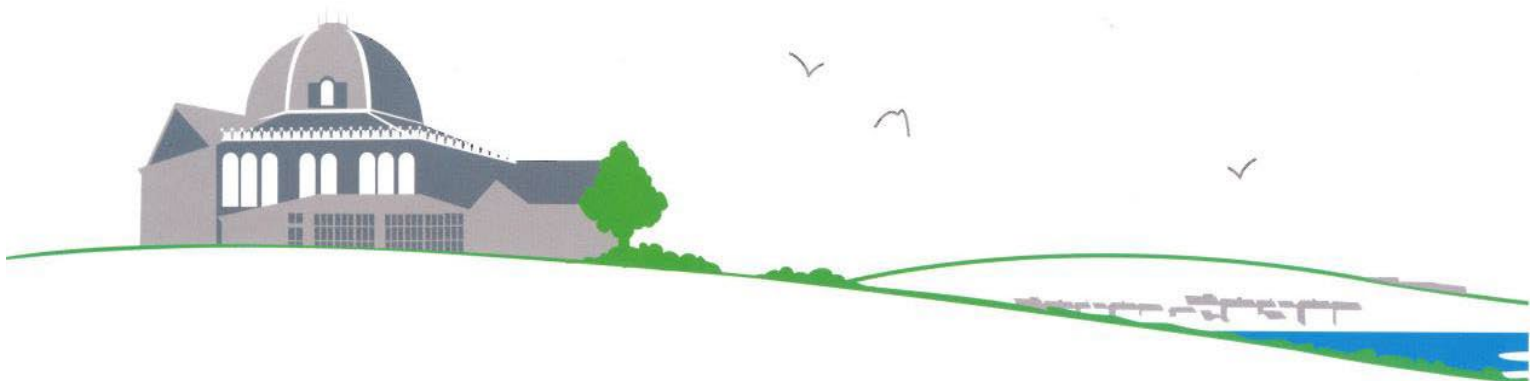




CANAL & RIVER TRUST

VYRNWY RESERVE

SHADOW HABITAT REGULATIONS
ASSESSMENT



CANAL & RIVER TRUST

VYRNWY RESERVE

SHADOW HABITAT REGULATIONS ASSESSMENT

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May 2025

This project has been undertaken in accordance with PAA policies and procedures on quality assurance.

Signed: _____



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1. INTRODUCTION

Purpose of Report

- 1.1 Penny Anderson Associates Ltd (PAA) was commissioned by the Canal & River Trust (the Trust) (the 'Applicant') to prepare a 'shadow' Habitat Regulations Assessment (HRA) to comply with Regulation 63 of the Conservation of Habitats and Species Regulations 2017 (as amended) (the 'Habitat Regulations') in relation to land adjacent to the Montgomery Canal, near Williams Bridge, Llandysilio, Powys (nearest postcode SY22 6SY, NGR SJ 25859 19544) (the 'Site') located within the administrative area of Powys County Council.
- 1.2 The Site location plan is included at Appendix 1.
- 1.3 The Development forms part of a wider project to restore the Montgomery Canal in partnership with Powys County Council and other stakeholders after successfully securing funding through the UK Government's Levelling Up Fund (LUF). The wider project includes a number of elements comprising:
- Vyrnwy Reserve (the 'Development').
 - Carreghofa Lane Bridge (a proposed new bridge);
 - Williams Bridge (a proposed new bridge); and
 - Wern Off-line Nature Reserve.
- 1.4 It is anticipated that these aspects of the wider project that require planning consent from Powys County Council will be submitted with a separate planning application and shadow HRA for each element.
- 1.5 In addition, sections of the Montgomery Canal will be subject to a phased programme of dredging, and this will be undertaken under permitted development rights and in accordance with Site of Special Scientific Interest (SSSI) Assent from Natural Resources Wales (NRW).
- 1.6 The requirement for an HRA is detailed in Regulation 63 of the Habitat Regulations which states:
- '63.—(1) A competent authority, before deciding to undertake, or give any consent, permission or other authorisation for, a plan or project which—*
- (a) is likely to have a significant effect on a European site or a European offshore marine site (either alone or in combination with other plans or projects), and*
- (b) is not directly connected with or necessary to the management of that site,*
- must make an appropriate assessment of the implications of the plan or project for that site in view of that site's conservation objectives.*
- (2) A person applying for any such consent, permission or other authorisation must provide such information as the competent authority may reasonably require for the purposes of the assessment or to enable it to determine whether an appropriate assessment is required.*
- (3) The competent authority must for the purposes of the assessment consult the appropriate nature conservation body and have regard to any representations made by that body within such reasonable time as the authority specifies.*
- (4) It must also, if it considers it appropriate, take the opinion of the general public, and if it does so, it must take such steps for that purpose as it considers appropriate.*
- (5) In the light of the conclusions of the assessment, and subject to regulation 64, the competent authority may agree to the plan or project only after having ascertained that*

it will not adversely affect the integrity of the European site or the European offshore marine site (as the case may be).'

- 1.7 This shadow HRA has been prepared to assist Powys County Council and NRW in forming an opinion as to whether the Development is likely to have a significant effect on a European Site, and the information necessary to carry out an 'appropriate assessment' (AA) if required.

Report Structure

- 1.8 This report presents the process, methods and results of a shadow HRA and is structured as follows:
- Section 1: Sets out the purpose and structure of the report;
 - Section 2: Describes the HRA process;
 - Section 3: Presents details of the relevant European Site(s) that are screened into the assessment, their qualifying features and Conservation Objectives; and
 - Section 4: Presents an AA of the project focussing on any issues that have the potential to result in an adverse effect on the integrity of the relevant European Site(s).

Reference Documents and Sources

- 1.9 The following documents and sources have been used in preparing this shadow HRA:
- Guidance via *Habitats Regulations assessments: protecting a European Site*¹;
 - Natural Resources Wales, 2008. *Core Management Plan, including Conservation Objectives for Montgomery Canal Special Area of Conservation*² (& SSSI). Countryside Council for Wales;
 - Habitat Works Ltd, 2023a. *Vyrnwy Reserve Site – Preliminary Ecological Appraisal Report*. Report for Canal & River Trust
 - Habitat Works Ltd, 2023b. *Montgomery Canal Aquatic Plants Survey*. Report for Canal & River Trust.
 - PAA, 2024. *EIA Screening Report – Vyrnwy Reserve*. Report for Canal & River Trust;
 - Montgomery Canal Partnership, 2005. *Montgomery Canal: Regeneration through Sustainable Restoration (A Conservation Management Strategy)*. Montgomery Canal Partnership; and
 - Montgomery Canal Partnership, 2016. *Montgomery Canal: Regeneration through Sustainable Restoration – Addendum to the Management Strategy*. Montgomery Canal Partnership.

¹ <https://www.gov.wales/habitats-regulations-assessments-protecting-european-site-html>

² SAC

2. HABITAT REGULATIONS ASSESSMENT PROCESS

The Habitat Regulations Assessment Process

- 2.1 Articles 6 (3) and 6 (4) of the Habitats Directive require an AA to be undertaken on proposed plans or projects which are not necessary for the management of the site, but which are likely to have a significant effect on one, or more, European Sites; either individually, or in combination with other plans and projects. As outlined in the introduction, this requirement is enacted in Wales through the Habitat Regulations 2017 (as amended), paragraph 63.
- 2.2 The European Commission has developed guidance in relation to Articles 6(3) and 6(4) of the Habitats Directive, implemented in Wales by the Habitat Regulations, and this recommends a four-stage approach to addressing the requirements of these Articles, as illustrated in Figure 1 (overleaf). In brief these stages are as follows.

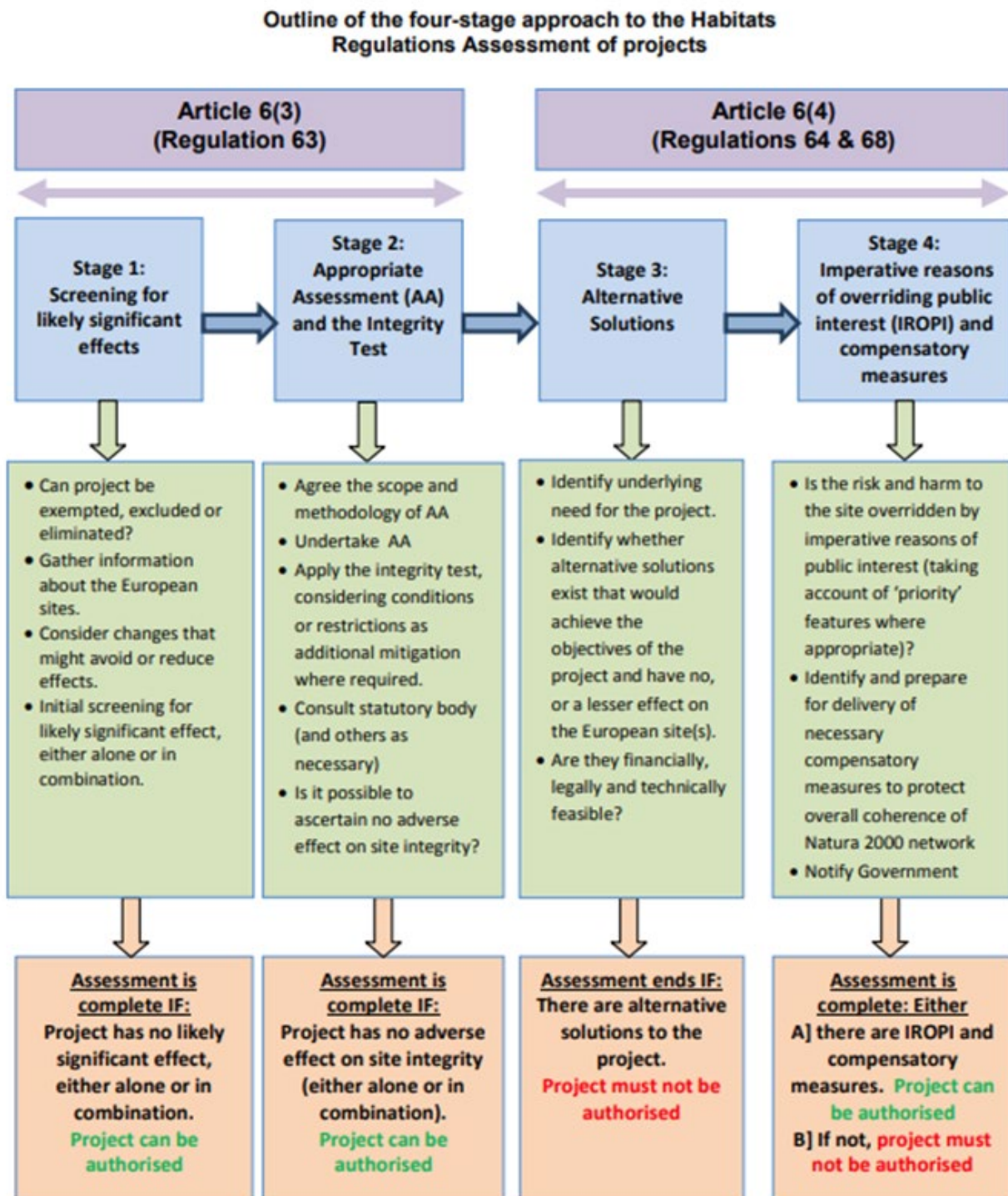
Stage 1 – Screening

- 2.3 This stage identifies the likely effects of a plan or project on any European Site, either alone or in combination with other plans or projects. Specifically, this stage considers whether these effects would have a Likely Significant Effect (LSE) on the qualifying features of any European Site, either alone or in-combination with other plans and projects. An AA is required if it is considered that any aspect of the plan or project will have a likely significant effect on any European Site.
- 2.4 In this case, the distance that has been used to screen for in-combination effects is 5km from the project. This distance is considered appropriate and proportionate to the type and scale of the Development.

Stage 2 – Appropriate Assessment

- 2.5 If it is considered that a plan or project is likely to have a significant effect on the integrity of a European Site (or sites), the requirements of Stage 2 are triggered. This stage considers the impacts of the plan or project on the integrity of a European Site. The assessment should consider the implications for the European Site in view of the site's conservation objectives. If adverse impacts are identified this assessment should also consider measures to mitigate the identified impacts.
- 2.6 If necessary, modifications to the proposals are identified to avoid any adverse effects on site integrity. If mitigation is not possible and adverse effects on a European Site's integrity remain, the process must proceed to Stage 3.
- 2.7 In this case, as describe in the remainder of this report, it is possible to conclude that there would be no adverse effects on the integrity of the relevant European Site(s) screened into the assessment, and Stage 3 is not triggered.

Figure 1 Summary of Habitat Regulations Assessment Process (from DTA Publications Ltd, 2018)



Extract from *The Habitats Regulations Assessment Handbook*, www.dtapublications.co.uk
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3. SCREENING ASSESSMENT

Identification of Relevant European Sites

- 3.1 The Defra Multi Agency Geographic Information for the Countryside (MAGIC) website was consulted on 10th December 2024 to identify European Sites, including SPA³, SAC and Ramsar Sites, which fall within 5km of the Site. A search distance of 5km is considered sufficient in this case, given the type of Development and likely extent of effects which are anticipated to be relatively localised.
- 3.2 There is one European Site, the Montgomery Canal SAC, which falls within the 5km search zone and is 'screened in' for the purposes of the Stage 1 HRA 'screening assessment'. Brief details of the European Site including distance from the Site and qualifying features are summarised in Table 1, with additional explanatory notes included.

Table 1 Summary of European Sites Within 5km of the Site

Name of Site	Distance	Summary of Qualifying Features	Notes
Montgomery Canal SAC	Adjacent to south of Site	Floating water-plantain (<i>Luronium natans</i> ⁴)	This is the largest and the most extensive population of floating water-plantain in Britain and is a highly significant lowland population. In favourable management conditions the species can be dominant over kilometre lengths of canal, carpeting the shallow bed and flowering and setting seed in abundance. This is a semi-natural population, having colonised from drift material or seed but needing periodic human disturbance for continued growth; in this respect the canal is a substitute for the species' former slow-moving, mesotrophic river niche, which has been largely destroyed in lowland Britain.

Consideration of In-combination Effects

- 3.3 There are no recent approved or pending planning applications in the immediate vicinity of the Site, and very few applications at all within a 1km search area⁵. The nearest recent planning applications are a minor household application some 1km south at Four Crosses, approved in November 2024, and an approved scheme for geodome tents and ancillary features approximately 600m south-west, approved in March 2024. A further application for the installation of a flood barrier at a property on the A483 approximately 1km east was withdrawn in October 2024.
- 3.4 There is the potential for cumulative effects in relation to other developments required to deliver the wider Montgomery Canal LUF Restoration project, namely proposed new bridges at Carreghofa

³ Special Protection Area(s)

⁴ Botanical species names follow Stace (2019)

⁵ Source: Powys Council Planning Portal accessed on 10th December 2024 - <https://pa.powys.gov.uk/online-applications/?lang=EN>

Lane, Llanymynech and Williams Bridge, and proposed Off-line Nature Reserve at Wern. However, none of these developments are anticipated to act in-combination with the Development due to distance from the Site (the nearest being Williams Bridge some 400m north with no habitat connectivity to the Site) and the relatively small-scale and localised nature of the Development.

Consideration of Likely Significant Effects

Montgomery Canal Special Area of Conservation

- 3.5 The Montgomery Canal SAC is located adjacent to southern boundary of the Site. The Development is not anticipated to have any direct effect on the SAC as it falls outside of the Site boundary, but there is potential for indirect effects due to proximity to Development. As such, it is anticipated that the Development would result in a LSE on the Montgomery Canal SAC, and the need for an AA is triggered, as set out in the next section of this report.

4. APPROPRIATE ASSESSMENT

Introduction

- 4.1 This section of the report describes the activities associated with the Development during the construction and operational stages which have the potential to adversely impact on the integrity of the Montgomery Canal SAC and its relevant qualifying feature, namely *Luronium natans*.

Description of Development

- 4.2 The full description of the Development is as follows:

'The construction of nature reserve on land adjacent to the River Vyrnwy together with associated enabling works including construction access, compound and landscaping.'

Layout, Scale and Appearance

- 4.3 The Site is illustrated in Appendix 1.
- 4.4 The purpose of the nature reserve is to provide a sustainable, long-term freshwater habitat with favourable conditions to support rare and protected submerged aquatic plant species, primarily floating water-plantain, as well as marginal wetland plants and associated invertebrates.
- 4.5 The design seeks to replicate natural backwater features in the floodplain of the River Vyrnwy that work with natural processes to provide a variety of natural habitats. The design involves the creation of two backwater channels (a northern backwater and a southern backwater) connected to the River Vyrnwy, with associated shallow edges, exposed gravels and islands. The backwaters are located in the north-eastern portion of the site, on grazing land.
- 4.6 A kested hedge would be planted along the north-eastern Site boundary. An existing ditch at the western boundary would be partially infilled, so that water flow is pushed east into the floodplain and into the backwater features.
- 4.7 The total area of new habitat available will be approximately 4ha. Water depth in the northern backwater ranges between 0.7m to 1m at this flow magnitude and the southern backwater would be inundated to between 0.35m to 0.8m depth.
- 4.8 The proposal seeks to remove a portion of the arisings from excavation of the backwater channels off-site but will retain part of the arisings to form landscaped bunds and to provide additional stability to the canal embankment in the southern portion of the Site, outside of the floodplain.

Landscaping

- 4.9 As outlined above, a new kested hedge will be planted along the north-eastern Site boundary. The landscaped bunds would have a maximum top height of 3m with a broad, flat top that slopes gently southwards towards the Montgomery Canal. The sides would be battered to a 2-in-1 slope down to existing ground level. The bunds would be stabilised by seeding with a suitable native grass seed mix.

Demolition and Construction Works

Programme

- 4.10 The works are programmed to commence in spring/summer 2025 for a duration of up to six months.

Access and Temporary Works

- 4.11 The works area will be accessed via Parson's Lane off the A483, with temporary site compounds, parking and storage on land within the Site.

Hours of Work

- 4.12 The standard working hours for construction activity would comply with conditions attached to any subsequent planning permission but, if possible, this would be 07:30 to 18:00hrs Mondays to Fridays, and 08:00 to 13:00hrs on Saturdays with no construction on Sundays or Bank Holidays.

Phasing

- 4.13 The general phasing of works would be to excavate the backwaters followed by formation of the landscape bunds.

Conservation Objectives of the Montgomery Canal SAC

- 4.14 The overall vision is to maintain the extent and distribution of *Lurionium natans* within the Montgomery Canal at favourable conservation status, where all of the following conditions are satisfied:
- The *L. natans* population in favourable condition will reflect the natural carrying capacity of the canal habitat and will be limited principally by species ability to spread or be relocated (vegetative or otherwise), the suitability of the rooting medium and competition between species as part of habitat succession;
 - Recreation pressure, principally through boat movements and fisheries management, will not significantly affect the maintenance of the species, or its ability to disperse throughout the canal network and any associated off-line reserves;
 - The ecological status of the water environment, including elements of water quality and physical habitat quality, will be sufficient to support the population of *L. natans* in favourable condition; and
 - All factors affecting the achievement of the above conditions are under control.
- 4.15 A series of performance indicators for feature condition have been devised by NRW (2008) and are presented at Appendix 2.

Potential Effects of Proposed Project

- 4.16 The aspect of the Development that has potential for adverse effects on *Lurionium natans*, with reference to the Site's conservation objectives, is the formation of landscape bunds in the south of the Site and the use of excavated material to provide additional long-term stability to the canal embankment, which may require the removal of some existing trees. There would be no work within the canal itself and no direct impact on the aquatic environment.
- 4.17 The improved stability of the canal embankment is a positive effect for the SAC, ensuring the canal embankment remains viable in the long-term.
- 4.18 The works could potentially introduce a risk of spread of Himalayan balsam which is known to be present in a ditch at the western boundary of the Site.

- 4.19 There is no potential for indirect effects relating to, e.g. sediment run-off or pollution entering the SAC, as the works will be below the level of the canal embankment (with the final soil level extending approximately half way up the canal embankment), with no potential pathway for sediment laden run-off or other pollutants to reach the canal. Nevertheless, best practice pollution control and biosecurity measures will be adopted as standard, to safeguard the natural environment, as detailed below.
- 4.20 The removal of trees adjacent to the canal would also reduce shading of the canal.
- 4.21 The main part of the Development comprising the excavation of backwaters linked to the River Vyrnwy will take place in the north-eastern portion of the Site and will not impact on the SAC.
- 4.22 The potential effects of Development and associated mitigation measures to avoid any indirect effects on the SAC are discussed further below.

Pollution Risk

- 4.23 As highlighted above, the proposed works will be take place below the crest level of the canal embankment, therefore, there will be no pathway for sediment laden run-off or other pollutants to reach the canal.

Invasive Non-Native Species and Biosecurity Risk

- 4.24 Schedule 9 (Wildlife and Countryside Act 1981 (as amended)) Invasive Non-Native Species (INNS) Himalayan balsam (*Impatiens glandulifera*) was recorded in a ditch that runs along the western Site boundary during the Preliminary Ecological Appraisal survey (Habitat Works 2023a). Mitigation measures will, therefore, be required to avoid the accidental spread of Himalayan balsam into the SAC during the works and also to manage the future spread and colonisation of invasive non-native species more generally once the nature reserve has become established. However, it should also be noted that there will be no direct connectivity between the works area and the canal, with the finished soil level of the bunds extending approximately halfway up the canal embankment. The risk of accidental spread of Himalayan balsam into the canal is, therefore, low.

Reduction in Tree Cover and Shade

- 4.25 The removal of trees (if required) along the northern side of the canal would reduce the amount of shading of the canal at this location. Excessive shade can result in the loss of *Luronium natans*, but conversely, a small amount of shade can be beneficial in suppressing competition from other aquatic plant species. A balance of areas with light shade and no shade is, therefore, likely to provide optimal conditions for *Luronium natans*. The reduction in tree cover along the northern bank of the canal would be unlikely to have an adverse impact on *Luronium natans* or prevent future colonisation by this species.

Mitigation Measures

- 4.26 The following mitigation measures will be required to avoid any indirect adverse impact on the integrity of the Montgomery Canal SAC, with reference to its qualifying feature *Luronium natans*:
- Measures to prevent the spread of invasive non-native species during construction.
- 4.27 In addition, best practice pollution control measures to safeguard the natural environment more generally will be adopted as standard. Further details of proposed mitigation are described below.

Measures to Control Pollution Risk and Biosecurity

- 4.28 To ensure that there is no risk from pollution of the natural environment or risk of spreading invasive species during the construction phase, a Construction Environment Management Plan (CEMP) will

be prepared and implemented. The CEMP will incorporate best practice in relation to construction activities within or near the water environment and will typically include (but not be limited to):

- Toolbox talks to Contractor, including INNS issues;
- Ecological supervision and monitoring during construction;
- Clear demarcation of working areas and use of temporary protective fencing and signage, as necessary;
- Buffer zones around retained habitats;
- Use of sediment traps, e.g. straw bales, regularly checked and replaced as needed;
- Contractors to arrive and leave site with clean footwear and machinery and wheel wash facilities to be provided;
- Fuel storage and re-fuelling to take place in designated areas away from the canal;
- All vehicles and plant to be stored in a secure site compound overnight;
- Plant nappies and spill kits to be carried as standard; and
- Emergency pollution incident protocols in place.

4.29 It should be re-iterated that the above measures are intended to safeguard the natural environment more generally. There are no indirect pollution risks in relation to the SAC because the works will take place below the crest level of the canal embankment, with no direct pathway from the works to the canal.

4.30 A specific section in the CEMP will address methods to avoid spread of the INNS are known to be present on Site, namely Himalayan balsam during the construction phase. This will include cleaning footwear and machinery to ensure that Himalayan balsam is not introduced into the landscape bund area or adjacent Canal.

Conclusions of Appropriate Assessment

4.31 Overall, with the above mitigation measures in place, and secured and implemented via suitably worded planning conditions, it is concluded that the Development will not result in any adverse effects on the integrity of the qualifying feature of the Montgomery Canal SAC. Furthermore, in the longer term, it is anticipated that the Development will increase the availability of suitable open water habitat for colonisation and spread of *Luronium natans* as part of the wider LUF Montgomery Canal restoration project.

5. REFERENCE

- DTA Publications Ltd, 2018. *The Habitat Regulations Assessment Handbook*. DTA Publications Limited.
- Habitat Works Ltd, 2023a. *Vyrnwy Reserve Site – Preliminary Ecological Appraisal Report*. Report for Canal & River Trust
- Habitat Works Ltd, 2023b. *Montgomery Canal Aquatic Plants Survey*. Report for Canal & River Trust.
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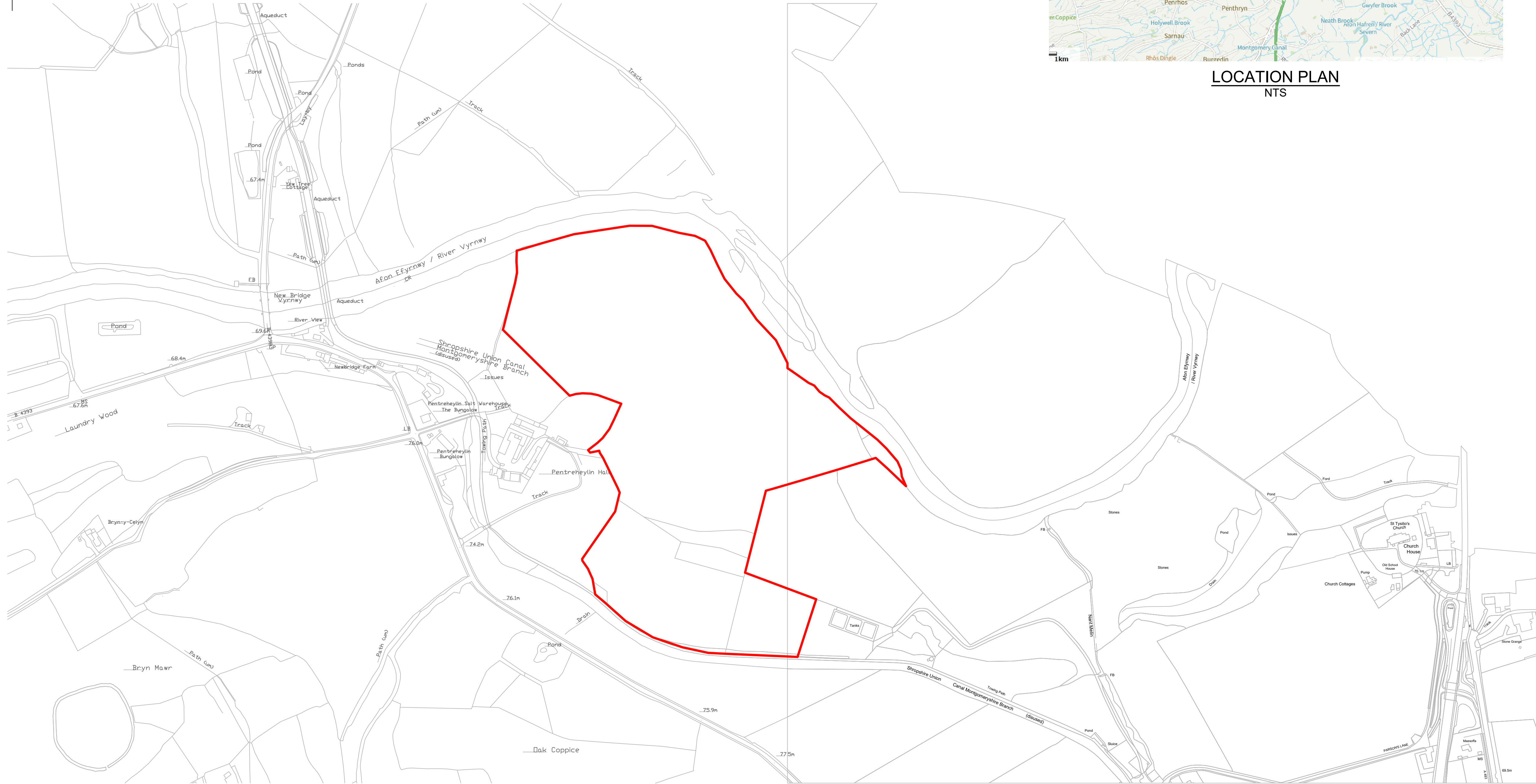
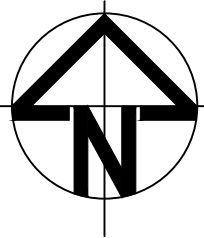
6. ABBREVIATIONS

AA	Appropriate Assessment
CEMP	Construction Environment Management Plan
HRA	Habitats Regulations Assessment
INNS	Invasive Non-Native Species
LSE	Likely Significant Effect(s)
LUF	Levelling Up Fund
MAGIC	Multi Agency Geographic Information for the Countryside
NRW	Natural Resources Wales
PAA	Penny Anderson Associates Ltd
SAC	Special Area(s) of Conservation
SPA	Special Protection Area(s)
SSSI	Site(s) of Special Scientific Interest

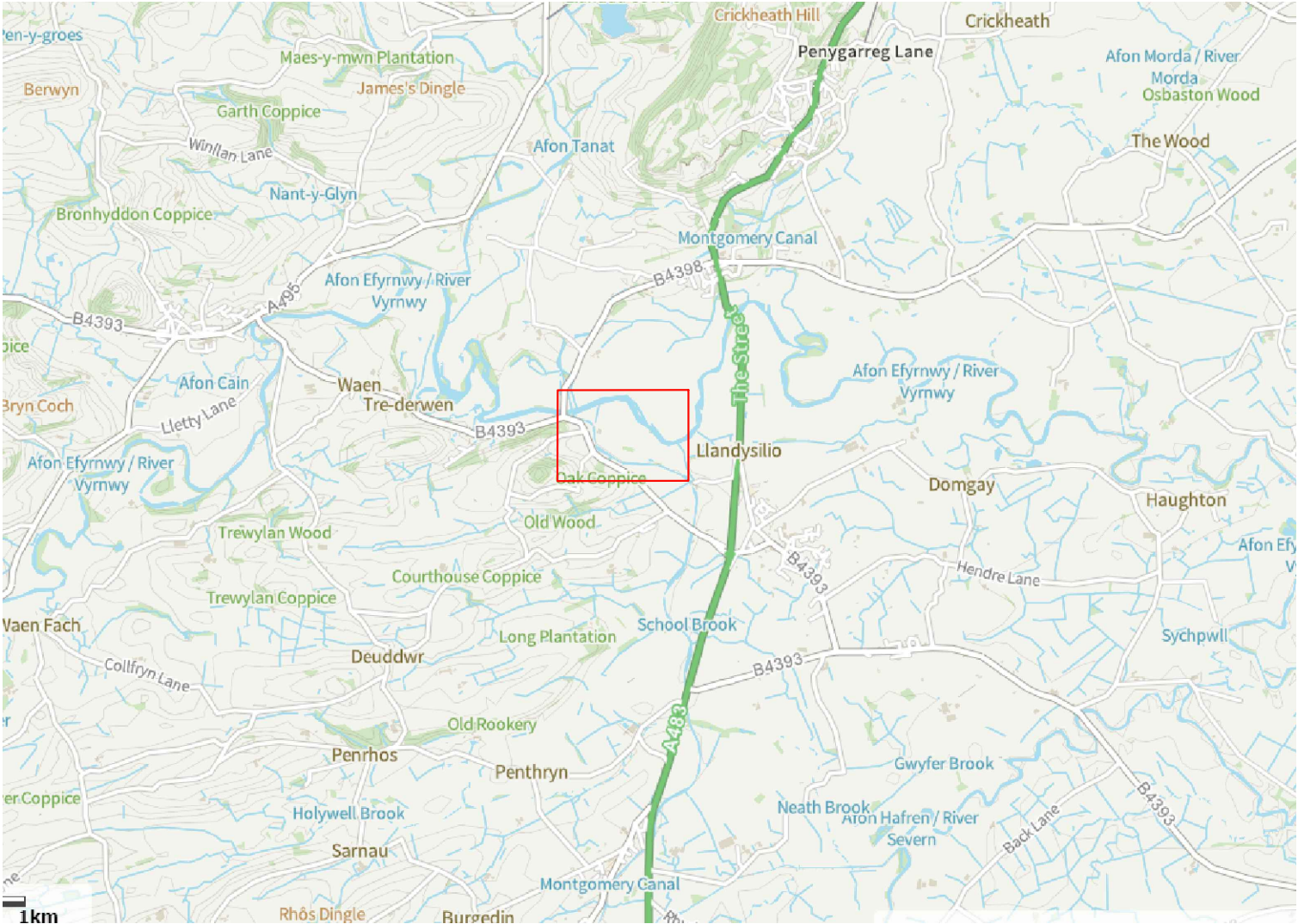
APPENDICES

APPENDIX 1

Site Location Plan



VYRNWY RESERVE - SITE PLAN
1 : 1250



LOCATION PLAN
NTS

- NOTES:**
- DO NOT SCALE FROM THIS DRAWING. USE FIGURED DIMENSIONS ONLY.
 - THIS DRAWING WAS PRODUCED AT THE REQUEST OF THE TRUST BASED ON MARKUPS PROVIDED BY THE TRUST ON 14.11.24 and 10.12.24.

RED LINE BOUNDARY

Rev	Date	Description	Prod.	Chk.	Rev.	App.
P01	20/12/24	For information	JM	EF	AH	AH



Project: **Montgomery Canal Restoration
Vyrnwy Reserve**

Site: Grid Reference SJ 25813 19569
Client: Canal & River Trust
National Waterways Museum
Ellesmere Port
Cheshire CH65 4FW



Registered office:
80 Fenchurch
Street
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Coordinating office:
1st Floor, 12 King St.
Leeds, LS1 2HL
Tel: 44 (0)113 284 5300

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Drawing Title: **Vyrnwy Reserve
Red Line Boundary**

Designed: J. Marshall	Signed: J.M	Date: 20/12/24
Produced: J. Marshall	Signed: J.M	Date: 20/12/24
Checked: E. Flynn	Signed: E.F	Date: 20/12/24
Reviewed: A. Holt	Signed: A.H	Date: 20/12/24
Approved: A. Holt	Signed: A.H	Date: 20/12/24
Design Stage: Preliminary Design		
Original Size: A1	Grid: OS	Datum: AOD
Suitability Code: S2	Scale: As shown	Project Number: 10048826
Suitability Description:		

FOR INFORMATION

Drawing Number: 10048826 - ARC - EWE R1 - DR - CE -00301	Revision: P01
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APPENDIX 2

Performance Indicators for *Luronium Natans* (Extract from Core Management Plan NRW 2008)

Appendix 2 Performance Indicators (Extract from Core Management Plan, NRW 2008)

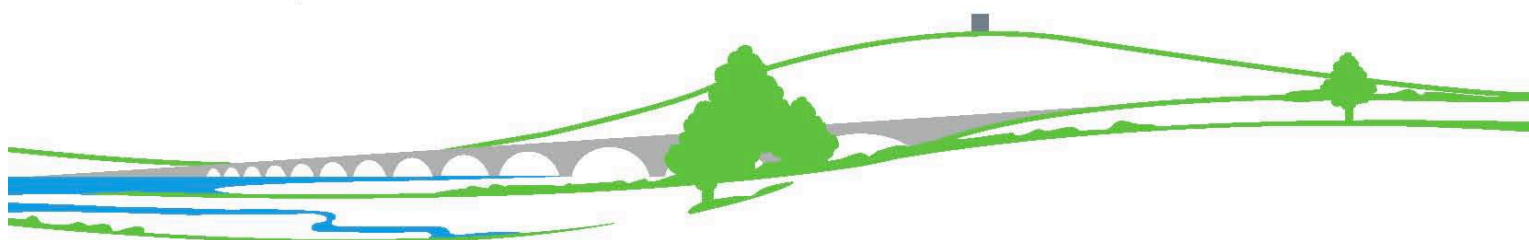
Table 1 Performance Indicators for Feature Condition

Attribute	Attribute Rationale and Other Comments	Specified Limits
A1. Extent of <i>Luronium natans</i>	<p>The base-line area (measured from 2001 survey for mapped continuous stands only) is 1.5 hectares. The lower limit is set to allow for up to a 25% decline to allow for natural fluctuations or management activity (like dredging) necessary to restore open water conditions.</p> <p>In reality this is too time-consuming to measure, so will usually be covered by monitoring distribution (A2), unless a new comprehensive mapping survey is completed.</p>	<p><i>Upper limit:</i> None required.</p> <p><i>Lower limit:</i> 1.1 ha</p>
A2. Distribution of <i>L.natans</i>	<p>This has been set to ensure the size of the population is safeguarded. It also provides a means of ensuring that the species can recolonise areas subject to dredging and weed cutting to maintain open water and water flow.</p> <p>Note that some units are composed of a number of contiguous km lengths.</p> <p>There are no recent records for this species in Units 4, 12 or 13, but at low density this species is very difficult to find.</p> <p>Each offline reserve has also been treated as a separate unit. The performance indicator limits are over and above the minimum standards set by JNCC because the plant is so widespread along the canal.</p>	<p><i>Upper Limit:</i> present along whole length of canal.</p> <p><i>Lower limit:</i> Present in all non-navigable channel kms where it was found in 2001; AND present in 75% of samples and 75% of the mapped area in 2001 in Vyrnwy aqueduct.</p> <p>Also present in offline reserves at Wern, Guilsfield Arm, Whitehouse and Brithdir Pools.</p> <p>Also requires evidence of spreading by runners, and spreading around site by fragments</p>

Table 2 Performance Indicators for Factors Affecting the Feature

Factor	Factor Rationale and Other Comments	Operational Limits
F1. Water Quality	<p>The water determines the quality of the habitat and plant community in which this species grows. These standards are higher than may be required for this species to safeguard the SSSI feature.</p> <p>It is recognised that these standards may be replaced by better standards more specific to canals as and when they become available.</p> <p>The standard will only be failed if failure is sustained and is for criteria wider than biochemical oxygen demand and dissolved oxygen.</p> <p>There should be no deterioration from existing levels. These targets should be replaced by experience of the existing data available from the Environment Agency or emerging Water Framework Directive targets over the coming years.</p>	<p><i>Upper limit:</i> As an interim guide the total phosphorus target for the whole canal is <40µg L⁻¹ TP. None required for other elements.</p> <p><i>Lower limit:</i> The current target is to seek to attain General Quality Assessment Grade A or B for biological water quality, and General Quality Assessment Grade B for water chemical quality.</p>
F2. Water Clarity	<p>It is considered essential to use a Secchi disk because observation alone cannot be a reliable measure of light penetration.</p> <p>This should not be measured during or after periods of heavy rain.</p>	<p><i>Upper limit:</i> not required</p> <p><i>Lower limit;</i> Secchi disk should be visible at depth of 1m in 90% of observations</p>

Penny Anderson
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CONSULTANT ECOLOGISTS



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