Nitrogen Budget Calculation

Planning Application Reference No.	APP/21/00024
Site Name:	Land Between 26 and 32 Padnell Road, Waterlooville, PO8 8DZ
Additional Information:	
Date:	**24.03.2021**

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	**6**
Net population increase per housing unit	**2.40**
Total net population increase generated by the development	**14.40**

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

Water use in litres per person per day	**110**
Total wastewater volume generated by the development (litres per day)	**1,584**

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

Select the wastewater treatment works the development will connect to	**Budds Farm**
Wastewater treatment works' permit limit (mg per litre)	**9.7**
Wastewater treatment works' discharge level (mg per litre)	**8.7**

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

Deduct acceptable Nitrogen loading in wastewater (mg per litre)	**6.7**
Total Nitrogen discharged by WwTW (mg per day)	**10,660.3**
Total Nitrogen discharged by WwTW (kg per day)	**0.0107**
Total Nitrogen discharged by WwTW (kg per year)	**3.9**

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)	**0.11**

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

Enter area currently used for urban development (hectares)	**0.00**
Enter area currently used for open space / greenfield (hectares)	**0.11**
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**
Check to help ensure that sum total of land uses in Step 2 equals site area in Step 1	**0.1**

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

Total Nitrogen load from current land usage (kg per year)	**0.6**

Nitrogen Budget Calculation

Stage 3 **Calculate nitrogen load for the non-built land uses proposed for the development site**

Step 1 **Identify proposed land uses of the development site**

Enter the total urban area to be created (hectares)	**0.11**
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	**0.11**

Step 2 **Calculate total Nitrogen load from proposed land uses**

Total Nitrogen load from future land uses (kg per year)	**1.53**

Stage 4 **Calculate the net change in Nitrogen load from the proposed development**

Step 1 **Identify Nitrogen load from wastewater (Stage 1)**

Nitrogen leaving wastewater treatment works (kg per year)	**3.89**

Step 2 **Calculate net change in Nitrogen load from land use changes**

Total Nitrogen load from future land use (kg per year)	**0.98**

Step 3 **Calculate total Nitrogen budget for the development site**

Nitrogen budget for the site (kg per year)	**4.87**

Step 4 **Calculate precautionary buffer if Nitrogen budget exceeds zero**

Precautionary Nitrogen buffer (kg per year)	**0.97**

Total Nitrogen budget for the proposed development (kg per year)	**5.8**

Development will generate additional Nitrogen - Mitigation is required
Please liaise with your Local Planning Authority for advice on next steps