AtkinsRéalis

Ecological Impact Assessment

Galway County Council

20/06/2025

N59 OUGHTERARD FOOTBRIDGE

Disclaimer: This report contains sensitive information on Freshwater Pearl Mussel and must be redacted prior to publishing of this document publicly.

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This document has 82 pages including the cover.

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Client signoff

Client	Galway County Council
Project	Eirspan 341 N59 Oughterard Footbridge
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Contents

Tables

Figures

1. Introduction

AtkinsRéalis have been commissioned by Galway County Council to prepare an Ecological Impact Assessment (EcIA) Report for the proposed Oughterard Footbridge, hereafter referred to as the proposed development.

The proposed development is located in Oughterard, Galway. The proposed development and redline boundary are highlighted on the drawings shown in Figure 2-2 and Figure 2-4.

2. Existing situation & proposed development

2.1 Project Description

The proposed development consists of the construction of a new low, steel bow-string truss pedestrian footbridge over the Owenriff River, located approximately 150m downstream (north-east) of the existing N59 road bridge, in the townlands of Cregg, Carrowmanagh, and Fough West, Oughterard, County Galway.

The proposed footbridge will be up to approximately 3.6m in height, and approximately 48.2m in length, with a 3m clear deck width. It will be a single-span footbridge with abutments to either side of the Owenriff River, and there will be no instream works. It will also contain a 3m clear width access ramp to tie into the Carrowmanagh Road to the north-west with stepped access to the riverside walkway. A new pedestrian crossing with speed table is proposed on Carrowmanagh Road with realigned kerb line. A path is proposed to tie into the N59 Clifden Road to the south-east with a new pedestrian crossing with speed table, and realigned carriageway kerb line. Works will include the demolition and rebuilding/realignment of the existing boundary wall to the existing dwelling to the north (adjacent to the riverside walkway) and to the existing dwelling to the south known as The Old Barracks. Ancillary works will include walls, fencing, pedestrian railings, bollards, signage, lighting, benches, hard and soft landscaping, including compensatory tree planting at Carrowmanagh Park, the diversion/replacement of an existing watermain and combined sewer, and a temporary construction compound on lands at Station Road, Oughterard.

2.2 Site location

The site is located approx. 150m east (downstream) of the existing N59 Oughterard Bridge (GC-N59-040.00). The ITM coordinates for the site location are as follows:

X: 511801 Y: 742754

The proposed footbridge crosses over the Owenriff River. The proposed north abutment is on a riverside path near Carrowmanagh Rd, and the south abutment is in an area of woodland (currently private residential property). The footbridge approach paths tie into proposed pedestrian crossings over Carrowmanagh Rd on the north side, and over N59 Clifden Road on the south side (adjacent to the Claddagh Credit Union).

The location map for the structure is shown in Figure 2-1.

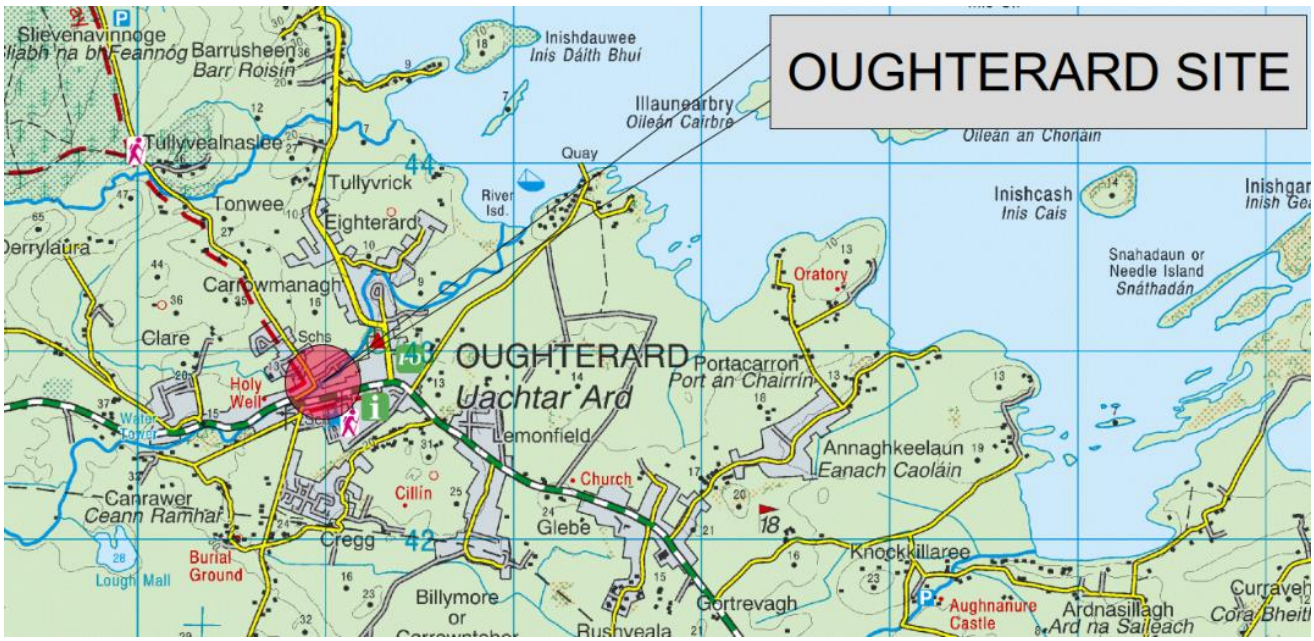

Figure 2-1 - Location Plan.

See existing general arrangement (GA) layout plan drawing (Figure 2-4), which shows topography and existing utilities at the site. The utility information is based on utility provider consultations, visual inspection of surface / manholes and ground penetration radar scan results.

The following existing utilities are present at the site:

- North riverbank path adjacent to the proposed abutment and ramp:
  - 225mm diameter buried concrete combined sewer pipe (1.56m depth below ground level (bgl))
  - 100 mm diameter buried watermain (1.00m depth bgl)
  - No overhead cables.
- Carrowmanagh Road adjacent to the proposed pedestrian crossing:
  - 225mm diameter buried concrete combined sewer pipe (1.56m depth bgl)
  - 100 mm diameter buried watermain (1.00m depth bgl)
  - Empty buried Aurora & Eir ducts / manholes
  - Overhead electric cables
  - Road Gully
- South riverbank and private land adjacent to the proposed abutment and approach path:
  - Buried pipe – combined sewer (4.00m depth, UTT QL B4)
- N59 Clifden Road at the proposed pedestrian crossing:
  - Buried water main (1.1m deep bgl)
  - Buried Eir telecoms (0.3 to 0.5m deep bgl)
  - Road gully and buried 225mm dia. PVC pipe (0.5 to 0.9m depth bgl)
  - Overhead electric cables

2.3 Scope and purpose of the project

The purpose of the N59 Oughterard Footbridge project is to provide a safe and convenient crossing for vulnerable road users (VRU's) over the Owenriff River in Oughterard and to minimise the number of VRU's crossing over the existing N59 road bridge, which is narrow and has no footpaths.

The project objectives are presented in Technical Note, 'Rationale for Intervention and Project Objectives', doc. ref. 0088798DG0012 Rev 1. These consider a range of impacts: transport users, economic, accessibility, social, land use, safety, climate change, and local environment.

The need for a new footbridge over the Owenriff River is emphasised in letters received from the Oughterard Footbridge Safety Committee, and the Safe Routes to School Outline Delivery plan for St Paul's Secondary School. Provision of a new footbridge aligns with County Development Plan objectives such as promoting local development, providing an accessible environment, and encouraging/supporting pedestrian and cycle routes around town. (Galway Couty Council, 2022). Objective OSGT 8 of the Galway County Development Plan states: Encourage and support the development of a series of pedestrian and cycle routes linking the residential areas to the town centre and local community services, where feasible. The Climate Action Vision for Galway County Council Climate Action Plan 2024 – 2029 is as follows: The communities, environment and economy of the County of Galway are thriving, climate resilient, biodiversity-rich, environmentally sustainable and carbon neutral.

The scope of the project is as follows:

- Site investigation
- Enabling works
- Foundation and substructure works.
- Installation of superstructure
- Finishes.

2.4 Description of Works

AtkinsRéalis prepared the 'Location Option Appraisal' Technical Note (doc. ref. 0088798DG0014) which documents a multi criteria analysis (MCA) of several different location options for the proposed footbridge. A copy of the report will be submitted with the planning application. The report concluded that a single span crossing of the river approximately 150m downstream of the existing N59 road bridge is the preferred location option. This location aligns with the main pedestrian desire line between Carrowmanagh and the town centre, allows substructures to be setback from the riverbank crest, and enables tie-into adjacent existing footways via zebra crossings over the roads.

AtkinsRéalis prepared the 'Structure Options Report' (doc. ref. 0088798DG0031) which documents an MCA of several different structure options for the proposed footbridge. A copy of the report will be submitted with the planning application. The report concluded that a steel bow string truss on reinforced concrete (RC) abutments is the preferred structural option for the single span crossing. A bow string truss maximises headroom clearance and freeboard under the deck, provides an aesthetically pleasing crossing which is in keeping with the local setting, and is lightweight which reduces craneage and foundation requirements. An Outline CEMP (Construction Environmental Management Plan) has also been prepared and will be included in the planning pack.

Proposed General Arrangement drawings are provided in Appendix A. A photomontage is provided in Appendix B. The proposed footbridge will be 48m span. Abutments will setback approximately 2.5m and 6.2m from the riverbank crest on the north and south side, respectively.

The lighting design has been developed with the following principal considerations:

- Provide adequate illumination to contribute towards the safe use of the proposed footbridge and approach paths.
- To minimise the impact of lighting on bats in the local environment, and on Freshwater Pearl Mussel or fish in the Owenriff River.
- Minimise light pollution and visual glare to the surrounding neighbourhood - contain the lighting within the site.
- Provide a high-quality public realm space.

The following lighting is proposed:

- Luminaires integrated into the top rail of the east parapet of the proposed footbridge, the top rail of the north parapet on the proposed north ramp, and the north handrail on the proposed north steps
- 2 no. 6m high lighting columns along the east side of the proposed south approach path.
- Belisha beacons / 8m high lighting columns each side of the proposed zebra crossing on the N59 Clifden Rd.
- 6m high lighting columns each side of the proposed zebra crossing on Carrowmanagh Rd..

Directional downlighting will be used to avoid light trespass into the environment. Modelling of the proposed lighting plan was carried out by ASD lighting and found that the maximum light spill to the river surface will be less than 1 lux. Characteristics such as light spectrum, UV content, intensity, dimming etc. will be specified in accordance with current best practice and design guidance (e.g., Bat Conservation Trust & Institute of Lighting Professional Guidelines (2018); Emery (2008); Emma Stone (2014) University of Bristol / Bat Conservation Trust; Responsible Outdoor Lighting at Night (ROLAN) guidelines, etc.). Galway CC and the ecological specialist will have final review of the lighting design to ensure above listed guidance is followed during detailed design stage.

In summary, the works will include the following (further details are provided in Section 2.4):

- Site investigations
- Enabling works including replacement/diversion of buried utilities and set up of a crane platform
- Construction works including installation of a spread foundation on the north side, and a mini-bored RC pile foundation on the south side. Once the crane is set up, the footbridge will delivered in sections to site, assembled, then lifted into position. Approach paths, boundary walls, zebra crossings etc. will then be completed.
- On completion, the temporary fencing, lighting, site compound etc. will be removed.

Temporary traffic management will be needed on the N59 Clifden Road and Carrowmanagh Road to enable the works – see Section 2.6 for details.

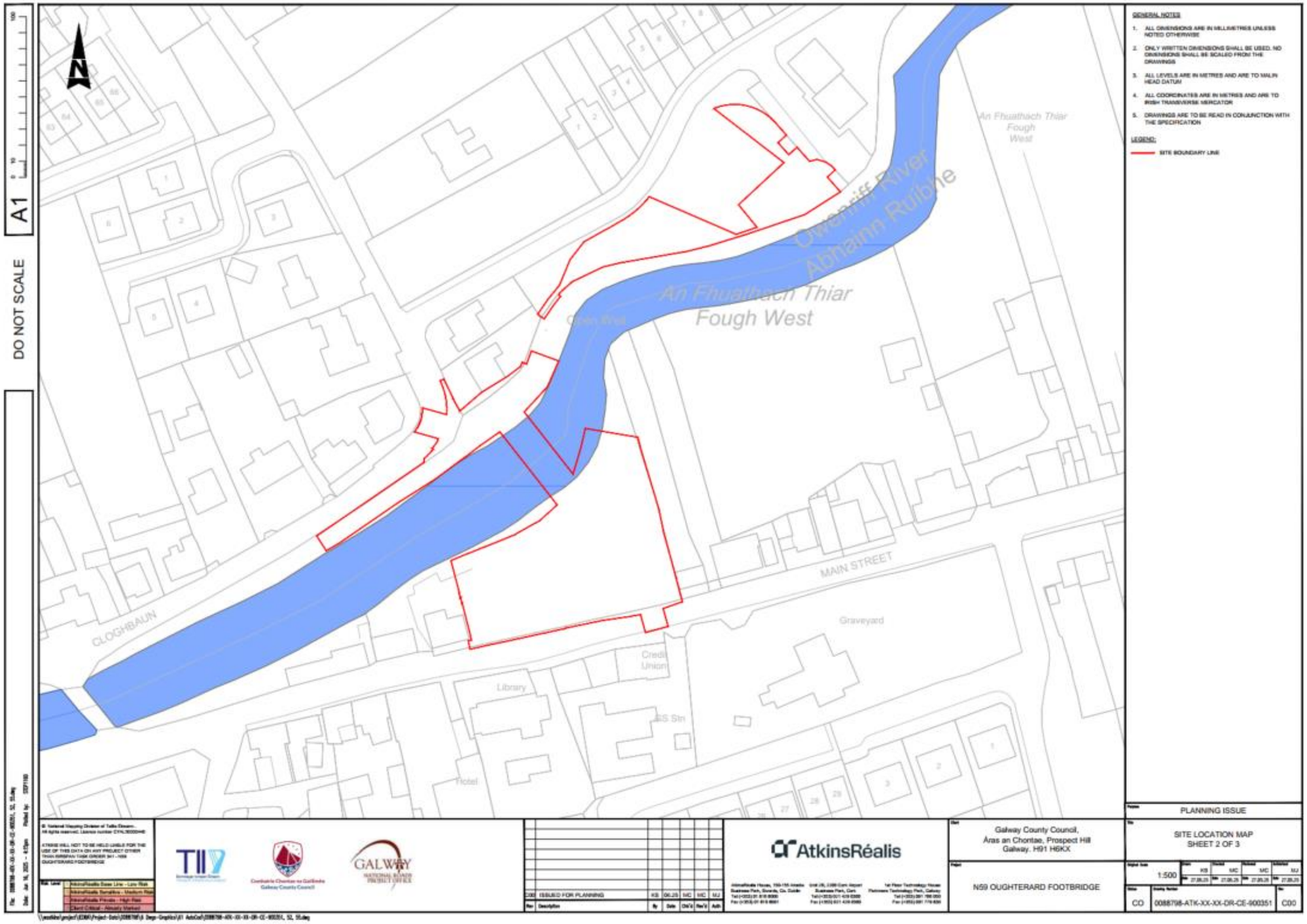

Figure 2-2 - Proposed development redline Boundary including Carrowmanagh Park proposed replacement tree planting.

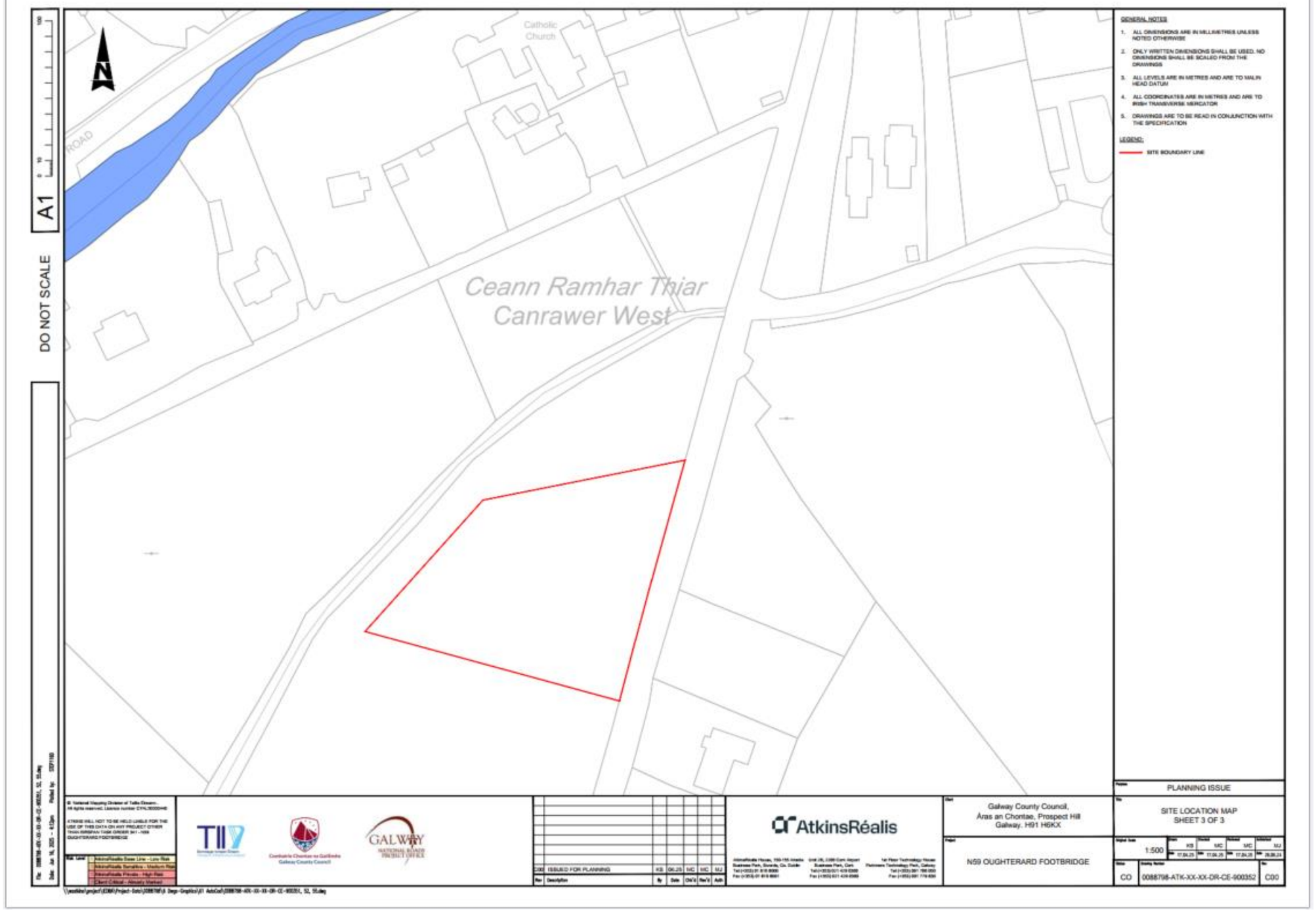

Figure 2-3 - Proposed Site compound location (Station Road).

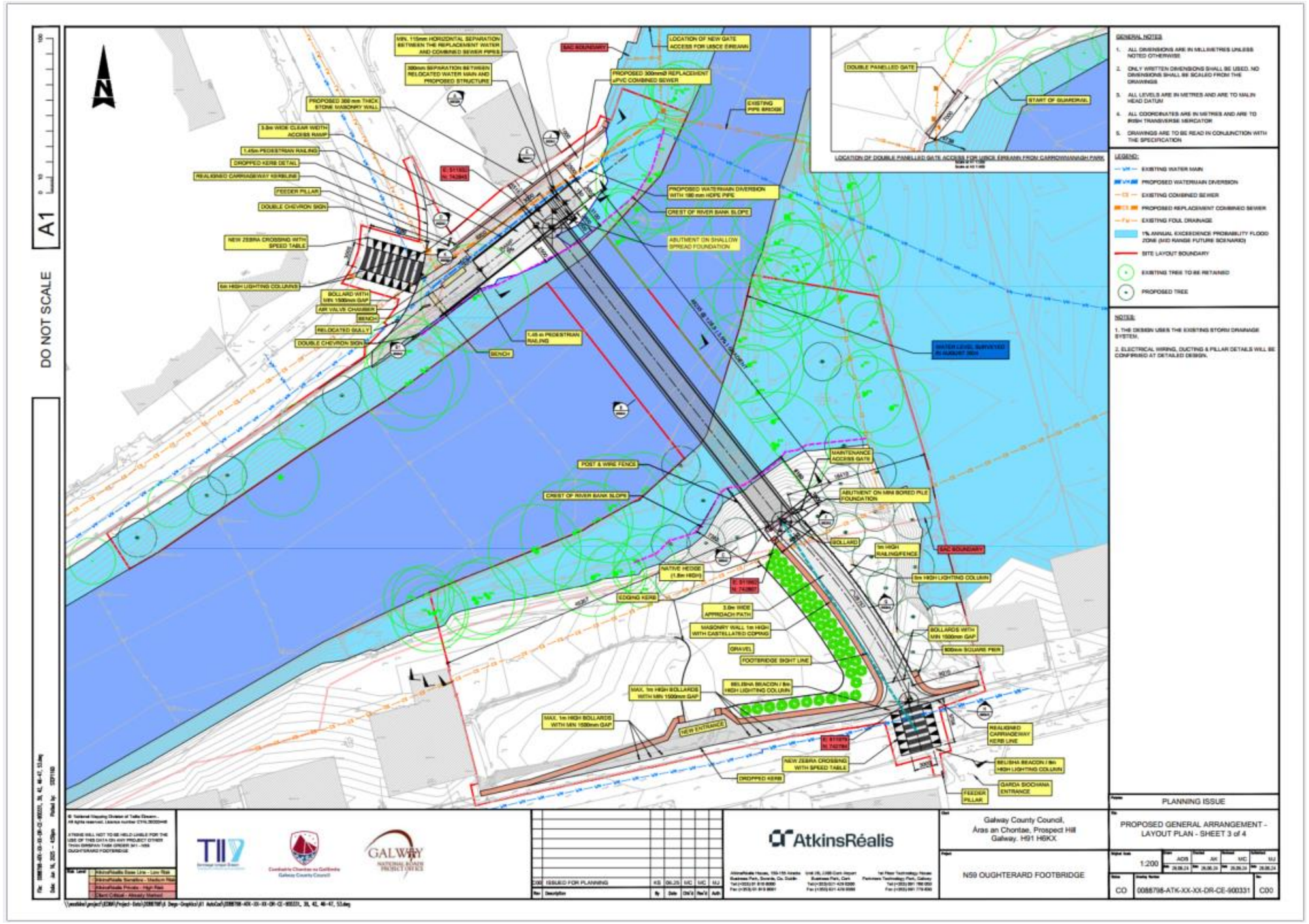

Figure 2-4 - Overview of proposed development (See planning pack for full scale detailed drawings)

2.5 Proposed sequence of works and methodology

The proposed sequence of works and methodology is outlined in the sections below. A outline Construction Environmental Management Plant (CEMP) has also been prepared which will be included in the planning pack.

2.5.1 Site investigations

The following site investigations will be carried out at detailed design stage:

- North abutment/ramp:
  - Slit trenches to confirm the arrangement of underground utilities and to determine the bedrock profile over the ramp/abutment extents.
- South side (abutment, crane pad and approach path):
  - Trial/inspection pits
  - Rotary coring (maximum diameter 150mm, two cores one for the abutment and one for the crane pad).
  - Slit trenches to confirm the arrangement of underground utilities.

A temporary site compound will be set up for approximately 1-2 weeks. The compound will be setup at least 50m away from the Owenriff River.

2.5.2 Enabling Works

A site compound will be set up before commencement of the works (15 days). It is not permitted to locate the site compound within 50m of the Owenriff River. The location proposed for the site compound is shown on Drg. No. 0088798-ATK-XX-XX-DR-CE-900014. The proposed location is a field on Station Rd owned by Galway CC c. 300m south-west of the site for the proposed footbridge. An ecology site survey was carried out on 29/1/25 at the proposed site. A drainage ditch runs around the perimeter of the field. The proposed site compound will provide a 10m buffer zone to the ditch. A Cultural Heritage Impact Assessment (CHIA) has been undertaken for the proposed site compound location (see Updated Cultural Heritage Impact Assessment: N59 Oughterard Footbridge, Oughterard, Co. Galway. Doc. ref. UPDATED_J3497_OughterardFootbridgeAddendum_CHIA_v0.8).. All plant and equipment will be maintained, refuelled, and stored at the compound location. Oil will also be stored in an appropriately contained bunded facility at this location. Refuelling is not permitted on the riverbank.

The site compound is a contractor designed element. For preliminary design purposes, the proposals assume that the site compound needs to accommodate a temporary set-down area for the prefabricated footbridge sections and a turning circle for heavy goods vehicles. On this basis, the required area of the site compound would be approximately 4500m^2, and approximately 1300m^3 of hardcore/gravel would be used to build up temporary access roads, paths and working area. The Contractor will design the site compound and may determine that a smaller area is sufficient.

Vibration monitoring will be installed on buildings adjacent to the proposed works. Trigger levels will be set to ensure that potential vibration effects are limited to acceptable levels

Site clearance will be undertaken over the extents required for the proposed development (5 days). Trees will be removed (10 days) as specified in the tree impact/preservation plan. A total of 60 trees along the riverbank are to be removed: 31 Ash (*Fraxinus excelsior*), 12 Sycamore (*Acer pseudoplatanus*), 14 Alder (*Alnus sp.*). 2 Willow (*Salix sp*.) and 1 Hawthorn (*Crataegus sp.*) (see Appendix C tree impact/). 1 no. existing sycamore tree will be removed on Carrowmanagh Park.Tree branches within 3m of the proposed footbridge will also need to be

removed. These works will be undertaken by a qualified arborist under the supervision of the contractor's ecologist.

A robust fence (Herras type fence complete with debris netting) will be erected to secure the works area. The required length of fence will change with each stage of construction as the works progress (the max. required length of fence is approx. 40m and 70m on the north and south side of the river, respectively). Any water which accumulates within excavations shall be pumped out of works areas, collected in storage tanks, and disposed off-site. A range of silt control measures (such as silt fences, mats, wattles etc.) will be installed on the riverbanks, see Section 7.2 for full details.

Protective fencing will be erected around trees to be retained (5 days) – as recommended in the tree impact/preservation plan. Where necessary, ground protection will also be installed to shield soil from damage during construction.

Temporary lighting at the site during construction will be installed (5 days) for security and health & safety purposes. All temporary lighting will be required to meet the lighting requirements as set out in Section 2.3 with regards to preventing light spillage and any associated negative impacts on the local environment. Any overnight lighting will be kept to a minimum and away from the river.

The 30m length of existing masonry wall along the frontage of the dwelling on the south side (The Old Barracks) adjacent to the N59 Clifden Road will be temporarily dismantled (5 days) to enable access for plant, components, materials etc. to the site. The masonry will be set aside for when the wall is re-built/realigned after the works are complete.

On the north riverbank, the existing masonry boundary wall around the adjacent house (approximately 25m length) will be dismantled and masonry will be set aside to be re-used (5 days).

Watermain and combined sewer works

The water main and combined sewer replacement works on the north riverbank will be carried out during a dry weather forecast period (5 days), as this will minimise flows in the combined sewer and reduce the risk of potential siltation impacts associated with excavations. The expected duration of the works is up to 5 no. days.

On the north riverbank adjacent to the boundary wall, a trench will be excavated to approximately 1.4m depth below ground level (BGL) to access the buried utility pipes. The excavated fill (approximately 60m^3) will be set aside at the site compound away from the river.

The existing 225mm dia. concrete sewer pipe will be replaced with a 300mm uPVC pipe. An indicative methodology is shown below:

1. Lay plastic sheeting and absorbent materials on the ground to catch any sewerage spills.

3. Set up a jet-vac truck (expected 10 to 12 m^3 capacity) on Carrowmanagh Rd adjacent to the site. Provide a temp over-pumping bypass from the manhole on Carrowmanagh Rd along the riverbank to the sewer side spur manhole (buried) on the grass amenity area on Carrowmanagh Park. The capacity of the required over-pump bypass will be based on flow estimates. The temporary bypass will be continuous without joints along the riverbank to minimise the risk of leaks. Test the over-pumping system and ensure a back-up is available in case it fails.

4. Jet clean the existing sewer between the manholes.

5. Plug the sewer pipe to be replaced at the manholes. Collect sewerage in the jet-vac truck during the sewer replacement works. In the unlikely event that the capacity of the jet-vac truck is exceeded, the excess sewerage shall be taken by the temporary over-pump bypass.

6. Remove the existing concrete sewer pipe by loosening fittings (a concrete disc cutter may be needed). The existing sewer should be empty after jet cleaning, but any remaining sewerage in the pipe shall be drained into a container. Bung the existing sewer pipe and remove it. The holes in the manholes will be enlarged to accommodate the larger diameter of the proposed sewer pipe. Power tools will be used with vacuum dust extraction to avoid potential ecology impacts.

7. Install the new 300mm dia. uPVC sewer pipe between the manholes.

8. Test the system and backfill.

9. Remove the bungs in the manholes. Flush the over-pumping bypass with water, drain, then remove. Use containers and/or absorbent materials to catch any remaining liquid in the bypass system. Carefully dispose of containers and soiled materials at a licensed waste facility. Sewerage in the jet-vac truck shall be emptied into the sewer network at a manhole at least 50m from the river. It is envisaged that a sewer manhole at the proposed site compound on Station Rd will be used.

10. Clean the work area. Remove the plastic sheet and absorbent materials. Carefully dispose of containers, plastic sheet, and soiled materials at a licensed waste facility.

The existing 100mm PVC dia. water main will be replaced with a 180mm dia. HDPE pipe and realigned with a 300mm offset from the proposed north abutment/ramp. An indicative methodology is shown below:

1. Remove the existing PVC water main pipe (a disc cutter may be needed).

2. Install the new HDPE water main pipe and connect to the existing pipe with bushings/reducers.

3. Test the system and backfill.

After the sewer and water main works are complete, the excavation will be reinstated with the excavated material.

The adjacent masonry boundary wall will then be rebuilt (25m length, 800mm height and 300mm width) in a revised alignment to achieve 2.5m clearance to the proposed north abutment/ramp (5 days). The underside of the boundary wall foundation will vary in depth from 0.6m to 1.4m BGL.

The following enabling works will be needed to accommodate the proposed footbridge assembly and lifting operations in The Old Barracks private property:

- The area under and around the proposed Liebherr LG 1750 crane shall be cleared of vegetation and topsoil (approximately 380m^2). The ground will be regraded to the required level. Any soft spots shall be replaced with suitable fill. The temporary crane pad/platform is a contractor designed element which will be subject to various technical and environmental requirements/constraints. It will be based on geotechnical design to be carried out after ground investigations are carried out after planning. The following is envisaged:
    - Geotextile strengthening (approximately 640m^2) and a sub-base of compacted washed gravel or crushed rock (approximately 600mm thick equating to 380m^3 in total) shall be laid under the proposed crane pads as necessary. The use of an interlocking, modular mat system will be considered by the Contractor to reduce the depth of sub-base required, subject to Ground Investigations.
    - A prefabricated crane platform consisting of a reinforced concrete (RC) slab (approximately 300mm thick), prefabricated columns, and precast strip footings on upfill will be installed where the ground falls away towards the boundary with the adjacent house on the east side (Ringabella). The estimated total volume of reinforced concrete is 70m^3. Rotary core piles may be used. Ground investigations carried out on the north riverbank in 2024 found that the

vibration effects of 100mm outside diameter rotary coring was 'easily noticeable' on the human perception scale at a distance of 5m. The proposed small diameter rotary piles for the temporary crane platform would be c. 30m from the edge of the river. The expected vibration effects on adjacent buildings are also expected to be within allowable limits to avoid structural damage or excessive disturbance to residents. Vibration monitoring will be implemented with trigger levels to ensure that vibration effects on sensitive receptors are within acceptable limits. A before and after condition survey of adjacent buildings will also be undertaken. The works will be restricted to typical periods..

- There is an existing buried combined sewer (150mm diameter. at approximately 4m depth) which runs west to east approximately 2m south of the proposed south abutment. This is within the influence zone of the Liebherr crane pad loads. This buried pipe will be assessed after ground investigations are carried out after planning. It is expected that the surcharge effects on the buried pipe will be within acceptable limits given it is 4m depth below ground level. The crane pads, hardstanding area and temporary crane platform will be designed to ensure that load constraints are satisfied.
- A 5m wide area shall be cleared and regraded as necessary to enable assembly of the crane main boom. Temporary trestles will be set up due to the uneven ground.
- An approximately. 8m wide area shall be cleared for assembly of the footbridge sections. This would require removal of approximately. 60m3 of existing fill, and a similar quantity of Class 6N2 upfill (crushed rock/gravel) would be needed to build up a temporary footbridge assembly area. The excavated fill would be set aside at the site compound to be used for reinstatement after completion of the works. Temporary trestles will need to be set up due to the uneven ground.

2.5.3 Construction Works

The expected methodology for the construction works is shown below with indicative quantities and timescales:

1. For the north abutment and ramp:
   a. Excavate approximately 70m^3 of existing fill down to bedrock level which is expected at 1.4m below ground level (BGL) (5 days).
   b. Pour approximately 3m^3 of in-situ blinding concrete (approximately 75mm thick) and cure (10 days).
   c. Install PC foundations and substructures (total approximately 90m^3 of concrete) (5 days).
   d. Backfill around the edge of the structure (2 days).
   e. Seal joints between precast elements (5 days).
   f. Install 2 no. bearings (5 days).
   g. Install parapets (24m length) (5 days).
2. For the south abutment:
   a. Excavate approximately 10m^3 of existing fill (5 days).
   b. Install bored mini-RC piles (1m^3 of concrete) (5 days).
   c. Lay approximately 1m^3 of concrete blinding and cure (approximately 75mm thick) (10 days).
   d. Construct in-situ RC pile cap and cure (7m^3 of concrete) (15 days).
   e. Backfill around the edge of the structure (2 days).
   f. Install 2 no. bearings (5 days).
3. For the footbridge installation:
   a. Mobilise and set up the Liebherr LG 1750 crane on the south side (2 days) in the curtilage of The Old Barracks.
   b. Transport the 3 no. prefabricated footbridge sections to site. They will be transported either directly from the steel fabricator to The Old Barracks, or from a temporary set-down area nearby (e.g. the site compound).

c. Assemble the footbridge in the assembly area (1 day). The prefabricated steel superstructure consists of approximately 8m^3 of structural steel, 7m^3 of glass reinforced polymer (GRP) decking, and 96m lenth of parapets.
d. Lift the footbridge on to the abutments (1 day).
e. Demobilise the crane and trestles (2 days).
f. Remove hardcore/upfill used for the temporary footbridge assembly and crane pad area. Reinstate excavated fill and reinstate finsihing/landscaping to the private property as appropriate (10 days).

4. For the finishes:
   a. Construct the stone masonry wall (1m height by 0.7m width) flanking the proposed south approach path to the footbridge – consisting of 3m^3 of in-situ concrete base and 18m^3 of stone masonry (10 days).
   b. Reinstate the stone masonry wall (1m height by 0.7m width) along the N59 frontage of The Old Barracks – consisting of 4m^3 of in-situ conctete base and 30m^3 of stone masonry (10-15 days). The realigned boundary will accommodate the relocated entrance to The Old Barracks.
   c. Realign the kerbs at the edge of Carrowmanagh Rd and N59 Clifden Rd, install surfacing to the relocated The Old Barracks entrance and new footpath on the north side of the N59 Clifden Rd, and provide drop kerb details at the entrances (approximately 90m length of kerbs). Relocate the existing gully adjacent to the proposed zebra crossing on Carrowmanagh Rd to suit the amended kerb alignment. Drainange pipe to be modified to suit (20 days total).
   d. Construct the approachh paths, which consist of 50mm thick limestone paviours (approximately 12m^3) and 30mm thick grout bed (approximately 7m^3) (20 days).
   e. Install the railing on the east side of the southern path (26m length) (10 days).
   f. Construct the zebra crossing with raised tables (11m^3 of modular pre-fabricated untis or road surfacing) (10 days).
   g. Install road signs, lighting, ducting, feeder pillars etc. (5 days).
   h. Install a double panneled gate (7m wide) in the masonry boundary wall at the south-west end of the grass amenity area on Carrowmanagh Park.
5. Undertake landscape planting as shown in Figure 2-5 and Figure 2-6 (15 days). This includes planting of 39 no. standard sized trees on Carrowmanagh Park amenity area, 26 no. standard sized trees adjacent to the proposed footbridge, and hedging in The Old Barracks.

2.5.4 Completion of Works

Once works are completed, the following activities will be undertaken:

- Remove the site fencing and temporary lighting (10 days).
- Remove the site compound and reinstate to agricultural grassland as appropriate (15 days).
- General clean and tidy of the site (5 days).
- A snag survey will be undertaken and any remedial actions undertaken (5 days).

2.5.5 Materials to be Used

The following materials and components will be used:

- Concrete
- Reinforcement steel
- Structural steel (coatings to be applied offsite)
- Stainless steel parapets.

- Bridge bearings (elastomeric)
- Light fittings and ancillary products required to install pedestrian/public lighting
- Footbridge deck planks (timber or glass reinforced polymer (GRP))
- Road signage
- HDPE replacement water main pipe
- uPVC replacement sewer pipe
- Structural backfill and upfill (crushed rock/gravel etc)

2.6 Programme and phasing of works

The following is an overview of the programme and phasing of the works (subject to receipt of Planning and statutory consents):

- Site investigations: The expected duration is two weeks, and the expected start date is Q3 2026.
- Enabling & construction works: Expected duration is nine months from mobilisation to completion, and the expected start date is Q4 2026.

The duration that excavations will be left exposed will be minimised as far as reasonably practicable. Excavations will be scheduled so that subsequent works such as blinding, in-situ RC, or PC installation can follow on quickly. This is to minimise the potential for silt to be generated which mitigates the risk of silt laden surface water run-off into the river. Weather forecast / rainfall will be monitored. Monitoring of the weather forecast and turbidity levels will be undertaken, and trigger levels will be established to stop work.

The expected duration of significant disruption to adjacent homeowners and residential amenity areas is shown below.

The expected duration of significant disruption to The Old Barracks is approximately six weeks. During this period, the following would be undertaken:

- Install temporary crane pad & footbridge assembly area.
- Mobilise the crane to site.
- Assemble the delivered footbridge sections.
- Lift the footbridge into position.

Demobilise the crane.The expected duration of significant disruption to the house (Riverside) adjacent to the proposed north abutment is approx. 13 days. During this period, the existing boundary wall adjacent to the proposed north abutment will be dismantled, the watermains and combined sewer will be relocated/replaced, and the wall will be rebuilt in a realigned position.

The expected duration of disruption to the grass amenity area on Carrowmanagh Park is expected to be approx. 15 days during planting of the compensation trees.

2.7 Management and Organisation of Works

It is envisaged that the proposed site compound for the works will be set up in one of the fields along Station Road (south-west of the site) shown in Figure 2-3, which is owned by Galway CC In the event that this site is not available at the time of construction another suitable site will be located in the surrounding area. The site compound must be a minimum 50 meters from the Owenriff River and a buffer of 10m from any drain or stream must be maintained. The site must also be surveyed for potential sensitive habitats or species.

Materials and plant required for the works are anticipated to be stored in this compound. All storage areas shall be appropriately bunded where required. Fuelling of plant is anticipated to be in a designated fuelling area within the compound. The compound will provide for the following:

- Welfare/office facilities for site staff
- Plant/machinery parking/storage area
- Fuel storage/refuelling area
- Segregated waste area
- Construction staff parking

Normal construction working hours for the development will be:-

- Monday to Friday: 08:00 to 18:00
- Saturday: 09:00 to 13:00

An ecological specialist will be employed by Galway County Council to ensure compliance with all environmental commitments. An Ecological Clerk of Works (ECoW) will be employed by the contractor for the duration of the project. The ECoW will update the outline CEMP and be responsible for carrying out toolbox talks and the daily environmental monitoring and checks. The ecological specialist will be required to sign off on the CEMP prior to the commencement of construction to ensure it complies will all environmental commitments. The ecological specialist will review all weekly environmental reports prepared by the ECoW and will carry out regular audits of the site. The ecological specialist will be present on site for all major work elements such as excavations, coring, concrete pours, installing of abutments and footbridge). Both the ECoW and ecological specialist must be suitably qualified having held protective species licences for relevant protected species and be full members of a professional body such as CIEEM or similar.

The following temporary traffic management is envisaged – details are subject to confirmation:

- Traffic management will be needed on the N59 Clifden Road to narrow the carriageway and provide a working space for takedown and reconstruction of the existing masonry wall frontage to the Old Barracks.
- Closure of the eastbound lane of the N59 Clifden Road will be needed along the frontage of the Old Barracks to enable HGVs to deliver/collect the crane, footbridge sections, components etc.
- Lane closures with stop/go lights and shuttle working will be needed on N59 Clifden Road to construct the proposed zebra crossing with raised table, realign the kerb, road markings and lighting.
- Lane closures with stop/go lights and shuttle working will be needed on Carrowmanagh Road to construct the proposed zebra crossing with raised table and realign the kerb line. It is envisaged that 1-2 days would be sufficient.
- The contractor will develop a traffic management plan (designed by a suitably qualified person).

2.8 Landscape Design

The proposed development will require the removal of woodland on both sides of the river, however, the majority of tree removal will be on the southern riverbank. An arboricultual survey was completed, and a tree impact/preservation plan has been prepared (the plan is included within the Arboricultural Assessment which is included in the Planning Pack) (Noel Lane, 2024).

A total of 60 no. tree will need to be removed from the area adjacent to the proposed footbridge: 31 Ash (*Fraxinus excelsior*), 12 Sycamore (*Acer pseudoplatanus*), 14 Alder (*Alnus sp.*). 2 Willow (*Salix sp.*) and 1 Hawthorn (*Crataegus sp.*), although 30 of these are Ash trees in different stages of decline due to Ash Die Back disease.

1 no. landscaping Sycamore tree at the south-west end of Carrowmanagh Park grass amenity area will need to be removed. The tree is approximately 5m height and is outside the SAC. The tree has negligible bat roosting suitability due to its size and absence of cracks or crevices which could be utilised for roosting.

The impact on woodland in the areas will be mitigated through design minimising the number of trees removed and planting trees to replace those being removed.

There is not sufficient space adjacent to the proposed footbridge to plant all the replacement trees. As such, additional land on Carrowmanagh Park (approx. 100m north east of the proposed footbridge) will be acquired by Galway County Council to plant the remainder of the trees. Planting in this area will replace trees within the river corridor and so be available to species currently using the woodland. Also, it will provide additional screening of the river from Carrowmanagh Park reducing illumination of the river environment from the street lighting on Carrowmanagh Park. A landscape plan has been developed based on the project design and tree impact/ preservation plan. See Figure 2-5 for the landscaped plan. A full scale version of the landscape plan can be found in the Landscape and Visual Impact Assessment Report which is included in the planning pack. The potential impacts due to the removal of trees along the river bank have been considered in Section 5.2 below.

Figure 2-5 Proposed development Landscape plan

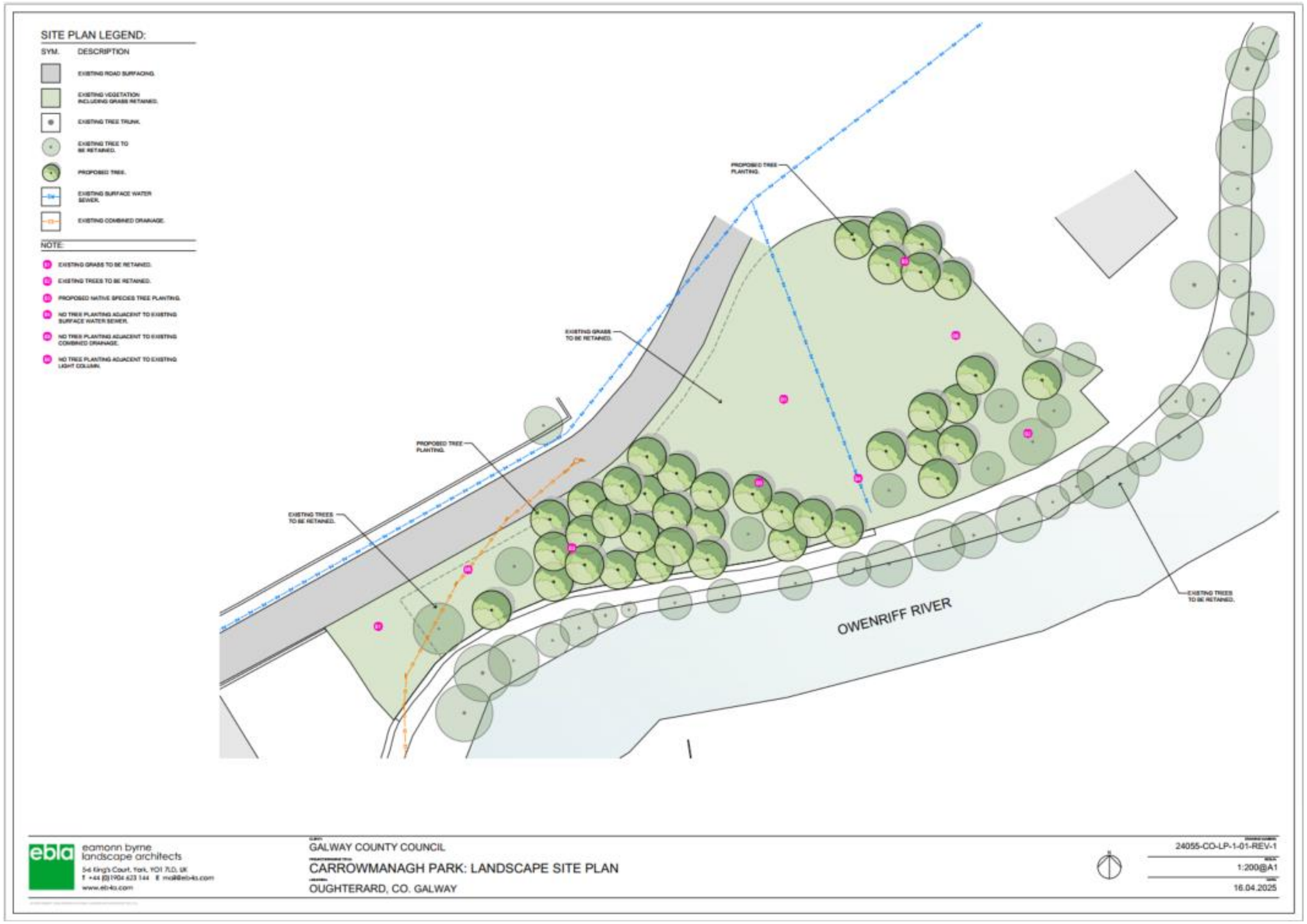

Figure 2-6 Carrowmanagh Park off site tree planting landscape plan

3. Methodology

3.1 Guidance

This report was prepared with due regard to the relevant guidance, including but not limited to: -

- All-Ireland Pollinator Plan 2021-2025. *National Biodiversity Data Centre Series* 25. National Biodiversity Data Centre, Waterford. March 2021.
- *Biodiversity and the Planning Process: Guidance for developers on the management of biodiversity issues during the planning process* (2013). Planning Department, Cork County Council, Cork.
- CIEEM (2018) *Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine. Version 1.2 - Updated April 2022.* Chartered Institute of Ecology and Environmental Management, Winchester.
- Collins, J. (ed.) (2024) *Bat Surveys for Professional Ecologists: Good Practice Guidelines (4th edition).* Bat Conservation Trust, London.
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- EPA (2022) *Guidelines on the information to be contained in Environmental Impact Assessment Reports. May 2022.* Environmental Protection Agency, Wexford.
- NRA (2006) *Guidelines for the Treatment of Bats during the Construction of National Roads Schemes.* National Roads Authority, Dublin.
- NRA (2008a) *Guidelines for the Treatment of Otters prior to the Construction of National Road Schemes.* National Roads Authority, Dublin.
- NRA (2008b) *Guidelines for the Crossing of Watercourses during the construction of National Road Schemes.* National Roads Authority, Dublin.
- NRA (2009a) *Guidelines for Assessment of Ecological Impacts of National Roads Schemes. Revision 2.* National Roads Authority, Dublin.
- NRA (2009b) *Ecological Surveying Techniques for Protected Flora and Fauna during the Planning of National Road Schemes.* National Roads Authority, Dublin.
- Smith, G.F., O'Donoghue, P., O'Hora, K. and Delaney, E. (2011) *Best Practice Guidance for Habitat Survey and Mapping.* The Heritage Council, Kilkenny.
- TII (2006) *A Guide to Landscape Treatments for National Road Schemes in Ireland. GE-ENV-01102. February 2006.* Transport Infrastructure Ireland, Dublin.
- TII (2012) *Guidelines on the Implementation of Landscape Treatment on National Road Schemes in Ireland. GE-ENV-01103. July 2012.* Transport Infrastructure Ireland, Dublin.
- TII (2020a) *The Management of Invasive Alien Plant Species on National Roads – Standard. GE-ENV-01104. December 2020.* Transport Infrastructure Ireland, Dublin.
- TII (2020b) *The Management of Invasive Alien Plant Species on National Roads – Technical Guidance. GE-ENV-01105. December 2020.* Transport Infrastructure Ireland, Dublin.

3.2 Desk Study

Baseline data regarding the receiving environment, including Natura 2000 sites, was gathered through a thorough desk study. The locations and boundaries of Natura 2000 sites in relation to the proposed development were reviewed on the National Parks & Wildlife Service (NPWS) *Designations Viewer* (NPWS, 2024b). Information on the qualifying interests and the structures and functions of the relevant Natura 2000 sites was found in the Site Synopsis, Natura 2000 Standard Data Form, Conservation Objectives and supporting documents for each site. Reporting under Article 17 of the Habitats Directive (NPWS, 2019a-c; ETC/DB, 2024a) and Article 12 of the Birds Directive (NPWS, 2022c; ETC/BD, 2022b) provided further information on the habitats and species concerned at the national level.

Spatial and other data regarding rivers and other waterbodies were obtained from the Environmental Protection Agency (EPA) using its online facility *EPA Maps: Water* (EPA, 2024). Spatial data for other features of the natural environment were viewed on the *ESM Webtool*. Information relating to recent and historical records of species was obtained from the National Biodiversity Data Centre (NBDC) *Biodiversity Maps* and via a data request to the NPWS in June 2024.

3.3 Consultation

There have been consultations with a number of state bodies to inform the project design. These have included meetings with National Parks and Wildlife Service (NPWS), Inland Fisheries Ireland (IFI) (22/10/24), Galway County Council Biodiversity Officer (21/08/24) and local residents including a public information evening which was held on the 2nd July 2024. Two meetings were held with NPWS, one during option selection (28/05/24) and the second during preliminary design (11/03/25). Comments or suggestion from NPWS, IFI, Galway's Biodiversity Officer and local residents were taken into consideration during the preliminary design stage.

3.4 Field Surveys

3.4.1 Walkover Survey

Site visits were carried out on 27th February 2024, 24th June 2024, 4th November 2024 ,19th December 2024 and 30th January 2025 by AtkinsRéalis Senior Ecologist Kevin Mc Caffrey.

Ecological survey methods were in general accordance with those outlined in the following documents: -

- A Guide to Habitats in Ireland (Fossitt, 2000);
- *Good Practice Guidance for Habitats and Species (CIEEM, 2021)*
- Best Practice Guidance for Habitat Survey and Mapping (Smith et al., 2011);
- Ecological Surveying Techniques for Protected Flora and Fauna during the Planning of National Road Schemes (NRA, 2009)

Potential sensitive ecological receptors present within the survey area were recorded, including the presence of protected species and habitats or habitats that would support protected species, in addition to noting connectivity to Natura 2000 sites. Any presence of non-native invasive species was also recorded.

3.4.2 Aquatic surveys

Aquatic surveys were carried out by Pascal Sweeney of Sweeny Consultancy on the 3rd and 4th of July 2024. Locations surveyed and methods used are detailed below. See Planning Pack for full report.

Grid references of sites locations were recorded using a hand-held GPS device and photographs were taken with digital cameras.

Biological Water Quality: The biological water quality was assessed following the most recent EPA Standard Operational Procedure for the Q-scheme methodology, which is based primarily on analysis of the aquatic invertebrate fauna (EPA 2021). Pond-net samples were taken at two comparable locations, one upstream at ITM 511765 742755 and one downstream of possible impacts from the proposed works at ITM 511967 742880, in areas which were first checked with a bathyscope to avoid disturbance of freshwater pearl mussels (Figure 3-1). Invertebrates were identified on the bankside to the lowest taxonomic level possible with the naked eye.

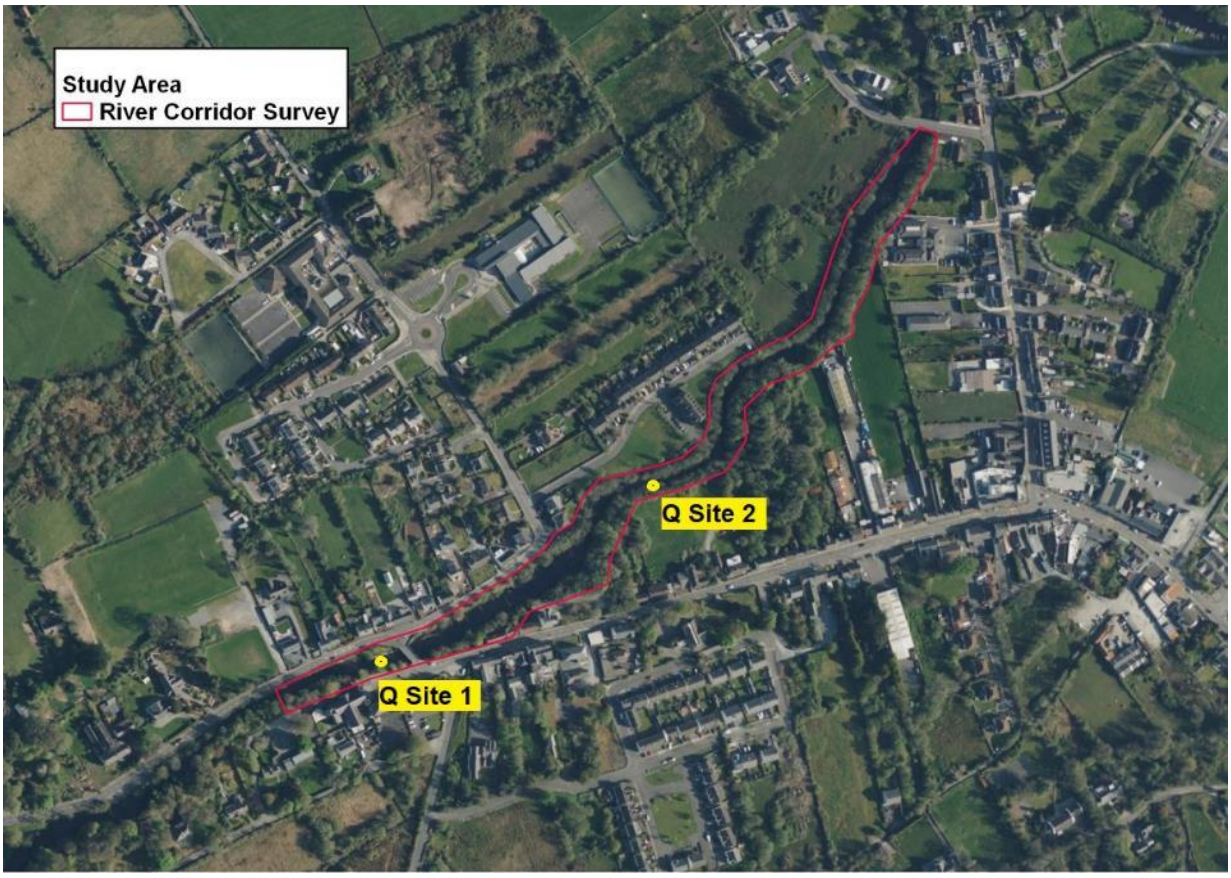

Figure 3-1 - Biological Water Quality (Q-value) Sites)

Freshwater pearl mussel (*Margaritifera margaritifera*) (FPM): Initial visual assessment of the habitat quality is based on the criteria outlined by Skinner et al. (2003). A licensed survey (Licence No C09/2024) was carried out in accordance with the standard methodology (Anon 2004). With Aideen Kane M.Sc. acting as bankside assistant, Pascal Sweeney entered the river, checking for FPM at each step taken with a bathyscope. To count numbers of FPM and map their distribution within the preferred general location for the footbridge, the area was first marked out in a grid (Figure 3-2) with hi-vis strips. Grids 1A to 7A are from upstream to downstream along the relatively straight left bank. Grids A to D are 5m x 5m squares. Along the right bank, each grid is 5m long, but width varies. FPM numbers within each grid were counted, using a bathyscope. In the grids along the right bank, as FPM densities were such that it would not be possible to walk in without standing on mussels, it was necessary to count from a greater distance, which could have resulted in a slight underestimate of numbers.

Figure 3-2 - Grid surveyed which covers the proposed footbridge location (see Figure 2.2 for bridge location.

In addition to the count within the preferred general location for the footbridge, FPM numbers were surveyed in the following three 2m wide transects, as shown in Figure 3-3:

Transect 1 upstream of the preferred general location for the footbridge at ITM 511853 742792, which is downstream of and immediately adjacent to a permanent transect which was surveyed on July 4th by Dr. Elizabeth Ryder, DKIT.

Transect 2 downstream of the preferred general location for the footbridge at ITM 512058 742912, across from the SW corner of the cul de sac running towards the left bank.

Transect 3 farther downstream at ITM 512190 743127, c. 50 m upstream of the next road bridge.

Coordinates given above were taken on the left bank.

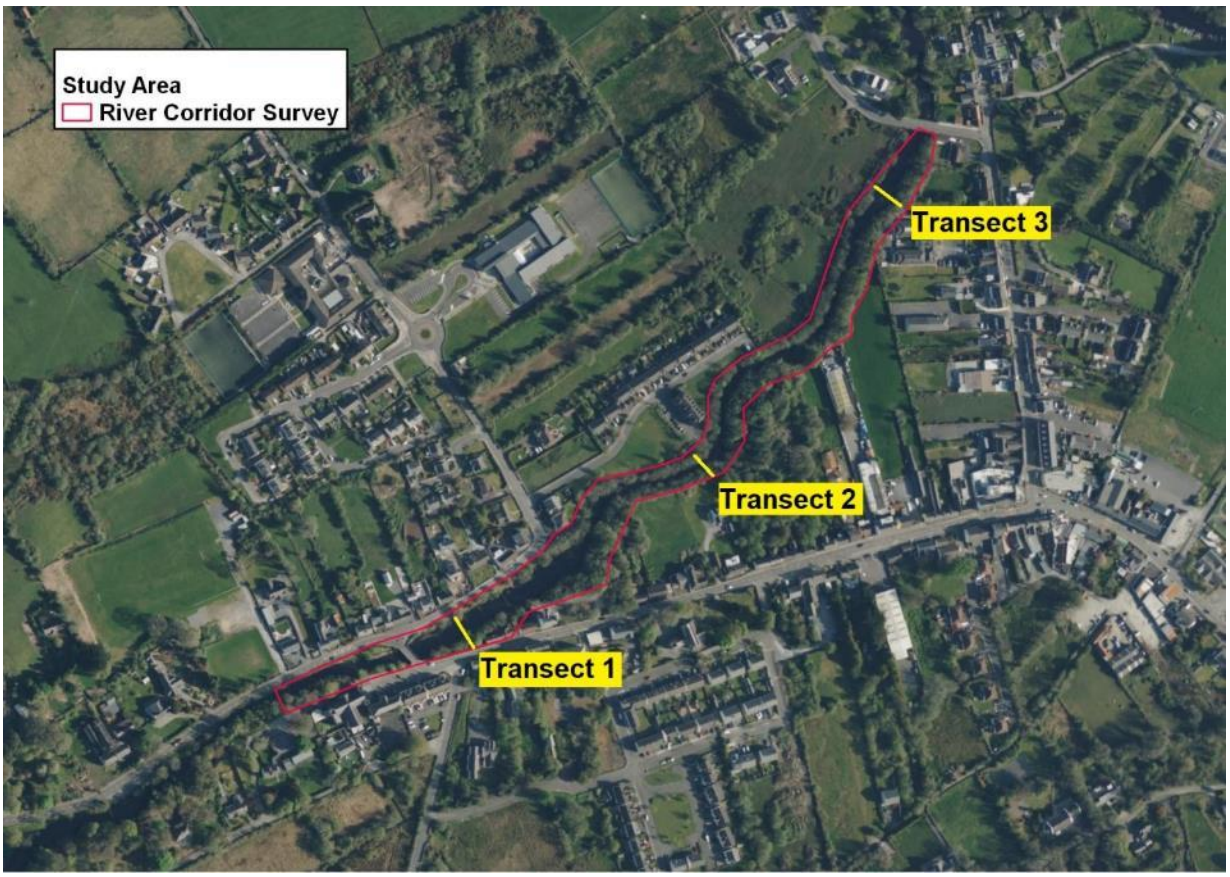

Figure 3-3 - FPM Transects.

Atlantic Salmon (*Salmo salar*): The habitat quality for salmon was assessed, based on the criteria outlined by Kennedy (1984), Crisp (1996), Bardonnet and Baglinière (2000) and by Hendry and Cragg-Hine (2003) for the physical instream requirements of this species for spawning, nursery and adult habitat. David Harrington (Senior Fisheries Environmental Officer, Inland Fisheries Ireland was contacted by email for information of salmon in the Owenriff. Observations were made while surveying with a bathyscope for FPM.

Lampreys (*Lampetra planeri* and *Petromyzon marinus*): The habitat quality for the two lamprey species, the brook lamprey, and sea lamprey was assessed, based on the criteria outlined by Maitland (1980) and by Johns (2002) for the physical instream requirements of these species for spawning, nursery and adult habitat. Available records on the distribution of these species were checked.

Otter (*Lutra lutra*): The presence of otter was checked for by a survey of the riverbank for holts or couching sites and an examination of hard bankside surfaces for the presence of spraints and bankside mud/sand for imprints. The habitat quality for this species was assessed, based on the criteria outlined by Chanin (2003).

Annex I Floating River Vegetation (FRV): Direct observations of aquatic vegetation were made, and species were identified.

3.4.3 Bat Survey

Bat surveys of the project and surrounding areas were carried out by Dr. Caroline Shiel. Surveys took place from June to August 2024. Locations surveyed and methods used are detailed below. See planning pack for full report.

Derelict restaurant building – Bat surveys were conducted to investigate if bats were roosting in the building. Bat surveys included a thorough search of the interior and exterior of the building, dusk and dawn bat detector surveys conducted by two surveyors. Surveys were also conducted by means of static bat detectors placed outside and inside the building.

Owenriff River – Bat activity along the Owenriff River was assessed by means of walking transects using bat detectors and thermal scopes to observe bats foraging over the river. Static detectors were also deployed at selected location along the river.

Woodland Areas A and B were surveyed during daylight hours for trees with potential bat roost features. GPS readings were taken of trees with potential as bat roosts. A tree survey was conducted by Noel Lane – Tree Care Services in July 2024. Metal tags were affixed to individual trees in a section of the study area between the existing N59 bridge as far as and including Woodland Area A. Walking transects with bat detectors and static surveys were also conducted in these woodland areas.

Area C – the field at the north-eastern end of the study area was surveyed by means of a static bat detector and walking transects.

Riverbank west of existing N59 Bridge trees were surveyed for potential roost features during daylight hours. A bat detector survey was conducted by means of hand-held bat detector

3.5 Ecological Impact Assessment

The overall methodology followed in the preparation of this report was informed by the most recent guidelines for EcIA in the UK and Ireland, i.e., the CIEEM (2018) guidelines, as updated in April 2022. In addition, the methods for specific aspects of the assessment, e.g., evaluation of receptors, assessment of impacts and effects, and development of mitigation and enhancement measures, had regard to appropriate guidelines from the National Roads Authority (now Transport Infrastructure Ireland (TII)) and the EPA. These methods are described below.

3.5.1 Evaluation of Ecological Receptors

The evaluation of the importance of ecological features present within the footprint of the proposed development, the Oughterard Footbridge and the Zone of Influence followed *Ecological Surveying Techniques for Protected Flora and Fauna during the Planning of National Road Schemes* (NRA, 2009a). The geographic frame of reference summarised in Table 3-1 below was used.

Table 3-1 - Geographic frame of reference for evaluating the importance of ecological features. Following: NRA (2009a).

Level	Examples (non-exhaustive)
International Importance	• European (Natura 2000) sites or sites which fulfil the criteria for such a designation. • Features essential to the coherence of the Natura 2000 network. • Best examples of natural habitat types listed on Annex I to the Habitats Directive ("Annex I habitats"). • Resident of regularly occurring populations of bird species listed on Annex I to the Birds Directive or animal or plant species listed on Annex II or IV to the Habitats Directive ("Annex II/IV species") (in numbers of national importance). • Wetlands of International Importance (under the Ramsar Convention). • UNESCO World Heritage Sites or Biosphere Reserves.
National Importance	• Designated or proposed Natural Heritage Areas (NHA/pNHA), statutory Nature Reserves or sites fulfilling the criteria for such a designation. • Resident or regularly occurring populations of species protected under the Wildlife Act, 1976 (as amended) or listed on the relevant national Red List (in numbers of national importance). • Viable examples of Annex I habitats.
County Importance	• Areas of Special Amenity, areas subject to a Tree Preservation Order and Areas of High Amenity. • Resident or regularly occurring populations of protected or threatened species (in numbers significant at the county level, e.g. >1% of the county population). • Examples (not of National or International Importance) of Annex I habitats. • Other features of ecological interest identified in relevant local or national biodiversity action plans. • Sites or habitats of high biodiversity value or degree of naturalness in a county context or species which are uncommon in the county. • Sites containing habitats or species which are in decline nationally.
Local Importance (Higher Value)	• Ecological features identified in the relevant local biodiversity action plan. • Resident or regularly occurring populations of protected or threatened species (in numbers significant at the local level). • Sites habitats of high biodiversity value or degree of naturalness in a local context or species which are uncommon locally. • Sites or features containing common or lower value habitats which provide connectivity between features of higher ecological value.
Local Importance (Lower Value)	• Sites containing small areas of semi-natural habitat that are of some local importance for wildlife. • Sites or features containing non-native species that are of some importance in maintaining habitat links.

Accordingly, factors which were taken into account when evaluating importance included the following:

- National or international designations on sites, or identification of sites in local plans,
- Level (if any) of statutory protection of the habitats and species concerned,
- Conservation status and trends in habitats and species in a local, national, and international context,
- Quality and extent of habitats and numbers of individuals of species within the study area,
- Likely future prospects of habitats and species in the study area in the 'do-nothing' scenario, and
- Inter-relationships between habitats, species and other ecological features in the study area and wider landscape.

3.5.2 Assessment of Impacts & Effects

Once the importance of ecological features in the study area had been evaluated, the assessment of the potential impacts focussed on key ecological receptors (KERs), i.e., ecological features of at least Local Importance (Higher Value), in accordance with *Guidelines on the information to be contained in Environmental Impact Assessment Reports* (EPA, 2022). The assessment of impacts is carried out in three stages, as follows:

1. First, potential impacts are identified by the examination of possible source-pathway-receptor chains.
2. Then, impacts and their effects are characterised in terms of the following:
    a. Nature (type) and quality (whether positive, neutral, or negative),
    b. Probability of occurrence,
    c. Intensity, magnitude and/or spatial extent,
    d. Timing, duration, and frequency, and
    e. Reversibility or potential for recovery.
3. Finally, the significance of effects are evaluated by considering their characteristics in the context of the particular sensitivities of the relevant KERs.

With regard to the duration of effects, EPA (2022) specifies the following definitions for what may be considered as "temporary", "short-term", "long-term" etc.:

- 'Momentary' – Seconds to minutes.
- 'Brief' – Less than a day.
- 'Temporary' – Less than 1 year.
- 'Short-term' – 1 to 7 years.
- 'Medium-term' – 7 to 15 years.
- 'Long-term' – 15 to 60 years.
- 'Permanent' – Over 60 years.

EPA (2022) also provides definitions for other relevant terms which might otherwise be subjective.

With regard to defining levels of significance, EPA (2022) provides for the following scale:

- 'Imperceptible' – Capable of measurement but without significant consequences.
- 'Not significant' – Causes noticeable changes in the character of the environment but without significant consequences.
- 'Slight' – Causes noticeable changes in the character of the environment without affecting its sensitivities.
- 'Moderate' – Alters the character of the environment in a manner that is consistent with existing and emerging baseline trends.
- 'Significant' – Alters a sensitive aspect of the environment.
- 'Very significant' – Significantly alters most of a sensitive aspect of the environment.
- 'Profound' – Obliterates sensitive characteristics.

The significance of an impact or effect may also be evaluated on the same geographical scale as the importance of ecological features. However, as noted in NRA (2009a), "*significance* […] *is determined empirically, on the basis of an analysis of the factors which characterise it, irrespective of the value of the receptor.* […] *If impacts are not found to be significant at the highest geographical level at which the resource has been valued, they may be significant at a lower level.*"

3.5.3 Mitigation & Enhancement

The development of the mitigation measures followed the "mitigation hierarchy", which prioritises avoidance over reduction, and actions at source over pathway over receptor, as follows:

1. Eliminate the source of the impact,
2. Minimise or reduce the impact at its source,
3. Block or weaken the pathway for effects, and
4. Abate effects at the receptor.

This approach assists with more complete removal of negative effects, minimises the risk of effects occurring by less obvious pathways, protects non-target receptors, and minimises the risks of unintended harm associated with measures focussed at or near receptors.

As explained in Section 2.4.2 above, the ecological enhancements of the proposed development outlined in this report have been developed in line with County Galway Council's policies and objectives in relation to sustainable drainage systems (SuDS), green and blue infrastructure, biodiversity on Council lands, and Biodiversity Net Gain. In accordance with NRA (2009a), it is recognised that ecological mitigation and enhancement measures "*may have a significant beneficial impact, but at a higher or lower geographic scale than the value of the receptor to which they have been applied.*"

3.6 Statement of Authority

This report was prepared by Sinéad Kinsella. This report was peer reviewed by Kevin McCaffrey.

Sinéad Kinsella has a BSc in Applied Freshwater and Marine Biology. She has experience in preparing Appropriate Assessment Screening Reports, Natura Impact Statements and prepares Ecological Impact Assessment Reports and undertakes a range of ecological surveys (e.g. mammal and bat surveys) for a range of proposed developments.

Kevin McCaffrey has a BSc (Hons) in Applied Freshwater and Marine Biology and a MSc in Environmental Sustainability. He is a Senior Ecologist with over 12 years' experience in freshwater and marine ecology, environmental surveying, impact assessment and as an Ecological clerk of Works. He has prepared and reviewed a wide range of technical reports including Environmental Impact Assessment, AA screening, Natura Impact Assessment, and sanitary surveys.

4. Baseline Ecological Conditions

4.1 Zone of Influence

The “Zone of Influence” of a plan or project is the area which may experience ecological effects as a result of its implementation, including any ancillary activities. The various impacts of a plan or project will each have their own characteristics, e.g., nature, extent, magnitude, duration etc. Accordingly, the area subject to each impact (“zone of impact”) will vary depending on characteristics of the impact and the presence of pathways for its propagation. Ecological features within or connected to one or more zones of impact could, depending on their sensitivities, be affected by the plan or project under consideration. The area containing such features may be regarded as the Zone of Influence. As such, in establishing the Zone of Influence for a plan or project, regard must be had to the characteristics of its potential impacts, potential pathways for impacts and the sensitivities of ecological features in the receiving environment.

Box 10 of *Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine* (CIEEM, 2018) lists useful questions which should be asked in order to assist in establishing the Zone of Influence for a proposal under consideration. This is reproduced in Figure 4-1 below. Consideration must be given to all phases, e.g., ground investigations, site preparation, construction, operation, decommissioning, of proposal under consideration (NRA, 2009a; CIEEM, 2018).

Box 10: Ecological considerations for establishing the zone(s) of influence

The following questions will help to determine the zone(s) of influence on ecological features:

- What 'important' ecological features (see Chapter 4) are known to occur within the project site and the surrounding area?
- What other 'important' ecological features could occur within the project site and surrounding area based on knowledge of the local distribution of relevant habitats and species?
- What activities may generate ecological impacts and which of these might have an influence on ecological features beyond the site boundaries? (see Box 9)
- Is the project likely to affect migratory species?
- Is the area used by mobile species that make regular movements to, from, or across the site?
- What are the key ecological processes or species activity periods? Are there seasonal variations in distribution, abundance and activity?
- What are the key hydrodynamic processes at the site (e.g. tidal currents, wave activity)? Are there seasonal or cyclic variations in these?
- Does the project affect any sites, directly or indirectly, that are designated or likely to be designated in the foreseeable future? What are the reasons for designation?
- What is required for the maintenance of particular ecosystems, networks, habitats or species populations? How would these be affected by project activities?
    - What are their distribution and status elsewhere for comparison?
    - What were their historical distributions, status and management compared with present?
    - Is anything known about the key factors influencing distribution and abundance of the feature(s)?
    - What are their scales of variation, vulnerability and likely exposure to the project?
- Are there any features whose disappearance would have significant consequences for other features?
- Are there any other projects planned within the same area or time-frame that may contribute to cumulative effects? (see 5.19 - 5.22)

Figure 4-1 - Factors in establishing the Zone of Influence. Source: CIEEM (2018).

Following the guidance in NRA (2009a) and CIEEM (2018), and on the basis of the description of the proposed development and an examination of potential pathways for ecological impacts in the receiving environment, the likely zones of impact from the proposed development were defined as follows: -

- For direct impacts, all areas within and immediately adjoining the works area.
- For temporary disturbance to birds and other fauna, as well as effects associated with the spread of invasive alien species, all areas within a precautionary buffer of 500m from the works area.
- For hydrological impacts, waterbodies, and riparian zones/floodplains within 500m of all works locations and downstream waterbodies as far as any accidental pollution could conceivably be carried – the Owenriff [Corrib] River and Lough Corrib.
- For indirect effects, all other areas with potential ecological connectivity to the above zones of impact, i.e. The Corrib catchment

The Zone of Influence was defined as the above zones of impact as well as other areas with potential ecological connectivity to them, i.e., woodlands and other semi-natural habitats connected to the proposed development by proximity or linear landscape features such as hedgerows or treelines and connected wetlands and waterbodies.

Publicly available spatial data for river, transitional and coastal waterbodies (sourced from *EPA Maps*) were used in conjunction with aerial imagery to identify pathways and zones of impact for disturbance and water quality impacts from the proposed development (see Figure 4-2 below). In addition, the Zone of Influence was examined to identify any other ecological features with potential ecological connections to these zones of impact.

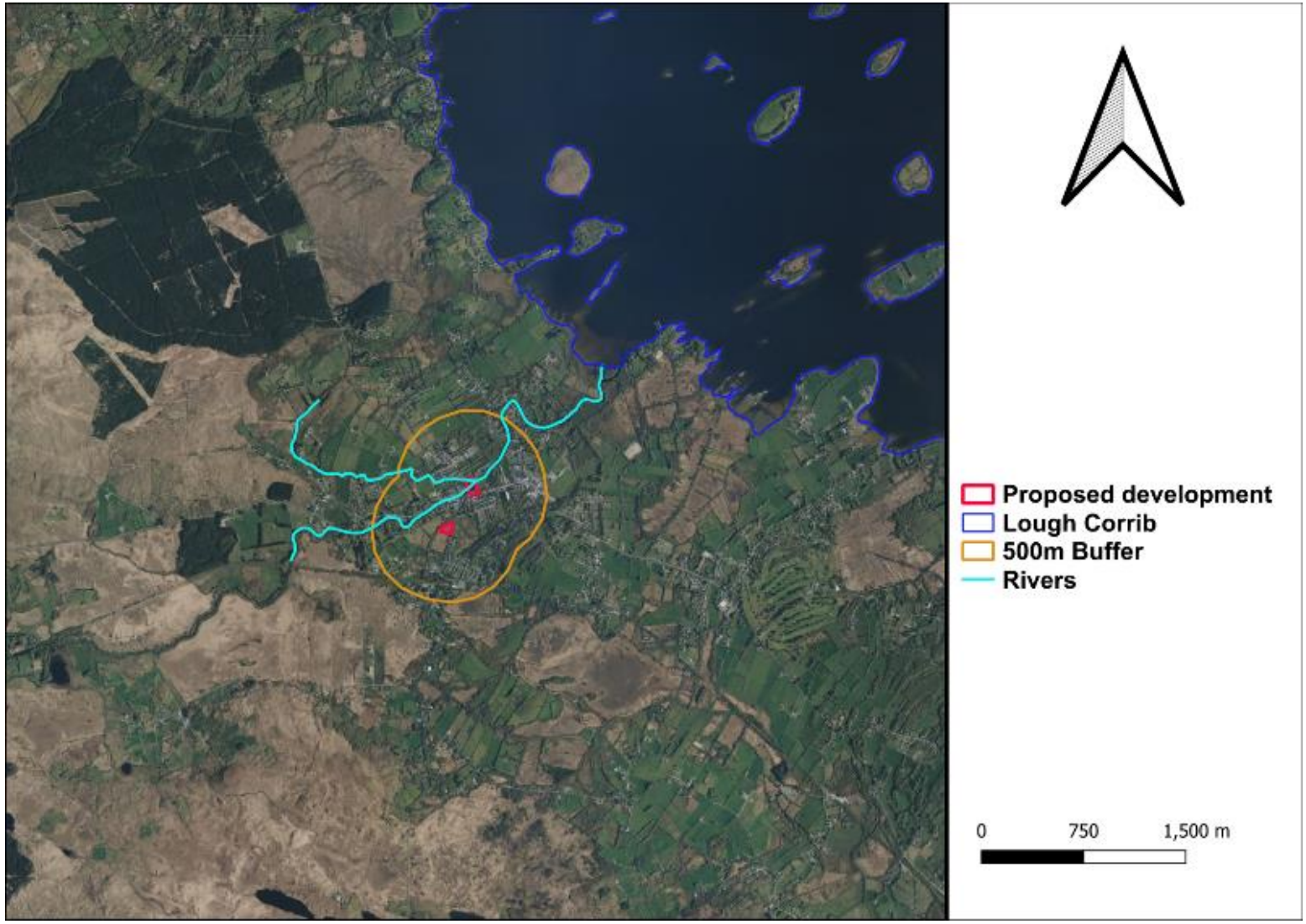

Figure 4-2 - Zones of impact from the proposed development.

4.2 Existing Environment

4.2.1 Designated Sites

4.2.1.1 International

There are no UNESCO World Heritage or Biosphere Reserve sites, or sites designated under the Convention for the Protection of the Marine Environment of the North-East Atlantic (the OSPAR Convention), in close proximity to the proposed development or within its Zone of Influence.

4.2.1.2 European

The Habitats Directive (92/43/EEC) is primary legislation of the European Union which provides legal protection for habitats and species of Community interest. Article 2 requires the maintenance or restoration of such habitats and species at a favourable conservation status, while Articles 3 to 9, inclusive, provide for the establishment and conservation of a Community-wide network of special areas of conservation (SACs), known as Natura 2000, which also includes special protection areas (SPAs) designated under the Birds Directive (2009/147/EC). Both SACs and SPAs are commonly referred to as “European sites” or “Natura 2000 sites”.

SACs are selected for natural habitat types listed on Annex I to the Habitats Directive and the habitats of species listed on Annex II to the Habitats Directive. SPAs are selected for species listed on Annex I to the Birds Directive, other regularly occurring migratory species and other species of special conservation interest. The habitats and species for which a Natura 2000 site is selected are referred to as the “qualifying interests” of that site and each is assigned a “conservation objective” aimed at maintaining or restoring its “favourable conservation condition” at the site, which contributes to the maintenance or restoration of its “favourable conservation status” at national and European levels.

There are 2 No. European sites within the Zone of Influence of the proposed development, namely Lough Corrib SAC (site code: 000297) and Lough Corrib SPA (site code: 004042) which are within the likely zone of impact for impacts from the proposed development. The proposed works are located within Lough Corrib SAC and ca. 1.8km upstream of Lough Corrib SPA.

Lough Corrib SAC was selected for the following qualifying interest: -

- Oligotrophic waters containing very few minerals of sandy plains (Littorelletalia uniflorae) [3110]
- Oligotrophic to mesotrophic standing waters with vegetation of the Littorelletea uniflorae and/or Isoeto-Nanojuncetea [3130]
- Hard oligo-mesotrophic waters with benthic vegetation of Chara spp. [3140]
- Water courses of plain to montane levels with the Ranunculion fluitantis and Callitricho-Batrachion vegetation [3260]
- Semi-natural dry grasslands and scrubland facies on calcareous substrates (Festuco-Brometalia) (* important orchid sites) [6210]
- Molinia meadows on calcareous, peaty, or clayey-silt-laden soils (Molinion caeruleae) [6410]
- Active raised bogs [7110] *

- Degraded raised bogs still capable of natural regeneration [7120]
- Depressions on peat substrates of the Rhynchosporion [7150]
- Calcareous fens with Cladium mariscus and species of the Caricion davallianae [7210] *
- Petrifying springs with tufa formation (Cratoneurion) [7220] *
- Alkaline fens [7230]
- Limestone pavements [8240] *
- Old sessile oak woods with Ilex and Blechnum in the British Isles [91A0]
- Bog woodland [91D0] *
- Margaritifera margaritifera (Freshwater Pearl Mussel) [1029]
- Austropotamobius pallipes (White-clawed Crayfish) [1092]
- Petromyzon marinus (Sea Lamprey) [1095]
- Lampetra planeri (Brook Lamprey) [1096]
- Salmo salar (Salmon) [1106]
- Rhinolophus hipposideros (Lesser Horseshoe Bat) [1303]
- Lutra lutra (Otter) [1355]
- Najas flexilis (Slender Naiad) [1833]
- Hamatocaulis vernicosus (Slender Green Feather-moss) [6216]

Lough Corrib SPA was selected for the following qualifying interests: -

- Gadwall (Anas strepera) [A051]
- Shoveler (Anas clypeata) [A056]
- Pochard (Aythya ferina) [A059]
- Tufted Duck (Aythya fuligula) [A061]
- Common Scoter (Melanitta nigra) [A065]
- Hen Harrier (Circus cyaneus) [A082]
- Coot (Fulica atra) [A125]
- Golden Plover (Pluvialis apricaria) [A140]
- Black-headed Gull (Chroicocephalus ridibundus) [A179]
- Common Gull (Larus canus) [A182]

- Common Tern (Sterna hirundo) [A193]
- Arctic Tern (Sterna paradisaea) [A194]
- Greenland White-fronted Goose (Anser albifrons flavirostris) [A395]
- Wetland and Waterbirds [A999]

As mentioned, Lough Corrib SPA is located ca. 1.8km downstream of the proposed works location. This is SPA is designated for a range of birds, waterbirds and wetland. A search of the 10km grid square (MI4) on the NBDC shows records for numerous birds and waterbirds, some of which are amber and red-listed on the BoCCI (Birds of Conservation Concern in Ireland).

The Appropriate Assessment (AA) Screening Report (Atkins Doc. Ref. 0088798DG0051) and Natura Impact Statement (NIS) will be submitted as part of the planning pack for the proposed development provides more detailed descriptions of these European sites and assesses the potential for likely significant effects thereon, in view of their conservation objectives.

4.2.1.3 National

Natural Heritage Areas (NHAs) are designated under the Wildlife Act, 1976 (as amended) due to their importance for the habitats present or which support species of plants and animals whose habitat requires protection. In addition, there are 630 No. proposed Natural Heritage Areas (pNHAs) nationally; these sites were published on a non-statutory basis in 1995 and, although they have not yet been formally designated, their ecological value is recognised by planning and licensing authorities.

Oughterard District Bog NHA (002431) is located ca. 6.1km upstream of the proposed works via the Owenrrif [Corrib] River. Moycullen Bog NHA (002364) is located ca. 12km southeast of the proposed works and is connected via remote surface water pathways. There are 24 No. pNHAs in the Zone of Influence of the proposed works.Lough Corrib pNHA is located ca. 1.8km downstream of the proposed works. Connemara Bog Complex pNHA is located ca. 6.5km upstream of the proposed works via the Owenriff [Corrib] River. Other pNHAs and their connectivity to the proposed development are summarised in Table 4-1 below.

Table 4-1 - Proposed Natural Heritage Areas in the Zone of Influence of the proposed development.

Site code	Name	Location (relative to the proposed development) and connectivity
000735	Maumtrasma Mountain Complex	c. 13km north-west. Weak connectivity via surface water pathways and mobile species, especially birds
002008	Maumturk Mountains	c. 16km north-west. Weak connectivity via surface water pathways and mobile species, especially birds
000297	Lough Corrib	c. 1.8km downstream. Connectivity via the Owenriff [Corrib] River
002034	Connemara Bog Complex	c. 6.5km east. Connectivity via the Owenrriff [Corrib] River
001271	Gortnandarragh Limestone Pavement	c. 6.4km southeast. Weak connectivity via surface water pathways and mobile species, especially birds
001312	Ross Lake And Woods	c. 8km southeast. Weak connectivity via surface water pathways and mobile species, especially birds
000228	Ballycuirke Lough	c. 15.8km southeast. Weak connectivity via surface water pathways and mobile species, especially birds

Site code	Name	Location (relative to the proposed development) and connectivity
001774	Lough Carra/Mask Complex	c. 14km north, weak connectivity via surface water pathways and mobile species, especially birds
001536	Mocorha Lough	c. 12km north-east. Only connectivity via birds
000385	Rostaff Turlough	c. 13km north-east. Only connectivity via birds
000525	Shrule Turlough	c. 16km north-east. Only connectivity via birds
001536	Mocorha Lough	c. 15km north-east. Only connectivity via birds
001788	Turloughcor	c. 17km east. Only connectivity via birds
001322	Turlough Monaghan	c. 20km east. Only connectivity via birds
001294	Lough Hacket	c. 18km east. Only connectivity via birds
000331	Turlough O'Gall	c. 22km east. Only connectivity via birds
000234	Belclare Turlough	c. 25km east. Only connectivity via birds
000480	Clyard Kettle-Holes	c. 18km north-east. Only connectivity via birds
000541	Skealoghan Turlough	c. 22km north-east. Only connectivity via birds
000461	Ardkill Turlough	c. 23km north-east. Only connectivity via birds
000503	Greaghans Turlough	c. 24km north-east. Only connectivity via birds
000215	Rathbaun Turlough	c. 28km north-east. Only connectivity via birds
000475	Carrowkeel Turlough	c. 31km north-east. Only connectivity via birds
000224	Altore Lake	c. 30km north-east. Only connectivity via birds

4.2.2 Flora and Fauna

4.2.2.1 Rare and Protected Flora and Fauna

It is noted that the absence of records from the NBDC database or NPWS records does not necessarily mean that these species do not occur within the area, rather it has not formally been recorded as present.

National Biodiversity Data Centre (NBDC)

4.2.2.1.1 Flora

The NBDC database holds records 3 no. protected species in grid square M14, Irish Lady's-tresses (*Spiranthes romanzoffiana*), Wood Bitter-vetch (*Vicia orobus*) and Slender Cottongrass (*Eriophorum gracile*) which is a protected species under the Flora Protection Order.

Records of no. 8 threatened species, Vervain (*Verbena officinalis*), Spring Gentian (*Gentiana verna*), Small-flowered Catchfly (*Silene gallica*), Shrubby Cinquefoil (*Potentilla fruticosa*), Greater Knapweed (*Centaurea scabiosa*), Field Gentian (*Gentianella campestris*), Dorset Heath (*Erica ciliaris*), Broad-fruited Cornsalad (*Valerianella rimosa*). It is possible for these species to be present in the vicinity of the proposed works, or further downstream along the banks of Lough Corrib.

The NPWS Flora Protection Order Map Viewer 2022 does not hold records for any protected species in the vicinity of the proposed works. The nearest record is for Varnished hook-moss (*Hamatocaulis vernicosus)* located

at Gortachalla Lough over 10km away. Based on the available information, the likelihood of protected or threatened vascular plant species occurring in the proposed area is considered to be medium.

Bryophytes

The NBDC database for grids M14 holds records of no. 135 species of mosses, no. 47 species of lichens, 1 no. species of hornworts. There is little to no information on the location of these species, therefore it can be assumed that these records concern the proposed works site or have the potential to occur within these sites. Willow Feather-moss (*Amblystegium varium*) is assessed as 'Near Threatened' and Large White-moss (*Leucobryum glaucum*) is listed under the EU Habitats Directive under Annex IV. As mentioned, there is little to noinformation on the exact location of these species. Therefore, they must be considered to be within the vicinity of the proposed works.

4.2.2.1.2 Birds

Grids M14 have a total of no.66 species of birds listed under the Birds Directive and Birds of Conservation Concern Ireland (BoCCI) Red and Amber list recorded according to the NBDC.

Table 4-2 - Birds listed under the Birds Directive and BoCCI Red and Amber List in M14 (NBDC, 2024)

Common Name	Latin Name	Status
Arctic Tern	*Sterna paradisaea*	Annex I, Amber List
Barn Owl	*Tyto alba*	Red List
Barn Swallow	*Hirundo rustica*	Amber List
Black-headed Gull	*Larus ridibundus*	Red List
Black-tailed Godwit	*Limosa limosa*	Amber List
Brent Goose	*Branta bernicla*	Amber List
Common Coot	*Fulica atra*	Annex II, Amber List
Common Goldeneye	*Bucephala clangula*	Annex II, Amber List
Common Grasshopper Warbler	*Locustella naevia*	Amber List
Common Kestrel	*Falco tinnunculus*	Amber List
Common Kingfisher	*Alcedo atthis*	Annex I, Amber List
Common Linnet	*Carduelis cannabina*	Amber List

Common Name	Latin Name	Status
Common Pheasant	*Phasianus colchicus*	Annex II
Common Pochard	*Aythya ferina*	Annex II, Amber List
Common Redshank	*Tringa totanus*	Red List
Common Sandpiper	*Actitis hypoleucos*	Amber List
Common Scoter	*Melanitta nigra*	Annex II, Red List
Common Shelduck	*Tadorna tadorna*	Amber List
Common Snipe	*Gallinago gallinago*	Annex II, Amber List
Common Starling	*Sturnus vulgaris*	Amber List
Common Swift	*Apus apus*	Amber List
Common Tern	*Sterna hirundo*	Annex I, Amber List
Common Wood Pigeon	*Columba palumbus*	Annex II
Corn Crake	*Crex crex*	Annex I, Red List
Dunlin	*Calidris alpina*	Annex I, Amber List
Eurasian Curlew	*Numenius arquata*	Annex II, Red List
Eurasian Oystercatcher	*Haematopus ostralegus*	Amber List
Eurasian Reed Warbler	*Acrocephalus scirpaceus*	Amber List
Eurasian Teal	*Anas crecca*	Annex II, Amber List
Eurasian Wigeon	*Anas penelope*	Annex II, Amber List
Eurasian Woodcock	*Scolopax rusticola*	Annex II, Amber List

Common Name	Latin Name	Status
European Golden Plover	*Pluvialis apricaria*	Annex I, Red List
Gadwall	*Anas strepera*	Annex II, Amber List
Great Black-backed Gull	*Larus marinus*	Amber List
Great Cormorant	*Phalacrocorax carbo*	Amber List
Great Crested Grebe	*Podiceps cristatus*	Amber List
Great Northern Diver	*Gavia immer*	Annex I
Great Skua	*Stercorarius skua*	Amber List
Greylag Goose	*Anser anser*	Annex II, Amber List
Hen Harrier	*Circus cyaneus*	Annex I, Amber List
Herring Gull	*Larus argentatus*	Red List
House Martin	*Delichon urbicum*	Amber List
House Sparrow	*Passer domesticus*	Amber List
Jack Snipe	*Lymnocryptes minimus*	Annex II
Lesser Black-backed Gull	*Larus fuscus*	Amber List
Little Egret	*Egretta garzetta*	Annex I
Little Grebe	*Tachybaptus ruficollis*	Amber List
Mallard	*Anas platyrhynchos*	Annex II
Merlin	*Falco columbarius*	Annex I, Amber List
Mew Gull	*Larus canus*	Amber List

Common Name	Latin Name	Status
Mute Swan	*Cygnus olor*	Amber List
Northern Lapwing	*Vanellus vanellus*	Annex II, Red List
Northern Shoveler	*Anas clypeata*	Annex II, Red List
Northern Wheatear	*Oenanthe oenanthe*	Amber List
Peregrine Falcon	*Falco peregrinus*	Annex I
Red Grouse	*Lagopus lagopus*	Annex II, Red List
Red-breasted Merganser	*Mergus serrator*	Annex II
Ringed Plover	*Charadrius hiaticula*	Amber List
Sand Martin	*Riparia riparia*	Amber List
Sky Lark	*Alauda arvensis*	Amber List
Spotted Flycatcher	*Muscicapa striata*	Amber List
Stock Pigeon	*Columba oenas*	Amber List
Tufted Duck	*Aythya fuligula*	Annex II, Amber List
Water Rail	*Rallus aquaticus*	Amber List
Whooper Swan	*Cygnus cygnus*	Annex I, Amber List
Yellowhammer	*Emberiza citrinella*	Red List

Given the extent of the proposed works over the Owenriff [Corrib] River and that the surrounding area is a suitable habitat for some of these bird species, impact on these bird species as a result of the proposed works cannot be ruled out.

4.2.2.1.3 Freshwater Pearl Mussel

The proposed works are located on land adjacent to a *Margaritifera*-sensitive Area (category: 'Catchments of SAC populations listed in S.I. 296 of 2009'). A freshwater pearl mussel survey was carried out in the Owenriff in 2014. The Owenriff is one of the most densely populated *Margaritifera* rivers in the world. It is recommended that the Owenriff Catchment should be one of the most protected catchments in the country for *Margaritifera*, The survey states that '*it is absolutely essential that complete protection to the river water and riverbed is provided*.' The Owenriff population was estimated as *ca*.1 million in 2009. Monitoring by NPWS estimated that it had reduced to 940,000 in 2012, based on a 1% per year decline owing to insufficient recruitment. Declines were detected in 2011, 2014 and 2015. A large kill followed a drought in 2014. The Owenriff population has been surveyed frequently since the 1990s and monitored regularly since the baseline survey in 2004. Mussels are abundant (over 250 per 100m, often 150/m²) from the hatchery at Canrawer East to upstream of Oughterard wastewater treatment plant (WWTP) discharge. The target is for the species to be sufficiently abundant to maintain itself on a long-term basis as a viable component of the Owenriff system.

4.2.2.1.4 Mammals

Bats

All bat species in Ireland, and their roosts, are protected under the Wildlife Act, 1976 (as amended) and are also afforded strict protection under Article 12 of the Habitats Directive (as they are listed on Annex IV). Several bat species have been recorded in the 10km grid square M14 including Brown Long-eared Bat (*Plecotus auritus*), Common Pipistrelle (*Pipistrellus pipistrellus sensu stricto*), Lesser Noctule (*Nyctalus leisleri*), Daubenton's Bat (*Myotis daubentonii*) and Soprano Pipistrelle (*Pipistrellus pygmaeus*). The study area itself, during the site survey, was identified as having high roost potential. A Bat Survey was carried out by Dr. Caroline Shiel and the survey results are detailed further in Section 4.2.5. Bats are a key ecological receptor for the proposed works.

Otter

Numerous records for Otter (*Lutra lutra*) exist in and within close proximity to the study area according to NBDC and NPWS records. Records occur at Lough Corrib ca. 1.8km downstream of the proposed works. Otter are listed on Annexes II and IV to the Habitats Directive. As such, they require the designation of SACs for the protection of their populations and are also strictly protected, wherever they occur, under Article 12 of the Directive. They are also protected under the Wildlife Act, 1976 (as amended).

Given that the proposed works will occur over the Owenriff [Corrib] River and that records for otter occur throughout in close proximity to the works, as well as their susceptibility to disturbance; Otter is considered to be a key ecological receptor for the proposed development.

Badger

Badger (*Meles meles*) and their setts are protected under the Wildlife Act ,1976 (as amended). There are records for this species according to the NBDC and NPWS within the study area, with a record of 19 no. within M14 from 2016. Given that the compound site is located in an area with treelines and hedgerows, badger is considered to be a key ecological receptor for the proposed development.

Other Mammals

NPWS and NBDC records indicate a number of other terrestrial mammal species which have been recorded within the area including Eurasian Pygmy Shrew (*Sorex minutus*), Eurasian Red Squirrel (*Sciurus vulgaris*), Pine Marten (*Martes martes*) and West European Hedgehog (*Erinaceus europaeus*). These species are all protected

in Ireland under the Wildlife Acts 1976 (as amended) and are listed as Least Concern on the IRL (Marnell *et al.* 2019).

National Parks and Wildlife Service (NPWS)

A data request was submitted to the NPWS in June 2024 for records of rare and protected flora and fauna within the 10km grid squares N68 and N78 across which the proposed project is located. The rare and protected species recorded in the data request return which were located within project area or surrounding area had not been recorded in the last 20 years. This list does not include Freshwater pearl mussel (*Margaritifera margaritifera*) which is present in Owenriff as discussed in Section 4.2.4.

4.2.2.2 Invasive Species

While non-native invasive species are not an ecological feature of value, they do need to be considered as a potential ecological constraint. The European Communities (Birds and Natural Habitats) Regulations 2011 S.I. 477 detail the legal context regarding the introduction and dispersal of certain non-native invasive plants and animals. Section 49 of the Regulations specify that it is an offence to disperse or spread any plant species or associated vector material listed on the 3rd Schedule of the Regulations.

The NBDC database holds a small number of records of invasive alien plant species in grid M14. Table 4-4 highlights the species below. All species are considered 'high impact' or 'medium impact' with no. 2 listed as Third Schedule to the Habitats Directive.

Table 4-3 - Invasive alien plant species in M14 (NBDC, 2024)

Common Name	Scientific Name	Status
Butterfly-bush	*Buddleja davidii*	Medium Impact Invasive Species
Canadian Waterweed	*Elodea canadensis*	High Impact Invasive Species
Cherry Laurel	*Prunus laurocerasus*	High Impact Invasive Species
Common Broomrape	*Orobanche minor*	Medium Impact Invasive Species
Curly Waterweed	*Lagarosiphon major*	High Impact Invasive Species (Third Schedule)
Himalayan Honeysuckle	*Leycesteria formosa*	Medium Impact Invasive Species
Japanese Knotweed	*Fallopia japonica*	High Impact Invasive Species (Third Schedule)

Common Name	Scientific Name	Status
New Zealand Pigmyweed	*Crassula helmsii*	High Impact Invasive Species (Third Schedule)
Nuttall's Waterweed	*Elodea nuttalli*	High Impact Invasive Species
Rhododendron ponticum	*Rhododendron ponticum*	High Impact Invasive Species (Third Schedule)
Sycamore	*Acer pseudoplatanus*	Medium Impact Invasive Species
Three-cornered Garlic	*Allium triquetrum*	Medium Impact Invasive Specie

As mentioned below in Section 4.2.3.1, the low impact invasive species *Crocosmia* x *crocosmiiflora* (Montbretia) is abundant on both riverbanks.

4.2.3 Site Surveys

4.2.3.1 Walkover Survey

The proposed bridge is located to the northwest edge of Oughterard Town. The river at this point is bordered by the N59 to the south and Carrowmanagh road to the north. Approximately 140m downstream of the exiting road bridge the Carrowmanagh Road turns 90 degrees away from the river. At this point the Western Way continues along the river to the Glann Bridge. The 140m stretch of the northern riverbank is best characterised as amenity grassland with well-spaced medium sized trees. The strip of riverbank is 5-6 meters deep and abuts the road. The tree species present along this section include Ash, Weeping beach, Alder, Mountain Ash, Hawthorn and Cherry. The low impact invasive species *Crocosmia* x *crocosmiiflora* (Montbretia) is abundant on both riverbanks in any area that doesn't have a dense tree canopy and on a small island immediately upstream of the bridge location. Along the start of the Western way path where the proposed bridge is to be located there is a tree line composed of mostly Sycamore and Ash. Most of the Ash is affected by Ash die back to varying degrees. The sloped riverbank below the trees is dominated by brambles, Ivy and montbretia. A stand of Japanese Knotweed that is currently undergoing treatment by Galway County Council is located 50m upstream of the exiting bridge.

The southern riverbank at the existing bridge starts as a steep cliff with a narrow flat section of bank just above median flow level. This lower section of riverbank gradually widens as you move downstream. At the proposed bridge location this lower area is approximately 3-4 meters wide. There is then a steep gradient up towards the ground behind and to road level. The area appears to have been raised at some stage as the bank is comprised of large rock material. The vegetation along the riverbank for the first 100m approximately is mixed tree line with some scrub behind. A stand of Bamboo was recorded growing behind the old restaurant (First building downstream of the bridge). The proposed bridge landing is located within a small area of (Mixed) Broadleaved Woodland (WD1).

The dominant tree species within the wood are Sycamore (*Acer pseudoplatanus*), Ash (*Fraxinus excelsior*) and Alder (*Alnus glutinosa*). Most of the Ash show signs of Ash Die back disease. Holly (*Ilex aquifolium*) and Elm (*Ulmus* sp.) are present to a lesser extent. The understory of the woodland is dominated by Ivy (*Hedera helix*) on

the low flat area adjacent to the river. A combination of Nettles (*Urtica dioica*), Brambles (*Rubus fruticosus*) and Enchanter's Nightshade (*Circaea lutetiana*) are present further back from the river on the steep bank where the canopy is more open. Other species which occur in the area include Hedge Woundwort (*Stachys sylvatica*), Lords-and-Ladies (*Arum maculatum*), Ivy Broomrape (*Orobanche hederae*), Hogweed (*Heracleum sphondylium*), Herb Robert (*Geranium robertianum*), Hart's-tongue (*Phyllitis scolopendrium*). The garden hedge escapes Box hedge (*Buxus* sp.) and Privet (*Ligustrum* sp.) are present throughout the wood.

There are no invasive plant species listed on the Third Schedule of the Natural Habitats Regulations (SI 477 of 2011) within the wooded area at the time of survey. Invasive plant species observed include *Crocosmia x crocosmiiflora* (Montbretia) and Cherry Laurel (*Prunus laurocerasus*); both are categorised by Invasive Species Ireland as High Impact invasive plant species.

There is a small island present immediately upstream of the proposed bridge location, vegetation is dominated by Willow (*Salix* sp.) and *Crocosmia x crocosmiiflora* (Montbretia).

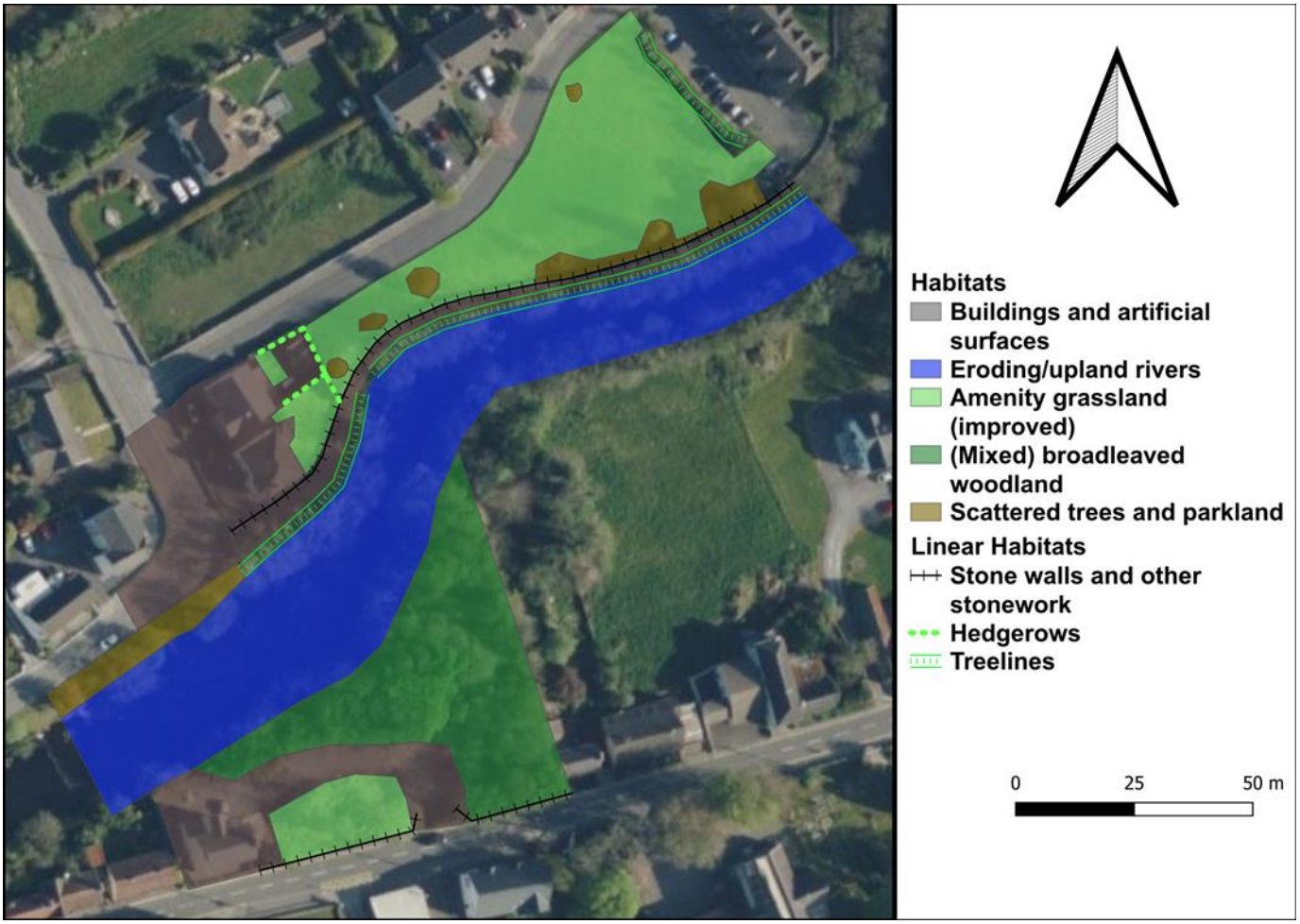

Figure 4-3 – Site Habitat Map

Plate 4-1 Northern bridge landing site, Western Way sign visible in top right of image.

Plate 4-2 View of southern landing site from immediately upstream of north landing.

Plate 4-3 View of southern landing site from N59.

Plate 4-4 View from southern riverbank towards northern landing site.

4.2.4 Aquatic Survey

An Aquatic Survey was carried out by Sweeney Consultancy on the Owenriff River at the proposed works site in Summer 2024. Aquatic surveys were carried out in advance of the optioneering and design stages. The identification of a number of sensitive species and in particular Freshwater Pearl Mussel lead to the decision to avoid any instream works and locate any structures as far from the river edge as possible.

4.2.4.1 Freshwater Pearl Mussel (Margaritifera margaritifera)

Live FPM were found throughout the Study Area from upstream of the N59 road bridge to under the next bridge downstream. Due to the highly protected nature of this species full records are not presented here but are available on request.

4.2.4.2 Atlantic Salmon (*Salmo salar*)

The Owenriff River is not a designated Salmonid Water designated under the European Communities (Quality of Salmonid Waters) Regulations of 1988 (S.I. No. 293 of 1988). Some potentially good salmon spawning habitat was identified within the study area, where the water quality is suitable for salmon, which need EPA Class A water: Q4 to Q5 (Curtis *et al.,* 2009). However, during fieldwork, no salmon parr were observed while using the bathyscope. Information from a local salmon angler (Ultan Macken, B.Sc., *pers. comm.*) indicates that salmon in the Owenriff spawn upstream of Oughterard. A report on a 2020 survey of fish stocks in the Corrib catchment is available on the IFI website (http://wfdfish.ie/index.php/corrib-catchment/). Reasonably good numbers of juvenile salmon were recorded in the only site surveyed in the Owenriff sub-catchment. This site is on the Rusheeny River, which flows from Lough Beg to Lough Ateeann, over 3km upstream of the Study Area. During a site visit on 4th of November 2024 Salmonid were recorded spawning immediately upstream of the bridge location. In a subsequent site visits on 19th of December 2024 a number of redds were easily visible from the riverbank.

4.2.4.3 Sea Lamprey (Petromyzon marinus)

Sea lampreys are present in the Corrib catchment but seem to be confined to below the Galway Regulating Weir (O'Connor, 2007). Although there are records of sea lampreys in some of the tributaries of Lough Corrib (Kurz & Costello, 1999), these records pre-date the construction of the existing weir. While there is potential lamprey spawning habitat preset along this stretch of river there is no suitable silty habitat for ammocoetes. There is likely to be suitable silty habitat present further downstream as the river deepens and slows as it joins Lough Corrib.

4.2.4.4 Brook Lamprey (*Lampetra planeri*)

While O'Connor (2007) recorded no lampreys at either of the two sites electro fished in the Owenriff catchment, the possibility of this species being present cannot be excluded, as there is suitable habitat. While there is potential lamprey spawning habitat preset along this stretch of river there is no suitable silty habitat for ammocoetes. There is likely to be suitable silty habitat present further downstream as the river deepens and slows as it joins Lough Corrib.

4.2.4.5 Otter (Lutra lutra)

Baily and Rochford (2006) report signs of otters recorded at over 77% of sites surveyed in the Corrib catchment. The national Biodiversity Data Centre website shows records of otter in the Owenriff River at locations upstream of Oughterard and in Lough Corrib, near the mouth of the river (https://maps.biodiversityireland.ie/Map). Otter imprints were found in bankside mud during fieldwork, but no holt or couching site within the study area.

4.2.4.6 Instream Vegetation

The aquatic macrophyte flora in the Owenriff River is dominated by Myriophyllum alterniflorum (alternate water-milfoil). Other aquatic macrophytes are rare. Glyceria fluitans and Fontinalis antipyretica cover less than 0.1% of the river. No species of Ranunculus (water crowfoot) or Callitriche (starwort) were recorded. This flora cannot be classified as the Annex I habitat type “Water courses of plain to montane levels with the Ranunculion fluitantis and Callitricho-Batrachion vegetation”.

4.2.4.7 Invasive Species

The only species found within the study area that is listed in the third schedule of S.I. No. 477/2011 - European Communities (Birds and Natural Habitats) Regulations 2011, was Japanese Knotweed (*Fallopia japonica*). This was a small plant on the left bank, just upstream of the N59 bridge and is evidently surviving herbicide treatment applied to a larger stand, formerly at this location. This is not within the area of proposed project area.

The main non-native species along the banks of the Owenriff River is *Crocosmia x crocosmiiflora* (montbretia). Other non-native plants present on the banksides in smaller amounts include *Fuchsia magellanica* (Fuchsia) and *Cotoneaster sp.* (Cotoneaster).

4.2.5 Bat Survey

A bat survey was carried out by Ecologist Dr. Caroline Shiel from June to August 2024.

Owenriff River

Bat activity along the Owenriff River was assessed by means of walking transects using bat detectors and thermal scopes to observe bats foraging over the river. Static detectors were also deployed at selected locations along the river. A Songmeter 4 bat detector was deployed overnight on 24/6/24 – 25/06/24 at a position on the northern river bank – Point C in Figure 4-4 – GPS 53.428493, -9.3248527.A Songmeter 4 detector was deployed on the southern river bank on 07/08/24 to 08/08/24 – Point B in Figure 4-4 – GPS 53.427921, -9.3254372.

The results of the analysis from the Songmeters are similar for both survey points. The most frequently recorded species were Soprano pipistrelle (*Pipistrellus pygmaeus*), Common pipistrelle (*P. pipistrellus*) and Leisler’s bat (*Nyctalus leisleri*). Two calls of Nathusius’s pipistrelle (*P. nathusii*) were recorded on 08/08/24. Daubenton’s bats (*Myotis daubentonii*) were detected in low numbers throughout both nights.

Figure 4-4 - Showing locations of static detectors deployed on banks of Owenriff River.

Walking transects conducted along the length of the Owenriff River in the study area revealed Soprano pipistrelles and Common pipistrelles feeding along the entire stretch of the river. Low numbers of Daubenton's bats were detected and were concentrated on slow-flowing pools in darker areas. No Daubenton's bats were detected foraging in the immediate vicinity of the existing N59 bridge. There is considerable light spillage onto the river in this location from streetlights.

The low occurrence of Daubenton's bats on site would indicate that there is no significant roost of this species close by. The under surfaces of the arches of the existing N59 bridge have been gunited leaving no roosting sites for bats.

Most of the trees lining the northern riverbank are immature and the predominantly alder and willow. In contrast, there are some very mature trees lining the southern bank of the river, many containing potential roost features for bats.

The bat surveys of the area recorded a singular Lesser Horseshoe call at an abandoned restaurant upstream of the bridge location. There are no proposed works at this site which is located 60m west of the proposed development. Lesser Horseshoe bats are a QI of the Lough Corrib SAC and listed on Annex II of the Habitats Directive.

Tree Surveys – Woodland Area A

Woodland Area A consists of a block of mature deciduous trees to the east of the Old Barracks house. The trees are along the southern riverbank and extend to the rear of the houses on the N59 road. Species are mainly ash, sycamore, alder and beech. Many of the ash trees are showing signs of ash die-back disease.

Woodland Area A was surveyed during daylight hours on 07/08/24 and 08/08/24 for trees with potential bat roost features. GPS readings were taken of trees with potential as bat roosts. A tree survey was conducted by Noel Lane – Tree Care Services in July 2024. Metal tags were affixed to individual trees in a section of the study area between the existing N59 bridge as far as and including Woodland Area A.

A walking transect with a bat detector was conducted at dusk on 07/08/24. A static detector was deployed overnight on 07/08/24 – 08/08/24 on a stone wall within Area A.

A bat survey was conducted by walking transects within Woodland Area A at dusk on 07/08/24. Equipment used included a Pettersson D240X bat detector and Echometer Touch Pro plugged into a mini iPad.

Woodland Area A contains many mature trees that have developed suitable bat roosting features such as cavities and cracks over time. There is an old stone wall running parallel to the Owenriff River, approximately 3m from the riverbank. There are several places along the base of the wall that would provide ideal conditions for otter holts.

Soprano pipistrelles were the first species recorded and were detected foraging mainly over the river but also intermittently within the woodland. Common pipistrelle and Leisler's were also recorded foraging over the river. Many Whiskered bats were recorded throughout survey, indicating that there is a roost close-by. A small number of Brown long-eared bats (*Plecotus auritus*) were recorded in the woodland. No Lesser horseshoe bats (*Rhinolophus hipposideros*) were detected.

Results of the recording from the Static bat detector revealed similar results. Whiskered bats were the most frequently encountered species and were active in the woodland throughout the night. A small number of Brown long-eared bats were recorded. Surprisingly, no Natterer's bats were detected, even though the habitat was ideal.

No Lesser horseshoe bats were detected.

Tree Surveys - Woodland Area B

Woodland Area B was surveyed during daylight hours on 14/08/24 for trees with potential bat roost features. GPS readings were taken of trees with potential as bat roosts. The tree survey conducted by Noel Lane – Tree Care Services – did not include this area.

A walking transect with a bat detector was conducted at dusk on 14/08/24.

Woodland Area B is located to the rear of Kennys Derelict pub on main street and extends north to the Owenriff River. Woodland Area B was accessed from the property immediately to the west of the pub. There is a lot of Japanese knotweed and Himalayan knotweed growing in this open area between Woodland Area A and Woodland Area B.

The trees in Woodland Area B consist of ash (again with ash die-back, sycamore and beech). The trees are not as mature as those in Woodland Area A and consequently do not have as many potential roost features.

Badger activity was noted in the open area between Woodland Area A and Woodland Area B. Badger trails were recorded heading into Woodland Area B.

A bat detector survey was conducted on 14/08/24 within Woodland Area B. Several Soprano pipistrelles were detected foraging within the woodland. Large numbers of whiskered bats were detected throughout the survey. It is most likely that these bats are roosting either in the haybarn or else in the various stone outbuildings to the rear of Kenny's pub. Further surveys would be required to locate the roost. However, this section of woodland is outside of the proposed development and so there will be no impact on this are due to the proposed development.

5. Evaluation of Ecological Features

Based on the description given in the preceding section of the biodiversity and baseline ecological conditions in the receiving environment of the proposed development, the following KERs have been defined as set out below.

5.1 Lough Corrib SAC and SPA

The proposed works are located within Lough Corrib SAC and ca. 1.8km upstream of Lough Corrib SPA. The qualifying interests of Lough Corrib SAC/SPA are detailed in Section 4.2.1.

Evaluation: International Importance

5.2 Treeline, Hedgerow and Woodland

The proposed bridge landing is located within a small are of (Mixed) Broadleaved Woodland (WD1).The dominant tree species within the wood are Sycamore (*Acer pseudoplatanus*), Ash (*Fraxinus excelsior*) and Alder (*Alnus glutinosa*). Most of the Ash show signs of Ash Die back disease. The hedgerows, treelines, and woodland within the study area provide important cover and forage for breeding birds and other fauna. A section of woodland will need to be felled to construct the proposed development.

Evaluation: Local Importance (Higher Value)

5.3 Watercourses

Watercourses within the study area are limited to the Owenriff [River] and the Canrawer East stream (EPA name) which the footbridge will cross and the Canrawer East stream (EPA name) which joins the Owenriff River just upstream of the bridge location. There is also a stream/drainage ditch located within the proposed site compound area. The site compound will be 10m back from the stream/drainage ditch.

Evaluation: Local Importance (Higher Value)

5.4 Fauna

5.4.1 Freshwater Pearl Mussel (*Margaritifera margaritifera*)

The proposed works are located on land adjacent to a *Margaritifera*-sensitive Area (category: 'Catchments of SAC populations listed in S.I. 296 of 2009'). A freshwater pearl mussel survey was carried out in the Owenriff in 2014. The Owenriff is one of the most densely populated *Margaritifera* rivers in the world. It is recommended that the Owenriff Catchment should be one of the most protected catchments in the country for *Margaritifera*, The survey states that '*it is absolutely essential that complete protection to the river water and riverbed is provided*.' The Owenriff population was estimated as *ca*.1 million in 2009. Monitoring by NPWS estimated that it had reduced to 940,000 in 2012, based on a 1% per year decline owing to insufficient recruitment. Declines were detected in 2011, 2014 and 2015. A large kill followed a drought in 2014. The Owenriff population has been surveyed frequently since the 1990s and monitored regularly since the baseline survey in 2004. Mussels are abundant (over 250 per 100m, often 150/m²) from the hatchery at Canrawer East to upstream of Oughterard wastewater

treatment plant (WWTP) discharge. The target is for the species to be sufficiently abundant to maintain itself on a long-term basis as a viable component of the Owenriff system.

Live FPM were found throughout the Study Area from upstream of the N59 road bridge to under the next bridge downstream. Full records are not presented here but are available on request.

Evaluation: International Importance

5.4.2 Protected Mammals

Bats

Several bat species have been recorded in the 10km grid square M14 including Brown Long-eared Bat (*Plecotus auritus*), Common Pipistrelle (*Pipistrellus pipistrellus sensu stricto*), Lesser Noctule (*Nyctalus leisleri*), Daubenton's Bat (*Myotis daubentonii*) and Soprano Pipistrelle (*Pipistrellus pygmaeus*). The study area itself, during Several Soprano pipistrelles were detected foraging within the woodland, which is planned to be partially removed to facilitate the works. Large numbers of whiskered bats were detected throughout the survey. It is most likely that these bats are roosting either in the haybarn or else in the various stone outbuildings to the rear of Kenny's pub. This area requires further surveys in order to locate the roost.

Bats are a key ecological receptor for the proposed works.

Evaluation: International Importance

Otter

Otter imprints were found in bankside mud during fieldwork, but no holt or couching site within the study area, during the aquatic survey. There are numerous records for this species in the vicinity of the proposed works. Habitats with some potential to support otter are included in the KER 'Watercourses' in Section 5.2 above.

Evaluation: International Importance

Badger and Other Mammals

There is potential for Badger and other mammal species throughout the study area. There was no evidence of mammal species during field surveys within the proposed development area. However, badger tracks were recorded just east of the proposed development on both the north and southern side of the river. Badgers are unlikely to establish setts in this area due to the exiting level of human activity.

Evaluation: National Importance

5.4.3 Other Fauna

No threatened or protected invertebrates were noted during the surveys which informed this EcIA. Habitats with potential to support such species or communities are included in the KERs 'Watercourses' in Sections 5.2.

5.5 Flora

5.6 Invasive Alien Species

The only species found within the study area that is listed in the third schedule of S.I. No. 477/2011 - European Communities (Birds and Natural Habitats) Regulations 2011, was Japanese Knotweed (*Fallopia japonica*). This was a small plant on the left bank, just upstream of the N59 bridge and is evidently surviving herbicide treatment applied to a larger stand, formerly at this location. This in not within the area of proposed project area. Japanese Knotweed and Himalayan Knotweed were recorded outside of the proposed development, approximately 30m to the east.

The main non-native species present within the redline boundary is *Crocosmia x crocosmiiflora* (montbretia). Other non-native plants present on the banksides in smaller amounts include *Fuchsia magellanica* (Fuchsia) and *Cotoneaster sp.* (Cotoneaster). However, as they represent a threat of an impact/effect, they are not assigned a level of importance.

Evaluation: n/a

6. Assessment of Impacts

This section provides an examination and analysis of the likely impacts of the construction and operation of the proposed development (in the absence of any mitigation or enhancement measures) and evaluates their effects on the KERs. In accordance with NRA (2009a), the significance of these effects is assessed empirically, without reference to the importance of the KERs in question.

6.1 Lough Corrib SAC and SPA

The proposed works are located within Lough Corrib SAC and ca. 1.8km upstream of Lough Corrib SPA.

Given that the proposed works site is located within Lough Corrib SAC, the aquatic qualifying interests of this SAC which include; Oligotrophic waters containing very few minerals of sandy plains (*Littorelletalia uniflorae*) [3110], Oligotrophic to mesotrophic standing waters with vegetation of the *Littorelletea uniflorae* and/or *Isoeto-Nanojuncetea* [3130], Hard oligo-mesotrophic waters with benthic vegetation of Chara spp. [3140], Water courses of plain to montane levels with the *Ranunculion fluitantis* and *Callitricho-Batrachion* vegetation [3260] are considered likely to occur within the zone of impact for water quality impacts from the proposed works. There is also potential for impact on aquatic QI species in the vicinity of the proposed works, including *Margaritifera margaritifera* (Freshwater Pearl Mussel) [1029], *Austropotamobius pallipes* (White-clawed Crayfish) [1092], *Petromyzon marinus* (Sea Lamprey) [1095], *Lampetra planeri* (Brook Lamprey) [1096], *Salmo salar* (Salmon) [1106], *Lutra lutra* (Otter) [1355]. Further, the proposed works site is hydrologically connected to Lough Corrib SPA, which is ca. 1.8km downstream. This SPA is designated for a range of waterbirds and wetland, which rely on water quality. This SPA is also considered to be within the zone of influence of the proposed works. Given that there are no instream work the potential for impact is associated predominantly with water quality and disturbance. Given the nature of the small scale and duration of the works both the potential for impact and the magnitude of any impact on the Natura 2000 sites mentioned above should they occur are considered small. However, given the proximity of the works to a large Freshwater Pearl Mussel population which accounts for a significant percentage of the national population a minor impact could cause a disproportional impact to the population of the SAC and nationally. Given the scale of the works there is not considered to be a likely significant impact on the adult mussel population but rather to the juvenile population which live in the sediment interstitial spaces for approximately 5 years.

Further, Connemara Bog Complex SAC is hydrologically connected to the proposed works area. However, the SAC is located ca. 6.8km upstream of the proposed works area. There will be no water quality impacts on this SAC as a result of the proposed works.

Evaluation: Short term significant effects at international level.

6.2 Treeline, Hedgerow and Woodland

The proposed bridge landing is located within a small are of (Mixed) Broadleaved Woodland (WD1).The dominant tree species within the wood are Sycamore (*Acer pseudoplatanus*), Ash (*Fraxinus excelsior*) and Alder (*Alnus glutinosa*). Most of the Ash show signs of Ash Die back disease. The hedgerows, treelines, and woodland within the study area provide important cover and forage for breeding birds and other fauna. A section of woodland will need to be felled to construct the proposed development.

Evaluation: Significant Permanent effects at a Local Importance (Higher Value) level

6.3 Watercourses

6.3.1 Water Quality - Construction Phase

Water quality impacts include pollution of surface waters and groundwater by sediment, cementitious materials (e.g., concrete), hydrocarbons (e.g., diesel, hydraulic oils, and lubricating oils) and other deleterious matter arising from construction works at the Owenriff [Corrib] River during the construction of the proposed footbridge. There is a possibility for surface water run-off from the proposed development site to reach Lough Corrib SAC and Lough Corrib SPA.

The combined sewer main along the proposed north abutment is to be replaced. During the removal of the existing pipe there is the potential for spillage of sewage. There is potential for impact on the Owenriff River given its proximity to the works. A detailed sequence of the works are provided in Section 2.5.2 above. In summary, the works will be carried out in summer when schools are off and rainfall levels are low. The section of pipe to be removed will be bunged and then cleaned using a jet-vac truck to remove any sewage from the pipe. During replacement of the pipe the jet-vat truck will be used to store any sewage within the system, with an additional temporary over-pumping bypass being put in place in the unlikely event that the jet-vat tank reaches its capacity. Given this there is not considered to be a likely significant impact on the Owenriff River due to the combined sewer main replacement.

Given the overall works sequence and methodology, the magnitude of any negative water quality impacts from the construction at the proposed works will be low and their duration brief or temporary. The probability of any significant pollution event occurring is very low. Therefore, no specific mitigation beyond the standard measures covered in the above referenced guidance will be required.

Evaluation: Temporary slight effects at the local level (Higher Value).

6.3.2 Water Quality - Operational Phase

Potential water quality impacts from the operation of the proposed development relate to run-off from the proposed footbridge. The permeability of these surfaces can result in increased run-off rates. Run-off from the bridge and concrete areas can be contaminated by hydrocarbons such as fuels, oils, greases, coolants and anti-freeze from vehicles and micro-plastics such as tyre dust, as well as general litter and fine sediments. As this is a pedestrian bridge contaminates from motor vehicle are not expected. Increased run-off rates and concrete areas can negatively impact on water quality and hydrological regime in receiving waterbodies. The increase in hard surface due to the project is minimal as the abutments are small in size and the northern abutment is to be constructed on predominately exiting hard surfaces. The bridge deck is to be have gaps between decking and so rain will pass through the structure not increasing run-off on land. Additionally, both landing areas will be separated from the watercourse by vegetated areas.

Evaluation: Imperceptible Long term effects at the local level (Higher Value).

6.4 Fauna

6.4.1 Freshwater Pearl Mussel

The potential impacts to FPM due to the proposed works is associated release of silt or other contaminates to the river and disturbance due to noise and vibrations. The level of excavation required for the project is relatively small due to the size of the bridge and shallow bedrock level. The quantity of concrete to be poured is also small as the bridge components will be precast with just a blinding layer to be poured at the base of the foundations. Due to the

small scale and short duration of these works the potential for impact is low. However, due to the sensitivity of mussels to water quality and in particular juvenile mussel an minor release of sediment could cause a disproportional effect on the mussel population. Juvenile FPM remain in the interstitial spaces in the river sediment for approximately 5 years. The foundations for the structures will involve the use of both excavators and rotary cores. Rotary coring will not be used for the northern abutment due to its proximity to the river. Given the short duration of the works and distance from the river of rotary coring on the southern riverbank Noise and vibration is not considered to be a significant impact.

Evaluation: Short term significant effects at international level.

6.4.2 Protected Mammals

Bats

Bat activity along the river and within the woodland was high with Soprano pipistrelle (*Pipistrellus pygmaeus*), Common pipistrelle (*P. pipistrellus*), Leisler's bat (*Nyctalus leisleri*), Daubenton's bats (*Myotis daubentonii*), Brown long-eared bats (*Plecotus auritus*) and whiskered bats (*Myotis mystacinus*). Lesser Horseshoe bats (*Rhinolophus hipposideros*) were not recorded alogn the river or within the woodland but a single call was recorded at a abandoned restaurant located 60m upstream of the proposed bridge. The potential for impact on bats is associated with impacts to roosts, loss of foraging habitat and artificial lighting. No trees with bat roost potential are to be felled. There will be a loss of some woodland habitat and increased lighting in the area.

Evaluation: Long-term Moderate effects at International Importance level

Otter

Impacts on the habitats with some potential to support otter are assessed under KER 'Watercourses' in Section 6.1 above. No holts or couches were recorded within the project area, although prints were recorded downstream and so Otters are present in the area. There is potential for disturbance of Otters commuting along the river. The current access for otters along this section for river is on the southern river bank. The only works required close to the river on this section is the removal of trees. These and all other works will be carried out during day light hours and so will not impact on otters. There will be no blockage of commuting routes due to the works. The project is located within an urban area and so otters resident to the area will be acclimatised to a level of anthropogenic disturbance

Evaluation: Imperceptible Temporary effects at International Importance level

Badger and Other Mammals

There are no recorded or signs of badgers located within the project redline boundary. The woodland located on the southern riverbank has an existing high level of human activity and so it is not likely that badgers will establish setts in this area. There were no signs of mammals recorded during sites surveys other than Otter or badger. The potential for impact of mammals within the area is restricted to the construction stage.

Evaluation: Temporary Not significant effects at National Importance Level

6.4.3 Other Fauna

Impacts on habitats with potential to support threatened or protected invertebrates or communities are assessed under KERs 'Treeline, Hedgerow and Woodland' and 'Watercourses' in Sections 6.2 and 6.3.

Impacts on habitats for aquatic fauna, including Common Frog, are assessed under KER ‘Watercourses’ in Section 6.3.

6.5 Invasive Alien Species

The introduction or spread of any aquatic or riparian invasive alien species could negatively affect the river itself, i.e., ‘Water courses of plain to montane levels with the *Ranunculion fluitantis* and *Callitricho-Batrachion* vegetation’ (3260) and the communities of fish and other native aquatic species. No third schedule invasive species were recorded during the site survey in the proposed redline boundary. Japanese Knotweed and Himalayan Knotweed is present in a neighbouring property approximately 30m east of the redline boundary. There will be no works in this area and construction vehicles will not be required to pass through this area to access the site. A single Japanese Knotweed stand is also located upstream of the existing road bridge. This stand is currently being treated. There is no potential for works relating to the proposed development causing the spread of these species.

Evaluation: No potential effect

7. Mitigation & Enhancement

7.1 Design Phase

The proposed development has gone through both route selection and option appraisal to identify the most suitable location and design with the least potential for ecological impact while still achieving the goals of the project. The proposed bridge location has been chosen as it provides the larges setback from the river on both riverbank to keep works as far from the river as possible and to allow sufficient space for the installation of mitigation such as silt control measures.

A key design choice was to make the bridge clear span so that no instream works are required. Additionally as much of the structure as possible has been designed to be prefabricated off sight both minimising the work time on site and significantly reducing the quantity of wet concrete required on site. Due to the proximity of the northern abutment to the river it has been decided that rotary coring will not be used in this are for the abutment foundation.

The width of the bridge has also been keep to a minimum so as to minimise the level of tree felling required and in turn reduce the size of abutment required which also reduces the level of excavation for foundations. A landscape plan has been prepared to replace all the tree lost as part of the project. There was not sufficient space within the project area to replace all of these tree and so offsite planting is required. An area of land will be required within Carrowmanagh Park to replace the remainder of the tree. The area of land chosen for the offsite planting is located close to the area to be felled (40-70m) and along the river corridor. Providing replacement that can be used by bats and other fauna in the area. Almost half of the trees to be felled are Ash trees which are suffering from different stages of Ash Die Back. As such the replacement of these tree with health trees will be a long term biodiversity gain.

The lighting design will be developed with the following principal considerations (Detailed design stage):

- Provide adequate illumination to contribute towards the safe use of the proposed footbridge and approach paths.
- To minimise the impact of lighting on bats in the local environment, and on Freshwater Pearl Mussel or fish in the Owenriff River.
- Minimise light pollution and visual glare to the surrounding neighbourhood - contain the lighting within the site.
- Provide a high-quality public realm space.

Lighting will be provided on the parapets of the proposed footbridge & north ramp, and on the masonry wall along the south approach path. It is envisaged that directional downlighting will be used to avoid light trespass into the environment. Characteristics such as light spectrum, UV content, intensity, dimming etc. will be specified in accordance with current best practice and design guidance (e.g., Bat Conservation Trust & Institute of Lighting Professional Guidelines (2018); Emery (2008); Emma Stone (2014) University of Bristol / Bat Conservation Trust; Responsible Outdoor Lighting at Night (ROLAN) guidelines, etc.).

7.2 Construction Phase

This section describes the mitigation measures required to ensure there are no residual effects on the integrity of the Lough Corrib SAC.

7.2.1 General mitigation Measures

1. Construction of the proposed development is to be programmed so that all critical works (excavations, coring, pouring of concrete etc) shall be carried out between 1st April and 30th of September. Detailed trigger levels for rainfall have been set out in the specific mitigation measures section below. Both NPWS and IFI will be informed in advance of works commencing.

2. All operations will be in accordance with, but not limited to, the following guidelines: -

    - Guidance on Assessment and Construction Management in *Margaritifera* Catchments in Irelands (Atkinson et al, 2023).

    - The construction management of the Site will take account of the recommendations of the Construction Industry Research and Information Association (CIRIA) guidelines '*Control of Water Pollution from Construction Sites' and 'Groundwater control - design and practice*' and CIRIA 2010 '*Environmental Good Practice on Site'* to minimise as far as possible the risk of pollution.

    - Guidance on Protection of Fisheries during Construction Works In and Adjacent to Waters (IFI, 2016).

    - The existing drainage network, specifically along the existing road, and as required elsewhere across the site, will be suitably protected/ isolated from works for the duration of the construction period (via. the use of physical barriers and / or the implementation a Site-specific water run-off management plan as required).

3. Any chemical, fuel and oil stores will be located on an impervious base within a secured bund with a storage capacity 110% of the stored volume. All such storage will be restricted to within the site compound which is not to be located near the river.

4. Biodegradable oils and fuels will only be used.

5. Drip trays will be placed underneath any standing machinery to prevent pollution by oil/fuel leaks. Refuelling of vehicles and machinery will be carried out on an impermeable surface. Refuelling of any vehicles or equipment can only be undertaken in the proposed site compound on Station Road.

6. Emergency spill kits will be available on site and staff will be trained in their use. These will be located both at the site compound on Station Road and within the works area at Oughterard.

7. Operators will check all equipment, machinery and vehicles on a daily basis before starting work to confirm the absence of leakages. Any leakages should be reported immediately and addressed.

8. Daily checks will be carried out and records kept on a weekly basis and any items that have been repaired/replaced/rejected noted and recorded. Any items of plant machinery found to be defective will be removed from site immediately or positioned in a place of safety until such time that it can be removed. All items of plant will be checked prior to use before each shift for signs of wear/damage. All machinery will be safely parked away from the river overnight.

9. An ecological specialist will be employed by Galway County Council to ensure compliance with all environmental commitments. An Ecological Clerk of works (ECoW) will be employed by the contractor for the duration of the project. The ECoW will update the outline CEMP and be responsible for carrying out toolbox talks and the daily environmental monitoring and checks. The ecological specialist will be required to sign off on the CEMP prior to the commencement of construction to ensure it complies will all environmental commitments. The ecological specialist will review all weekly environmental reports prepared by the ECoW and will carry out regular audits of the site. The ecological specialist will be present on site for all major work elements (Excavations, coring, concrete pours, installing of abutments and bridge). Both the ECoW and ecological specialist must be suitably qualified having held protective species licences for relevant protected species and be a full members of a professional body such as CIEEM or similar. All site staff will be informed of work methods to be employed on site, as well as the sensitivity of Lough Corrib SAC & Lough Corrib SPA via toolbox talks. This shall include the requirement for protection of aquatic and riverside habitats and prevention of any runoff from works areas. A toolbox talk will be required at the start of works; in advance of significant stages of the project (e.g start of excavations, craning in of bridge) and for any new staff. New personael to the site, including any new subcontractors, will be required to attend a toolbox talk in advance of carrying out any works on site. It will be the responsibility of the Contractor to ensure this is implemented and to ensure that all workers on site are made aware of the ecological sensitivity of the site and the Owenriff River.

10. Both the ecological specialist and the ECoW will have real time access to the continuous turbidity monitoring, with alerts set up for trigger levels (See Section 7.2.2.2 for more detail).

11. To prevent any potential surface water impacts via release of cementitious materials the following measures will be implemented when poured concrete is being used on Site:

    - The production, transport and placement of all cementitious materials will be strictly planned and supervised. It is not permitted to undertake site batching/production of concrete in the works area adjoining the Owenriff River.

    - There will be no mixing of concrete on site or at the site compound and all required concrete must be delivered to the site by ready-mix lorry.

    - The use of wet concrete on the project is restricted to the blinding layer for the north abutment, associated ramp and the camping for the south abutment and temporary crane pad mini bore piles. The concrete for north abutment and ramp will be self-contained within the base of the 1.4m deep foundation. The capping for the south abutment and temporary crane pad is located 14m and 23m back from the River. The quantity of concrete required for the capping is small and there is not considered to be a risk to the Owenriff River and associated aquatic fauna from this aspect of the project (See section 2.4.3 for quantities of concrete required)

    - Any small spillages will be cleaned up and disposed of correctly.

    - A gravity fed pour will be used for the concrete blinding layers and pile capping. The end of the shoot will have a manual switch off and be manned by the operator continually during pours. Concrete will not me transported by any other means on site.

    - Washing out of the ready-mix lorry will not be allowed anywhere on the site and must take place back at the concrete supplier plant.

    - Surplus concrete will also be returned to supplier's plant after completion of a pour.

12. At no point will any equipment be washed out within the work area or adjacent to a watercourse.

13. All materials used on site, will be removed from site and disposed of at a licensed waste facility.

7.2.2 Specific mitigation measures

7.2.2.1 Tree felling

The required tree felling should take place outside of the breeding bird season (the season ahead of summer works). Sectional tree felling is to be used to allow a more controlled felling and prevent any impacts to the riverbank. Tree stumps on the riverbank will not be dug or ground out and will be left in place to decay naturally.

7.2.2.2 Water Quality

Silt Control measures

- A combination of Silt mats, fences and wattles will be implemented to prevent any silt from entering the watercourse. The exact arrangement of these silt defences will vary depending on location but multiple layers will be installed at all locations to act as back up in the event of a failure. The first line of silt defences at all locations will be a silt fence before the riverbank crest with a line of straw wattles on both sides of the fence. The silt fence will be wrapped under the wattle on the works side of the fence. All wattles will be securely staked in place so that there are no gaps between them and the ground. Additional rows of silt matts or straw wattles will be arranged behind these. The ECoW will inspect all silt defences regularly and instruct repairs where necessary. Spare silt control materials will be kept at works areas on both banks so that they are available to repair existing defences or installing additional.

- Once works are completed any build-up of silt behind the silt defences will be removed by hand prior to removal of the defences. Given the small scale of the excavation, it is not anticipated that any measurable quantity of sediment will make sit's way to the silt defences.

- Dewatering of trenches

    - All excavation works will be planned for dry weather period leading up to the works and during them, will rainfall limits set for works below.

    - It Is not expected that ground water will be encountered during excavation of the foundation, however, should water be encountered it will be pumped to a mobile water tank. The water tank will then be removed from the site and disposed of at a suitable waste facility.

- A section of concrete footpath on the western side of the north abutment approximately 18m long will need to be removed to allow for stone paving of the landing area for the ramp. The concrete will be cut into smaller section with a circular saw. The circular saw will be fitted with a vacuum system to collect dust produced during cutting. The sections will then be broken out using a mini digger.

Turbidity trigger levels

Although there are no instream works and the potential for release of sediment to the river is considered unlikely continuous turbidity meters will be installed and trigger levels set. This will allow for real time monitoring during construction and evidence post construction that the project did not impact on the water quality of the river.

- Continuous Turbidity Meters will be installed upstream and immediately downstream of the proposed works. Two meter upstream and two downstream, the meters will be positioned in close proximity to the riverbanks so as to record any increase from the works as early as possible. There is a small stream (EPA Canrawer East) which is culverted under the Carrowmanagh Road upstream of the proposed north abutment. As such increased turbidity in this stream could cause a false trigger for the downstream meters. As such two additional meters will be installed, one at the confluence of the Canrawer East stream and the Owenriff River and one located upstream of the works on the Canrawer East.

- To establish baseline conditions monthly turbidity sampling will be required for 12 months prior to start of works at all six proposed monitoring point (full 12 months of sampling to be completed in advance of the start of any construction works). This baseline data will then be used to set trigger levels during construction. The trigger levels will be set relative to the upstream reading rather than absolute Turbidity. Turbidity is to be recorded in NTU.

- The continuous Turbidity meters are to be installed and start recorded two weeks before the start of any works. The effectiveness of the trigger levels can be tested during this period and adjusted as necessary. The meters will run continuously throughout the construction phase and for an additional two weeks post construction.

- Readings from the meters will be transmitted to web-based data portal allowing live monitoring.

- If trigger levels are reached downstream works will stop as quickly as safely possible. The ECoW will investigate the source of elevated levels. If a source is discovered the issue must be remedied as soon as possible. If no source can be found works can commence once the turbidity levels are in line with the upstream meters. Works will restart gradually while both the works area and the turbidity readings are being monitored by the ECoW. If a pollution event occurs the ECoW will notify the project manager, client representative ecologist, NPWS and IFI. The ecological specialist will also have access to the continuous

turbidity monitoring and will receive alerts if trigger levels are reached. Following any alert if not on site the ecological specialist will make contact with the ECoW to ensure works are suspended until the issue has been resolved as discussed above. Both the ecological specialist and the ECoW will have authority to stop the works due to a suspected pollution event or deviation from the CEMP or any other environmental commitment.

Aquatic Habitat Condition

The habitat condition of the river under the proposed bridge was assessed as part of the Aquatic surveys as shown in Appendix D of the NIS. The substrate condition of the river below the proposed bridge was assessed in 5m grid squares. The percentage composition of cobbles, gravel and sand within the substrate was recorded. In advance of the start of construction (within 6 months, but no earlier than12 months prior) the habitats will be resurveyed to set a baseline prior to construction Once all works have been completed the substrate will be resurveyed to show that the project has not impacted on the available habitat for QI species. The surveyor undertaking these works must have suitable experience with surveying Freshwater Pearl Mussels and will require a survey licence from NPWS.

Rainfall Trigger levels

The following rainfall trigger levels have been implemented in the upgrades to the Oughterard WWTP approcimately1km downstream of the proposed development (Harrington, K. and McDonnell, D, 2018).

- Trigger level 1: Very high Risk activities
    - 6hour rainfall >3mm / 12hour rainfall >4mm / 24hour rainfall >5mm
    - No overland flow or pathway for water movement
    - Conditions on the ground match the forecast
- Trigger level 2: High Risk Activities
    - 6hour rainfall >6m m/ 12hour rainfall >8mm / 24hour rainfall l>10mm
    - Conditions on the ground match the forecast
- Trigger level 3 Intermediate to Low Risk
    - Silt defences manages all risks; work can be undertaken in all weathers but turbidity monitoring triggers remain

7.2.2.3 Disturbance of Fauna

- In order to mitigate potential impacts to otter, working hours shall be restricted to daylight hours.
- The river channel and riverbanks will not be artificially lit during hours of dusk and darkness.

7.2.3 Biosecurity protocols

Given the presence of Japanese Knotweed and Himalayan Knotweed in neighbouring properties a resurvey for invasive species will be carried out in advance of the proposed work. The area will continue to be monitored during construction by the ECoW to ensure there is no spread. If construction is to start outside of the optimum survey period

for invasive species a survey must be carried out in the preceding survey window. Invasive species are recorded within the site boundary an Invasive Species Management Plan will be developed.

7.3 Operational Phase

The implementation of the landscape plan and specification will continue into the operational phase. This will include the establishment and ongoing management of the new planting, where necessary

The maintenance of the bridge structure will fall under the EIRSPAN annual bridge monitoring program and so all proposed maintenance will be subject to AA screening by Transport Infrastructure Ireland (TII) prior to works commencing.

7.4 Residual Effects

Given the full and proper implementation of the mitigation and enhancement measures detailed in this section, the residual effects of the proposed development on the KERs are evaluated as follows:

- Treeline, Hedgerow and Woodland: Slight Medium-term effects at a Local Importance (Higher Value) level
- Lough Corrib SAC/ SPA: Imperceptible temporary effect at International level.
- Watercourses:
    - Water quality - construction phase: Imperceptible temporary effects at the local level (Higher Value).
    - Water quality - operational phase: Imperceptible Long term effects at the local level (Higher Value)..
- Freshwater Pearl Mussel: Short term imperceptible effects at international level.
- Bats: Long-term not significant effects at International Importance level
- Otter: Imperceptible Temporary effects at International Importance level
- Badger and Other Mammals: Temporary imperceptible effects at National Importance Level
- Other Fauna: potential impacts to other fauna are considered under other KERs including Treeline, Hedgerow ,Woodland and Watercourses.
- Invasive Alien Species: No potential effect

8. Potential In-combination Effects

8.1 Requirement for Assessment

The requirement for AA arising out of Article 6(3) of the Habitats Directive covers plans and projects that, "*either individually or in combination with other plans or projects*", are likely to have a significant effect on one or more European sites. This means that AA is required for any plan or project that, in combination with other plans or projects, would have a significant effect on one or more European sites, irrespective of the presence or absence of such effects from that plan or project on its own. Therefore, regardless of the significance of the effects of the plan or project individually, the potential for significant effects in combination with other plans and projects must be considered in all cases.

8.2 Approach and Methodology

The objective of this requirement is to capture significant effects potentially arising from the cumulation or other interaction of non-significant effects from multiple plans and projects. Consequently, the assessment of potential in-combination effects is not a pair-wise assessment, rather, it considers the totality of the effects arising from all plans and projects affecting the Natura 2000 site(s) in question. In identifying the plans and projects to be included in this assessment, it is important to define an appropriate geographical scope and timescale over which potential in-combination effects are to be considered and the sources of information to be consulted, as described below. It is also important to consider the nature of the interactions between effects, which may be additive, antagonistic, synergistic, or complex.

8.2.1 Geographical Scope

In defining the geographical scope for identifying potential in-combination effects, it is important to remember that effects are evaluated in view of the conservation objectives of the Natura 2000 site(s) concerned. As such, two or more effects relating to the same conservation objective for a given Natura 2000 site would combine even if their geographical extents did not overlap. For example, the loss of a small area of an Annex I habitat type listed as a qualifying interest of a Natura 2000 site would combine with the loss of an entirely unconnected area of the same habitat type from a remote part of the same site to produce an in-combination effect, the significance of which would need to be evaluated in view of the relevant conservation objective. On that basis, the scope of the assessment of in-combination effects extends to all plans and projects affecting the same conservation objectives as the plan or project under consideration, irrespective of whether those effects are significant or not.

8.2.2 Timescale

As stated, the construction stage of the proposed development is estimated to take 9 months to complete. As explained in the preceding sections, impacts potentially arising from the proposed works include direct impacts on the SAC, disturbance to habitats and species, impacts on water quality, impacts from vibration and noise and impacts from lighting. Any non-significant effects arising from disturbance to habitats or species, or water quality impacts, will be brief or temporary, i.e., there will be full recovery of any effects within one year.

8.2.3 Sources of Information

The following sources of information were consulted to gather information on other plans and projects: -

- Local authority development plans and their AA documents.

- Local authority online planning enquiries (Galway County Council).
- EIA Portal (DHLGH, 2024).
- Floodinfo.ie (OPW, 2024).

The threats, pressures, and activities with negative impacts on Lough Corrib SAC are listed in Table 5-1, along with the relative importance of each threat, pressure, or activity and whether it occurs inside or outside the site concerned. This information was used to identify plans and projects which, by their nature, are likely to give rise to potential impacts on the sites concerned.

8.3 Assessment

Plans

The Galway County Development Plan 2022-2028 sets out the vision, core strategy, aims and policy objectives for the proper planning and sustainable development of County Galway. The plan contains a large number of policy objectives relating to biodiversity. The plan was subject to AA, including the preparation of a Natura Impact Report (CAAS, 2022), which assessed, at a strategic level, the implications of the plan for European sites, including Lough Corrib SAC. Where potential adverse effects were identified, the plan was amended to mitigate those effects. Following these amendments, the adopted plan now contains specific text in relation to the protection of these and other European sites, as well as river corridors, floodplains, and wetlands. These includes restrictions on development within riparian corridors, requirement for assessment under Article 6 of the Habitats Directive for development likely to have a significant effect on European sites, use of sustainable urban drainage systems (SUDS), and commitments to develop green infrastructure to support European sites and biodiversity generally, in line with Article 10 of the Habitats Directive and Article 3 of the Birds Directive.

The policy objectives in the Galway County Development Plan contribute to mitigating the negative effects of development on Lough Corrib SAC and other European sites and provide for the enhanced resilience of these sites through the development of green infrastructure/ecological networks. Therefore, there will be no adverse effects from the proposed works in combination with this plan, which will itself mitigate any in-combination effects arising from other projects.

Projects

Near the site of the proposed project, projects that have been granted planning permission include to improve recreational public and private open space, retention of existing developments, typically extensions to domestic dwellings, or the construction of new domestic dwellings or extensions to such dwellings. Regarding potential impacts to water quality, these projects will have to comply with the EPA's *Code of Practice for Wastewater Treatment Systems for Single Houses* (EPA, 2009; 2018). These developments have conditions attached to their planning permission relating to sustainable development, such as siting of septic tanks, foul surface water and effluent drainage facilities, and clean surface water run-off drainage facilities. Therefore, it is not anticipated that the developments that have been granted permission will act in-combination with the proposed project. Five terraced houses are currently being constructed *ca.* 30m northwest of the northern abutment. The structural aspects of these houses is substantially complete and it is considered that there will be no overlap with the construction phase of the proposed development given the timelines proposed in this report.

A search of the EIA portal was carried out to identify any significant projects located in the vicinity of the proposed development. The closest development on the EIA portal is Galway Wind Park, which is approximately 5km at its closest point south west of the proposed development. The construction stage of this development has been completed and has been in operation since 2017. Galway Wind Park is not within the Owenriff Sub catchment and so

there is no potential for in-combination impacts on the Owenriff River with the proposed development. In 2023 an application for Tullaghmore Windfarm was lodged which is approximately 10km north west of the proposed development. Tullaghmore Windfarm was refused planning permission. There were no further projects identified on EIA portal that could cause in-combination effects with the proposed development.

Some of these projects are too small in scale or located too remotely from Lough Corrib SAC to have any impacts whatsoever on this site and, therefore, have no potential to give rise to any in-combination effects. Taken together, given the nature, scale, and geographical spread of these projects, they are not likely to give rise to significant effects in combination with the proposed works.

Other activities

Farmers and landowners undertake general agricultural operations in areas adjacent to the proposed works sites, which could potentially give rise to effects on the same qualifying interests the proposed works. Most such operations are periodic, not continuous, and qualify as 'activities requiring consent' that require prior consultation with the NPWS, e.g., reclamation, infilling or land drainage within 30m of a river, removal of trees or any aquatic vegetation within 30m of a river, and harvesting or burning of reed or willow (NPWS, 2025c). Such operations must also comply with the European Communities (Environmental Impact Assessment) (Agriculture) Regulations, 2011 (as amended) in relation to: -

- Restructuring of rural land holdings,
- Commencing use of uncultivated land or semi-natural areas for intensive.
- Land drainage works on lands used for agriculture.

Stage 2 AA is required under Section 9 of those Regulations if the activity is likely to have a significant effect on a Natura 2000 site. The drainage or reclamation of wetlands is controlled under the Planning and Development (Amendment) (No. 2) Regulations, 2011 and the European Communities (Amendment to Planning and Development) Regulations, 2011. Therefore, any in-combination effects from agricultural operations and the proposed works are not likely to be significant.

8.4 Conclusion

As detailed in the preceding sections, it can be concluded that, based on the small scale of the proposed works and the brief duration of both the works themselves and any impacts arising from them, they will not cause significant ecological impacts in combination with other plans or projects.

9. Biodiversity Net Gain

The Galway County Development Plan 2022-2028[1] Galway County Council shall work with the appropriate stakeholders and agencies in increasing awareness, participation, enjoyment, knowledge and understanding of our shared heritage in order to lead to its proper conservation, management and protection and safeguarding it for future generations. This will accord with the following strategic aims:

- Conserve, manage, protect and enhance the special character of the County as defined by its natural heritage, biodiversity and green infrastructure;
- To ensure compliance with the requirements of relevant International, European Directives and National Legislation in relation to Natural Heritage, Biodiversity, Green/Blue Infrastructure and Climate Change;
- Ensure climate change considerations are taken into account in the Natural Heritage, Biodiversity and Green/Blue Infrastructure;
- Continue to implement actions of the National Heritage Plan and the National Biodiversity Plan and the current *Galway County Heritage and Biodiversity Plan 2017-2022* in partnership with all relevant stakeholders and any successor to these documents;
- To promote the creation of an integrated and coherent green infrastructure network throughout County Galway in order to enhance connectivity, social inclusion, sense of place and the creation of wildlife corridors.

The following objectives have been set out in the Galway County Development Plan 2022-2028 in relation to Natural Heritage and Biodiversity:

- **NHB 1: Natural Heritage and Biodiversity of Designated Sites, Habitats and Species:**
    - Protect and where possible enhance the natural heritage sites designated under EU Legislation and National Legislation (Habitats Directive, Birds Directive, European Communities (Birds and Natural Habitats) Regulations 2011 and Wildlife Acts) and extend to any additions or alterations to sites that may occur during the lifetime of this plan.
    - Protect and, where possible, enhance the plant and animal species and their habitats that have been identified under European legislation (Habitats and Birds Directive) and protected under national Legislation (European Communities (Birds and Natural Habitats) Regulations 2011 (SI 477 of 2011), Wildlife Acts 1976-2010 and the Flora Protection Order (SI 94 of 1999).
    - Support the protection, conservation and enhancement of natural heritage and biodiversity, including the protection of the integrity of European sites, that form part of the Natura 2000 network, the protection of Natural Heritage Areas, proposed Natural Heritage Areas, Ramsar Sites, Nature Reserves, Wild Fowl Sanctuaries (and other designated sites including any future designations) and the promotion of the development of a green/ ecological network.
- **NHB 2: European Sites and Appropriate Assessment**

[1] https://consult.galway.ie/en/consultation/adopted-galway-county-development-plan-2022-2028

- To implement Article 6 of the Habitats Directive and to ensure that Appropriate Assessment is carried out in relation to works, plans and projects likely to impact on European sites (SACs and SPAs), whether directly or indirectly or in combination with any other plan(s) or project(s). All assessments must be in compliance with the European Communities (Birds and Natural Habitats) Regulations 2011. All such projects and plans will also be required to comply with statutory Environmental Impact Assessment requirements where relevant.

- **NHB 3: Protection of European Sites**

  - No plans, programmes, or projects etc. giving rise to significant cumulative, direct, indirect or secondary impacts on European sites arising from their size or scale, land take, proximity, resource requirements, emissions (disposal to land, water or air), transportation requirements, duration of construction, operation, decommissioning or from any other effects shall be permitted on the basis of this Plan (either individually or in combination with other plans, programmes, etc. or projects.*

- **NHB 4: Ecological Appraisal of Biodiversity**

  - Ensure, where appropriate, the protection and conservation of areas, sites, species and ecological/networks of biodiversity value outside designated sites. Where appropriate require an ecological appraisal, for development not directly connected with or necessary to the management of European Sites, or a proposed European Site and which are likely to have significant effects on that site either individually or cumulatively.

- **NHB 5: Ecological Connectivity and Corridors**

  - Support the protection and enhancement of biodiversity and ecological connectivity in non-designated sites, including woodlands, trees, hedgerows, semi-natural grasslands, rivers, streams, natural springs, wetlands, stonewalls, geological and geo-morphological systems, other landscape features and associated wildlife areas where these form part of the ecological network and/or may be considered as ecological corridors in the context of Article 10 of the Habitats Directive.

- **NHB 6: Implementation of Plans and Strategies**

  - Support the implementation of any relevant recommendations contained in the National Heritage Plan 2030, the National Biodiversity Plan, the All Ireland Pollinator Plan and the National Peatlands Strategy and any such plans and strategies during the lifetime of this plan.

- **NHB 7: Mitigation Measures**

  - Require mitigating measures in certain cases where it is evident that biodiversity is likely to be affected. These measures may, in association with other specified requirements, include establishment of wildlife areas/corridors/parks, hedgerow, tree planting, wildflower meadows/marshes and other areas. With regard to residential development, in certain cases, these measures may be carried out in conjunction with the provision of open space and/or play areas.

- **NHB 8: Increased Awareness of the County's Biodiversity and Natural Heritage**

  - Facilitate increased awareness of the County's biodiversity and natural heritage through the provision of information to landowners and the community generally, in cooperation with statutory and other partners.

- **NHB 9: Protection of Bats and Bats Habitats**

- Seek to protect bats and their roosts, their feeding areas, flight paths and commuting routes. Ensure that development proposals in areas which are potentially important for bats, including areas of woodland, linear features such as hedgerows, stonewalls, watercourses and associated riparian vegetation which may provide migratory/foraging uses shall be subject to suitable assessment for potential impacts on bats. This will include an assessment of the cumulative loss of habitat or the impact on bat populations and activity in the area and may include a specific bat survey. Assessments shall be carried out by a suitably qualified professional and where development is likely to result in significant adverse effects on bat populations or activity in the area, development will be prohibited or require mitigation and/or compensatory measures, as appropriate. The impact of lighting on bats and their roosts and the lighting up of objects of cultural heritage must be adequately assessed in relation to new developments and the upgrading of existing lighting systems.

- **NHB 10: NPWS & Integrated Management Plans**

  - Article 6(1) of the Habitats Directive requires that Member States establish the necessary conservation measures for European sites involving, if need be, appropriate management plans specifically designed for the sites or integrated into other development plans. The NPWS's current priority is to identify site specific conservation objectives; management plans may be considered after this is done. Where Integrated Management Plans are being prepared by the NPWS for European sites (or parts thereof), the NPWS shall be engaged with in order to ensure that plans are fully integrated with the Plan and other plans and programmes, with the intention that such plans are practical, achievable and sustainable and have regard to all relevant ecological, cultural, social and economic considerations, including those of local communities.

- **NHB 11: Increases in Visitor Numbers to Semi-Natural Areas, Visitor and Habitat Management**

  - Seek to manage any increase in visitor numbers in order to avoid significant effects including loss of habitat and disturbance, including ensuring that any new projects, such as greenways, are a suitable distance from ecological sensitivities, such as riparian zones.

  - Where relevant, the Planning Authority and those receiving permission for development under the Plan shall seek to manage any increase in visitor numbers and/or any change in visitor behaviour in order to avoid significant effects, including loss of habitat and disturbance. Management measures may include ensuring that new projects and activities are a suitable distance from ecological sensitivities. Visitor/Habitat Management Plans will be required for proposed projects as relevant and appropriate.

10. Conclusion

This EcIA has examined the biodiversity and baseline ecological conditions of the receiving environment within the site of the proposed footbridge in Oughterard, Co. Galway and its Zone of Influence, assessed the likely effects of the proposed development, individually and in combination with other plans and projects, on the sites, habitats, species and other ecological features of Local Importance (Higher Value) or above which were identified within the footprint of the proposed development and its Zone of Influence. This report has also proposed suitable measures to avoid or reduce the likely effects on those features and evaluated any residual effects. These measures, as well as further ecological enhancements of the proposed development, were developed in line with County Galway's policy in relation to Biodiversity Net Gain.

On the basis of that assessment, it is concluded that the proposed footbridge in Oughterard, Co. Galway, providing that it is implemented in accordance with the measures proposed in this EcIA, will not give rise to any significant negative effects on the biodiversity or ecology of the receiving environment and will be aligned with the principle of Biodiversity Net Gain.

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