



Nutrient Neutrality

**Land at Birchwood Gardens,
Hedge End**

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Report	Nutrient Budget Calculation
Site Name	Land at Birchwood Gardens, Hedge End
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Client	Home Living Housing Limited
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Executive Summary

Ecosupport Ltd. was instructed by Home Living Housing Ltd to conduct a Nutrient Budget Calculation for a development on the land at Birchwood Gardens, Hedge End. This assessment calculates the change in nitrogen outputs from the existing site to the future proposed development.

Using the standard Natural England methodology, it was calculated that the site will result in an increased nitrogen load of **+0.79/TN/year** and will therefore require mitigation.

Recommendations for mitigation are outlined within **Section 4.0** of this document. Mitigation must be agreed with the local authority to be considered acceptable.

1.0 INTRODUCTION

1.1 Brief

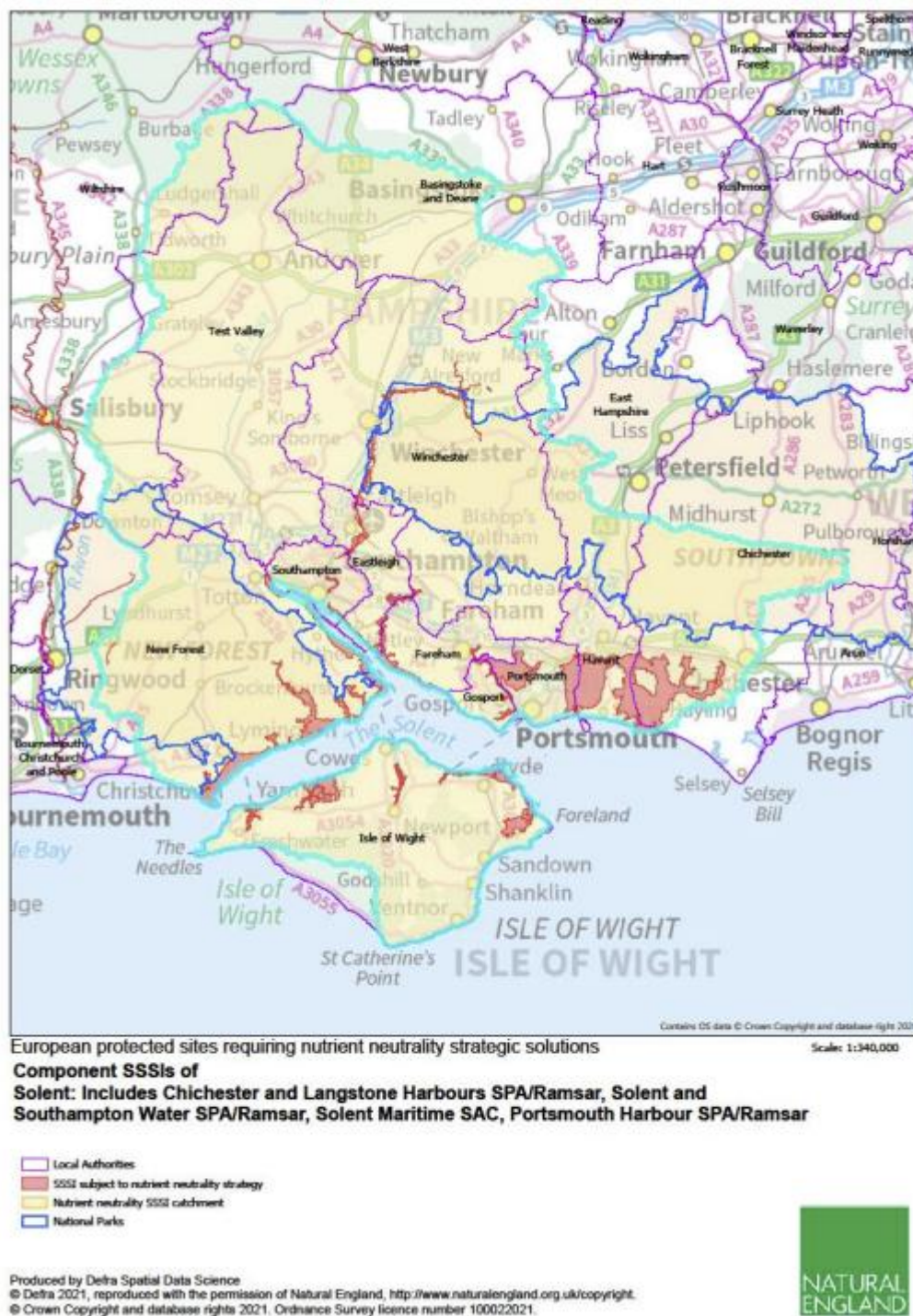
Ecosupport Ltd. was instructed by Home Living Housing Ltd to conduct a Nutrient Budget Calculation for a development on the land at Birchwood Gardens, Hedge End. Due to the site's location within the Solent Catchment Area, it will require nitrogen neutrality to ensure the development will not result in an increased nitrogen load into the Solent's sensitive and designated areas.

The purpose of this calculation was to determine the change in nitrogen load resulting from a net increase in dwellings within the site as a result of the development.

1.2 Background

The Conservation of Habitats and Species Regulations (2017) transposes the EU Habitats Directive (Council Directive 92/43/EEC) into UK domestic law and provides protection for sites and species deemed to be of conservation importance across Europe. Under Regulation 63 competent authorities must undertake an "Appropriate Assessment" to assess whether proposed actions may have a significant effect on a European protected site.

In 2018 and 2019, Natural England undertook a number of condition assessments on designated sites around the Solent including the Solent Maritime Special Area of Conservation (SAC), Chichester and Langstone Harbours Special Protection Area (SPA), Portsmouth Harbour SPA and Solent and Southampton Water SPA and associated Sites of Special Scientific Interest (SSSI). The assessment found that many of the designated sites were in unfavourable and/or declining conditions due to existing levels of nutrients and held the view that increased wastewater from new developments would have a likely significant effect on the internationally designated sites. Natural England advised councils within the watersheds leading to the designated sites (**Fig 1**) that any new development resulting in an increase in overnight stays should achieve nutrient neutrality in order to not have any significant effects. Natural England developed a nitrogen budget methodology to calculate the nitrogen output of a development using a precautionary approach. All developments that will result in a net increase in dwellings or overnight stays (e.g. hotels, student accommodation, nursing homes) will require a nitrogen budget calculation using this method. Any sites resulting in an increase in nitrogen loading will require mitigation prior to planning approval, or site occupancy, where Grampian conditions are permitted to achieve planning approval.

Figure 1. Solent Catchment Area map (taken from Natural England, 2022a).

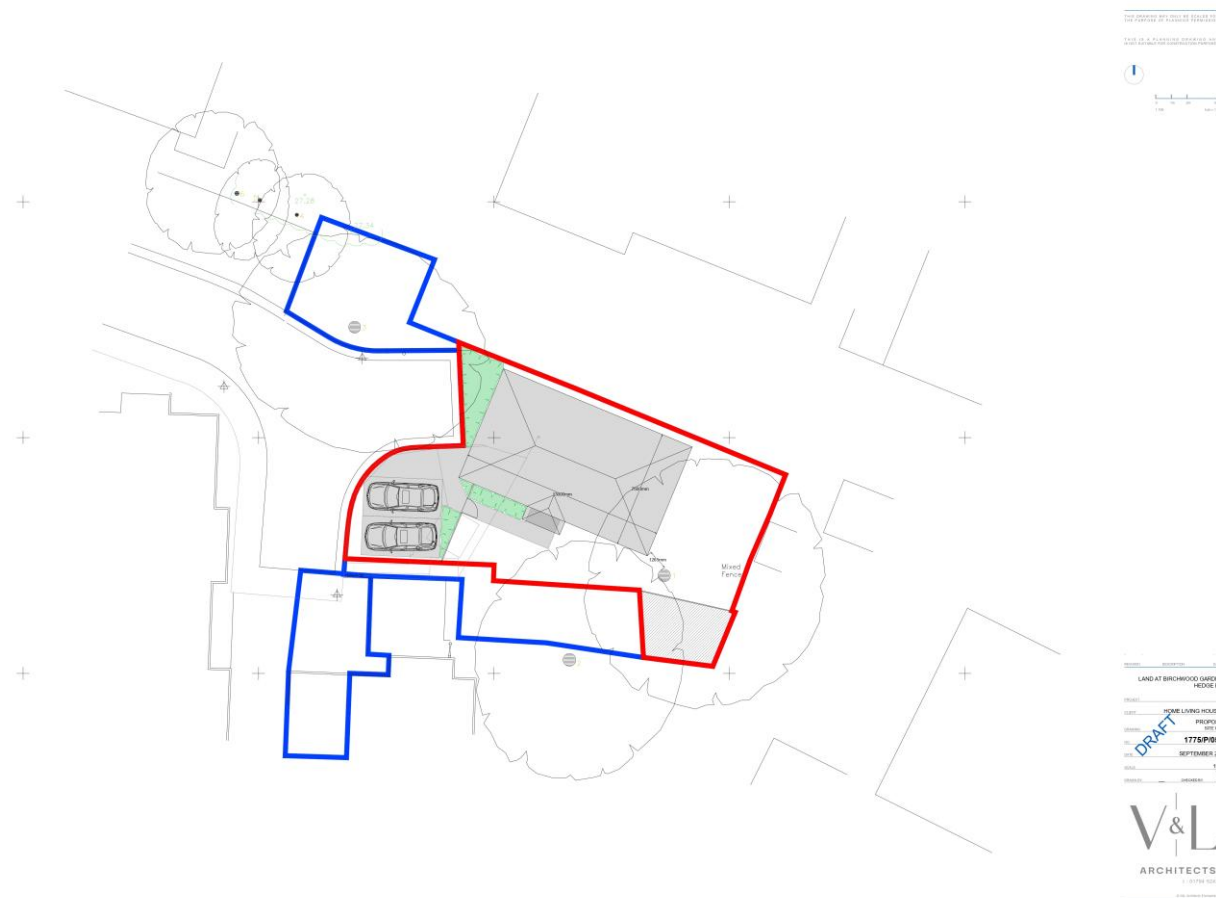
1.3 Site Location

The site comprises of an isolated piece of land at Birchwood Gardens which includes one mature Oak tree (*Quercus robur*), a managed lawn area, and a private garden. The site is demarcated by wooden fencing. The site is located off Birchwood Gardens, Hedge End (OS grid reference SU 445446). The site is bounded by residential housing and associated road network neighbouring formal gardens.

1.4 Proposed Development

The proposals entail the construction of a single detached housing plot (**Fig 2**).

Figure 2. Draft proposed site plan (V&L Architects, 2025)



2.0 METHODOLOGY

2.1 Calculation

2.1.1 Overview

The methodology for the assessment of the net change in nitrogen to the Solent catchment is based on the updated Natural England advice on achieving nutrient neutrality (Natural England & DEFRA, 2024a), the Nutrient Neutrality Generic Methodology (Natural England, 2022b) and the associated published *Nitrogen Budget Calculator Version 3* (Natural England, 2024b). As recommended, only the expected area to be impacted for change in land use is calculated. The calculator includes instructions and five worksheets.

2.1.2 Worksheet 1 – Nutrients from Wastewater

The first worksheet is “Nutrients from Wastewater” which contains two tables and calculates the new nutrient load associated with the additional wastewater that would exit the wastewater treatment works (WwTW) into the Solent. Information on the proposed development and wastewater infrastructure is entered for the calculation. The default setting for water use is 120L / day per person. Where the permit limit of the WwTW is planned to be change, this calculation may result in more than one output result, based on the date this change is targeted for.

2.1.3 Worksheets 2-3 – Nutrients from Current and Future Land Use

The second worksheet calculates the existing nutrient load from current land use based on set average nitrogen loss rates from type of land use. In this section some environmental information about the development is also entered as well as the type(s) and area(s) of landcover on the development site. The third worksheet similarly calculates the annual nitrogen load from the proposed land use based on the proposed site plan.

The land use areas have been calculated using QGIS mapping. These have been created in line with the Biodiversity Net Gain (BNG) assessment (Ecosupport Ltd, 2025) to ensure the areas are precise and the land use type is appropriate based on the future management specified. The land use definitions provided by Natural England & DEFRA (2024) have been used, shown in **Table 2** below, with the most appropriate definition selected.

Table 2. Land Use Types in the calculator with descriptions provided in the guidance (Natural England & DEFRA, 2024)

Land Use Type	Description
Cereals	Agricultural areas on which cereals, combinable crops and set-aside are farmed.
General	Agricultural areas on which arable crops (including field scale vegetables) are farmed.
Horticulture	Agricultural areas on which fruit (including vineyards), hardy nursery stock, glasshouse flowers and vegetables, market garden scale vegetables, outdoor bulbs and flowers, and mushrooms are farmed.
Pig	Agricultural areas on which pigs farmed.
Poultry	Agricultural areas on which poultry are farmed.
Dairy	Agricultural areas on which dairy cows are farmed.

LFA	Agricultural areas on which cattle, sheep and other grazing livestock are farmed in locations where agricultural production is difficult. An area is classified as a Less Favoured Area (LFA) holding if 50% or more of its total area is classed as LFA.
Lowland	Agricultural areas on which cattle, sheep and other grazing livestock are farmed. A holding is classified as lowland if 50% or more of its area is classified as a lowland grazing area.
Mixed	Agricultural areas in which none of the above categories are farmed or where it is too difficult to select a single category to describe the farm type.
Greenspace	Natural and semi-natural outdoor spaces provided for recreational use where fertilisers will not be applied and dog waste is managed. For example, semi-natural parks. This does not include green infrastructure within the built urban environment, such as sports fields, gardens, or grass verges, as these are included in the residential urban land category.
Woodland	Natural and semi-natural outdoor wooded areas.
Shrub	Natural and semi-natural outdoor shrubland area.
Water	Areas of surface water, including rivers, ponds and lakes.
Residential urban land	Areas of houses and associated infrastructure. This is inclusive of roads, driveways, grass verges and gardens.
Commercial or industrial urban land	Areas that are used for industry. These are businesses that typically manufacture, process or otherwise generate products. Included in the definition of industrial land are factories and storage facilities as well as mining and shipping operations.
Open urban land	Area of land in urban areas used for various purposes such as leisure and recreation, may include open land. For example, sports fields, playgrounds, public squares or built facilities such as sports centres
Community food growing	Areas that are used for local food production, such as allotments.

The proposed works result in no change to the land use. The existing site comprises of an active garden and adjacent managed lawn, which would come under land use type 'Residential urban land'. The proposed development will result in the construction of a residential building, hard standing, and amenity lawn, which would fall under this same land use type. Since there will be no change in land use, worksheets 2 and 3 were left blank.

2.1.4 Worksheet 4 – SuDS

A fourth worksheet is available only if the nutrient load will be reduced through a SuDS feature on site. In this case a SuDS feature is not proposed and as such this worksheet was left blank.

2.1.5 Worksheet 5 – Final Nutrient Budget

The final worksheet delivers the results of the annual nutrient budget for the development site. The value(s) shown as the "annual nutrient budget" are how much nutrient mitigation is required in kilograms per year to achieve nutrient neutrality. A precautionary buffer of 20% is built into the calculation.

3.0 RESULTS

3.1 Nitrogen Budget

The proposed development will result in **+0.79kg of Total Nitrogen per year**. The full calculation can be found in the accompanying *Nutrient Calculator Solent Maritime_V_03_01_03* (Natural England, 2024b) however the final results can be found in **Table 3**.

Table 3. Screenshot of final Nutrient Budget Calculation results

Total nutrient budget calculations	
Description of values generated	Values generated
Wastewater TN load (kg TN/year):	0.66
Net land use TN change (kg TN/year):	0.00
TN budget:	0.66
TN budget + 20% buffer:	0.79
Annual nutrient budget	
The total annual nitrogen load to mitigate is (kg TN/yr):	0.79

4.0 MITIGATION

Given that there is insufficient space to offset the increased nitrogen load of 0.79kg/TN/year on site, mitigation will be sought through credit schemes. As the site falls within Eastleigh Borough Council, nutrient credits will need to be purchased. It is recommended credits are purchased through the council's credit scheme (Eastleigh Borough Council, 2025). This has one of the most economical rates, which is currently set at £3,000 + VAT per credit.

To secure mitigation, Home Living Housing Ltd will (when requested) provide evidence to the Local Planning Authority that mitigation has been secured.

5.0 CONCLUSION

Ecosupport Ltd. was instructed Home Living Housing Ltd to conduct a Nutrient Budget Calculation for a development on the land at Birchwood Gardens, Hedge End. Using the standard Natural England methodology, it was calculated that the site will result in an increased nitrogen load of **+0.79/TN/year** and will therefore require mitigation. As detailed in **Section 4.0** of this document, mitigation will be provided through the purchase of nutrient credits through Eastleigh Borough Council's scheme. Mitigation must be agreed with the local planning authority to be considered acceptable.

5.0 REFERENCES

Eastleigh Borough Council (2025). *Developers: How to unlock your development*. Available at: <https://www.eastleigh.gov.uk/business/developers-how-to-unlock-your-development>

HMSO (2017) *The Conservation of Habitats and Species Regulations*. Statutory Instrument 2010 No. 490. HMSO, London.

HMSO (2019) *The Conservation of Habitats and Species Regulations*. Statutory Instrument 2019 No. 579. HMSO, London.

Natural England (2022a) *The Solent – Catchment Map*. – August 2022.

Natural England (2022b) *Nutrient Neutrality Generic Methodology (NECR459)*. – November 2022.

Natural England & DEFRA (2024) *Using the nutrient neutrality calculators*. Available at: <https://www.gov.uk/guidance/using-the-nutrient-neutrality-calculators>

Natural England (2024) *Nitrogen Budget Calculator Version 3_01_3*.

New Forest District Council (2025) *Nutrient neutral development*. Available at: <https://www.newforest.gov.uk/article/2714/Nutrient-neutral-development#h22>