

TECHNICAL NOTE

Project: 22-23 St Georges Terrace, Herne Bay, Canterbury
Job No: 4092 / P03 ADD2
Purpose of Note: NUTRIENT ASSESSMENT – ADDENDUM 3
Date: 01/04/2021

This technical note provides an addendum to the Nutrient Assessment for the proposed development at 22-23 St Georges Terrace, Herne Bay, Canterbury to specifically address the concerns raised by Canterbury City Council about confidence that existing flows from the site are greater than the proposed uses. The proposal is to re-develop a former 22 bed care home with 14 apartments.

The Issue

As stated in the Nutrient Assessment, Natural England advise that the water environment in the Stodmarsh designated sites is internationally important for its wildlife and is protected under the Water Environment Regulations and the Conservation of Habitats and Species Regulations. Water quality assessment of the Stodmarsh designated sites reveals that levels of nutrients (nitrate and phosphate) are high and leading to the eutrophication of the sites – i.e. an excessive richness of nutrients in the water bodies which is causing plant growth to threaten protected species and habitats.

As much of the nutrient load in the Stour comes from treated human waste, Natural England are advising Planning Authorities to take a ‘precautionary approach’ i.e. to Refuse Planning Consent for any development that is not ‘nutrient neutral’ until ‘any solutions are implemented to remove the adverse effects on Stodmarsh’.

Only developments that are ‘nutrient neutral’ or include suitable mitigation will be allowed without challenge by Natural England.

The Development

Existing Site

The existing site has recently been used as a 22 – 25 bed care home. Southern Water Services have confirmed that foul sewers in the site area discharge to the May Street WWTW which discharges into the Stour well downstream of the Stodmarsh Sites and should therefore not be an issue for Stodmarsh water quality. However, to address Canterbury City Council concerns we now look in detail at the Residential Care Home the likely waste water load,

To calculate capacity requirements for drainage assets including sewage treatment systems we see that the industry uses British Water Code of Practice ‘Flows and Loads – 4 “Sizing Criteria, Treatment Capacity for Sewage Treatment Systems”’ as endorsed by The Environment Agency and others. From that document we see a ‘Table of Loadings for Sewage Treatment Systems’ which includes residential care homes and hospitals as in the figure below:

	FLOW	BOD	Ammonia
HOSPITALS & RESIDENTIAL CARE HOMES			
Residential old people / nursing	350	110	13
Small hospitals	450	140	Assess
Large hospitals			Assess individually
*Staff figures also apply to other applications			

Extract from ‘Flows and Loads – 4’. First figure is load per person per day

From this database we see the likely typical load per person is some 350 litres per resident per day.

It should also be noted that the same data set records typical domestic load per person to be 150 litres per person per day which is more than the Natural England standard assessment value of 110 litres per person.

The Surface Water discharges to the front of the property where it outfalls to the sea via a local watercourse as confirmed in Environment Agency mapping.

Proposed Development

The property on the site is to be demolished and a new development proposes the construction of 14 apartments to replace 22 beds in a care home. 14 apartments at 2.4 occupancy in line with Natural England advice provides for some 34 people. The care home would have 22 occupants as patients plus an allowance for the fact that there would be staff on site for 24 hours of the day as well as the waste from visitors of which there would be many.

Using the Flows and Loads figures we see a proposed use of 34 persons ($14 \times 2.4 = 33.6 = 34$) at 150 litres per person per day = 5,100 litres per day. Being ultra conservative and only using the data for the residents of the existing use we see 22 persons at 350 litres per person per day = 7,700 litres per day. By simple inspection we can see that the flows from the existing use far exceeds the likely flows from the proposed use i.e. Existing use of 7,700l/day compared to 5,100l/day for the proposed use using the higher Flows and Loads data. It is of note that, on this basis, a development of up to 21 dwellings would be classed as nutrient neutral using Flows and Loads data for the new units and 29 dwellings using the 110 litres per person for a new development from the Natural England advice so we can see there is a healthy margin between the proposed development level and the maximum level for nutrient neutrality.

Conclusion

It has been shown then that whether using the Natural England values for flow per person or Flows and Loads-4 data the Nutrient Load from the site is significantly less than that of the existing uses irrespective of where the treated effluent goes.

The surface water from the site will continue to discharge northwards to the sea. It does not affect the Stour catchment and therefore does not have an impact on the Stodmarsh Designated Sites.

It is the opinion of the original Nutrient Assessment and also this Addendum that allowing the development to go forward on the basis described would not be in contravention of the advice from Natural England as the effluent and nutrients deriving from the site are lower than the existing consented uses and discharge in such a way that it will not affect the Stodmarsh Designated Sites.

As such there is no reason in nutrient load terms why the development cannot be granted planning consent in the form proposed.

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