



**Nutrient Neutrality Management Plan for The Dairy, Roads Hill,
Catherington PO8 0TD**

Prepared on behalf of:

Cornerstone Hampshire Ltd

Prepared by:

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QUALITY CONTROL

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1. Introduction

This report is produced by Anna Becvar BSc (Hons) MI Soil Sci C Sci MBPR FACTS RFE/414. Anna has a Bachelor of Science Honours Degree in Soils and Plant Nutrition. She is a Chartered Scientist and Member of the British Society of Soil Science.

2. Site description

This report is written to support an outline planning application for a new development at The Dairy, Roads Hill, Catherington, PO8 0TD for nine new dwellings.

The foul water from the dwellings will enter the foul drainage system and be discharged to Budds Farm Waste water Treatment Works (WwTW) which has a nitrogen discharge limit on its permit of 9.7 mg N/l.

3. Calculations

The following calculations will show that the proposed development either avoids harm to the Chichester and Langstone Harbours Special Protection Area and the Solent Maritime Special Area of Conservation or will suggest mitigation measures required to ensure that there is no adverse effect and that the development will achieve nitrogen neutrality.

A nitrogen budget has been produced following the Advice for LPAs “Advice on Achieving Nutrient Neutrality for New Development in the Solent Region”, Natural England Working Draft Version 5 June 2020 and using the Nutrient Neutrality calculator V5.0. Calculations are provided as a series of tables. A maximum water use efficiency of 110 litres per day per person has been used within these calculations.

The site is currently urban in nature which remains unchanged following development.

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| Planning Application Reference No. | |
| Site Name: | The Dairy, Roads Hill, Catherington PO8 0TD |
| Additional Information: | |
| 3 x 3 bed 3 x 4 bed 3 x 5 bed 2 small commercial units (outside of overnight accomodation) | |
| Date: | 22 December 2020 |

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| Stage 1 | Calculate total Nitrogen in kg per year derived from the development that would exit the Wastewater Treatment Works (WwTW) into Solent catchments after treatment | |
| Step 1 | Calculate additional population | |
| | Enter the number of units proposed | 9 |
| | Net population increase per housing unit | 2.40 |
| | <i>Total net population increase generated by the development</i> | 21.60 |
| Step 2 | Calculate wastewater volume generated by the development | |
| | Water use in litres per person per day | 110 |
| | <i>Total wastewater volume generated by the development (litres per day)</i> | 2,376 |
| Step 3 | Confirm receiving WwTW and permit limit | |
| | Select the wastewater treatment works the development will connect to | Budds Farm |
| | <i>Wastewater treatment works' permit limit (mg per litre)</i> | 9.7 |
| | <i>Wastewater treatment works' discharge level (mg per litre)</i> | 8.7 |
| Step 4 | Calculate total nitrogen in kg per year discharged by the WwTW | |
| | <i>Deduct acceptable Nitrogen loading in wastewater (mg per litre)</i> | 6.7 |
| | <i>Total Nitrogen discharged by WwTW (mg per day)</i> | 15,990.5 |
| | <i>Total Nitrogen discharged by WwTW (kg per day)</i> | 0.0160 |
| | <i>Total Nitrogen discharged by WwTW (kg per year)</i> | 5.8 |

Stages 2 and 3 are not required as land use remains urban.

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| Stage 4 | Calculate the net change in Nitrogen load from the proposed development | |
| Step 1 | Identify Nitrogen load from wastewater (Stage 1) | |
| | <i>Nitrogen leaving wastewater treatment works (kg per year)</i> | 5.84 |
| Step 2 | Calculate net change in Nitrogen load from land use changes | |
| | <i>Total Nitrogen load from future land use (kg per year)</i> | 0.00 |
| Step 3 | Calculate total Nitrogen budget for the development site | |
| | <i>Nitrogen budget for the site (kg per year)</i> | 5.84 |
| Step 4 | Calculate precautionary buffer if Nitrogen budget exceeds zero | |
| | <i>Precautionary Nitrogen buffer (kg per year)</i> | 1.17 |

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| Total Nitrogen budget for the proposed development (kg per year) | 7.0 |
| Development will generate additional Nitrogen - Mitigation is required Please liaise with your Local Planning Authority for advice on next steps | |

4. Recommendations

Based on the full calculations there is a **surplus of Nitrogen from the development of 7.0 kg N/yr** for which mitigation is required.

Within the ownership of the site is grazed grassland with associated nitrogen losses estimated to be 13 kg N/ha/yr. Rather than be used for equestrian purposes 0.875 ha (2.16 ac) could be planted to broadleaf trees with a reduction in estimated losses of 8 kg N/ha/yr to 5 kg N/ha/yr.

This would achieve nutrient neutrality for the development with a mitigation offset of -7.0 kg N/ha/yr. The land would be planted at a density equivalent to 100 per hectare i.e., a minimum of 88 deciduous broadleaved trees for perpetuity (80-125 years) under an S106 Obligation. A plan showing the land holding and proposed development is included within Appendix 1 of this document.

Cornerstone Hampshire Ltd would prefer to take the opportunity to contribute to a larger offsite mitigation scheme, which may provide wider benefits for biodiversity gain, than a small area of onsite mitigation. To this aim they have submitted an expression of interest to Hampshire & Isle of Wight Wildlife Trust to provide a financial contribution to offsite mitigation within the catchment and will be actively seeking to take part in any such similar scheme.

Appendix 1 Plan of proposed mitigation land area

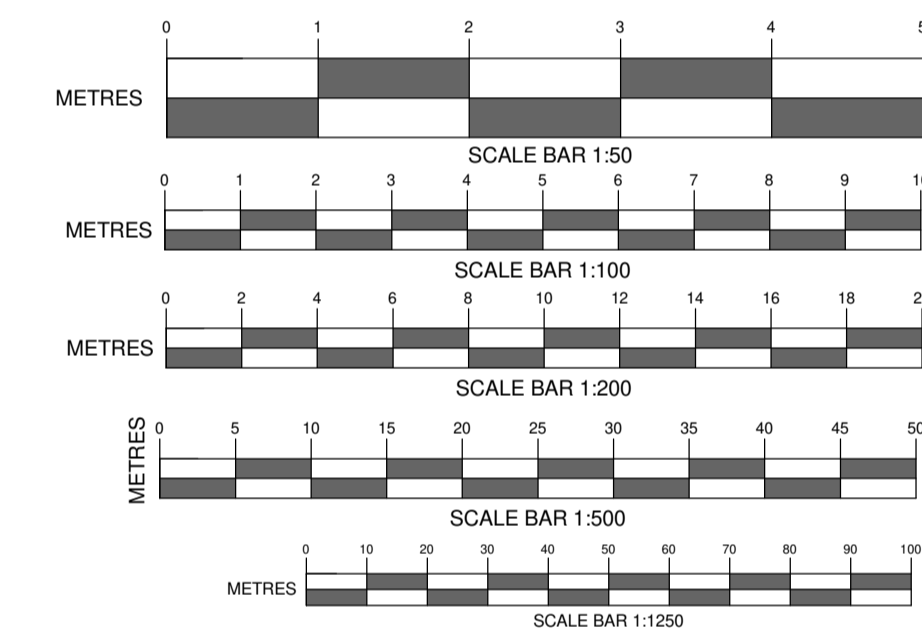
NOTES:

All dimensions to be checked on site and any discrepancy notified to The Consultant. Written dimensions are to be used in preference to scaled dimensions.

This drawing is the property of The Consultant and must not be reproduced, in part or whole, or deviated from, without their permission.

It is essential that prior to commencement and during construction works, the contractor reviews the drawings and specification and discusses with the practice any inconsistencies, anomalies, non-industry standard features or other concerns.

For both pricing and construction purposes Structural, Mechanical and Electrical Engineers designs, calculations and sizes etc are to take preference over the layout drawings. Any discrepancies are to be brought to the immediate attention of The Consultant.



| AMENDMENTS | DATE |
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CLIENT
Cornerstone Development

PROJECT
The Dairy - New Build Development
The Dairy, Roads Hill, Waterlooville,
Hampshire, PO8 0TG

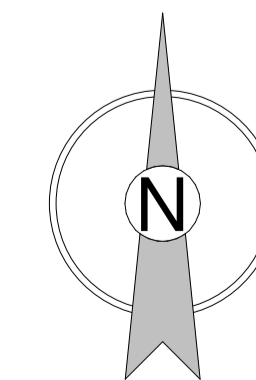
DRAWING TITLE
Master Site Plan

DATE
29/09/2020

SCALE
1 : 400

DRAWING No.
20.020.SP 02G2

REVISION



Location Plan.
1 : 400