

CANAL & RIVER TRUST

PHOSPATE OUTPUT ASSESSMENT

Trevor Basin, Llangollen Canal, Trevor, LL20 7TP

February 2022

Prepared by
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Prepared for
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Report Title	:	Phosphate output assessment – Trevor Basin
Report Status	:	Final
Date	:	February 2022
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CONTENTS

	Page
1 Introduction	2
1.1 Purpose of this report	2
1.2 Phosphate sources	2
1.3 Existing and Proposed development	2
2 Planning context	4
2.1 National Resources Wales Planning Policy Statement - Phosphate	4
2.2 Dee catchment phosphorous reduction strategy	4
3 Estimated Phosphate output	4
3.1 Calculating phosphate outputs	4
3.2 Existing operations estimated phosphate output	5
3.3 Proposed development estimated phosphate output	5
4 Conclusions	5
4.1 Comparing current to proposed use	5
4.2 Waste water disposal	6
4.3 Phosphate neutrality	6

APPENDICES

APPENDIX A

APPENDIX B

1 INTRODUCTION

1.1 Purpose of this report

1.1.1 In June 2021 Canal & River Trust (The Trust) submitted planning application P2021/0560 to Wrexham County Borough Council (WCBC) for a proposed re-development of Trevor Basin, Llangollen Canal, Trevor. The proposal lies within the River Dee and Bala Lake Special Area of Conservation (SAC).

1.1.2 The Trust have appointed Enebio to undertake an assessment of potential phosphate outputs to the River Dee SAC from existing and proposed development at the site in order to progress planning approval.

1.1.3 The purpose of this report is to satisfy Natural Resources Wales (NRW), a consultee in the planning process, that the proposed development will not increase phosphate levels to the River Dee SAC beyond current levels. That the development will be phosphate neutral in comparison to existing activities on site.

1.2 Phosphate sources

1.2.1 Phosphate inputs to the River Dee SAC originate from a number of sources within the catchment. Sewage effluent from waste water treatment and agriculture are the largest sources of phosphorous to waterbodies¹.

1.2.2 The proposed development has the potential to contribute phosphorous to the River Dee SAC via disposal of foul water (toilets, on land and boat, and kitchen waste water) to the Cefn Mawr waste water treatment works operated by Welsh Water. Volumes of waste water generated relate directly to visitor and staff numbers using the sites.

1.3 Existing and Proposed development

1.3.1 The proposed development will re-locate an existing boat hire operation, Anglo Welsh, ~250m from its current base along the Llangollen canal. Given it's close proximity to the proposed development site and that both sites dispose foul sewerage to the Cefn Mawr waste water treatment works, both the current operations of Anglo Welsh and prior occupant of the development site (Peter Jones) have been taken into consideration in this assessment.

Peter Jones

1.3.2 The proposed development site was previously occupied by a boat trip operator, Peter Jones, which has now ceased trading.

1.3.3 The Peter Jones operation comprised multiple buildings. A main building containing an office, storage, laundry, retail/cafe, toilet facilities (staff and visitors) and a mess/kitchen area for staff use. Other buildings on site included bin stores, service points (foul water pump out, water supply, electricity supply), gas bottle storage and a linen collection area. Above ground diesel fuel tanks were also present on site but were unhoued. The total floor area of the operation comprised 316m². Total land area 0.36ha.

1.3.4 The boat trip operation attracted significant numbers of visitors to site with around 12 trips per week in the peak summer period. It is estimated that almost 11,000 visitors

¹ <http://www.flintshire.gov.uk/en/PDFFiles/Planning/Examination-Library-Documents/FCC/FCC031-Phosphate-Strategy.pdf>

passed through site during April-September each year all of whom would be using facilities both on land and boat. Smaller numbers were seen over the winter October to March period. Additional water consumption and waste water disposal will have been generated via the café and on-site staff also.

- 1.3.5 Waste water generated from both on site buildings and trip boats was disposed to foul sewer.

Anglo Welsh

- 1.3.6 The current Anglo Welsh boat hire operation consists of 21 hire boats and a main building (2 storey) housing an office, café, reception and toilet. The total floor area of the main building is 144m². Total land area 0.18ha.
- 1.3.7 Hire boats are usually taken out for a 1 week hire. It is estimated that 2,700 people make use of the hire boats across the peak summer period April-September with smaller numbers over October-March.
- 1.3.8 Waste water generated from both on site buildings and boat hire is disposed to foul sewer.

Proposed development

- 1.3.9 The proposed development will see the existing Anglo Welsh operation relocate ~250m along the canal onto the site formerly occupied by Peter Jones. See appendix A for reference.
- 1.3.10 New buildings on site will comprise a single storey main building housing an office, laundry, retail, café, storage and toilet facilities. There will also be additional small out buildings comprising bin store, gas bottle store and covered fuel store. Total floor area of the on-land operation will be 346m². Total land area 0.66ha.
- 1.3.11 There will be no increase in boat fleet numbers compared to the existing Anglo Welsh operation ~250m along the canal. Whilst there may be a small increase in café usage it is not predicted that visitor numbers will increase significantly.
- 1.3.12 Waste water from the main building will be disposed to foul sewer. All waste water from the boats, due to its chemical content, will be pumped to a septic tank and tankered off site for disposal. This is in line with correspondence from Welsh Water in August 2021 requesting that all chemical toilet waste be removed from foul sewer circulation (Appendix B). This waste will be tankered off site for specialist treatment at Davyhulme Sewage Works, Manchester which is outside the catchment of the River Dee SAC. Whilst an accurate assessment of the quantity of waste water managed in this way cannot be made at this stage it is expected that this will be a significant proportion of waste water generated from site.
- 1.3.13 The new development will see the consolidation of 2 existing café's in close proximity (Peter Jones and Anglo Welsh).
- 1.3.14 All surface water is managed on-site via soakaway or discharged to the canal and is not thought to be a contributor to phosphate in the natural environment.

2 PLANNING CONTEXT

2.1 National Resources Wales Planning Policy Statement - Phosphate

2.1.1 In January 2021 National Resources Wales published an evidence package outlining phosphate levels for all river SACs across Wales following a review of tighter standards by the Joint Nature Conservation Committee. In the WCBC area it was found that the River Dee SAC failed to meet these standards.

2.1.2 As part of the evidence a planning policy statement was released by NRW stating that all proposed developments within an SAC should be screened by the local planning authority (LPA) via a Habitats Regulation Assessment (HRA) to prevent damage to SACs as a result of increased phosphate levels associated with new development.

2.1.3 NRW advised WCBC that existing phosphate discharge permit levels at waste water treatment works were insufficient to ensure no further damage would be incurred to the River Dee SAC. With that in mind WCBC and NRW are seeking either phosphate neutrality or adoption of alternative phosphate removal via direct treatment of phosphate generating waste water to remove phosphorous or offset land use.

2.2 Dee catchment phosphorous reduction strategy

2.2.1 This document, developed by Wrexham and Flintshire County Borough Councils forms the basis for future assessment of development against the NRW planning policy statement on phosphate output to the Dee SAC.

2.2.2 It sets out the strategic approach for delivering phosphorous reductions in the River Dee SAC.

2.2.3 The strategy is still in consultation and, whilst it's recommendations are taken into account in this assessment, future changes to the strategy, development of a nutrient management board and updates to future local development plan (LDP) policies may alter future assessments of phosphate outputs from development.

3 ESTIMATED PHOSPHATE OUTPUT

3.1 Calculating phosphate outputs

3.1.1 Guidance on reporting and assessing phosphate outputs from development is relatively new (2020 in England², 2021 in Wales³) as such, modelling and calculating tools are still in their infancy.

3.1.2 Calculators have been developed to support the assessment of phosphate potential within Local Development Plans (LDPs). LDP's focus on wider scale housing need and economic development potential rather than specific proposed developments.

3.1.3 As part of this assessment publicly available phosphate calculators have been evaluated against available information on the proposed development. Whilst no calculator was deemed a "perfect fit" to the proposed activities at Trevor Basin the

² <https://www.push.gov.uk/wp-content/uploads/2020/06/Natural-England%E2%80%99s-latest-guidance-on-achieving-nutrient-neutrality-for-new-housing-development-June-2020.pdf>

³ <https://naturalresources.wales/guidance-and-advice/business-sectors/planning-and-development/our-role-in-planning-and-development/advice-to-planning-authorities-for-planning-applications-affecting-phosphorus-sensitive-river-special-areas-of-conservation/?lang=en>

calculator developed by Somerset Councils Partnerships⁴ to assess their LDP does offer some insights.

- 3.1.4 The calculator offers good data on potential phosphate offset options should The Trust ever need to pursue such for other projects. The assessment within the Somerset model calculates estimated outputs based on land area and wide-ranging land use categories rather than more detailed assessment of estimated waste water outputs. As such it is unable to give an accurate representation for both existing and proposed development at Trevor Basin.
- 3.1.5 However, despite its limitations the Somerset model has been used here to offer an indication and comparison of potential phosphate outputs from both existing and proposed development at Trevor Basin.
- 3.1.6 The best fit category “sports and leisure facilities” has been used for this assessment. As identified above, potential phosphate outputs for this development will arise from toilet and kitchen uses rather than across the whole site. With this in mind total indoor floor area has been used as opposed to total land area in the calculator.

3.2 Existing operations estimated phosphate output

- 3.2.1 The proposed development will replace two existing operations within the development area. As such the floor area for both current Welsh Anglo operations and former Peter Jones operations have been used in the calculator. This totals 460m².
- 3.2.2 The Somerset calculator estimates total phosphate output for a site of this size under the sports and leisure category is 0.06kg/year.

3.3 Proposed development estimated phosphate output

- 3.3.1 The proposed development site covers 346m².
- 3.3.2 The estimated total phosphate output for a site of this size under the sports and leisure category is 0.04kg/year.
- 3.3.3 Whilst limitations to this methodology are identified above, this demonstrates a small potential decrease between existing and proposed operations.

4 CONCLUSIONS

4.1 Comparing current to proposed use

- 4.1.1 The estimated movements of people and waste water generation and therefore phosphate output across the sites will be significantly reduced across the year as a result of the removal of the former Peter Jones operation (estimated 11,000 visitors in peak season) and relocation of the Anglo Welsh operation to the proposed development site. This in itself is likely to reduce waste water and therefore phosphate outputs from site.
- 4.1.2 Estimated total phosphate outputs using the Somerset calculator show a clear reduction from existing operations.

⁴

https://ssccust1.spreadsheethosting.com/1/3d/08e177701b0026/Copy%20of%20P%20budget%20Calc_V3.1%20developer%20version/Copy%20of%20P%20budget%20Calc_V3.1%20developer%20version.htm

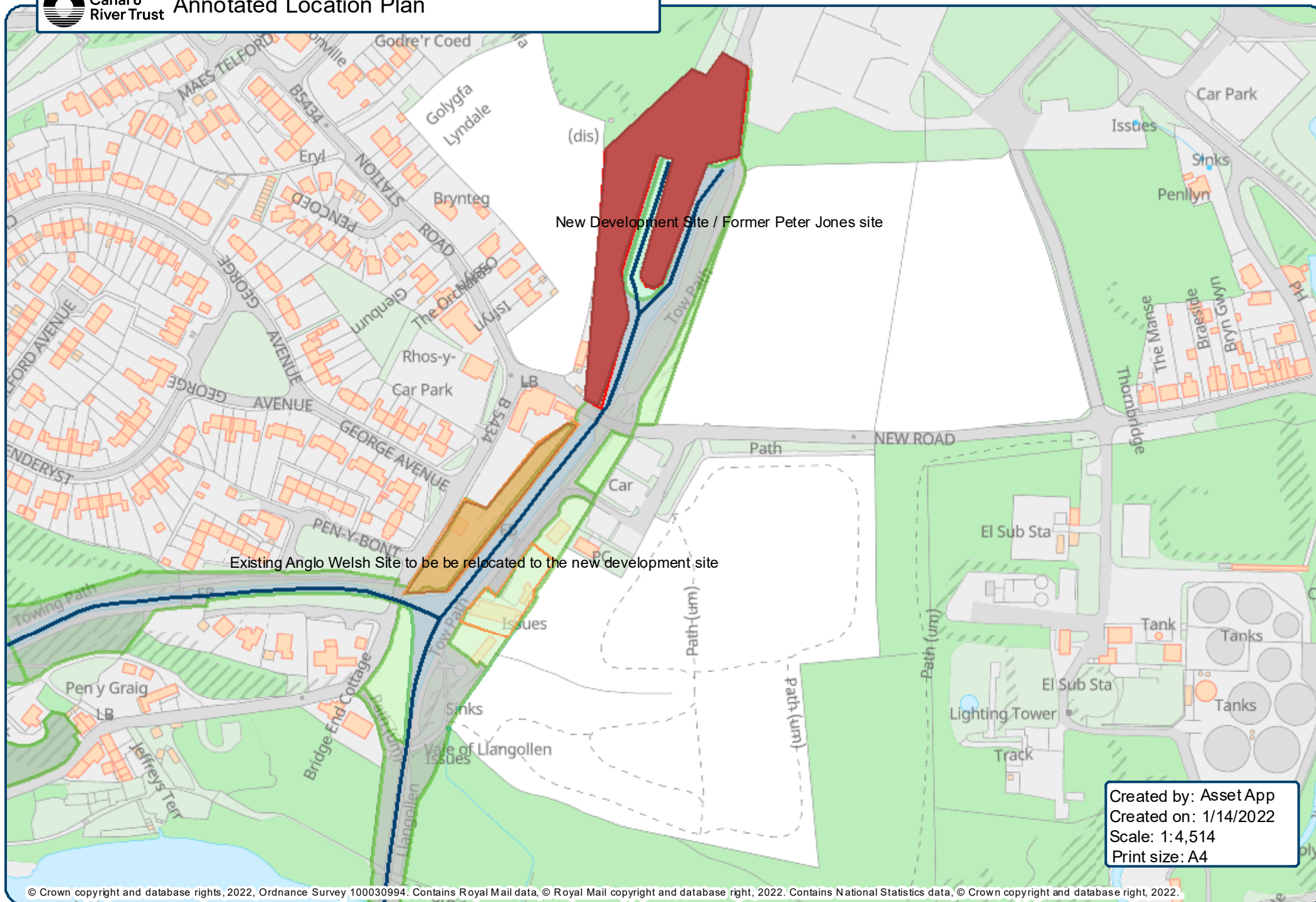
4.2 Waste water disposal

- 4.2.1 Welsh Water's requirement for all chemical toilet waste to be stored in septic tank and transported off site for specialist treatment will see a significant proportion of waste water and therefore total phosphate generated at the proposed development removed from the River Dee SAC. The waste water discharged to foul sewer as a result of the proposed development will come from the on site toilets and café. This is expected to be significantly lower than outputs generated from the former operator on site, Peter Jones, where all waste water, including boat based waste water was sent to foul sewer.

4.3 Phosphate neutrality

- 4.3.1 It is our conclusion that the cumulative reduction of visitor numbers across both sites, combined with removal of a significant proportion of waste water from site (boat pump out) for specialist treatment outside of the River Dee SAC will reduce phosphate outputs from site when compared to prior operations. This should be sufficient to meet NRW's requirement to evidence no increase in phosphate outputs as a result of the proposed development.

Appendix A



Appendix B

Date:
11/08/21

Enquiries:
Raymond
Jones

Dear Occupier.

S111 Water Industry Act 1991

We are writing to you regarding the disposal of chemical toilet fluid into the sewer. We note that the use of such substances is prevalent on boats/campsites and would take this opportunity to remind you that disposing of such substances into the sewer, or into any drain or sewer that communicates to the public sewer, is a criminal offence.

S111(1)(a) Water industry Act 1991 provides that “no person shall throw, empty or turn, or suffer or permit to be thrown or emptied or to pass, into any public sewer, or into any drain or sewer communicating with a public sewer any matter likely to injure the sewer or drain, to interfere with the free flow of its contents or to affect prejudicially the treatment and disposal of its contents”.

S111(3) Water Industry Act 1991 provides that “a person who contravenes any of the provisions of this section shall be guilty of an offence and liable -

- (a) on summary conviction, to a fine not exceeding the statutory maximum and to a further fine not exceeding £50 for each day on which the offence continues after conviction.
- (b) on conviction on indictment, to imprisonment for a term not exceeding two years or to a fine or to both”.

These offences are now subject to the new Environmental Sentencing Guidelines.

Chemical toilet fluid affects the treatment and disposal of the wastewater that is received at our sewerage treatment works (STW). It contains dyes, anti-microbials, high concentrations of oxygen demanding substances, ammonia and formaldehyde. These chemicals are environmentally harmful. If they are disposed of via the public sewer they can harm, or even kill, the microorganisms that are cultivated to treat the wastewater received at our STWs.

This affects our ability to comply with our regulatory and legislative duties and, most importantly, it has the potential to cause environmental harm. It is therefore imperative that these chemicals are not disposed of into the public sewer or into any sewer or drain that communicates with the public sewer.

As the owner of the site, you could be held responsible for any unlawful deposits of such substances from your site. Please therefore ensure that you and anybody using your site refrains from depositing such substances into the public sewer, or into any sewer or drain communicating with the public sewer.

If you would like to discuss this further, please contact our Trade Effluent Officer on 07824845827.

Yours faithfully

Raymond Jones

Trade Effluent Officer

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