

Nitrate Budget Report v2

Land to North of 61 Hollybank Lane, Emsworth

At the time of reporting, December 2020, it was understood that the proposed development comprised the erection of a 4 bedroomed dwelling. The proposed development includes foul disposal to sewer.

The following Nitrogen budget has been calculated based on the guidance within the Natural England document 'Advice on Achieving Nutrient Neutrality for New Development in The Solent Region' Version 5 dated June 2020.

NITRATE BUDGET CALCULATION (Stage 1)

Stage 1 - Total Nitrogen (TN) Load from Development Wastewater			
Step	Measurement	Value (unit)	Explanation/Assumpti
	Number of proposed dwellings	1No. four bed dwelling	As per drawings.
1	Additional Population	2.4 (People)	Assumes a UK average sized family (2017)
2	Wastewater Generated by Development	264 (litres/day)	Assumes 110 litres per person
3	Receiving WwTW environmental TN permit limit. Assume discharge to be at 90% of consent limit	9.0 (mg/l)	Consent limit for WwWT x 0.9
4	Deduct acceptable TN loading (@ 2 mg/l TN) (as defined in Paragraph 4.40)	7.0 (mg/l)	Step 3 – 2 mg/l TN
5	TN discharged after WwTW	1848mg/TN/day	Step 2 x Step 4
6	Convert Kg/TN per day to Kg/TN per year	0.001848Kg/TN/day	Step 5 divided by 1,000,000
7	Convert Kg/TN per day to Kg/TN per year	0.67452 (kg/yr)	Step 6 x 365 days

NITRATE BUDGET CALCULATION (Stage 2)

Stage 2 - Total Nitrogen (TN) Load from Current Development		
Measurement	Value (unit)	Explanation/Assumptions
Site Area	0.05 (hectares)	As per site description/plans
TN load of the current site use	14.3 (kg/ha/yr)	Based on the TN load for an urban land.
TN Load – current land use	0.715 (kg/N/yr)	Based on the above assumptions

NITRATE BUDGET CALCULATION (Stage 3)

Stage 3 - Total Nitrogen (TN) Load from Proposed Development		
Measurement	Value (unit)	Explanation/Assumptions
Site Area	0.05 (hectares)	As per site description/plans
TN load of the proposed site use	14.3 (kg/ha/yr)	Based on the TN load for an urban land-use
TN Load – proposed development	0.715 (kg/N/yr)	Based on the above assumptions

NITRATE BUDGET CALCULATION (Stage 4)

Stage 4 - Net Change in Nitrogen Load from the Proposed Development		
Measurement	Value (unit)	Explanation/Assumptions
Nitrogen Load from Wastewater	0.67 (kg/yr)	Stage 1
Net change in TN load from land use change	0.00 (kg/yr)	Subtract Stage 2 from Stage 3
Nitrogen Budget	0.67 (kg/yr)	Add the Net change in TN Load from land use change to Stage 1
Nitrogen Budget (20% Buffer)	0.8 (kg/yr)	20% Precautionary Buffer Applied

CONCLUSIONS/MITIGATION

The nitrogen budget calculation for the site shows that after the occupation of the proposed development there will be an increase in the Total Nitrogen load compared to the existing site use. Therefore, it is recommended that mitigation or nitrogen offsetting is required for this development.

SOLUTION

The area of off-site rewilding required to offset the nitrogen load of the proposed development: $0.67 \text{ kg/yr} \div 28.3 \text{ kg/ha/yr} = 0.0238 \text{ ha}$ (calculation assumes a mixed-use farm type for rewilding).

Therefore, in order to offset the calculated nitrogen load of 0.67 kg/yr, **rewilding an area of 0.0238ha would be required.**