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**WOODGATE HILL WTW
COMPOUND -
INVASIVE SPECIES
MANAGEMENT PLAN**

STRABAG UK LIMITED

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1. INTRODUCTION

1.1. PROJECT OVERVIEW

The Haweswater Aqueduct Resilience Programme (HARP) is a regionally significant infrastructure programme which benefits from policy support and planning permission, and for which there is an established urgent need. United Utilities have appointed Cascade Infrastructure Ltd to fund, design, construct and maintain the HARP programme of works, and Cascade have in turn appointed STRABAG UK (SUK) to carry out the design and construction.

To deliver the design and enabling works, SUK acts as the delivery partner, responsible for planning, managing, and executing each phase of works.

1.2. PURPOSE

Over 2,000 plants and animals have been introduced to Britain by people, both deliberately and by accident. These are known as non-native species. Most are harmless. But around 10-15% become invasive non-native species, which spread and have a harmful impact on the environment and wildlife, the economy, or human health and recreation.

In Britain, they threaten the survival of native wildlife and damage our natural ecosystems by preying on or out-competing other plants and animals and spreading harmful diseases. Invasive species cost the British economy almost £2 billion a year and can be a significant nuisance. Certain species can irritate our skin or respiratory system, while others increase the risk of flooding or prevent us from enjoying recreational spaces and activities.

The purpose of this Invasive Species Management Plan (ISMP) is to provide a comprehensive approach to identifying, assessing, setting site controls and managing both invasive and non-native species associated with the HARP programme of works. This plan aims to ensure that all activities related to invasive species management are conducted in compliance with relevant UK legislation, regulations, and best practices, while prioritising the protection of biodiversity, the environment, and the programme of work's assets.

This ISMP will be implemented in conjunction with other relevant site-specific documents.

The ISMP has been produced for all phases of works, to discharge Condition 24 of planning permission 66947. Condition 24 states:

“Development within each phase approved under condition 3 shall not be commenced until a detailed management / method statement for the relevant phase is submitted to and approved in writing by the Local Planning Authority giving details of measures to be taken to prevent the spread of the invasive plant Himalayan balsam during the course of the scheme. The approved management / statement plan shall include a timetable for implementation and be submitted prior

to ground works, affected by such invasive species, takes place. Should a delay of more than one year occur between the date of approval of the management scheme and either the date of implementation of the management scheme or the date of development commencing, a further site survey must be undertaken and submitted to the Local Planning Authority."

1.3. SCOPE

This ISMP will cover management and removal of invasive species for all phases of construction works throughout the programme of works, details of which can be found in Section 1.5.

This ISMP will be a live document and will be updated as and when necessary, based on updates to any design changes, construction information or updates to legislation and lessons learnt as the programme of works continues.

1.4. SETTING

1.4.1. THE HASLINGDEN AND WALMERSLEY SECTION

The Proposed Haslingden and Walmersley Section, extends from Huncoat, approximately 1.7 km east of Accrington in the north, to Woodgate Hill Water Treatment Works (WTW) in the south. The Haslingden and Walmersley Section would replace an existing 18.9 km section of aqueduct. It would be constructed by a Tunnel Boring Machine (TBM) below ground level with short open-cut surface trenching sections at each end making connections back to the existing aqueduct.

The new section would be bored in two directions (north and south) from a compound at Haslingden (hereafter referred to as the "Haslingden Road Compound") with reception shafts at Huncoat (hereafter referred to as the "Bolton Avenue Compound") and Woodgate Hill (hereafter referred to as the "Woodgate Hill WTW Compound").

1.4.2. WOODGATE HILL WTW COMPOUND

The Woodgate Hill WTW Compound, hereafter referred to as the "Site", falls within the Bury Council jurisdiction. The Site will be a reception facility in the south, located within the eastern

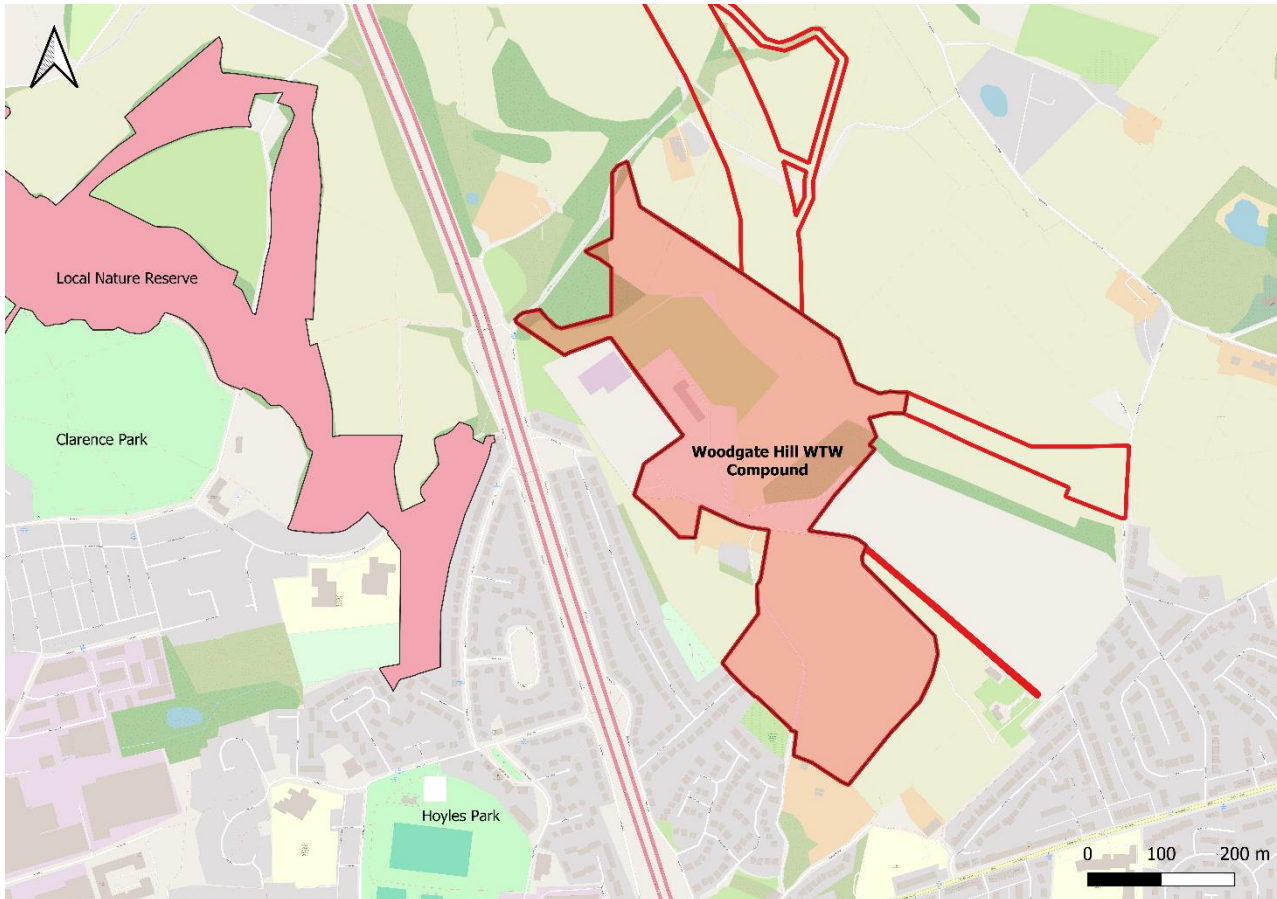


Figure 1. Woodgate Hill WTW Compound Boundary

edge of Bury (Figure 1) and will also encompass further working areas and shaft location. The Site exists within a suburban-rural transition area, as Bury's residential zones move out towards agricultural fields and rural land. The compound area encompasses various green spaces (both managed and natural) and lies upslope from the adjacent M66, which separates the Site from the Chesham Local Nature Reserve. The ISMP is a live document that will be regularly reviewed and updated throughout the HARP lifecycle to reflect any changes in site conditions, regulatory requirements, or stakeholder expectations, and key lessons learned. The plan will be implemented in conjunction with other relevant site-specific documents, such as the Construction Environmental Management Plan (doc. number 80061155-SBG-XX-XX-RP-I-00003).

1.5. PLANNED WORKS

This ISMP covers management of invasive species during all phases of the programme of works on Site, as per the details submitted for condition 3. These are detailed in Table 1.1.

Table 1.1. Activities Associated with Phases 1-5 of construction works

Construction Phase	Works
Phase 1 - Enabling and Site Establishment Works Anticipated start of works Q3 2026	• Temporary haul roads and footpaths formation • Water Attenuation Lagoons formation • Setup of temporary mobile welfare • Setup of drainage and wastewater treatment system • Setup of temporary generators area (use until mains connection) • Setup of wastewater treatment plant • Partial site access haul road and footway construction works • Site entrance junction construction works • Topsoil removing • Temporary security setup • Erection of temporary fence line (e.g. Heras fence) • Concrete testing building
Phase 2 - Commencement of Substantive Excavations Works Anticipated start of works Q4 2026	• Site compounds re-profiling • Site access haul road and footpath construction works • Sheet piling earthworks for ground stabilization • Facilities foundation hardstanding construction • Lay in required utilities services (e.g. water, gas, telecom) • Site security system setup (e.g. fence line, turnstile gates) • Construction of footings and foundation slabs • Substation connection and commissioning • LV distributor and commissioning • Welfare facilities and site car parking construction • Site storage and workshops area formation • Crawler and mobile cranes setup • Setup of grout slurry batching plant • Setup of piling casing storage area

Construction Phase	Works
	• Setup of reinforcement cages storage area
Phase 3 - Shaft / Portal and Tunnelling Works Anticipated start of works Q3 2027	• Secant piles construction works • Capping beam construction works • Shafts excavation & spray concrete lining construction works • Shaft bottom permanent structure construction works • TBM breaks through reception shaft • Dismantling of TBM components within the reception shaft • Lifting and extraction of TBM parts • Handling and disposal of waste materials (slurry, lubricants, debris) • Loading TBM components onto transport vehicles for removal from the site. • Post-retrieval inspection of the reception shaft to confirm structural stability.
Phase 4 - Connection Works Anticipated start of works Q3 2027	• New built tunnel rinsing works • Site and UU facilities relocation works (If required) • Siphon Pipelines Connection Works • Surface permanent structures preparation works
Phase 5 - Site Reinstatement Works Anticipated start of works Q1 2032	• Tunnel support services dismantling works • Shaft permanent structures construction works • Surface permanent works (e.g. boundary treatment) • Site re-landscaping works • Permanent road modification works • Site permanent security setup • Construction site equipment and facilities demobilisation • Topsoil replacement • Vegetation plantation for reinstating

1.6. STRUCTURE OF THE DOCUMENT

This document comprises the following sections:

- **Section 1: Introduction** – Purpose of the document, structure and site background.
- **Section 2: Policy and Regulatory Framework**– Relevant Legislation, Regulations and Guidelines which the works will be carried out in accordance with and govern species management.
- **Section 3: Types of Invasive Species** – Outlines the invasive and non-native species commonly found in the UK and have the potential to be present on Site.
- **Section 4: Site-specific Invasive species identification and controls**– Outlines general management standards / procedures to be applied across the Site.

2. POLICY AND REGULATORY FRAMEWORK

2.1. RELEVANT LEGISLATION, REGULATIONS, AND GUIDELINES

The ISMP for the HARP programme of works is developed in accordance with a comprehensive framework of UK regulations and standards that govern species management in construction projects. These regulations strive to ensure that our activities are conducted responsibly, safeguarding biodiversity and the environment, and aligning with national and local environmental management strategies. Key regulations include:

- Wildlife and Countryside Act 1981 (UK)
- Invasive Alien Species (Enforcement and Permitting) Order 2019 (UK)
- Environmental Protection Act 1990 (UK)
- Conservation of Habitats and Species Regulations 2017 (UK)
- National Planning Policy Framework (NPPF) (UK)
- Anti-social Behaviour Crime and Policing Act 2014 (UK)

2.2. REGULATOR-SPECIFIC REGULATIONS AND GUIDELINES

2.2.1. ENVIRONMENT AGENCY (ENGLAND)

- Overview of specific guidelines and regulations issued by the Environment Agency, applicable to construction projects in England. This includes permits for discharges to guidelines on managing invasive species and protecting native biodiversity.
- An “Agreement to use herbicides in or near water” may be required for herbicide use herbicides to control weeds in water (aquatic weeds) or on the banks or banksides next to a watercourse or other body of water. This requirement is administered by the Environment Agency. The agreement must be received prior to treating invasive species in these areas.

2.2.2. THE GREAT BRITAIN INVASIVE NON-NATIVE SPECIES STRATEGY 2023 TO 2030

- The Strategy covers invasive, non-native species (INNS) in the terrestrial, freshwater, and marine environments and also species native to one part of a country that become invasive in areas outside their natural range.

3. TYPES OF INVASIVE SPECIES

3.1. INVASIVE SPECIES IDENTIFICATION AND CONTROLS

Table 3.1 provides a list of most widely-spread invasive species in England and Wales and includes identification traits and control measures.

The following link also provides additional information in relation to invasive and non-native species <https://www.gov.uk/guidance/invasive-non-native-alien-plant-species-rules-in-england-and-wales#list-of-invasive-plant-species>

Table 3.1 Invasive species identification and Controls.

Species Common Name	Identification	Controls
Himalayan balsam (<i>Impatiens glandulifera</i>) 	Easily identified by its tall, hollow, reddish stems, large pink, helmet-shaped flowers, and distinctive explosive seed pods. It grows in moist, semi-shaded areas, often along riverbanks and ditches, and can reach heights of up to 3 meters	Can be controlled through various methods including hand-pulling, cutting, and herbicide application. For small infestations, hand-pulling is effective, while larger areas may require cutting or herbicide use. It's crucial to act before seed pods develop to prevent further spread
Variegated yellow archangel (<i>Lamium galeobdolon 'Variegatum'</i>) 	Hair, heart-shaped leaves with distinctive silvery-grey patches and toothed edges, growing in opposite pairs on square stems	A combination of thorough manual removal (digging out all roots) and herbicide applications. Endeavour to ensure all plant material is disposed of as controlled waste.

Species Common Name	Identification	Controls
Cotoneaster (<i>cotoneaster</i>) 	Characterised by a woody, shrub-like stem, short, thick leaves and small red berries	Manual removal or chemical treatment and diligent disposal of all plant material (either by burning or licenced landfill)
Montbretia (<i>Crocasmia × crocosmiiflora</i>) 	Sword-shaped leaves appear in spring with decorative gladioli-type flowers in bright orange.	Diligent manual removal of the entire plant system and herbicide application. Disposal as controlled waste.

4. SITE-SPECIFIC SPECIES IDENTIFICATION AND CONTROLS

4.1. PREVIOUS SURVEY RESULTS

In 2020 surveys were carried out on Site and identified the presence of the following invasive species:

- Himalayan balsam (*Impatiens glandulifera*)
- Cotoneaster (cotoneaster)
- Montbretia (*Crocasmia × crocosmiiflora*)
- Variegated yellow archangel (*Lamium galeobdolon*)

Prior to works commencing on Site an updated ecological walkover including an invasive species survey should be undertaken. Any updated, identified invasive species will be clearly demarcated within the ISMP. Any identified areas of invasive species within the Site will be barriered off and access restricted using fencing or netting.

4.2. GENERAL CONTROLS

Where works are required within the demarcated area, they should be undertaken using the following controls;

- Set up an area that will be used for decontamination, outside of the affected zone. This may be a laydown area or area of hardstanding. The area should be equipped with decontaminating equipment such as jet wash, brushes, waste skips and PPE changing facilities.
- The area should be equipped with isolated drainage to allow runoff to enter a controlled sump. Water leaving the sump should be free from invasive species contamination.
- Once works are completed within the affected zone all equipment leaving the zone should enter the decontamination area and should be thoroughly cleaned to remove any traces of invasive species prior to leaving. Specific attention should be paid to excavator tracks, buckets, vehicle tires, moxy tippers etc.
- Site personnel that have entered the contaminated zone should brush down boots and shake off clothing and where required change PPE.
- Any bio suits used within the area should be disposed of as controlled waste and should be removed from Site by a licenced waste carrier.
- Contaminated bagged or skipped materials should be sealed and removed from Site by licenced waste carrier.
- Where a specialist subcontractor is used to remove invasive species, a copy of the subcontractor's biosecurity plan or Risk Assessment Method Statement (RAMS) should be provided. Regular audits should be undertaken to check the subcontractors' practices and processes.

- The Site's environmental team will conduct and report on weekly checks within decontaminant areas.
- Contaminated soil will be identified and stored separately from non-contaminated soil
- The contaminated area will be mapped and soil stripping will be carried out following all appropriate biosecurity measures.

In addition to the above, the following Environment Agency (EA) and Non-Native Species Secretariat (NNSS) advice and guidance will be followed to aim to prevent spreading INNS:

- **Check:** Before leaving the water, examine clothing, boats, footwear, and equipment (nets, anchors, bait wells) for mud, aquatic animals, and plant material.
- **Clean:** Thoroughly wash everything as soon as possible, focusing on hard-to-access areas. Using hot water (ideally around 45°C) to soak equipment for 15 minutes is highly effective at killing most INNS.
- **Dry:** Dry everything for as long as possible. Many invasive species can survive for over two weeks in damp conditions. A minimum of 48 hours drying in sunlight is recommended.

4.3. SPECIES-SPECIFIC CONTROLS AND TREATMENT TIMETABLES

Suitable treatment and disposal of any invasive species will be carried out by a responsible Contractor and the treatment will be carried out in line with the Contractor's own RAMS, which will be in line with the requirements of The Wildlife and Countryside Act (1981) and all other relevant legislation and guidance. The sections below provide a high level guide of treatment timetables for each invasive species previously identified on Site. If additional invasive species are identified in a future survey, this ISMP will be updated.

4.3.1. HIMALAYAN BALSAM (*IMPATIENS GLANDULIFERA*)

Table 4.1 gives a guide to treatment activities and appropriate time periods for treatment.

Table 4.1 Implementation of treatment timetable for Himalayan balsam

Timeframe	Activity / Treatment
Apr – May	Seedlings and young plants emerge; best time to start hand-pulling or early herbicide treatment.
May – Jun (Peak control time)	Plants are tall enough to identify easily but have not yet produced seed pods. Continue hand-pulling treatment.
Jul – Oct	Regular monitoring and follow-up removal of late-germinating seedlings. Stop removing if mature, explosive seed pods are already formed, as this will spread seeds further.
Nov – Feb	Check for potential spread. Do not compost plants; they should be left to dry and rot, or removed as controlled waste.

4.3.2. COTONEASTER (COTONEASTER)

Table 4.2 gives a guide to treatment activities and appropriate time periods for treatment.

Table 4.2 Implementation of treatment timetable for Cotoneaster

Timeframe	Activity / Treatment
All year	Cutting and stump treatment can be done any time but is most effective when the plant is actively growing, with herbicide applied immediately to the cut stump.
Jun – Aug	Best time for herbicide / foliar spray, ideally just after the flowering period ends, to minimise impact on pollinator species.
Nov – Mar	Best time for physical removal when the plant is dormant .
Mar - Oct	Alternative herbicide time is in the broader growing season.
July	Alternative removal time recommended for excavation to avoid spreading seeds.

4.3.3. MONTBRETIA (CROCOSMIA × CROCOSMIIFLORA)

Table 4.3 gives a guide to treatment activities and appropriate time periods for treatment.

Table 4.3 Implementation of treatment timetable for Montbretia

Timeframe	Activity / Treatment
Mar – May	New growth period – while foliage is emerging, plants can be dug up, though chemical control is less effective during early growth.
Jun – Aug	Peak growing season – this is optimal time for herbicide application when plants are fully grown and actively absorbing nutrients.
Sep – Oct	Follow-up applications of herbicide, as the plant is moving nutrients down into the corms for winter.
Nov -Feb	Avoid treatment in winter – plants are dormant and herbicide will not be effective.

4.3.4. VARIEGATED YELLOW ARCHANGEL (LAMIASTRUM GALEOBDOLON)

Table 4.4 gives a guide to treatment activities and appropriate time periods for treatment.

Table 4.4 Implementation of treatment timetable for Variegated Yellow Archangel

Timeframe	Activity / Treatment
Mar – May	Small infestations can be dug up manually or mechanically – remove all roots and stem fragments, as they readily re-grow.

Timeframe	Activity / Treatment
	Spray with herbicide in early spring before the plant seeds. Cut back trailing stems and prevent further spread.
Jun – Aug	Monitor regularly to check treated areas for re-growth. Re-apply herbicides to any new growth.
Sep – Nov	Apply additional herbicide treatments to ensure total destruction.
All year	All plant waste must be carefully removed and disposed of as controlled waste.

4.4. MONITORING AND MAINTENANCE

Where works have been undertaken to remove an invasive species, regular monitoring will be undertaken.

Monitoring will include quarterly inspections of the site to evaluate the overall effectiveness of species control measures, including monitoring for re-emergence of invasive species. Where invasive species are observed to recolonise an area secondary and tertiary control measures may be initiated.



5. DEFINITIONS AND ABBREVIATIONS

Abbreviation	Definition
HARP	Haweswater Aqueduct Resilience Programme
INNS	Invasive Non-Native Species
LV	Low Voltage
ISMP	Invasive Species Management Plan
NPPF	National Planning Policy Framework
PPE	Personal Protective Equipment
RAMS	Risk Assessment Method Statement
SUK	Strabag United Kingdom
TBM	Tunnel Boring Machine
UK	United Kingdom
UU	United Utilities
UV	Ultra-Violet
WTW	Water Treatment Works

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