Purpose of this document

The purpose of this Invasive Species Management Plan is to:

- Detail the known locations of invasive flora species identified within the onshore pipeline corridor.
- Define the control measures to prevent the spread of identified invasive species.

The expected outcome of a successful invasive species Management Plan is the prevention of spreading identified invasive species.

Introduction

Seven invasive flora species were identified within the pipeline route corridor during the TAP ESIA surveys.

- Black locust (*Robinia pseudoacccia*)
- Desert false indigo (*Amorpha fruticosa*)
- Silver leaf nightshade (*Solanum eleagnifolium*)
- American pokeweed (*Phytolacca americana*)
- Amaranth (*Amaranthus sp.*)
- Tree of heaven (*Ailanthus altissima*)
- Pampas grass (*Cortaderia selloana*)

Baseline

Locations of invasive flora species within the ESIA survey corridor are detailed in Table 1 below.

Mitigation and management measures

Table 1: locations of invasive flora species within pipeline corridor.

<table>
<thead>
<tr>
<th>Location (KP)</th>
<th>Mitigation and management control</th>
<th>Species and habitat</th>
</tr>
</thead>
<tbody>
<tr>
<td>Greece 78</td>
<td>Trenchless crossing of riparian corridor avoids contact.</td>
<td>Tree of heaven (<em>Ailanthus altissima</em>) noted within deciduous thickets (5160) and riparian habitat type ‘Salix alba and Populus alba galleries’ (92A0).</td>
</tr>
<tr>
<td>Greece 78</td>
<td>Trenchless crossing of riparian corridor avoids contact.</td>
<td>Amaranth (<em>Amaranthus sp.</em>) noted within riparian habitat type ‘Salix alba and Populus alba’</td>
</tr>
</tbody>
</table>
### Invasive flora species protocol

- During pre-construction surveys, the EPC contractor must identify and record the presence of any invasive flora species along the RoW. This will include verification of RoW impact on the locations of invasive flora species identified in Table 1.

<table>
<thead>
<tr>
<th>Location (KP)</th>
<th>Mitigation and management control</th>
<th>Species and habitat</th>
</tr>
</thead>
<tbody>
<tr>
<td>Greece 154</td>
<td>Trenchless crossing of riparian corridor avoids contact</td>
<td>American pokeweed (<em>Phytolacca americana</em>) noted within riparian habitat type ‘<em>Salix alba</em> and <em>Populus alba</em> galleries’ (92A0).</td>
</tr>
<tr>
<td>Greece 154</td>
<td>Trenchless crossing of riparian corridor avoids contact</td>
<td>Silver leaf nightshade (<em>Solanum eleagnifolium</em>) noted within the riparian habitat type ‘Annual riparian communities’ (32B0), nitrophilous grasslands (6290) and dry grasslands (62A0).</td>
</tr>
<tr>
<td>Greece 180</td>
<td>Implement invasive species protocol</td>
<td>Silver leaf nightshade (<em>Solanum eleagnifolium</em>) noted within the riparian habitat type ‘Annual riparian communities’ (32B0), nitrophilous grasslands (6290) and dry grasslands (62A0).</td>
</tr>
<tr>
<td>Greece 202</td>
<td>Implement invasive species protocol</td>
<td>American pokeweed (<em>Phytolacca americana</em>) noted within riparian habitat type ‘<em>Salix alba</em> and <em>Populus alba</em> galleries’ (92A0).</td>
</tr>
<tr>
<td>Greece 294</td>
<td>Trenchless crossing of riparian corridor avoids contact</td>
<td>Pampas grass (<em>Cortaderia selloana</em>) noted within riparian habitat. Black locust (<em>Robinia pseudoacacia</em>) noted within the riparian habitat types ‘<em>Salix alba</em> and <em>Populus alba</em> galleries’ (92A0) and ‘Annual riparian communities’ (32B0), and deciduous thickets.</td>
</tr>
<tr>
<td>Greece 311</td>
<td>Implement invasive species protocol</td>
<td>Black locust (<em>Robinia pseudoacacia</em>) noted within the riparian habitat types ‘<em>Salix alba</em> and <em>Populus alba</em> galleries’ (92A0) and ‘Annual riparian communities’ (32B0), and deciduous thickets.</td>
</tr>
<tr>
<td>Greece 354</td>
<td>Implement invasive species protocol</td>
<td>Tree of heaven (<em>Ailanthus altissima</em>) noted within deciduous thickets (5160) and riparian habitat type ‘<em>Salix alba</em> and <em>Populus alba</em> galleries’ (92A0).</td>
</tr>
<tr>
<td>Greece 359</td>
<td>Implement invasive species protocol</td>
<td>Black locust (<em>Robinia pseudoacacia</em>) noted within the riparian habitat types ‘<em>Salix alba</em> and <em>Populus alba</em> galleries’ (92A0) and ‘Annual riparian communities’ (32B0), and deciduous thickets.</td>
</tr>
<tr>
<td>Greece 375</td>
<td>Trenchless crossing of riparian corridor avoids contact</td>
<td>Black locust (<em>Robinia pseudoacacia</em>) noted within the riparian habitat types ‘<em>Salix alba</em> and <em>Populus alba</em> galleries’ (92A0) and ‘Annual riparian communities’ (32B0), and deciduous thickets.</td>
</tr>
<tr>
<td>Greece 375</td>
<td>Trenchless crossing of riparian corridor avoids contact</td>
<td>Desert false indigo (<em>Amorpha fruticosa</em>) noted within riparian habitat type ‘<em>Salix alba</em> and <em>Populus alba</em> galleries’ (92A0).</td>
</tr>
</tbody>
</table>
• If invasive species are identified within the RoW, the EPC contractor will develop a site-specific invasive species plan for TAP approval where TAP deems the invasive flora species protocol insufficient.

• The site specific invasive species plan will contain the follow information at a minimum:
  - Detailed mapping of extent of stand.
  - Detailed photographs of extent of stand.
  - Removal methods and controls.
  - Material storage methods and controls.
  - Spread prevention methods and controls.
  - Material replacement and disposal methods.
  - Monitoring.

• In general, the following approach will be adhered to when invasive flora species are encountered:
  - Any plants that need to be disturbed will be cut and stored on geotextile to the side of the working width. The material must be signed and fenced. The cuttings will be left to compost or taken to an approved waste facility, depending on the species biology.
  - Any soil contaminated with invasive species will be stripped and stored separately on plastic or terram. The materials must be signed and fenced. During reinstatement, the material will be placed in the exact location it was taken from, to prevent the plant spreading.
  - Depending on the species encountered and if deemed necessary, any surplus material contaminated or suspected of being contaminated with invasive species will be disposed of at an approved and licensed waste facility.
  - Depending on the species encountered and if deemed necessary, the buckets, blades, tracks and tyres of all plant and machines that have been in contact with invasive species will be sprayed down, to ensure that rhizomes are not transported to uncontaminated areas.

**Hydro-testing activities**

Hydro-test activities have the potential to spread aquatic alien and invasive species during cross-watershed discharges.

Where possible, hydro-test water will be discharged back into the watershed of origin. However, to reduce repeated surface water abstractions, discharges and consumption of freshwater resources, hydro-test water will be re-used in subsequent hydro-test sections. This may result in cross-watershed discharges.

Fish screens on the abstraction pumps will prevent fish and macro invertebrates being lifted during hydro-test water sourcing.
If a cross-watershed discharge is required, a full suite of chemical and biological analysis of both source and receiving watercourses will inform a biosecurity risk assessment. Analytical results and risk assessment will be provided prior to discharge.

A TAP aquatic specialist will review the biosecurity risk assessment and identify any additional testing and/or water treatments before any discharge.

The EPC contractor will not discharge hydro-test water into different watersheds without TAP approval. Cross-watershed discharges into critical habitat watercourses will be avoided where possible.

Post-construction monitoring will assess potential impacts to aquatic species of cross-watershed discharges at CH watercourses. These will be included within the corresponding Level 3 site file.

**Monitoring**

- A TAP biodiversity advisor will review all baseline data, including EPC PCS reports, to identify the locations of any invasive species.
- In addition, TAP will conduct walk-through surveys of the entire Right of Way to identify invasive species within and adjacent to the RoW.
- A Level 3 site file will be developed for all identified invasive species locations.
- The presence of invasive flora species will be monitored along the RoW by TAP for the duration of the biorestoration monitoring programme.
- TAP will develop and implement a remediation strategy to eradicate any stands of invasive flora species that have established in previously uncontaminated areas as a result of construction activities.
- The EPC contractors will be responsible for invasive species monitoring and remediation during the contract maintenance phase. This will be supplemented by ongoing TAP monitoring of identified invasive species locations.
- Responsibility will be transferred to TAP upon handover.
- TAP will ensure that the requirements of this plan are implemented to prevent the spread of invasive species.