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- 1.1 This Nitrate Neutrality Note has been prepared by Paul Basham Associates to support the proposed foul water drainage design for the proposed development at Nightingale Avenue, Eastleigh.
- 1.2 The site is currently a brownfield site serving comprising a storage yard and two garages, and therefore does not generate any foul water.
- 1.3 The new development proposals are for 4 residential flats with communal gardens and parking spaces. The foul drainage proposals are to discharge via a gravity sewer into the existing Southern Water sewer located 30m south-east of the site. Based on Southern Water's asset location search, the nearest wastewater treatment plant is the Chickenhall Eastleigh Wastewater Treatment Works, located 1.18km southeast of the property, therefore it is assumed that this is where the foul water will ultimately discharge into.
- 1.4 Natural England nutrient calculator for the Itchen River catchment has been used to calculate the nutrient loads for the proposed and existing site. Please see below an extract from Stage 1 (**Figure 1**) showing the proposed site details. An average occupancy rate of 2.4 have been used, which gives the post-2025 Nutrient Loading for Phosphorous and Nitrogen, where the proposed development will have annual Phosphorus loading of 0.23 kg TP/year and a Nitrogen loading of 10.52 kg TN/year.

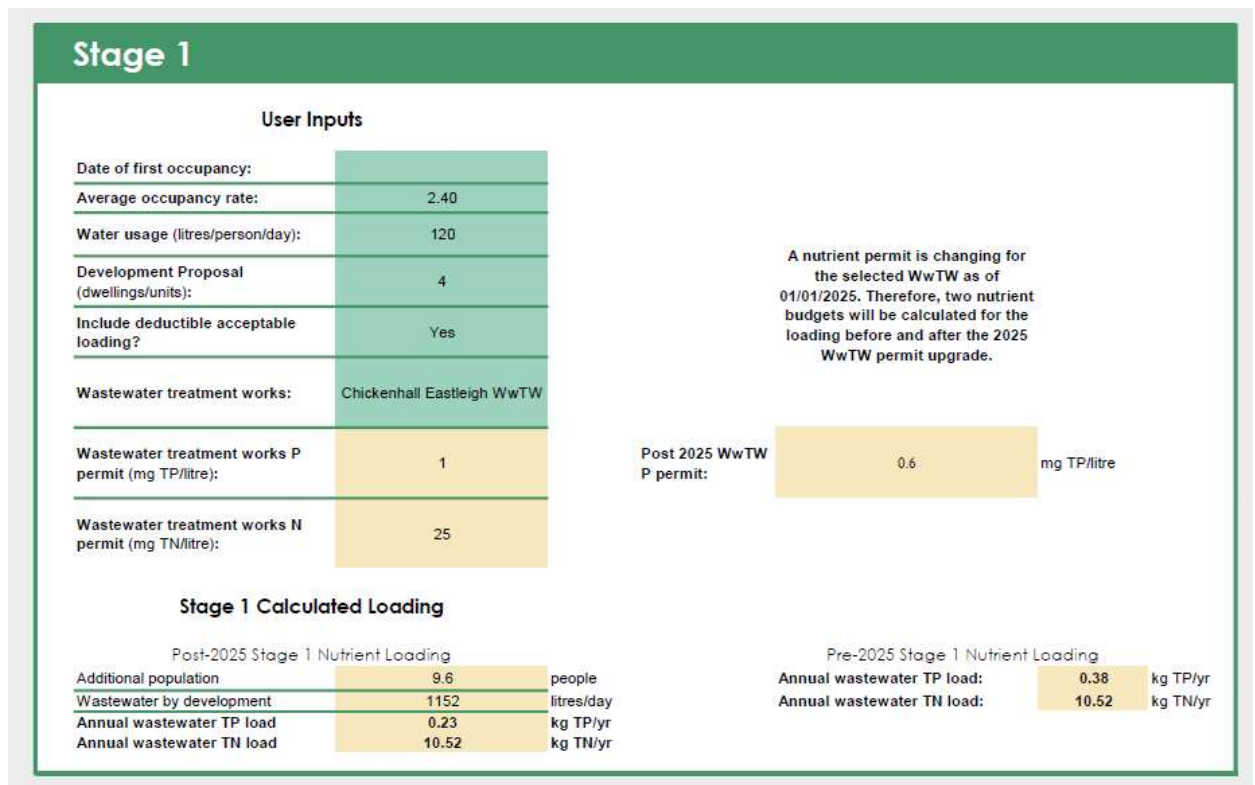


Figure 1: Stage 1 Extract

- 1.5 Stages 2 and 3 related to the existing and proposed land use types and the annual nutrient load relating for each case. The land use in both stages have been chosen as “Residential Urban Land” since it is the closest description for the storage yard as well as a residential development. Please see below Figure 2 and Figure 3 for Stage 2 and 3 extracts.

Stage 2			
User Inputs			
Catchment:	Itchen		
Soil drainage type:	Freely draining		
Annual average rainfall (mm):	750.1 - 800		
Within Nitrate Vulnerable Zone (NVZ):	Yes		
Existing land use type(s)	Area (ha)	Annual phosphorus nutrient export (kg TP)	Annual nitrogen nutrient export (kg TN)
Residential urban land	0.06	0.09	0.86
Total:	0.0598	0.09	0.86

Figure 2: Stage 2 Extract

Stage 3			
User Inputs			
New land use type(s)	Area (ha)	Annual phosphorus nutrient export (kg TP)	Annual nitrogen nutrient export (kg TN)
Residential urban land	0.06	0.09	0.86
Total:	0.0598	0.09	0.86

Figure 3: Stage 3 Extract

- 1.6 Stage 4 summarises the calculated outputs based on the parameters input for the site. An extract is shown in **Figure 4** below. The output summary indicates the total annual load of phosphorus to mitigate pre-2025 is 0.45 kg TP/year and will be 0.27 kg TP/year post 2025. Meanwhile, the total annual nitrogen load to mitigate remains the same value with a total of 12.62 kg TN/year.

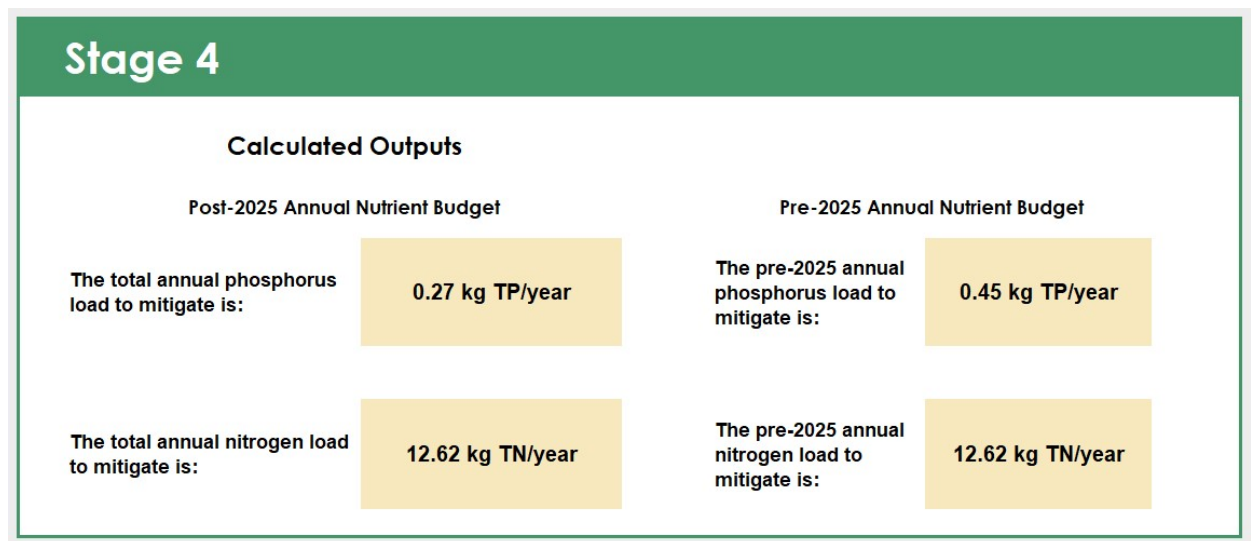


Figure 4: Stage 4 Extract

- 1.7 Regarding surface water drainage and according to the Drainage Strategy Technical Note provided by Odyssey (Ref. 21-138-02); the surface water proposals for the site are to collect run-off via gravity network and attenuate in two underground cellular storage tanks, prior to discharging into the existing Southern Water network at a limited discharge rate of 1l/s through two discharge points.