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Marine Invasive Non-native Species Biosecurity Risk Assessment and Management Plan

A Marine Biosecurity Risk Assessment and Management Plan enables marine operators and contractors to understand and minimise the risk of introducing or spreading marine invasive non-native species (INNS). Management of marine INNS is extremely challenging once they are introduced to a new area. Effective biosecurity measures that minimise the risk of introduction or spread are therefore key to effective management.

Filling in this form:

To help you fill in this form, see accompanying document “Guidance for completing NRW’s Biosecurity Risk Assessment and Management Plan”. The accompanying document contains clarification of many key terms and also provides guidance on potential pathways of introduction for INNS (Table 1) and level of risk associated with each pathway (Table 2).

Structure of this form:

You will need to fill in Sections A and C. Fill in sections B1 to B5 when relevant to your activity. For further information on what is included in each section see the accompanying guidance document.

Section A: Activity overview

You should complete this section.

Section B: Risk Assessment

B.1 Assessing the pathway risks associated with vessels

If you are using a vessel (or vessels) as part of your licensed activity you should complete this section. Information on any equipment to be used which can be separated from the vessel should be provided in Section B.4.

B.2 Assessing the pathway risks associated with non-biological materials and water

If your activity involves the use or transfer of non-biological materials (e.g. water, sediment, construction material) you should complete this section.

B.3 Assessing the pathway risks associated with biological material

If your activity involves the use or transfer of biological material (including aquaculture) you should complete this section.

B.4 Assessing the pathway risks associated with equipment

If your activity involves use of equipment which can be separated from their vessel you should complete this section.

B.5 Assessing other pathway risks

This should be filled in if previous sections do not capture aspects of your activity.

Section C: Management Measures

You should complete this section.

Section D: Recommendations

You should consider this section.

Section A: Activity overview

Please fill out the activity details below:

Applicant name:	Binnies UK Ltd. (Working on behalf of Natural Resources Wales)
Short description of activity: <i>(please provide enough detail for NRW to understand the location and the different elements of the project. Links to other documents which describe the project can be provided)</i>	Cardigan Tidal Flood Risk Management Scheme (TFRMS) is situated towards the centre of Cardigan town, Ceredigion, in west Wales. The Scheme is positioned along the right bank (northern bank) of the River Teifi (Afon Teifi). The permanent works are bound to the west by Castle Street (SN 177 458), to the east by Gloster Row car park (SN 180 459). The Scheme would comprise a continuous flood defence structure over a length of approximately 327m designed to achieve a consistent level of 4.95mAOD to provide the scheme design standard of 1 in 200 annual exceedance probability (AEP) with allowance for climate change. The new structures would generally range between approximately 1.1 to 2 metres above the existing ground level. The Scheme has a design life of 100 years. The main Scheme elements comprise a flood defence wall, engineered riverbank and new river access slipway. The flood defences have been set back towards the eastern extent to mitigate for intertidal habitat losses in areas where the design cannot be set back due to existing built constraints. Supporting design drawings and documents: - General Arrangement Plan – 4021883-BUK-ZZ-00-DR-EN-00008 - Cardigan TFRMS Location Plan – 4021883-BUK-ZZ-00-DR-EN-00005 - Design and Access Statement - 4021883-BUK-ZZ-00-RP-EN-00030 - Wall coping stones - 4021883-BUK-ZZ-00-DR-C-05300 - Cladding detail - 4021883-BUK-ZZ-00-DR-C-05200

	- Embankment standard cross section - 4021883-BUK-ZZ-00-DR-C-05000 - Area 1 proposed plan and long section - 4021883-BUK-ZZ-00-DR-C-01001 - Area 1 setting out - 4021883-BUK-ZZ-00-DR-C-01003 - Area 1 wall tie-in west and plateau steps - 4021883-BUK-ZZ-00-DR-C-01100 - Area 1 RC wall cross section - 4021883-BUK-ZZ-00-DR-C-01105 - Area 1 pile wall cross section - 4021883-BUK-ZZ-00-DR-C-01250 - Area 1 DCWW outfall - 4021883-BUK-ZZ-00-DR-C-01300 - Area 2 proposed plan and long section - 4021883-BUK-ZZ-00-DR-C-02001 - Area 3 proposed plan and long section - 4021883-BUK-ZZ-00-DR-C-03001 - Area 3 boat ramp plan and long section - 4021883-BUK-ZZ-00-DR-C-03200 - Area 3 boat ramp flood gate details - 4021883-BUK-ZZ-00-DR-C-03300 - Area 4 proposed plan and long section - 4021883-BUK-ZZ-00-DR-C-04001 - Area 4 car park layout - 4021883-BUK-ZZ-00-DR-C-04400
Estimated timings of proposed licensed activities:	It is expected that the proposed construction works would start in spring/summer 2027, once all approvals have been attained, and take approximately 18 months to complete. Construction durations are estimates and are dependent on the appointed contractor and their detailed construction method statement.

Section B: Risk Assessment

B.1 Assessing the pathway risks associated with vessels

B.1.1. Please list all ports within the UK or overseas that all vessel(s) to be used (both during construction and maintenance) have visited over the 12 months prior to this licensed activity, or since the last out of water period (whichever is most recent).

Please state **N/A** if vessels have not entered any port since the last out of water period.

If you do not yet have the information to complete this section, please state **Unknown**. NRW may ask for this section to be updated when these details are known. The risk should be set as High.

Vessel name	Port / location visited over last 12 months (listed chronologically with dates if known)	Which marine invasive non-native species known to be present at this port(s) / location(s)?	Has the vessel had antifouling? 12 months prior to activity for biocidal coatings, 24 months for biocide-free coatings
N/A	N/A	N/A	N/A

Please add more rows if necessary

Please indicate the INNS risk level and justification of the risk below, separately for each vessel based on the locations visited in last 12 months. This should take into account the probability of biofouling and vessel antifouling regime. **Note:** Examples of risk levels are given in Table 2 of the accompanying guidance document and there is further information about this section in the accompanying guidance document.

Vessel name / type	Risk Level (High, Medium, Low)	Justification of risk level
N/A	N/A	N/A

B.1.2 Please provide details of the vessels (identified in Table B.1.1), which have not had antifouling (within the 12 months prior to the licensed activity for biocidal coatings, or 24 months for biocide-free coatings) and if there is an alternative antifouling management regime.

If there are not additional measures or an alternative biofouling management regime, then please put **None**, and the risk level would not change.

Vessel	Alternative biofouling management regime (e.g. different timeframes for antifouling treatment, vessel storage on land etc.)	Risk Level (High, Medium, low)
N/A	N/A	N/A

B.2 Assessing the pathway risks associated with non-biological materials and water

B.2.1: Please provide information about the source and receiving environments for non-biological materials and water transferred through the licensed activity from different pathways (for example hopper water, dredge material, construction material).

Pathway	Location (including Coordinates, WGS84)		Relevant Environmental Conditions for INNS species (e.g. salinity and depth differences between source and receiving environments)	List of INNS known to be present	Risk Level (High, Medium or Low)	Justification of risk level
<i>Transfer of Marine INNS within material from land source to works site</i>	Source	Sheet piling – Supplier TBC (GR/LATLONG)	Manufactured material.	Unknown	Low	INNS unlikely due to nature of material.
	Receiving	Northern compound: SN 18239 46106 (material deliveries) Area 1: SN 17829 45889 (temporary laydown on road side (terrestrial) prior to use)	Northern compound: existing hardstanding and terrestrial habitats. Area 1 temporary laydown: Hardstanding (road and pavement). Areas 1-4: Hardstanding. Shingle/gravel and River Teifi banks (Intertidal marine habitats).	Northern compound: Known stands of Japanese knotweed <i>Reynoutria japonica</i> present at the perimeter of the compound. Areas 1-4: None recorded.	Medium	Risk of Japanese knotweed rhizomes being disturbed by material storage and transferred to working area.

Pathway	Location (including Coordinates, WGS84)		Relevant Environmental Conditions for INNS species (e.g. salinity and depth differences between source and receiving environments)	List of INNS known to be present	Risk Level (High, Medium or Low)	Justification of risk level
		Areas 1-4 (working area - see licence area)				
<i>Transfer of Marine INNS within material from land source to works site</i>	Source	Granular fill – Supplier TBC (GR/LATLONG)	Extracted from terrestrial conditions and blended required specification, source TBC	Unknown	Low	Extracted from terrestrial conditions, low risk of INNS
	Receiving	Northern compound: SN 18239 46106 (material deliveries) Area 1: SN 17829 45889 (temporary laydown on road side (terrestrial) prior to use) Areas 1-4 (working area -	Northern compound: existing hardstanding and terrestrial habitats. Area 1 temporary laydown: Hardstanding (road and pavement). Fill likely to be taken by wagons directly to foreshore for placement. Areas 1-4: Hardstanding. Shingle/gravel and River Teifi banks	Northern compound: Known stands of Japanese knotweed <i>Reynoutria japonica</i> present at the perimeter of the compound. Areas 1-4: None recorded.	Medium	Risk of Japanese knotweed rhizomes being disturbed by material storage and transferred to working area.

Pathway	Location (including Coordinates, WGS84)		Relevant Environmental Conditions for INNS species (e.g. salinity and depth differences between source and receiving environments)	List of INNS known to be present	Risk Level (High, Medium or Low)	Justification of risk level
		see licence area)	(Intertidal marine habitats).			
<i>Transfer of Marine INNS within material from land source to works site</i>	Source	Concrete – Supplier TBC (GR/LATLONG)	Manufactured material.	Unknown	Low	INNS unlikely due to nature of material.
	Receiving	Northern compound: SN 18239 46106 (material deliveries) Area 1: SN 17829 45889 (temporary laydown on road side (terrestrial) prior to use) Areas 1-4 (working area - see licence area)	Northern compound: existing hardstanding and terrestrial habitats. Area 1 temporary laydown: Hardstanding (road and pavement). Areas 1-4: Hardstanding. Shingle/gravel and River Teifi banks (Intertidal marine habitats).	Northern compound: Known stands of Japanese knotweed <i>Reynoutria japonica</i> present at the perimeter of the compound. Areas 1-4: None recorded.	Medium	Risk of Japanese knotweed rhizomes being disturbed by material storage and transferred to working area.

Pathway	Location (including Coordinates, WGS84)		Relevant Environmental Conditions for INNS species (e.g. salinity and depth differences between source and receiving environments)	List of INNS known to be present	Risk Level (High, Medium or Low)	Justification of risk level
<i>Transfer of Marine INNS within material from land source to works site</i>	Source	Stone cladding - Supplier TBC (GR/LATLONG)	Quarried and cut material	Unknown	Low	INNS unlikely due to nature of material.
	Receiving	Northern compound: SN 18239 46106 (material deliveries) Area 1: SN 17829 45889 (temporary laydown on road side (terrestrial) prior to use) Areas 1-4 (working area - see licence area)	Northern compound: existing hardstanding and terrestrial habitats. Area 1 temporary laydown: Hardstanding (road and pavement). Areas 1-4: Hardstanding. Shingle/gravel and River Teifi banks (Intertidal marine habitats).	Northern compound: Known stands of Japanese knotweed <i>Reynoutria japonica</i> present at the perimeter of the compound. Areas 1-4: None recorded.	Low	Risk of Japanese knotweed rhizomes being disturbed by material storage and transferred to working area.
<i>Transfer of Marine INNS within</i>	Source	Pre-cast concrete copings -	Manufactured material.	Unknown	Low	INNS unlikely due to nature of material.

Pathway	Location (including Coordinates, WGS84)		Relevant Environmental Conditions for INNS species (e.g. salinity and depth differences between source and receiving environments)	List of INNS known to be present	Risk Level (High, Medium or Low)	Justification of risk level
<i>material from land source to works site</i>		Supplier TBC (GR/LATLONG)				
	Receiving	Northern compound: SN 18239 46106 (material deliveries) Area 1: SN 17829 45889 (temporary laydown on road side (terrestrial) prior to use) Areas 1-4 (working area - see licence area)	Northern compound: existing hardstanding and terrestrial habitats. Area 1 temporary laydown: Hardstanding (road and pavement). Areas 1-4 – Placed atop constructed flood defence wall (terrestrial only).	Northern compound: Known stands of Japanese knotweed <i>Reynoutria japonica</i> present at the perimeter of the compound. Areas 1-4: None recorded.	Medium	Risk of Japanese knotweed rhizomes being disturbed by material storage and transferred to working area.
<i>Transfer of Marine INNS within material</i>	Source	Geotextile membrane - Supplier TBC (GR/LATLONG)	Manufactured material.	Unknown	Low	INNS unlikely due to nature of material.

Pathway	Location (including Coordinates, WGS84)		Relevant Environmental Conditions for INNS species (e.g. salinity and depth differences between source and receiving environments)	List of INNS known to be present	Risk Level (High, Medium or Low)	Justification of risk level
<i>from land source to works site</i>	Receiving	Northern compound: SN 18239 46106 (material deliveries) Area 1: SN 17829 45889 (temporary laydown on road side (terrestrial) prior to use) Areas 1-4 (working area - see licence area)	Northern compound: existing hardstanding and terrestrial habitats. Area 1 temporary laydown: Hardstanding (road and pavement). Areas 1-4: Hardstanding. Shingle/gravel and River Teifi banks (Intertidal marine habitats).	Northern compound: Known stands of Japanese knotweed <i>Reynoutria japonica</i> present at the perimeter of the compound. Areas 1-4: None recorded.	Low	Risk of Japanese knotweed rhizomes being disturbed by material storage and transferred to working area.
<i>Transfer of Marine INNS within material</i>	Source	Riprap - Supplier TBC (GR/LATLONG)	Quarried and cut material, from terrestrial conditions, low risk of Marine INNS	Unknown	Low	INNS unlikely due to nature of material.

Pathway	Location (including Coordinates, WGS84)		Relevant Environmental Conditions for INNS species (e.g. salinity and depth differences between source and receiving environments)	List of INNS known to be present	Risk Level (High, Medium or Low)	Justification of risk level
<i>from land source to works site</i>	Receiving	Northern compound: SN 18239 46106 (material deliveries) Area 1: SN 17829 45889 (temporary laydown on road side (terrestrial) prior to use) Areas 1-4 (working area – see licence area)	Northern compound: existing hardstanding and terrestrial habitats. Area 1 temporary laydown: Hardstanding (road and pavement). Areas 1-4: Hardstanding. Shingle/gravel and River Teifi banks (Intertidal marine habitats).	Northern compound: Known stands of Japanese knotweed <i>Reynoutria japonica</i> present at the perimeter of the compound. Areas 1-4: None recorded.	Low	Risk of Japanese knotweed rhizomes being disturbed by material storage and transferred to working area.
<i>Transfer of Marine INNS within material from land source to works site</i>	Source	Imported soils - Supplier TBC (GR/LATLONG)	Terrestrial conditions, source TBC	Unknown	Medium	Potential for INNS seeds, roots and rhizomes to be in imported soil.
	Receiving	Northern compound: SN 18239 46106	Northern compound: existing hardstanding and terrestrial habitats.	Northern compound: Known stands of Japanese knotweed <i>Reynoutria japonica</i>	Medium	Risk of Japanese knotweed rhizomes being disturbed

Pathway	Location (including Coordinates, WGS84)		Relevant Environmental Conditions for INNS species (e.g. salinity and depth differences between source and receiving environments)	List of INNS known to be present	Risk Level (High, Medium or Low)	Justification of risk level
		(material deliveries) Area 1: SN 17829 45889 (temporary laydown on road side (terrestrial) prior to use) Areas 1-4 (working area - see licence area)	Area 1 temporary laydown: Hardstanding (road and pavement). Areas 1-4: Hardstanding. Shingle/gravel and River Teifi banks (Intertidal marine habitats).	present at the perimeter of the compound. Areas 1-4: None recorded.		by material storage and transferred to working area.
<i>Transfer of Marine INNS within material from land source to works site</i>	Source	Coir rolls - Supplier TBC (GR/LATLONG)	Manufactured material.	Unknown	Low	INNS unlikely due to nature of material.
	Receiving	Northern compound: SN 18239 46106 (material deliveries)	Northern compound: existing hardstanding and terrestrial habitats.	Northern compound: Known stands of Japanese knotweed <i>Reynoutria japonica</i> present at the perimeter of the compound.	Low	Risk of Japanese knotweed rhizomes being disturbed by material storage and transferred to working area.

Pathway	Location (including Coordinates, WGS84)		Relevant Environmental Conditions for INNS species (e.g. salinity and depth differences between source and receiving environments)	List of INNS known to be present	Risk Level (High, Medium or Low)	Justification of risk level
		Area 1: SN 17829 45889 (temporary laydown on road side (terrestrial) prior to use) Areas 1-4 (working area - see licence area)	Area 1 temporary laydown: Hardstanding (road and pavement). Areas 1-4: Hardstanding. Shingle/gravel and River Teifi banks (Intertidal marine habitats).	Areas 1-4: None recorded.		
<i>Transfer of Marine INNS within material from land source to works site</i>	Source	Water sourced from: TBC	Water purity (potential to contain INNS)	Unknown source.	Low	Potential for INNS seeds, roots and rhizomes to be transported via water used on site. Unlikely assuming that the source of water would be a mains supply (on site or tankered in) or a local abstraction point from the Afon Teifi.
	Receiving	Areas 1-4 (working area -	Area 1 temporary laydown: Hardstanding (road and pavement).	Northern compound: Known stands of Japanese knotweed <i>Reynoutria japonica</i>	Low	Water used for activities such as watering germinating seeds on the upper embankment during

Pathway	Location (including Coordinates, WGS84)		Relevant Environmental Conditions for INNS species (e.g. salinity and depth differences between source and receiving environments)	List of INNS known to be present	Risk Level (High, Medium or Low)	Justification of risk level
		see licence area)	Areas 1-4: Hardstanding. Shingle/gravel and River Teifi banks (Intertidal marine habitats).	present at the perimeter of the compound. Areas 1-4: None recorded.		drought and dust suppression within the working area could contain INNS. However, this is considered to be unlikely assuming that the source of water would be a mains supply (on site or tankered in) or a local abstraction point from the Afon Teifi.
<i>Transfer on construction plant moved from site to site</i>	Source	Construction Contractor and their machinery suppliers (TBC)	Most construction plant used likely to have been used previously in terrestrial conditions, although potential for some to have been used on other shorelines.	Unknown at origin Northern compound: Known stands of Japanese knotweed <i>Reynoutria japonica</i> present at the perimeter of the compound. Areas 1-4: None recorded.	Medium	Transfer of INNS via machinery moving between work sites is a recognised risk.
	Receiving	Northern compound: SN 18239 46106	Northern compound: existing hardstanding and terrestrial habitats.	Unknown at origin Northern compound: Known stands of	Medium	Risk of Japanese knotweed rhizomes being disturbed by machinery storage and

Pathway	Location (including Coordinates, WGS84)		Relevant Environmental Conditions for INNS species (e.g. salinity and depth differences between source and receiving environments)	List of INNS known to be present	Risk Level (High, Medium or Low)	Justification of risk level
		(material deliveries) Area 1: SN 17829 45889 (temporary laydown on road side (terrestrial) prior to use) Areas 1-4 (working area - see licence area)	Area 1 temporary laydown: Hardstanding (road and pavement). Areas 1-4: Hardstanding. Shingle/gravel and River Teifi banks (Intertidal marine habitats).	Japanese knotweed <i>Reynoutria japonica</i> present at the perimeter of the compound. Areas 1-4: None recorded.		movement and transferred to working area.

Please add more rows if necessary

B.3 Assessing the pathway risks associated with biological material

B.3.1 Please provide information about the species that will be used or transferred through the licensed activity and the potential for INNS to be contained in the biological material.

The seed mix for an estuarine/salt-tolerant environment would be sown to aid vegetation growth on these upper areas of the engineered embankment which are inundated less frequently by the tides. A small plateau would remain on the riverward side of the proposed flood defence wall. This would be seeded with the same salt tolerant seed mix as used on the upper section of the engineered riverbank. The seed mix will be tailored for an estuarine/salt-tolerant environment. The specification for this seed mix is to be confirmed by the Applicant.

The linear planting bed created as part of the landscape works in Area 1 would be planted with small shrub and herbaceous species and street trees. A raised planting bed would also be created near the Bathroom Centre planted with taller species.

The remaining grassland within Area 4 would be re-seeded with grass.

B.3.2: Please provide information about the source and receiving environments for biological material used or transferred through the licensed activity. Pathways include, for example, transfer of seeded ropes with seaweed or shellfish.

Pathway	Location (coordinates, WGS84) and / or name of culture facility		Relevant environmental conditions for INNS species (e.g. salinity and depth differences between source and receiving environments)	List of INNS known to be present in the location or culture facility	Risk Level (High, Medium or Low)	Justification of risk level
<i>Introduced seed mixes and plants</i>	Source	Supplier TBC	Unknown.	Unknown.	Medium	Potential for INNS seeds, roots and rhizomes to be in seed mixes and soil around

<i>containing INNS</i>						imported plants – recognised biosecurity risk.
	Receiving	Engineered embankment (Areas 1-4) Plateau area (Areas 1-4)	Estuarine/salt-tolerant environment on the upper engineered embankment and plateau.	None identified.	Low	No INNS identified in working areas during ecology surveys for the scheme.
<i>Introduced seed mixes and plants containing INNS</i>	Source	Supplier TBC	Unknown.	Unknown.	Medium	Potential for INNS seeds, roots and rhizomes to be in seed mixes and soil around imported plants – recognised biosecurity risk.
	Receiving	Area 1/2 linear planting beds and raised beds	Terrestrial enclosed planting beds.	None identified.	Low	No INNS identified in working areas during ecology surveys for the scheme.
<i>Introduced seed mixes and plants containing INNS</i>	Source	Supplier TBC	Unknown.	Unknown.	Medium	Potential for INNS seeds, roots and rhizomes to be in seed mixes and soil around imported plants – recognised biosecurity risk.
	Receiving	Area 4 remaining grass	Terrestrial grassland.	None identified.	Low	No INNS identified in working areas during ecology surveys for the scheme.

Please add more rows if necessary

B.3.3. If a relevant pathway is identified in Table B.3.2, please outline any relevant biosecurity measures or protocols in place to prevent contamination of material by marine INNS, and introduction or spread of marine INNS.

Seed mix provided by supplier is not specified to contain any terrestrial or marine invasive species and has been specifically selected to be appropriate for an estuarine/salt-tolerant environment.

All plants and seed mixes will be peat free, UK sourced and grown. The NRW assurance pro forma will be used as part of procurement process and Plant Passport information will be retained.

Procurement specification will require:

- Suppliers to provide full batch traceability for each species in the mix, including supplier batch number, provenance/origin, collector or grower, harvest year and seed lot records.
- Suppliers to provide seed analysis certificates for each batch (submitted before approval of the seed mix) demonstrating purity, germination and weed seed content. Suppliers should also confirm, through their quality assurance procedures, that the seed mix is free from known INNS.
- Suppliers to provide confirmation that UK plant health requirements have been met.
- Suppliers should operate a documented biosecurity management system, with Plant Healthy certification being one acceptable way of demonstrating that: [Plant Healthy Certification Scheme - Plant Healthy](#)
- Suppliers of native seed to be certified with the Flora Locale Code of Practice for Collectors, Growers and Suppliers of Native Flora. [Code of Practice for Collectors, Growers and Suppliers of Native Flora | CIEEM](#)
- Trees will be sourced from nurseries qualified for UKISG (UK and Ireland Sourced and Grown Assurance Scheme) assured status.

B.3.4. Does the transfer have the relevant documentation from the Fish Health Inspectorate at CEFAS (Aquaculture Production Business Registration), or follow other relevant codes of conduct for prevention of the introduction or spread of marine INNS? Please place an X in the relevant box.

Yes	No	Don't know	Not relevant
			X

B.4 Assessing the pathway risks associated with immersible equipment

B.4.1. Please list the immersible equipment expected to be used in this licensed activity in the box below.

N/A – All equipment land-based working on the foreshore or from piling platform once constructed.

B.4.2. Will all the immersible equipment used in this licensed activity undergo washing, rinsing and / or drying as part of routine maintenance at the times described below? Please place an X in the relevant box.

	Yes	No
Immediately prior to departing the <u>port of origin</u> to undertake the licensed activity.	x	
Immediately prior to leaving the licensed activity area on completion of the licensed activity.	x	

B.4.3. Will all the immersible equipment used in this licensed activity undergo washing, rinsing and / or drying between different deployments within the activity area of this licensed activity (e.g. different specific locations of dredging or sampling covered under this marine licence)? Please place an X in the relevant box.

Yes	No (please provide reason)
x	

If you answer No to any of the questions in B.4.2 or B.4.3, then please complete B.4.4 below.

B.4.4. Please provide information on the previous location the equipment will have been used prior to the vessel being used for this licensed activity.

Note: A contractor has not been appointed at the time of writing. No vessels will be used.

Equipment	Location (Coordinates, WGS84)	Risk Level (High, Medium or Low)	Justification of risk level

B.5 Assessing other pathway risks

B.5.1 Please provide any other information on the licensed activity that may produce a risk of the introduction or spread of marine INNS that is not covered in the sections above.

Pathway	Risk Level (High, Medium or Low)	Justification of risk level
Transfer of Marine INNS on road vehicles travelling between site to site	Low	Limited movement of road vehicles within marine habitats
Transfer of Marine INNS on operatives PPE travelling between site to site	Medium	Personnel transfer between sites is likely higher than equipment transfer.

Section C: Management Measures

C.1 Management Measures

Enter the management measures for the pathways identified in the sections above.

All **high and medium risk** pathways identified in the previous risk assessment (sections B.1 to B.5) should have some degree of additional control or mitigation measures. Low risk pathways may also need additional control or mitigation measures. You may want to consider keeping a logbook to help demonstrate compliance if this is requested.

Pathway (identified in sections above)	Risk Level (High, Medium or Low)	Risk management measure/s	Risk level after management (High, Medium or Low)
Transfer of Marine INNS within material from land source to works site – all materials	Medium	Action will be undertaken by the Applicant to manage Japanese knotweed stands at the northern compound prior to the start of works, preventing spread from the northern compound to the working area. INNS management plan will be in place which will specify best practice biosecurity measures and specific measures to control the spread of INNS.	Low

		Mitigation detailed within the WFD compliance assessment will be in place.	
Transfer of Marine INNS within material from land source to works site – granular fill	Low	Supplier to provide evidence of provenance of fill material and any treatment (e.g. washing) carried out. If terrestrial source of fill is not available, a protocol for checking for INNS / verify material is free from INNS will be established.	Low
Transfer of Marine INNS within material from land source to works site – imported soil	Medium	Supplier to provide evidence of provenance of soil and tests or trials carried out to verify absence of INNS. Areas reinstated with imported soil will be regularly inspected for INNS and other unplanned for species during establishment. If identified, INNS and other unplanned for species will be removed under supervision of a suitably qualified ecologist.	Low
Transfer of Marine INNS on road vehicles travelling between site to site	Medium	Contractor to verify previous locations where plant has	Low

		worked to identify any potential for increased INNS risks. Ensure all plant are cleaned prior to delivery, prior to moving between work areas, and removal from site, using the Check-Clean-Dry approach. INNS management plan will be in place which will specify best practice biosecurity measures and specific measures to control the spread of INNS Including spread via delivery vehicle and plant wheels. Mitigation detailed within the WFD compliance assessment will be in place.	
Transfer of Marine INNS on operatives PPE travelling between site to site	Medium	Operative briefing on Marine INNS transfer. Ensure PPE is cleaned prior to transfer between sites using the Check – Clean – Dry approach.	Low
Transfer of INNS via imported seed mixes and plants	Medium	Protocols set out in B3.3.3 will be followed. Seeding and planting will be regularly inspected for INNS and other unplanned for	Low

		species, as well as for signs or symptoms of pests and disease, during establishment. If identified, INNS and other unplanned for species will be removed under supervision of a suitably qualified ecologist. Anything suspicious in regard to pests and diseases will be reported to the NRW Plant Health Team and APHA (Animal and Plant Health Agency) immediately.	

Please add more rows if necessary

Section D. Recommendations

You may want to consider how compliance with the management measures will be recorded, for example in a log book or via photos.

We also recommend that;

- You identify an individual for monitoring and reporting on biosecurity management plan actions (a biosecurity manager)

Site Management / EnvCoW will undertake regular (daily) site inspections to monitor and record any instance of INNS within the site. Adhere to the Biosecurity Management Plan (BMP) throughout the works.

- All staff involved in the licensed activity are made fully aware of the possibility that INNS may be encountered and understand what measures will be taken to ensure surveillance / monitoring of INNS during the activity

All site personnel will be made fully aware of Marine INNS within the Site Induction and through the delivery of Tool Box Talks on Ecologically sensitive areas, Biosecurity, and monitoring process, including the Check – Clean – Dry approach.

- All relevant staff are adequately trained in the identification and detection of INNS and to report any instances to the biosecurity manager

All relevant site personnel shall receive training on site within the Site Induction and through the Delivery of Tool Box Talks. All site staff shall be required to report suspected Marine INNS to site management. All staff shall be updated throughout the duration of the project on suspected or confirmed INNS identified during construction.