

**PROPOSED DEVELOPMENT OF THREE HOUSES ON LAND
ADJACENT TO 105 VICTORIA ROAD, CHICHESTER**

NUTRIENT NEUTRALITY STATEMENT

DAVID BENNETT ARCHITECT

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NUTRIENT NEUTRALITY STATEMENT

PROPOSED DEVELOPMENT OF LAND ADJACENT TO 105 VICTORIA ROAD, CHICHESTER, PO19 7HY

EXISTING SITE DETAILS AND PROPOSED DEVELOPMENT

105 Victoria Road is a two storey detached house, lying to the south side of Victoria Road. The proposed development site lies to the east of 105 Victoria Road, Chichester with frontages to Victoria Road and Leatherbottle Lane. In addition to the house, which is retained unaltered in the proposed scheme, the site contains a single storey building adjoining the house used as a fish and chip shop, a number of garages and outbuildings and a large concrete and asphalt car parking area with access from Leatherbottle Lane. The southern part of the site is a grassed area at a lower level than the rest of the site with further small outbuildings. The area of the development site is 646 square metres (0.0646 hectare).

It is proposed to develop three dwellings on the site of the Fish and Chip Shop and associated car parking areas.

NUTRIENT NEUTRALITY

In preparing the following information we have had reference to the Nutrient Neutrality Generic Methodology statement (NNGM) produced by Natural England ref NECR459 published November 2022.

POPULATION AND WATER USAGE

To calculate the additional population generated by the development, an average of 2.4 persons per dwelling has been used, as recommended by Natural England from statistics provided by the Office of National Statistics. The maximum water use rate of 110 litres per person per day, the optional higher water efficiency contained in the Building Regulations, has been used in the following calculations.

$$\begin{aligned} & 3 \text{ dwellings} \times 2.4 \text{ persons per dwelling} \times 120 \text{ litres (110 litres per person per day plus 10\%)} = \\ & 864 \text{ litres per day wastewater volume} \\ & \text{Annual use is therefore: } 864 \times 365.25 = 315,576 \text{ litres/year} \end{aligned}$$

WASTEWATER TREATMENT

The waste water generated by the development is to be discharged to the mains sewer network. According to information supplied by Southern Water, the wastewater treatment works (WwTW) to which this site will drain is Apuldram, which has a Total Nitrogen (TN) permit of 9.00 mg per litre. A figure of 90% of the TN limit is used in subsequent calculations, as recommended in Part1.3A of the NNGM (9.00mg/l x 90% = 8.10mg/l).

NUTRIENT LOAD FROM ADDITIONAL WASTEWATER (STAGE 1 OF NNGM)

Annual nitrogen load from the new development is:

$$\begin{aligned} & (9.00\text{mg/l} \times 90\%) \times 315,576 \text{ litres/year} = 2,556,166 \text{ mg TN/year} \\ & \text{Equals } 2.56.\text{kg TN/year} \end{aligned}$$

NUTRIENT FROM CURRENT LAND USE (STAGE 2 OF NNGM)

The current land use is part commercial and part residential (374sm commercial and 288sm residential measured by site area). From Part 2.1.C Table 8, for commercial use the nitrogen export coefficient is 5.51 and the phosphorus export coefficient is 0.81, both in kg/ha/yr. For residential use the N export coefficient is 10.33 and the P export coefficient is 1.10.

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Total annual nutrient loading from current land uses is:

Nitrogen: 0.0374 * 5.51 = 0.21 kg N/year
 0.0288 * 10.33 = 0.30 kg N/year
Total 0.51 kg N/year

Phosphorus: 0.0374 * 0.81 = 0.03 kg N/year
 0.0288 * 1.10 = 0.03 kg N/year
Total 0.06 kg N/year

NUTRIENT LOADING FROM FUTURE LAND USE (STAGE 3 OF NNGM)

The land use area is 662 square metres or 0.0662 hectare. The land has a nitrogen export coefficient of 10.33 and a phosphorus export coefficient of 1.10. This generates the following total nutrient loadings from future land uses:

Nitrogen: 0.0662 * 10.33 = 0.68 kg N/year
Phosphorus: 0.0662 * 1.10 = 0.06 kg N/year

NUTRIENT BUFFER (STAGE 4 OF NNGM)

Nitrogen budget from Stages 1,2 and 3:

Stage 1 2.56 kg N/year
Stage 2 0.51 kg N/year
Stage 3 0.68 kg N/year

Nutrient budget calculation is therefore: $2.56 - 0.51 + 0.68 = 2.73$ kg N/year

Precautionary 20% buffer = $2.73 \times 1.2 = 3.276$ kg N/year

MITIGATION

The applicants acknowledge that mitigation measures are required and have engaged Lizard Landscape Design and Ecology to submit their proposals to achieve nutrient neutrality in accordance with the guidance provided by Natural England. This submission will be made under separate cover.

End

November 2023