

Ecological Impact Assessment

Kinsale Active Travel Scheme, Co. Cork.

November 2024

Prepared for:



Comhairle Contae Chorcaí
Cork County Council



O'DONNELL 
ENVIRONMENTAL

Summary

Project: Kinsale Active Travel Scheme, Co. Cork.

Coordinates: W 63086 49640 (IG); 563040 549682 (ITM).

Report by: Tom O'Donnell BSc (Hons) MSc CEnv MCIEEM.

Company Profile: O'Donnell Environmental is an independent environmental consultancy established by Tom O'Donnell in 2019. O'Donnell Environmental is a Chartered Institute of Ecology and Environmental Management (CIEEM) 'Registered Practice' which demonstrates our commitment to high professional standards, accountability and the delivery of the best outcomes for biodiversity and our Clients.

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1 Introduction

O'Donnell Environmental Ltd. was commissioned by Cork County Council to undertake an Ecological Impact Assessment (EclA) in relation to the proposed Kinsale Active Travel Scheme, Co. Cork. Additionally, an Appropriate Assessment (AA) Screening Report and Environmental Impact Assessment (EIA) Screening Report were commissioned and are reported elsewhere.

The proposed works extend primarily along buildings and artificial surfaces habitat consisting mostly of roadways. The southern extent of works is bordered by Commoge Marsh to the west, identified as an area of local biodiversity value, alongside James Fort pNHA (1060) located to the east of Kinsale Town. The low-order stream Knocknabohilly (IE_SW_20K190980) travels under the Bandon Road (L3234) at the north of the development, eventually flowing into the Lower Bandon Estuary that borders the south of the development. Treelines and hedgerows are present throughout the scheme alongside lone-standing mature trees. Adjoining land uses include residential, educational and amenity land uses. A number of domestic residences are present along the length of the scheme.

This report has been prepared with cognisance of the following best practice guidance:

- Guidelines for Ecological Impact Assessment in the UK and Ireland - Terrestrial, Freshwater, Coastal and Marine' (CIEEM, 2018).
- Guidelines on the Information to be contained in Environmental Impact Assessment Report (EIAR) (EPA, 2022).

This report is informed by the following documents which are submitted as part of the current planning application including:

- Appropriate Assessment Screening Report (O'Donnell Environmental, 2024).
- Environmental Impact Assessment Screening Report (O'Donnell Environmental, 2024).
- Kinsale Active Travel Scheme Part VIII Planning Report (DBFL, 2024a).
- General Arrangement Layouts (Sheets 1-15) (DBFL, 2024b).
- Preliminary Construction and Environmental Management Plan (DBFL, 2024c).
- Landscape Plan (Sheets 1-9) (Áit, 2024).
- Tree Survey and Arboriculture Report (Holly Arboriculture, 2024a).
- Tree Removal Plan (Holly Arboriculture, 2024b).
- Tree Protection Plan (Sheets 1-5) (Holly Arboriculture, 2024c).

The following relevant documents were considered in the overall ecological design and assessment of the current project.

- Cork County Development Plan 2022-2028.
- Commoge Marsh Nature Reserve Project – Management Plan (RPS, 2005).
- Planning for Watercourses in the Urban Environment (IFI, 2016).
- Greening and Nature-based SuDS for Active Travel Schemes (NTA, 2023).
- Pollinator-friendly Management of: Transport Corridors (AIPP, 2019).
- Monkstown Active Travel Link and Public Realm Enhancement – Appropriate Assessment Screening Report (ARUP, 2023).
- The SuDS Manual (CIRIA, 2015).

The objectives of the Cork County Development Plan (2022-2028) were considered when assessing the project. Relevant conservation measures and actions from the CDP include:

- GI 14-1(f): Achieve a net gain in green infrastructure through the protection and enhancement of existing assets and through the provision of new green infrastructure.
- BE 15-2: Protect designated sites, protected habitats and species, and areas of local biodiversity value alongside enhancement where possible.
- BE 15-3(a): Ensure that biodiversity issues are considered at the earliest possible stages of plan making.
- BE 15-5(a): Protect biodiversity and support the principle of biodiversity net gain on land and property owned and managed by Cork County Council.
- BE 15-7: Implement best practice to minimise the risk of spread of invasive alien species, on Council owned or managed land, and require the development and implementation of Invasive Alien Species Management Plans for new developments where required.
- BE15-8: Preserve and enhance the general level of tree cover in both town and country. Ensure that development proposals do not compromise important trees and include an appropriate level of new tree planting.

The site is not designated as any category of Strategic Planning Areas under the Cork County Development Plan. The proposed development is contained almost entirely within 'Existing Residential/Mixed Residential and Other Uses' land-use zone but is bordered in portions by areas of 'Green Infrastructure' land-use, notably Commoge Marsh Wetland. Additionally, the entirety of the proposed development is contained within 'High Value Landscape'.

1.1 DESCRIPTION OF THE PROPOSAL

The proposed development comprises the provision of linear pedestrian and cycle facilities along Abbey View Road (L3235), Bandon Road (L3234), local road L7249, Roseabbey Park, and Abbey Court located at the western border of Kinsale Town. A site location map is presented in **Figure 1.1**. The proposed scheme involves the following elements (DBFL, 2024a):

Section 1 - Abbey View Road / Compass Quay (spans from the junction with the R606 and Abbey View Road,) as far northward as the mini-roundabout):

- Junction tightening at R606 / Abbey View Road junction to reduce turning speeds. Widening of existing footpath on Abbey View Road.
- Provision of segregated cycle lanes commencing just north of the bridge, with space re-allocated from the carriageway and verges to provide dedicated, safe cycle tracks between Cammogue Marsh, the residential developments along Abbey View Road and the two schools.
- Signalised toucan crossing just north of the bridge on Abbey View Road.
- Improvements to local junctions in line with DMURS, including at-grade pedestrian priority crossings over entrances, and junction tightening.
- Realignment of existing informal crossing by Kinsale Community College just north of the junction with the Sáile Sports and Community Centre.
- Raised table junction at Roseabbey Park / Abbey View Road to slow down vehicular traffic and improve pedestrian crossings.
- Incorporate grasscrete, tree planting, rain gardens and landscaping as per accompanying Drawings.

Section 2 - Abbeylands (continues northward from the mini-roundabout to the non-signalised junction with Bandon Road):

- Retrofit the existing mini-roundabout to a compact design in line with DMURS and the Cycle Design Manual to improve safety, accessibility and comfort for all.
- Introduction of a 30kph speed limit zone between the new crossing at Kinsale Community School and the junction with Abbey View Road / Bandon, extending to Roseabbey Park and Abbey View residential streets.
- Development of a Quietway route running in parallel via quiet residential streets (Abbey Court and Abbey View) to boost cyclist and pedestrian permeability between Abbey View Road and Bandon Road. There is an existing path that will be formalised including widening the path, wayfinding signage, and removing kissing gate and fencing between Abbey Court and Abbey View. Supplementary lighting may be required to improve the safety and accessibility in terms of passive surveillance, lighting, and general visibility.
- Access control to the Quietway to ensure safety for all road users.
- Incorporate landscaping as per accompanying Drawings.

Section 3 - S. Bandon Road (continues westward along Bandon Road up to the junction with Cappagh):

- Provision of a shared pedestrian and cycle path on the northern side of the road.
- Provision of a new footpath between the junction with Abbey View Road and entrance to the Quietway. Continuing north from the Quietway, a segregated cycle lane, flush with the carriageway, is proposed.
- Improvements to all local junctions in line with DMURS and the Cycle Design Manual including local junction tightening and pedestrian priority crossings.
- Development of a complementary Quietway route running in parallel via quiet residential streets (Abbey Court and Abbey View) as detailed in Section 2 above, including a toucan crossing at the entrance on Bandon Road.
- Incorporate landscaping as per accompanying Drawings.

Section 4 - N. Bandon Road (continues westward along Bandon Road as far as the entrance to the proposed new Kinsale GAA Grounds):

- Continuation of the shared pedestrian and cycle path northward, varying between 3m-4m with a 0.5m grass verge buffer.
- Raised table toucan crossing at Bandon Road / Cappagh junction (to Gaelscoil).
- Improvements to local junctions in line with DMURS and Cycle Design Manual, including at-grade pedestrian priority crossings over entrances to development, and reduced corner radii.
- Gateway Treatment from the existing GAA Grounds to calm vehicular traffic and indicate to motorists they are approaching the edge of Kinsale Town, including an extension of the 50kph limit.
- Incorporate landscaping as per accompanying Drawings.

Section 5 - Cappagh

Provision of a shared pedestrian and cycle path on the southern side of the road, between the junction with Bandon Road, as far as the Gaelscoil.

Section 6 - Roseabbey Park

- Provision of a raised table junction at Roseabbey Park / Abbey View Road to slow down vehicular traffic and improve pedestrian crossings.

- Reallocation of space for a shared pedestrian and cycle path on the western end between junction with Abbey View Road and entrance to Scoil Naomh Eltin.
- Extension of footpath and additional pedestrian crossing at eastern end of Roseabbey Park to improve pedestrian comfort and safety.
- Additional public realm improvements in line with the Safe Routes to School design guidance, such as rain gardens.

Surface water runoff within the bounds of public roadways currently is collected by a series of roadside drains associated with the municipal drainage network. This runoff feeds into the stormwater network which flows south along the L3235 via a series of gravity and private pressurised mains before discharging into the Lower Bandon Estuary (see **Appendix C**). The remaining surface water outside the bounds of this network discharges largely to ground. Portions of surface water likely flows overland into the Knocknabohilly Stream at the north, and Commoge Marsh and Lower Bandon Estuary to the south.

The proposed scheme typically involves works in close proximity to existing roadways, which are already lit. Additional lighting is proposed in Section 2 only.

A temporary construction compound be located adjacent to the R606 near the Kinsale Equestrian Centre (see DBFL, 2024c). The compound is currently occupied by agricultural grassland. Following temporary occupation for storage, welfare facilities etc., the compound will be returned to agriculture. O'Donnell Environmental contributed to the de-selection of other compound options, to avoid ecological conflicts (e.g. proximity to sensitive species or habitats, proximity to knotweed infested areas).

O'Donnell Environmental engaged with the project team during the design phase to avoid loss of or disturbance to ecologically significant features in so far as was possible. As outlined in the Arboriculture Report (Holly Arboriculture, 2024a) 80 trees are proposed for removal to facilitate the current scheme. The Bristol Tree Replacement Standard (updated) was used to derive an appropriate level of replanting to ensure that the scheme achieves 10% 'biodiversity nett gain'. The details of the proposed tree planting are outlined in the Landscape Plan (Ait, 2024) which includes for:

- 64 individual trees (1 semi-mature, 40 heavy standard, 19 select standard, 4 small).
- 770m² woodland planting (200 select standard trees).
- 378m² pollinator friendly mix.
- 148m² shade-tolerant pollinator friendly mix.
- 61m² rain garden.
- 803m² grass verge with bulbs.
- 229m² low sward meadow.
- 41m² evergreen hedge.
- 66m² native hedgerow.

1.2 STATEMENT OF AUTHORITY

O'Donnell Environmental Ltd. is an independent environmental consultancy established by Tom O'Donnell BSc (Hons) MSc CEnv MCIEEM in 2019. Since then, O'Donnell Environmental has established itself as a provider of quality, Client-focused ecological and environmental services to public and private sector Clients nationwide. O'Donnell Environmental is a Chartered Institute of Ecology and Environmental Management (CIEEM) 'Registered Practice' which demonstrates our commitment to high professional standards and accountability.

Tom O'Donnell is a Chartered Environmentalist and a full member of the Chartered Institute of Ecology and Environmental Management. He was awarded a BSc in Environmental and Earth System Science [Applied Ecology] in 2007 and an MSc in Ecological Assessment in 2009, both from UCC. Tom has 15 years professional experience in the environmental industry, including working on projects such as windfarms, overhead power lines, roads, cycleways and residential developments. Tom is licensed by NPWS for roost disturbance and to capture bats.

Colm Breslin BSc (Hons) is a Qualifying member of the Chartered Institute of Ecology and Environmental Management. He was awarded a BSc in Biological, Earth and Environmental Sciences [Ecology and Environmental Biology] in 2023 from UCC. Colm has experience in habitat mapping, bat activity surveys and preliminary roost assessments for a variety of windfarm and residential developments. Colm is licenced by NPWS for roost disturbance (Ref: DER/BAT 2024-09) and to capture bats (C03/2024).

Cian Ó Ceallaigh (BSc (Hons), MSc) is an Associate member of the Chartered Institute of Ecology and Environmental Management (ACIEEM) who has extensive botanical and habitat knowledge (FISC Level 4, 2018) and has worked as a professional ecologist in Ireland and Britain since 2017. Cian primarily works in monitoring and surveying habitats (Article 17 Habitats Directive monitoring & the Countryside Survey) but is experienced in undertaking Appropriate Assessment (AA) screening reports and Natura Impact Statements (NIS's) Preliminary Ecological Appraisals (PEAs), Ecological Site Management Plans (ESMP's) and other species-specific surveys such as birds and bats as well as experience in Ecological Clerk of Work (ECoW) supervision. Cian has operated as a freelance ecologist under the name Ó Ceallaigh Ecology in Britain and Ireland since 2020.

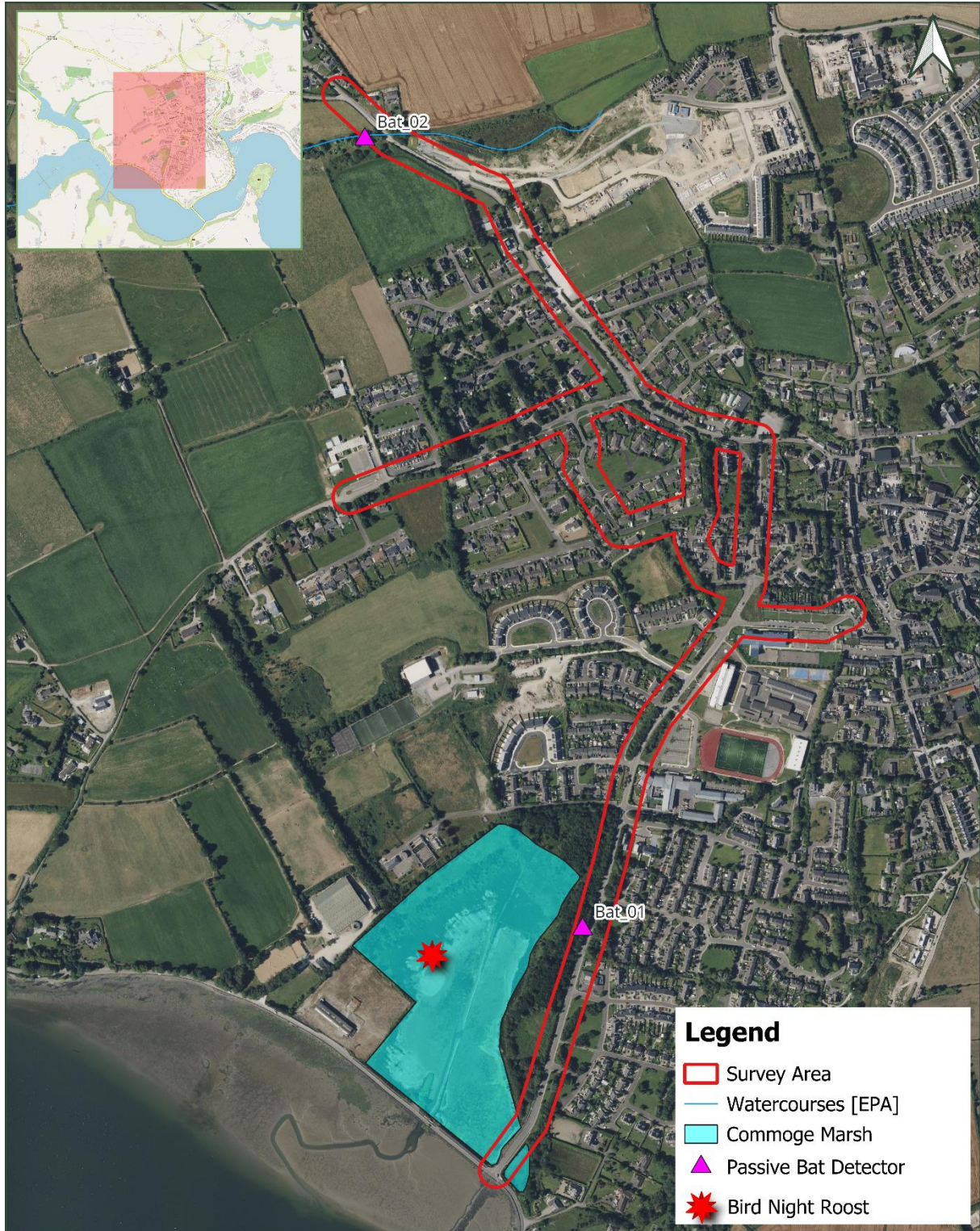


Figure 1.1 - Study Site Location

Project:
Kinsale Active Travel

0 100 200 m

Prepared for:
Cork County Council

Colm Breslin BSc (Hons)
D: 16/10/2024

2 Methodology

An ecological assessment was prepared for the proposed development following a thorough desktop review of available ecological information and field surveys carried out during early November 2023.

The aims of this EclA are to:

- Establish the ecological baseline.
- Determine the ecological value of the relevant ecological features.
- Assess the predicted impact of the proposed development on relevant ecological features.
- Identify avoidance and mitigation measures where available.
- Assess any residual impacts of the development.

The methodology employed in the carrying out of this ecological assessment is outlined below.

2.1 DESKTOP REVIEW

A detailed desktop review of relevant data available for the study area was undertaken. National Parks and Wildlife Service (NPWS)¹ and National Biodiversity Data Centre (NBDC)² online databases were consulted on 6th July 2023 to identify any relevant rare or protected species records located within the relevant national grid squares encompassing and surrounding the site. The Environmental Protection Agency (EPA)³ website was reviewed for relevant hydrological or environmental information.

As part of an initial desktop review, the model of Bat Landscapes, available on the NBDC website was consulted. This model is based on the relative importance of landscape and habitat associations for bat species in Ireland and the index ranges from 0 to 100, where 100 is the most suitable for bats (Lundy et al. 2011). This was complemented by an appraisal of potential foraging and commuting habitat carried out by Tom O'Donnell and Colm Breslin on 23rd October 2023. Additionally, O'Donnell Environmental requested a data search of Bat Conservation Ireland's database for any known bat roosting locations within 10km of the proposed development.

2.1.1 Designated Conservation Sites

Designated nature conservation sites within the wider hinterland of the proposed redevelopment were identified through a desktop review. Special Areas of Conservation (SACs) and Special Protection Areas (SPAs) form part of a European Conservation network known as Natura 2000 sites. SACs are designated under the EU Habitats Directive⁴ while SPAs designated under the EU Birds Directive⁵. Designated sites are summarised briefly in **Section 3.1.1**.

¹ <https://www.npws.ie/protected-sites>. Accessed 13/12/2024

² <https://maps.biodiversityireland.ie/Map>. Accessed 13/12/2024

³ <https://gis.epa.ie/EPAMaps/>. Accessed 13/12/2024

⁴ Council Directive 92/43/EEC on the conservation of natural habitats and wild flora and fauna, as amended by Council Directive 97/62/EC.

⁵ Directive 2009/147/EC (Birds Directive) on the conservation of wild birds (the codified version of Council Directive 79/409/EEC as amended).

2.2 BOTANICAL & HABITAT ASSESSMENT

The site was surveyed on 1st and 2nd November 2023 by Cian Ó Ceallaigh BSc (Hons) MSc of Ó Ceallaigh Ecology on behalf of O'Donnell Environmental and a Phase 1 habitat and flora assessment was carried out in accordance with the Heritage Council's guidelines (Smith et al., 2011). This involved a walkover of the proposed development site where the habitats present were classified to level three using the classification scheme presented in *A Guide to Habitats of Ireland* (Fossitt, 2000). The extent of habitats was recorded on a field map along with notes of species present and their relative abundance described using the DAFOR scale⁶. In addition, any other observations of interest (e.g. invasive plant species, etc.) were recorded using a Garmin eTrex10 GPS handheld unit.

The conservation status of habitats and botanical species was also considered. The conservation status of habitats and botanical species within Ireland and Europe is indicated by inclusion in one or more of the following: Irish Red Data Book for Vascular Plants (Wyse Jackson et al., 2016); Flora (Protection) Order 2022 and the EU Habitats Directive (92/43/EEC).

2.3 NON-VOLANT MAMMALS

Survey for non-volant mammals was undertaken by Colm Breslin BSc (Hons) and Cian Ó Ceallaigh on 1st and 2nd November 2023. Surveys involved a walkover of the site to identify any mammal species present or signs of mammal activity such as droppings, tracks, burrows etc. Observations were recorded using field notes and/or handheld GPS units. Techniques used to identify mammal activity followed recognised guidelines (e.g., Bang & Dahlstrom 2004, JNCC 2004 and Muir et al., 2013).

The conservation status of mammal species was considered. The conservation status of mammals within Ireland and Europe is indicated by inclusion in one or more of the following: Irish Wildlife Acts (1976 - 2010); Red List of Terrestrial Mammals (Marnell et al. 2009); EU Habitats Directive (92/43/EEC).

2.4 BATS

Targeted surveys were carried out to determine the presence of bats or Potential Roosting Features (PRFs) for bats where proposed works may have a direct or indirect impact.

2.4.1 Visual Roost Surveys

Daytime visual preliminary roost assessments were carried out on 1st and 2nd November 2023 to identify any bat roosting potential which may exist within the site boundary and adjoining habitats. Winter is the optimal time for 'preliminary ground roost assessments' of trees (Collins, 2023), due to greater visibility as a result of leaf fall and die back of ground level vegetation. Signs of bat use include bat droppings, feeding remains, potential bat access points identified by characteristic staining and scratches, noise made by bats etc.

In relation to trees, Collins (2023) has moved away from the subjective approach used in Collins (2016) for categorising individual Potential Roosting Features (PRFs) in trees. Collins (2023) acknowledges the subjectivity of the previous approach and the many constraints associated with surveying trees for

⁶ The DAFOR scale has been used to estimate the frequency and cover of the different plant species as follows: Dominant (D) - >75% cover, Abundant (A) – 51-75% cover, Frequent (F) – 26-50% cover, Occasional (O) – 11-25% cover, Rare (R) – 1-10% cover. The term 'Locally' (L) is also used where the frequency and distribution of a species are patchy and 'Edge' (E) is also used where a species only occurs on the edge of a habitat type.

bats. The preliminary ecological appraisal (now termed the Daytime Bat Walkover (DBW)) of trees present on site follows the categorisations scheme outlined in **Table 2.1** below.

Table 2.1. Scheme for describing the potential suitability of PRFs in trees on a proposed development site for bats.

Suitability	Description
None	Either no PRFs in the tree or highly unlikely to be any.
FAR	Further Assessment Required to establish if PRFs are present in the tree.
PRF	A tree with at least on PRF.

After 'Bat Surveys for Professional Ecologists: Good Practice Guidelines (4th Edition)', Collins (2023).

A ground-level tree assessment (GLTA) was carried out on trees with confirmed PRFs within the site boundary following Collins (2023) and classified according to a separate scheme outlined in **Table 2.2**. Trees contained within and bordering the study area were surveyed from ground level using binoculars, torches, and endoscope where suitable to identify possible roosting locations. The survey was non-destructive, and relevant PRFs were visually inspected to identify any evidence of bat roosting.

Table 2.2. Scheme for describing the potential suitability of PRFs in trees for bats.

Suitability	Description
PRF-I	PRF is only suitable for individual bats or very small number of bats either due to size or lack of suitable surrounding habitats.
PRF-M	PRF is suitable for multiple bats and may therefore be used by a maternity colony.

After 'Bat Surveys for Professional Ecologists: Good Practice Guidelines (4th Edition)', Collins (2023).

2.4.2 Passive Bat Monitoring

Two full-spectrum ultrasonic passive monitoring stations were deployed using a Song Meter Minis from Wildlife Acoustics between 23rd October and 1st November 2023 for a total of 10 survey nights. Passive monitoring provides insight into bat species diversity within the proposed development and relevant activity patterns. All registrations were manually analysed and confirmed using Kaleidoscope bioacoustics analysis software (v. 5.4.1) following Russ (2012; 2021) and Middleton et al. (2014).

2.5 OTHER TAXA ASSESSMENT

Other taxa encountered during the overall ecology field assessment were casually recorded during walkover surveys. This included brief point counts of bird species present within Commoge Marsh using a telescope.

2.6 LIMITATIONS

This study was not limited in any significant way. Full access to the site was facilitated by the Client. Passive bat monitoring took place at the end of the optimal survey period for bat activity and include some poor weather nights. However, due to the scale and extent of the proposed works this limitation is not considered significant in this instance.

2.7 EVALUATION & IMPACT ASSESSMENT

Evaluation of ecological features follows the NRA (now TII) publication 'Guidelines for Assessment of Ecological Impacts of National Roads Schemes' (2009). The following ecological evaluation scheme is utilised:

- International importance.
- National importance.
- County importance.
- Local importance (higher value).
- Local importance (lower value).

Impact assessment follows 'Guidelines on the Information to be Contained in Environmental Impact Assessment Reports' published by the EPA (2022).

3 Results

The proposed development is located within the context of peri-urban land-uses and adjoining land uses include residential, amenity, transport, education. The area in which the scheme is proposed is currently heavily disturbed from human activity and artificial lighting.

3.1 DESKTOP SURVEY

The results of the desktop survey for the proposed scheme are summarised below.

3.1.1 Sites of International Importance

European sites, Special Areas of Conservation (SACs) and Special Protection Areas (SPAs) have been designated under the EU Habitats Directive (92/43/EEC) and the EU Birds Directive (2009/147/EC) respectively. SACs and SPAs form part of a network of sites designated across Europe in order to protect biodiversity within the community, known as Natura 2000 sites and are legally protected by Irish law.

The development site is not located within any Natura 2000 site (see **Figure 3.1**). Six designated sites are located within 15km of the proposed development, five SPAs and a single SAC. The most proximal is Sovereign Island SPA (4124) located approximately 6km southeast. Old Head of Kinsale SPA (4021) is located approximately 8.65km south. Courtmacsherry Bay SPA (4219) and Courtmacsherry Estuary SAC (1230) both share similar boundaries and are located approximately 10.1km southwest. Seven Heads SPA (4191) and a section of Cork Harbour SPA (4030) are the most distant from the proposed development, located 13.98km southwest and 14.57km northeast of the site respectively.

The proposed site contains habitats and botanical communities listed under Annex I of the EU Habitats Directive, namely Estuaries [1130] and Atlantic salt meadows (*Glauco-Puccinellietalia maritima*) [1330]. Additionally, multiple bird species which are listed as special conservation interests (SCIs) of surrounding SPAs (including Courtmacsherry Bay SPA and Sovereign Islands SPA) were identified within Commoge Marsh adjoining the proposed development scheme.

The current application is accompanied by an Appropriate Assessment Screening Report which was prepared by O'Donnell Environmental (2024). This report concludes that due to the nature and scale of the proposed development and lack of a viable source-receptor pathway to any Natura 2000 sites, there is no likelihood of a significant negative impact occurring on any Natura 2000 site as a result of the proposed development either alone or in combination with other plans or projects.

3.1.2 Sites of National Importance

Nature Reserves and Refuges for Fauna are protected under the Irish Wildlife Acts (1976 - 2010). Nationally designated conservation sites include Natural Heritage Areas (NHAs) and proposed Natural Heritage Areas (pNHAs). NHAs are designated to protect habitats, flora, fauna and geological sites of national importance. While NHAs are legally protected by the Irish Wildlife Acts (1976 - 2010), pNHAs are not. Many designated sites overlap, e.g. a site can be designated as both a SAC and NHA.

The development site is not located within any NHAs or pNHAs. James Fort pNHA (1060) is the only nationally designated site within 5km of the proposed development and is located approximately 1km

east across the Bandon River. Sovereign Islands NHA (0105) shares a boundary with Sovereign Island SPA (4124) and is the only NHA located within proximity to the proposed development at 6km southeast. Other national sites are located proximal to the 5km buffer, notably Bandon Valley below Inishannon pNHA (1515), Garrettstown Marsh pNHA (1053) and Garrylucas Marsh pNHA (0087) located approximately 5.97km northwest, 5.85km southwest and 6.13km southwest of the proposed development respectively. There is no significant source-receptor pathway between the proposed site and any pNHA or NHA, such that a significant impact would likely occur as a result.

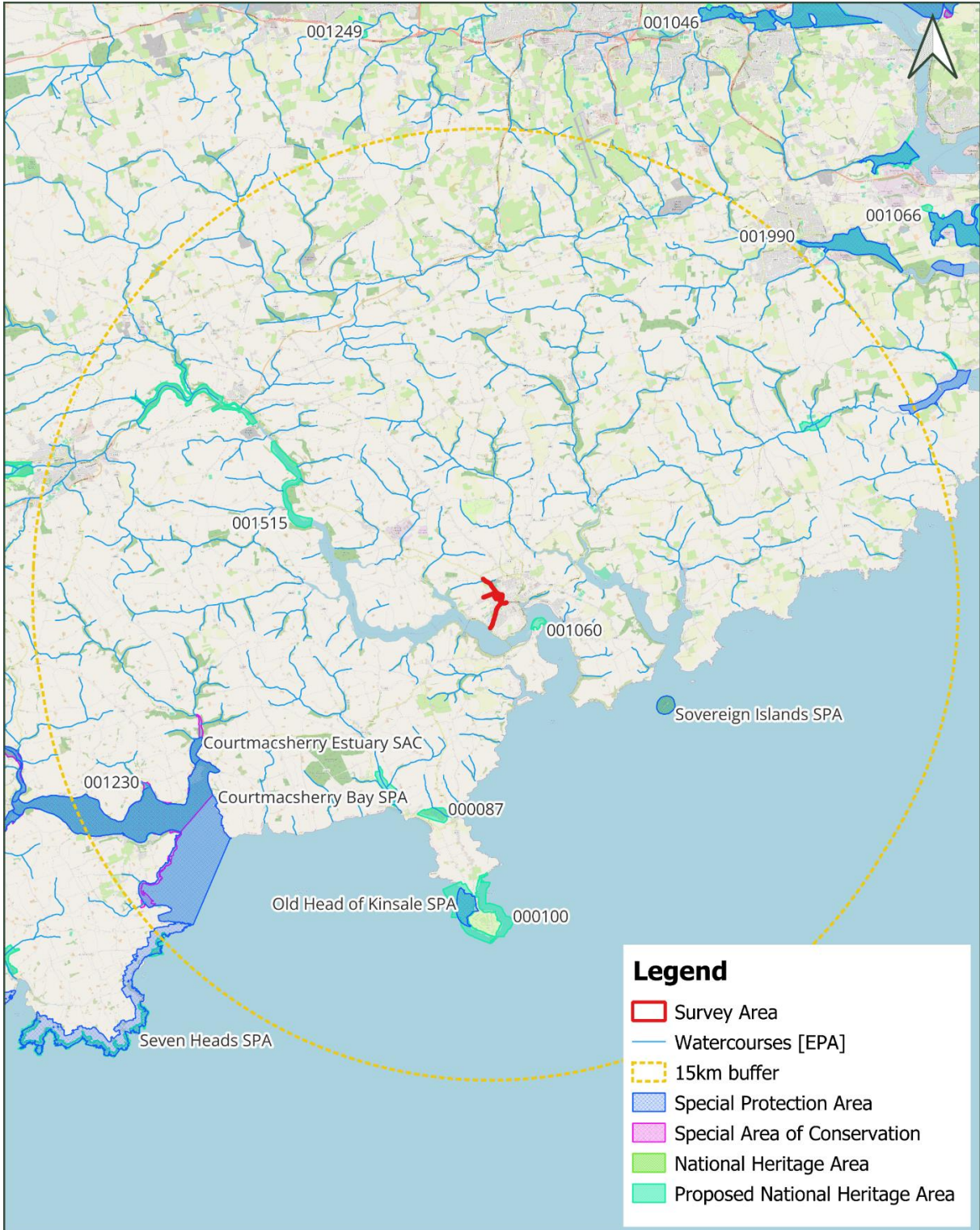


Figure 3.1 - Designated Sites

Project:
Kinsale Active Travel

0 2.5 5 km

Prepared for:

Cork County Council

Colm Breslin BSc (Hons)
D: 14/12/2023

3.1.3 Hydrological Context

The proposed site is located in the Bandon-Ilen Catchment, Catchment ID 20, sub-catchment Bandon_SC_060. The proposed development footprint is not situated within a catchment with previous records of Freshwater Pearl Mussel (*Margaritifera margaritifera*).

The EPA undertakes survey of the water quality of water systems. The proposed development contains the Knocknabohilly_010 stream (IE_SW_20K190980) at the northern-most extent of the scheme. The EPA categorise the water quality of this river system as having “Good” status (River Waterbody WFD Status 2016-2021) and is risk-assessed as ‘Review’ (River Waterbodies Risk 2021). Considering the extent and scale of the proposed development, lack of additional nearby river waterbodies categorised by the EPA and separation distances involved, no other river waterbody is considered relevant for this assessment.

The Knocknabohilly_010 stream flows westwards and discharges into the Lower Bandon Estuary (IE_SW_080_0100) transitional waterbody which borders the southern-most extent of the scheme, and eventually into the Celtic Sea. The EPA categorise the water quality of the Lower Bandon Estuary as having “Poor” status (Transitional Waterbody WFD Status 2016-2021) and is listed as ‘At risk’ (Transitional Waterbodies Risk 2021). Surface water at the north extent of the proposed development appears to drain into the Knocknabohilly_010 stream. The Knocknabohilly_010 stream provides a surface water source-receptor pathway between the northern extent of the proposed development and the Lower Bandon Estuary.

Drains forming part of the local municipal drainage system were noted along the entirety of the proposed development within the bounds of existing public roadways and private residential dwelling access roads. Surface water runoff within the bounds of public roadways currently is collected by a series of roadside drains associated with the municipal drainage network. This runoff feeds into the stormwater network which flows south along the L3235 via a series of gravity and private pressurised mains before discharging into the Lower Bandon Estuary (see **Appendix C**). The remaining surface water outside the bounds of this network discharges largely to ground, with portions adjacent to Commoge Marsh, Knocknabohilly Stream and Lower Bandon Estuary likely directly entering these receptors. A sluice gate currently connects both waterbodies at the south. As a result, there exists a viable surface water source-receptor pathway between the southern extent of the proposed development and Commoge Marsh and the Lower Bandon Estuary. There will be a slight increase in impermeable area due to the expansion of particular footpaths and cycle tracks.

The groundwater body at the site location (Bandon, IE_SW_G_086) has an overall groundwater status of ‘Good’ (Ground Waterbody WFD Status 2016-2021) and is risk-assessed as ‘Not at risk’ (Ground Waterbodies Risk 2021). Similarly, Geological Survey Ireland carry out groundwater vulnerability assessments on underlying aquifers and the proposed development footprint is predominantly within an area of ‘Medium’ permeability and ‘High’ vulnerability. The northern extent of the proposed development is underlain by an area of ‘Extreme’ groundwater vulnerability, with small, isolated portions classified as ‘Extreme’ due to the presence of rock near the surface.

Considering the scale and extent of the proposed works, and separation distances involved, there exists no significant surface water or groundwater source-receptor pathway between any nationally or internationally designated sites and the proposed development.

3.2 HABITATS & BOTANICAL

The results of the habitats and botanical desk study and field assessments are described in detail below.

3.2.1 Desk Study

Consultation with the NPWS Flora Protection Order (FPO) 2022 Map Viewer⁷ revealed the presence of the protected species Borrer's Saltmarsh-grass (*Puccinellia fasciculata*) within the western and eastern boundaries of Commoge Marsh immediately adjoining the proposed development. Additionally, Lanceolate Spleenwort (*Asplenium obovatum*) and Pennyroyal (*Mentha pulegium*) have been recorded within the 10km grid square (W64) that contains a portion of the proposed development. Excluding the above species, no legally protected plant species have been previously recorded in the NBDC⁸ or BSBI⁹ databases for the 2km grid squares (W65F; W64J) within which the proposed development is located.

No records for bryophyte species listed on the Flora Protection Order (2022) (FPO) were found on the NPWS webmapping facility for legally protected bryophytes¹⁰ within or directly adjacent to the proposed development site. The FPO bryophyte species *Scleropodium touretii* has previously been recorded on a dilapidated wall within Charles Fort approximately 2.1km east of the proposed development. The most recent records were made in 2006 is currently threatened by encroaching grass.

Records exist of three red-listed vascular plant species classified as Near Threatened in the 2 km grid squares (W65F; W64J) on the NBDC database within which the proposed development is located (Wyse Jackson et al., 2016). Additionally, three red-listed bryophyte species classified as Near Threatened have been previously recorded within the same geographical area (Wyse Jackson et al., 2016). Considering the extent of the proposed works and habitats contained therein, these species are not likely to occur within the development boundary but are likely to be present within the locality considering the quality of adjacent habitats.

3.2.1.1 Invasive Species

A total of nine alien invasive plant species (AIPS) have been previously recorded on the NBDC database within the 2km grid squares (W65F; W64J) within which the proposed development is located and have been risk-assessed by Kelly et al. (2013) and O'Flynn et al. (2014). Japanese Knotweed (*Reynoutria japonica*) is the only 'High Impact' species, with the remaining eight plant species risk-assessed as 'Medium Impact'. These species include Black Currant (*Ribes nigrum*), Butterfly-bush (*Buddleja davidii*), Himalayan Honeysuckle (*Leycesteria formosa*), Pampas-grass (*Cortaderia selloana*), Sycamore (*Acer pseudoplatanus*), Three-cornered Garlic (*Allium triquetrum*), Traveller's-joy (*Clematis vitalba*) and Virginia-creeper (*Parthenocissus quinquefolia*). A portion of the above plant species were recorded during field surveys and are detailed in **Section 3.2.2** below.

Additionally, three invasive animal species have previously been recorded within the same geographical area. These include the 'High Impact' Harlequin Ladybird (*Harmonia axyridis*) and Brown Rat (*Rattus norvegicus*), and the 'Medium Impact' Budapest Slug (*Tandonia budapestensis*).

⁷ <https://heritagedata.maps.arcgis.com/apps/webappviewer/index.html?id=a41ef4e10227499d8de17a8abe42bd1e> (accessed 02/01/2024)

⁸ <https://maps.biodiversityireland.ie/Map> (accessed 02/01/2024)

⁹ <https://database.bsbi.org/maps/> (accessed 02/01/2024)

¹⁰ https://www.npws.ie/sites/default/files/fpo/taxon/Scleropodium_touretii_03_Kinsale.pdf (accessed 02/01/2024)

3.2.2 Habitat Survey

A Phase 1 habitat and flora assessment was carried out by Cian Ó Ceallaigh (Ó Ceallaigh Ecology) on behalf of O'Donnell Environmental of the proposed development site. The habitats present were classified to level three using the classification scheme presented in *A Guide to Habitats of Ireland* (Fossitt, 2000).

The dominant habitats contained within the proposed development are largely disturbed in nature and of low ecological value, containing a variety of non-native and exotic plant species. These habitats consisted mostly of 'Buildings and Artificial Surfaces' (BL3) in the form of public roadways and residential dwellings, and 'Amenity Grassland' (GA2). Isolated pockets of 'Mixed Broadleaf Woodland' (WD1) are contained throughout alongside strips of Wet Woodland (WN4; WN6) of higher ecological value.

Annex I habitats listed under the EU Habitats Directive are present directly adjacent to the southern extent of the proposed development in the form of Atlantic salt meadow (1330), Coastal lagoons (1150) and Estuaries (1130). No botanical species protected under the Flora (Protection) Order 2022, listed in Annex II or IV of the EU Habitats Directive (92/43/EEC), or Red listed in Ireland (Wyse Jackson et al., 2016) were recorded.

A variety of Alien Invasive Plant Species (AIPS) were identified throughout the site, notably Japanese Knotweed (*Reynoutria japonica*), Butterfly-bush (*Buddleja davidii*), Winter Heliotrope (*Petasites fragrans*), Traveller's-joy (*Clematis vitalba*), and *Rhododendron ponticum* within private gardens (see **Figure 3.4** for locations). These species have been risk assessed by Kelly et al. (2013) and O'Flynn et al. (2014).

The overall ecological valuation of the habitats contained within the proposed development is considered to be of **Local Importance (Lower Value)** due to the presence of largely disturbed and semi-natural environments containing a variety of species that are considered common and widespread for similar habitats. However, it is noted there are small portions of Annex I quality habitat immediately adjacent to the study site.

The following habitats (with Fossitt codes, as outlined in **Section 2.2** above) were recorded within the proposed development site (see **Figure 3.2**):

- Buildings and artificial surfaces (BL3)
- Amenity grassland (GA2)
- Upper salt marsh (CM2) - [Annex 1330 Atlantic salt meadows]
- Lagoons and saline lakes (CW1) - [Annex 1150 Coastal lagoons]
- Tidal rivers (CW2) - [Annex 1130 Estuaries]
- Wet pedunculate oak-ash woodland (WN4)
- Wet willow-alder-ash woodland (WN6)
- Scrub (WS1)
- Improved agricultural grassland (GA1)
- Hedgerow (WL1)
- Treelines (WL2)
- Dry meadows and grassy verges (GS2)
- Flower beds and borders (BC4)
- Stone walls and other stonework (BL1)
- Recolonising bare ground (ED3)

- Depositing/lowland rivers (FW2)
- Mixed broadleaf woodland (WD1)
- Mixed broadleaf/conifer woodland (WD2)
- Conifer woodland (WD3)
- Scattered trees and parkland (WD5)
- Ornamental/non-native shrub (WS4)

An overview of the site is presented in **Plates 3.2.1** to **Plate 3.2.12** below. The habitats present within the boundary of the proposed site are described below.

3.2.2.1 Buildings and artificial surfaces (BL3)

Approximately half of the Site is made up of buildings, concrete paths and tarmac roads which fit into the BL3 habitat classification. The habitat is largely unvegetated with the exception of some small ruderal species such as annual meadow grass *Poa annua*. However, this habitat was not thoroughly surveyed due to its low ecological value. The embankment adjacent to lagoon waterbodies at the southern end of the Site also fits this habitat. It was mainly dominated by red valerian *Centranthus ruber* and had frequent 'Medium Impact' invasive butterfly bush *Buddleja davidii* and grey willow *Salix cinerea*. The 'Medium Impact' invasive Traveller's joy *Clematis vitalba* was locally abundant within sections of this habitat (within the embankment).



Plate 3.2.1 – Buildings and artificial surfaces dominating the habitats contained within the development boundary, primarily in the form of public roadways.

3.2.2.2 Amenity grassland (GA2)

Amenity grassland is present throughout the site as strips of mown grassland adjacent to roads and paths as well as lawns in and around estates and gardens. The habitat is typically dominated by perennial rye grass with other grasses such as Yorkshire fog *Holcus lanatus*, creeping bent *Agrostis stolonifera* and meadow grasses *Poa* spp., depending on level of naturalness (i.e. not being reseeded or age since being seeded). Herb component was typically species poor with herbs such as red clover *Trifolium pratense*, white clover *Trifolium repens* and dandelion *Taraxacum* spp. being frequent. Other species include occasional ragwort *Senecio jacobaea* and broadleaved dock *Rumex obtusifolia*.

3.2.2.3 Upper salt marsh (CM2) – [Annex 1330 Atlantic salt meadow]

Upper salt marsh habitat is present as narrow bands of vegetation along the waterline of Commoge Marsh, either side of the L3235 road (see **Figure 3.3**). The bands of vegetation are approximately 5m wide which occur here as a result of the salinity and tidal influence in the estuary. Three distinct communities are present within the habitat and described below.

On the eastern side of the road a band of grey club-rush *Schoenoplectrus tabernaemontani* roughly 3m wide is present. It is dominated by grey club rush and has frequent creeping bent *Agrostis stolonifera* at its upper limit. No Irish vegetation classification (IVC) community is described which matches this vegetation. On the western side of the road two more distinct vegetation types exist. At the lower end the vegetation has abundant sea club-rush *Bolboschoenus maritimus* and frequent grey club-rush. This community is likely to fit IVC community SM6A *Bolboschoenus maritimus* – *Agrostis stolonifera* saltmarsh-swamp. The band of vegetation is approximately 3m wide.

At the upper end of the salt marsh on the western side of the road the vegetation is sparser and comprises frequent salt marsh rush *Juncus gerardii* and creeping bent with occasional sea aster *Tripolium pannonicum* and rare sea-blite *Suaeda* sp. This band of vegetation is approximately 2m wide and considered to correspond with the IVC community SM6D *Agrostis stolonifera* – *Juncus gerardii* saltmarsh. Only the latter vegetation type, SM6D *Agrostis stolonifera* – *Juncus gerardii* saltmarsh, is considered to correspond within an **Annex salt marsh habitat. Namely, 1330 Atlantic salt meadows.**

This habitat is adjoining but outside of the proposed works area, and will not be directly affected by the proposed scheme.



Plate 3.2.2 – Upper salt marsh (CM2) along the eastern boundary of Commoge Marsh and western side of the L3235, of which portions correspond to the Atlantic salt meadows [1330] Annex I habitat.

3.2.2.4 Lagoons and saline lakes (CW1) – [Annex 1150 Coastal lagoons]

The two waterbodies comprising Commoge Marsh either side of the southern end of the L3235 road are considered to correspond with this habitat classification. Although they are largely separate to the tidal river south of the R606 they are clearly somewhat influenced by saline water. The substrate within the habitat appeared to be silty at time of survey. Apart from the fringing CM2 vegetation described above, the only vegetation record within the habitat was drift *Ulva* sp. (presumed to be sea lettuce *Ulva lactuca*). This habitat is likely to correspond with **Annex habitat 1150 coastal lagoons.**



Plate 3.2.3 – Lagoons and saline lakes (CW1) habitat comprising a large portion of Commoge Marsh, corresponding to the Coastal lagoons [1150] Annex I habitat.

3.2.2.5 Tidal rivers (CW2) – [Annex 1130 Estuaries]

The southern end of the river Bandon is present at the southern end of the Site just south of the R606. The river has a certain amount of salt water influence, and this was confirmed by the presence of frequent brown seaweeds *Ascophyllum nodosum*, growing up from the riverbed substrate, and *Pelvetia canaliculata* growing just below and above the water line. See photo below. This habitat corresponds with the **Annex habitat 1130 estuaries**.



Plate 3.2.4 – Tidal rivers habitat (CW2) forming the Lower Bandon Estuary, which corresponds with the estuaries [1130] Annex I habitat.

3.2.2.6 Wet pedunculate oak-ash woodland (WN4)

Tall wet woodland which periodically dries (dry at time of survey) was present in the southern half of the Site on the western side of the L3235. The canopy had a mixture of tall (ca. 10 – 15m) abundant alder and grey willow with frequent ash, occasional pedunculate oak and rare beech. The shrub layer had occasional elder and hawthorn with rare English elm. Field layer was mainly dominated by a

mixture of bramble and ivy and had occasional hart's tongue fern, nettle and rare male ferns *Dryopteris* spp. The following epiphytes were recorded growing within the habitat - *Frullania tamarisci*, *Hypnum cupressiforme*, *Cryphaea heteromalla*, *Radula complanata*, *Metzgeria furcata* and *Microlejeuna ulicina*.



Plate 3.2.5 – Wet pedunculate oak-ash woodland (WN4) along the southern extent of the proposed development.

3.2.2.7 Wet willow-alder-ash woodland (WN6)

This type of woodland occurred at two locations on Site, one at the northern end of the site adjacent to the stream and other in the southern half of the Site adjacent to WN4 habitat, where the ground was permanently wet. The canopy was dominated by alder in the southern part and grey willow adjacent to the stream. The shrub layer was sparse for this habitat with rare holly and hawthorn being recorded. The field layer included locally abundant duckweed *Lemna* sp. and locally frequent floating sweet grass *Glyceria fluitans* where standing water was present beneath the canopy. Otherwise nettle was frequent, wood sedge *Carex sylvatica*, yellow iris *Iris pseudacorus* and bramble were occasional and the herbs herb Robert and wood avens *Geum urbanum* were rare. The bryophytes *Brachythecium rutabulum* and *Thamnobryum alopecurum* were frequent to occasional in the field layer also.



Plate 3.2.6 – Wet willow-alder-ash woodland (WN6) within the southern extent of the proposed development adjacent to WN4 habitat.

3.2.2.8 Scrub (WS1)

Scrub habitat was present throughout the Site and variable. Bramble was a common component and usually abundant. Hawthorn and grey willow were typical in the habitat also as frequent or abundant species and sometimes dominant. Other species recorded for the habitat include hazel, sycamore, ash, gorse *Ulex europeaus*, alder and elder. Ornaments were also a common component (mosaic) of the habitat with cherry Laurel, ornamental cherry's *Prunus* spp., *Cotoneaster* spp., *Grisselinia littoralis* and 'Medium Impact' butterfly bush being recorded.

The 'High Impact' Japanese knotweed was identified within this habitat approximately in the middle of the proposed development within an area of regularly deposited garden waste (see **Plate 3.2.7**; **Figure 3.4**).



Plate 3.2.7 – Scrub (WS1) present throughout the site with a small stand of Japanese knotweed (red arrow) emerging from a pile of garden waste at the centre of the proposed development.

3.2.2.9 Improved agricultural grassland (GA1)

Improved agricultural grassland is present at the northern end and western end of this Site. The habitat is mainly characterised by a grassland with a short sward and is typically dominated by perennial rye grass *Lolium perenne*. Other grasses and forbs recorded within the habitat include occasional cock's foot *Dactylis glomerata* and broadleaved dock *Rumex obtusifolius* and frequent white clover *Trifolium repens*.

3.2.2.10 Hedgerows (WL1)

A number of hedgerows are present throughout the northern half of the Site. At the northern end a hawthorn – blackthorn *Prunus spinosa* mixed hedgerow is present along the road. Just south of this there is a beech dominated hedgerow around the local GAA carpark. In the middle of the site there is another old hedgerow with abundant hawthorn at its eastern end. The majority of this hedgerow has been underplanted with beech or ornamental species such as *Grisselinia littoralis*.

3.2.2.11 Treelines (WL2)

A number of treelines are present in the northern half of the Site. These were variable and included a Sitka spruce *Picea sitchensis* dominated treeline near the northern end of the Site, an ornamental birch *Betula* sp. treeline south of this and a Norway maple dominated treeline near the centre of Site. At the western end of the Site a number of sycamore dominated treelines existed. One of these is located adjacent to a the GS2 habitat field on the south side of the road and has a canopy dominated by sycamore but also has occasional pedunculate oak and ash *Fraxinus excelsior*. A relatively species-rich field layer was recorded here on the stone wall/earth bank beneath the treeline and included frequent ivy, soft shield fern *Polytrichum setiferum* and harts tongue fern *Asplenium scolopendrium*, occasional wood false-brome *Brachypodium sylvaticum*, shining cranes bill *Geranium lucidum*, herb robert *G. robertianum* and violet *Viola* sp., and rare common hogweed *Heracleum sphondylium*.

3.2.2.12 Dry meadows and grassy verges (GS2)

There are two main areas of moderately species-rich neutral grassland on site. This includes a field near the western end of the Site and another field close to the centre of the Site. A number of other smaller strips of the habitat are also present as roadside verges. The habitat is characterised by tussocky grassland which is either rarely cut or is (presumed to be) used as grazing land for livestock. Grass species within the habitat include abundant Yorkshire fog and occasional creeping bent, cock's foot *Dactylis glomerata* and false-oat grass *Arrhenatherum elatius*. The herb layer was more diverse than in the amenity grassland. Red clover, ribwort plantain *Plantago lanceolata* and common knapweed *Centaurea nigra* were frequent with occasional creeping buttercup *Ranunculus repens*, mouse-ear chickweed and cat's ear *Hypochaeris radicata* and rare broadleaved dock

The non-native invasive species montbretia *Crococsmia x crocosmiiflora* and Chinese bramble *Rubus tricolor* were recorded by the entrance to a field at the western end of the Site where GS2 habitat occurs (see **Figure 3.4**).



Plate 3.2.8 – Dry meadows and grassy verges (GS2) habitat occurring within an abandoned field with the invasive plant species Montbretia and Chinese bramble present.

3.2.2.13 Flower beds and borders (BC4)

This habitat was not surveyed in detail as it is a low value habitat with non-native exotic species. Target notes were made in this habitat if non-native invasive species were identified.

3.2.2.14 Stone walls and other stonework (BL1)

Stone walls were present throughout the Site along the roadside and residential boundaries. An old stone wall was also present within woodland habitat at the southern end of the Site.

Along the roadside hart's tongue fern *Asplenium scolopendrium* was frequent on this habitat. Other species recorded on the habitat throughout the site included ivy *Hedera helix*, trailing St John's wort *Hypericum humifusum*, navelwort *umbilicus rupestris*, black spleenwort *Asplenium adiantum-nigrum*, common polypody *Polypodium vulgare* and germander speedwell *Veronica chamaedrys*.



Plate 3.2.9 – Stone wall (BL1) present within woodland at the southern extent of the site.

3.2.2.15 Recolonising bare ground (ED3)

This habitat is present at the northern end of this site where gravel substrate was laid in the past and since become colonised in ruderal species. Species recorded in this habitat included greater abundant plantain *Plantago major*, frequent red clover *trifolium repens*, silverweed *Potentilla anserina*, pineapple weed *Matricaria discoidea*, scarlet pimpernel *Anagallis tenella*, mouse-ear chickweed *Cerastium fontanum*, and occasional black medick *Medicago lupulina*, cut-leaved cranes bill *Geranium dissectum*, common field speedwell *Veronica persica* and a species of mayweed (either scented or scentless mayweed) *Matricaria chamomilla* or *Tripleurospermum inodorum*.

The 'High Impact' invasive species Japanese knotweed *Reynoutria japonica* (Kelly et al., 2013; O'Flynn et al., 2014) was identified growing vigorously along the adjacent riverbank and L3234 road, of which the road portion has previously been treated with herbicide (see **Plate 3.2.10; Figure 3.4**). The 'Medium Impact' Winter heliotrope *Petasites fragrans* was also present adjacent to this habitat (Kelly et al., 2013; O'Flynn et al., 2014).



Plate 3.2.10 – Japanese knotweed previously treated with herbicide adjacent to the L3234 road.

3.2.2.16 Depositing/lowland rivers (FW2)

A lowland river (Knocknabohilly_010) flowing westwards goes through the Site at the northern end and is bordered by scrub habitat and wet woodland habitat. The substrate within the watercourse is very silty presumably due to the presence of intensive agriculture upstream. There was a moderate flow at time of survey. The 'High Impact' Japanese knotweed, and 'Medium Impact' Winter heliotrope and Butterfly-bush were present adjacent to this habitat beside the road and spreading into the scrub (see **Plate 3.2.10**; **Figure 3.4**).



Plate 3.2.11 – Depositing/lowland river (FW2) at the northern extent of the scheme.

3.2.2.17 Mixed broadleaf woodland (WD1)

This habitat is present in the southern half of the Site typically as highly modified/planted areas of woodland adjacent to housing estates. Native tree and shrub cover within the habitat was variable with the canopy species alder *Alnus glutinosa*, beech *Fagus sylvatica*, lime *Tilia x europaea* being common

and oak *Quercus robur* and Norway maple *Acer platanoides* as rare. Shrubs included occasional holly *Ilex aquifolium* and cherry laurel *Prunus laurocerasus* and rare spindle *Euonymus europeaus*, hazel *Corylus avellana* and hawthorn *Crataegus monogyna* as well as other unidentified ornamentals. The ground layer included abundant ivy *Hedera helix* and bramble *Rubus fruticosus* agg. and rare common figwort *Scrophularia nodosa* and broadleaved willowherb *Epilobium montanum*. The bryophyte layer was sparse but the species *Fissidens taxifolius* and *Kindbergia praelonga* were recorded for this habitat.

3.2.2.18 Mixed broadleaf/conifer woodland (WD2)

This habitat was also present in the southern end of the Site in similar situations and differed in that it had a significant conifer component within the canopy which included occasional Scots pine *Pinus sylvestris* and other conifer species. The 'Medium Impact' invasive climber Traveller's joy *Clematis vitalba* is occasional in this habitat.



Plate 3.2.12 – Dense stand of Traveller's-joy growing along the proposed development boundary.

3.2.2.19 Conifer woodland (WD3)

A belt of non-native conifers fitting this habitat classification is present in the centre of the Site. It is dominated by a species of cypress (likely Leylandii cypress *Cupressus x leylandii*). The habitat had a sparse field layer and occasional elder *Sambucus nigra* in the shrub layer.

3.2.2.20 Scattered trees and parkland (WD5)

Scattered trees are present throughout Site. Habitat was classified as WD5 in situations where trees bordered amenity grassland in a non-linear fashion, was present above scrub, or the habitat was open with a grassland sward beneath (typically amenity grassland). Tree species within this habitat varied and included Poplar species *Populus* spp., English elm *Ulmus procera*, sycamore *Acer pseudoplatanus* and leylandii cypress. The 'Medium Impact' invasive climber Traveller's joy is occasional in this habitat and was locally abundant in the scrub habitat.

3.2.2.21 Ornamental/non-native shrub (WS4)

This habitat was not surveyed in detail as it is a low value habitat dominated by non-native exotic species. Target notes were made in this habitat if non-native invasive species were identified. Species identified within the habitat included Portuguese laurel *Prunus lusitanica*, *Cotoneaster* spp., ornamental rhododendron species, leylandii cypress, *Grisselenia littoralis*, *Fuchsia* spp., hornbeam *Carpinus betulus* and red robin *Photinia* sp.

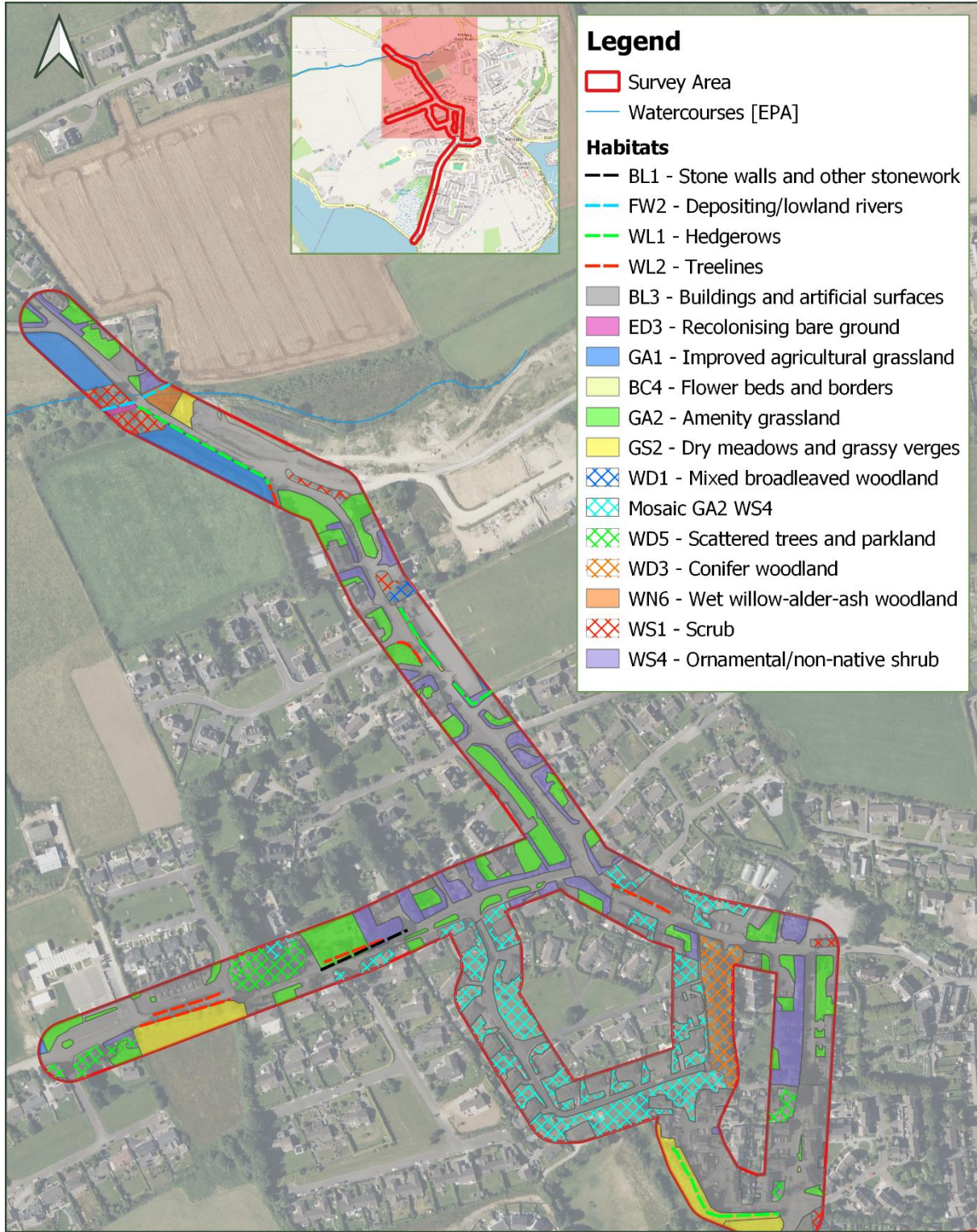


Figure 3.2 - Habitat Map 1 of 2

Project:
Kinsale Active Travel

0 75 150 m

Prepared for:

Cork County Council

Colm Breslin BSc (Hons)
D: 03/01/2023

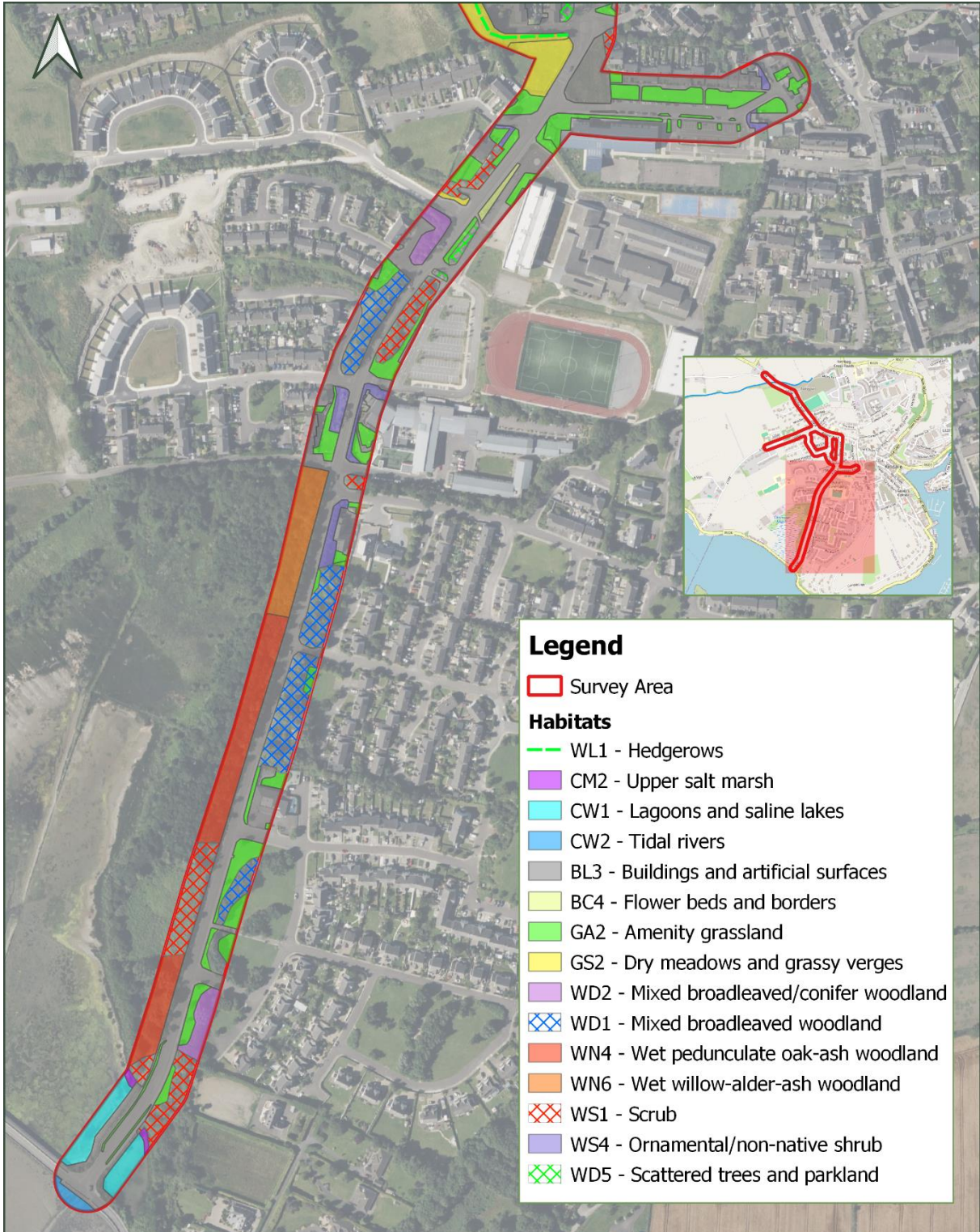


Figure 3.3 - Habitat Map 2 of 2

Project:
Kinsale Active Travel



Prepared for:

Cork County Council

Colm Breslin BSc (Hons)
D: 03/01/2023

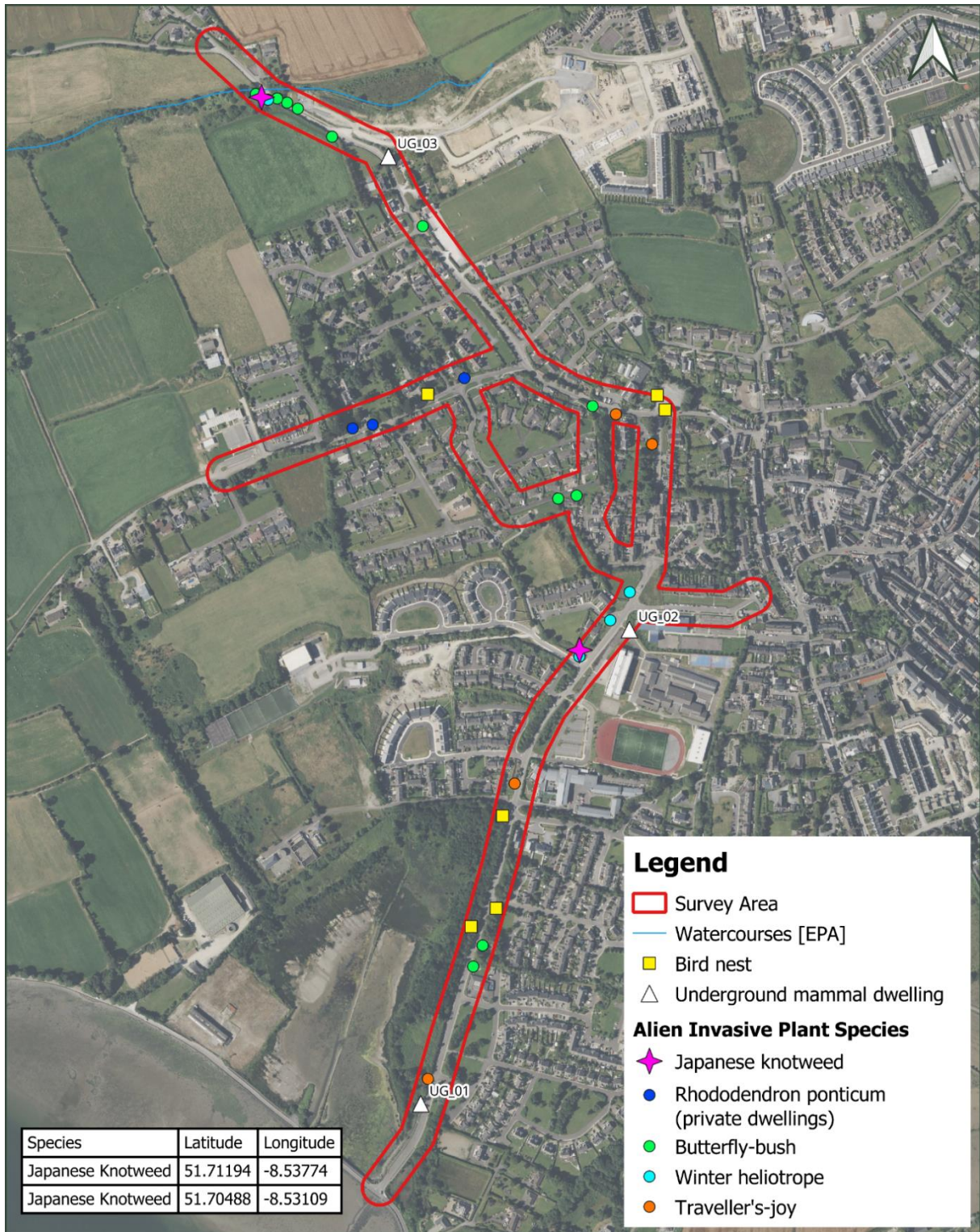


Figure 3.4 - Invasive Species and Other Survey Results

Project:
Kinsale Active Travel

0 100 200 m



Prepared for:

Cork County Council

Colm Breslin BSc (Hons)
D: 03/01/2024

3.3 MAMMAL ASSESSMENT

The results of surveys carried out for non-volant mammals and bats are outlined below.

3.3.1 Non-volant Mammals

Within the 10km grid squares in which the proposed development site is located (W64; W65) there are historic records for a total of 12 non-volant mammal species (see **Table 3.1**). 4 of the below 12 non-volant mammal species have been recorded within the 2km squares in which the proposed site is located (W64J; W65F), namely Brown Rat, Badger, Otter and Hedgehog.

Table 3.1 - Mammal species previously recorded within the 10km grid square (N71) in which the site is located (NBDC).

Common name	Species name	Legal Protection*	Conservation Status**
Bank Vole	<i>Myodes glareolus</i>	-	AIS
Brown Rat	<i>Rattus norvegicus</i>	-	AIS
Eurasian Badger	<i>Meles meles</i>	WA	LC
Eurasian Red Squirrel	<i>Sciurus vulgaris</i>	WA	LC
European Otter	<i>Lutra lutra</i>	Annex II/IV, WA	LC
European Rabbit	<i>Oryctolagus cuniculus</i>	-	LC
Irish Hare	<i>Lepus timidus</i> subsp. <i>hibernicus</i>	Annex V, WA	LC
Irish Stoat	<i>Mustela erminea</i> subsp. <i>hibernica</i>	WA	LC
Raccoon	<i>Procyon lotor</i>	-	AIS
Red Fox	<i>Vulpes vulpes</i>	-	LC
Sika Deer	<i>Cervus nippon</i>	-	AIS
European Hedgehog	<i>Erinaceus europaeus</i>	WA	LC

Source: <https://maps.biodiversityireland.ie/Map>. Accessed 03/01/2023.

* Annex status (EU Habitats Directive), WA (Protected under Wildlife Acts 1976 and 2000).

** LC – Least Concern (Marnell et al., 2019); AIS - Alien Invasive Species.

Areas of soft mud within the site were examined for the presence of prints during the 1st and 2nd November 2023. A total of three underground dwellings were identified within the survey area. Mammal tracks were noted occasionally throughout the scheme, primarily running along and beside less disturbed areas of encroaching scrub, rank grassland and extending from the entrances of some burrows. Only a single underground dwelling attributed to a pair of Foxes (UG_02; **Plate 3.3.1**) appeared recently used, with the remaining dwellings (UG_01; UG_03) showing past use by either Rabbit or Rat (see **Appendix A1** and **A2**). A full summary of underground dwellings is supplied in **Table 3.2** below and locations are shown in **Figure 3.4** above.

Table 3.2 – Summary of underground mammal dwellings identified within the survey area.

Underground Dwelling	Species	Notes	Latitude	Longitude
UG_01	Rabbit/Rat	Incomplete attempted burrow entrance that extends approximately 10 inches underground before stopping. Leaf litter accumulation in entrance with partial collapsed entrance. Located adjacent to frequently disturbed path. No evidence of occupation at the time of survey.	51.699053	-8.534305
UG_02	Fox	Located within grounds of Kinsale Community School. Subject to considerable noise and light pollution. Some signs of recent activity although none at the time of survey. Camera trapping carried out by Kinsale Community School showed Fox (max. 2) investigating the entrance.	51.705151	-8.530069
UG_03	Rabbit/Rat	Entranceway gives way to much smaller tunnel travelling to the north which likely only accommodates Rat or possibly Rabbit. Clear trail leading from entrance across the road.	51.711193	-8.535114



Plate 3.3.1 – View of the entrance to UG_03 recently occupied by Fox.



Plate 3.3.2 – Camera trap footage of two Foxes at the entrance to UG_03.
Photo courtesy of Kinsale Community School.

Based upon the results of non-volant mammal assessment and considering the scale and local context of the proposed site, the study site is considered to be of **Local Importance (Lower Value)** for non-volant mammals.

3.3.2 Bats

All Irish bat species are protected under the Wildlife Act (1976) and Wildlife Amendment Act (2000). All Irish bats are listed in Annex IV of the Habitats Directive and the Lesser Horseshoe Bat is further listed under Annex II.

3.3.2.1 Data Search

The following two bat species have previously been recorded in the 10km grid squares in which the proposed development site is located (W64; W65):

- Lesser Noctule (*Nyctalus leisleri*).
- Common Pipistrelle (*Pipistrellus pipistrellus*).

The overall bat suitability index value (31.89) according to 'Model of Bat Landscapes for Ireland' (Lundy et al., 2011) suggests the landscape in which the proposed site is located is of medium suitability for bats in general. Species specific scores are provided in **Table 3.3**. The Annex II (EU Habitats Directive) listed bat species, Lesser Horseshoe Bat, is assigned a score of 0 despite the presence of suitable foraging and commuting habitat locally. The most proximal record available at the time of reporting for Lesser Horseshoe Bat from the NPWS database is approximately 15km northwest of the proposed development from the year 2000.

Table 3.3 - Suitability of the study area for the bat species according to 'Model of Bat Landscapes for Ireland' (Lundy et al. 2011).

Common name	Scientific name	Suitability index
<i>All bats</i>		31.89
Soprano Pipistrelle	<i>Pipistrellus pygmaeus</i>	46
Brown Long-eared Bat	<i>Plecotus auritus</i>	45
Common Pipistrelle	<i>Pipistrellus pipistrellus</i>	41
Lesser Horseshoe Bat	<i>Rhinolophus hipposideros</i>	0
Leisler's Bat	<i>Nyctalus leisleri</i>	41
Whiskered Bat	<i>Myotis mystacinus</i>	40
Daubenton's Bat	<i>Myotis daubentonii</i>	28
Nathusius's Pipistrelle	<i>Pipistrellus nathusii</i>	8
Natterer's Bat	<i>Myotis nattererii</i>	38

Additionally, O'Donnell Environmental requested a data search of Bat Conservation Ireland's database for any known bat roosting locations within 10km of the proposed development (see **Table 3.4** below). No records exist within the BCI database for bat roosting locations within and proximal to the proposed development. A total of four known bat roosting locations are located within 10km of the proposed development, with the most proximal being a *Pipistrellus* spp. roost located approximately 6.58km northeast of the proposed development.

Table 3.4 – Bat Conservation Ireland records of known roosting locations within 10km of the proposed development.

Bat Species	Roost Type	Grid Reference	Distance
<i>Pipistrellus</i> spp.	Private Dwelling	W6657	6.58km
<i>Plecotus auritus</i>	Private Dwelling	W5745	7.56km
<i>Pipistrellus pygmaeus</i>	Private Dwelling	W7252	8.61km
<i>Plecotus auritus</i>	Private Dwelling	W5759	9.66km

3.3.2.2 Visual Roost Survey

The proposed project will involve works affecting, or in close proximity to, potential roosting features (trees) such that disturbance to roosting bats would be caused should they be present. A preliminary roost assessment of suitability of trees for roosting bats was undertaken from ground level, following the methodology outlined in Collins (2023). The survey took place during the optimal time of year in the winter season, as leaf fall makes PRFs more visible from ground level.

The trees are categorised according to their potential following Collins (2023) (see **Table 2.2**). This categorisation and the results of the assessment are detailed in **Table 3.5** below and the locations of relevant trees are shown in **Figure 3.5**. Due to the abundance of trees within the survey area displaying no suitability for roosting bats, only trees displaying 'PRF-I' suitability or greater are discussed further below. All trees identified with suitability for roosting bats were cross-referenced with the arboricultural survey tag numbers (Holly Arboriculture, 2024a).

No roosting bats were encountered during the current survey, and no unoccupied roosts which contained signs of bats were encountered. No 'PRF-M' suitability tree roosts with features suitable for multiple bats and therefore a maternity colony were identified. Maternity roosts are of considerable conservation importance to bats and there is no potential for a maternity roost of any bat species to occur within any of the trees surveyed.

Of the trees surveyed, 23 trees displayed PRF-I suitability for roosting bats, with features which are considered to have potential to support roosting bats either individually or in small numbers (see **Plate 3.3.3 – 3.3.4** for examples). It is likely that some of these features will be used at least occasionally by day-roosting bats. Most of Ireland's bat species are known to exploit a wide variety of roosting opportunities with some being used infrequently. Over time, the suitability of many of these roosting features to bats may increase in value. The remaining trees displayed no value for roosting bats.

It should be noted that the proposed development is located within a peri-urban context with a wide variety of private residential dwellings in close proximity to the proposed works. These structures typically present a variety of roosting opportunities for bat species but are considered to be outside the zone of influence of the current project.



Plate 3.3.3 – Tear-off which provides cavities for roosting bats and a pathway for future rot cavities to form in the medium-long term (Ref: Tr_01).



Plate 3.3.4 – Welded stems which provide cavities for roosting bats, alongside collecting water which promotes the formation of rot-associated PRFs (Ref: TR_07).

Table 3.5 – Assessment of roosting potential of trees within and proximal to site boundary displaying ‘PRF-I’ suitability or greater.

Ref.	Arborist Ref.*	Species	Latitude	Longitude	Comment	Suitability for Roosting Bats	Removal
Tr_01	T79	Ash	51.69921	-8.53426	Peeling bark facing southeast at 3m. 2 tear-outs facing west at 3m. Split stem facing north at 2m. Multi-stem, Low ivy cover, Minor rothole PRFs visible of limited value currently.	PRF-I	Yes
Tr_02	T78	Ash	51.69943	-8.53429	Multi-stem, Dense ivy cover, Minor rot associated with dieback disease which may increase in value through time.	PRF-I	Yes
Tr_03	TG40	Poplar	51.70089	-8.53308	Cracked bark extending along main stem in portions. Provides pathway for future rot-associated PRFs.	PRF-I	No
Tr_04	TG39	Alder	51.70141	-8.53287	Dense ivy cover. View of PRFs at height restricted.	PRF-I	No
Tr_05	TG38	Beech	51.70181	-8.53264	Multi-stem, Evidence of historic tree surgery, Minor rothole PRFs visible at height.	PRF-I	No
Tr_06	TG38	Lime	51.70191	-8.53261	Multi-stem, Low ivy cover, welded stems which may form cavities through time.	PRF-I	No
Tr_07	TG38	Beech	51.70198	-8.53255	Multi-stem. Welded basal stems that collect water and rot. Multiple tear offs, mostly facing east at approximately 2m height. Evidence of decay.	PRF-I	No
Tr_08	TG38	Lime	51.70214	-8.53237	Welded primary stems at base. Witches broom present along multiple portions. Cracked bark in portions at height. Tear off facing east at 3m.	PRF-I	No
Tr_09	TG35	Beech	51.70389	-8.53207	Heavily damaged from human activity with healed wounds. Potential to develop further and increase in value. Notably at 5m high facing west.	PRF-I	Yes
Tr_10	TG34	Ash	51.70390	-8.53172	Dense ivy cover which restricts views of PRFs. Evidence of dieback disease.	PRF-I	No
Tr_11		Hawthorne	51.70588	-8.53058	Tear out and split stem facing west at 2m.	PRF-I	No
Tr_12	TG24	Scot's Pine	51.70784	-8.52962	Single mature Scot's Pine located within stand of 10 individuals. Cracked stem falling away at 10m facing north. Minor tearout facing east at 11m.	PRF-I	No

Tr_13	-	Leyland Cypress	51.70711	-8.53060	Tear offs facing west at 4m, fluting at base, exposed bark growing inwards with potential to rot	PRF-I	No
Tr_14	-	Leyland Cypress	51.70702	-8.53059	Dead cypress with peeling bark, fluting, welded primary stems and major tear off facing south at 3m. Potential to develop further.	PRF-I	No
Tr_15	T25	Scot's Pine	51.70798	-8.53461	Multi-stem. Cracked and deeply gnarled bark collecting water in places with potential to rot and increase in value.	PRF-I	No
Tr_16	T26	Beech	51.70794	-8.53477	Multi-stem. Evidence of historic tree surgery. Tear off facing east at 4m.	PRF-I	No
Tr_17	-	Beech	51.70787	-8.53497	Multi-stem, Low ivy cover, Evidence of historic tree surgery. Dead limbs near base, tear offs of smaller stems facing east approximately 4m high with potential to develop into rothole PRF.	PRF-I	No
Tr_18	T29	Beech	51.70784	-8.53515	Multi-stem, Evidence of historic tree surgery, minor rotholes at height. Dead limbs approximately 3m high with potential to develop further.	PRF-I	No
Tr_19	T31	Beech	51.70779	-8.53536	Multi-stem, Low ivy cover. Rotholes stemming from past tear offs facing south approximately 4m high facing south with potential to develop further.	PRF-I	No
Tr_20	T34	Leyland Cypress	51.70766	-8.53607	Cypress with split and twisting stems facing southeast at approximately 8m. Potential to develop further.	PRF-I	No
Tr_21	T35	Scot's Pine	51.70759	-8.53633	Tear offs halfway along axillary stems facing southwest and southeast at approximately 10m height. Wet rot evident on undersides of some stems where resting on others due to water accumulation with potential to develop further.	PRF-I	No
Tr_22	TG2	Ash	51.71187	-8.53778	Dense ivy cover, View of PRFs at height restricted.	PRF-I	No
Tr_23	TG2	Ash	51.71200	-8.53819	Multi-stem, Low ivy cover. Cracked stems with potential to develop further.	PRF-I	No

*Note: Arborist references individual tag number (T)/tree group (TG) number where applicable. (Holly Arboriculture, 2024a).

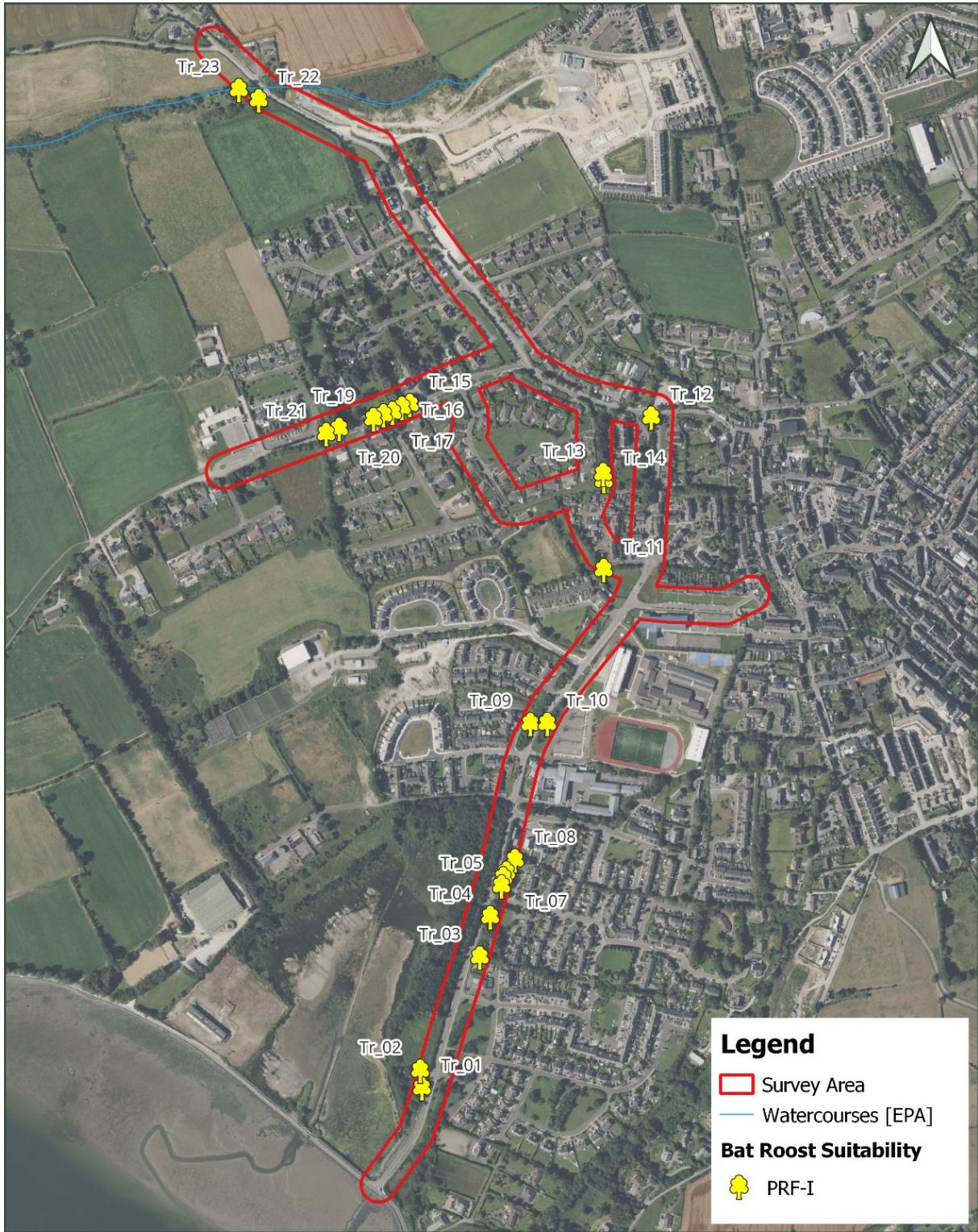


Figure 3.5 - PRF Survey Results

Project:
Kinsale Active Travel

0 100 200 m



Prepared for:

Cork County Council

Colm Breslin BSc (Hons)
D: 10/01/2024

3.3.2.3 Passive Bat Monitoring

Passive monitoring was carried out using a Wildlife Acoustics Song Meter Mini full-spectrum detectors between 23rd October and 1st November 2023 for a total of 10 survey nights (see **Figure 1.1** for detector locations). Passive monitoring took place near the end of the recommended bat survey period (Collins, 2023) and included some poor weather nights. A total of 360 registrations were recorded. Bioacoustics analysis of bat sonograms was carried out using Kaleidoscope and all calls were manually verified.

The results of passive bat monitoring are presented in **Table 3.6**. The majority of registrations comprised common and widespread species such as Soprano Pipistrelle and Common Pipistrelle, comprising 73% and 25% of registrations respectively. Brown Long-eared Bat comprises 1.4% of registrations, with the remaining species of Leisler's Bat and Nathusius' Pipistrelle making up less than 1% respectively.

Table 3.6 – Bat 'registrations' recorded during passive bat monitoring.

Site	Survey Date	Brown Long-eared Bat	Common Pipistrelle	Leisler's Bat	Nathusius Pipistrelle	Soprano Pipistrelle	Total
Bat_01	23/10/23	0	12	1	0	30	43
	24/10/23	0	0	0	0	4	4
	25/10/23	0	0	0	0	0	0
	26/10/23	0	7	2	0	23	32
	27/10/23	0	0	0	0	17	17
	28/10/23	0	4	0	0	9	13
	29/10/23	0	2	0	0	3	5
	30/10/23	0	6	0	0	9	15
	31/10/23	0	0	0	0	1	1
	01/11/23	0	0	0	0	0	0
Bat_02	23/10/23	0	10	0	0	7	17
	24/10/23	0	3	0	1	4	8
	25/10/23	0	2	0	0	15	17
	26/10/23	1	11	1	0	25	38
	27/10/23	0	2	1	0	25	28
	28/10/23	1	18	0	0	34	53
	29/10/23	0	7	0	0	44	51
	30/10/23	0	4	0	0	7	11
	31/10/23	0	0	0	0	4	4
	01/11/23	0	1	0	0	2	3
Total		2	89	5	1	263	360

Note: data shows number of bat registrations which is defined as the presence of a species within a recording of up to 15 seconds.

Overall, a low level of bat activity was recorded, with little to no registrations on some survey nights. Of the nine (possibly ten) Irish species known to occur nationally, five were recorded within the proposed development; this represents a moderate diversity of species. The Annex II listed Lesser Horseshoe

Bat was not recorded despite the presence of suitable landscape. This would be expected considering the proposed development is located outside of their known range, with the most proximal record available at the time of reporting for Lesser Horseshoe Bat from the NPWS database approximately 15km northwest of the proposed development from the year 2000.

The distribution of registrations recorded are shown in **Figure 3.6**. Activity patterns can be seen as relatively inconsistent throughout the survey period. This is due to passive monitoring taking place near the end of the recommend bat survey period and included some poor weather nights. Therefore, the bat activity results discussed are likely an underrepresentation of the local bat activity levels and species diversity present within the locality of the proposed development.

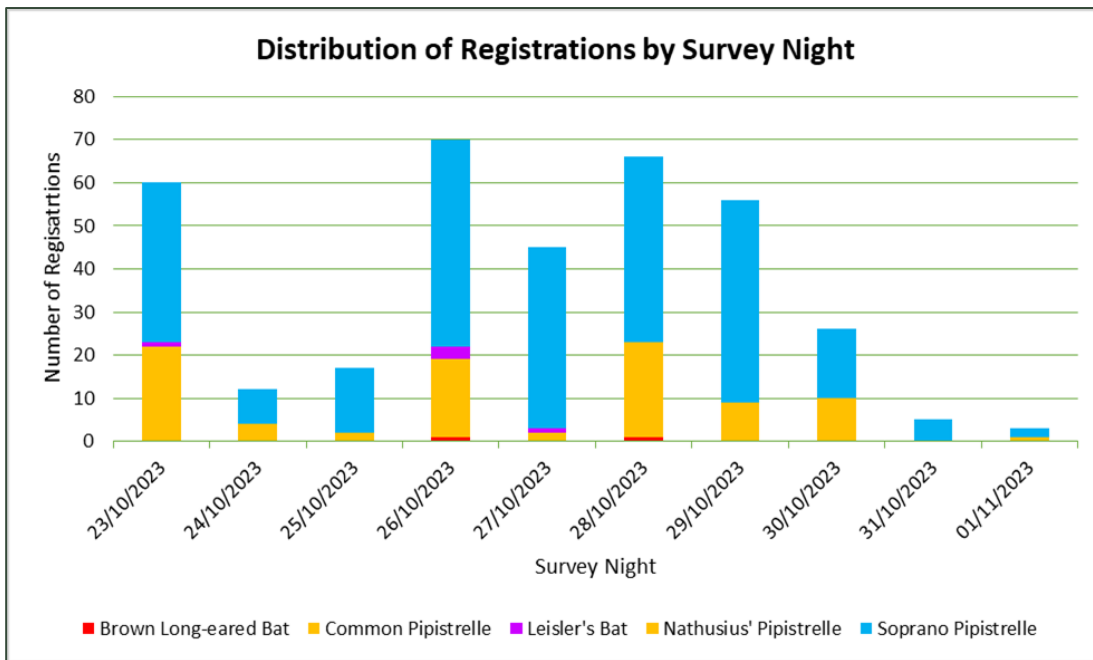


Figure 3.6 - Distribution of all bat registrations recorded by 10-minute time intervals and species.

Considering the nature and scale of the proposed site, the nature of the habitats contained within, the species recorded and distribution of those recordings during the survey, the proposed site is considered of **Low value (Local importance)** for foraging and commuting bats (following NRA, 2009).

3.4 OTHER TAXA

3.4.1 Bird Assessment

Note was made of birds seen and heard during ecological walkover surveys. Additionally, brief point counts were carried out on bird species present within the neighbouring Commoge Marsh and Lower Bandon Estuary at the southern end of the development. It should be noted that these surveys were not dedicated breeding- or wintering-bird surveys and were non-exhaustive.

Table 3.6 – Bird species recorded during field surveys.

Common Name	Species name	Conservation Status	Location of Record
Northern Lapwing	<i>Vanellus vanellus</i>	WA, Red, A. II	Commoge Marsh
Curlew	<i>Numenius arquata</i>	WA, Red, A. II	Commoge Marsh, Lower Bandon Estuary
Black-tailed Godwit	<i>Limosa limosa</i>	WA, Red, A. II	Commoge Marsh
Dunlin	<i>Calidris alpina</i>	WA, Red, A. I	Commoge Marsh
Redshank	<i>Tringa totanus</i>	WA, Red, A. II	Commoge Marsh, Lower Bandon Estuary
Pochard	<i>Aythya ferina</i>	WA, Red, A. II	Commoge Marsh
Snipe	<i>Gallinago gallinago</i>	WA, Red, A. II	Commoge Marsh
Oystercatcher	<i>Haematopus ostralegus</i>	WA, Red, A. II	Commoge Marsh
Kingfisher	<i>Alcedo atthis</i>	WA, Amber, A. I	Commoge Marsh
Wigeon	<i>Anas penelope</i>	WA, Amber, A. II, III	Commoge Marsh
Teal	<i>Anas crecca</i>	WA, Amber, A. II, III	Commoge Marsh
Black-headed Gull	<i>Larus ridibundus</i>	WA, Amber, A. II	Commoge Marsh, Lower Bandon Estuary
Herring Gull	<i>Larus argentatus</i>	WA, Amber, A. II	Commoge Marsh, Lower Bandon Estuary
Cormorant	<i>Phalacrocorax carbo</i>	WA, Amber	Commoge Marsh
Mallard	<i>Anas platyrhynchos</i>	WA, Amber, A. II	Commoge Marsh
Mute Swan	<i>Cygnus olor</i>	WA, Amber, A. II	Commoge Marsh
Lesser Black-backed Gull	<i>Larus fuscus</i>	WA, Amber, A. II	Commoge Marsh, Lower Bandon Estuary Development boundary
Starling	<i>Sturnus vulgaris</i>	WA, Amber, A. II	Development boundary
Grey Heron	<i>Ardea cinerea</i>	WA, Green	Commoge Marsh
Little Egret	<i>Egretta garzetta</i>	WA, Green, A. I	Commoge Marsh
Great Black-backed Gull	<i>Larus marinus</i>	WA, Green, A. II	Commoge Marsh, Lower Bandon Estuary Development boundary
Sparrowhawk	<i>Accipiter nisus</i>	WA, Green	Commoge Marsh
Little Grebe	<i>Podiceps cristatus</i>	WA, Green	Commoge Marsh
Great Tit	<i>Parus major</i>	WA, Green	Development boundary
Blue Tit	<i>Cyanistes caeruleus</i>	WA, Green	Development boundary
Coal Tit	<i>Parus ater</i>	WA, Green	Development boundary
Long-tailed Tit	<i>Aegithalos caudatus</i>	WA, Green	Development boundary
Goldfinch	<i>Carduelis carduelis</i>	WA, Green	Development boundary
Goldcrest	<i>Regulus regulus</i>	WA, Green	Development boundary
Robin	<i>Erithacus rubecula</i>	WA, Green	Development boundary
Magpie	<i>Pica pica</i>	WA, Green	Development boundary
Rook	<i>Corvus frugilegus</i>	WA, Green	Development boundary
Jackdaw	<i>Corvus monedula</i>	WA, Green	Development boundary
Blackbird	<i>Turdus merula</i>	WA, Green	Development boundary
Duncock	<i>Prunella modularis</i>	WA, Green	Development boundary

Note: WA: Wildlife Acts; A. denotes relevant Annex of EU Birds Directive; Red/Amber denotes relevant conservation status according to BoCCI(4) status.

Commoge Marsh presents a locally significant site for a range of special conservation interest (SCI) bird species associated with surrounding SPAs particularly: Lapwing, Curlew, Dunlin, Black-tailed

Godwit, Pochard, Teal, Wigeon, Black-headed Gull and Cormorant. Cormorant is a qualifying interest of the most proximal Natura 2000 site; Sovereign Islands SPA (4124). Curlew and Lapwing were identified night-roosting within the northwestern portion of the marsh in relatively large numbers approximately 200m from the site boundary (251 and 48 respectively; see **Figure 1.1** for location). This approximates nearly 1% of the national population for Curlew (350). Black-headed Gull (approx. 80) were identified atop the deeper water within Commoge Marsh directly adjacent to the L3235 at the south. The Lower Bandon Estuary was noted to contain a subset of the above listed species alongside Redshank and Oystercatcher although no significant roosting was identified due to tidal inundation.

The bird species recorded within and proximal to the development boundary represent a typical assemblage of semi-urban and agricultural habitats in Ireland. The extent of the proposed development is limited primarily to public roadways and portions of scrub and grassland with semi-mature trees proximal to the development boundary. Considering this, and the species recorded only within and immediately proximal to the development boundary, the site is not considered of high value for its bird assemblage. The immediate site is considered to be of **Local Importance (Lower Value)** for birds.

However, it should be noted that there exists high quality foraging and roosting habitat for a range of bird species, particularly wetland birds within the neighbouring Commoge Marsh and Lower Bandon Estuary.

3.5 OVERALL SITE EVALUATION

Taking the above into consideration, the proposed development site is considered to be of **Local Importance (Lower Value)**.

4 Potential Impacts

Potential ecological impacts which could arise as a result of the proposed development are discussed below. Avoidance and mitigation measures in respect of identified potential impacts are discussed in Chapter 5 - Avoidance and Mitigation Measures. The predicted residual impact of identified potential impacts following application of avoidance and mitigation measures are discussed in Chapter 6 - Residual Impacts.

4.1 DO NOTHING IMPACT

If the proposed development does not proceed, the 'do nothing' scenario is that the existing environment within the site boundary is likely to remain as described herein in the short term at least. The lands contained within the development boundary will remain heavily illuminated from public lighting and experience high levels of pedestrian and vehicular traffic.

4.2 POTENTIAL EFFECTS ON SURFACE WATER

The below sections discuss the potential effects of the proposed development on surface water in both the construction and operational phases.

4.2.1 Construction Phase

Surface water runoff within the bounds of public roadways currently is collected by a series of roadside drains associated with the municipal drainage network. This runoff feeds into the stormwater network which flows south along the L3235 via a series of gravity and private pressurised mains before discharging into the Lower Bandon Estuary (see **Appendix C**). The remaining surface water outside the bounds of this network discharges largely to ground. Portions of surface water likely flows overland into the Knocknabohilly Stream at the north, and Commoge Marsh and Lower Bandon Estuary to the south.

Habitat loss or deterioration of the ecological status of surface water can occur from the indirect effects of contaminated run-off or discharge into the aquatic environment, through siltation, nutrient release and/or contamination. The waters associated with Commoge Marsh and the Lower Bandon Estuary have been identified as particularly sensitive ecological receptors in this instance.

The construction phase of the development will involve site preparation (e.g. earthworks, excavation etc.). In the absence of mitigation, the proposed construction phase works have the potential to result in sediment run-off during prolonged heavy rain where excavated areas and spoil heaps are unprotected. Similarly, the operation and refuelling of machinery during construction has the potential to result in leaks of hydrocarbons in the absence of mitigation.

The overall impact on surface water as a result of the construction phase of the proposed development is considered to be **slight negative, short-term** following EPA (2022).

4.2.2 Operational Phase

The operational phase of the proposed development will utilise existing outfalls and municipal surface water networks as outlined previously (see **Appendix C**). There will be no significant increase in

impermeable surface area, with approximately 61m² of natural SuDS measures (rain gardens) incorporated within the Landscape Plan (Áit, 2024).

The overall impact on surface water as a result of the operational phase of the proposed development is considered to be **neutral** following EPA (2022).

4.3 POTENTIAL EFFECTS ON HABITATS AND FLORA

The below sections discuss the potential effects of the proposed development on habitats and flora in both the construction and operational phases.

4.3.1 Construction Phase

Annex I habitats listed under the EU Habitats Directive are located immediately adjacent to southern extent of the proposed development, namely Atlantic salt meadows [1330], Coastal lagoons [1150], and Estuaries [1130]. Species belonging to the Flora (Protection) Order 2022 have historically been recorded within Commoge Marsh, namely Borrer's Saltmarsh-grass (*Puccinellia fasciculata*). In the absence of mitigation, the proposed construction phase works have the potential to result in sediment runoff and leaks of hydrocarbons which possess the potential to negatively impact the above sensitive habitats and protected plant species.

From the early stages in the design process O'Donnell Environmental engaged with Cork County Council, DBFL Consulting Engineers and Áit Urbanism + Landscape to reduce the impact of the proposed scheme through avoidance of loss in the first instance and incorporate mitigation and enhancement measures thereafter. A total of 80 trees will unavoidably be lost as part of the proposed development, consisting of individual trees and trees within groups (Holly Arboriculture, 2024a). Portions of three hedgerows (No. 11,13,18) approximating a total of 35m in length will be required for removal. These hedgerows are composed entirely of non-native species of *Griselenia littoralis* and Cherry Laurel (*Prunus laurocerasus*). The limited portion of Tree Group 29 (Holly Arboriculture, 2024a) proposed for removal has been classified as 'Hedgerow' habitat (see **Section 3.2.2.10**) due to the presence of mature Hawthorne.

All other species recorded during the botanical survey are considered common for similar habitats in the general area. A portion of scrub habitat which contains Tree Group 36 at the southern portion of the site will be encroached upon but no trees will be lost due to the proposed no-dig construction zone (Holly Arboriculture, 2024c).

The 'High Impact' alien invasive plant species Japanese Knotweed (*Reynoutria japonica*) has been identified in two distinct locations, alongside *Rhododendron ponticum* within private residential gardens. The proposed development involves works in close proximity to these stands, of which one is located directly adjacent to a watercourse. There exists potential for the spread of this species in the absence of suitable mitigation measures.

The use of heavy machinery in the root zone of trees can cause damage of woodland habitat and trees, resulting in increased tree morbidity and mortality. Equally, the use of machinery in proximity to trees can result in accidental damage to the trunk and branches of trees.

The overall effect on local habitats and flora as a result of the construction phase of the proposed development is considered to be **temporary, slight negative, reversible effect** following EPA (2022).

4.3.2 Operational Phase

There will be no additional removal of existing habitat features during the operational phase of the proposed development. O'Donnell Environmental engaged with the project team during the design phase to avoid loss of or disturbance to ecologically significant features in so far as was possible. Proposed planting measures including trees, woodland and native hedgerows alongside wildflower grassland management provided by the Landscape Plan (Áit, 2024) at the construction stage will continue to mature and increase in ecological value over time. Retained vegetation features including trees will also continue to mature and increase in ecological value over time.

The overall effect on local habitats and flora as a result of the operational phase of the proposed development is considered to be **permanent, slight positive effect** following EPA (2022).

4.4 POTENTIAL EFFECTS ON MAMMALS

Impacts on non-volant and volant mammals are discussed separately below.

4.4.1 Non-Volant Mammals

The below sections discuss the potential effects of the proposed development on non-volant mammals in both the construction and operational phases.

4.4.1.1 Construction Phase

Evidence of non-volant mammal usage was identified throughout the proposed development and was largely confined to areas of scrub and grassland. Three underground dwellings of various species and in various states were identified adjacent to the proposed development. Only a single underground dwelling (UG_02) was recently occupied by Fox (see **Plate 3.3.2**), with the remaining two burrows being only attempted excavations (UG_01) or belonging to either Rat or Rabbit (UG_03). Mammal trails were clearly visible in areas. The Annex II listed species Otter were not recorded on the site and is unlikely to occur within the development boundary due to anthropogenic disturbance.

Construction works may result in the collapse of underground dwellings should ground-breaking and excavation be carried out in close proximity and is of particular relevance for UG_02. Site clearance and noise as a result of construction will likely cause some local displacement of terrestrial mammals. Deep excavations can potentially entrap mammals commuting across the site. During construction, should there be pooled water in any excavations there is potential for drowning. Inappropriate or excessive lighting during the construction phase can cause disturbance to mammals at night. The inappropriate disposal of food wastes during the construction phase can encourage scavenging by mammals (and birds) at the site.

Localised increases in noise and dust levels are likely to occur during the construction phase. In the absence of mitigation, these impacts could give rise to indirect negative impacts on mammal species present in the local environment. Noise will occur through the operation of machinery (excavation, pile driving, etc.). Dust may arise during construction works if dry soil or other material is allowed to become windborne.

The overall effect on non-volant mammals as a result of the construction phase of the proposed development is considered to be **short-term, slight negative** following EPA (2022).

4.4.1.2 Operational Phase

No additional habitat loss will occur during the operational phase. The temporary disturbance and loss of foraging and commuting habitat for non-volant mammal species as a result of the construction phase will be entirely reversed following the implementation of habitat remediation and enhancement measures within the Landscape Plan at the construction phase (Áit, 2024; see **Section 4.3.1** above), relative to the condition of the site prior to any vegetation clearance. The roadways will continue to experience high levels of light pollution which is considered generally unsuitable for mammal species.

The overall effect on non-volant mammals at the site and surrounding locality during the operational phase is considered to be a **neutral effect** following EPA (2022).

4.4.2 Bats

The below sections discuss the potential effects of the proposed development on bats in both the construction and operational phases.

4.4.2.1 Construction Phase

The construction phase of the proposed development will necessitate the removal and pruning of trees and hedgerow habitat to facilitate the construction of pathways. An ecological assessment of all trees within the development boundary and its immediate surroundings was undertaken, and no evidence was recorded of the use of the trees by bats. A total of 23 trees were identified throughout the scheme with 'PRF-I' suitability for roosting bats such that individual or small numbers of bats may use these features on a transitory basis. Of these 23 trees identified, a total of 3 are proposed for removal to facilitate development (Tag No. 78, 79, single individual within Tree Group 35; see **Table 3.5**) (Holly Arboriculture, 2024a).

Irish bat species such as Common and Soprano Pipistrelle favour woodland edge and aquatic habitats for foraging. Any removal of vegetation or alteration of its structure has the potential to impact foraging and commuting bats that use hedgerows and other similar features. Hedgerows maintain landscape connectivity and provide commuting bats with waypoints and corridors through which they commute to and from roosts/foraging areas. The loss of these linear hedgerow features on site will cause a reduction in landscape connectivity in the immediate vicinity of the proposed site.

The majority of the proposed development was noted to be subject to significant levels of light pollution from the public lighting along roadways which causes disturbance to roosting, commuting and foraging bats. Existing public lighting will mostly service the proposed development. However, some lighting columns will need to be relocated and updated in response to realigned footpaths. Additional supplementary lighting is proposed for an additional two locations: 1) along the proposed quietway between Abbey Court and Bandon Road, between the current Kinsale GAA Club, and 2) the northern extent of the scheme along the Bandon Road. Artificial lighting is thought to increase the chances of bats being predated upon by avian predators (e.g. owls), and therefore bats may modify their behaviour to avoid illuminated areas.

The use of heavy machinery in the root zone of trees can cause damage of woodland habitat and trees, resulting in increased tree morbidity and mortality (see **Figure 3.5**). Equally, the use of machinery in proximity to trees can result in accidental damage to the trunk and branches of trees. Where the proposed development encroaches upon portions of woodland habitat and tree groups, no-dig construction areas have been designated and arboricultural monitoring required during works in these areas to ensure no impact to these trees (Holly Arboriculture, 2024c).

The overall effect on bats as a result of the construction phase of the proposed development is considered to be a **short term, slight, reversible negative** effect following EPA (2022).

4.4.2.2 Operational Phase

Relative to the construction stage, no additional foraging habitat loss or loss of roosting features will occur during the operational phase. The measures included within the Landscape Plan (Áit, 2024) provided at the construction stage will continue to mature and increase in ecological value over time, providing a degree of additional foraging habitat for light-tolerant bat species such as Leisler's Bat and Pipistrelles. Retained trees and woodland habitat will continue to mature and increase in ecological value over time.

The overall effect on bats at the site and surrounding locality during the operational phase is considered to be **permanent, slight positive** following EPA (2022).

4.5 POTENTIAL EFFECTS ON BIRDS

The below sections discuss the potential effects of the proposed development on birds in both the construction and operational phases.

4.5.1 Construction Phase

The assemblage of bird species recorded within the proposed development boundary is typical of semi-urban and semi-natural habitat mosaics found within Ireland. The nature of the habitats present at the site, and the species recorded during the survey, do not indicate that the site is of high value for its bird assemblage.

However, there exists an abundance of high value foraging and roosting habitat for birds within Commoge Marsh and along the Lower Bandon Estuary in the form of mudflats and shallow reedbeds. Relevant bird species associated with the surrounding SPAs were identified using the marsh to roost and estuary to forage. These species include Lapwing, Curlew, Black-tailed Godwit, Dunlin, Wigeon, Black-headed Gull and Cormorant.

Noise and visual effects arising from construction phase works have the potential to negatively impact foraging and roosting bird species associated with Commoge Marsh and the Lower Bandon Estuary. Some species such as Lapwing are particularly sensitive to visual disturbance, often alighting in large numbers when their sightlines are disturbed by movement. Construction activity such as ground preparation and site clearance works is likely to cause localised disturbance to the birds present in or close to the development footprint. Should works be carried out in spring or summer there is potential to directly and indirectly impact upon nesting birds occurring at the site through removal of vegetation or noise and light disturbance respectively.

If edible wastes are not disposed of appropriately during construction this has the potential to attract avian scavengers to the site.

The overall effect on birds as a result of the construction phase of the proposed development in the absence of mitigation is considered to be **temporary, slight negative** and **reversible** following EPA (2022).

4.5.2 Operational Phase

The operational phase of the proposed works will not result in any additional habitat loss relative to the construction phase. The measures included within the Landscape Plan (Áit, 2024) provided at the construction stage will continue to mature and increase in ecological value over time, providing an increase in suitable foraging and nesting habitat for passerine bird species occurring within and proximal to the development boundary. There will be predicted increase in visual disturbance from cyclist traffic, of which bird species occupying Commoge Marsh are largely habituated to already.

The overall impact on birds as a result of the operational phase of the proposed development is considered to be **permanent, slight positive** following EPA (2022).

4.6 CUMULATIVE IMPACTS

A review of the National Planning Database (NPD) was undertaken to identify proximal and relevant planning applications proximal to the study area. A search of planning applications within this area within the last 5 years was undertaken and reviewed on 8th January 2024 and updated on 16th October 2024. **Table 4.1** below provides the results of this search. The locations of applications are shown in **Figure 4.1**.

A number of proximal large developments are present within the planning database currently and were considered for the purpose of this report, including the construction of sports club facilities (Ref: 225388, 234424) and residential developments (Ref: 206563, 225145, 226060, 225657). The proposed development under the current design, in combination with the above developments is considered to present no cumulative impacts due to the existing baseline conditions of heavy public lighting.

The proposed development itself will have no effect of the conservation objectives of any Natura 2000 Sites. Given the separation distances involved between the proposed development in combination with other plans and projects there is no potential for the current project to adversely affect any Natura 2000 Site.

Table 4.1 - Planning applications within the relevant search area.

Ref. No.	Development Description	Decision	Decision Date
235723	Permission for retention of existing detached domestic garage.	Conditional Permission	2023-10-18
234893	(I) Permission for retention and completion of alterations and porch extension to dwelling under construction - referred to as the upper house (change of plan to that permitted under Planning Ref. No. 18/4146), (II) Permission for retention and completion of minor elevational changes to dwelling under construction - referred to as the lower house (change of plan to that permitted under Planning Ref. No. 18/4146), (III) retention and completion of garage to serve both dwellings with green roof and landscaping, (IV) Retention and completion of external steps with lift, (V) Permission for retention of textured concrete walls on the west and south site boundaries and (VI) all associated site works	Conditional Permission	2023-10-03
235477	2 no. roof lights to front of dwelling.	Conditional Permission	2023-09-11
235074	Permission for alterations to existing two-storey split level dwelling, namely; two storey extension to south elevation, single storey extension to north elevation and changes to all elevations, along with enlarged outdoor terrace and any associated site works	Conditional Permission	2023-08-22
234656	Construction of a dwelling house and the installation of a waste-water treatment unit and percolation area and all associated site works.	Conditional Permission	2023-08-17
234991	Construction of a detached granny flat (adjacent and ancillary to their existing dwelling) and associated site works.	Conditional Permission	2023-07-05
225145	Construction of 86 no. dwellinghouses with one childcare facility, and all ancillary site development works. Access to the proposed development will be provided via 2 no. new accesses onto the link road permitted under ref no. 20/6563.	Conditional Permission	2023-05-24
225657/ ABP-316840- 23	The demolition and removal of existing facilities including changing rooms, ball alley and other ancillary facilities; and the construction of 71 no. dwelling houses and all associated ancillary development works including vehicular and pedestrian access, parking, footpaths, lighting, drainage, landscaping and amenity areas. The proposed development allows for the provision of a pedestrian/cycle link to connect into Abbeyfort Estate to the northeast.	Conditional Permission	2024-09-12
225877	Construction of a dwelling house and associated site works including the alterations of existing boundary walls and new connection to services	Conditional Permission	2023-03-06
225388	The provision of new club facilities and all ancillary site works. The proposed development includes the construction of 4 no. full sized playing pitches, an astroturf pitch, single storey clubhouse building, single storey gym building, single storey equipment store, surface car park and children's playground. The proposed development provides for ballstop netting serving each of the proposed pitches and the provision of 6 no. 21 metre floodlights serving pitch no. 2 and 4 no. 12-18 metre floodlights serving the proposed astroturf pitch. Ancillary development works include the provision of a pedestrian crossing on the L-3234 local road to connect the existing footpath network and servicing proposals including the diversion/undergrounding of existing overhead lines. Access to the proposed development will be provided from the L-3234.	Conditional Permission	2023-02-23
224920	The construction of 9 no dwelling houses and associated site works, including a new vehicular entrance and connection to public services. this application is for permission for modifications to	Conditional Permission	2023-02-13

	previously granted residential development planning red 18/6381 and an Bord Pleanala ref ABP-304796-19 and includes (1) modifications to house types C and D with revised internal layouts, elevations and facades (2) updated road layouts and access point for the 4 no lower houses and ancillary site development works		
226060	Construction of 51 no. houses and all ancillary development works. This is a modification to a residential scheme permitted under Cork County Council Planning Ref. No. 06/11830 extended by Ref. No. 12/4124, Ref. No. 17/6075, and Ref. No. 21/6844 (and subsequently amended under Cork County Council Ref. No. 20/6563). Access to the proposed development will be from the existing access via Abbey Lane.	Conditional Permission	2023-01-31
226588	Retention of patio doors on the front elevation and for permission to construct a side extension with associated site works, all to the existing dwelling.	Conditional Permission	2023-01-23
225537	Alterations and extensions as listed below to our building at 55 Main Street, Kinsale, Co.Cork which is recorded in the National Inventory of Architectural Heritage under Categories of Special Interest. All external work is to be to the rear of the existing Café, Guesthouse, and Landlord's Apartment: 1st floor – new internal entrance lobby, new private stairs and new WC in ex. utility in landlord's apartment. New terrace and external access door to existing living room. Extension accommodating bin and tool/bicycle/maintenance stores, new external fire escape stairs; 2nd Floor – new E/S bathroom, balcony and external door to ex. guest bedrooms. New internal staircase. Extension accommodating new master bedroom, E/S bathroom, walk-in-wardrobe. Patio and walled rear garden; 3rd Floor – new balcony and door to ex. door to ex. guest bedroom. New internal staircase. Extension accommodating x2 bedrooms, x2 E/S bathrooms; Roof Level – x1 dormer roof, x1 new skylights over ex. main stairs. New staircase to roof. And to carry out all associated site works.	Conditional Permission	2023-01-16
217498	The following development of Patsy's corner building (this building is a protected structure): (A) Change of use of building from existing retail/shop unit on ground floor with associated (unused) residential accommodation on first and second floor to a use as an independent retail/shop unit on the ground floor and a separate short term holiday letting residential unit on the first and second floor with independent access (B) Alterations, repairs and conservation works throughout the building including the removal /replacement of defective and decayed timber and material throughout the building, (C) the strengthening and up-grading of internal partitions and floor to meet building regulations, (D) the replacement of shop front including windows and doors (E) the insertion of a new door in the shop front southwest elevation (F) the installation of a new door and two windows to the north east elevation framed in corten steel, (g) associated modifications to all internal layout and plans and elevations (H) and all associated site works	Conditional Permission	2022-11-08
226034	Modifications to the terrace associated with apartment 26 including the erection of a glass balustrade and all ancillary development	Unconditional Permission	2022-10-27
225929	Permission to construct a rear extension and alterations to an existing dwelling incl. all site works	Unconditional Permission	2022-10-14
225677	Alterations and extensions to dwelling; consisting of a front porch extension incorporating a new flat roof with entrance canopy, a ground floor side extension and all associated site works	Conditional Permission	2022-09-08

225674	Permission for the construction of a single storey extension to the rear of existing two storey dwelling, modifications to elevations of said dwelling, modifications to south elevation of attached granny flat and all associated site works	Unconditional Permission	2022-09-07
225134	Modifications to a permitted childcare facility by Cork County planning Ref. no. 06/11830 extended by ref no. 12/4124, ref no. 17/6075 and ref no. 21/6844. the proposed modifications consist of internal layout changes and all ancillary site development works.	Conditional Permission	2022-08-30
225509	Permission to erect one temporary classroom to the southwest of the existing school building and all associated site works.	Unconditional Permission	2022-08-10
225344	Alterations and renovations to existing dwelling including (a) demolition of existing single storey extension to rear (b) demolition of 2 no garden sheds to rear (c) elevational revisions including window and door opes to existing side and rear elevations (d) installation of 2 no dormer windows to rear roof (e) installation of 3 no velux rooflights to front and rear roof (f) construction of single storey garden shed (18m2) to rear (g) construction of single storey garage (39m2) to rear.	Conditional Permission	2022-07-26
224895	The construction of an extension of the living space to the west and south of the above dwelling house, some internal modification and associated infrastructure.	Unconditional Permission	2022-06-07
224427	Permission for the renovation and extension to the front, side and rear of their dwelling. The construction will consist of the following: 1) demolition of the existing single storey room at the side of the dwelling. 2) construction of a single storey porch to the front of the dwelling, 3) construction of a two storey extension to the side of the dwelling. 4) construction of a single storey extension to the rear of the dwelling. 5) all associated site works	Conditional Permission	2022-05-17
224554	Permission for retention for 1) rear two storey flat roof extension, 2) single storey side bay window, 3) rear facing roof light, 4) second floor side window to existing dwelling. Permission for retention for 1) detached domestic garage with associated side access steps, 2) rear garden shed, 3) alterations to boundary walls including access door onto side lane, 4) construction of boundary wall with access door onto side lane with associated site works. Permission to demolish single storey store room.	Conditional Permission	2022-04-28
224430	Permission to demolish the existing dwelling and existing garage, construct a new two storey dwelling with two storey glazed link staircase, a new rooflight, new solar panels on the pitched roof, permission to construct 2 no. new off-street car parking places. Permission is sought for part demolition and part alter the existing boundary walls, with ancillary works and associated site works to include new water, foul and storm sewer connections to public mains.	Conditional Permission	2022-04-26
216582	(i) Demolition of the existing annexes to the front elevation and side elevation of the 'Former Shirt Factory' (which is to become the production hall) , in addition to demolition of the steel ruin frame structure on site, (ii) Modernisation of existing building elevations (the proposed production hall), comprising alterations to the building façade, including revised material finishes to the roof and elevations incorporating fenestration changes allowing for a brewery and distillery at ground floor level, (iii) Construction of extension to the front elevation of the existing building on site (the proposed production hall) consisting of ancillary office space, retail space at first floor level with lower and upper terraces and associated signage, (iv) A storage hall, (v) The upgrading of the existing access into and through the site including a swale incorporating the length of the site with drainage to Commogue Marsh, (vi) Ancillary on-site car and bicycle parking provision, (vii) Beer storage tank farm, (viii) Malt grain storage silo farm, (ix) Plant including steam boiler unit and cooling ventilation unit, (x) Delivery	Conditional Permission	2022-01-26

	yard permitting open storage, (xi) Landscaping including fencing, new boundary treatments, lighting, and pedestrian linkages to nearby footpath, and (xii) Pumping station, ground level changes with all other associated site works and ancillary services.		
216518	Planning permission for retention of garage, for extension and alterations to and for change of use of said garage to dwellinghouse and for all associated site works.	Conditional Permission	2021-12-14
216844	Alterations to permitted residential development 05/588 to make provision for 214 no. dwellinghouses, 42 no. apartments and relocation and change of plan of creche and associated site works and services (change in overall layout and design) - Extension of Duration to Permission granted under Planning Ref. No.06/11830 extended by Ref. No.12/4124 and Ref. No. 17/6075.	Unconditional Permission	2021-12-09
215984	Construction of a single storey dwelling house with detached garage and associated site works	Conditional Permission	2021-10-15
216369	The construction of 2 new metal fenced enclosed ball play courts located to the south west of Kinsale Community School together with associated site works. The proposed works to be carried out within the curtilage of Kinsale Community School.	Unconditional Permission	2021-10-14
216059	Modifications to 35 no. permitted dwellings (currently under construction) by Cork County Council Planning Ref. No. 06/11830 extended by Ref. No. 12/4124 and Ref. No. 17/6075. The proposed modifications consist of internal layout changes, omission of roof lights, omission of dormer window on the front elevation, omission of gable window, modifications to the elevations and façade and all ancillary site development works.	Conditional Permission	2021-09-20
215998	The retention of an extension to an existing house. Permission is also sought to carry out works including: (i) the construction of a store; (ii) the installation of a pedestrian gate in an existing boundary wall abutting a public footpath; (iii) the erection of a porch at the front entrance of the aforesaid existing house and (iv) all associated works.	Unconditional Permission	2021-09-08
206563	The construction of 95 no. houses and all ancillary development works. This is a modification to a residential scheme permitted under Cork County Council Planning Ref. No. 06/11830 extended by Ref. No.12/4124 and Ref. No. 17/6075. Access to the proposed development will be from the existing access via Abbey Lane and via the proposed access at Bandon Road.	Conditional Permission	2021-09-03
215631	The construction of a dwelling house and associated site works. Note that the proposed development comprises changes from part of that permitted under a residential development Planning Reg. 19/5455 and An Bord Pleanala Appeal Reference: ABP-304970-19. Note that the proposed house was identified as house 'A' on the drawings submitted under the above planning permission which governs the overall development of the lands. The changes to the development include change of plan of the proposed dwelling house, change in elevation of the proposed dwelling house, increase in floor area of the proposed dwelling, change in site layout and associated site works.	Conditional Permission	2021-08-19
215775	The construction of a first floor extension to the existing dwellinghouse above the existing attached domestic garage, and a rear two storey extension behind the existing garage.	Unconditional Permission	2021-08-18
206168	The demolition of existing single storey commercial retail unit and the construction of a 10 bedroom commercial guest house comprising part three storey and part two storey, with associated dining room, professional kitchen and reception area, connection to public services and all associated site works.	Conditional Permission	2021-08-16

215264	To demolish existing roof, including dormers, and construct new raised roof and clearstory windows, for the existing dwelling. To demolish existing external stairs to the side and rear of the existing dwelling and construct new second floor extension, to rear and side, with new rooflight. To construct new window/door openings and to modify existing window/door openings, connection to public services and all associated site works.	Conditional Permission	2021-07-02
206757	9 no. dwellinghouses and all associated site development works. This application is a change of plan of Pl. Reg. No. 17/6867 and ABP301767-18, whereby permitted dwellinghouses 28 to 32 inclusive are to be replaced by the proposed new 9 dwellinghouses.	Conditional Permission	2021-06-01
206090	Conversion of detached domestic garage to granny flat ancillary to the main dwelling-house and permission for alterations to the elevations of said garage including bay window to the front and dormer window to the side and associated site works.	Conditional Permission	2021-05-31
214624	Permission for the retention of A) Extension to the rear of existing dwelling B) Porch extension to front elevation C) Roof lights to rear roof	Unconditional Permission	2021-04-29
214031	The construction of a dwelling house and domestic garage and associated site works. Note the proposed development comprises changes from part of that permitted under a residential development Planning Reg. 19/5455 & An Bord Pleanála Appeal Reference: ABP-304970-19. Note that the proposed house was identified as house 'C' on the drawings submitted under the above planning permission which governs the overall development of the lands. The changes to the development include change of plan of the proposed dwelling house, change in elevation of the proposed dwelling house, increase in floor area of the proposed dwelling, change in site layout, and the additional of a domestic garage in the site layout and associated site works.	Conditional Permission	2021-03-03
206937	Modifications to the rear elevation of the convent building to provide for private amenity space. The proposed modifications to apartments 28, 30, 33, 34, 36 and 37 permitted by Ref. No.'s 04/53026 [ABP PL65.211819], 14/6792 and 17/7332 consist of: the addition of ground floor patios and balconies at first and second floor levels; associated modifications to the rear façade; alterations to the external walkway at first and second floor level; and all associated site development works.	Unconditional Permission	2021-02-22
205515	Development to an existing dwellinghouse. (This building is a protected structure). The development comprises the construction of a two storey extension to the front of the existing structure with associated alterations and modifications to internal layout, plans and elevations of the existing structure and all associated site works.	Conditional Permission	2021-02-15
204401	Change of use of part of existing Guest House at first, second & third floor levels to form new apartment incorporating into existing four storey apartment building.	Conditional Permission	2021-01-29
206579	Modifications to 3 no. apartments permitted under Cork County Council Ref. No.'s 14/6792 and 17/7332. The proposed modifications consist of: i) the internal modifications to the convent building to amalgamate Apartment no.'s 24 and 26; ii) modifications to the layout of Apartment 23; and iii) all associated modifications to the facade and ancillary site developments works.	Unconditional Permission	2021-01-22
205734	(a) The construction of minor extensions to the ground floor and to the first floor area of the dwelling, (b) the construction of a flat roofed rear dormer roof extension with an associated increase in the floor area to the second floor, (c) the modifications to internal layout and plans of the dwelling and modifications to all elevations of the dwelling, (d) the removal of the bay window to the front elevation and replacement with a window, (e) the reconfiguration of some windows and doors including the	Conditional Permission	2020-11-13

	enlargement and the relocation of some windows and the addition of new windows to the dwelling, (f) the replacement of a dormer window with a roof light to front elevation, (g) the replacement of the roof of the dwelling with a natural slate roof, (h) the application of external insulation to the dwelling, (i) and all associated site works.		
205902	Permission to demolish existing outbuildings to the rear of the existing dwelling. Construct a two storey extension to the rear of the existing dwelling and a single storey extension to the side of the existing dwelling. Construct a new rooflight to the rear of the existing dwelling; modify existing window/door openings, construction of a new window opening to the South-Eastern elevation, with associated site works.	Conditional Permission	2020-10-23
205868	Retention for change of use of existing attached garage to a playroom and alterations to front elevation to include replacement of garage door with PVC door and windows, at the dwelling house.	Unconditional Permission	2020-10-16
205374	Change of use from previous use as a health centre to 3 units occupied by a youth community cafe, a youth social service and a community based men's organisation.	Conditional Permission	2020-09-11
205424	The construction of single storey extension to the rear of house.	Conditional Permission	2020-08-31
205317	Construction of two-storey retail/residential building comprising of retail unit (area 365sqm) to ground floor and 3 no. apartments at first floor with associated signage to north, east and west elevations, 16 no. car parking spaces, site entrance, site exit and all associated site works - Extension of Duration of Permission granted under Planning Reference: 15/4186	Unconditional Permission	2020-08-13
204968	Construction of 47 no. residential units, a crèche and all ancillary site development and landscaping works. The proposed development includes the construction of 27 no. houses consisting of 19 no. three-storey detached houses with first floor terraces, 1no. three-storey detached house with first and second floor terraces and 7 no. two-storey townhouses with first floor balconies; a new pedestrian access at Rampart Lane; and all ancillary landscaping, surface and underground car parking and site development works. The proposed works to the former convent buildings includes the development of 20 no. apartments; a crèche with mezzanine floor; modifications to the façade and extensions to the rear of the building. The proposed development will result in alterations to the residential scheme originally permitted under Planning Ref. No. 04/53026 and An Bórd Pleanála Ref. No. PL 65.211819. The alterations proposed will reduce the total number of residential units permitted on-site from 158 to 96 units. Extension of Duration of Permission granted under Planning Reference: 14/6792.	Unconditional Permission	2020-07-02
196697	Retention of garden shed to rear of existing dwelling	Unconditional Permission	2020-05-29
204248	The construction of an extension to an existing prefabricated structure for an additional classroom at the play school facility.	Conditional Permission	2020-03-27
196644	Demolition of gable wall and rear wall and roof of existing two storey end of terrace dwellinghouse and reconstruction of gable wall, rear wall and roof and erection of two storey extension at rear including all associated site works.	Conditional Permission	2020-03-20
196958	Retention to an existing dwellinghouse. Retention to consist of: 1) Garage, detached from the main dwelling, now converted to granny flat/separate dwelling unit 2) Ground floor window in existing dwellinghouse on the south eastern gable	Conditional Permission	2020-03-16
197039	The construction of a two bedroom detachedhouse, vehicular entrance, connection to public services and all ancillary site works.	Conditional Permission	2020-03-12

196838	To undertake alterations to existing dwellinghouse, comprising of demolition of existing single storey extensions to the rear of the existing dwelling. To construct a new single storey extension to the rear of the existing dwellinghouse, together with alterations to elevations, a new rooflight to the rear of the existing dwelling house, with associated site works, to include new water, foul and storm sewer connections to the public mains	Conditional Permission	2020-01-29
195700	Construction of an extension to the side and rear of existing dwelling incorporating part raising of the ridgeline to incorporate development in the existing attic for use as habitable space and all ancillary site works	Conditional Permission	2020-01-20
196543	Retention and completion of 8 no. dwelling houses (change of plan to houses 1 to 8 previously permitted under TP 17/06867 and ABP301767-18) and all associated site works.	Conditional Permission	2019-12-16
195455	(a) The demolition of Riverview House, detached domestic garage and existing domestic swimming pool, (b) The construction of three detached houses, (c) Modifications to boundary treatment including new boundary walls to road side and new entrances to the three proposed dwelling houses, (d) All associated site works.	Conditional Permission	2019-07-15
195285	Retention of the existing dwelling as constructed (change of plan to that permitted under Pl. Reg. No. 96/1179), and all ancillary works	Conditional Permission	2019-07-08
195343	Alterations to dwellinghouse including (A) internal alterations and associated external alterations, (B) close in existing open front porch, (C) fit solar panels to front elevation and (D) construct boundary wall to front and side of site	Unconditional Permission	2019-07-08
195179	A dwellinghouse and all associated site development works including connection to mains sewage system. Site development works permitted under Pl. Reg. No. 15/6681.	Conditional Permission	2019-06-25
194879	Retention of a prefabricated structure for use as a play school facility.	Conditional Permission	2019-05-31
194825	(This building is a Protected Structure) (a) The demolition of existing rear extension to a dwelling house, (b) the construction of a flat roofed rear dormer roof extension, (c) the replacement of 2 no. existing roof lights with larger roof lights to front elevation, (d) the replacement of the roof of the dwelling with a natural slate roof, (e) the replacement of the windows, (f) modifications to all elevations, (g) the modifications to internal layout and plans, (h) and all associated site works.	Conditional Permission	2019-05-22
194486	Retention for minor changes to dwelling granted permission under PL Reg. No. 11/53018, to include minor alterations to elevations and an increase to area of basement as used as plant room and storage area and all associated site works.	Unconditional Permission	2019-04-16
187463	The demolition of existing structure containing 3 no. apartments and the construction of a new building containing 3 no. apartments and associated site works	Conditional Permission	2019-02-25
187346	Construction of single storey extension to rear of existing single storey creche building and all associated site works. Extension of Duration of Permission Granted under Planning Reg: 13/6481	Unconditional Permission	2019-02-19
186806	Construction of dwelling house and all associated site development works, including connection to mains sewage system and relocation of site entrance. Site development works permitted under Pl. Reg. No. 15/6681.	Conditional Permission	2018-12-17
234424	To develop 2 no. all weather "astro" playing pitches (soccer and hockey) including drainage, 2.4m high perimeter protective fencing with 3m high ballstop netting above, 6 no. 15.24m high and 2 no. 24.38m high floodlights, earth retaining structures, reduce in size existing all weather pitch, remove existing basketball/tennis court together with all site development works	Awaiting FI Response	-

234447	To demolish existing dwelling house and to construct a two-storey dwelling house over proposed basement with attic accommodation to first floor including the installation of renewable energy measures, a single storey flat roofed garage to rear, extending existing driveway to rear, parking at rear including new main entrance to dwelling at rear, retaining walls and all associated site works	Awaiting Recommendation	-
234946	The demolition and removal of the former St. Joseph's National School and associated structures and construction of 18 no. residential units consisting of 2 no. 5 bed dwelling houses, 10 no. 4 bed dwelling houses, 3 no. 3 bed duplex apartments and 3 no. 2 bed simplex apartments and all associated ancillary development works including the car and bicycle parking, footpaths, lighting, drainage, landscaping and amenity areas. Vehicular and pedestrian access serving the development will be via Blind Gate Street. Pedestrian access is also facilitated via Rampart Lane.	Awaiting FI Response	-
235573	Construction of a dwelling house and associated site works.	Awaiting FI Response	-
235783	Permission for retention of side extension with associated site works, all to the existing dwelling.	Awaiting Recommendation	-
236031	Permission is sought for the development of the following (alterations to the permitted development under planning ref. no. 21/6582): a) change of use of permitted office space at first floor level to hospitality and retail space ancillary to the permitted brewery and distillery, b) relocation of public entrance to the visitor centre to south elevation, c) minor changes to roof profile (the permitted ridge level retained), d) the development of a second raised terrace recreational space on the south elevation at first floor level (152m2) ancillary to hospitality uses on site, and all other associated site works and ancillary services on site. Retention permission is sought for the 'building as built', incorporating the following alterations to the permitted development under planning ref. no. 21/6582: a) The removal and replacement of steel portal framed sub-structure of the former 'Old Shirt Factory', b) fenestration changes to north, south, east and west elevations, c) increase in height at ground floor level to the permitted undercroft area (476m2) allowing storage for the brewery and distillery operation, d) reduction in number of roof lights from 12 to 3, e) reorientation of covered fire escape to western elevation, f) provision of boiler room as constructed to the rear of the brewery and distillery building, and g) provision of electrical switch room to the west elevation.	Awaiting Validation	-

Note: 'Development Description' field was truncated by the Planning Authority when providing data to the NPD.



Figure 4.1 - Planning Search

Project:
Kinsale Active Travel

0 100 200 m



Prepared for:

Cork County Council

Colm Breslin BSc (Hons)
D: 11/01/2024

4.7 OVERALL IMPACT

The overall impact on biodiversity as a result of the construction and operation of the proposed development is considered to be a **slight negative impact at a local level in the short term** (during construction and establishment of vegetation), and a **neutral or slight positive effect thereafter**.

5 Avoidance and Mitigation Measures

Avoidance and mitigation measures in relation to potential impacts identified above are discussed below. From an early stage in the design process, O'Donnell Environmental engaged with Cork County Council, DBFL (Engineers), Holly Arboriculture and Áit (Landscapers) to reduce the impact of the scheme and to incorporate appropriate mitigation and enhancement measures.

5.1 MEASURES FOR LOCAL SURFACE WATER

Measures for the protection of local surface water during the construction and operational phases are outlined below.

5.1.1 Construction Phase

Measures intended to manage and protect local surface water during the construction phase include the following commitments within the preliminary construction and environmental management plan (pCEMP; DBFL, 2024c) in order to avoid, where possible, potential negative effects arising at Knocknabohilly Stream, Commoge Marsh and the Lower Bandon Estuary as a result of the construction phase:

- Appointment of Project Ecologist to be consulted prior to the commencement of works in relation to all onsite drainage during construction works (with particular emphasis on protected habitats and plant species within Commoge Marsh), alongside on-site inspections to ensure all measures to mitigate negative impact on Knocknabohilly Stream, Commoge Marsh, and the Lower Bandon Estuary are implemented.
- Local silt traps will be established throughout the site, including a double silt fence between the site and the drainage network.
- Fuel, oil and chemical storage will be sited within a bunded area protected from flood damage and inundation. The bund will be situated at least 50m away from drains, ditches or the watercourse, excavations, and other locations where it may cause pollution.
- Bunds will be kept clean and spills within the bund area will be cleaned immediately to prevent groundwater contamination. In addition, a designated bunded refuelling area on an impermeable surface will be provided at the construction compound.
- Stockpiles and run-off areas following clearance will have suitable barriers in place to prevent run-off of fines into the drainage system and surrounding watercourses.
- Any water-filled excavations that require pumping, including any attenuation tanks during construction, will not directly discharge into waterways. Prior to discharge of water from excavations, adequate filtration will be provided to ensure no deterioration of water quality.
- There will be no pumping from or to adjacent watercourses.
- No entry of solids into the associated drainage network during the connection of pipework to the public water system will occur.
- Sufficient on-site cleaning of vehicles will be undertaken prior to leaving the site at the Construction Compound, particularly during groundworks, and wheel-wash facilities implemented and utilised.
- All machinery will be regularly inspected and maintained, and all vehicles will carry mobile spill kits. Staff will be instructed in the proper use and disposal of spill kits.
- Soil will be stored away from any open surface water drains.
- Waste fuels and materials will be stored in designated areas and skips will be covered.
- Wash down and washout of concrete transporting vehicles will take place at an appropriate facility offsite.

- Rainwater and surface water runoff from hardstanding areas will be discharged to proposed Sustainable Urban Drainage Solutions (SuDS) with silt traps and a Class1 petrol interceptor where required.
- Generators, diesel pumps and similar equipment will be placed in drip trays to collect minor spillages. These will be checked regularly, and accumulated oil removed.
- Leaking oil drums will be removed from site immediately and disposed of via a licensed waste disposal contractor.
- The Site Manager will be responsible for the Pollution Prevention Programme and will ensure that at minimum daily checks are carried out to ensure compliance.

Measures were implemented where possible within the Landscape Plan (Áit, 2024) as outlined by current best practice in 'Planning for Watercourses in the Urban Environment (IFI, 2016), 'Greening and Nature-based SuDS for Active Travel Schemes' (NTA, 2023), and 'The SuDS Manual' (CIRIA, 2015).

5.1.2 Operational Phase

Provision is made within the Landscape Plan (Áit, 2024) for nature-based and sustainable drainage systems (SuDS) following best practice guidance (CIRIA, 2015; IFI, 2016; NTA, 2023). Approximately 61m² of rain garden along the roadside verges are proposed to be implemented during the construction phase, providing a degree of attention capacity and natural filtering through SuDS measures during the operational phase of the proposed development.

5.2 MEASURES FOR HABITATS AND FLORA

Japanese Knotweed areas described above were identified to Cork County Council during the design of the current project and were included in an ongoing council management programme. Control measures for AIPS, particularly Japanese Knotweed, will be implemented prior to the commencement of works on the two identified stands within the centre and northern extent of the scheme. Of particular importance is the vigorous stand of Japanese Knotweed adjacent to the Knocknabohilly Stream. No fill material will be required for importation during construction phases which minimises the risk of importation of an alien invasive plant species (DBFL, 2024c). This would demonstrate compliance with CDP Policy 15-7 'Minimise the risk of spread of alien invasive species'.

A total of 80 trees will unavoidably be lost as part of the proposed development, consisting of individual trees and trees within groups. In order to define the measures necessary to compensate for the loss, tree details were inputted to the Bristol Tree Replacement Standard (BTRS) calculator and compensated for an additional 10% biodiversity net gain (BNG). A total of 184 trees was calculated to achieve 10% BNG. During the design phase, O'Donnell Environmental engaged with the design team and as part of the proposed landscape plan (Áit, 2024), a total of 264 trees are proposed to be planted within the development boundary and council-owned land. These trees consist of 1 individual semi-mature, 40 individual heavy standards, 19 individual select standards, 4 small tree/large shrubs, woodland planting of 200 select standards. This exceeds the number required to achieve 10% BNG.

Boundary habitats and trees which are to be retained will be fenced off prior to the commencement of works to protect these habitats from accidental ingress and damage to the root zone. Full details of tree protection details of retained vegetation is outlined in within the 'Tree Protection Plan' (Holly Arboriculture, 2024c). Where the proposed development encroaches upon trees or tree groups, no-dig construction areas have been designated and arboricultural monitoring required during works in these areas (Holly Arboriculture, 2024c).

In addition to tree planting, the proposed landscape plan additionally accounts for the following habitat enhancement measures:

- 378m² pollinator friendly mix.
- 148m² shade-tolerant pollinator friendly mix.
- 61m² rain garden.
- 803m² grass verge with bulbs.
- 229m² low sward meadow.
- 41m² evergreen hedge.
- 66m² native hedgerow.

Measures outlined in **Section 5.1.1** above will additionally serve to avoid, where possible, the potential negative effects of contaminated surface water on the identified protected habitats and species.

These measures demonstrate compliance with biodiversity objectives of the Cork County Development Plan (2022) including: BE 15-3(a): Ensure that biodiversity issues are considered at the earliest possible stages of plan making; BE 15-5(a): Protect biodiversity and support the principle of biodiversity net gain on land and property owned and managed by Cork County Council; BE15-8: Preserve and enhance the general level of tree cover in both town and country. Ensure that development proposals do not compromise important trees and include an appropriate level of new tree planting.

5.3 MEASURES FOR MAMMALS

Mitigation measures proposed for bats and non-volant mammals are discussed separately in detail below.

5.3.1 Non-Volant Mammals

Due to the scale of the proposed site and the nature of the habitats contained within, the site is not indicative of high value habitat for its non-volant mammal assemblage. A pre-construction mammal survey is not considered warranted in this instance.

Localised increases in noise and dust levels are likely to occur during the construction phase. In the absence of mitigation, these impacts could give rise to indirect negative impacts on some mammal species present in the local environment. The following measures will be applied and are outlined within the pCEMP (DBFL, 2024c):

- Bowsers will be operated during periods of dry weather and high winds when there is a likelihood of dust nuisance to ensure moisture content is high enough to increase the stability of the soil and thus suppress dust.
- Excess material will be protected within sheltered regions of the site.
- Material delivery vehicles will be covered with tarpaulins at all times.
- During construction, works will generally take place during daylight hours only, and the site will not be lit during the hours of darkness.
- If some lighting is required for health, safety or security reasons, lighting shall be cowed, angled downwards and directed away from sensitive ecological features.
- Lighting will be provided with the minimum luminosity sufficient for safety and security purposes.
- Site lighting shall not be left on overnight.

- Suitable fencing will be used if relevant to exclude mammals from hazardous areas including deep excavations.
- Basic housekeeping measures will be implemented including the proper use and daily emptying of bins.

In addition to the above construction-related measures, the Landscape Plan (Áit, 2024) provided at the construction stage will continue to mature and increase in ecological value over time, providing a degree of additional foraging and commuting habitat for mammal species. Retained trees and woodland habitat will continue to mature and increase in ecological value over time.

5.3.2 Bats

No roosting bats were encountered during the current survey, and no unoccupied roosts which contained signs of bats were encountered. No 'PRF-M' suitability tree roosts with features suitable for multiple bats and therefore a maternity colony were identified. Maternity roosts are of considerable conservation importance to bats and there is no potential for a maternity roost of any bat species to occur within any of the trees surveyed.

A total of 23 trees displayed PRF-I suitability for roosting bats, with features which are considered to have potential to support roosting bats either individually or in small numbers. Of these 23 trees identified, a total of 3 are proposed for removal to facilitate development (Tag No. 78, 79, single individual within Tree Group 35; see **Table 3.5**) (Holly Arboriculture, 2024a). These trees will be checked by a bat-licensed ecologist at a minimum immediately prior to supervised felling to ensure no roosting bats are present. For trees displaying heavy Ivy cover, these will be left for a minimum of 24 hours post-felling to enable any potentially concealed roosting bats to escape. In the event roosting by bats is identified, no felling will occur until a derogation licence is in place from the NPWS.

The use of heavy machinery in the root zone of trees can cause damage of woodland habitat and trees, resulting in increased tree morbidity and mortality. Equally, the use of machinery in proximity to trees can result in accidental damage to the trunk and branches of trees. Where the proposed development encroaches upon portions of woodland habitat and tree groups, no-dig construction areas have been designated and arboricultural monitoring required during works in these areas to ensure no impact to trees and therefore foraging habitat for bat species within and proximal to the proposed development (Holly Arboriculture, 2024c).

Prior to the commencement of any tree felling/pruning works, a minimum of 10 artificial bat boxes will be erected in suitably undisturbed locations along the scheme extents. There exists abundant high quality woodland habitat along the southern extent of the proposed development which presents ample opportunity for the integration of artificial bat boxes on trees. The selection of bat box locations will be decided with cognisance of the following:

- Bat boxes will be installed at a minimum height of 3.5 metres above ground level, and in locations which are inaccessible to unaided climbing (to minimise risk of vandalism).
- Locations will be chosen which are not vulnerable to artificial light or noise pollution during the operational phase of the development, with cognisance given to any additional lighting required.
- Boxes will be installed so that they have southern or westerly aspects and preferably in locations where they will receive some direct sunlight.

Due to the urban nature of the project, 'Bark Boxes' are recommended as these are less conspicuous than other types of bat box. Alternatively, a mixture of Schwegler '1FD', '2FR', 'ANS-4' and 'BT-3'

models are recommended. This measure is considered a slight enhancement for roosting bat species relative to pre-construction conditions. These boxes will be monitored once a year for a minimum of two years by a bat-licensed ecologist in order to detail any evidence of occupation.

The pCEMP (DBFL, 2024c) outlines hours of work and site lighting during the construction phase of the development. There are no proposed hours of work extending into the night unless otherwise advised. There is no proposed construction lighting at night except in the winter months when deemed necessary for works to be carried out in a safe manner. No site lighting will be left on overnight. All lighting will be cowled and directed away from sensitive ecological features (Commoge Marsh, woodland habitat).

Existing public lighting will mostly service the proposed development. However, some lighting columns will need to be relocated and updated in response to realigned footpaths. Additional supplementary lighting is proposed for an additional two locations: 1) along the proposed quietway between Abbey Court and Bandon Road, between the current Kinsale GAA Club, and 2) the northern extent of the scheme along the Bandon Road.

In order to reduce the ecological disturbance of light spillage on bats and other ecological features within these areas, light sources used will be designed with cognisance of ILP (2023) and specified as follows (including subsequent replacements):

- LEDs will be used, as these emit minimal ultra-violet light.
- White and blue wavelengths will be avoided; wavelength will be <2,700 kelvin.
- Lights will peak higher than 550nm.
- Only luminaires with a negligible or zero Upward Light Ratio, and with good optical control, have been specified. Luminaires should always be mounted horizontally, with no light output above 90° and/or no upward tilt.
- Consideration should be given to the use of lighting bollards relative to elevated lighting columns along the proposed quietway between Abbey Court and Bandon Road.

In addition to the above construction-related measures, the Landscape Plan (Áit, 2024) provided at the construction stage will continue to mature and increase in ecological value over time, providing a degree of additional foraging and commuting habitat for bat species locally Retained trees and woodland habitat will continue to mature and increase in ecological value over time.

Implementation of these measures demonstrates compliance with CDP Policy GI 14-1(f) 'Achieve a net gain in green infrastructure', BE 15-2 'Protect designated species', and BE15-5(a) 'Protect biodiversity and support the principle of biodiversity net gain on land and property owned and managed by Cork County Council'

5.4 MEASURES FOR BIRDS

Multiple bird nests were identified along the trees directly adjacent to the proposed development (see **Figure 3.4**). Hedgerow and tree clearance should preferentially take place outside the breeding bird season. Section 40 of the Wildlife Act 1976 (as amended) makes provision for the clearance of vegetation (e.g. hedgerows) within the bird breeding season (defined as 1st March to 31st August inclusive) where the works are required to facilitate permitted construction activity.

It is an offence under Section 22 of the Wildlife Act 1976 (as amended) to wilfully destroy, injure, or mutilate the eggs or nest of a wild bird or to wilfully disturb a wild bird on or near a nest containing eggs or un-flown young birds at any time of the year. Where felling or habitat clearance works are required

during the bird breeding season, these features will be inspected in advance by a suitably experienced Ecologist to identify if active bird nests are present. If a nest is discovered, an exclusion zone will be installed at a distance appropriate to the species concerned.

As an enhancement measure, a minimum of 10 artificial bird boxes will be installed in suitably undisturbed locations along the scheme extents in order to compensate for the loss of nesting habitat during the construction phase. There exists abundant high quality woodland habitat along the southern extent of the proposed development which presents ample opportunity for the integration of artificial bird boxes on trees. Bird boxes will be installed between 3-5 metres above ground-level and placed on a variety of aspects to provide a range of environmental conditions for nesting bird species. No more than one bird box will be installed on each tree and will be placed a minimum of 20 metres apart in order to maximise occupation rates and breeding parameters within the available space (Serrano-Davies et al., 2017). A mixture of nest boxes will be utilised in order to cater for a wide variety of bird species. These boxes will be cleaned out annually each winter outside of the bird nesting season. The following bird nest box models (or similar specifications) are considered suitable:

- Two 'Schwegler 1B'
- Two 'Schwegler 2H'
- Two 'Schwegler 2HW'
- Two 'Schwegler AP-2'
- One 'Schwegler 2BN'
- One 'Schwegler 1ZA'

Large accumulations of wetland bird species associated with surrounding SPAs, namely Curlew and Lapwing, were identified night roosting within the northwestern portion of Commoge Marsh, at approximately 250m distance from the nearest point of the proposed development. Due to their sensitive nature, noise and visual effects arising from construction phase works have the potential to negatively impact foraging and roosting bird species associated with Commoge Marsh and the Lower Bandon Estuary. Construction activity such as ground preparation and site clearance works is likely to cause localised disturbance to the birds present in or close to the development footprint. Provision is made within the pCEMP (DBFL, 2024c) for visual and acoustic screening consisting of solid acoustic blanket mounted on full-height fences of approximately 2.5m in height which be placed anywhere along the southern portion of the proposed development which interacts with Commoge Marsh. This will be in place prior to the commencement of the construction phase. Works will generally take place during daylight hours and the site will not be lit during hours of darkness. Any necessary artificial lighting will be cowled and directed away from Commoge Marsh and Lower Bandon Estuary.

5.5 MEASURES FOR OTHER TAXA

Any ponding water will be inspected regularly by the Environmental Manager for the presence of frogspawn during the relevant season. If found to be present it will be removed to a suitable location locally.

6 Residual Impacts and Conclusion

The significance of the potential impacts identified in Chapter 4, considering the avoidance and mitigation measures outlined in Chapter 5, is considered below. The description of effects follows EPA (2022). Effects are judged relative to the current or 'do-nothing' scenario (see **Section 4.1**).

6.1 RESIDUAL IMPACTS ON SURFACE WATER

It is considered that with the implementation of measures outlined herein there will be a non-significant negative impact on surface water quality during the construction phase and a neutral impact during the operation phase.

6.2 RESIDUAL IMPACTS ON HABITATS AND FLORA

There will be a slight negative localised impact on habitats as well as localised impacts on the diversity of flora during the construction phase through the removal of trees, tree groups and hedgerows. The proposed Landscape makes provision for 10% BNG native tree planting as per the Bristol Tree Replacement Standard (updated). Additionally, provision is made for pollinator-friendly grassland management throughout the scheme which exceeds in area any semi-natural habitats lost. Considering the above, the overall residual effect of the proposed development on habitats and flora will be slight positive at a local level.

6.3 RESIDUAL IMPACTS ON MAMMALS

Considering the application of the proposed mitigation measures the overall residual effect of the proposed development on mammals be slight negative during the construction phase. The implementation and continued maturation of the proposed Landscape Plan (Áit, 2024) will provide a additional foraging and commuting habitat for nocturnal mammals above what is present prior to the construction phase. Regular occupation of artificial bat roosts and continued maturation of existing and proposed vegetation have the potential to offset the loss of trees for a slight positive effect overall at a local level.

6.4 RESIDUAL IMPACTS ON BIRDS

Considering the application of the proposed mitigation measures the overall residual effect of the proposed development on birds will be neutral at a local level. Regular occupation of artificial bird boxes and continued maturation of existing and proposed vegetation have the potential to offset the loss of trees for a slight positive effect overall at a local level.

6.5 MEASURES FOR OTHER TAXA

Considering the application of the proposed mitigation measures the overall residual effect of the proposed development on other taxa will be neutral at a local level.

6.6 CONCLUSION

A comprehensive ecological impact assessment has been carried out and the proposed site is considered to be of **Local Importance (Lower Value)** from an ecological perspective as it has limited

areas of semi-natural habitat and is not of special importance for any high conservation priority species or habitats.

Disturbance impacts will occur during the construction phase which cannot be avoided or fully mitigated, and these will have a slight negative impact on the relevant receptors at a local level.

With the implementation of the avoidance and mitigation measures outlined herein, the overall ecological impact of the proposed project (relative to the 'do-nothing' scenario) is considered to be **slight positive at a local level.**

7 References

- Bang, P. & Dahlstrom, P. (2004). *Animal Tracks and Signs*. Oxford University Press, Oxford.
- Bat Conservation Ireland (2010). *Guidance Notes for: Planners, engineers, architects and developers*.
- Bat Conservation Trust (2018). *Bats and Artificial Lighting in the UK*. Guidance note 08/18.
- CIEEM (2018). *Guidelines for Ecological impact Assessment in the UK And Ireland - Terrestrial, Freshwater, Coastal and Marine*. Version 1.1.
- Collins J. (ed.) (2023). *Bat Surveys for Professional Ecologists: Good Practice Guidelines (3rd Edition)*. The Bat Conservation Trust, London.
- EPA (2022). *Guidelines on the Information to be Contained in Environmental Impact Assessment Reports*.
- Gilbert, G., Stanbury, A. and Lewis, L., 2021. Birds of conservation concern in Ireland 4: 2020–2026. *Irish Birds*, 43, pp.1-22.
- JNCC (2004) *Common Standards Monitoring Guidance for Terrestrial Mammals*, Version August 2004, JNCC, Peterborough, ISSN 1743-8160.
- Kelly, J., O'Flynn, C. and Maguire, C., 2013. Risk analysis and prioritisation for invasive and non-native species in Ireland and Northern Ireland. Northern Ireland Environment Agency and National Parks and Wildlife Service, 64 pp.
- Lockhart, N., Hodgetts, N. & Holyoak, D. (2012). *Ireland Red List No.8: Bryophytes*. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht, Dublin, Ireland.
- Lundy, M.G., Aughney, T., Montgomery, W.I. & Roche, N. (2011). *Landscape Conservation for Irish Bats & Species-Specific Roosting Characteristics*. Bat Conservation Ireland.
- Marnell, F., Kelleher, C., Mullen, E. (2022). *Bat mitigation guidelines for Ireland*. National Parks and Wildlife Service. Department of Housing, Local Government and Heritage. Irish Wildlife Manuals, No.134, 2022.
- Muir G., Morris P., Troughton G., Strachan R., Wroot S., Beer A-J., Savery J. (2013). *How to find and Identify Mammals*. The Mammal Society.
- NRA (National Roads Authority, now TII). (2009). *Guidelines for Assessment of Ecological Impacts of National Roads Schemes*. Revision 2, 1st June 2009. NRA, Dublin.
- O'Flynn, C., Kelly, J. and Lysaght, L. (2014). *Ireland's invasive and non-native species – trends in introductions*. National Biodiversity Data Centre Series No. 2. Ireland.
- Russ, J. (2012). *British Bat Calls - A Guide to Species Identification*. Pelagic Publishing. Exeter, UK.
- Russ, J. (2021). *Bat Calls of Britain and Europe - A Guide to Species Identification*. Pelagic Publishing. Exeter, UK.

Serrano, E., Barrientos, R. and Sanz, J., 2017. The role of nest-box density and placement on occupation rates and breeding performance: a case study with Eurasian Blue Tits. *Ornis Fennica*, 94(1), pp.21-32.

Smith, F.G, O'Donoghue, P., O'Hora, K., Delaney, E. (2011). Best Practice Guidance for Habitat Survey and Mapping in Ireland. The Heritage Council.

Wyse Jackson, M., FitzPatrick, Ú., Cole, E., Jebb, M., McFerran, D., Sheehy Skeffington, M. & Wright, M. (2016) Ireland Red List No. 10: Vascular Plants. National Parks and Wildlife Service, Department of Arts, Heritage, Regional, Rural and Gaeltacht Affairs, Dublin, Ireland.

Appendix A - Photographic Record



A1. Abandoned attempted entrance (UG_01) at the south of the proposed scheme.



A2. Rat/Rabbit burrow entrance (UG_03) with clearly defined trail from entrance.



A3. Culvert carrying the Knocknabohilly Stream underneath the Bandon Road (L3234) at the north of the scheme.



A4. Lapwing roosting along the centre of Commoge Marsh.



A5. Alternate view of Commoge Marsh, showing the deeper water where gull species have been identified in large numbers.



A6. View looking north along the L3235 at the southern extent of the proposed scheme.



A7. Alternate view of the wet woodland habitat along the southern extent of the proposed scheme.



A8. Japanese Knotweed growing within the scrub adjacent to the Knocknabohilly Stream. This stand extends down to the stream edge.

Appendix B - Description of Ecological Effects

Table F1.1 - Descriptions of Ecological Effects

<p>Quality of Effects</p>	<p>Positive Effects: A change which improves the quality of the environment (for example, by increasing species diversity; or the improving reproductive capacity of an ecosystem, or by removing nuisances or improving amenities).</p> <p>Neutral Effects: No effects or effects that are imperceptible, within normal bounds of variation or within the margin of forecasting error.</p> <p>Negative Effects: A change which reduces the quality of the environment (for example, lessening species diversity or diminishing the reproductive capacity of an ecosystem; or damaging health or property or by causing nuisance).</p>
<p>Describing the Significance of Effects</p>	<p>Imperceptible: An effect capable of measurement but without significant consequences.</p> <p>Not significant: An effect which causes noticeable changes in the character of the environment but without significant consequences.</p> <p>Slight Effects: An effect which causes noticeable changes in the character of the environment without affecting its sensitivities.</p> <p>Moderate Effects: An effect that alters the character of the environment in a manner that is consistent with existing and emerging baseline trends.</p> <p>Significant Effects: An effect which, by its character, magnitude, duration or intensity alters a sensitive aspect of the environment.</p> <p>Very Significant: An effect which, by its character, magnitude, duration or intensity significantly alters most of a sensitive aspect of the environment.</p> <p>Profound Effects: An effect which obliterates sensitive characteristics.</p>
<p>Describing the Extent and Context of Effects</p>	<p>Extent: Describe the size of the area, the number of sites, and the proportion of a population affected by an effect.</p> <p>Context: Describe whether the extent, duration, or frequency will conform or contrast with established (baseline) conditions (is it the biggest, longest effect ever?).</p>
<p>Describing the Probability of Effects</p>	<p>Likely Effects: The effects that can reasonably be expected to occur because of the planned project if all mitigation measures are properly implemented.</p> <p>Unlikely Effects: The effects that can reasonably be expected not to occur because of the planned project if all mitigation measures are properly implemented.</p>
<p>Describing the Duration of Effects</p>	<p>Momentary Effects: Effects lasting from seconds to minutes.</p> <p>Brief Effects: Effects lasting less than a day.</p> <p>Temporary Effects:</p>

Effects lasting less than a year.

Short-term Effects:

Effects lasting one to seven years.

Medium-term Effects:

Effects lasting seven to fifteen years.

Long-term Effects:

Effects lasting fifteen to sixty years.

Permanent Effects:

Effects lasting over sixty years.

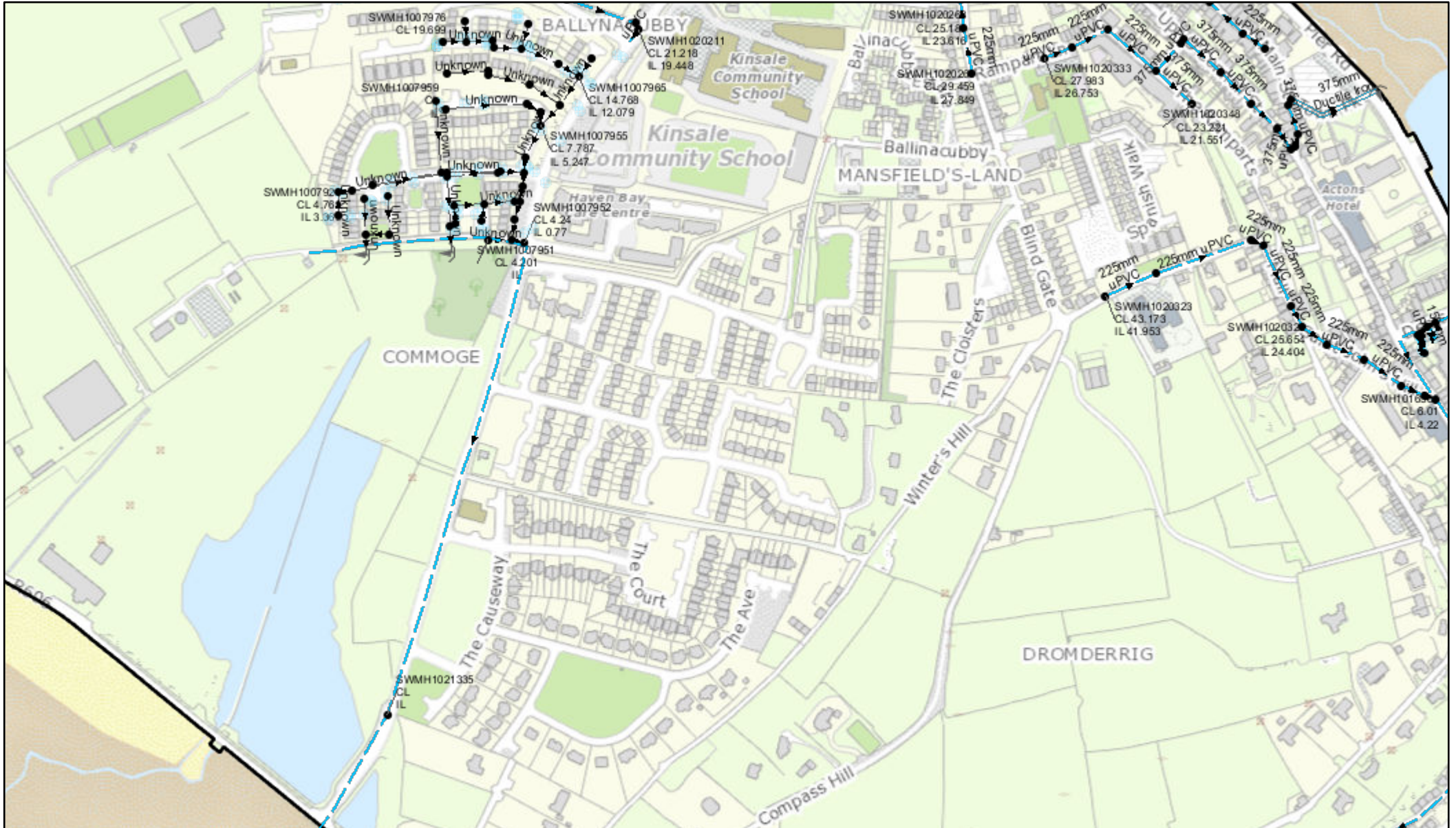
Reversible Effects:

Effects that can be undone, for example through remediation or restoration

Adapted from 'Guidelines on the Information to be Contained in Environmental Impact Assessment Reports' EPA (2022).

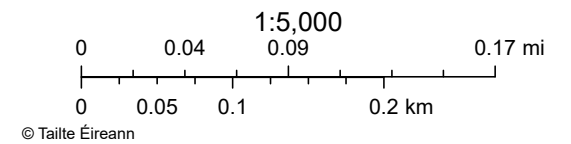
Appendix C - Kinsale Stormwater Network

Web Map Output



14/02/2024, 15:43:00





- | | | | | |
|-----------------------|-------------------------------|---|----------------|--|
| Storm chambers | Storm Inlets | Surface Water Pressurised Mains | Other; Unknown | Bifurcation |
| Storm Detention Areas | Gully | Surface Water Pressurised Mains Private | Storm Manholes | Hatchbox |
| Storm Open Drains | Standard | Storm Discharge Points | Standard | Lamphole |
| Storm Weirs | Other; Unknown | Outfall | Backdrop | Hydrobrake |
| Storm Clean Outs | Surface Water Mains | Overflow | Cascade | Other; Unknown |
| Storm Culverts | Surface Gravity Mains | Soakaway | Catchpit | Cork County Boundary (Effective 31st May 2019) |
| | Surface Gravity Mains Private | | | |



Appendix D - Landscape Plan Sheets 1-9 (Áit, 2024)






LEGEND

Tree Planting




-  1no. Individual Semi-Mature Tree
See Planting Schedule for details.
-  10no. Individual Heavy Standard Tree
See Planting Schedule for details.
-  15no. Individual Select Standard Tree
See Planting Schedule for details.
-  4no. Individual Small Tree/Large Shrub
See Planting Schedule for details.

 Existing vegetation retained as per arborist's survey

Planting Mixes

-  Pollinator Friendly Mix (370sqm)
See Planting Schedule for details.
-  Shade tolerant Pollinator Friendly Mix (140sqm)
See Planting Schedule for details.
-  Rain Garden (61sqm)
See Planting Schedule for details.
-  Grass verge with bulbs (803sqm)
See Planting Schedule for details.
-  Low Sward Meadow (225sqm)
See Planting Schedule for details.

Hedge Planting

-  Evergreen hedge (11sqm)
See Planting Schedule for details.
-  Native hedgerow (66sqm)
See Planting Schedule for details.
-  Woodland Planting (770sqm; 200no. select standard trees)
See Planting Schedule for details.

NOTES:
Proposed tree locations are indicative and may be subject to modification to take account of below ground infrastructure.

NOTES ON PLANTING WORKS

- 1.0 Rip subsoil to a depth of min. 650mm from finished surface.
- 2.0 Cultivate the planting beds to a min. depth of 450mm, working in 100mm depth of peat free organic compost.
- 3.0 Staking + guying:
All feathered, multi-stem and standard trees planted to be supported with a single stake. All timber to be pressure treated. All fixings to be hot-dip galvanised. All tree ties to be adjustable and flexible.
- 4.0 Apply a layer of mulch to all planting beds, Medium Grade Bark Chip.
- 5.0 All bare root planting to be undertaken during October-March inclusive. All wire rool balled stock to be planted October-April inclusive.

NOTES ON MEADOWS

- 1.0 Meadow areas will be sown with a Low Sward Meadow mix at a ratio of 70:30 Wildflower to Grass Seed - see 24C04-DR-0204 for full planting list and details. Seed sowing should be undertaken in August/ September.
- 2.0 Meadows to be mown four times during the first season. All cuttings are to be removed.

- 3.0 Post establishment Garden Meadows are to be cut once annually after August and cut no shorter than 40mm. All cuttings are to be removed. Roadside verges can be cut more frequently; max. every 6 weeks.
- 4.0 Removal and/or treatment of aggressive weeds as required, such as, Creeping Thistle *Cirsium arvense*, Spear Thistle *Cirsium vulgare*, Common Ragwort *Senecio vulgaris*, Broad-leaved Dock *Rumex obtusifolius* and Curled Dock *Rumex crispus*.

NOTES ON WATERING

Watering (General)

1. General Provision: Provide for 3 Years Watering
2. Supply: Potable mains water or Rain water from storage tank
3. Quantity: Wet full depth of topsoil
4. Application: Do not damage or loosen plants.
5. Compacted soil: Loosen or scoop out, to direct water to rootzone.
6. Frequency: As necessary for the continued thriving of all planting and when instructed by Cork County Council; number of watering visits to be agreed with Cork County Council.

Watering (Summer)

1. Supply: Potable mains water or Rain water from storage tank
2. Quantity: Wet full depth of topsoil
3. Application: Do not damage or loosen plants.
4. Compacted soil: Loosen or scoop out, to direct water to rootzone.
5. Frequency: Include for watering all planting areas as required by dry conditions; 2 weeks without rain (precipitation less than 20mm) during months April to September.

Watering (Heatwaves)

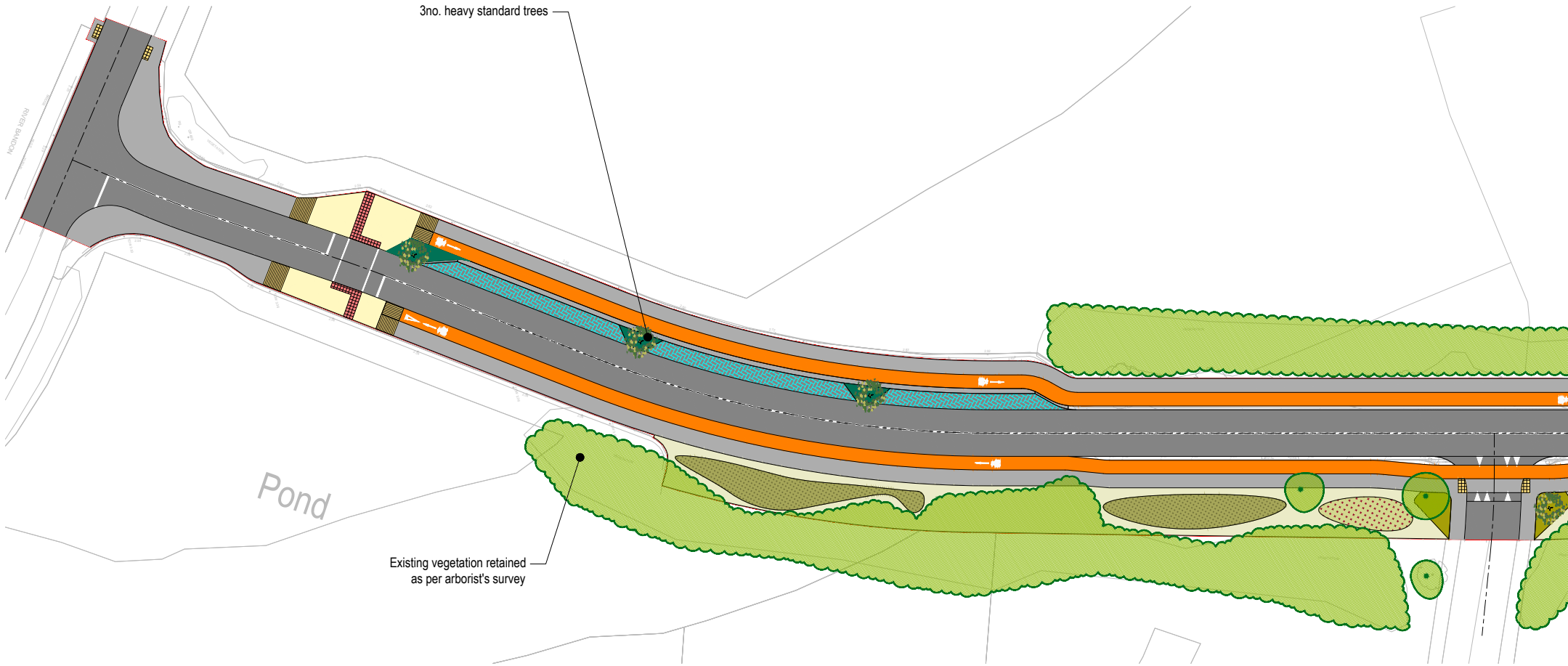
1. Supply: During these conditions water is to be collected via bousier/tanker & locally sourced from canal or other river/waterbody where there is an adequate supply.
2. Quantity: Wet full depth of topsoil
3. Application: Do not damage or loosen plants.
4. Compacted soil: Loosen or scoop out, to direct water to rootzone.
5. Frequency: Bi-weekly watering during heatwaves (where there are 5 consecutive days or more with maximum temperature over 25 degrees Celsius (i.e. daily maximum temperature > 25 °C.)) as required and as necessary to ensure trees and planting do not suffer due to heat.

Watering (Trees)

1. Supply: Drawn from: Potable mains water or locally sourced from canal or other river/waterbody where there is an adequate supply via Slow Release Tree Watering Bag (2no. bag per base of tree) Double bag setup maximum water capacity is approximately 88.95 litres
2. Quantity: Wet full depth of topsoil (double bag setup)
3. Application: Do not damage or loosen plants.
4. Compacted soil: Loosen or scoop out, to direct water to rootzone.
5. Frequency: **First 2 years of establishment:** Refill bag 2-3 times per week (depending on needs/conditions to keep soil moist); water depleted after 5-9 hours. **After 2 years of establishment:** Refill bag every 5-7 days (depending on needs/conditions to keep soil moist)

Water restrictions

1. General: If water supply is, or is likely to be, restricted by emergency legislation, submit proposals for an alternative suitable source of water. Obtain instructions before proceeding.



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NO.	REV.	DESCRIPTION	DATE	BY

NOTES:

	8th Floor, The National Centre, Research Park, Galway T +353 (0) 91 592000 www.ait.ie	ISSUE STATUS: PLANNING	
	CLIENT: Client PROJECT: BANDON ROAD TO R606 CYCLE SCHEME DRAWING: Landscape Plan 1	DRAWING NO: 24C04-DR-0201 PROJECT NO: 2404 SCALE: 1:250 SHEET SIZE: A1 CHECKED BY:	






LEGEND

Tree Planting

-  1no. Individual Semi-Mature Tree
See Planting Schedule for details.
-  10no. Individual Heavy Standard Tree
See Planting Schedule for details.
-  15no. Individual Select Standard Tree
See Planting Schedule for details.
-  4no. Individual Small Tree/Large Shrub
See Planting Schedule for details.

 Existing vegetation retained as per arborist's survey

Planting Mixes

-  Pollinator Friendly Mix (270sqm)
See Planting Schedule for details.
-  Shade tolerant Pollinator Friendly Mix (140sqm)
See Planting Schedule for details.
-  Rain Garden (61sqm)
See Planting Schedule for details.
-  Grass verge with bulbs (803sqm)
See Planting Schedule for details.
-  Low Sward Meadow (225sqm)
See Planting Schedule for details.

Hedge Planting

-  Evergreen hedge (11sqm)
See Planting Schedule for details.
-  Native hedgerow (66sqm)
See Planting Schedule for details.
-  Woodland Planting (770sqm; 200no. select standard trees)
See Planting Schedule for details.

NOTES:
- Proposed tree locations are indicative and may be subject to modification to take account of below ground infrastructure.

NOTES ON PLANTING WORKS

- 1.0 Rip subsoil to a depth of min. 650mm from finished surface.
- 2.0 Cultivate the planting beds to a min. depth of 450mm, working in 100mm depth of peat free organic compost.
- 3.0 Staking + guying:
All feathered, multi-stem and standard trees planted to be supported with a single stake. All timber to be pressure treated. All fittings to be hot-dip galvanised. All tree ties to be adjustable and flexible.
- 4.0 Apply a layer of mulch to all planting beds, Medium Grade Bark Chip.
- 5.0 All bare root planting to be undertaken during October-March inclusive. All wire rool balled stock to be planted October-April inclusive.

NOTES ON MEADOWS

- 1.0 Meadow areas will be sown with a Low Sward Meadow mix at a ratio of 70:30 Wildflower to Grass Seed - see 24C04-DR-0202 for full planting list and details. Seed sowing should be undertaken in August/ September.
- 2.0 Meadows to be mown four times during the first season. All cuttings are to be removed.

- 3.0 Post establishment Garden Meadows are to be cut once annually after August and cut no shorter than 40mm. All cuttings are to be removed. Roadside verges can be cut more frequently; max. every 6 weeks.
- 4.0 Removal and/or treatment of aggressive weeds as required, such as, Creeping Thistle *Cirsium arvense*, Spear Thistle *Cirsium vulgare*, Common Ragwort *Senecio vulgaris*, Broad-leaved Dock *Rumex obtusifolius* and Curled Dock *Rumex crispus*.

NOTES ON WATERING

Watering (General)

1. General Provision: Provide for 3 Years Watering
2. Supply: Potable mains water or Rain water from storage tank
3. Quantity: Wet full depth of topsoil
4. Application: Do not damage or loosen plants.
5. Compacted soil: Loosen or scoop out, to direct water to rootzone.
6. Frequency: As necessary for the continued thriving of all planting and when instructed by Cork County Council; number of watering visits to be agreed with Cork County Council.

Watering (Summer)

1. Supply: Potable mains water or Rain water from storage tank
2. Quantity: Wet full depth of topsoil
3. Application: Do not damage or loosen plants.
4. Compacted soil: Loosen or scoop out, to direct water to rootzone.
5. Frequency: Include for watering all planting areas as required by dry conditions; 2 weeks without rain (precipitation less than 20mm) during months April to September.

Watering (Heatwaves)

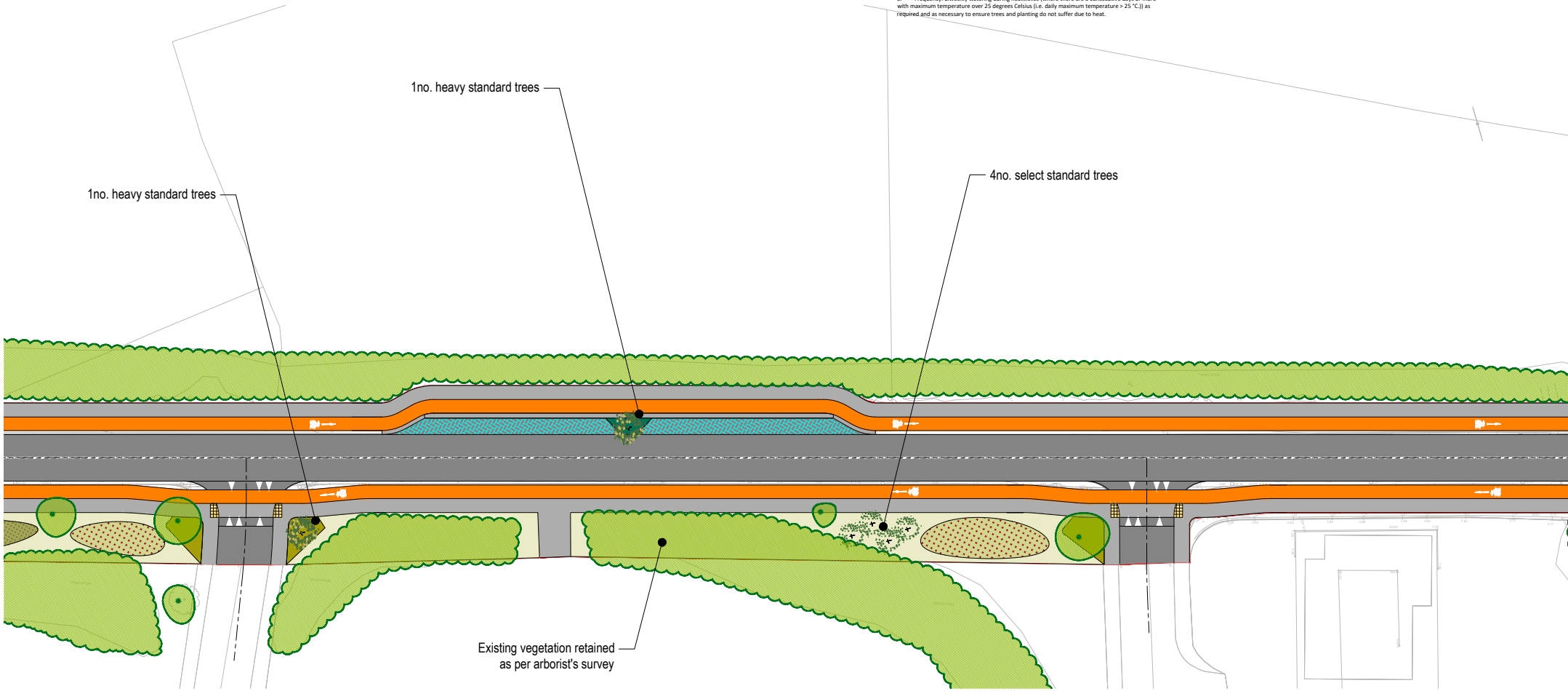
1. Supply: During these conditions water is to be collected via bousser/tanker & locally sourced from canal or other river/waterbody where there is an adequate supply.
2. Quantity: Wet full depth of topsoil
3. Application: Do not damage or loosen plants.
4. Compacted soil: Loosen or scoop out, to direct water to rootzone.
5. Frequency: Biweekly watering during heatwaves (where there are 5 consecutive days or more with maximum temperature over 25 degrees Celsius (i.e. daily maximum temperature > 25°C)) as required and as necessary to ensure trees and planting do not suffer due to heat.

Watering (Trees)

1. Supply: Drawn from: Potable mains water or locally sourced from canal or other river/waterbody where there is an adequate supply via Slow Release Tree Watering Bag (2no. bag per base of tree) Double bag setup maximum water capacity is approximately 88.95 litres
2. Quantity: Wet full depth of topsoil (double bag setup)
3. Application: Do not damage or loosen plants.
4. Compacted soil: Loosen or scoop out, to direct water to rootzone.
5. Frequency: **First 2 years of establishment:** Refill bag 2-3 times per week (depending on needs/conditions to keep soil moist); water depleted after 5-9 hours. **After 2 years of establishment:** Refill bag every 5-7 days (depending on needs/conditions to keep soil moist)

Water restrictions

1. General: If water supply is, or is likely to be, restricted by emergency legislation, submit proposals for an alternative suitable source of water. Obtain instructions before proceeding.



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NO.	REV.	DESCRIPTION	DATE	BY

NOTES:

	8th Floor, The National Centre Republic of Square Dublin 4 Ireland T: +353 (0)1 454 2000 www.ait.ie	ISSUE STATUS: PLANNING	
	CLIENT: Client PROJECT: BANDON ROAD TO R606 CYCLE SCHEME DRAWING: Landscape Plan 2	DRAWN BY: LHM PROJECT NO: 24C04-DR-0202 SCALE: 1:250	






LEGEND

Tree Planting

-  1no. Individual Semi-Mature Tree
See Planting Schedule for details.
-  10no. Individual Heavy Standard Tree
See Planting Schedule for details.
-  15no. Individual Select Standard Tree
See Planting Schedule for details.
-  4no. Individual Small Tree/Large Shrub
See Planting Schedule for details.

 Existing vegetation retained as per arborist's survey

Planting Mixes

-  Pollinator Friendly Mix (170sqm)
See Planting Schedule for details.
-  Shade tolerant Pollinator Friendly Mix (140sqm)
See Planting Schedule for details.
-  Rain Garden (61sqm)
See Planting Schedule for details.
-  Grass verge with bulbs (803sqm)
See Planting Schedule for details.
-  Low Sward Meadow (225sqm)
See Planting Schedule for details.

Hedge Planting

-  Evergreen hedge (11sqm)
See Planting Schedule for details.
-  Native hedgerow (66sqm)
See Planting Schedule for details.
-  Woodland Planting (770sqm; 200no. select standard trees)
See Planting Schedule for details.

NOTES:
Proposed tree locations are indicative and may be subject to modification to take account of below ground infrastructure.

NOTES ON PLANTING WORKS

- 1.0 Rip subsoil to a depth of min. 650mm from finished surface.
- 2.0 Cultivate the planting beds to a min. depth of 450mm, working in 100mm depth of peat free organic compost.
- 3.0 Staking + guying:
All feathered, multi-stem and standard trees planted to be supported with a single stake. All timber to be pressure treated. All fittings to be hot-dip galvanised. All tree ties to be adjustable and flexible.
- 4.0 Apply a layer of mulch to all planting beds, Medium Grade Bark Chip.
- 5.0 All bare root planting to be undertaken during October-March inclusive. All wire root balled stock to be planted October-April inclusive.

NOTES ON MEADOWS

- 1.0 Meadow areas will be sown with a Low Sward Meadow mix at a ratio of 70-30 Wildflower to Grass Seed - see 24C04-DR-0203 for full planting list and details. Seed sowing should be undertaken in August/ September.

- 2.0 Meadows to be mown four times during the first season. All cuttings are to be removed.

- 3.0 Post establishment Garden Meadows are to be cut once annually after August and cut no shorter than 40mm. All cuttings are to be removed. Roadside verges can be cut more frequently; max. every 6 weeks.

- 4.0 Removal and/or treatment of aggressive weeds as required, such as, Creeping Thistle *Cirsium arvense*, Spear Thistle *Cirsium vulgare*, Common Ragwort *Senecio vulgaris*, Broad-leaved Dock *Rumex obtusifolius* and Curled Dock *Rumex crispus*.

NOTES ON WATERING

Watering (General)

1. General Provision: Provide for 3 Years Watering
2. Supply: Potable mains water or Rain water from storage tank
3. Quantity: Wet full depth of topsoil
4. Application: Do not damage or loosen plants.
5. Compacted soil: Loosen or scoop out, to direct water to rootzone.
6. Frequency: As necessary for the continued thriving of all planting and when instructed by Cork County Council; number of watering visits to be agreed with Cork County Council.

Watering (Summer)

1. Supply: Potable mains water or Rain water from storage tank
2. Quantity: Wet full depth of topsoil
3. Application: Do not damage or loosen plants.
4. Compacted soil: Loosen or scoop out, to direct water to rootzone.
5. Frequency: include for watering all planting areas as required by dry conditions; 2 weeks without rain (precipitation less than 20mm) during months April to September.

Watering (Heatwaves)

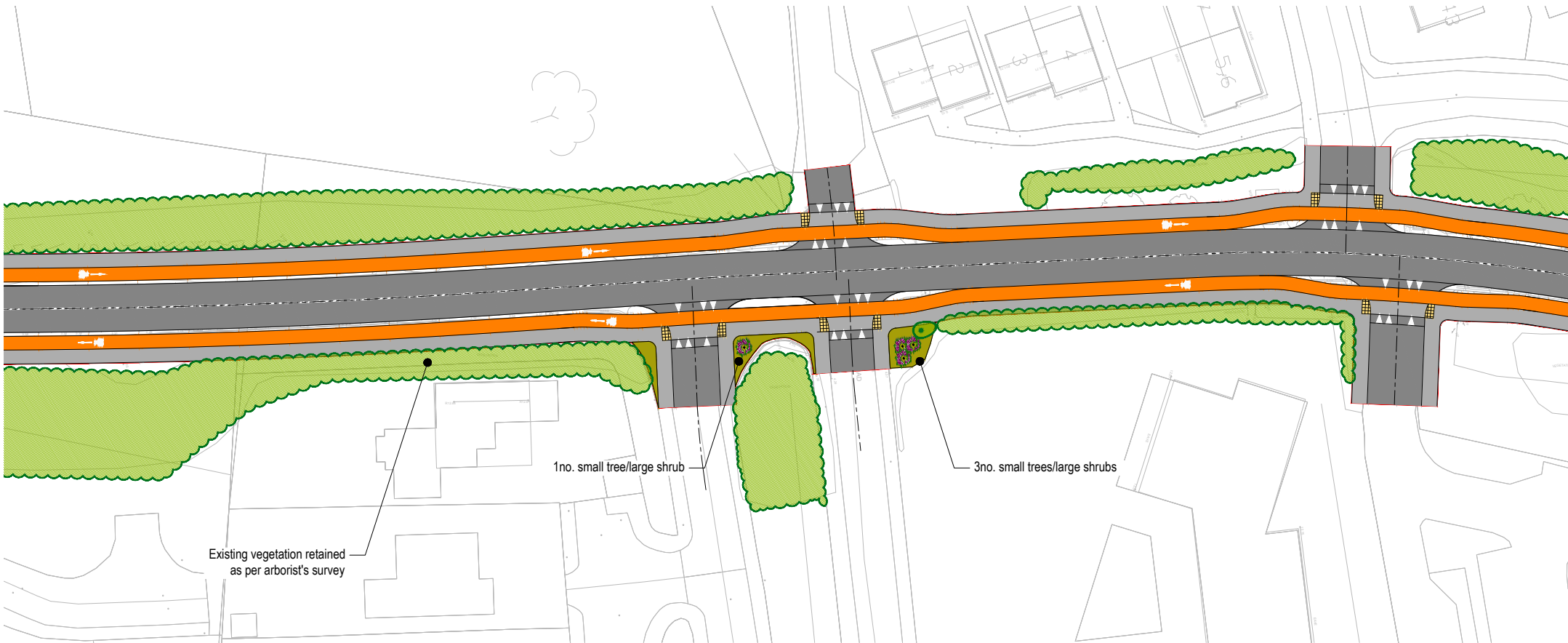
1. Supply: During these conditions water is to be collected via bousser/tanker & locally sourced from canal or other river/waterbody where there is an adequate supply.
2. Quantity: Wet full depth of topsoil
3. Application: Do not damage or loosen plants.
4. Compacted soil: Loosen or scoop out, to direct water to rootzone.
5. Frequency: Biweekly watering during heatwaves (where there are 5 consecutive days or more with maximum temperature over 25 degrees Celsius (i.e. daily maximum temperature > 25°C)) as required and as necessary to ensure trees and planting do not suffer due to heat.

Watering (Trees)

1. Supply: Drawn from: Potable mains water or locally sourced from canal or other river/waterbody where there is an adequate supply via Slow Release Tree Watering Bag (2no. bag per base of tree) Double bag setup maximum water capacity is approximately 88.95 litres
2. Quantity: Wet full depth of topsoil (double bag setup)
3. Application: Do not damage or loosen plants.
4. Compacted soil: Loosen or scoop out, to direct water to rootzone.
5. Frequency: First 2 years of establishment: Refill bag 2-3 times per week (depending on needs/conditions to keep soil moist); water depleted after 5-9 hours. After 2 years of establishment: Refill bag every 5-7 days (depending on needs/conditions to keep soil moist)

Water restrictions

1. General: If water supply is, or is likely to be, restricted by emergency legislation, submit proposals for an alternative suitable source of water. Obtain instructions before proceeding.



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NO.	DATE	DESCRIPTION	BY	CHECKED

NOTES:

	8th Floor, The National Centre, Republic Square, Dublin 1, Ireland T: +353 (0) 1 708 0000 www.ait.ie		ISSUE STATUS: PLANNING		
	CLIENT: Client	DRAWING NO: 24C04-DR-0203	REVISION: -	SHEET NO.: 1	
PROJECT: BANDON ROAD TO R606 CYCLE SCHEME	DRAWN BY: LHM	IN ISSUE: 08.10.2024	NORTH		
DRAWING: Landscape Plan 3	PROJECT NO.: 24004	SCALE: 1:250	SHEET SIZE: A1 CHECKED BY:		






LEGEND

Tree Planting

-  1no. Individual Semi-Mature Tree
See Planting Schedule for details.
-  10no. Individual Heavy Standard Tree
See Planting Schedule for details.
-  10no. Individual Select Standard Tree
See Planting Schedule for details.
-  4no. Individual Small Tree/Large Shrub
See Planting Schedule for details.

 Existing vegetation retained as per arborist's survey

Planting Mixes

-  Pollinator Friendly Mix (270sqm)
See Planting Schedule for details.
-  Shade tolerant Pollinator Friendly Mix (140sqm)
See Planting Schedule for details.
-  Rain Garden (61sqm)
See Planting Schedule for details.
-  Grass verge with bulbs (803sqm)
See Planting Schedule for details.
-  Low Sward Meadow (225sqm)
See Planting Schedule for details.

Hedge Planting

-  Evergreen hedge (11sqm)
See Planting Schedule for details.
-  Native hedgerow (66sqm)
See Planting Schedule for details.
-  Woodland Planting (770sqm; 200no. select standard trees)
See Planting Schedule for details.

NOTES:
Proposed tree locations are indicative and may be subject to modification to take account of below ground infrastructure.

NOTES ON PLANTING WORKS

- 1.0 Rip subsoil to a depth of min. 650mm from finished surface.
- 2.0 Cultivate the planting beds to a min. depth of 450mm, working in 100mm depth of peat free organic compost.
- 3.0 Staking + guying:
All feathered, multi-stem and standard trees planted to be supported with a single stake. All timber to be pressure treated. All fixings to be hot-dip galvanized. All tree ties to be adjustable and flexible.
- 4.0 Apply a layer of mulch to all planting beds, Medium Grade Bark Chip.
- 5.0 All bare root planting to be undertaken during October-March inclusive. All wire root balled stock to be planted October-April inclusive.

NOTES ON MEADOWS

- 1.0 Meadow areas will be sown with a Low Sward Meadow mix at a ratio of 70:30 Wildflower to Grass Seed - see 24C04-DR-0204 for full planting list and details. Seed sowing should be undertaken in August/ September.
- 2.0 Meadows to be mown four times during the first season. All cuttings are to be removed.

- 3.0 Post establishment Garden Meadows are to be cut once annually after August and cut no shorter than 40mm. All cuttings are to be removed. Roadside verges can be cut more frequently; max. every 6 weeks.
- 4.0 Removal and/or treatment of aggressive weeds as required, such as, Creeping Thistle *Cirsium arvense*, Spear Thistle *Cirsium vulgare*, Common Ragwort *Senecio vulgaris*, Broad-leaved Dock *Rumex obtusifolius* and Curled Dock *Rumex crispus*.

NOTES ON WATERING

Watering (General)

1. General Provision: Provide for 3 Years Watering
2. Supply: Potable mains water or Rain water from storage tank
3. Quantity: Wet full depth of topsoil
4. Application: Do not damage or loosen plants.
5. Compacted soil: Loosen or scoop out, to direct water to rootzone.
6. Frequency: As necessary for the continued thriving of all planting and when instructed by Cork County Council; number of watering visits to be agreed with Cork County Council.

Watering (Summer)

1. Supply: Potable mains water or Rain water from storage tank
2. Quantity: Wet full depth of topsoil
3. Application: Do not damage or loosen plants.
4. Compacted soil: Loosen or scoop out, to direct water to rootzone.
5. Frequency: include for watering all planting areas as required by dry conditions; 2 weeks without rain (precipitation less than 20mm) during months April to September.

Watering (Heatwaves)

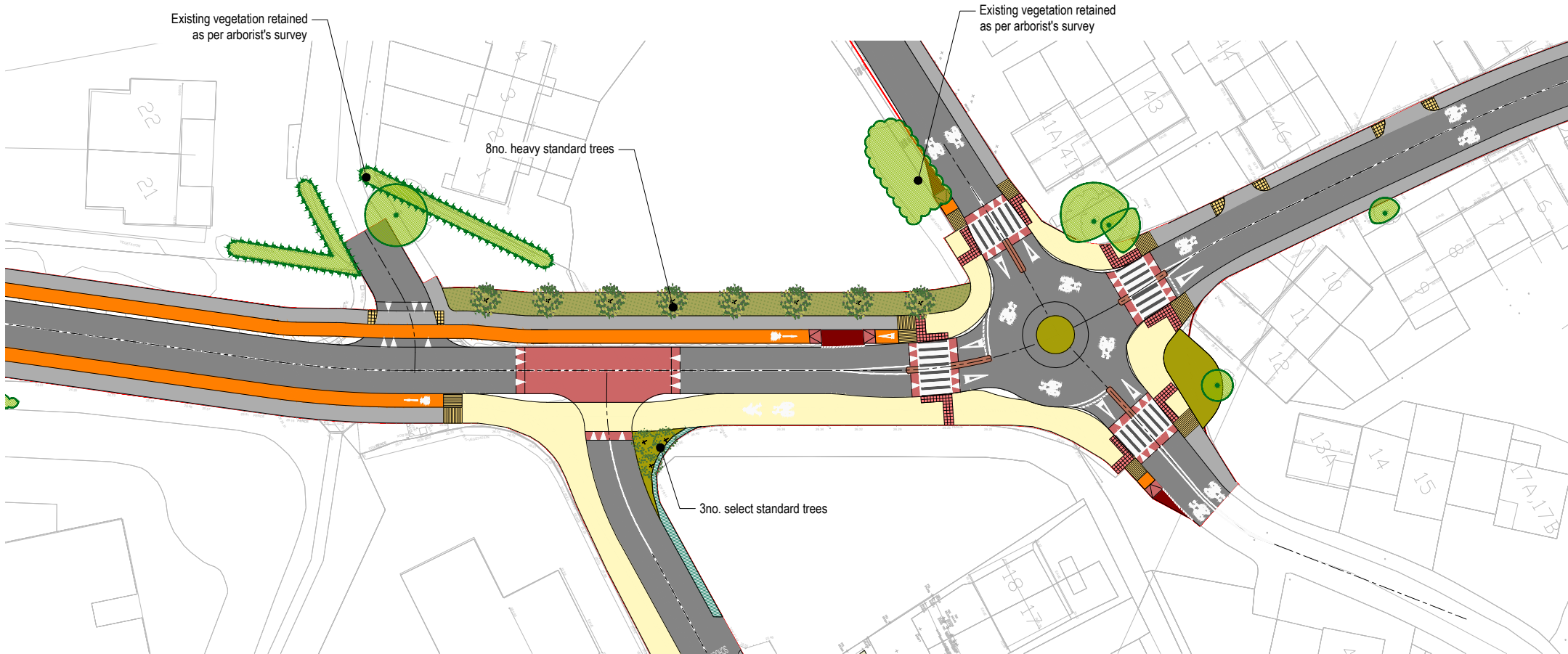
1. Supply: During these conditions water is to be collected via bousier/tanker & locally sourced from canal or other river/waterbody where there is an adequate supply.
2. Quantity: Wet full depth of topsoil
3. Application: Do not damage or loosen plants.
4. Compacted soil: Loosen or scoop out, to direct water to rootzone.
5. Frequency: Biweekly watering during heatwaves (where there are 5 consecutive days or more with maximum temperature over 25 degrees Celsius (i.e. daily maximum temperature > 25°C)) as required and as necessary to ensure trees and planting do not suffer due to heat.

Watering (Trees)

1. Supply: Drawn from: Potable mains water or locally sourced from canal or other river/waterbody where there is an adequate supply via Slow Release Tree Watering Bag (2no. bag per base of tree) Double bag setup maximum water capacity is approximately 88.95 litres
2. Quantity: Wet full depth of topsoil (double bag setup)
3. Application: Do not damage or loosen plants.
4. Compacted soil: Loosen or scoop out, to direct water to rootzone.
5. Frequency: First 2 years of establishment: Refill bag 2-3 times per week (depending on needs/conditions to keep soil moist); water depleted after 5-9 hours. After 2 years of establishment: Refill bag every 5-7 days (depending on needs/conditions to keep soil moist)

Water restrictions

1. General: If water supply is, or is likely to be, restricted by emergency legislation, submit proposals for an alternative suitable source of water. Obtain instructions before proceeding.



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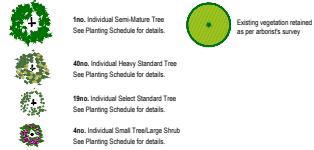
REV	NO.	DESCRIPTION	DATE	BY

NOTES:

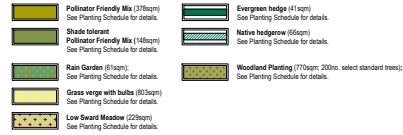
 ait urbanism + landscape	8th Floor, Newmarket House, Newmarket Square, Cork City, T. +353 (0)21 4922000 www.ait.ie	ISSUE STATUS: PLANNING	
	CLIENT: Client PROJECT: BANDON ROAD TO R606 CYCLE SCHEME DRAWING: Landscape Plan 4	DRAWN BY: LAM IN ISSUE: 08/10/2024 PROJECT NO: 24C04 SCALE: 1:200 SHEET SIZE: A1 CHECKED BY: GMB	

LEGEND

Tree Planting



Planting Mixes



Existing vegetation retained as per architect's survey

Hedge Planting
Evergreen hedge (11sqm)
Native hedgerow (66sqm)

Woodland Planting (770sqm; 200no. select standard trees)
See Planting Schedule for details.

NOTES:
Proposed tree locations are indicative and may be subject to modification to take account of below ground infrastructure.

NOTES ON PLANTING WORKS

- Rip subsoil to a depth of min. 650mm from finished surface.
- Cultivate the planting beds to a min. depth of 450mm, working in 100mm depth of peat free organic compost.
- Staking + guying:
All feathered, multi-stem and standard trees planted to be supported with a single stake. All timber to be pressure treated. All fixings to be hot-dip galvanised. All tree ties to be adjustable and flexible.
- Apply a layer of mulch to all planting beds, Medium Grade Bark Chip.
- All bare root planting to be undertaken during October-March inclusive. All wire rool balled stock to be planted October-April inclusive.

NOTES ON MEADOWS

- Meadow areas will be sown with a Low Sward Meadow mix at a ratio of 70-30 Wildflower to Grass Seed - see 24C04-DR-0205 for full planting list and details. Seed sowing should be undertaken in August/ September.
- Meadows to be mown four times during the first season. All cuttings are to be removed.

- Post establishment Garden Meadows are to be cut once annually after August and cut no shorter than 40mm. All cuttings are to be removed. Roadside verges can be cut more frequently; max. every 6 weeks.
- Removal and/or treatment of aggressive weeds as required, such as, Creeping Thistle *Cirsium arvense*, Spear Thistle *Cirsium vulgare*, Common Ragwort *Senecio vulgaris*, Broad-leaved Dock *Rumex obtusifolius* and Curled Dock *Rumex crispus*.

NOTES ON WATERING

Watering (General)

- General Provision: Provide for 3 Years Watering
- Supply: Potable mains water or Rain water from storage tank
- Quantity: Wet full depth of topsoil
- Application: Do not damage or loosen plants.
- Compacted soil: Loosen or scoop out, to direct water to rootzone.
- Frequency: As necessary for the continued thriving of all planting and when instructed by Cork County Council; number of watering visits to be agreed with Cork County Council.

Watering (Summer)

- Supply: Potable mains water or Rain water from storage tank
- Quantity: Wet full depth of topsoil
- Application: Do not damage or loosen plants.
- Compacted soil: Loosen or scoop out, to direct water to rootzone.
- Frequency: Include for watering all planting areas as required by dry conditions; 2 weeks without rain (precipitation less than 20mm) during months April to September.

Watering (Heatwaves)

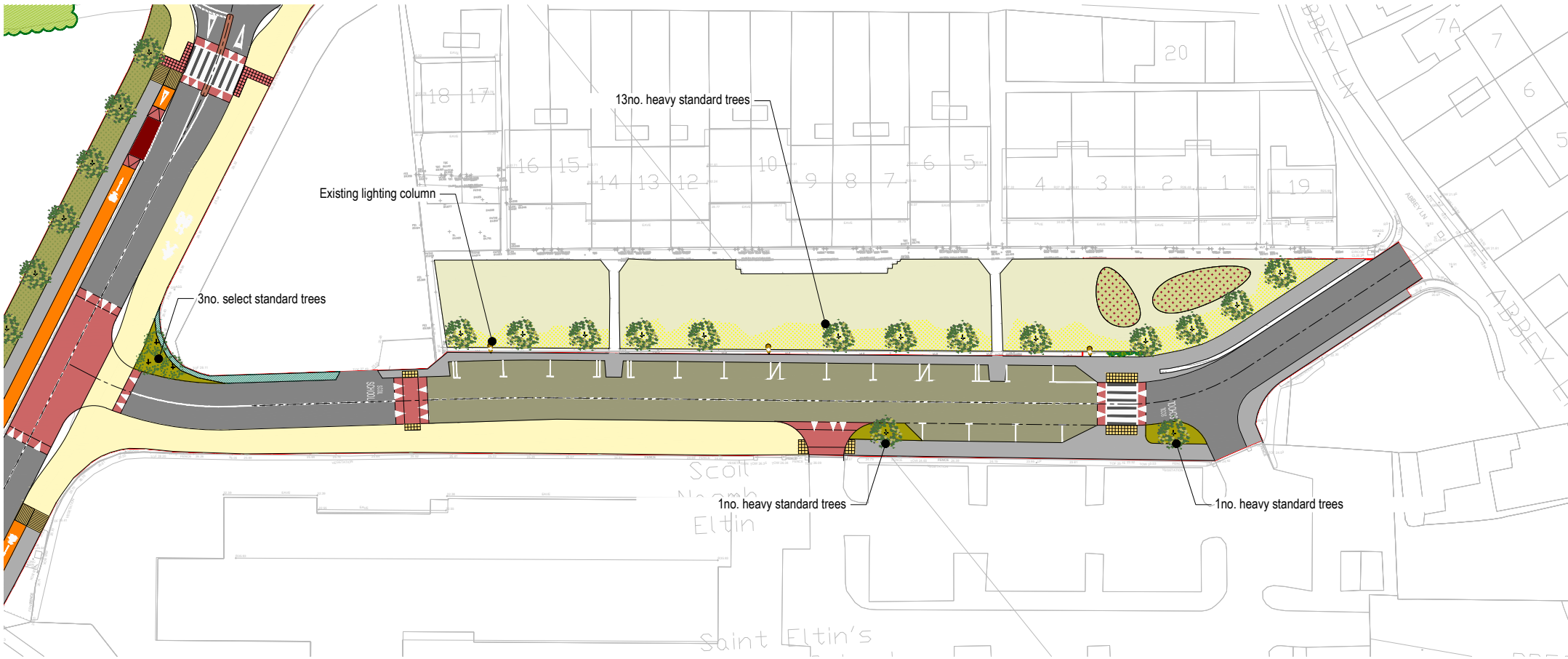
- Supply: During these conditions water is to be collected via bousier/tanker & locally sourced from canal or other river/waterbody where there is an adequate supply.
- Quantity: Wet full depth of topsoil
- Application: Do not damage or loosen plants.
- Compacted soil: Loosen or scoop out, to direct water to rootzone.
- Frequency: Bi-weekly watering during heatwaves (where there are 3 consecutive days or more with maximum temperature over 25 degrees Celsius (i.e. daily maximum temperature > 25°C)) as required and as necessary to ensure trees and planting do not suffer due to heat.

Watering (Trees)

- Supply: Drawn from: Potable mains water or locally sourced from canal or other river/waterbody where there is an adequate supply via Slow Release Tree Watering Bag (2no. bag per base of tree) Double bag setup maximum water capacity is approximately 88.95 litres
- Quantity: Wet full depth of topsoil (double bag setup)
- Application: Do not damage or loosen plants.
- Compacted soil: Loosen or scoop out, to direct water to rootzone.
- Frequency: First 2 years of establishment: Refill bag 2-3 times per week (depending on needs/conditions to keep soil moist); water depleted after 5-9 hours. After 2 years of establishment: Refill bag every 5-7 days (depending on needs/conditions to keep soil moist)

Water restrictions

- General: If water supply is, or is likely to be, restricted by emergency legislation, submit proposals for an alternative suitable source of water. Obtain instructions before proceeding.



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NO.	DATE	DESCRIPTION	BY	CHECKED

NOTES:

	24C04-DR-0205 DRAWING NO.	ISSUE STATUS: PLANNING	
	CLIENT: Client	REVISION:	
PROJECT: BANDON ROAD TO R606 CYCLE SCHEME	DRAWN BY: LHM	IN ISSUE: 08/10/2024	NORTH
DRAWING: Landscape Plan 5	PROJECT NO: 24004	SCALE: 1:250	SHEET SIZE: A1 CHECKED BY:






LEGEND

Tree Planting




-  1no. Individual Semi-Mature Tree
See Planting Schedule for details.
-  10no. Individual Heavy Standard Tree
See Planting Schedule for details.
-  10no. Individual Select Standard Tree
See Planting Schedule for details.
-  4no. Individual Small Tree/Large Shrub
See Planting Schedule for details.

 Existing vegetation retained as per arborist's survey

Planting Mixes

-  Pollinator Friendly Mix (370sqm)
See Planting Schedule for details.
-  Shade tolerant
Pollinator Friendly Mix (140sqm)
See Planting Schedule for details.
-  Rain Garden (61sqm)
See Planting Schedule for details.
-  Grass verge with bulbs (803sqm)
See Planting Schedule for details.
-  Low Sward Meadow (225sqm)
See Planting Schedule for details.

Hedge Planting

-  Evergreen hedge (11sqm)
See Planting Schedule for details.
-  Native hedge (66sqm)
See Planting Schedule for details.
-  Woodland Planting (770sqm; 200no. select standard trees)
See Planting Schedule for details.

NOTES:
Proposed tree locations are indicative and may be subject to modification to take account of below ground infrastructure.

NOTES ON PLANTING WORKS

- 1.0 Rip subsoil to a depth of min. 650mm from finished surface.
- 2.0 Cultivate the planting beds to a min. depth of 450mm, working in 100mm depth of peat free organic compost.
- 3.0 Staking + gowing:
All feathered, multi-stem and standard trees planted to be supported with a single stake. All timber to be pressure treated. All foliage to be hot-dip galvanised. All tree ties to be adjustable and flexible.
- 4.0 Apply a layer of mulch to all planting beds, Medium Grade Bark Chip.
- 5.0 All bare root planting to be undertaken during October-March inclusive. All wire root balled stock to be planted October-April inclusive.

NOTES ON MEADOWS

- 1.0 Meadow areas will be sown with a Low Sward Meadow mix at a ratio of 70:30 Wildflower to Grass Seed - see 24C04-DR-0206 for full planting list and details. Seed sowing should be undertaken in August/ September.
- 2.0 Meadows to be mown four times during the first season. All cuttings are to be removed.
- 3.0 Post establishment Garden Meadows are to be cut once annually after August and cut no shorter than 40mm. All cuttings are to be removed. Roadside verges can be cut more frequently; max. every 6 weeks.
- 4.0 Removal and/or treatment of aggressive weeds as required, such as, Creeping Thistle *Cirsium arvense*, Spear Thistle *Cirsium vulgare*, Common Ragwort *Senecio vulgaris*, Broad-leaved Dock *Rumex obtusifolius* and Curled Dock *Rumex crispus*.

NOTES ON WATERING

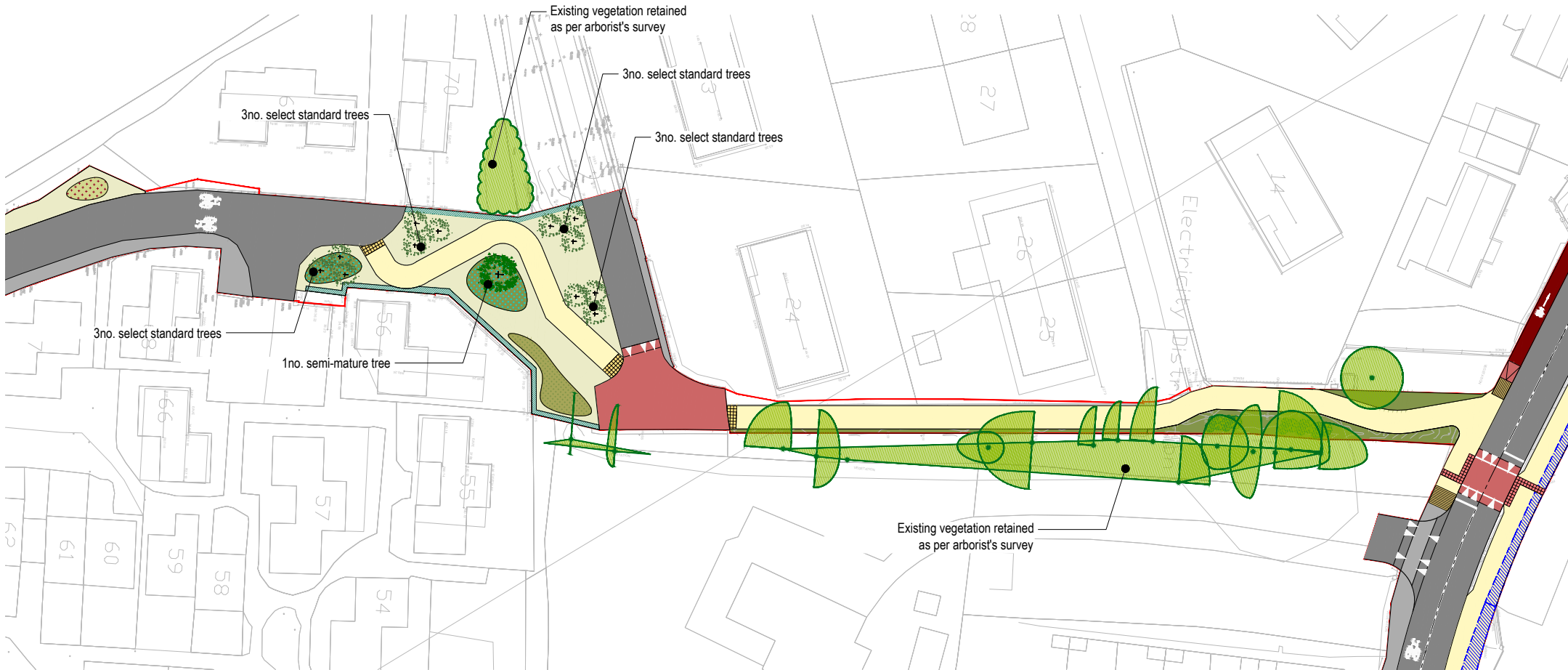
- Watering (General)**
1. General Provision: Provide for 3 Years Watering
 2. Supply: Potable mains water or Rain water from storage tank
 3. Quantity: Wet full depth of topsoil
 4. Application: Do not damage or loosen plants.
 5. Compacted soil: Loosen or scoop out, to direct water to rootzone.
 6. Frequency: As necessary for the continued thriving of all planting and when instructed by Cork County Council; number of watering visits to be agreed with Cork County Council.
- Watering (Summer)**
1. Supply: Potable mains water or Rain water from storage tank
 2. Quantity: Wet full depth of topsoil
 3. Application: Do not damage or loosen plants.
 4. Compacted soil: Loosen or scoop out, to direct water to rootzone.
 5. Frequency: Include for watering all planting areas as required by dry conditions; 2 weeks without rain (precipitation less than 20mm) during months April to September.
- Watering (Heatwaves)**
1. Supply: During these conditions water is to be collected via bousier/tanker & locally sourced from canal or other river/waterbody where there is an adequate supply.
 2. Quantity: Wet full depth of topsoil
 3. Application: Do not damage or loosen plants.
 4. Compacted soil: Loosen or scoop out, to direct water to rootzone.
 5. Frequency: Bi-weekly watering during heatwaves (where there are 5 consecutive days or more with maximum temperature over 25 degrees Celsius (i.e. daily maximum temperature > 25°C)) as required and as necessary to ensure trees and planting do not suffer due to heat.

Watering (Trees)

1. Supply: Drawn from: Potable mains water or locally sourced from canal or other river/waterbody where there is an adequate supply via Slow Release Tree Watering Bag (2no. bag per base of tree) Double bag setup maximum water capacity is approximately 88.95 litres
2. Quantity: Wet full depth of topsoil (double bag setup)
3. Application: Do not damage or loosen plants.
4. Compacted soil: Loosen or scoop out, to direct water to rootzone.
5. Frequency: First 2 years of establishment: Refill bag 2-3 times per week (depending on needs/conditions to keep soil moist); water depleted after 5-9 hours. After 2 years of establishment: Refill bag every 5-7 days (depending on needs/conditions to keep soil moist)

Water restrictions

1. General: If water supply is, or is likely to be, restricted by emergency legislation, submit proposals for an alternative suitable source of water. Obtain instructions before proceeding.



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NO.	REV.	DESCRIPTION	DATE	BY

NOTES:

	2nd Floor, Newmarket House, Newmarket Square, Dublin 4, Ireland T: +353 (0)1 454 6111 www.ait.ie		ISSUE STATUS: PLANNING		
	CLIENT: Client	DRAWING NO: 24C04-DR-0206	REVISION: -	DATE ISSUED: 05.10.2024	
PROJECT: BANDON ROAD TO R606 CYCLE SCHEME	DRAWN BY: LK	IN ISSUE:	SCALE: 1:200	SHEET SIZE: A1	NORTH
DRAWING: Landscape Plan 6	PROJECT NO: 2024	CHECKED BY:	DATE:	CHECKED BY:	DATE:






LEGEND

Tree Planting




-  1no. Individual Semi-Mature Tree
See Planting Schedule for details.
-  10no. Individual Heavy Standard Tree
See Planting Schedule for details.
-  10no. Individual Select Standard Tree
See Planting Schedule for details.
-  4no. Individual Small Tree/Large Shrub
See Planting Schedule for details.

 Existing vegetation retained as per arborist's survey

Planting Mixes

-  Pollinator Friendly Mix (370sqm)
See Planting Schedule for details.
-  Shade tolerant Pollinator Friendly Mix (140sqm)
See Planting Schedule for details.
-  Rain Garden (61sqm)
See Planting Schedule for details.
-  Grass verge with bulbs (803sqm)
See Planting Schedule for details.
-  Low Sward Meadow (225sqm)
See Planting Schedule for details.

Hedge Planting

-  Evergreen hedge (11sqm)
See Planting Schedule for details.
-  Native hedgerow (66sqm)
See Planting Schedule for details.
-  Woodland Planting (770sqm; 200no. select standard trees)
See Planting Schedule for details.

NOTES:
Proposed tree locations are indicative and may be subject to modification to take account of below ground infrastructure.

NOTES ON PLANTING WORKS

- 1.0 Rip subsoil to a depth of min. 650mm from finished surface.
- 2.0 Cultivate the planting beds to a min. depth of 450mm, working in 100mm depth of peat free organic compost.
- 3.0 Staking + guying:
All feathered, multi-stem and standard trees planted to be supported with a single stake. All timber to be pressure treated. All fixings to be hot-dip galvanised. All tree ties to be adjustable and flexible.
- 4.0 Apply a layer of mulch to all planting beds. Medium Grade Bark Chip.
- 5.0 All bare root planting to be undertaken during October-March inclusive. All wire rool balled stock to be planted October-April inclusive.

NOTES ON MEADOWS

- 1.0 Meadow areas will be sown with a Low Sward Meadow mix at a ratio of 70:30 Wildflower to Grass Seed - see 24C04-DR-0207 for full planting list and details. Seed sowing should be undertaken in August/ September.
- 2.0 Meadows to be mown four times during the first season. All cuttings are to be removed.

NOTES ON WATERING

- 3.0 Post establishment Garden Meadows are to be cut once annually after August and cut no shorter than 40mm. All cuttings are to be removed. Roadside verges can be cut more frequently; max. every 6 weeks.
- 4.0 Removal and/or treatment of aggressive weeds as required, such as, Creeping Thistle *Cirsium arvense*, Spear Thistle *Cirsium vulgare*, Common Ragwort *Senecio vulgaris*, Broad-leaved Dock *Rumex obtusifolius* and Curled Dock *Rumex crispus*.

Watering (General)

1. General Provision: Provide for 3 Years Watering
2. Supply: Potable mains water or Rain water from storage tank
3. Quantity: Wet full depth of topsoil
4. Application: Do not damage or loosen plants.
5. Compacted soil: Loosen or scoop out, to direct water to rootzone.
6. Frequency: As necessary for the continued thriving of all planting and when instructed by Cork County Council; number of watering visits to be agreed with Cork County Council.

Watering (Summer)

1. Supply: Potable mains water or Rain water from storage tank
2. Quantity: Wet full depth of topsoil
3. Application: Do not damage or loosen plants.
4. Compacted soil: Loosen or scoop out, to direct water to rootzone.
5. Frequency: Include for watering all planting areas as required by dry conditions; 2 weeks without rain (precipitation less than 20mm) during months April to September.

Watering (Heatwaves)

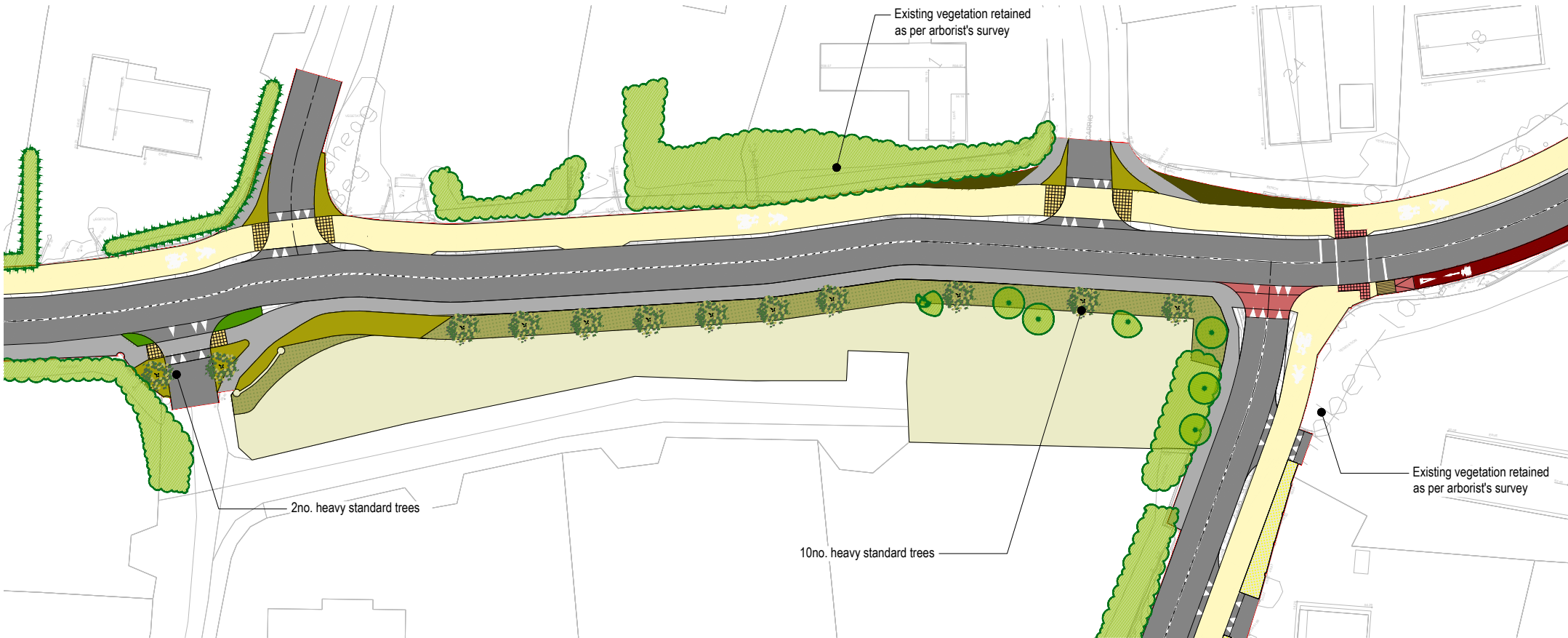
1. Supply: During these conditions water is to be collected via bousser/tanker & locally sourced from canal or other river/waterbody where there is an adequate supply.
2. Quantity: Wet full depth of topsoil
3. Application: Do not damage or loosen plants.
4. Compacted soil: Loosen or scoop out, to direct water to rootzone.
5. Frequency: Biweekly watering during heatwaves (where there are 5 consecutive days or more with maximum temperature over 25 degrees Celsius (i.e. daily maximum temperature > 25°C)) as required and as necessary to ensure trees and planting do not suffer due to heat.

Watering (Trees)

1. Supply: Drawn from: Potable mains water or locally sourced from canal or other river/waterbody where there is an adequate supply via Slow Release Tree Watering Bag (2no. bag per base of tree) Double bag setup maximum water capacity is approximately 88.95 litres
2. Quantity: Wet full depth of topsoil (double bag setup)
3. Application: Do not damage or loosen plants.
4. Compacted soil: Loosen or scoop out, to direct water to rootzone.
5. Frequency: First 2 years of establishment: Refill bag 2-3 times per week (depending on needs/conditions to keep soil moist); water depleted after 5-9 hours. After 2 years of establishment: Refill bag every 5-7 days (depending on needs/conditions to keep soil moist)

Water restrictions

1. General: If water supply is, or is likely to be, restricted by emergency legislation, submit proposals for an alternative suitable source of water. Obtain instructions before proceeding.



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NO.	REV.	DESCRIPTION	DATE	BY	CHECKED

NOTES:

	8th Floor Newmarket House Newmarket Square Dublin 4 Ireland T +353 1 7700000 www.ait.ie	ISSUE STATUS: PLANNING	
	CLIENT: Client PROJECT: BANDON ROAD TO R606 CYCLE SCHEME DRAWING: Landscape Plan 7	DRAWN BY: LHM PROJECT NO: 24C04-DR-0207 SCALE: 1:250 SHEET SIZE: A1 IN ISSUE: 08.10.2024 CHECKED BY:	









LEGEND

Tree Planting

-  1No. Individual Semi-Mature Tree
See Planting Schedule for details.
-  1No. Individual Heavy Standard Tree
See Planting Schedule for details.
-  1No. Individual Select Standard Tree
See Planting Schedule for details.
-  4No. Individual Small Tree/Large Shrub
See Planting Schedule for details.

 Existing vegetation retained as per arborist's survey

Planting Mixes

-  Pollinator Friendly Mix (370sqm)
See Planting Schedule for details.
-  Shade tolerant
See Planting Schedule for details.
-  Rain Garden (61sqm)
See Planting Schedule for details.
-  Grass verge with bulbs (803sqm)
See Planting Schedule for details.
-  Low Sward Meadow (225sqm)
See Planting Schedule for details.
-  Evergreen hedge (11sqm)
See Planting Schedule for details.
-  Native hedgerow (66sqm)
See Planting Schedule for details.
-  Woodland Planting (770sqm, 20No. select standard trees)
See Planting Schedule for details.

NOTES:
Proposed tree locations are indicative and may be subject to modification to take account of below ground infrastructure.

NOTES ON PLANTING WORKS

- 1.0 Rip subsoil to a depth of min. 650mm from finished surface.
- 2.0 Cultivate the planting beds to a min. depth of 450mm, working in 100mm depth of peat free organic compost.
- 3.0 Staking + gowing:
All feathered, multi-stem and standard trees planted to be supported with a single stake. All timber to be pressure treated. All fixings to be hot-dip galvanised. All tree ties to be adjustable and flexible.
- 4.0 Apply a layer of mulch to all planting beds, Medium Grade Bark Chip.
- 5.0 All bare root planting to be undertaken during October-March inclusive. All wire root balled stock to be planted October-April inclusive.

NOTES ON MEADOWS

- 1.0 Meadow areas will be sown with a Low Sward Meadow mix at a ratio of 70:30 Wildflower to Grass Seed - see 24C04-DR-0208 for full planting list and details. Seed sowing should be undertaken in August/ September.
- 2.0 Meadows to be mown four times during the first season. All cuttings are to be removed.

NOTES ON WATERING

- 3.0 Post establishment Garden Meadows are to be cut once annually after August and cut no shorter than 40mm. All cuttings are to be removed. Roadside verges can be cut more frequently; max. every 6 weeks.
- 4.0 Removal and/or treatment of aggressive weeds as required, such as, Creeping Thistle *Cirsium arvense*, Spear Thistle *Cirsium vulgare*, Common Ragwort *Senecio vulgaris*, Broad-leaved Dock *Rumex obtusifolius* and Curled Dock *Rumex crispus*.

NOTES ON WATERING

- Watering (General)**
1. General Provision: Provide for 3 Years Watering
 2. Supply: Potable mains water or Rain water from storage tank
 3. Quantity: Wet full depth of topsoil
 4. Application: Do not damage or loosen plants.
 5. Compacted soil: Loosen or scoop out, to direct water to rootzone.
 6. Frequency: As necessary for the continued thriving of all planting and when instructed by Cork County Council; number of watering visits to be agreed with Cork County Council.
- Watering (Summer)**
1. Supply: Potable mains water or Rain water from storage tank
 2. Quantity: Wet full depth of topsoil
 3. Application: Do not damage or loosen plants.
 4. Compacted soil: Loosen or scoop out, to direct water to rootzone.
 5. Frequency: include for watering all planting areas as required by dry conditions; 2 weeks without rain (precipitation less than 20mm) during months April to September.
- Watering (Heatwaves)**
1. Supply: During these conditions water is to be collected via bousser/tanker & locally sourced from canal or other river/waterbody where there is an adequate supply.
 2. Quantity: Wet full depth of topsoil
 3. Application: Do not damage or loosen plants.
 4. Compacted soil: Loosen or scoop out, to direct water to rootzone.
 5. Frequency: Biweekly watering during heatwaves (where there are 5 consecutive days or more with maximum temperature over 25 degrees Celsius (i.e. daily maximum temperature > 25°C.)) as required and as necessary to ensure trees and planting do not suffer due to heat.

Watering (Trees)

1. Supply: Drawn from: Potable mains water or locally sourced from canal or other river/waterbody where there is an adequate supply via Slow Release Tree Watering Bag (2No. bag per base of tree) Double bag setup maximum water capacity is approximately 88.95 litres
2. Quantity: Wet full depth of topsoil (double bag setup)
3. Application: Do not damage or loosen plants.
4. Compacted soil: Loosen or scoop out, to direct water to rootzone.
5. Frequency: First 2 years of establishment: Refill bag 2-3 times per week (depending on needs/conditions to keep soil moist); water depleted after 5-9 hours. After 2 years of establishment: Refill bag every 5-7 days (depending on needs/conditions to keep soil moist)

Water restrictions

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NO.	REV.	DESCRIPTION	DATE	BY

NOTES:

 ait urbanism + landscapage	8th Floor, Newmarket House, Newmarket Square, Dublin 4, Ireland T: +353 (0)1 470 0000 www.ait.ie	ISSUE STATUS: PLANNING DRAWING NO: 24C04-DR-0208 REVISION: -	
	CLIENT: Client PROJECT: BANDON ROAD TO R606 CYCLE SCHEME DRAWING: Landscape Plan B	DRAWN BY: LRB IN ISSUE: 09.10.2024 PROJECT NO: 24004 SCALE: 1:200 SHEET SIZE: A1 CHECKED BY: GMB	






LEGEND

Tree Planting

-  1no. Individual Semi-Mature Tree
See Planting Schedule for details.
-  1no. Individual Heavy Standard Tree
See Planting Schedule for details.
-  1no. Individual Select Standard Tree
See Planting Schedule for details.
-  4no. Individual Small Tree/Large Shrub
See Planting Schedule for details.

 Existing vegetation marked as per arborist's survey

Planting Mixes

-  Pollinator Friendly Mix (170sqm)
See Planting Schedule for details.
-  Shade tolerant Pollinator Friendly Mix (140sqm)
See Planting Schedule for details.
-  Rain Garden (61sqm)
See Planting Schedule for details.
-  Grass verge with bulbs (803sqm)
See Planting Schedule for details.
-  Low Sward Meadow (225sqm)
See Planting Schedule for details.

Hedge Planting

-  Evergreen hedge (11sqm)
See Planting Schedule for details.
-  Native hedgerow (66sqm)
See Planting Schedule for details.
-  Woodland Planting (770sqm; 200no. select standard trees)
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NOTES:
Proposed tree locations are indicative and may be subject to modification to take account of below ground infrastructure.

NOTES ON PLANTING WORKS

- 1.0 Rip subsoil to a depth of min. 650mm from finished surface.
- 2.0 Cultivate the planting beds to a min. depth of 450mm, working in 100mm depth of peat free organic compost.
- 3.0 Staking - gowing:
All feathered, multi-stem and standard trees planted to be supported with a single stake. All timber to be pressure treated. All fixings to be hot-dip galvanised. All tree ties to be adjustable and flexible.
- 4.0 Apply a layer of mulch to all planting beds. Medium Grade Bark Chip.
- 5.0 All bare root planting to be undertaken during October-March inclusive. All wire rood balled stock to be planted October-April inclusive.

NOTES ON MEADOWS

- 1.0 Meadow areas will be sown with a Low Sward Meadow mix at a ratio of 70-30 Wildflower to Grass Seed - see 24C04-DR-0209 for full planting list and details. Seed sowing should be undertaken in August/ September.
- 2.0 Meadows to be mown four times during the first season. All cuttings are to be removed.

- 3.0 Post establishment Garden Meadows are to be cut once annually after August and cut no shorter than 40mm. All cuttings are to be removed. Roadside verges can be cut more frequently; max. every 6 weeks.
- 4.0 Removal and/or treatment of aggressive weeds as required, such as, Creeping Thistle *Cirsium arvense*, Spear Thistle *Cirsium vulgare*, Common Ragwort *Senecio vulgaris*, Broad-leaved Dock *Rumex obtusifolius* and Curled Dock *Rumex crispus*.

NOTES ON WATERING

- ### Watering (General)
1. General Provision: Provide for 3 Years Watering
 2. Supply: Potable mains water or Rain water from storage tank
 3. Quantity: Wet full depth of topsoil
 4. Application: Do not damage or loosen plants.
 5. Compacted soil: Loosen or scoop out, to direct water to rootzone.
 6. Frequency: As necessary for the continued thriving of all planting and when instructed by Cork County Council; number of watering visits to be agreed with Cork County Council.
- ### Watering (Summer)
1. Supply: Potable mains water or Rain water from storage tank
 2. Quantity: Wet full depth of topsoil
 3. Application: Do not damage or loosen plants.
 4. Compacted soil: Loosen or scoop out, to direct water to rootzone.
 5. Frequency: include for watering all planting areas as required by dry conditions; 2 weeks without rain (precipitation less than 20mm) during months April to September.

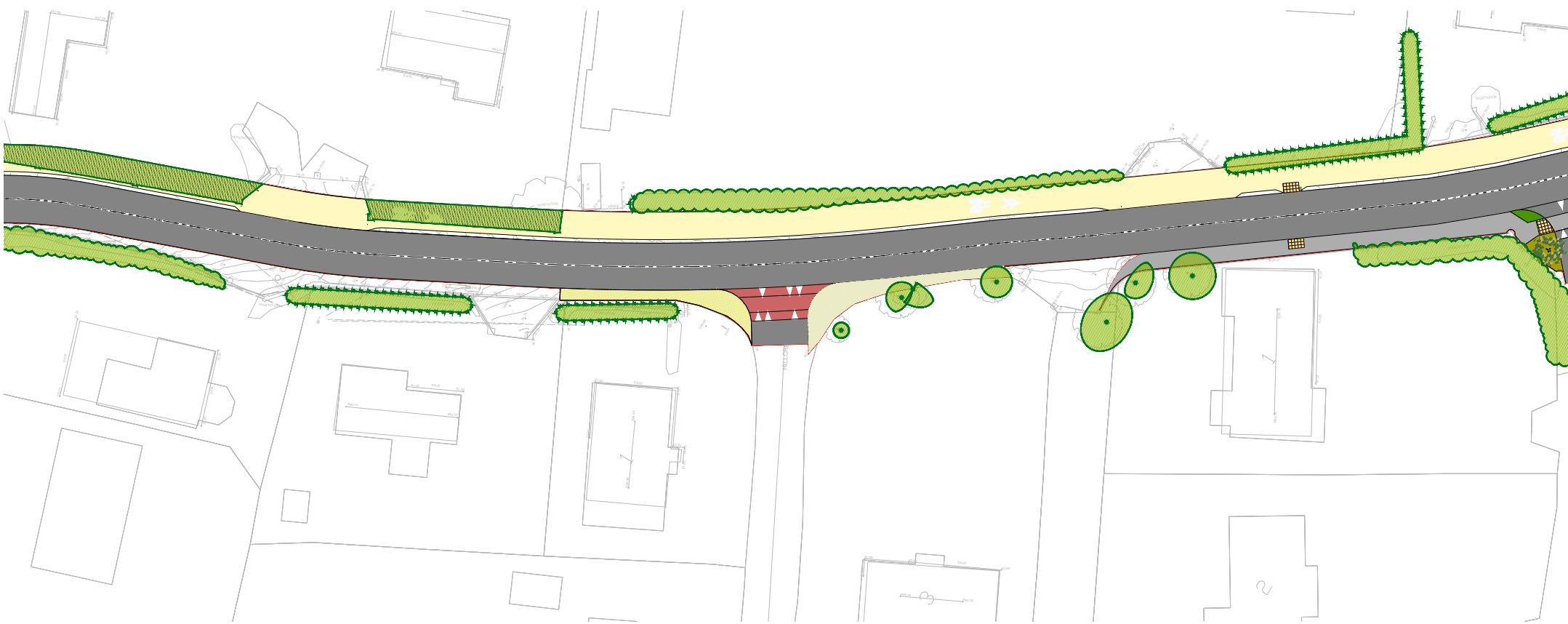
- ### Watering (Heatwaves)
1. Supply: During these conditions water is to be collected via bousier/tanker & locally sourced from canal or other river/waterbody where there is an adequate supply.
 2. Quantity: Wet full depth of topsoil
 3. Application: Do not damage or loosen plants.
 4. Compacted soil: Loosen or scoop out, to direct water to rootzone.
 5. Frequency: Biweekly watering during heatwaves (where there are 5 consecutive days or more with maximum temperature over 25 degrees Celsius (i.e. daily maximum temperature > 25°C.)) as required and as necessary to ensure trees and planting do not suffer due to heat.

Watering (Trees)

1. Supply: Drawn from: Potable mains water or locally sourced from canal or other river/waterbody where there is an adequate supply via Slow Release Tree Watering Bag (2no. bag per base of tree) Double bag setup maximum water capacity is approximately 88.95 litres
2. Quantity: Wet full depth of topsoil (double bag setup)
3. Application: Do not damage or loosen plants.
4. Compacted soil: Loosen or scoop out, to direct water to rootzone.
5. Frequency: First 2 years of establishment: Refill bag 2-3 times per week (depending on needs/conditions to keep soil moist); water depleted after 5-9 hours. After 2 years of establishment: Refill bag every 5-7 days (depending on needs/conditions to keep soil moist)

Water restrictions



1. General: If water supply is, or is likely to be, restricted by emergency legislation, submit proposals for an alternative suitable source of water. Obtain instructions before proceeding.



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NO.	REV.	DESCRIPTION	DATE	BY

NOTES:

	8th Floor, Newmarket Plaza, Newmarket Square, Dublin 4, Ireland T: +353 (0)1 470 0000 www.ait.ie	ISSUE STATUS: PLANNING DRAWING NO: 24C04-DR-0209 REVISION: -	
	CLIENT: Client PROJECT: BANDON ROAD TO R606 CYCLE SCHEME DRAWING: Landscape Plan 9	DRAWN BY: LK PROJECT NO: 24004 SCALE: 1:200 IN ISSUE: 08.10.2024 SHEET SIZE: A1 CHECKED BY: GMB	

LEGEND

Tree Planting

- Individual Semi-Mature Tree**
 - Pt *Pinus sylvestris*
 - 18-20 cm g.
- Individual Selective/Very Standard Tree**
 - Ib *Betula pendula*
 - Ib *Betula pubescens*
 - Cc *Corylus colurna*
 - Pa *Pinus avium*
 - Pa *Pinus sylvestris*
 - Ag *Alnus pedunculata*
 - Sc *Sorbus aucuparia*
 - Sc *Sorbus aria*
 - Mix of 10-12 cm g. and 12-14 cm g.
- Individual Small Tree/Large Shrub**
 - Cc *Corylus avellana* (N), multi-stem
 - Cm *Crataegus monogyna* (N)
 - Ma *Malus sylvestris* (N)
 - Pa *Pinus avium* (N)
 - Multi-stem 2.5-3.1 m high, 1.2m crown spread.

Existing vegetation retained as per arborist's survey

Planting Mixes

- Pollinator Friendly Mix**
- Perennials:**
 - Centaurea altissima*
 - Ornithogalum vulgatum*
 - Euphorbia characias*
 - Echinops ranunculoides*
 - Eryngium yuccifolium*
 - Erythronium 'Hedera'*
 - Geranium 'Rozanne'*
 - Geranium 'Johnson Blue'*
 - Helianthus argenteifolius*
 - Rosa rugosa*
 - Alcea rosea*
 - Alcea 'Red Star'*
 - Phlox paniculata 'Blue Spire'*
 - Pulsatilla nuttalliana*
 - Rudbeckia hirta 'Goldstrum'*
 - Salvia nemorosa*
 - Stachys byzantina*

- Ornamental Grasses and Sedges, for mid-Winter interest, max. 30% of any planted area:**
 - Calamagrostis 'Waldenburst'*
 - Carex obovata* (N)
 - Deschampsia cespitosa*
 - Helictotrichon sempervirens*
 - Molinia caerulea* (N)
 - Sesleria autumnalis*

- Shade Tolerant Pollinator Friendly Mix**
- Perennials:**
 - Anemone hepatica*
 - Anemone x hybrida*
 - Bergenia cordifolia 'Ruber'*
 - Brunnera 'Jack Frost'*
 - Brunnera 'Looking Glass'*
 - Digitalis purpurea*
 - Geranium macrorrhizum*
 - Helianthus scaberrimus*
 - Helianthus 'White Lady'*
 - Hesperis 'Lime Marmalade'*
 - Lysimachia nummularia 'Aurea'*
 - Panicum affinis 'Dappled Red'*
 - Polygonatum 'Blue Ensign'*
 - Rudbeckia 'Oak Palms'*
 - Vicia villosa*

- Ornamental Ferns, for mid-Winter interest, max. 30% of any planted area:**
 - Asplenium adnigrum*
 - Dryopteris affinis*
 - Polygonatum sibiricum*

Hedge Planting

Evergreen hedge
all 200cm g. plants at 0.5m², 0.5m height, to be selected from the following:

- Ilex aquifolium*
- Prunus lazaroides*
- Ilex crenata*

Native hedgerow
Planted at 500mm centres in a double staggered row, 0.9 - 1.2m ht.

- Plants list:**
- Crataegus monogyna*
 - Corylus avellana*
 - Alnus pedunculata*
 - Sorbus aucuparia*
 - Sorbus aria*
 - Pinus sylvestris*
 - Pinus avium*
 - Rosa canina*
 - Sambucus nigra*
 - Viburnum opulus*

Rain Garden, Type A: Ornamental planting

- Shrub species:**
- Malva sylvestris 'Soft Caress'*
 - Sarcocolla*
 - Silene japonica 'Rubra'*

- Perennial species:**
- Achillea filipendula*
 - Artemisia abrotanifera var. salicifolia*
 - Anemone x hybrida 'Honore Jobert'*
 - Camelot 'Blue Cloud'*
 - Polemonium caeruleum*
 - Rudbeckia hirta*
 - Verbena bonariensis 'Lollipop'*
 - Veronicastrum virgatum 'Album'*
 - Libertia formosa*
 - Libertia grandiflora*
 - Luzula sivea*
 - Luzula sylvatica*
- Ornamental grasses:**
- Carex obovata (native plant)*
 - Deschampsia cespitosa*
 - Helictotrichon sempervirens*
 - Molinia caerulea (native plant)*

Low Sward Meadow

Ratio of Wildflower to Grass Seed: 70:30. Sowing rate 2g/m² m² approx.

- Wildflowers:**
- Lady's Bedstraw*
 - Bugle*
 - Meadow Buttercup*
 - Wild Chamomile*
 - Red Clover*
 - Cowslip*
 - Oxeye Daisy*
 - Smooth Hawkbit*
 - Ribwort Plantain*
 - Quaking Grass*
 - Selfheal*
 - Sorrel*
 - Birdfoot Trefoil*
 - Yarrow*
 - Kidney Vetch*
- Grasses:**
- Agrostis stolonifera*
 - Cynodon dactylon*
 - Festuca pratensis*
 - Festuca ovina*
 - Festuca rubra*
 - Poa pratensis*

- Native Grasses:**
- Agrostis stolonifera*
 - Cynodon dactylon*
 - Festuca pratensis*
 - Festuca ovina*
 - Festuca rubra*
 - Poa pratensis*
- Bulb Mix (D) bulb types combined in equal proportions, planted 25 bulbs/m²**
- 20% Allium species, 20% Crocus, 20% Galanthus, 20% Narcissus, 20% Scilla
- Bulb coverage: 20% of total area

Grass verge with bulbs

- Bulbs:**
- Shade tolerant mix of bulbs for around the base of trees:*
 - Wild Garlic*
 - Allium ursinum*
 - Wood Anemone*
 - Anemone nemorosa*
 - Snowdrop*
 - Galanthus nivalis*
 - Bluebell*
 - Hyacinthoides non-scriptus*

Open aspect:

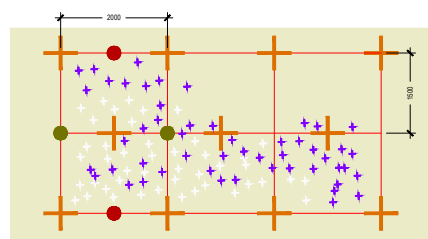
- Allium 'Gladior'*
- Allium 'Purple Sensation'*
- Allium 'Mount Everest'*
- Crocus x early, white, lilac and purple flowering varieties.*
- Crocus sativus*
- Fritillaria*
- Fritillaria meleagris*
- Prunella spicata*
- Muscari armeniacum*
- Narcissus 'Tete a tete'*

Native Grasses:

- Creeping Bent*
- Crested Dogtail*
- Meadow Fescue*
- Sheeps Fescue*
- Slender Red Fescue*
- Timothy*
- Smooth Stalked Meadowgrass*
- Agrostis stolonifera*
- Cynodon dactylon*
- Festuca pratensis*
- Festuca ovina*
- Festuca rubra*
- Poa pratensis*
- Poa pratensis*

NOTES:
Proposed tree locations are indicative and may be subject to modification to take account of below ground infrastructure.

Native Woodland Planting



- WOODLAND PLANTING:**
- +** Over storey and dominant species: feathered, 1500-1800mm h., br.
 - Under storey and minor species, planted in clumps to the edge of woodland groups: feathered/wings 900-1500mm h., br.
- BULB PLANTING:**
- +** Bluebell *Hyacinthoides non-scriptus*
 - Wood Anemone *Anemone nemorosa*
 - Wild Garlic/Ranunculus *Allium ursinum*
- planted as bulbs, top size, 7 per sqm.

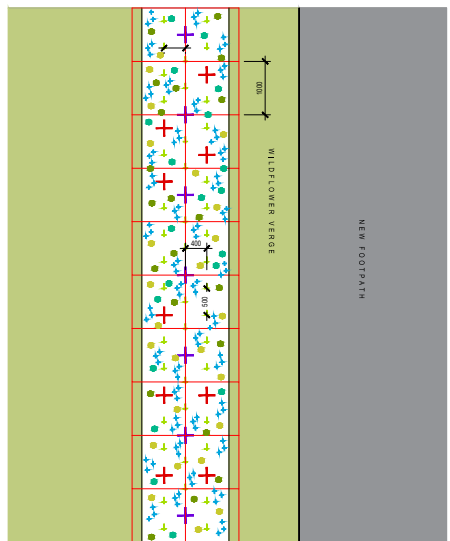
NOTES ON MANAGEMENT:

Year 1 + 2
Maintain weed free aisle to each tree: 200-300mm radius by hand weeding or using a herbicide.
Spraying to be undertaken post May and/or when bulb foliage has died back.
Ensure all tree stakes and ties are secure. Ensure all stakes ties are upright and adjust if necessary.

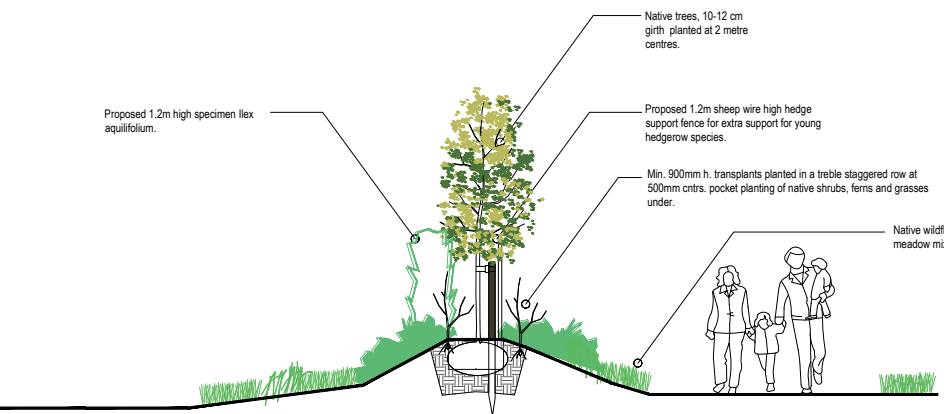
Year 3
Remove all tree stakes and ties.

- Planting Specifications:**
- All trees with 40% of full crown 100-1800mm high.
 - Planted at 1.0m x 1.0m centres:
 - 30% Hazel *Corylus avellana*
 - 30% Hawthorn *Crataegus monogyna*
 - 10% Scots Pine *Pinus sylvestris*
 - 20% Oak *Quercus robur*
 - 10% Shrub Layer
 - 50% Hilly *Ilex aquifolium*
 - 50% Guller Rose *Viburnum opulus*

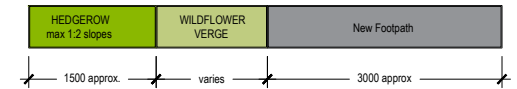
- Abbreviations:**
- nr number of transplants in nursery
 - h height
 - sp spread
 - w/b wire root balled
 - g/m graft of tree in containers measured 1m above ground
 - cmg cm
 - 200 g



Hedgerow Reinstatement - typical setting out



Hedgerow Reinstatement - typical section



- Standard trees:**
- 10-12cm g, min. 3.0m high, 1.0m diameter spread.
 - 50% Hawthorn *Crataegus monogyna*
 - 20% Oak *Quercus robur*
 - 10% Cook Apple *Malus sylvestris*
 - 10% Spindle *Eutymia europaea*
 - 10% Scots Pine *Pinus sylvestris*
- Holly:**
- Ilex aquifolium* (Male and female plants), 1.2m high, 0.3m diameter spread, rootballed.
- Wires:**
- 600-550mm high, narrowest stock
 - 50% Hawthorn *Crataegus monogyna*
 - 20% Hazel *Corylus avellana*
 - 10% Wild Cherry *Prunus avium*
 - 10% Dog Rose *Rosa canina*
 - 10% Guller Rose *Viburnum opulus*
- Understorey of native woodland groundcover plants:**
- Planted as 20 or 30 container grown, 3 per sqm approx.
 - 20% Forget-me-not *Digitalis purpurea*
 - 20% Harts Tongue *Asplenium adnigrum*
 - 20% Male Fern *Cheilanthes lanuginosa*
 - 20% Primrose *Primula vulgaris*
 - 20% Woodrush *Luzula sylvatica*
- Bulbs:**
- Native bulb species, sown on bulb-free sites.
 - Planted as 5 per sqm approx.
 - 40% Anemone *Anemone nemorosa*
 - 30% Bluebell *Hyacinthoides non-scriptus*
 - 30% Ranunculus *Allium ursinum*

01 0600 Planting schedule n/a

02 0600 Woodland planting detail 1:50

03 0600 Hedgerow reinstatement detail 1:50

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DATE	NO.	DESCRIPTION	BY	CHECKED

NOTES:

	2nd Floor Newmarket House Newmarket Road Ipswich Suffolk IP1 3DU www.ait.co.uk	ISSUE STATUS: PLANNING DRAWING NO: 24C04-DR-0600 REVISION: -
	CLIENT: Cork County Council PROJECT: BANDON ROAD TO R606 CYCLE SCHEME DRAWING: Planting Details	DRAWN BY: LHM PROJECT NO: 2404 SCALE: 1:50 SHEET NO: 4/4 CHECKED BY:

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