

Document:	Nutrient Balancing Assessment
Project:	Edwina Mountbatten House
Client:	Planning Issues Ltd
Project Number:	784-B043706
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INTRODUCTION

Tetra Tech was appointed by Planning Issues Ltd to calculate the change in nutrient outputs from existing to future use associated with the proposed development at Edwina Mountbatten House.

The proposed development comprises 47 residential units, parking, access and open space. There are already 23 residential units on site.

The calculations are required in response to recent consultation with Natural England on residential projects in the vicinity of the Solent following the findings of the Integrated Water Management Study for South Hampshire, published by the Partnership for Urban South Hampshire¹. The calculator was used to establish the Total Nitrogen (TN) for the proposed development and also the maximum TN load as a result of land use changes associated with the development proposals.

Due to the uncertainty over whether new development can be accommodated by existing wastewater treatment infrastructure without causing harm to coastal European sites, Natural England advise that all residential development should achieve nitrogen neutrality.

This report has been prepared by Assistant Ecologist Chloe Mockridge and the conditions pertinent to it are provided in Appendix A.

METHODOLOGY

To make the assessment, the following guidance documents were used:

- Advice for development proposals with the potential to affect water quality resulting in adverse nutrient impacts on habitats sites (Natural England, 16th March 2022);
- Nutrient Neutrality Generic Methodology NECR459 (Natural England and Ricardo Energy and Environment, November 2022);
- Nutrient Budget Calculator Guidance Document (Natural England and Ricardo Energy and Environment, March 2022); and
- Nutrient Neutrality Budget Calculator Solent v2.3 (Natural England and Ricardo Energy and Environment, April 2023).

¹ PUSH, (2018), Integrated Water Management Study, [online] Available at <https://www.push.gov.uk/wp-content/uploads/2018/07/IWMS-Appendix-1.pdf>, Accessed February 2021.

ASSESSMENT

There is a requirement for developments within the Solent Catchment to work out the Total Nitrogen (TN) from the development.

The proposals for the site are for the construction of a 47-unit retirement development. The default average occupancy rate within the nutrient budget calculator is 2.4, however it is appropriate to use site or region-specific occupancy rates, in particular where the proposed development differs from a typical market residential development. The average occupancy rate for sites operated by Churchill Retirement Living is 1.33 (Appendix B) and has therefore been used for this assessment, as the best available evidence.

There are 23 dwellings currently present on the site in the form of an existing retirement facility. In the absence of specific occupancy rates for the existing use, it is assumed that they are equivalent to the proposed development and therefore the scheme results in a net increase of 24 units.

The assumptions relevant to this project in addition to those included in the updated Natural England methodology are provided in Table 1.

Table 1. Project Assumptions

Parameter	Value
Number of proposed units:	47
Existing number of dwellings present:	23
Net increase in dwellings:	24
Occupancy rate:	1.33
Water consumption:	120 l/person
The total site area:	0.30 ha
The current land uses are:	0.30 ha Residential urban land
The future land uses will be:	0.30 ha Residential urban land
The waste water from the site will be treated at this wastewater treatment works (WwTW):	Romsey
The consent limit for the WwWT is:	27.0 mg/l TN
Surface water catchment:	Lower Test and Southampton Streams
Standard annual average rainfall:	800.1 – 850 mm
Soilscape category:	Freely draining
Nitrate Vulnerable Zone:	Yes

The results using the method for determining the nitrogen budget for the proposals are provided in Table 2.

Table 2. Summary of the results

Calculating Total Nitrogen (TN) Load From Development Wastewater	Calculating TN Load From Current Land Use	Calculating TN Load From Future Land Uses	Calculating Net Change in TN From the Development	Apply 20% Buffer
34.98 Kg/TN/yr	4.61 Kg/TN/yr	4.61 Kg/TN/yr	34.98 Kg/TN/yr	41.97 Kg/TN/yr

The calculations show that the development would result in an increased TN budget of 41.97 Kg/TN/yr.

It is therefore considered that in the absence of mitigation or amendments to the scheme, the development proposals would still have the potential to result in an adverse effect on the integrity of the Solent European sites.

It is proposed that this increase in total nitrogen is offset through a proposed mitigation project at Land at Calmore Croft Farm, North Totton. This comprises the removal of land from agriculture (pig farming) resulting in a reduction in total nitrogen output. The proposed mitigation project is within the same catchment (Lower Test and Southampton Streams) and generates 67.26 kg/TN/yr of mitigation, sufficient to offset the proposed development with additional capacity available. The details of the proposed mitigation are set out in Appendix D.

With the application of this mitigation, suitably secured by planning obligation, there would result a net decrease in total nitrogen and there would be no potential for an adverse effect on the integrity of the Solent European sites to occur.

Version:	1	Prepared by:	Chloe Mockridge Assistant Ecologist
Date:	16/05/2023	Checked and Approved by:	David West CEnv MCIEEM Associate Director
Status:	Final		
Description of Revision:	Issue		

APPENDIX A: REPORT CONDITIONS

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The report refers, within the limitations stated, to the environment of the site in the context of the surrounding area at the time of the inspections. Environmental conditions can vary, and no warranty is given as to the possibility of changes in the environment of the site and surrounding area at differing times. No investigative method can eliminate the possibility of obtaining partially imprecise, incomplete or not fully representative information. Any monitoring or survey work undertaken as part of the commission will have been subject to limitations, including for example timescale, seasonal and weather-related conditions. Actual environmental conditions are typically more complex and variable than the investigative, predictive and modelling approaches indicate in practice, and the output of such approaches cannot be relied upon as a comprehensive or accurate indicator of future conditions. The “shelf life” of the Report will be determined by a number of factors including its original purpose, the Client’s instructions, passage of time, advances in technology and techniques, changes in legislation etc. and therefore may require future re-assessment.

The whole of the report must be read as other sections of the report may contain information which puts into context the findings in any executive summary.

The performance of environmental protection measures and of buildings and other structures in relation to acoustics, vibration, noise mitigation and other environmental issues is influenced to a large extent by the degree to which the relevant environmental considerations are incorporated into the final design and specifications and the quality of workmanship and compliance with the specifications on site during construction. Tetra Tech accept no liability for issues with performance arising from such factors.

APPENDIX B: NUTRIENT BALANCING CALCULATIONS

See attached calculator

APPENDIX C: CHURCHILL RETIRMENT LIVING OCCUPANCY RATES

	Development	Individual?	Couple?	Unit Numbers	Individual total	Couple total	Total number of people
South West occupation stats	Abingdon	9	3	12	9	6	15
	Andover	45	19	64	45	38	83
	Chippenham	6	0	6	6	0	6
	Chichester	18	7	25	18	14	32
	Highcliffe	24	9	33	24	18	42
	Hythe	19	9	28	19	18	37
	Lymington	10	14	24	10	28	38
	Malmesbury	9	7	16	9	14	23
	Newbury	32	16	48	32	32	64
	Newquay	26	17	43	26	34	60
	Park Gate	11	8	19	11	16	27
	Penzance	27	14	41	27	28	55
	Portsmouth	16	12	28	16	24	40
	Salisbury	34	10	44	34	20	54
	Shaftesbury	26	14	40	26	28	54
	Sidford	14	5	19	14	10	24
Tavistock	27	14	41	27	28	55	
Torquay	13	14	27	13	28	41	
Truro	38	20	58	38	40	78	
Yate	20	17	37	20	34	54	
South East occupation stats	Ashted	11	6	17	11	12	23
	Bagshot	8	1	9	8	2	10
	Camberley	24	16	40	24	32	56
	Carshalton	27	12	39	27	24	51
	Cheam	23	3	26	23	6	29
	Dartford	45	21	66	45	42	87
	Deal	30	7	37	30	14	44
	East Grinstead	14	5	19	14	10	24
	Eastbourne	17	10	27	17	20	37
	Eltham	12	6	18	12	12	24
	Haywards Heath	27	16	43	27	32	59
	Leatherhead	31	5	36	31	10	41
	Littlehampton	20	9	29	20	18	38
	Maidstone	32	17	49	32	34	66
	Orpington	3		3	3		3
	Peacehaven	18	5	23	18	10	28
	Reigate	4	3	7	4	6	10
	Selsdon	9	4	13	9	8	17
	Shepperton	10	2	12	10	4	14
Sittingbourne	26	18	44	26	36	62	
Staines	4	2	6	4	4	8	
Tattenham Corner	2	0	2	2	0	2	
Walton	27	14	41	27	28	55	
Midlands occupation stats	Aldridge	23	15	38	23	30	53
	Cheltenham	14	8	22	14	16	30
	Cowbridge	25	11	36	25	22	47
	Fishponds	21	8	29	21	16	37
	Knowle	13	6	19	13	12	25
	Ludlow	21	12	33	21	24	45
	Market Harborough	13	10	23	13	20	33
Shirley	36	12	48	36	24	60	
Eastern occupation stats	Aylesbury	16	6	22	16	12	28
	Burnham	7	1	8	7	2	9
	Berkhamsted	34	11	45	34	22	56
	Billericay	17	6	23	17	12	29
	Frinton-on-Sea	20	13	33	20	26	46
	Haverhill	21	11	32	21	22	43
	Hitchin	12	9	21	12	18	30
	Huntingdon	23	11	34	23	22	45
	Marlow	18	5	23	18	10	28
	Pinner	16	8	24	16	16	32
	Princes Risborough	10	7	17	10	14	24
Thame	4	4	8	4	8	12	
	1212	585		1797	1212	1170	2382

Average Occupancy rate =

1.33

APPENDIX D: MITIGATION STRATEGY

Site:	Land at Calmore Croft Farm, North Totton, Hampshire, SO40 2RQ
Client:	Planning Issues
Job Number:	784-B039480
Report Type(s):	Nutrient Strategy
File Location:	M:\Projects\784-B039480 North Totton\60. Project Output\61. Work In Progress\Ecology\Nutrient

INTRODUCTION

Tetra Tech was appointed to undertake an assessment of potential reductions in nitrogen outputs as a result of the change of use of a pig farm on land at Calmore Croft Farm, North Totton, Hampshire, SO40 2RQ and set out a strategy for how this will provide mitigation for new development within the catchment.

On 16th March 2022, Natural England issued updated guidance on nutrient neutrality to a number of planning authorities across the country. Within these local authority areas, Natural England have identified Habitats Sites (e.g. Special Protection Areas and Special Areas of Conservation) which are in unfavourable condition and sensitive to elevated nutrient concentrations (nitrogen or phosphorous). Natural England advise that any development with the potential to result in nutrient outputs (for example in foul or surface water) should be assessed to determine if there is potential for a likely significant effect on an identified Habitats Site. Where significant effects are likely, Natural England advise developments achieve nutrient neutrality (mitigating or offsetting to achieve a net reduction in nutrients) to avoid an adverse effect on integrity. This approach has been tested for several years in affected catchments in the South such as the Solent.

This report has been prepared by Associate Director David West CEnv MCIEEM and the conditions pertinent to it are provided in Appendix A.

METHODOLOGY

To make the assessment, the following guidance documents were used:

- Advice for development proposals with the potential to affect water quality resulting in adverse nutrient impacts on habitats sites (Natural England, 16th March 2022);
- Nutrient Neutrality Generic Methodology NECR459 (Natural England and Ricardo Energy and Environment, November 2022);
- Nutrient Budget Calculator Guidance Document (Natural England and Ricardo Energy and Environment, March 2022); and
- Nutrient Neutrality Budget Calculator Solent v2.3 (Natural England and Ricardo Energy and Environment, undated April 2023).

ASSUMPTIONS

The assumptions relevant to this this project in addition to those included in the methodology are provided in Table 1.

Table 1: Project Assumptions

Number of proposed units:	n/a
Occupancy rate:	n/a
Water consumption:	n/a
The total site area:	1.75 ha
The current land uses are:	1.75 ha pig farming
The future land uses will be:	1.75 ha commercial urban land
The wastewater from the site will be treated at this wastewater treatment works (WwTW):	n/a
The consent limit for the WwWT is:	N/A
Surface water catchment:	Lower Test and Southampton Streams
Standard annual average rainfall:	800.1 – 850 mm
Soilscape category:	Impeded drainage (Slowly permeable seasonally wet slightly acid but base-rich loamy and clayey soils)
Nitrate Vulnerable Zone:	Yes

With reference to Stage 1 of the Generic Methodology, neither the current nor proposed land uses include residential development and therefore this stage is excluded from the assessment.

The current use of the site has been assessed as pig farming. This was confirmed via an Ecological Appraisal including a site survey by Tetra Tech in 2022 (Tetra Tech, 2022). A review of historic aerial imagery clearly shows pig pens and associated paddocks across the site dating back to at least 2016 (Appendix B). Beyond this point, it appears that the site was grazed alongside the surrounding fields.

The site falls within the Lower Test and Southampton Streams surface water catchment with impeded drainage.

The site is allocated as part of Strategic Site SS1 within the New Forest District Local Plan 2016-2036 Part One: Planning Strategy which was adopted in 2020. SS1 includes a mix of uses including at least 1000 dwellings and around five hectares of employment land. The allocation masterplan shows the site within an area identified for employment land and as such the future use of urban commercial land as been used on a precautionary basis as a reasonable worst-case scenario.

RESULTS AND SUMMARY

The results using the method for determining the nutrient budget for the proposals are provided in Table 2. The full workings are shown in Appendix C.

Table 2: Summary of the results

Calculating Total Nitrogen (TN) Load From Development Wastewater	Calculating TN Load From Current Land Use	Calculating TN Load From Future Land Uses	Calculating Net Change in TN From the Development	Incorporate 20% Buffer ¹
Stage 1	Stage 2	Stage 3	Stage 4	Stage 4
0.0 kg/TN/yr	81.61 kg/TN/yr	14.35 kg/TN/yr	-67.26 kg/TN/yr	-67.26 kg/TN/yr

¹Note the 20% buffer is not applied if a reduction in TN output occurs.

The calculations show that the change in use of the site would result in a decrease in nitrogen load of **-67.26 kg/TN/yr**. This change would therefore not result in an adverse effect on the integrity of the Solent and Southampton Water SPA or Solent Maritime SAC, and there is a surplus budget available to offset other development within the catchment.

MITIGATION STRATEGY

It is proposed that the pig farming use of the site is ceased, resulting in a net reduction in nitrogen. Because of the allocation of the site for employment land, the available mitigation surplus has been calculated based on this future land use (although the timescales for development are unknown). Therefore, the future development of the land has no impact on the delivery of mitigation provided the uses are restricted to those allocated in the local plan (or lesser impact such as open space).

On this basis, the mitigation surplus available is **67.26 kg/TN/yr**.

Catchment for Mitigation

The site (i.e. the mitigation land) lies within the Lower Test and Southampton Streams surface water catchment, thus the reduction in nitrogen benefits the Solent and Southampton Water SPA, Solent Maritime SAC and other overlapping designated sites (such as the Solent and Dorset Coast SPA). Therefore, it is suitable to mitigate any development within the following catchments:

- Lower Test and Southampton Streams
- Upper and Middle Test
- New Forest – Bartley Water
- Isle of Wight Rivers

Management

Typically, nutrient mitigation land is subject to long-term habitat creation and management such as woodland planting. In this case, these uses would compromise the SS1 allocation for employment land, therefore alternative management is required. In the absence of the pig farming operation, the site will naturally revert to grassland, this will be allowed to occur and the management of the mitigation site will comprise mechanical cutting to maintain the site as grassland. In theory, any use of the site which results in a lower nitrogen output than the future urban commercial land use would not compromise the mitigation strategy and the mitigation surplus, however to minimise confusion and

oversight required by the local planning authority, the site will remain as grassland (i.e. open space) unless and until a planning application for the allocated employment use is brought forwards.

Security

It is necessary to secure the mitigation site, permitted uses, management and budget with sufficient certainty to enable the mitigation surplus to be relied upon for development within the identified catchments within project-specific Habitats Regulations Assessments. This will take the form of a Section 106 Agreement made between the landowner and the local planning authority which will enable the sale of credits to third parties. The following sets out the framework for a draft Section 106 Schedule which will secure the mitigation.

Draft Section 106 Schedule

Selected definitions:

“Agriculture” means pig farming but for the avoidance of doubt does not include those activities listed at paragraph 3.1 below PROVIDED THAT no further fertiliser inputs are applied;

“End Date” the date 125 years from the date of the last Notice of Purchase issued under this Deed;

“Land Management Plan” means the plan appended to this Agreement or any future Land Management Plan proposed by the Owner and approved by Natural England (or any successor body) in writing;

1 EFFECT

1.1 Save for paragraph 1.3 below, the covenants contained in this Schedule shall only take effect in respect of any part of the Mitigation Land:

1.1.1 on the date of service of a relevant Notice of Purchase; and

1.1.2 only in respect of the Mitigation Land identified in that Notice of Purchase.

1.2 On service by the Owner on the Council of a Notice of Purchase the Mitigation Land identified within that Notice of Purchase shall become Credits Linked Land.

1.3 Subject to paragraph 3.2 of this Schedule not from the date of Commencement of Development to use any of the Mitigation Land for Agriculture or deposit or permit the deposit of any nitrates upon the Mitigation Land.

2 RELEASE AND LAPSE

2.1 Where any Permission expires without having been Commenced or where a Permission is quashed following a successful challenge the Credits Linked Land relating to that Permission (as set out in the relevant Notice of Purchase) shall be released automatically on such expiry or date of

quashing of such Permission from the covenants contained in this Schedule so that for the avoidance of doubt the Owner shall then be entitled to serve a fresh Notice of Purchase in relation to that Credits Linked Land.

2.2 Nothing in this Deed prohibits or limits the right to develop any part of the Mitigation Land in accordance with a planning permission granted after the date of this Deed, whether or not pursuant to an appeal, on condition that such planning permission does not prevent or restrict in any way the continued operation of the Mitigation Land and the compliance with the covenants and restrictions contained within this Deed.

2.3 The restrictions, obligations and covenants in this Schedule will terminate with immediate effect if a Relevant Event occurs.

3 COVENANTS REGULATING USE OF THE MITIGATION LAND

The Owner covenants with the Council as follows:

3.1 To manage all Credits Linked Land in accordance with the Land Management Plan PROVIDED THAT following activities shall for the avoidance of doubt be permitted without limitation:

- i. The planting and management of trees and shrubs;
- ii. Leaving the Mitigation Land naturally to regenerate;
- iii. The grazing of animals but only such as to maintain the Mitigation Land. Grazing density shall not exceed 0.1 livestock units per hectare per year and no supplementary feed shall be provided;
- iv. Planting and maintaining greensward;
- v. The carrying out and maintenance of any forestry planting scheme that is first approved by Natural England, the Forestry Commission, or any other authority for the time being with the relevant responsibility for land such as the Mitigation Land provided that no further fertiliser inputs are applied;
- vi. The construction and operation of employment land if permitted by the Council via planning application.

4 NOTIFICATION REQUIREMENTS

4.1 Upon completion of any sale of Credits, but only once the Owner has been paid in full for such sale, the Owner shall immediately send the relevant Notice of Purchase to the Council.

5. MONITORING OBLIGATIONS

5.1 The Owner undertakes to the Council to pay the Verification Contribution to the Council upon the completion of this Deed.

5.2 The Owner undertakes to the Council to send a Monitoring Report to the Council at the following intervals:

5.2.1 Every six months from the date hereof until the Five Year Date; and

5.2.2 Annually from the Five Year Date until the Twenty Year Date; and

5.2.3 Every five years from the Twenty Year Date to the End Date; and

5.2.4 Once in the final year ending on the End Date

5.3 Subject to paragraph 5.4 of this Schedule the Owner undertakes to then Council to pay, on written demand by way of a notice in accordance with this Deed, the Verification Contribution to the Council for the Council carrying out its monitoring obligations at paragraphs 6.1.3 and 6.1.4 of this Schedule. Such demand shall not be given by the Council before completion of the monitoring obligations on a year-by-year basis.

5.4 Credit will be given to the Owner in relation to the payments required by paragraphs 5.1 and 5.3 of this Schedule for any moneys paid for similar purposes under the provisions of any other agreements or undertakings relating to nitrate mitigation on the Mitigation Land so that (for the avoidance of doubt) the sums stated or required as Twenty Year Verification Contribution or Verification Contribution shall need to be paid only once in aggregate across all such agreements or undertakings.

COUNCIL OBLIGATIONS

6 MONITORING

6.1 The Council shall monitor the obligations insofar as they relate to the Mitigation Land by way of a physical visit to the Mitigation Land (such access hereby permitted by the Owner) to inspect the Mitigation Land, verify the contents of the Monitoring Report and provide as soon as practicable afterwards a written report to the Authority of the findings of their visit, at the following intervals:

6.1.1 Every six months from the date hereof until the Five Year Date; and

6.1.2 Annually from the Five Year Date until the Twenty Year Date; and

6.1.3 Every five years from the Twenty Year Date until the End Date; and

6.1.4 One visit in the final year ending on the End Date.

Document Control			
Revision:	V1	Status:	Issue
Date:	12/05/23		
Prepared by: David West CEnv MCIEEM Associate Director		Checked and approved by: Danny De la Hey Principal Ecologist	

Appendix A: Report Conditions

Appendix B: Site Aerial Photographs

Appendix C: Nitrogen Balancing Calculations

Appendix A: Report Conditions

REPORT CONDITIONS

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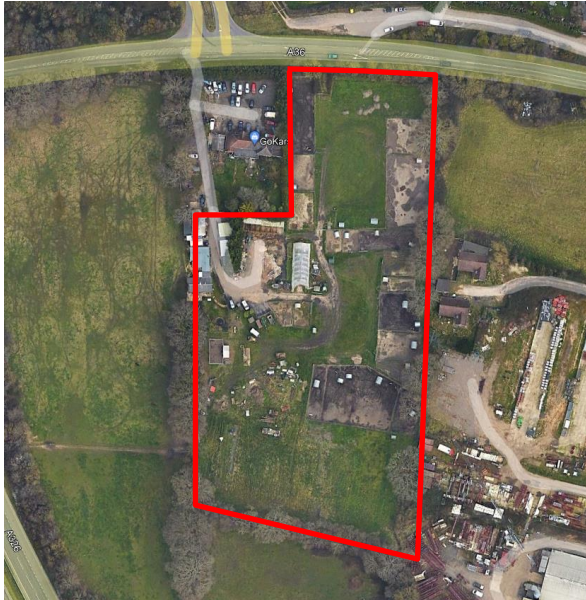
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Appendix B: Site Aerial Photographs



May 2022



January 2022



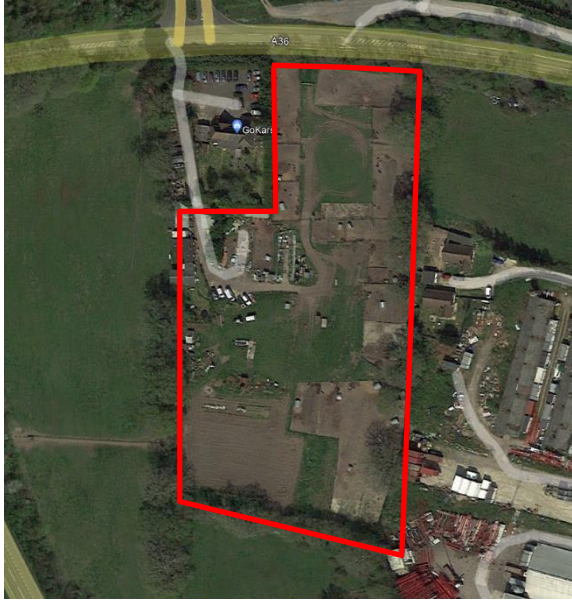
July 2021



April 2021



May 2020



April 2020



July 2018



May 2017



August 2016

Appendix C: Nitrogen Balancing Calculations

See attached nutrient budget calculator.