Nitrogen Budget Calculation

Planning Application Reference No.	
Site Name:	Land West of Old Manor Farm, South of Lower Road, Bedhampton
Additional Information:	
Outline application for up to 43 dwellings, associated landscaping, open space and allotments with access from Lower Road	
Date:	**15th September 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	43
Net population increase per housing unit	2.40
Total net population increase generated by the development	103.20

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)	11,352

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)	76,399.0
Total Nitrogen discharged by WwTW (kg per day)	0.0764
Total Nitrogen discharged by WwTW (kg per year)	27.9

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)	3.67

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)	0.00
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)	3.67
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	3.7

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

Total Nitrogen load from current land usage (kg per year)	114.5

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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)	1.46
Enter the total designated open space / SANG area to be created (hectares)	2.21
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	3.67

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

Total Nitrogen load from future land uses (kg per year)	31.93

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)	27.89

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

Total Nitrogen load from future land use (kg per year)	-82.58

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

Nitrogen budget for the site (kg per year)	-54.69

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

Precautionary Nitrogen buffer (kg per year)	0.00

Total Nitrogen budget for the proposed development (kg per year)	**-54.7**

Development will be Nitrogen neutral - no mitigation will be required