Nutrient Neutrality (Phosphorus) Assessment

Site: 96 Erddig Road, Wrexham
Proposal: Conversion to 2 × 2-bed apartments (4 beds total)
Applicant: Shaun Myddelton
Planning Ref: P/2025/0607
Date: 17 September 2025

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1) Purpose

This note responds to the case officer's request for a nutrient neutrality assessment for the revised proposal (2 × 2-bed apartments). It compares the existing lawful use with the proposed use using British Water Flows & Loads 4 occupancy assumptions and sets out mitigation to ensure no net increase in phosphorus loading to the River Dee SAC catchment.

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2) Drainage & Receiving Works

- Foul drainage: connection to the public foul sewer (no private treatment).
- Receiving WwTW: Five Fords Wastewater Treatment Works (WwTW), which operates under an Environmental Permit.

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3) Occupancy Baseline vs Proposed (per Flows & Loads 4)

The case officer has cited the Flows & Loads 4 occupancy equivalents:

- Existing 5-bed dwelling: 7 persons (baseline)
- Proposed 2 × 2-bed apartments: 8 persons (proposed)
  → Net change: +1 person

Note on realistic occupation: While Flows & Loads 4 assumes 8 persons across the two apartments, in practice it is highly unlikely that both flats would consistently accommodate 4 persons each. Actual occupation is expected to be materially lower, meaning the projections below are precautionary and conservative.

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4) Water Use Assumptions

- Conservative baseline daily discharge per person: 150 L/person/day.
- Proposed water-efficiency target: ≤105 L/person/day, consistent with Building Regulations Part G.

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5) Calculations

Scenario	Occupants	Rate (L/person/day)	Total Wastewater (L/day)
Existing lawful use (5-bed house)	7	150	1,050
Proposed (2 × 2-bed apts)	8	105	840

Result: Proposed discharge decreases by 210 L/day vs. baseline (1,050 → 840 L/day), a 20% reduction despite +1 headcount. On a like-for-like basis, a reduction in wastewater volume equates to a proportional reduction in phosphorus load to the WwTW.

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6) Mitigation & Design Commitments

To achieve/maintain ≤105 L/person/day across both apartments, we will install and retain:

- Dual-flush, low-flush WCs
- Flow-restricted taps and showers
- Water-efficient appliances (A/A+ rated washing machines & dishwashers)
- Occupant guidance/signage to promote reduced water use (issued at occupation)

These measures mirror those accepted by NRW previously for the HMO iteration at the site.

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7) Conclusion (Habitats Regulations)

- The development connects to the public foul sewer; there is no private treatment.
- Using Flows & Loads 4 occupancy and Part G efficiency, the proposal reduces daily wastewater (and thus phosphorus loading to Five Fords WwTW) by ~210 L/day compared to the existing lawful use.
- The assessment is based on conservative assumptions; in practice, actual occupation levels are likely to be lower than the modelled 8 persons, meaning the true phosphorus load reduction would be greater.
- Accordingly, the proposal achieves nutrient neutrality with betterment and does not lead to an adverse effect on the integrity of the River Dee SAC.

Contact

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