

## Nitrogen Budget Calculation

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| <b>Planning Application Reference No.</b>                                                                                                                                                       | APP/18/01045                       |
| <b>Site Name:</b>                                                                                                                                                                               | 32a High Lawn Way, Havant, PO9 5BP |
| <b>Additional Information:</b>                                                                                                                                                                  |                                    |
| Water calculations undertaken by Thorns-Young Architectural; Budds Farm Wastewater Treatment Works                                                                                              |                                    |
| No change in land use. Site is approximately 190sqm previously urban development (private garden space) and will be developed entirely as urban development (building and private garden space) |                                    |
| Calculations are provided to discharge Grampian Condition (condition 9) of the planning application                                                                                             |                                    |
| <b>Date:</b>                                                                                                                                                                                    | 04 November 2020                   |

|                |                                                                                                                                                                          |            |
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| <b>Stage 1</b> | <b>Calculate total Nitrogen in kg per year derived from the development that would exit the Wastewater Treatment Works (WwTW) into Solent catchments after treatment</b> |            |
| <b>Step 1</b>  | <b>Calculate additional population</b>                                                                                                                                   |            |
|                | Enter the number of units proposed                                                                                                                                       | 1          |
|                | Net population increase per housing unit                                                                                                                                 | 2.40       |
|                | <b>Total net population increase generated by the development</b>                                                                                                        | 2.40       |
| <b>Step 2</b>  | <b>Calculate wastewater volume generated by the development</b>                                                                                                          |            |
|                | Water use in litres per person per day                                                                                                                                   | 110        |
|                | <b>Total wastewater volume generated by the development (litres per day)</b>                                                                                             | 264        |
| <b>Step 3</b>  | <b>Confirm receiving WwTW and permit limit</b>                                                                                                                           |            |
|                | Select the wastewater treatment works the development will connect to                                                                                                    | Budds Farm |
|                | <b>Wastewater treatment works' permit limit (mg per litre)</b>                                                                                                           | 9.7        |
|                | <b>Wastewater treatment works' discharge level (mg per litre)</b>                                                                                                        | 8.7        |
| <b>Step 4</b>  | <b>Calculate total nitrogen in kg per year discharged by the WwTW</b>                                                                                                    |            |
|                | <b>Deduct acceptable Nitrogen loading in wastewater (mg per litre)</b>                                                                                                   | 6.7        |
|                | <b>Total Nitrogen discharged by WwTW (mg per day)</b>                                                                                                                    | 1,776.7    |
|                | <b>Total Nitrogen discharged by WwTW (kg per day)</b>                                                                                                                    | 0.0018     |
|                | <b>Total Nitrogen discharged by WwTW (kg per year)</b>                                                                                                                   | 0.6        |

|                |                                                                                                    |      |
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| <b>Stage 2</b> | <b>Calculate existing (pre-development) nitrogen from current land use of the development site</b> |      |
| <b>Step 1</b>  | <b>Total area of development site</b>                                                              |      |
|                | Enter the total area of the development site (hectares)                                            | 0.02 |
| <b>Step 2</b>  | <b>Identify current land uses of the development site</b>                                          |      |
|                | Enter area currently used for urban development (hectares)                                         | 0.02 |
|                | Enter area currently used for open space / greenfield (hectares)                                   | 0.00 |
|                | Enter area currently used for woodland (hectares)                                                  | 0.00 |
|                | Enter area currently used for community food growing / catchment average (hectares)                | 0.00 |
|                | Enter area currently used for cereals (hectares)                                                   | 0.00 |
|                | Enter area currently used for dairy (hectares)                                                     | 0.00 |
|                | Enter area currently used for general cropping (hectares)                                          | 0.00 |
|                | Enter area currently used for horticulture (hectares)                                              | 0.00 |
|                | Enter area currently used for pig farming (hectares)                                               | 0.00 |
|                | Enter area currently used for lowland grazing (hectares)                                           | 0.00 |
|                | Enter area currently used for mixed farming (hectares)                                             | 0.00 |
|                | Enter area currently used for poultry farming (hectares)                                           | 0.00 |
|                | <b>Check to help ensure that sum total of land uses in Step 2 equals site area in Step 1</b>       | 0.0  |
| <b>Step 3</b>  | <b>Calculate nitrogen load from current land usage</b>                                             |      |
|                | <b>Total Nitrogen load from current land usage (kg per year)</b>                                   | 0.3  |

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| <b>Stage 3</b> | <b>Calculate nitrogen load for the non-built land uses proposed for the development site</b> |      |
| <b>Step 1</b>  | <b>Identify proposed land uses of the development site</b>                                   |      |
|                | Enter the total urban area to be created (hectares)                                          | 0.02 |
|                | Enter the total designated open space / SANG area to be created (hectares)                   | 0.00 |
|                | Enter the total nature reserve area to be created (hectares)                                 | 0.00 |
|                | Enter the total woodland area to be created (hectares)                                       | 0.00 |
|                | Enter the total community orchard area to be created (hectares)                              | 0.00 |
|                | Enter the total community food growing / allotment area to be created (hectares)             | 0.00 |
|                | <i>Check to help ensure that sum total of proposed land uses equals site area in Stage 2</i> | 0.02 |
| <b>Step 2</b>  | <b>Calculate total Nitrogen load from proposed land uses</b>                                 |      |
|                | <i>Total Nitrogen load from future land uses (kg per year)</i>                               | 0.29 |

|                |                                                                                |      |
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| <b>Stage 4</b> | <b>Calculate the net change in Nitrogen load from the proposed development</b> |      |
| <b>Step 1</b>  | <b>Identify Nitrogen load from wastewater (Stage 1)</b>                        |      |
|                | <i>Nitrogen leaving wastewater treatment works (kg per year)</i>               | 0.65 |
| <b>Step 2</b>  | <b>Calculate net change in Nitrogen load from land use changes</b>             |      |
|                | <i>Total Nitrogen load from future land use (kg per year)</i>                  | 0.00 |
| <b>Step 3</b>  | <b>Calculate total Nitrogen budget for the development site</b>                |      |
|                | <i>Nitrogen budget for the site (kg per year)</i>                              | 0.65 |
| <b>Step 4</b>  | <b>Calculate precautionary buffer if Nitrogen budget exceeds zero</b>          |      |
|                | <i>Precautionary Nitrogen buffer (kg per year)</i>                             | 0.13 |

|                                                                                                                                                             |            |
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| <b>Total Nitrogen budget for the proposed development (kg per year)</b>                                                                                     | <b>0.8</b> |
| <b>Development will generate additional Nitrogen - Mitigation is required<br/>Please liaise with your Local Planning Authority for advice on next steps</b> |            |