

## Invasive Species Management Plan for the proposed GNI143 Ballykilleen Pipeline



12<sup>th</sup> January 2026

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**On behalf of:** Gas Networks Ireland

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<b>Document Control Sheet</b>			
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## Introduction

Planning permission is being sought by Gas Networks Ireland for a Proposed Development site and associated temporary working areas covers an area of approximately 243.4 hectares (ha) (the “Proposed Development Site”) and encompasses all lands required for the construction and operation of the pipeline, including the Kilwarden Offtake Installation, the Ballykilleen AGI, temporary construction compounds, line pipe storage areas, and all associated ancillary works.

The Proposed Development Site comprises the c. 23.65 km linear route of the underground GNI 143 Ballykilleen Pipeline and its temporary working areas.

The proposed site outline is demonstrated in Figure 1. A site visit was carried out by Emma Peters and Frank Spellman on the 21<sup>st</sup> August 2025 and the presence and extent of invasive species on site was recorded. The location of Japanese knotweed is seen in Figure 2. Although Japanese knotweed was not recorded within the redline boundary, there is a risk of machinery movements indirectly/not related to the proposed works coming within proximity of this species. Areas requiring isolation and monitoring are demonstrated in Figure 3.

## Invasive Species Assessment

The following management plan was compiled by Bryan Deegan MCIEEM of Altemar Ltd. Bryan is an ecologist with over 30 years survey experience and former project manager for the EU LIFE project CAISIE on invasive species. This was a €1.5 million EU project that carried out surveys and developed control tools for aquatic and riparian invasive species in Ireland.

The control of invasive species in Ireland comes under the Wildlife (Amendment) Act 2000 where it states that ‘*Any person who— [...] plants or otherwise causes to grow in a wild state in any place in the State any species of flora, or the flowers, roots, seeds or spores of flora, [‘refers only to exotic species thereof’][...] otherwise than under and in accordance with a licence granted in that behalf by the Minister shall be guilty of an offence.*’

Under the European legislation, the Birds and Natural Habitats Regulations 2011 (SI 477 of 2011), Section 49(2) prohibit the introduction and dispersal of species listed in the Third Schedule whereby “*any person who plants, disperses, allows or causes to disperse, spreads or otherwise causes to grow [...] shall be guilty of an offence.*” Relevant species within this legislation include but, are not limited to (See Table 1):

Giant hogweed	<i>Heracleum mantegazzianum</i>	Throughout the State
Giant knotweed	<i>Fallopia sachalinensis</i>	Throughout the State
Giant-rhubarb	<i>Gunnera tinctoria</i>	Throughout the State
Himalayan balsam	<i>Impatiens glandulifera</i>	Throughout the State
Himalayan knotweed	<i>Persicaria wallichii</i>	Throughout the State
Japanese knotweed	<i>Reynoutria japonica</i>	Throughout the State
Rhododendron	<i>Rhododendron ponticum</i>	Throughout the State
Hottentot-fig	<i>Carpobrotus edulis</i>	Throughout the State
Sea-buckthorn	<i>Hippophae rhamnoides</i>	Throughout the State

This report applies the most relevant and current guidance in relation to non-native invasive plant species in construction projects. The following literature was referred to in preparation of this report.

- S.I. No. 477/2011 - European Communities (Birds and Natural Habitats) Regulations 2011. <http://www.irishstatutebook.ie/eli/2011/si/477/made/en/pdf>
- NRA Guidelines on The Management of Noxious Weeds and Non-Native
- Invasive Plant Species on National Roads

## Site Survey

Walkover assessments of the development site were carried out by Emma Peters and Frank Spellman on the 21<sup>st</sup> August 2025. All areas were examined for Invasive species during the optimal survey season. Two

stands of Japanese knotweed (*Reynoutria japonica*) were present to the northeast of the power station, approximately 100m southeast of the proposed pipeline route and 62m southeast of the proposed works area, within grassland habitat, with the particular area bounding access roads showing evidence of recent use. This species is a third Schedule listed species under Regulations 49 & 50 in the European Communities (Birds and Natural Habitats) Regulations 2011. No other non-native invasive species listed in the third schedule of (SI 477 of 2011) were noted on site (Plants Table 1 & and Animals Table 2). This invasive species management plan deals specifically with those species covered under SI 477 of 2011 i.e. Japanese knotweed.

The location of species covered under SI 477 of 2011 is seen in Figure 2. As can be seen from Figure 2 the location of the Japanese knotweed stand is located within grassland habitat bounding an access road to the northeast of the power plant and southeast of the proposed pipeline route. It must be assumed that root rhizomes from specimens in this area extend into the access road, soil and any other substrates within 7 metres of the stands.

As part of surveys associated with the proposed project, lands at Bord na Móna's Edenderry Power Station comprising the southernmost portion of the proposed project were included. During site assessments Japanese knotweed was noted within the vicinity of the proposed pipeline route, approximately 100m southeast of the proposed route point (62m from proposed works area), immediately adjacent to service roads to the northeast of the power plant within Edenderry Renewable Energy Complex. An Invasive Species Management Plan has been prepared to outline the extent of the infestation and the measures that will be in place to mitigate the potential impact and prevent spread of the invasive species during works in line with National and international legislation.

Given the historical and current nature of the site, and recent earth, machinery and materials movements within the site, there are a number of potential internal and external sources of the specimens on site. There is therefore a risk of Japanese knotweed spreading elsewhere in the vicinity of the subject area prior to initiation of works either from root rhizomes or through natural or unnatural (e.g. maintenance, vehicular movements, vegetation control etc.) spread from within the site elsewhere within and areas surrounding the Bord na Móna site. The current extent of Japanese knotweed is located in an area that has received previous disturbance, and is bounding a road which contained evidence of recent vehicular movements.

It should be noted that no other Japanese knotweed specimens were recorded within, along or adjacent to the proposed redline boundary, and no other specimens were present within the Bord na Móna lands surveyed. The current specimens appear to be established but isolated at the time of survey. However, saplings in other areas may have been obscured by other vegetation and it is likely that other specimens/stands will establish adjacent to and/or elsewhere from the current stand.

**Table 1.** Plant species listed in the Third Schedule of SI 477 of 2011

Common Name	Species	Location	Present on site
American skunk-cabbage	<i>Lysichiton americanus</i>	Throughout the State	Not observed
A red alga	<i>Grateloupia doryphora</i>	Throughout the State	Not observed
Brazilian giant-rhubarb	<i>Gunnera manicata</i>	Throughout the State	Not observed
Broad-leaved rush	<i>Juncus planifolius</i>	Throughout the State	Not observed
Cape pondweed	<i>Aponogeton distachyos</i>	Throughout the State	Not observed
Cord-grasses <i>Spartina</i>	( <i>all species and hybrids</i> )	Throughout the State	Not observed
Curly waterweed	<i>Lagarosiphon major</i>	Throughout the State	Not observed
Dwarf eel-grass	<i>Zostera japonica</i>	Throughout the State	Not observed
Fanwort	<i>Cabomba caroliniana</i>	Throughout the State	Not observed
Floating pennywort	<i>Hydrocotyle ranunculoides</i>	Throughout the State	Not observed
Fringed water-lily	<i>Nymphoides peltata</i>	Throughout the State	Not observed
Giant hogweed	<i>Heracleum mantegazzianum</i>	Throughout the State	Not observed

<b>Common Name</b>	<b>Species</b>	<b>Location</b>	<b>Present on site</b>
Giant knotweed	<i>Fallopia sachalinensis</i>	Throughout the State	Not observed
Giant-rhubarb	<i>Gunnera tinctoria</i>	Throughout the State	Not observed
Giant salvinia	<i>Salvinia molesta</i>	Throughout the State	Not observed
Himalayan balsam	<i>Impatiens glandulifera</i>	Throughout the State	Not observed
Himalayan knotweed	<i>Persicaria wallichii</i>	Throughout the State	Not observed
Hottentot-fig	<i>Carpobrotus edulis</i>	Throughout the State	Not observed
<b>Japanese knotweed</b>	<b><i>Fallopia japonica</i></b>	<b>Throughout the State</b>	<b>Observed</b>
Large-flowered waterweed	<i>Egeria densa</i>	Throughout the State	Not observed
Mile-a-minute weed	<i>Persicaria perfoliata</i>	Throughout the State	Not observed
New Zealand pigmyweed	<i>Crassula helmsii</i>	Throughout the State	Not observed
Parrot's feather	<i>Myriophyllum aquaticum</i>	Throughout the State	Not observed
Rhododendron	<i>Rhododendron ponticum</i>	Throughout the State	Not observed
Salmonberry	<i>Rubus spectabilis</i>	Throughout the State	Not observed
Sea-buckthorn	<i>Hippophae rhamnoides</i>	Throughout the State	Not observed
Spanish bluebell	<i>Hyacinthoides hispanica</i>	Throughout the State	Not observed
Three-cornered leek	<i>Allium triquetrum</i>	Throughout the State	Not observed
Wakame	<i>Undaria pinnatifida</i>	Throughout the State	Not observed
Water chestnut	<i>Trapa natans</i>	Throughout the State	Not observed
Water fern	<i>Azolla filiculoides</i>	Throughout the State	Not observed
Water lettuce	<i>Pistia stratiotes</i>	Throughout the State	Not observed
Water-primrose	<i>Ludwigia (all species)</i>	Throughout the State	Not observed
Waterweeds	<i>Elodea (all species)</i>	Throughout the State	Not observed
Wireweed	<i>Sargassum muticum</i>	Throughout the State	Not observed

**Table 2.** Animal species listed in the Third Schedule of SI 477 of 2011

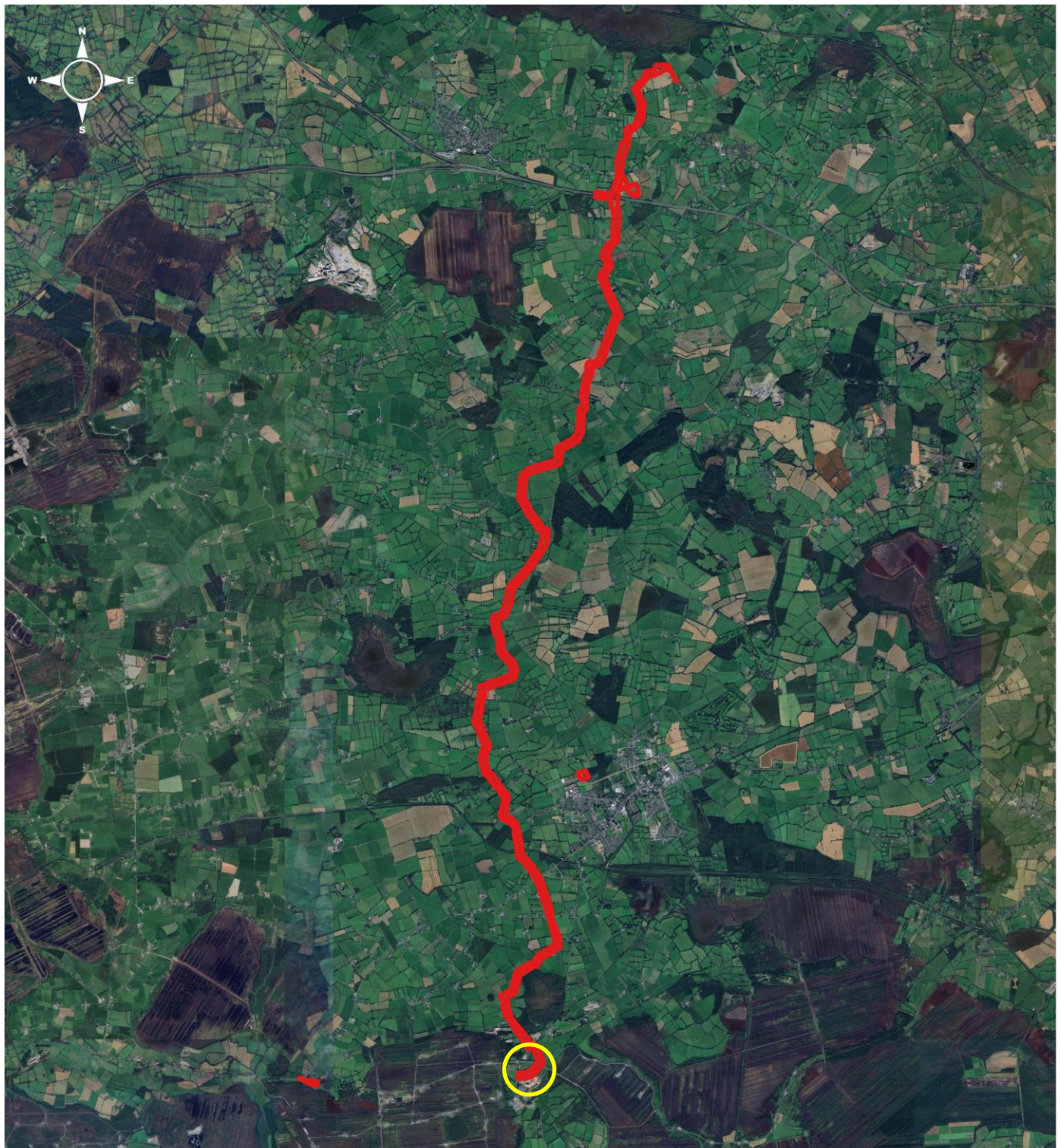
Common Name	Species	Location	Present on site
A colonial seasquirt	<i>Didemnum spp.</i>	Throughout the State	Not observed
A colonial seasquirt	<i>Perophora japonica</i>	Throughout the State	Not observed
All freshwater crayfish except <i>Austropotamobius pallipes</i>	All Freshwater crayfish except <i>Austropotamobius pallipes</i>	Throughout the State	Not observed
American bullfrog	<i>Rana catesbeiana</i>	Throughout the State	Not observed
American mink	<i>Neovison vison</i>	Throughout the State	Not observed
American oyster drill	<i>Urosalpinx cinerea</i>	Throughout the State	Not observed
Asian oyster drill	<i>Ceratostoma inornatum</i>	Throughout the State	Not observed
Asian rapa whelk	<i>Rapana venosa</i>	Throughout the State	Not observed
Asian river clam	<i>Corbicula fluminea</i>	Throughout the State	Not observed
Bay barnacle	<i>Balanus improvisus</i>	Throughout the State	Not observed
Black rat	<i>Rattus rattus</i>	Offshore islands only	N/A
Brown hare	<i>Lepus europaeus</i>	Throughout the State	Not observed
Brown rat	<i>Rattus norvegicus</i>	Offshore islands only	N/A
Canada goose	<i>Branta canadensis</i>	Throughout the State	Not observed
Carp	<i>Cyprinus carpio</i>	Throughout the State	Not observed
Chinese mitten crab	<i>Eriocheir sinensis</i>	Throughout the State	Not observed
Chinese water deer	<i>Hydropotes inermis</i>	Throughout the State	Not observed
Chub	<i>Leuciscus cephalus</i>	Throughout the State	Not observed
Common toad	<i>Bufo bufo</i>	Throughout the State	Not observed
Coypu	<i>Myocastor coypus</i>	Throughout the State	Not observed
Dace	<i>Leuciscus leuciscus</i>	Throughout the State	Not observed
Freshwater shrimp	<i>Dikerogammarus villosus</i>	Throughout the State	Not observed
Fox	<i>Vulpes vulpes</i>	Offshore islands only	N/A
Grey squirrel	<i>Sciurus carolinensis</i>	Throughout the State	Not observed
Greylag goose	<i>Anser anser</i>	Throughout the State	Not observed
Harlequin Ladybird	<i>Harmonia axyridis</i>	Throughout the State	Not observed
Hedgehog	<i>Erinaceus europaeus</i>	Offshore islands only	N/A
Irish stoat	<i>Mustela erminea hibernicus</i>	Offshore islands only	N/A
Japanese skeleton shrimp	<i>Caprella mutica</i>	Throughout the State	Not observed
Muntjac deer	<i>Muntiacus reevesi</i>	Throughout the State	Not observed
Muskrat	<i>Ondatra zibethicus</i>	Throughout the State	Not observed
Quagga Mussel	<i>Dreissena rostriformis</i>	Throughout the State	Not observed
Roach	<i>Rutilus rutilus</i>	Throughout the State	Not observed
Roe deer	<i>Capreolus capreolus</i>	Throughout the State	Not observed
Ruddy duck	<i>Oxyura jamaicensis</i>	Throughout the State	Not observed
Siberian chipmunk	<i>Tamias sibiricus</i>	Throughout the State	Not observed
Slipper limpet	<i>Crepidula fornicata</i>	Throughout the State	Not observed
Stalked sea squirt	<i>Styela clava</i>	Throughout the State	Not observed
Tawny owl	<i>Strix aluco</i>	Throughout the State	Not observed
Wild boar	<i>Sus scrofa</i>	Throughout the State	Not observed
Zebra mussel	<i>Dreissena polymorpha</i>	Throughout the State	Not observed



Plate 1. Japanese knotweed infested area within Bord na Móna site (facing south).



Plate 2. Close-up of Japanese knotweed specimens.



**Legend:**  
 EIA Red Line Boundary

Project: GNI143 Ballykilleen Pipeline  
 Location: Kilwarden Offtake Installation (Kinnegad) to Bord na Móna Cushaling Peaker Plant (Edenderry)  
 Date: 15th December 2025  
 Drawn By: Frank Spellman (Altamar)

**ALTEMAR**  
 Marine & Environmental Consultancy

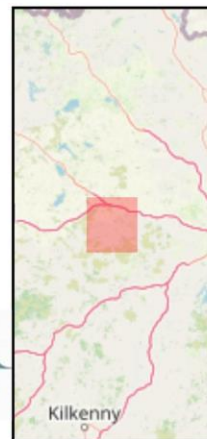


Figure 1. EIA assessment area (general location of Japanese knotweed in yellow).

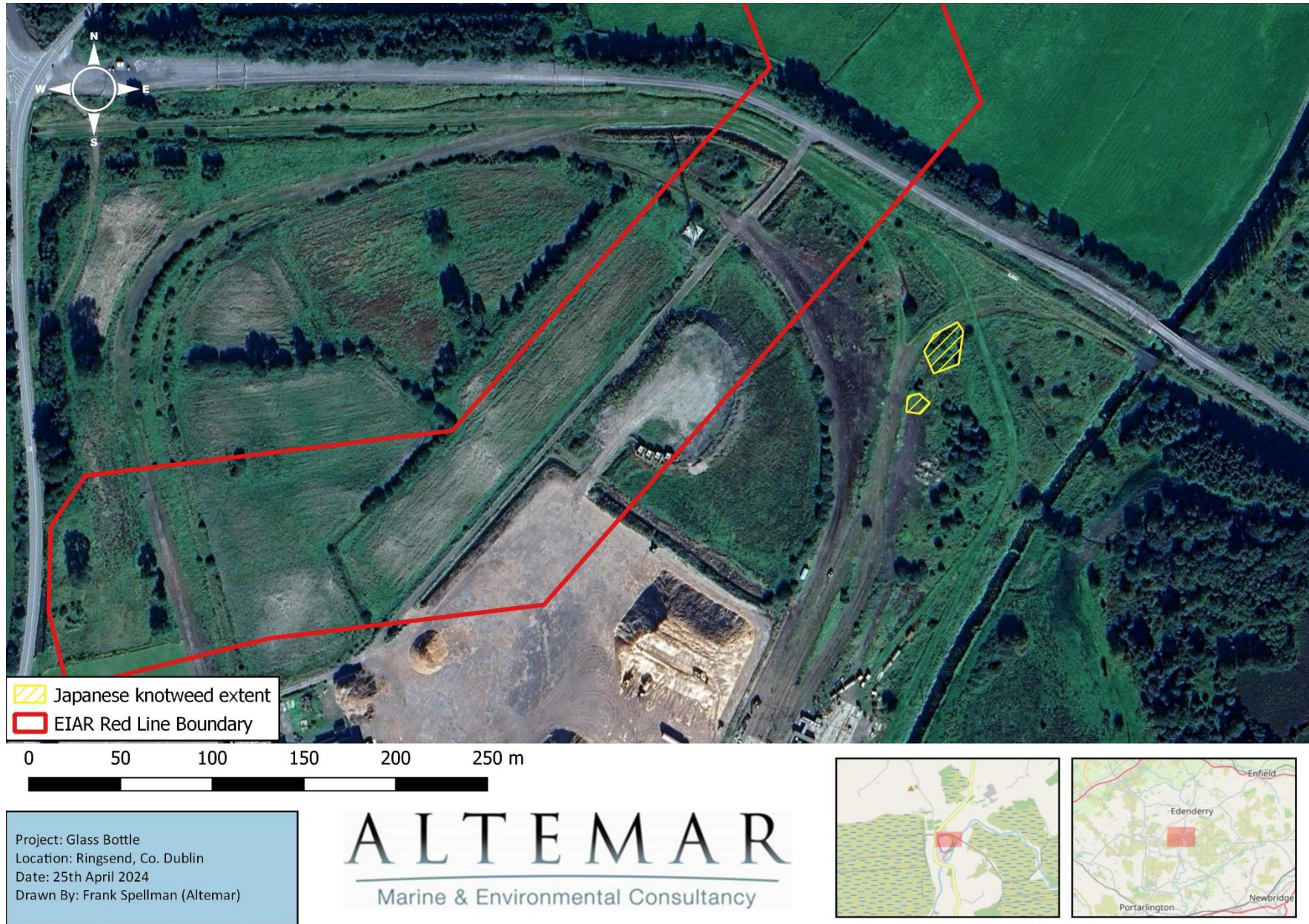


Figure 2. Extent of Japanese knotweed monitoring.

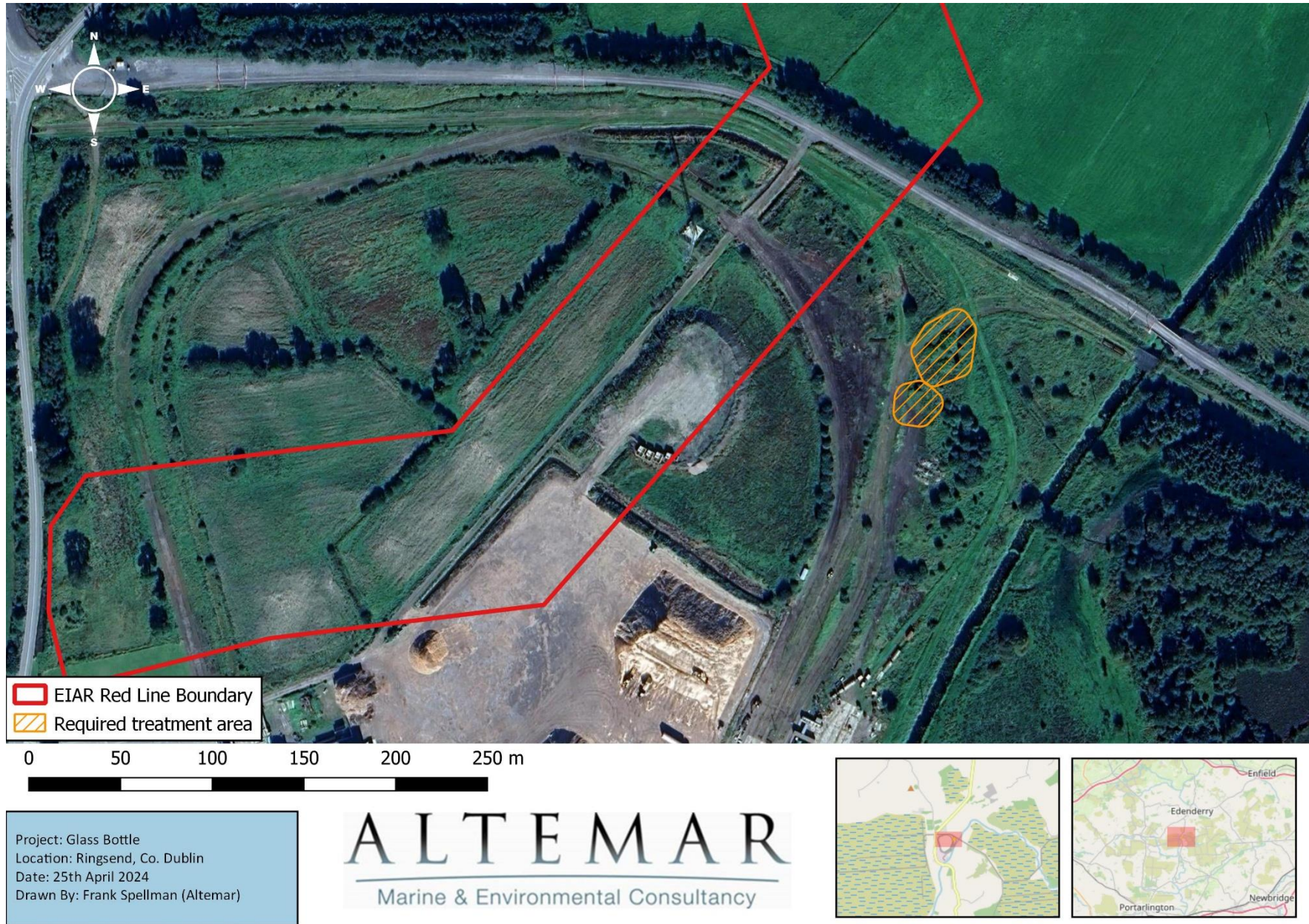


Figure 3. Areas requiring exclusion and post-treatment monitoring.

## Proposed Management of Japanese knotweed

The key objective of the Invasive Species Management Plan is to develop a safe and biosecure approach to the long-term control of invasive species in the site and to remove the risk of spread and future. The successful implementation of the Plan will prevent the further spread of Japanese knotweed as a result of the proposed project. The Management Plan describes procedures that will ensure the effective control of the specific invasive species.

It is recommended that all control methods follow the TII 4 phase approach to control of Invasive species as outlined in TII (2020)<sup>1</sup>:

**Phase 1** – Site assessment – Mapping – Description of site – Habitat mapping – Presence of IAPS – Sensitive receptors – Proximity to designated sites – Topographical survey

**Phase 2** – IAPS Management Plan – Costing – Site management objectives – Treatment required – Risk of re-infestation – Costings of appropriate control strategies – Acquisition of land/Compulsory Purchase Order (CPO) if necessary

**Phase 3** – Implement control methods – Treatment reporting – IAPS control (chemical, physical or a combination of both) – Biosecurity measures – Documentation of method of treatment

**Phase 4** – Re-growth monitoring – Re-growth reporting – Survey re-growth – Report on re-growth – Make provisions for site protection to prevent future IAPS infestations

One invasive species (SI 49 of 2011) was noted within the proposed development area (Figure 2).

### *Japanese knotweed*

The Transport Infrastructure Ireland “The Management of Invasive Alien Plant Species on National Roads – Technical Guidance”<sup>2</sup> will be followed. As outlined in this guidance in relation to Japanese knotweed:

*“As highlighted in GE-ENV-01104, it is vital to accurately map the detailed distribution of all IAPS. This is particularly important when managing Japanese knotweed as areas of infestation can extend 7m horizontally (and up to 2m in depth) from the nearest above-ground plant. When managing areas infested with Japanese knotweed, the management phases outlined in Figure 5 must be followed.*

#### 6.1.3.1 Chemical control

*While a number of chemicals are effective in controlling Japanese knotweed, many of these are undesirable due to their non-selective nature, persistence or toxicity to aquatic ecosystems. Care is required in the selection of the appropriate PPP and method of application. In making this selection, regard should be had to the abundance of Japanese knotweed, the location of the stand, the proximity and nature of sensitive receptors, and the season. Only certain PPPs are approved for use in or near water. Not all PPPs are selective in nature and the persistency of PPPs varies. The method of application should be as targeted as possible, having regard to all other factors. PPPs must be used in compliance with the product label and in accordance with the legislation regulating their use and the sustainable use of pesticides. With all forms of chemical control in relation to Japanese knotweed, follow-up treatment will be required in subsequent years.*

*The current most widely recommended active ingredient for Japanese knotweed control is glyphosate, which breaks down in the soil relatively quickly. Glyphosate is a broad spectrum herbicide and, as such, is potentially damaging*

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<sup>1</sup> TII (2020) The Management of Invasive Alien Plant Species on National Roads – Standard. GE-ENV-01104  
<https://www.tiipublications.ie/library/GE-ENV-01104-01.pdf>

<sup>2</sup> <https://www.tiipublications.ie/library/GE-ENV-01105-01.pdf>

to non-target plants. Great care is, therefore, necessary when applying this herbicide and it may be appropriate to seek advice from a Registered Pesticide Advisor. A recent study has demonstrated that effective control of Japanese knotweed may be achieved by biannual (summer and autumn) foliar glyphosate applications or by annual application of glyphosate in autumn (after the flowering period but prior to senescence) using stem injection (at high concentrations) or foliar spray (Jones, et al., 2018).

Selective herbicides containing the active ingredients aminopyralid and fluroxypyr are increasingly being used to chemically control Japanese knotweed. However, these products are toxic to aquatic life and must not be used in or near water. They also cannot be used on land that will be grazed by livestock. Aminopyralid and fluroxypyr have a low to moderate persistence in soil (this can be up to 35 days in the case of aminopyralid). Products containing these active ingredients should not be used on or adjacent to soil that may be used as garden top-soil, for potting or used on grass that may be cut and used as mulch or for compost for horticultural or garden crops.

Products containing the active ingredients aminopyralid and triclopyr are also increasingly being trialled in Japanese knotweed control. Products containing these active ingredients are selective, but they are highly toxic to aquatic life and deemed slightly toxic to birds, on an acute basis. These herbicides are more persistent, with an average persistency of  $\leq$  six weeks. Products containing these active ingredients should not be used on or adjacent to soil that may be used as garden top-soil, for potting or used on grass that may be cut and used as mulch or for compost for horticultural or garden crops.

#### 6.1.3.2 Physical control

Where feasible, preference should be given to treating Japanese knotweed in its original location to limit the risk of further spread of the plant. A number of physical control methods have been developed to deal with Japanese knotweed, which are all based on the mechanical excavation of the rhizome material and its subsequent containment either at depth, within an impermeable membrane, or its disposal off-site. Sections 2.3.2 and 2.3.3 of GE-ENV-01104 *The Management of Invasive Alien Planet Species on National Roads – Standard outline the appropriate physical methods of excavation, disposal and biosecurity measures that should be followed when physical control of Japanese knotweed is conducted.*”

#### **On site Management**

Japanese knotweed was not recorded within or immediately adjacent to the proposed works outline. Therefore, there is no requirement for treatment or removal of the current extent of Japanese knotweed as part of the proposed development. However, Japanese knotweed is a highly invasive plant species and can unwittingly be transferred easily into/across a development site. The management of this species in relation to the proposed development will focus on isolation to avoid inadvertent contact and transfer of live plant material.

The first stage of management of the species will be to mark out all stands/specimens with a 7m buffer of tape or fencing prior to works commencing to ensure that no machinery or personnel come within close proximity to the plants. Failure to do this could result in the transfer of knotweed particularly in the tracks/tyres of machinery/vehicles. No vehicles associated with the proposed development will be permitted to use the access road adjacent to the current Japanese knotweed stands under any circumstances. All isolation and marking/sign-posting measures in this area must be approved and carried out in consultation with a suitably qualified ecologist or invasive species specialist. Prior to works commencing an updated survey will be carried out and 7m buffer adjusted respective of any changes in distribution. If any Japanese knotweed specimens are identified within or immediately adjacent to the proposed development boundary, an updated Invasive Species Management Plan will be prepared.

A Guide to Landscape Treatments for National Road Schemes in Ireland (TII)). As outlined in TII “The Management of Invasive Alien Plant Species on National Roads – Standard”<sup>3</sup> “Areas infested with IAPS must be clearly identified and the specific sites of infestation isolated with fencing or warning tape. ‘Biosecure zone’ signs must be erected at each contaminated site to alert workers that IAPS are present and to avoid entering or interfering with these sites. Likewise, any stockpiles of soil that are or could be contaminated with IAPS must be clearly marked. Designated and clearly marked cleaning and/or disinfection stations should be strategically placed within the work site for use by staff, vehicles and machinery. Where it is necessary to work in contaminated areas, every effort should be made not to use vehicles with caterpillar tracks.

*All vehicles and equipment that have been used in IAPS control operations must be thoroughly pressure-washed in a designated wash-down area each time they leave the works site and once work in that area has been completed. This also includes footwear, personal protective equipment (PPE), tools, and other light equipment. It is important to remove soil that may contain seeds or plant fragments, which otherwise could be transported along the road corridor as works are being undertaken. Vehicles leaving contaminated area(s) should either be confined to marked haulage routes protected by root barrier membranes, or be pressure-washed before leaving the area. Only vehicles that are deemed to be biosecure (i.e. sealed so that no soil can escape) shall be used to transport contaminated soil and all must be thoroughly pressure-washed in the designated wash-down area before exiting the infested area.”*

No physical or chemical treatment of the current Japanese knotweed extent identified is required as part of the proposed development. However, the final measures are subject to the findings of a pre-construction invasive species survey, and any subsequent consultation (if required) between the project ecologist, invasive species specialist, Gas Networks Ireland and Bord na Móna. All measures will be carried out in line with legislative requirements.

#### General Procedures for Construction

Biosecurity of both plant and animal species will be employed pre and post works and will form part of the Appointed Contractor’s CEMP. The biosecurity protocols will include:

- Implement Check–Clean–Dry procedures for all plant, equipment and PPE before entering and leaving site.
- Restrict machinery movement and use designated access routes to protect the riparian zones.
- Identify and demarcate any invasive species areas to prevent disturbance.
- Inspect, segregate and appropriately manage excavated soils to avoid spread of invasive plant material.
- Follow IFI field work protocol for field survey work (2010) aquatic biosecurity protocols for all works near watercourses
- Deliver toolbox talks to all personnel on invasive species awareness and biosecurity requirements.
- Maintain ongoing environmental supervision to ensure compliance and address issues promptly.

#### Specific Procedures for Construction

- All existing areas containing Japanese knotweed will be marked with tape/fenced to create a 7m exclusion zone.
- No machinery/personnel will be permitted to enter the Japanese knotweed exclusion zone without prior consultation and supervision by a qualified ecologist or invasive species specialist.
- No machinery or personnel involved with the subject development will be permitted to utilise the access road adjacent to the current extent of Japanese knotweed.
- A pre-construction assessment for invasive species will be carried out prior to construction and an updated Invasive Species Management Plan provided.

In addition to these measures, watching brief will be maintained throughout all site preparation and construction activities to ensure that any invasive species encountered during the works are identified and correctly managed.

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<sup>3</sup> <https://www.tiipublications.ie/library/GE-ENV-01104-01.pdf>

If any suspected invasive species is observed the Ecological Clerk of Works (ECoW) will be notified immediately so that they can attend the location, confirm identification, and implement appropriate containment measures. Until the ECoW has assessed the finding and provided direction, no soil, vegetation, or equipment within the affected area will be moved or disturbed. This approach ensures that any new or previously unrecorded invasive species are addressed and that robust biosecurity controls are maintained throughout the construction phase to prevent accidental spread.

### **Conclusion**

An area of mature Japanese knotweed was identified within grassland approximately 100 m southeast of the proposed Ballykilleen pipeline route (62m southeast of development boundary) and northeast of the Bord na Móna Edenderry power plant. Although the area of infestation is not incorporated with the proposed pipeline works, its proximity to an access road and general presence poses a high risk of spread of this species via movement of machinery and personnel within the vicinity of the stands, as well as natural processes. There is the potential that this species spreads to other areas within the Bord na Móna site, including the area proposed for the Ballykilleen pipeline route and associated works area. It is proposed to initially mark out the areas containing live specimens and prevent access within 7m of these areas (including the access road). No machinery or personnel associated with the proposed works will be permitted to utilise the access road adjacent to Japanese knotweed stands. Any deviation of these measures will only be undertaken following consultation and under supervision by a qualified ecologist/ECoW/invasive species specialist with full biosecurity measures in place. If during pre-construction surveys it is determined that Japanese knotweed specimens are identified within the proposed works area, an updated Invasive Species Management Plan will be commissioned to determine the necessary course of action in line with TII guidelines. All measures will be carried out in line with legislative requirements.