic mitigation is being delivered by the Council on behalf of developers, providing that burdens are avoided and mitigated on site as far as practicable. This can be achieved by certain types of sustainable urban drainage systems (SuDS).

The strategic approach is not applicable to unplanned development or industrial, agricultural or tourism applications.

8.4 CIRIA C808F sets out how SuDS can be used to reduce/minimise the amount of phosphorus that arises from urban runoff. The guidance can be applied at both outline and full planning application stage, with measures that can be adopted on small sites as well as larger sites. It is expected that new developments will adopt this approach where practicable.

There is currently no geotechnical investigation information on the site soils and groundwater regime at this time so the calculations contained in section C have taken a precautionary approach..

INFORMATIVE

1) There is no evident right of assignment or buy back for the 0.17 kg (approx. £7,000) that would no longer be needed come 2030 (or possibly before) from the WC mitigation scheme. This is all very opaque at present and leads to an inference of not being able to sell back the 35% unused credits come 2030 (or before). It does not align with the new government move to delivering 1.5M new homes or to making these more affordable as at present come 2030 the applicant would otherwise be sat £7,000 out of pocket so will have passed this on to purchasers by means of a larger sales price. It also does not make best use of the credits as 0.17 kg would otherwise return to the credit pool come 2030, whereas

at present the pool will be 0.17kg short of what it would otherwise have had come 2030 (more so when all the other current sites the current mentality will be affecting are also included). The LPA response on other recent assessments makes plain that the LPA are not proactive in promoting a pragmatic and sustainable long term approach but are currently sitting back and using NE as a political shield. Natural England are not a body with responsibility for planning decisions they are an advisory body. The combination of the historic monopoly position of the WC mitigation scheme and lack of will of the LPA to adopt a pragmatic sustainable position in decision making is effectively co-ercing small developments into use of the WC mitigation scheme. We understand that this stance by WC is rendering some small conversion developments now unviable until 2030 unless and until the government issue a directive to LPAs to accept a more pragmatic and sustainable approach for the short term transitional period. The present stance is having an adverse and detrimental effect on the ability to deliver 1.5M new homes, particularly affordable ones that such city centre conversions would deliver.

2) At present the WC mitigation scheme only provides permanent credits. The need for temporary credits covering the short term differential until 2030 has just begun to be recognised by NE and LPAs, and Dorset Council have just opened the first temporary credits arrangement albeit for the Poole Harbour catchment. This provides a template approach for other LPAs to follow elsewhere around the UK. We recommend that you enquire with your case officer as to what progress WC have made towards a similar mechanism for temporary credits for the Hampshire Avon.

8.5 Other mitigation schemes are beginning to come to market and subject to confirmation of suitability by WC the following mitigation providers may be able to provide mitigation credits:

- Environmental Farmers Group (EFG) scheme at Trafalgar Fisheries, Downton. EFG Agent Tom Vacher tvacher@gwct.org.uk
- BioDiverse at various locations contact Martin Taylor info@bio-diverse.com

Other schemes may be coming on line. Enquire with your case officer for the most up to date position.

8.6 The applicant proposes to purchase nutrient mitigation credits to mitigate the impact.

Appendix A

Location Plan

1:1250



revisions	initial	date
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Contractors, Sub Contractors and Suppliers are to check all relevant dimensions and levels of site and buildings before commencing any shop drawings or building work.

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project
SWAN ORCHARD
Pewsey, Wiltshire

drawing
Location plan

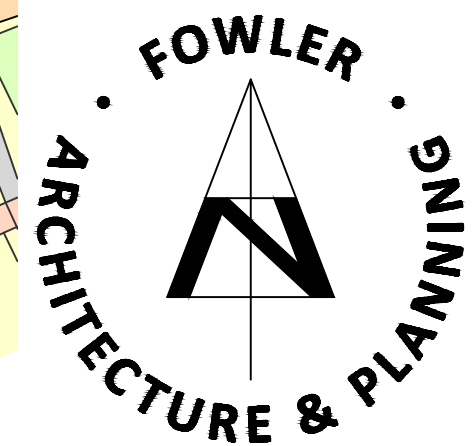
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DB

date
Aug '25

231214-01
drawing no

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rev



39 High Street
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Wiltshire
SN9 5AF
tel (01672) 569444
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KEY

New tree

Existing tree

Tree to be removed

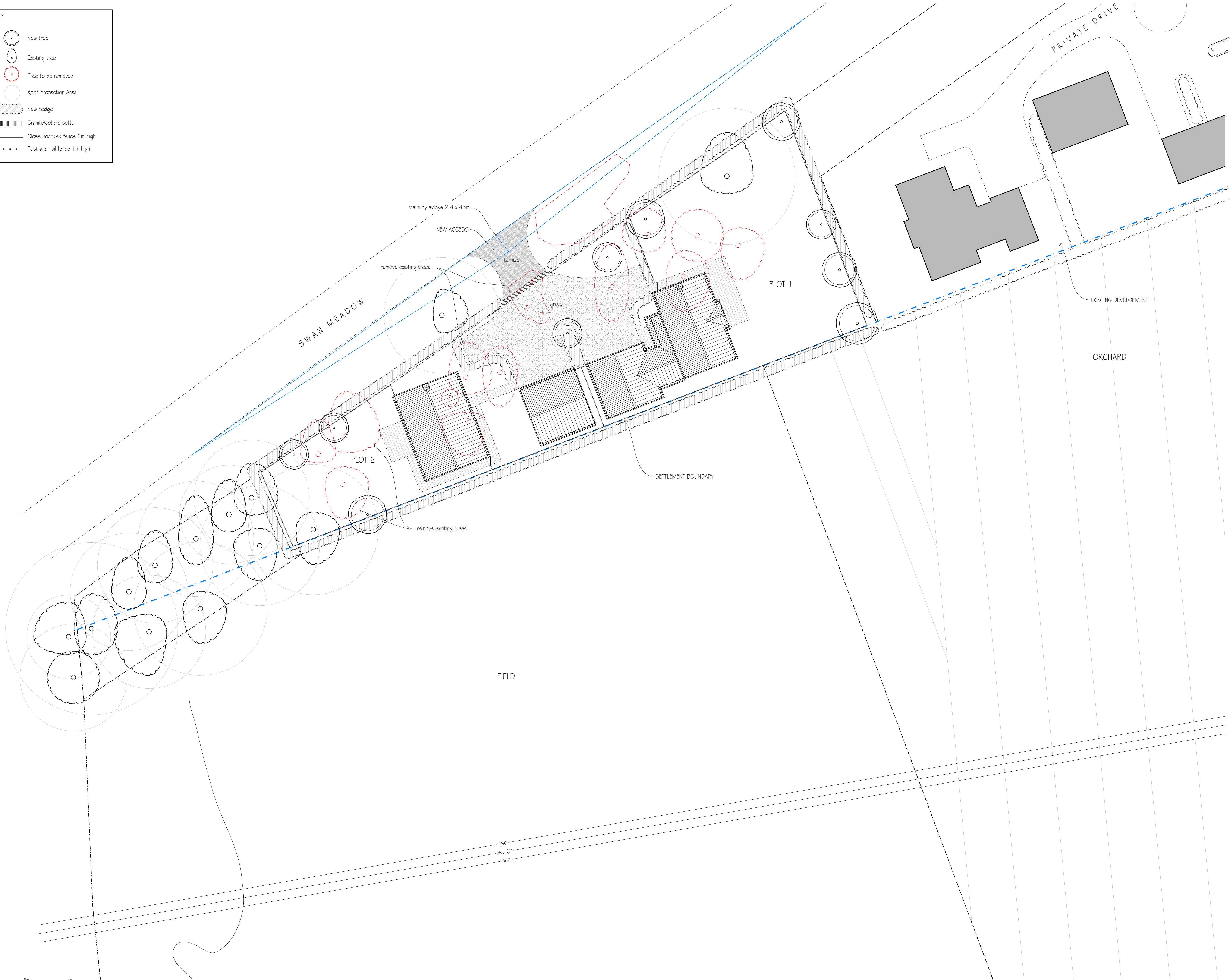
Root Protection Area

New hedge

Grante/cobble setts

Close boarded fence 2m high

Post and rail fence 1m high



revisions	initial	date
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Contractors, Sub Contractors and Suppliers are to check all relevant dimensions and levels of site and buildings before commencing any shop drawings or building work.

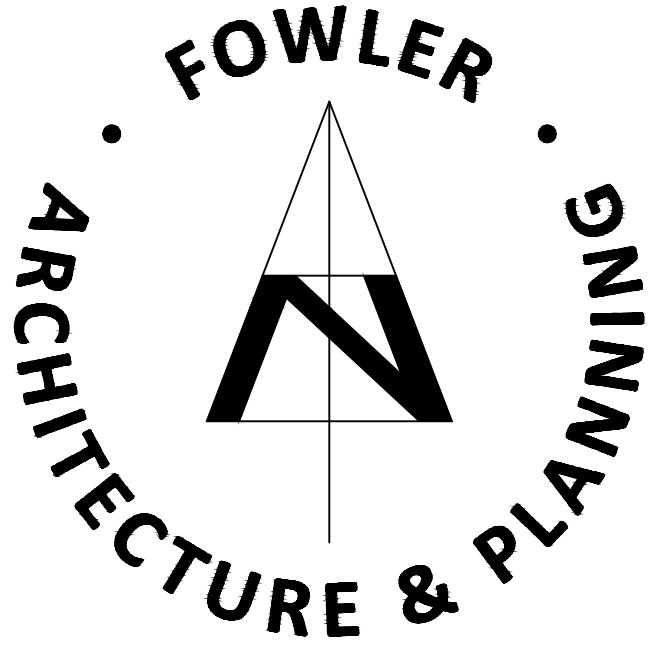
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project
SWAN ORCHARD
Pewsey, Wiltshire

drawing
Site Plan

scale	drawn by	date
1:200 @A1	BL	Oct 2025

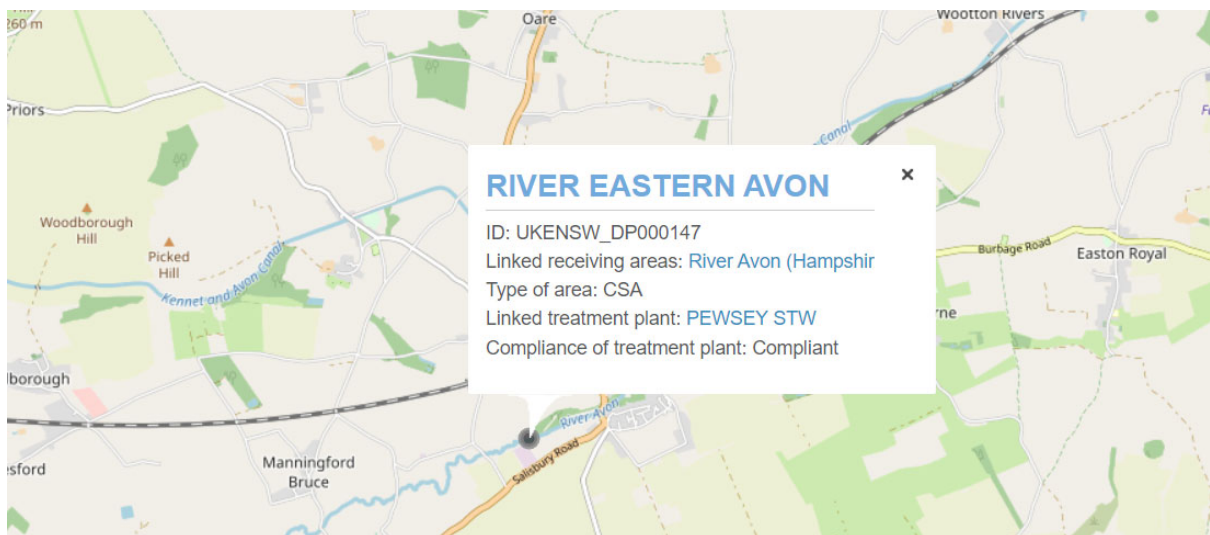
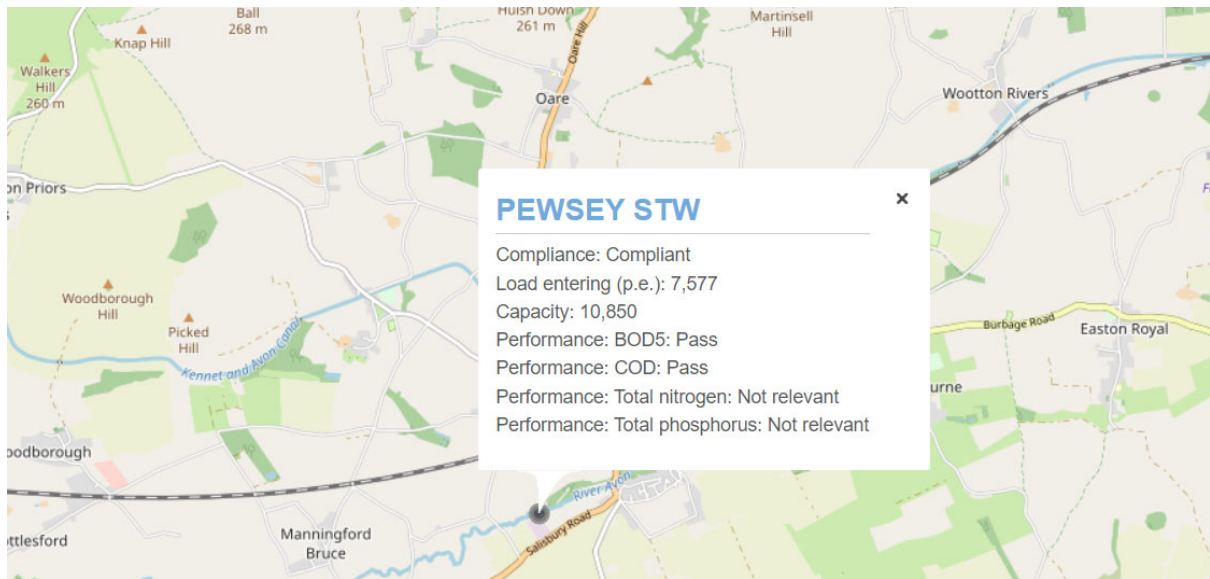
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drawing no	rev



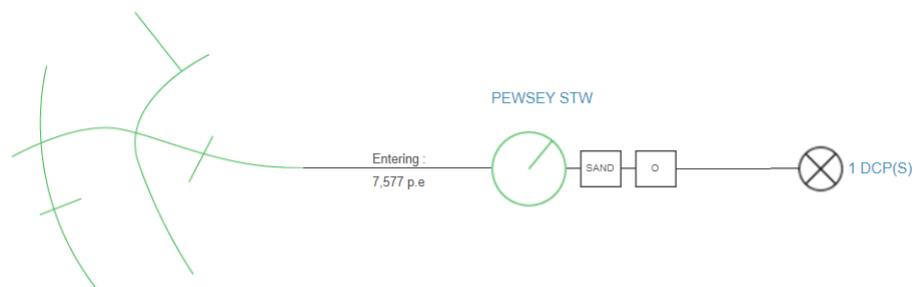
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Appendix B



Agglomerations : 1



Main treatment :

- : Compliant
- : Not compliant
- : No information / Not relevant

More stringent treatment :

- Performance :**
- : Pass performance
 - : Fail performance
 - : Not relevant

Type :

- N : Nitrogen removal
- P : Phosphorus removal
- UV : UV treatment
- MICRO : Micro Filtration

Type :

- CHLOR : Chlorination
- OZONE : Ozonation
- SAND : Sand filtration
- O : Other more stringent

Discharge point :

- : Discharge point
- DCP(S) : Discharge point(s)

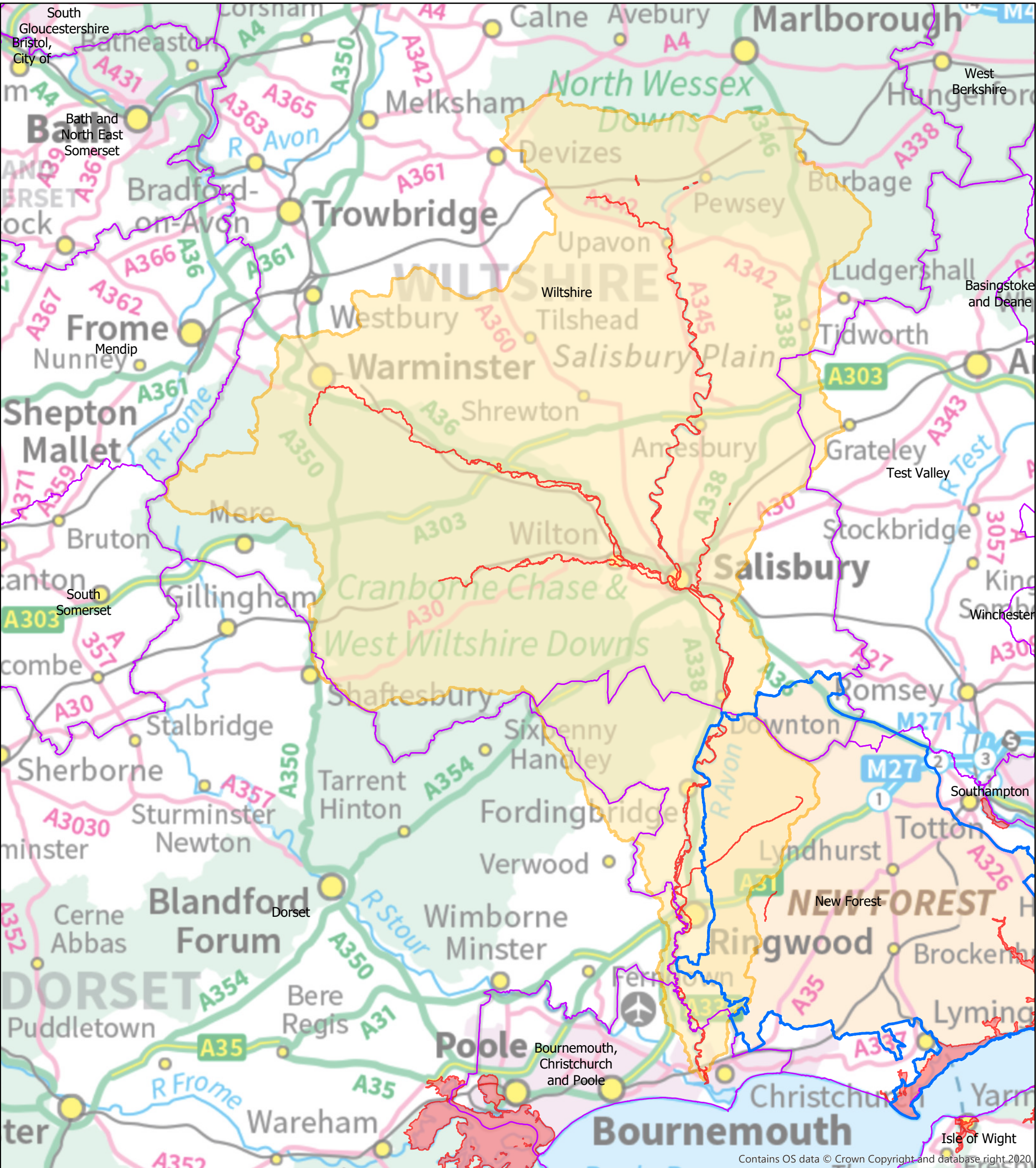
Appendix C

Water infrastructure information		
Description of required information	Data entry column - user inputs required	Additional data entry column - user inputs may be required
Date of first occupancy (dd/mm/yyyy):	01/09/2026	
Average occupancy rate (people/dwelling or people/unit):	2.40	
Water usage (litres/person/day):	120	
Development proposal (dwellings/units):	2	
Wastewater treatment works:	Pewsey WwTW	
Current wastewater treatment works P permit (mg TP/litre):	1.00	
Not applicable	Not applicable	
Post 2030 WwTW P permit (mg TP/litre):	0.25	
Final calculation of nutrient load from wastewater		
Description of values generated	Values generated	
Post-2030 wastewater nutrient Loading		
Additional population (people):	4.80	
Wastewater by development (litres/day):	576.00	
Annual wastewater TP load (kg TP/yr):	0.05	
Pre-2030 wastewater nutrient loading		
Annual wastewater TP load (kg TP/yr):	0.19	
Not applicable		
Not applicable	Not applicable	

SuDS information							
New land use type(s) within SuDS catchment area - user inputs required	SuDS catchment area (ha) - user inputs required	Percentage of flow entering the SuDS (%) - user inputs required	Annual phosphorus inputs to SuDS feature(s) (kg T/yr)	Name of SuDS feature(s) - user inputs required	TP removal rate for features - user specified (%) - user inputs required	Annual phosphorus load removed by SuDS (kg TP/yr)	Notes on data
			0.00			0.00	Not applicable
			0.00			0.00	Not applicable
			0.00			0.00	Not applicable
			0.00			0.00	Not applicable
			0.00			0.00	Not applicable
			0.00			0.00	Not applicable
			0.00			0.00	Not applicable
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			0.00			0.00	Not applicable
			0.00			0.00	Not applicable
			0.00			0.00	Not applicable
			0.00			0.00	Not applicable
Totals:	0.00		0.00			0.00	

APPLICANT DOES NOT SEEK ANY DISCOUNT TO THE FUTURE LAND USE IMPACT (STAGE 3)

Total nutrient budget calculations	
Description of values generated	Values generated
Wastewater TP load (kg TP/year):	0.05
Net land use TP change (kg TP/year):	0.21
TP budget:	0.26
TP budget + 20% buffer:	0.31
Annual nutrient budget	
The total annual phosphorus load to mitigate is (kg TP/yr):	0.31
Pre-2030 nutrient budget	
The total annual phosphorus load to mitigate is (kg TP/yr):	0.48
Not applicable	
Not applicable	Not applicable



European protected sites requiring nutrient neutrality strategic solutions

Scale: 1:280,000

Component SSSIs of River Avon SAC

- Local Authorities
- SSSI subject to nutrient neutrality strategy
- Nutrient neutrality SSSI catchment
- National Parks



Appendix D

CONDITIONS AND LIMITATIONS OF NITROGEN NUTRIENT ASSESSMENT

May 2020

Aqua Callidus Consulting Ltd is constituted as a limited liability company in accordance with the Companies Act 1989 (with registered number 11390910 and with its registered office at Kintyre House, 70 High Street, Fareham, Hants, PO16 7BB).



1. The report is confidential to the clients stated in the report and has been prepared to their instructions for their own purposes and it is not permitted to disclose this report to other parties (except NHBC, Local Authority, the Client's own Solicitors and Professional Advisers) without the prior consent of Aqua Callidus Consulting Ltd.
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5. No liability for the contents of this report is accepted to any parties other than the client stated in the report.
6. Unless stated otherwise the nitrogen assessment is based on site specific information provided by the client and manufacturers and wastewater companies public information on the performance of wastewater treatment plants and works. No liability is accepted for the accuracy of such third party information.
7. Unless stated otherwise the nitrogen assessment is undertaken as a desktop assessment and no site visit has been made.