



# CAMBRIDGE WATER WATER RESOURCES MANAGEMENT PLAN 2024

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## Invasive Non-Native Species (INNS)

Method Statement

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# 1. INTRODUCTION

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## 1.1 BACKGROUND AND PURPOSE OF REPORT

Like all water companies in England and Wales, Cambridge Water is required <sup>[1]</sup> to prepare, maintain and publish a Water Resource Management Plan (WRMP). A WRMP sets out the strategy for water resource and demand management to ensure supplies of safe, clean drinking water are maintained to customers throughout the relevant company's region in a way that is economically, socially, and environmentally sustainable. WRMPs are reviewed on a rolling five-year basis; Cambridge Water published their most recent WRMP (WRMP19) in December 2019. The next cycle of WRMPs (WRMP24) cover the period 2025 to 2050 and beyond. Cambridge Water is now reviewing and updating their draft WRMP24 for submission in autumn 2022.

Cambridge Water forms part of the Water Resources East (WRE)<sup>1</sup> regional group and is one of five regional water resources groups in England and Wales working under the National Framework for Water Resources (the 'National Framework')<sup>2</sup>. Each regional group brings together the water companies operating in that region with key water users, stakeholders and environmental regulators including the Environment Agency. This enables greater co-ordination and alignment of water resources planning for WRMP and regional plan development. The other water companies that form WRE alongside Cambridge Water are Affinity Water, Anglian Water, Essex & Suffolk Water and Severn Trent Water.

In addition, Cambridge Water are merged with South Staffs Water. South Staffs Water are one of five water companies<sup>3</sup> that make up the Water Resource West (WRW) regional group. As such, there is also the requirement for the Cambridge Water WRMP to align with that of South Staffs Water and the WRW regional plan.

Section 5.14 of the Water Resource Planning Guidelines (WRPG) published in 2021<sup>4</sup> states that water companies must review whether current abstraction operations and future solutions will risk spreading INNS or create pathways which increase the risk of spreading INNS.

This report sets out the approach that will be undertaken in reviewing the INNS risk associated with the feasible list of options and the preferred programme. The results of the risk assessment will support the Strategic Environmental Assessment (SEA), option selection and inform the type and extent of mitigation measures required as well as scheme design.

## 1.2 INVASIVE NON-NATIVE SPECIES (INNS)

Invasive non-native species (INNS) of flora and fauna are considered the second biggest threat after habitat loss and destruction to biodiversity worldwide. The annual cost of INNS to the Great Britain economy was estimated in 2010 to be £1.7billion per year, of which around 5 million was attributed to water industry management of INNS. New and existing INNS also pose a threat to achieving Water Framework Directive (WFD) objectives. The UKWIR project completed by Ricardo Energy & Environment (Ricardo)<sup>5</sup>, provided further evidence of the implications of INNS to the water industry.

Subsequently, the EA in 2017, set out a position paper on the assessment of the risks of spread of INNS posed by existing water transfers. The position paper set out the scope, outcomes and timelines expected for the raw water transfer risk assessments and options appraisal that water companies should deliver in Asset Management Plan (AMP) 7.

As a result, INNS became a new "driver" within Price Review 2019 (PR19). In previous price reviews, there was some scope for limited INNS work, justified within the biodiversity drivers. Having a separate driver recognised the increasing evidence and understanding of the risks posed by INNS. The guidance supporting

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<sup>1</sup> <https://wre.org.uk/>

<sup>2</sup> <https://www.gov.uk/government/publications/meeting-our-future-water-needs-a-national-framework-for-water-resources>

<sup>3</sup> Along with Severn Trent Water, United Utilities Water, Dŵr Cymru Welsh Water and Hafren Dyfrdwy

<sup>4</sup> Ofwat (2021). Water resources planning guideline Draft update November 2021

<sup>5</sup> UKWIR (2016). Invasive and Non-Native Species (Inns) Implications on The Water Industry. Report produced by Ricardo Energy & Environment. Report Number 16/DW/02/82. October 2016

this driver is explicit in stating that “the most cost beneficial and least damaging way to manage invasive species is to prevent their arrival and spread.”<sup>6</sup>

This highlights the need to understand the *pathways* by which INNS can be transferred and hence spread. Furthermore, the EA has specifically identified raw water transfers (RWTs) as a subgroup of pathways that should have priority risk assessments (RAs) of INNS spread<sup>7</sup>.

The INNS guidance indicates that all water companies will need to consider:

- Pathways of spread (understanding and reducing the risk from different pathways),
- Preventing spread (controlling, eradicating or managing INNS to prevent spread where this will contribute to WFD prevention of deterioration), and
- Action on INNS to achieve conservation objectives of SSSI and Habitats Directive sites.

### 1.3 INVASIVE NON-NATIVE SPECIES (INNS) AND WRMP

Section 5.14 of the Water Resource Planning Guidelines (2021) states that water companies must review whether current abstraction operations and future solutions will risk spreading INNS or create pathways which increase the risk of spreading INNS.

If water companies are considering a new scheme that creates a hydrological connection between locations not already connected, there is a requirement to have mitigation measures in place to ensure INNS cannot be spread by the new transfer. Where a scheme will create a hydrological connection between locations that have an existing hydrological link, an assessment of the increased risk that the scheme poses should be completed.

Where there is increased risk, water companies must propose measures to manage that risk in their plans. The WRPG notes that the risk assessment should consider the EA’s position statement, including the risk assessment guidance note and map which states which catchments are considered isolated.

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<sup>6</sup> EA. 2017. PR19 Driver Guidance, Driver Name: Invasive Non-Native Species (INNS)

<sup>7</sup> EA. 2017. PR19 - Assessing the risks of spread of Invasive non-native species posed by existing water transfers - OFFICIAL

## 2. INVASIVE NON-NATIVE SPECIES (INNS) APPROACH

### 2.1 FEASIBLE LIST OF OPTIONS – STEP 1

A high-level risk assessment will be undertaken for the full list of **feasible options**. The high-level risk assessment will provide an overview of the activity-based risk relating to each **feasible option**. The first part of the assessment will be undertaken in four steps as summarised below:

Data will be captured for each of the **feasible options** including (**Step 1.1**):

- Option description
- Option elements
- Construction requirements
- Operational requirements
- Maintenance requirements
- Mitigation for each element

The information collected will be used to undertake questionnaires that provided a high-level risk assessment for each **feasible option** (**Step 1.2**). The questionnaires cover the three major aspects of each **feasible option** (see **Table 2-1**):

- The construction of the option/element
- The operation of the option/element
- The maintenance of the option/element

The questionnaires are designed to provide a simple and rapid assessment tool that can be applied to a broad range of activities.

Table 2-1: Summary of the questionnaire used in the high-level risk assessment (excluding mitigation measures)

| Construction Questionnaire |   |                          |                         |
|----------------------------|---|--------------------------|-------------------------|
| <b>Q1</b>                  | Does the option require the construction of new infrastructure  | <b>Yes = Q2</b>          | <b>No = No Risk</b>     |
| <b>Q2</b>                  | Are construction activities limited to within the confines of existing infrastructure? (e.g Improvements to an existing WTW).                         | <b>Yes = Q4</b>          | <b>No = Q3</b>          |
| <b>Q3</b>                  | Are construction activities likely to involve the transport of materials such as transport of soils, vegetation or raw water.                         | <b>Yes = High Risk</b>   | <b>No = Medium Risk</b> |
| <b>Q4</b>                  | Are construction activities likely to involve the transport of materials such as soils, vegetation or raw water to/from outside of the existing site. | <b>Yes = Med</b>         | <b>NO = Low Risk</b>    |
| Operation Questionnaire    |   |                          |                         |
| <b>Q1</b>                  | Does the option/element involve the transfer/abstraction of raw water?  | <b>Yes = Q2</b>          | <b>No = Q3</b>          |
| <b>Q2</b>                  | Does the option/element utilise an open-channel transfer mechanism (eg. river, canal) AND/OR does the option terminate at an open reservoir/channel?  | <b>Yes = High Risk</b>   | <b>No = Low Risk</b>    |
| <b>Q3</b>                  | Does the option/element utilise an open-channel transfer mechanism (eg transfer channel) AND/OR does the option terminate at an open reservoir?       | <b>Yes = Medium Risk</b> | <b>No = No Risk</b>     |
| Maintenance Questionnaire  |   |                          |                         |
| <b>Q1</b>                  | Does the maintenance activity require the movement of machinery, eg dredging, excavators, haulage?  | <b>Yes = Q2</b>          | <b>No = Q3</b>          |
| <b>Q2</b>                  | Does the maintenance activity require the removal/transport of biological material? (eg. screen debris, pipeline fouling)                             | <b>Yes = High Risk</b>   | <b>No = Medium Risk</b> |
| <b>Q3</b>                  | Does the maintenance activity require the removal/transport of biological material? (eg. screen debris, pipeline fouling)                             | <b>Yes = High Risk</b>   | <b>No = Low Risk</b>    |



Using the outcome of the questionnaire in **Step 1.2** and the data captured in **Step 1.1**, outcomes of the risk assessment for each **feasible option** will be reviewed to identify where mitigation measures could reduce the magnitude of the risk and identify the specific measures that may be suitable for reducing the risk of distributing INNS (**Step 1.3**).

The risk assessment score calculated in **Step 1.2** will then be reviewed/updated to reflect the residual risk associated with each **feasible option** after the implementation of mitigation measures. The measures will be listed as part of the final report and will be used to inform scheme design and operation. Standard (best practice) mitigation measures will be considered including those measures that can reduce the spread and distribution of INNS and limit the pathways of distribution during construction, operation and maintenance of the feasible options. These standard measures include (for example):

- Pre-construction considerations:
  - Ensuring detailed checks and risk assessments are carried out for INNS within initial site feasibility assessments and surveys.
  - Where any INNS are present, ensuring contractors understand the risks and implications of managing it, as well as their legal requirements and those of the water company.
  - Where any INNS are identified as a risk of being introduced, spread within, or moved off site, ensure mitigation measures are considered at the early planning stage, and ensure enough time is given to implement them.
  - Consider phasing construction to allow time to deal with the presence and/or risk of spread of INNS.
  - Ensure INNS and locations (mapped) are incorporated within all relevant site method statements, including the site Ecological Protection Plan and Species Protection Plans, where appropriate.
  - Where a species requires long-term management (e.g. Japanese knotweed), ensuring a site management plan is put together that addresses all issues associated with it
  - Nominating a designated Clerk of Works/ecologist to manage the issue of INNS on your site from an early stage.
- Equipment / machinery used in construction or maintenance of options
  - Clear signs/markings should be used to warn staff working there that a site/area contains INNS (where known).
  - Where contaminated soil, materials or water are located, signage should be erected to indicate them.
  - Personnel working on or between sites should ensure their clothing and footwear are cleaned where appropriate to prevent spread
  - Tracked vehicles should not be used within areas known to contain INNS (especially where plan fragments are known to be present).
  - All vehicles leaving the construction and or operational sites and / or transporting infested soil/materials must be thoroughly pressure-washed in a designated wash-down area before being used for other work.
  - Where cross-contamination is possible (i.e. from one site to another), consider designating vehicles or machinery to specific sites where possible to prevent spread.
  - Material / water left after vehicles have been pressure-washed must be contained, collected and disposed of appropriately
  - All wash facilities including wastewater from washing vehicles, equipment or personnel should be managed in a responsible way so as not to not cause harm to the environment

It is recognised that any soil or plant material contaminated with INNS can cause ecological damage and may be classified as controlled waste. This includes any waste material generated at either Water Treatment Works (WTW) or Wastewater Treatment Works (WwTW) (in relation to effluent re-use options) including waste from the treatment process and from any intake screens.

It is an offence to keep, treat or dispose of waste that could harm the environment and human health. It has, therefore, been assumed that any waste during construction, operation and maintenance will be disposed of at an authorised landfill site or suitable disposal site and that such waste will be transported by a registered waste carrier.

Any construction, operational or maintenance waste containing INNS should not be composted. Where waste (including soils) has been treated for INNS using any chemical process such waste should be treated as hazardous waste (due to the persistent nature of the chemical) and should be disposed of at a suitable hazardous waste site.

For the review of the **feasible** list of options, only standard (best practice) mitigation measures will be considered. Where a **feasible option** will result in a significant risk of INNS distribution and this risk cannot be mitigated in consideration of best practice measures, the risk assessment for that feasible option **will not** be amended. This will include, for example, options that include a raw water transfer where a new pathway/connection is established, and the scheme may require physical and or chemical treatment to reduce the risk.

This approach will be adopted to identify where the design of the scheme will require further consideration and the risk will be reviewed once more information on the mitigation/treatment measures is available.

Finally (**Step 1.4**), a final RAG score will be assigned to the option based upon the highest post-mitigation risk score calculated. The RAG rating will be provided in Microsoft Excel format with a brief cover note to summarise the approach and key findings to inform scheme design and mitigation measures to consider a part of the option appraisal process.

## 2.2 PREFERRED OPTIONS PROGRAMME - STEP 2

Following option appraisal, a further review will be completed for the **preferred** list of options. This assessment will aim to capture information about INNS known to be present within a set distance of the **preferred option** infrastructure. The assessment of the preferred list of options will consist of the following:

**Step 2.1** will capture data for each of the **preferred option** including:

- The location of infrastructure
- Transfer routes
- Zones of influence of 500 meters

The data captured in **Step 2.1** will be used to capture INNS occurrence records using the National Biodiversity Network (NBN) database and other open-source data (**Step 2.2**). Species data will then be screened to capture only species that are relevant to the option/activity, i.e., excluding large mammals and birds.

The INNS data captured in **Step 2.2** will then be used to create an INNS heatmap to represent INNS occurrence data spatially in reference to the option route/infrastructure. The INNS data captured in **Step 2.2** will then be used to create an INNS risk scoring table which will summarise:

- The species recorded within the zone of influence of the option infrastructure
- The number of occurrences recorded for each species
- The GBNNSS Risk assessment score for the risk of entry, establishment, spread and impact
- A RAG rating will be calculated for each species based upon the perceived risk of transfer of during the construction, operation, and maintenance of the option.

## 2.3 FINAL OPTIONS PROGRAMME - STEP 3

The EA has also developed an INNS risk assessment tool. The tool provides a consistent approach to assessing INNS risks across water supply options and will be used to assess INNS risks for Strategic Resource Options (SROs). We consider this tool to be applicable for WRMP options as well.

We propose that this tool will also be applied to complete a more detailed risk assessment of the preferred options that are included in the **final** list of option. The EA's Microsoft Excel based tool has been developed to account for the diversity of assets and raw water transfers which may comprise any one SRO and uses a single assessment process via a modular approach, to provide a quantitative score of relative risk.

In addition to the data captured during **Step 1** and **Step 2**, in **Step 3.1** the following data will be captured for the **final** list of options:

- The location of priority habitats along transfer routes or at the location of proposed infrastructure.
- The hydrological link between the source, pathway and receptor sites.
- The Presence of operational and recreational activities at the source, receptor, and pathway.
- The volume, frequency of transfer and other existing connections between elements.



The assessment of assets and raw water transfers takes a pragmatic pathway and source-pathway-receptor model approach. An extended functional group mechanism has been incorporated into the tool to account for future risks rather than only examining species known to be currently present. Biosecurity modules have also been included, providing high level indications of the types of biosecurity measures which may be considered in relation to the different pathways examined within the assessments. The tool has been automated so that data can be easily and efficiently entered by an assessor, with risk and mitigation scores generated rapidly. The outcome of the tool will allow for the assessment of individual aspects within each of the **final** list of options providing further detail into the elements of each option which may pose a risk for the transfer of INNS.

### 3. INVASIVE NON-NATIVE SPECIES (INNS) ASSESSMENT REPORTING

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A stand-alone assessment report will be prepared for consultation at the same time as the draft WRMP. The document will be for review by the environmental regulator and is not necessarily a wider stakeholder document. An updated document will accompany the Final WRMP that will reflect any changes to options, programmes, or more current information on other company water resources plans.



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