CALCULATION SPREADSHEET
Unmitigated Nutrient Neutrality Calculations

Job No.	21088	
Job Name	Treetops, Bulford	
Engineer / Initials	Christopher Garrard	CMG
Checked by / Initials	Guy Laister	GL
Date	02/12/2022	

WATER | ENVIRONMENT
Water Environment Limited ● 6 Coppergate Mews ● Brighton Road ● Surbiton ● London ● KT6 5NE
Tel: 020 8545 9720 ● Email: admin@waterenvironment.co.uk

Standard Average Annual Rainfall (mm)	731	Soil Type	Freely Draining
Nitrate Vulnerable Zone	TRUE	Catchment	Avon Hampshire

Stage 1 - Total Nitrogen (TN) and Total Phosphorus (TP) Load from Development Wastewater

Measurement	Value	Unit	Explanation
New Hotel	90	Rooms	Assuming the hotel is 69.7% occupied on average, in line with global statistics.
Average Occupancy	1.4	persons/dwelling	
Future Population	87.8	persons	
Water Use	120	litres/person/day	Discharge to Ratfyn WwTW
TP Licence Limit	1.00	mg/l	
Future Wastewater Nutrient Load	**3.46**	**kgP/yr**	

Stage 1 - Wastewwater Loads from Existing Carwash

Measurement	Value	Unit	Explanation
Water Use	1.15	Ml/year	Bakacs et al (2013) and International Car Wash Association (2002). Assumed discharge to surface
Effluent TP Concentration	0.17	mg/l	
Existing Wastewater Nutrient Load	**0.20**	**kgP/yr**	

Stage 2 - Calculation of Existing Nutrient Load from Surface Water

Existing Land Use	Existing Area (ha)	Leaching Rates (kg/ha/year) TP	Explanation
Commercial/Industrial	1.20	1.06	Site is currently a car wash
Existing Surface Water Nutrient Load	**1.27**	**kgP/yr**	

Stage 3 - Calculation of Future Nutrient Load from Surface Water

Future Land Use	Proposed Area (ha)	Leaching Rates (kg/ha/year) TP	Explanation
Urban Land Uses			
Residential Urban	0.80	1.45	Site plans indicate a grassed car park in the courtyard. This has been designated as open urban, in line with the NEGM
Open Urban	0.40	0.78	
Reduction factor due to SuDS		0%	
Urban Nutrient Load (kg/year)		1.47	
Future Surface Water Nutrient Load	**1.47**	**kgP/yr**	

Stage 4 - Calculation of TN andTP Budgets

Measurement	Value	Unit	Explanation
Total Future TP	4.94	kgP/yr	
TP Budget	3.47	kgP/yr	
Nutrient Budget with 20% Buffer	**4.16**	**kgP/yr**	