

## Nitrogen Budget Calculation

|                                           |                                     |
|-------------------------------------------|-------------------------------------|
| <b>Planning Application Reference No.</b> | APP/20/01111                        |
| <b>Site Name:</b>                         | Fiscal House 2 Havant Road Emsworth |
| <b>Additional Information:</b>            |                                     |
|                                           |                                     |
| <b>Date:</b>                              | 03 March 2020                       |

### 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                                | 1           |
| Net population increase per housing unit                          | 2.40        |
| <b>Total net population increase generated by the development</b> | <b>2.40</b> |

#### Step 2 Calculate wastewater volume generated by the development

|                                                                              |            |
|------------------------------------------------------------------------------|------------|
| Water use in litres per person per day                                       | 110        |
| <b>Total wastewater volume generated by the development (litres per day)</b> | <b>264</b> |

#### Step 3 Confirm receiving WwTW and permit limit

|                                                                       |             |
|-----------------------------------------------------------------------|-------------|
| Select the wastewater treatment works the development will connect to | Thornham    |
| <b>Wastewater treatment works' permit limit (mg per litre)</b>        | <b>10.0</b> |
| <b>Wastewater treatment works' discharge level (mg per litre)</b>     | <b>9.0</b>  |

#### Step 4 Calculate total nitrogen in kg per year discharged by the WwTW

|                                                                        |                |
|------------------------------------------------------------------------|----------------|
| <b>Deduct acceptable Nitrogen loading in wastewater (mg per litre)</b> | <b>7.9</b>     |
| <b>Total Nitrogen discharged by WwTW (mg per day)</b>                  | <b>1,548.0</b> |
| <b>Total Nitrogen discharged by WwTW (kg per day)</b>                  | <b>0.0015</b>  |
| <b>Total Nitrogen discharged by WwTW (kg per year)</b>                 | <b>0.7</b>     |

### Stage 2 Calculate existing (pre-development) nitrogen from current land use of the development site

#### Step 1 Total area of development site

|                                                         |      |
|---------------------------------------------------------|------|
| Enter the total area of the development site (hectares) | 0.09 |
|---------------------------------------------------------|------|

#### Step 2 Identify current land uses of the development site

|                                                                                              |            |
|----------------------------------------------------------------------------------------------|------------|
| Enter area currently used for urban development (hectares)                                   | 0.09       |
| 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> | <b>0.1</b> |

#### Step 3 Calculate nitrogen load from current land usage

|                                                                  |            |
|------------------------------------------------------------------|------------|
| <b>Total Nitrogen load from current land usage (kg per year)</b> | <b>1.3</b> |
|------------------------------------------------------------------|------------|

## Nitrogen Budget Calculation

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|-----------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------|------|----------------------------------------------------------------------------|------|--------------------------------------------------------------|------|--------------------------------------------------------|------|-----------------------------------------------------------------|------|----------------------------------------------------------------------------------|------|---------------------------------------------------------------------------------------|--|--|------|-------------------------------------------------------|--|--|------|
| <b>Stage 3</b> Calculate nitrogen load for the non-built land uses proposed for the development site                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                           |      |                                                                            |      |                                                              |      |                                                        |      |                                                                 |      |                                                                                  |      |                                                                                       |  |  |      |                                                       |  |  |      |
| <b>Step 1</b> Identify proposed land uses of the development site                                                                                   | <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 80%;">Enter the total urban area to be created (hectares)</td> <td style="width: 20%; text-align: right;">0.09</td> </tr> <tr> <td>Enter the total designated open space / SANG area to be created (hectares)</td> <td style="text-align: right;">0.00</td> </tr> <tr> <td>Enter the total nature reserve area to be created (hectares)</td> <td style="text-align: right;">0.00</td> </tr> <tr> <td>Enter the total woodland area to be created (hectares)</td> <td style="text-align: right;">0.00</td> </tr> <tr> <td>Enter the total community orchard area to be created (hectares)</td> <td style="text-align: right;">0.00</td> </tr> <tr> <td>Enter the total community food growing / allotment area to be created (hectares)</td> <td style="text-align: right;">0.00</td> </tr> <tr> <td colspan="2">           Check to help ensure that sum total of proposed land uses equals site area in Stage 2         </td> </tr> <tr> <td></td> <td style="text-align: right;">0.09</td> </tr> <tr> <td colspan="2">           Calculate total Nitrogen load from proposed land uses         </td> </tr> <tr> <td></td> <td style="text-align: right;">1.29</td> </tr> </table> | Enter the total urban area to be created (hectares)       | 0.09 | 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 | Check to help ensure that sum total of proposed land uses equals site area in Stage 2 |  |  | 0.09 | Calculate total Nitrogen load from proposed land uses |  |  | 1.29 |
| Enter the total urban area to be created (hectares)                                                                                                 | 0.09                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                           |      |                                                                            |      |                                                              |      |                                                        |      |                                                                 |      |                                                                                  |      |                                                                                       |  |  |      |                                                       |  |  |      |
| 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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                           |      |                                                                            |      |                                                              |      |                                                        |      |                                                                 |      |                                                                                  |      |                                                                                       |  |  |      |                                                       |  |  |      |
| Check to help ensure that sum total of proposed land uses equals site area in Stage 2                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                           |      |                                                                            |      |                                                              |      |                                                        |      |                                                                 |      |                                                                                  |      |                                                                                       |  |  |      |                                                       |  |  |      |
|                                                                                                                                                     | 0.09                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                           |      |                                                                            |      |                                                              |      |                                                        |      |                                                                 |      |                                                                                  |      |                                                                                       |  |  |      |                                                       |  |  |      |
| Calculate total Nitrogen load from proposed land uses                                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                           |      |                                                                            |      |                                                              |      |                                                        |      |                                                                 |      |                                                                                  |      |                                                                                       |  |  |      |                                                       |  |  |      |
|                                                                                                                                                     | 1.29                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                           |      |                                                                            |      |                                                              |      |                                                        |      |                                                                 |      |                                                                                  |      |                                                                                       |  |  |      |                                                       |  |  |      |
| <b>Stage 4</b> Calculate the net change in Nitrogen load from the proposed development                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                           |      |                                                                            |      |                                                              |      |                                                        |      |                                                                 |      |                                                                                  |      |                                                                                       |  |  |      |                                                       |  |  |      |
| <b>Step 1</b> Identify Nitrogen load from wastewater (Stage 1)                                                                                      | <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 80%;">Nitrogen leaving wastewater treatment works (kg per year)</td> <td style="width: 20%; text-align: right;">0.67</td> </tr> </table>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Nitrogen leaving wastewater treatment works (kg per year) | 0.67 |                                                                            |      |                                                              |      |                                                        |      |                                                                 |      |                                                                                  |      |                                                                                       |  |  |      |                                                       |  |  |      |
| Nitrogen leaving wastewater treatment works (kg per year)                                                                                           | 0.67                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                           |      |                                                                            |      |                                                              |      |                                                        |      |                                                                 |      |                                                                                  |      |                                                                                       |  |  |      |                                                       |  |  |      |
| <b>Step 2</b> Calculate net change in Nitrogen load from land use changes                                                                           | <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 80%;">Total Nitrogen load from future land use (kg per year)</td> <td style="width: 20%; text-align: right;">0.00</td> </tr> </table>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Total Nitrogen load from future land use (kg per year)    | 0.00 |                                                                            |      |                                                              |      |                                                        |      |                                                                 |      |                                                                                  |      |                                                                                       |  |  |      |                                                       |  |  |      |
| Total Nitrogen load from future land use (kg per year)                                                                                              | 0.00                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                           |      |                                                                            |      |                                                              |      |                                                        |      |                                                                 |      |                                                                                  |      |                                                                                       |  |  |      |                                                       |  |  |      |
| <b>Step 3</b> Calculate total Nitrogen budget for the development site                                                                              | <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 80%;">Nitrogen budget for the site (kg per year)</td> <td style="width: 20%; text-align: right;">0.67</td> </tr> </table>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Nitrogen budget for the site (kg per year)                | 0.67 |                                                                            |      |                                                              |      |                                                        |      |                                                                 |      |                                                                                  |      |                                                                                       |  |  |      |                                                       |  |  |      |
| Nitrogen budget for the site (kg per year)                                                                                                          | 0.67                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                           |      |                                                                            |      |                                                              |      |                                                        |      |                                                                 |      |                                                                                  |      |                                                                                       |  |  |      |                                                       |  |  |      |
| <b>Step 4</b> Calculate precautionary buffer if Nitrogen budget exceeds zero                                                                        | <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 80%;">Precautionary Nitrogen buffer (kg per year)</td> <td style="width: 20%; text-align: right;">0.13</td> </tr> </table>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Precautionary Nitrogen buffer (kg per year)               | 0.13 |                                                                            |      |                                                              |      |                                                        |      |                                                                 |      |                                                                                  |      |                                                                                       |  |  |      |                                                       |  |  |      |
| Precautionary Nitrogen buffer (kg per year)                                                                                                         | 0.13                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                           |      |                                                                            |      |                                                              |      |                                                        |      |                                                                 |      |                                                                                  |      |                                                                                       |  |  |      |                                                       |  |  |      |
| <b>Total Nitrogen budget for the proposed development (kg per year)</b>                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                           |      |                                                                            |      |                                                              |      |                                                        |      |                                                                 |      |                                                                                  |      |                                                                                       |  |  |      |                                                       |  |  |      |
| <b>0.8</b>                                                                                                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                           |      |                                                                            |      |                                                              |      |                                                        |      |                                                                 |      |                                                                                  |      |                                                                                       |  |  |      |                                                       |  |  |      |
| Development will generate additional Nitrogen - Mitigation is required<br>Please liaise with your Local Planning Authority for advice on next steps |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                           |      |                                                                            |      |                                                              |      |                                                        |      |                                                                 |      |                                                                                  |      |                                                                                       |  |  |      |                                                       |  |  |      |