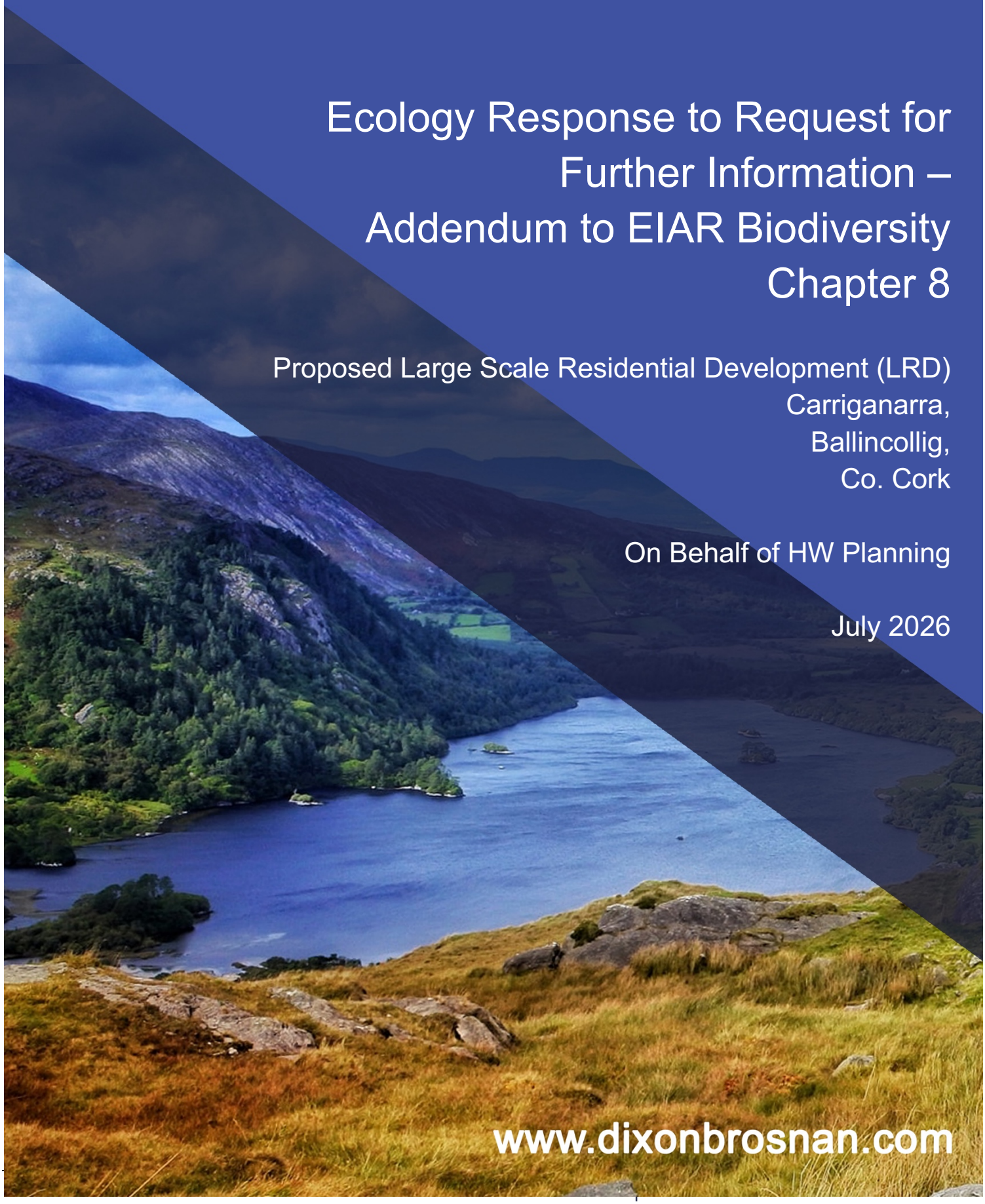
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Ecology Response to Request for Further Information – Addendum to EIAR Biodiversity Chapter 8

Proposed Large Scale Residential Development (LRD)
Carriganarra,
Ballincollig,
Co. Cork

On Behalf of HW Planning

July 2026



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Project	Response to Request for further information for Proposed Large Scale Residential Development, Carriganarra, Ballincollig, Co. Cork	
Client	HW Planning	
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Table of Contents

1. Introduction 4

2. Response to Point 1. Breeding bird surveys 5

2.1 Survey methodology 5

2.2 2024 survey results 7

2.3 2026 survey results 9

3. Response to Point 2 Bats 11

3.1 2024 and 2025 surveys 11

3.2 2026 surveys 13

3.3 Summary of bat surveys 16

4. Response to Point 3. Botanical 17

5. Response to Point 4. Impacts 18

6. Response to Point 5. Invasive species 18

7. Response to Point 6. Flood zone and wastewater 18

8. Response to Point 7. Habitat removal 21

9. Response for elements of AA screening and NIS 22

10. Conclusion 22

Appendix 1. Impact assessment 24

1. Introduction

DixonBrosnan Environmental Consultants were commissioned to assess the potential impacts of the proposed large scale residential development (LRD) at Carriganarra, Ballincollig, Co. Cork, and all associated site works on terrestrial and aquatic flora and fauna.

Following submission of the planning application to Cork City Council, the applicant received a request for further information from the planning authority (Ref 26/44718). This included a request for the following:

Environmental Impact Assessment

In order to provide the necessary baseline data to undertake Ecological Impact Assessment and to have the required level of confidence in its conclusions, the following information is requested:

1. The applicant is required to undertake a breeding bird survey and provide up-to-date data in the Biodiversity Chapter.

2. The applicant is requested to undertake a series of bat activity surveys which follow standard guidelines. This survey shall be carried out by an experienced and appropriately qualified ecologist.

Please refer to standard texts such as Collins (2016) and Marnell et al. et al. (2022) for guidance on survey methods, survey effort and timing/seasonality.

3. The applicant is requested to undertake a dedicated botanical survey of the site. This shall be undertaken by a qualified botanist and at the optimum time for surveying calcareous/neutral grassland and its flora.

4. The Biodiversity Chapter/ Impact Assessment shall be updated with the results of the requested surveys and in line with Guidelines on the information to be contained in Environmental Impact Statements EPA (2022) and Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine CIEEM (2018 and 2024). Core information, required to describe the impact assessment process (evaluation > impact significance > mitigation > residual impact significance), shall be included within the Biodiversity Chapter so that the clear link between impact significance, mitigation and residual impact significance can be seen.

5. Montbretia (low risk) and Sycamore (medium risk) shall be added to the invasive, alien plant species section in Section 8.3.5 of the main EIAR because these species were reported as per Appendix 8.2. Mitigation measures to remove/manage such invasive species shall be included in the assessment.

6. Foul water management, including the temporary pumping station, and flood risk, shall be included within the impact assessment of the Biodiversity Chapter in greater detail. There is a proposed temporary wastewater pumping station located within the flood zone. This aspect of the development shall be included within the impact assessment and mitigated i.e. consider that this be relocated outside of flood zone.

7. As per the comments of NPWS (within the submitted EIAR Appendices), the removal of some of the hedgerow habitat and woodland shall be reconsidered, with hedgerows and the woodland instead incorporated into the site layout design. Where these habitats are required to be removed, please provide adequate justification, and within the impact assessment provide clear quantitative assessment of the amount of habitat to be removed, and amount of habitat to be planted as compensation. In particular the retention of the hedgerow in the south of the site (within the open space and valued as of 'good quality') shall be considered, with connectivity ensured. In support of Item 1(7) above, Parks and Recreation Report asks the following information; 'Hedgerows: The Landscape plan indicates the removal of a large section of Hedgerow (H10 - good condition) in the existing Agricultural lands. There is no justification for the removal of the majority of this hedgerow, and therefore should be retained.'

Appropriate Assessment

The AA Screening and Natura Impact Statement shall be updated to include Great Island Channel SAC. In addition, the potential impacts of foul water management and flood risk shall be included in the assessment.

The following information is requested:

1. The AA Screening and Natura Impact Statement shall be updated to include Great Island Channel SAC. In addition, the potential impacts of foul water management, including the temporary pumping station, and flood risk, shall be included in the assessment along with any proposed mitigation.

2. Montbretia (low risk) and Sycamore (medium risk) shall be added to the invasive, alien plant species section in Section 4.9.3 of the report because these species were reported as per Appendix 8.2 of the EIAR. Mitigation measures to remove/manage such invasive species should be included in the assessment.

3. Foul water management, including the temporary pumping station, and flood risk, should be included within the impact assessment of the NIS in greater detail. There is a proposed temporary wastewater pumping station located within the flood zone. This aspect of the development shall be included within the impact assessment of the AA Screening/NIS and mitigated i.e. consider that this be relocated outside of flood zone.

This report presents the response to the RFI using additional and previous surveys. This report should be read in combination with the SRLA and DOSA consulting engineers' response to the RFI. This report has been written in accordance with the Environmental Impact Statements EPA (2022) and Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine CIEEM (2018 and 2024).

2. Response to Point 1. Breeding bird surveys

2.1 Survey methodology

The breeding bird survey was based on the BTO Common Bird Census (CBC) methodology (Bibby *et al*., 2000 and Gilbert *et al.*, 1998) which aims to capture a snapshot of breeding bird activity within the study area. The study area focused on terrestrial habitats within the proposed development site. The aim of the breeding bird surveys was to identify any valuable

bird habitats within the Site boundary and to identify birds present within the proposed development site and surrounding landscape. This survey area encompassed terrestrial habitats within the site including hedgerows, treelines and grassland.

Breeding bird surveys were carried out on the 14th of May and 16th of June 2024. Following this request for further information, additional surveys were completed on the 1st of July and 3rd of July 2026 (**Table 2**). Although these July survey dates are outside the optimal survey period, i.e. early April to late June, it is noted that the RFI response was not issued until the 30th of June and therefore surveys were completed as quickly as possible following the request. Surveys are recommended to be 4 weeks apart (Gilbert *et al.* 1998). However, due this would extend survey dates into August and therefore, it was concluded that given breeding bird surveys had previously been completed within the optimal time period (in 2024), both surveys were completed in July as birds were still active onsite. The surveys completed in May and June 2024 provide the primary breeding-season dataset. The July 2026 surveys were supplementary verification visits completed immediately following receipt of the RFI. They were not relied upon as a substitute for the appropriately timed 2024 breeding-bird surveys but confirmed that the character and distribution of breeding-bird activity at the site remained broadly consistent.

The site was walked so that all habitats within 50m of potential nesting features were surveyed. A map illustrating the transect routes is shown in **Figure 1**. The ornithological surveyor slowly walked through the site, stopping at regular intervals to scan with binoculars and to listen for bird calls or song. Birds were identified by sight and song, and observations were plotted on a map. Survey visits were made in the early morning to coincide with the peak period of bird activity and all species seen or heard in the study area and immediate environs were recorded including those in flight. Visits were made during favourable weather conditions.

All species encountered during the survey were mapped and coded using standard BTO species codes and activity recorded using the BTO codes for breeding evidence. In an effort to minimise potential disturbance, no attempts were made to locate nests as such behaviours are generally sufficient to determine probable or confirmed breeding.

Dates, times and weather conditions for the surveys are included in **Table 1**. All species seen or heard were recorded, including those in flight over the site (**Table 3**).

Table 1. Dates and weather of breeding bird surveys

Date	Temperature	Wind	Rain	Cloud	Visibility
14/05/24	19°C	5km/h from SW	0mm	50%	Excellent
16/06/24	17°C	10km/h SW	0mm	50%	Excellent
01/07/26	19°C	7km/h from SW	0mm	20%	Excellent
03/07/26	22°C	5km/h from SW	0mm	30%	Excellent

All species encountered during the survey were mapped and coded using standard BTO species codes and activity recorded using the BTO codes for breeding evidence. In an effort to minimise potential disturbance, no attempts were made to locate nests as such behaviours are generally sufficient to determine probable or confirmed breeding.



Figure 1. Breeding bird survey transect locations (2024 and 2026)

2.2 2024 survey results

The results of the breeding bird survey for 2024 are shown in **Table 2.**

Table 2. Bird Species recorded during breeding bird surveys 2024

Species		Breeding Status	Highest evidence of breeding	Estimated number of territories	Conservation Status: Annex I of Birds Directive or Red/Amber List*
Blackbird	*Turdus merula*	Possible	Singing male	3	
Blackcap	*Sylvia atricapilla*	Probable	Pair observed	2	
Blue tit	*Cyanistes caeruleus*	Possible	Singing male	2	
Bullfinch	*Pyrrhula pyrrhula*	Probable	Pair observed	1	
Buzzard	*Buteo buteo*	Non-breeding	Flying over		
Chaffinch	*Fringilla coelebs*	Possible	Singing male	2	
Chiffchaff	*Phylloscopus collybita*	Possible	Singing male	2	
Dunnock	*Prunella modularis*	Possible	Singing male	2	
Feral pigeon	*Columba livia domestica*	Non-breeding	Flying over		
Goldfinch	*Carduelis carduelis*	Probable	Pair observed	1	

Species		Breeding Status	Highest evidence of breeding	Estimated number of territories	Conservation Status: Annex I of Birds Directive or Red/Amber List*
Great tit	*Parus major*	Possible	Singing male	1	
House martin	*Delichon urbicum*	Non-breeding	Flying over		Amber List
House sparrow	*Passer domesticus*	Possible	Singing male	1	Amber List
Jackdaw	*Corvus monedula*	Probable	Pair observed	1	
Linnet	*Linaria cannabina*	Non-breeding	Overflying		Amber List
Magpie	*Pica pica*	Possible	Singing male	1	
Pheasant	*Phasianus colchicus*	Probable	Pair observed in suitable nesting habitat in breeding season	1	
Robin	*Erithacus rubecula*	Possible	Singing male	1	
Rook	*Corvus frugilegus*	Non-breeding	Flying over	NA	
Spotted flycatcher	*Musciapa striata*	Possible	Singing male	1	Amber list
Starling	*Sturnus vulgaris*	Non-breeding	Overflying	1	Amber List
Swallow	*Hirundo rustica*	Confirmed	Nesting within farm building	1	Amber list
Treecreeper	*Certhia familiaris*	Possible	Species observed in breeding season in suitable nesting Habitat	1	
Woodpigeon	*Columba palumbus*	Possible	Singing male		
Wren	*Troglodytes troglodytes*	Possible	Singing male	2	

No Annex I bird species were recorded during the site survey. A total of 25 species were recorded during the breeding bird surveys. The majority of birds recorded as considered common, woodland edge species which will nest in the mature treelines and hedgerow onsite. However, the mix of habitats onsite provides locally valuable habitats for a range of breeding birds. The proposed development site is dominated by grassland with patchy treelines/hedgerow. Native hedgerow provide valuable feeding/nesting resources for birds i.e. Hawthorn, Elder, Blackthorn, Willow. The grassland within the proposed development size is managed conventionally for cattle grazing. This is a low diversity habitat which does not provide significant resources for breeding birds. Although there is some ponded surface water on grassland and in scrub/woodland during peak rainfall events, these ephemeral habitats do not provide significant breeding resources for birds. There are also heavily channelised drains

within the proposed development site boundary, but likewise they do not provide high value breeding resources for local bird populations.

Five species of conservation concern (Amber list) were recorded during the breeding birds surveys i.e. House martin *Delichon urbicum,* House sparrow *Passer domesticus*, Linnet *Linaria cannabina*, Starling *Sturnus vulgaris* and Swallow *Hirundo rustica.* A Swallow nest was recorded within one of the old farm buildings.

2.3 2026 survey results

A total of 25 bird species were also recorded during the 2026 surveys, although the assemblages differed slightly from the 2024 surveys. No Annex I species were recorded. Five Amber list species were recorded Goldcrest *Regulus regulus*, House Martin *Delichon urbicum*, House Sparrow *Passer domesticus*, Sand Martin *Riparia riparia* and Swallow *Hirundo rustica* as well as one Red List species, Meadow pipit *Anthus pratensis*. Meadow pipit was notably absent from the 2024 breeding bird surveys; however this species was recorded during winter surveys prior to July 2026.

A number of species recorded during the 2026 surveys were not recorded in 2024 i.e. Coal Tit *Periparus ater*, Goldcrest *Regulus regulus*, Hooded Crow *Corvus cornix*, Jay *Garrulus glandarius,* Meadow Pipit, Reed Bunting *Emberiza schoeniclus* , Sand Martin *Riparia riparia* and Stonechat *Saxicola rubicola.*

Other species present during 2024, not recorded during the 2026 surveys were Feral pigeon *Columba livia domestica*, Jackdaw *Corvus monedula*, Treecreeper *Certhia familiaris*, Linnet *Linaria cannabina*, Magpie *Pica pica*, Pheasant *Phasianus colchicus* and Spotted flycatcher *Musciapa striata*.

The difference in species recorded reflects the ‘snapshot’ nature of this type of field survey. However, both surveys supported a typical assemblage of birds associated with rank grassland, hedgerows, scrub, treelines, scattered mature trees and adjoining stream vegetation. The bird species recorded are characteristic of a semi-natural farmland site on the urban fringe.

As with the 2024 surveys, most bird activity was concentrated along the field boundaries and areas of dense scrub, where species such as Wren, Blackbird, Robin, Dunnock, Blackcap, Chiffchaff, Blue Tit, Great Tit, Bullfinch, Song Thrush and Goldcrest were recorded. These habitats provide suitable nesting and foraging opportunities for common woodland-edge and hedgerow birds.

The rank grassland, particularly in the lower/southern fields, was used extensively by feeding and overflying birds. Goldfinch was especially prominent, with large flocks recorded moving over and feeding within the grassland, reflecting the availability of seed-bearing plants. Swallows and Goldfinch were observed foraging in these areas. House Martins and probable Sand Martins were also recorded overflying or foraging above the site. Meadow Pipit and Stonechat were associated with the more open grassland and scrub mosaic, while Common Buzzard was recorded over the wider site. As noted in **Section 7** of this report, this area will be retained as grassland with only limited sections of hedgerow requiring trimming where necessary to facilitate the proposed road and footpath.

The river and associated treelines/hedgrows provide additional habitat diversity. Reed Bunting was recorded along the river. No Kingfisher was recorded. The riparian corridor, together with adjoining scrub and hedgerows, is likely to function as both a breeding habitat and a commuting corridor for small passerines. Jay was recorded only off-site, indicating its presence in the surrounding landscape rather than confirmed use of the development site itself. This riparian area will not be impacted by the proposed development.

The derelict farm buildings contained old Swallow nests, demonstrating previous use of the structures for nesting. However, the nests were unoccupied during the survey, and part of the roof had collapsed, potentially rendering at least one nest site unusable. Swallows continued to forage around the buildings and fields, but active breeding within the structures was not confirmed. As outlined in the EIAR, replacement nesting habitat will be provided for Swallows (and other bird species) as part of the landscape masterplan.

Table 3. Bird Species recorded during breeding bird surveys 2026

Species		Breeding Status	Highest evidence of breeding	Estimated number of territories	Conservation Status: Annex I of Birds Directive or Red/Amber List*
Blackbird	*Turdus merula*	Possible	Singing male	2	
Blackcap	*Sylvia atricapilla*	Possible	Singing male	3	
Blue Tit	*Cyanistes caeruleus*	Possible	Singing male	3	
Bullfinch	*Pyrrhula pyrrhula*	Possible	Singing male	1	
Buzzard	*Buteo buteo*	Non-breeding	Overflying		
Chiffchaff	*Phylloscopus collybita*	Possible	Singing male	3	
Coal Tit	***Periparus ater***	Possible	Singing male	**1**	
Dunnock	*Prunella modularis*	Possible	Singing male	1	
Goldcrest	***Regulus regulus***	Possible	Singing male	**1**	Amber list
Goldfinch	*Carduelis carduelis*	Possible	Singing male	2	
Great Tit	*Parus major*	Possible	Singing male	2	
Hooded Crow	***Corvus cornix***	**Non-breeding**	**Overflying**		
House Martin	*Delichon urbicum*	Non-breeding	Overflying		Amber list
House Sparrow	*Passer domesticus*	Possible	Singing male	1	Amber list
Jay	***Garrulus glandarius***	**Non-breeding**	**Overflying**		
Meadow Pipit	***Anthus pratensis***	**Possible**	**Singing male**	**1**	**Red list**
Reed Bunting	***Emberiza schoeniclus***	**Possible**	**Singing male**	**1**	
Robin	*Erithacus rubecula*	Possible	Singing male	2	
Rook	*Corvus frugilegus*	Non-breeding	Overflying		
Sand Martin	***Riparia riparia***	**Non-breeding**	**Overflying**		**Amber list**

Species		Breeding Status	Highest evidence of breeding	Estimated number of territories	Conservation Status: Annex I of Birds Directive or Red/Amber List*
Song Thrush	*Turdus philomelos*	Possible	Singing male	1	
Stonechat	***Saxicola rubicola***	**Possible**	**Singing male**	**1**	
Swallow	*Hirundo rustica*	Probable	Nesting material within farm building (not active during July)	1-2	Amber list
Woodpigeon	*Columba palumbus*	Possible	Singing male	1	
Wren	*Troglodytes troglodytes*	Possible	Singing male	3	

As outlined above, both surveys supported a typical assemblage of birds associated with rank grassland, hedgerows, scrub, treelines, scattered mature trees and adjoining stream vegetation. The bird species recorded are characteristic of a semi-natural farmland site on the urban fringe. It is noted that following updated bird surveys there have been no changes to the original conclusions of the EIAR.

3. Response to Point 2 Bats

Bat surveys were led by Carl Dixon MSc (Ecological monitoring) and supported by Dr. Sorcha Sheehy PhD (Ornithology) and Sophie Knightly BSc (Wildlife Biology).

Carl has considerable experience in bat survey and bat mitigation measures/roost design. Carl was the primary coordinator and surveyor for a heritage council-funded project serving all the river bridges in County Waterford for bats. He has designed bat roosts for Lesser horseshoe in conjunction with the NPWS for sites in West Cork and is currently designing a dedicated bat roost for a large pharmaceutical plant in County Limerick. Carl has completed specialized training courses relating to bats in Ireland and the UK and has considerable experience in using a variety of bat survey equipment and subsequent software analysis of data.

3.1 2024 and 2025 surveys

Bat surveys were completed at the proposed development site 2024 and 2025. It is noted that part of the site was also surveyed for bats in 2022 as part of an adjoining development (31st of August and 1st of September).

During the 2024 and 2025 surveys Elekon Batloggers, Batbox Duet, EchoMeter Touch 2 PRO bat detectors and Bat box duet were used for surveys. Emergence surveys using a Pulsar Helion 2 XP50 Pro Thermal Imaging Camera were also carried out to identify potential emergence points from buildings within the survey area. The primary purpose of bat surveys was to assess usage of trees and habitats, located within or in close proximity to the site boundary. Activity surveys were also carried out to identify foraging and/or commuting routes within the proposed development site boundary (i.e., buildings, hedgerows, treelines, drainage ditch, etc.).

A building inspection was carried out to identify potential access points, 'potential roosting features (PRFs)' and any evidence indicating the presence of bats using the buildings within the proposed development site. A preliminary roost assessment was carried at ground level

on all trees earmarked for removal within the proposed development site. These assessments followed the guidelines set out in 'Bat Surveys for Professional Ecologists: Good Practice Guidelines (4th ed)' (Collins, 2023) (note Collins 2016 is an older version which has been superseded by Collins 2023).

Table 4 summarises the bat surveys completed within the proposed development site in 2024 and 2025 in the lead up to the planning application. Surveys methods, effort and timings were appropriate for the site based on Collins (2023) and Marnell *et al*. (2022). Is it noted that Marnell *et al*. is not a prescriptive as Collins in terms of survey requirements, but the timelines and methods are broadly similar. Marnell *et al*. (2022) does not prescribe a mandatory minimum interval between building emergence surveys; rather, survey effort is required to be proportionate to site conditions and sufficient to establish the presence, nature and importance of bat use.

Table 4. Summary of bat surveys, timings and approach based on Collins (2023) and Marnell *et al.* (2022)

Tree/Structure/Habitat	Conclusions based on initial assessment	Action	Surveys 2024 and 2025
Tree survey (preliminary roost assessment) Can be completed all year round	All trees onsite low to negligible potential	No further survey required (Based on Collins 2023)	Preliminary roost assessment of all semi-mature and mature trees onsite.
Building survey (preliminary roost assessment) Can be completed all year round	One building (farm dwelling in ruins) classified as low-moderate potential for roosting bats All other building negligible value	One to two emergence surveys required (Based on Collins 2023) No further survey required (Based on Collins 2023)	2024 – 2 emergence surveys of farm dwelling 2025 – 2 emergence surveys of farm dwelling
Ground level walkover night-time survey of treelines/commuting areas survey Optimal May to September (Collins 2023)	Mature treelines and hedgerows onsite surveyed for bat activity/commuting levels and assess which species using these areas.	Requirement assessed on a site-by-site basis (see further detail below) based on professional judgement.	2024 – 2 walkover surveys August 2025- 2 walkover surveys September

Following this request for further information, additional surveys were completed onsite to update data and determine if any changes in bat activity had occurred since the 2024 and

2025 surveys. The methodology repeated that of the activity/emergence 2024 and 2025 surveys to clearly identify any change in patterns or species usage.

3.2 2026 surveys

A bat emergence survey was conducted on 1st of July and 9th of July 2026, to detect if the building onsite was being utilized as a bat roost. A bat activity survey was also conducted on all treelines and hedgerows within the site boundary. Three Batlogger M2 bat statics, one Pulsar thermal imagery camera and two Nova Nightfox infrared cameras were used as part of the emergence. No emergence activity was detected throughout the survey. Footage from the emergence activity was analysed and showed no evidence of emergence events (see **Plates 1-3**).

Bat static data was analysed using BatExplorer software. Most of the bat activity was from Common Pipistrelle, with smaller numbers of Soprano Pipistrelle, Leisler's bat, and an unidentified Myotis species. No records of Lesser Horseshoe were identified during the bat activity surveys.

The first bat detected during the emergence surveys was a Leisler's Bat at 22:02. At 22:13, the first Soprano Pipistrelle was detected utilising the site, followed by the first Common Pipistrelle detected at 22:19. One recording of an unidentified Myotis species was detected at 22:43.

Bat species utilising the site for commuting or foraging activity included Common Pipistrelle, Soprano Pipistrelle, Leisler's Bat, and an unidentified Myotis species. No emergence activity was detected.

Activity | Frequencies | Frequencies/Time | Species

Species	#	# Calls
Myotis spec.	1	2
Noise	4	4
Nyctalus leisleri	46	340
Pipistrellus pipistrellus	227	2758
Pipistrellus pygmaeus	48	623

Figure 2. Species registrations and calls as analysed by Bat explorer

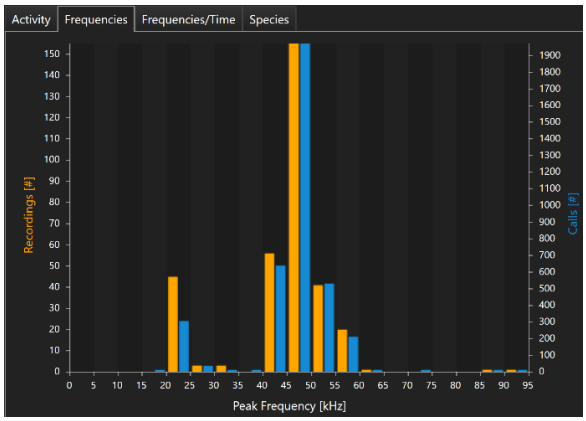


Figure 3. Bat call frequency histogram

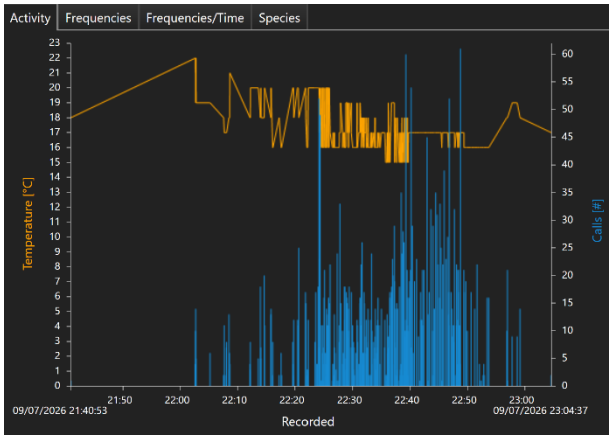


Figure 4. Bat activity Histogram

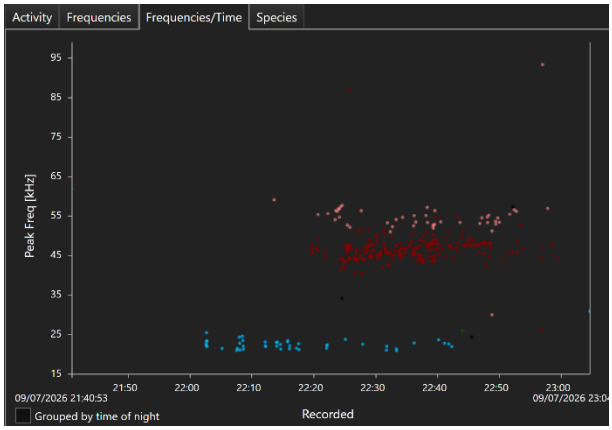


Figure 5. Bat frequency/time diagram

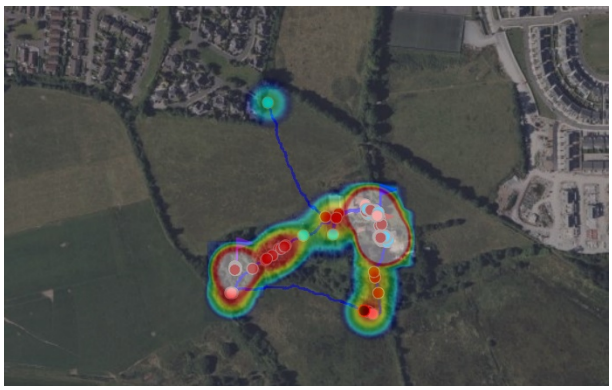


Figure 6. Heatmap (Blue line marks the transects walked onsite)



Plate 1. Infra red 2 camera. Bat commuting/foraging

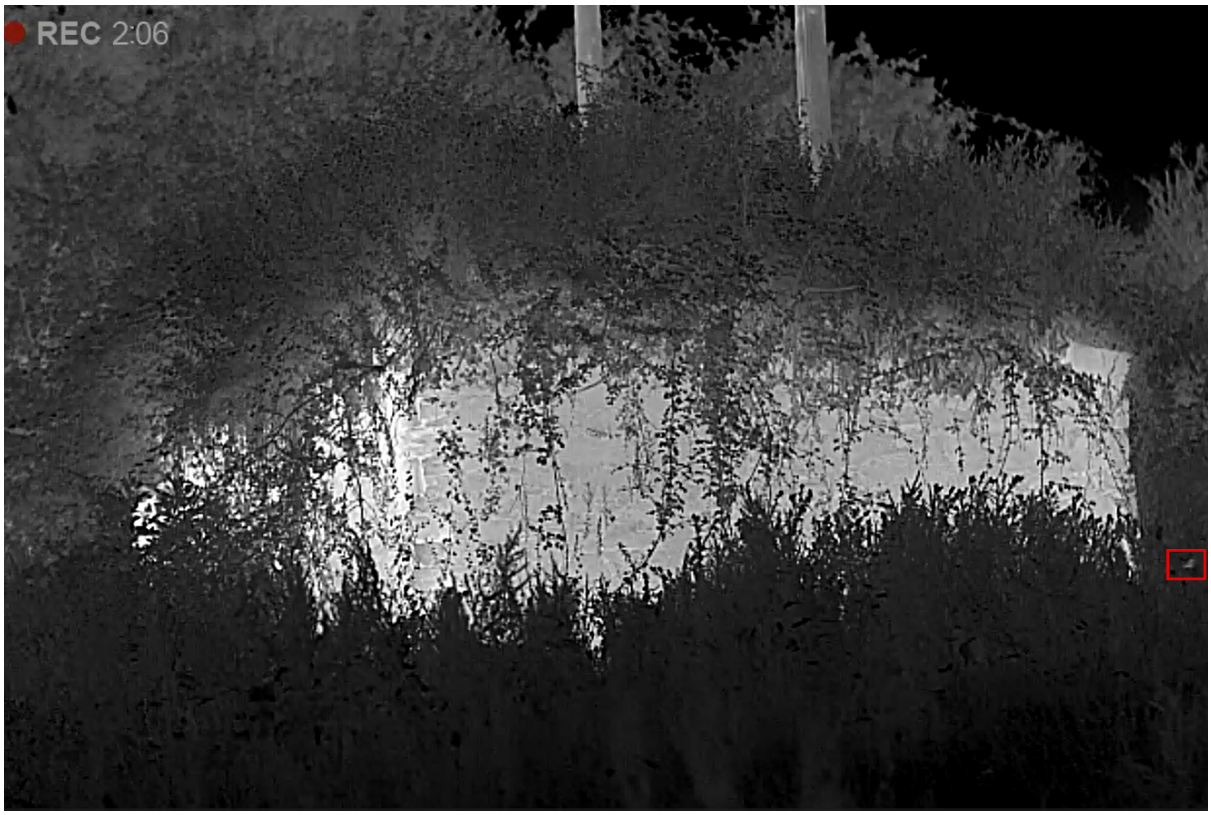


Plate 2. Thermal camera bat commuting/foraging



Plate 3. Infra red 1 view – no bat activity visible

3.3 Summary of bat surveys

Bat surveys were undertaken on six nights over three successive survey seasons, comprising two dusk emergence surveys in each of 2024, 2025 and 2026. On each survey night, the emergence survey of the building identified as having potential suitability for roosting bats was supplemented by a walked activity survey covering the wider development site, including the hedgerows, treelines and grassland areas. The site is dominated by managed agricultural grassland of relatively limited value for foraging bats, with the mature hedgerows representing the principal potential commuting and foraging features. The repeated surveys provided coverage over a number of years of bat activity under a range of suitable weather conditions and allowed the species present, levels of activity, flight directions and use of the principal linear habitats to be assessed.

While the baseline landscape screening initially characterized the commuting and foraging habitat within the subject site as possessing Moderate suitability, the subsequent Phase 2 survey design was designed using professional ecological judgment, as explicitly permitted under the frameworks of both the Collins, 2023 and Marnell et al. *et al*. 2022.

A total of four walkover survey visits were initially completed across two separate calendar years, specifically targeting peak activity windows in August 2024 and September 2025. Patterns of activity and species assemblages on all surveys indicated low-to-moderate pattern of bat activity. The site's bat assemblage is heavily dominated by common, ubiquitous, and suburban-resilient species—namely Common Pipistrelle, Soprano Pipistrelle and Leisler's bat. Critically sensitive Annex II species, such as the Lesser Horseshoe bat, are absent, and the site lacks any geographical or ecological connectivity to SACs designated for bats. Furthermore, only negligible, transient activity (one to two registrations) of Myotis species was

recorded, confirming the absence of significant or specialized woodland foraging corridors. This pattern of activity was repeated during the 2026 surveys.

Having regard to the consistency of the survey findings over three years, the survey effort was considered proportionate to the character of the site and sufficient to inform the assessment of potential effects on roosting, commuting and foraging bats. Patterns of bat activity at the site have remained consistent across three years of survey.

Overall, the site provides moderate value foraging habitat in the context of a conventionally farmed agricultural landscape. Most of the activity is concentrated along western and northern boundary hedgerow/treeline, along the internal treeline along lane that leads to the existing farmyard and along the edges of scrub/woodland habitats. Although numbers are not exact and the survey was extended over multiple survey seasons it is estimated that overall the site was used for foraging by small numbers of Common Pipistrelle, Soprano Pipistrelle and Leisler's as well as occasional Brown Long Eared bat and Natterers bat. No Lesser Horseshoe Bat was recorded, and no evidence of regular use of the site by this species was identified. Based on the patterns observed to date, any additional survey is likely to yield comparable results.

As outlined in the EIAR, operational lighting will increase across parts of the site. However, the final lighting design maintains connected dark habitat at less than 1 lux along the north-eastern planted corridor, the retained southern grassland and the riparian corridor of the Maglin North Stream. These routes will retain functional commuting and foraging habitat for light-sensitive species. Any residual risk associated with the early-season data gap has been entirely neutralized through standard, precautionary, "designed-in" mitigation. This includes the retention and strict protection of existing linear habitat features as unlit dark corridors (<1 lux) and a commitment to standard pre-felling/construction checks, ensuring the permanent protection of the local bat population regardless of seasonal variance.

The residual effect on bats remains as negative, slight and long-term at the local level and is not significant at any geographic scale.

4. Response to Point 3. Botanical

An updated botanical survey was completed on the 3rd of July 2026. It is noted that previous botanical surveys included a survey in mid-May 2024 which is within the optimal survey period for calcareous/neutral grassland, as well as a number of other habitat and botanical surveys within the growing season i.e. August 2024 and September 2025. However, this additional survey provides more up to date data from the proposed development site. This updated survey was completed by Tara Challoner MSc (CV attached). Tara has extensive experience in botanical and habitat assessment and evaluation, and has completed botanical surveys for RSPB as well as projects in Ireland and the UK.

The proposed development site is dominated by improved agricultural grassland (used by grazing cattle), which has been extensively managed for approximately 20 years. There has been limited maintenance of hedgerows/treelines, which has resulted in scrub encroachment along the boundary of the grassland in many areas. While there are some areas where they have been classified as a grassland mosaic, i.e. Improved agricultural grassland GA1/Wet grassland GS4 and Improved agricultural grassland GA1/Dry calcareous and neutral

grassland GS1, no Annex I habitats have been recorded within the proposed development site. An updated botanical survey is provided in **Appendix 8.2 (RFI Update)**.

Although a small number of species associated with neutral or locally base-rich conditions were recorded, including Black Medick, Red Bartsia and Eyebright, these occurred within a wider assemblage dominated by common species of improved, semi-improved, disturbed and locally wet grassland. The grassland lacked the diversity and characteristic calcicolous species assemblage associated with species-rich calcareous grassland or Annex I habitat 6210. The results therefore support its classification as a mosaic of improved and semi-natural grassland of relatively low botanical value, rather than valuable calcareous grassland.

Extensive surveys have been completed at this site over a 2 year period. While there are a small number of additional species recorded over the site, there is no change to the classification of habitats previously described in the EIAR Biodiversity chapter. No plant species listed under the Flora (Protection) Order 2022 or classified as threatened on the Irish Red List were identified during the botanical survey. All identified species are common and widespread in Ireland.

5. Response to Point 4. Impacts

Appendix 1 of this report includes an updates impacts summary based on updated surveys. It is noted that following updated bat, bird and botanical surveys there have been no changes to the original conclusions of the EIAR.

6. Response to Point 5. Invasive species

Appendix 8.6 Invasive species management plan of the EIAR has been updated to account for the presence of Montbretia and Sycamore. Mitigation measures for the removal of Montbretia have been specified.

Mature and semi-mature Sycamore forming part of retained treelines and hedgerows will not be targeted for removal solely because of its non-native status. Sycamore removal will be limited to trees identified for removal under the proposed development and arboricultural proposals. No Sycamore will be planted as part of the landscaping scheme, and seedlings or young regeneration will be selectively controlled during construction works where necessary to prevent dominance within retained or newly created habitats.

7. Response to Point 6. Flood zone and wastewater

Wastewater from the proposed development will be conveyed for treatment to Ballincollig WWTP. As confirmed in drawing 4208-1003 (Source DOSA Consulting Engineers) the pumping station is located outside the post-development flood extent for 1% AEP extents. All references to ‘temporary’ have been removed from updated drawings (this description was included in error). The location of the pumping station means there is no significant risk or flooding and/or accidental spillage of foul water to the local stream network. No stormwater captured in basement carparks will be discharged to the foul network. All stormwater will be discharged to the stormwater network. The pumping station will be designed in accordance with Uisce Éireann code of practice and will incorporate duty and standby pumping capacity, high-level alarms, telemetry, emergency storage and appropriate arrangements for power or pump failure. No emergency overflow to the Maglin North Stream or the surface-water

drainage network is proposed. These embedded design measures, together with the location of the station outside the post-development 1% AEP flood extent, ensure that there is no realistic pathway for an accidental foul-water discharge to the local watercourse network.

The Ballincollig agglomeration is served by a wastewater treatment plant with a Plant Capacity Population Equivalent (P.E.) of 33,000. The agglomeration consists of one primary discharge point which discharges to the River Lee. The WWTP obtained a discharge licence (Reg: D0049-01) from the EPA and has assigned emission limit values (ELV's) for a range of parameters to ensure a high degree of protection to the River Lee, the Lee Estuary and surrounding waters.

Treated effluent from the proposed development will discharge from the Ballincollig WWTP via the main treated effluent line. The discharge licence assigns ELV's for total phosphorous (Total P), chemical oxygen demand (COD), total suspended solids (TSS), biological oxygen demand (BOD), Ammonia, pH and orthophosphate. The ELVs are set based on the full design capacity (P.E. 33,000) and are aimed at providing a high degree of protection to the receiving water body and to ensure the receiving waterbody is capable of accommodating the proposed discharge without causing or exacerbating a breach in the relevant standards.

It is noted that the proposed occupancy of the housing development is approximately Total PE for the development can be taken as 870.8 PE (based on 2.7 persons per dwelling and 60.8 PE for creche). Based on the most recent EPA data (Source Envision mapping) the agglomeration PE for Ballincollig WWTP was 25,105 (AER 2024). The proposed development would increase the current WWTP P.E. from 25,105 to 25,975.80, which is well within the 33,000 P.E. design capacity.

The most recent AER (2024) notes that the final effluent from the Primary Discharge Point was non-compliant with the Emission Limit Values for Ammonia-Total (as N) mg/l Total Nitrogen mg/l which were linked to adverse weather events. The following was noted:

- *The WWTP discharge was not compliant with the ELV's set in the wastewater discharge licence for the following: Total Nitrogen mg/l, Ammonia-Total (as N) mg/l.*
- *The ambient monitoring results does meet the required EQS at the downstream monitoring location. The EQS relates to the Oxygenation and Nutrient Conditions set out in the Surface Water Regulations 2009.*
- *The discharge from the wastewater treatment plant does not have an observable impact on the water quality.*
- *The discharge from the wastewater treatment plant does not have an observable negative impact on the Water Framework Directive status.*

It is noted that the annual mean hydraulic loading is less than the peak Treatment Plant Capacity. The annual maximum hydraulic loading is less than the peak Treatment Plant Capacity.

Effluent monitoring summary from Ballincollig WWTP AER 2024 (Source EPA)

Parameter	WWDL ELV (Schedule A)	ELV with Condition 2 Interpretation included Note 1	Interim % reduction from influent concentration	Number of sample results	Number of exceedances	Number of exceedances with Condition 2 Interpretation included	Annual Mean	Overall Compliance (Pass/Fail)
COD-Cr mg/l	125	250	N/A	12	N/A	N/A	25	Pass
Suspended Solids mg/l	35	87.5	N/A	12	1	N/A	9.84	Pass
BOD, 5 days with Inhibition (Carbonaceous) mg/l	25	50	N/A	12	1	N/A	5.12	Pass
BOD, 5 days with Inhibition (Carbonaceous) Kg/d	74	148	N/A	12	1	N/A	25.94	Pass
Total Nitrogen mg/l	15	18	N/A	12	3	3	9.58	Fail
pH pH units	9	9	N/A	12	N/A	N/A	7.51	Pass
Ammonia-Total (as N) mg/l	5	6	N/A	12	3	3	3.27	Fail
ortho-Phosphate (as P) - unspecified mg/l	2	2.4	N/A	12	N/A	N/A	0.252	Pass
ortho-Phosphate (as P) – unspecified Kg/d	29.5	59	N/A	12	N/A	N/A	1.27	Pass
Total Phosphorus (as P) mg/l	2	2.4	N/A	12	N/A	N/A	0.397	Pass
Total Phosphorus (as P) Kg/d	15	30	N/A	12	N/A	N/A	2.01	Pass

A Pre-Connection Enquiry was submitted to Irish Water which confirmed that, subject to a valid connection agreement being put in place, the proposed connection to the Irish Water network could be facilitated.

The addition of the effluent discharge from the proposed Carriganarra LRD to the Ballincollig WWTP is well within its design capacity and will not compromise the operational capability of the WWTP to treat effluent to comply with emission limit values. Therefore, the no significant impacts are predicted from the proposed development given the current operating conditions at the WWTP. Although non-compliances for ammonia and total nitrogen were recorded in the 2024 AER, these appear to be related to adverse weather events. The AER concluded that there is no observable negative effect on local water quality or the WFD status on the River Lee. Impact from wastewater discharges are predicted to be neutral, imperceptible and long-term.

The WWTP discharge is located 14.6km upstream of Cork Harbour SPA and 19.3km upstream of Great Island Channel SAC. Minor increases in nutrient levels potentially discharged by the WWTP will not have a significant impact water quality within the River Lee and/or the Cork Harbour SPA and Great Island Channel SAC. Therefore, no likely significant effects on water quality within European sites from wastewater discharges have been identified.

The construction of the Maglin Sustainable Access Corridor, clear-span bridge and associated raising of ground levels will result in localised changes to the hydraulic regime of the Maglin North Stream and its floodplain. Hydraulic modelling predicts increases in flood level of up to 360mm extending approximately 350m upstream of the sustainable access corridor and increases of up to 50mm extending approximately 250m downstream. These changes will principally occur within areas already identified as being at risk of flooding, with only a slight increase in flood extent upstream of the corridor and no increased flood risk predicted farther downstream. Chapter 7 of the EIAR concludes that, following implementation of the proposed design and mitigation measures, the local hydraulic changes will not be significant.

Residual effects on surface-water quality during construction are assessed as negative, localised, temporary and not significant. Operational effects on water quality are assessed as negative, imperceptible, localised and brief, while residual effects on hydrology and runoff characteristics are assessed as negative, imperceptible, local and permanent. No significant indirect effects on the aquatic habitats or fauna of the Maglin North Stream are predicted.

It is noted that a discussion of the wastewater loading within Ballincollig wastewater treatment plant (WWTP) is also included in the NIS which accompanies this application.

8. Response to Point 7. Habitat removal

A detailed quantitative assessment of the existing, retained and removed hedgerow, treeline and woodland habitats, together with the extent of proposed compensatory planting and the resulting net change, is provided in the separate document prepared by SRLA and submitted with this RFI response. That assessment also identifies and justifies the remaining areas of habitat removal and should be read in conjunction with this RFI response. The principal outcomes of the assessment are reflected in Table 8.14 below.

The following information has been provided by SRLA in response to Point 7 of the Ecology RFI:

Following receipt of the RFI, the landscape design was comprehensively reviewed with the objective of maximising the retention of existing hedgerows and woodland where practicable. As a result of this review, a number of hedgerows and tree groups previously identified for removal have now been incorporated into the revised layout for retention.

The proposed layout and finished levels were reassessed in response to the Planning Authority's comments regarding the retention of existing hedgerows and woodland. This review has enabled existing habitats to be better integrated into the design while avoiding unnecessary disturbance to hedgerow root zones and associated tree Root Protection Areas wherever practicable.

The principal revisions include:

- *Hedgerow H010, located within the southern field and running north-south, is now retained, with only localised trimming where required to accommodate the proposed development road.*
- *Tree Group G11 is retained.*

- *Tree Groups G13 and G18, both of which represent substantial areas of existing woodland vegetation, are retained.*

As a result, the area designated for continued agricultural use in the southern part of the site remains largely undisturbed, with only limited sections of hedgerow requiring trimming where necessary to facilitate the proposed road and footpath. This significantly increases the retention of existing habitats and maintains ecological connectivity through the southern part of the site.

In addition to the increased retention of existing habitats, the revised landscape design also includes compensatory habitat planting, including a new 488.8 m² ecological buffer zone along the south-western site boundary. This area comprises dense native woodland planting and extends the established ecological corridor along the western boundary, strengthening habitat continuity and ecological connectivity across the site. The ecological buffer is further enhanced through the incorporation of biodiversity measures including bird boxes, bee boxes, insect hotels, log piles and hedgehog domes, creating a diverse range of nesting, foraging and refuge opportunities for wildlife while providing a robust planted buffer along the site boundary.

Overall, the revised landscape design responds directly to the Planning Authority's comments by substantially increasing the retention of existing hedgerows and woodland where practicable, while introducing compensatory habitat planting and biodiversity enhancements to reinforce the site's green infrastructure network and ecological connectivity.

9. Response for elements of AA screening and NIS

An updated AA Screening and NIS has been submitted with this RFI response. The updated report includes Great Island Channel SAC and assesses the potential effects associated with surface-water management, foul-water management, the pumping station and flood risk. It concludes, following implementation of the specified mitigation measures, that the proposed development will not adversely affect the integrity of Cork Harbour SPA or Great Island Channel SAC, either alone or in combination with other plans or projects

10. Conclusion

Specialist ecological surveys were undertaken over an extended survey timeline between 2024 and 2026, supplemented by earlier bat survey data from 2022. The primary breeding-bird, botanical, bat, wintering-bird and aquatic surveys were completed at appropriate times of year, while the July 2026 breeding-bird visits provided supplementary verification of the appropriately timed 2024 dataset. The survey programme, which was undertaken by experienced and appropriately qualified ecologists using accepted methodologies, provides a robust baseline for the assessment of the ecological receptors within the zone of influence.

The updated surveys confirm that the character, value and use of the habitats at the site remain broadly consistent with the originally submitted baseline. The updated impact assessment identifies a significant residual effect at the local geographic scale on woodland, hedgerow and treeline habitat in the short to medium term while replacement planting establishes. All other residual ecological effects are assessed as not significant at any geographic scale. In the long-term, no significant residual effects have been identified.

The updated NIS concludes that the proposed development will not adversely affect the integrity of Cork Harbour SPA or Great Island Channel SAC, either alone or in combination with other plans or projects.

Appendix 1. Impact assessment

This assessment is based on surveys at the proposed development site. Site surveys were largely carried out between January 2024 to July 2026 as outlined below. It is noted that DixonBrosnan also previously surveyed this site in August and September 2022.

Table 8.1 Dates of Site Surveys (update)

Surveys	Dates
Habitats (including hedgerows, botanical and invasive species)	14th May 2024, 22nd August 2024, 11th September 2025, 17th December 2025, 30th January 2026, 3rd July 2026
Non-volant mammals	22nd August 2024, 11th September 2025, 17th December 2025, 5th January 2026 (note this was incorrectly reported as 2025 in EIAR)
Bats	24th August 2024, 27th August 2024, 11th September 2025, 25th September 2025, 1st July 2026, 9th of July 2026 (31st August 2022, 1st September 2022),
Winter birds	29th January 2024, 12th February 2024, 27th February 2024, 22nd January 2025, 7th February 2025, 27th February 2025, 27th October 2025, 3rd November 2025, 12th December 2025
Breeding birds	14th May 2024, 16th June 2024, 1st July 2026, 3rd July 2026
Aquatic	25th September 2025, 26th January 2026, 5th February 2026

The evaluation of ecological receptors, potential effects, mitigation measures and residual effects is summarised in **Table 8.14**. The table should be read in conjunction with the detailed baseline, impact assessment and mitigation sections of this chapter. Effect descriptions follow the terminology set out in the EPA Guidelines (2022), while ecological significance has been determined with reference to the value of the receptor, the characteristics of the effect and whether the effect would adversely affect the integrity or conservation status of the receptor at the stated geographic scale.

Table 8.14 Summary of Biodiversity Impact Assessment

Ecological receptor and evaluation	Potential effect	Effect before mitigation	Mitigation and enhancement	Residual effect
Cork Harbour SPA and Great Island Channel SAC – International Importance	Construction runoff, suspended solids, cementitious material or hydrocarbons entering the Maglin North Stream; operational runoff and changes in drainage or flood conditions; increased wastewater loading.	Potential negative effects on water quality and connected estuarine habitats. Likely significant effects could not be excluded in the absence of mitigation. **Potentially significant at the international level.**	Construction water-quality controls; CEMP implementation; 10 m buffer from the Maglin North Stream; no instream works; pollution-prevention measures; attenuation, SuDS, hydrocarbon interceptors and controlled discharge rates; clear span bridge*; pumping station is located outside the post-development flood extent for 1%AEP extents, foul drainage and WWTP capacity measures assessed in the NIS.	**No adverse effect on the integrity of Cork Harbour SPA or Great Island Channel SAC**, either alone or in combination with other plans or projects. No significant residual effect.
Ballincollig Cave pNHA and Lee Valley pNHA – National conservation interest	No impact pathway to Ballincollig Cave pNHA. A potential indirect pathway to Lee Valley pNHA arises through wastewater	No significant effect on Ballincollig Cave pNHA. Potential indirect water-quality effect on Lee Valley pNHA, but no significant effect was identified under	Connection to the public foul network; treatment at Ballincollig WWTP; compliance with Uisce Éireann requirements and wastewater controls described in the NIS.	**No adverse effect on an NHA or pNHA.** Not significant.

Ecological receptor and evaluation	Potential effect	Effect before mitigation	Mitigation and enhancement	Residual effect
	discharge from Ballincollig WWTP.	the proposed wastewater arrangement.		
Rare or protected flora	Removal of vegetation during site clearance.	No rare, protected or Red-listed plant species were recorded, and the habitats proposed for removal do not support specialist flora. **Neutral, imperceptible and not significant.**	Protection of retained habitats; invasive-species controls; native planting and ecological supervision.	**Neutral, imperceptible and not significant.**
Improved agricultural grassland GA1; Improved agricultural grassland GA1/Dry calcareous and neutral grassland GS1; Improved agricultural grassland GA1/Wet grassland GS4; Recolonising bare ground ED3; Stone walls and other stonework; BL1/Buildings and artificial surfaces BL3–	Permanent removal of predominantly modified, species-poor habitats during site clearance and construction.	Effects range from **neutral and imperceptible** to **negative, slight and long-term at the local level**.	Native meadow, grassland, hedgerow and tree planting; SuDS planting; replacement habitat incorporated into the SRLA landscape masterplan.	**Neutral or negative, slight and long-term at the local level.** Not significant.

Ecological receptor and evaluation	Potential effect	Effect before mitigation	Mitigation and enhancement	Residual effect
Local Importance, Lower Value				
Dry meadows and grassy verges GS2/Scrub WS1 – Local Importance, Higher Value	Permanent habitat loss and fragmentation during site clearance; loss of locally valuable flora and habitat used by birds, mammals and invertebrates.	**Negative, slight and long-term at the local level.**	Retention of boundary habitats as outlined in SRLA Landscape masterplan; native meadow, scrub, hedgerow and tree planting; habitat-protection fencing; ecological supervision.	**Negative, slight and long-term at the local level.** Not significant.
Mixed broadleaved woodland, woodland/scrub, hedgerows and treelines – Local Importance, Higher Value	Permanent removal and fragmentation; reduced ecological connectivity; loss of nesting, foraging and shelter habitat for bats, breeding birds and terrestrial mammals.	**Negative, moderate and long-term at the local level.** **Significant at a local geographic scale**	Retention of boundary habitats and understorey vegetation as outlined in SRLA Landscape masterplan; fencing and protection of root-protection areas before construction; no machinery or spoil within protected areas; extensive native hedgerow and tree planting; habitat monitoring and management. The landscape proposals provide a net gain of approximately 494.5m of hedgerow and approximately 2,208 new native trees (see	In the short to medium term: **negative, moderate and significant at the local level**, reflecting the time required for replacement habitat to mature. In the long term: **negative, slight and long term**. Not significant in long-term.

Ecological receptor and evaluation	Potential effect	Effect before mitigation	Mitigation and enhancement	Residual effect
			SRLA biodiversity calculations Rev02 included with this RFI response) for full details	
Maglin North Stream and associated riparian habitat– Local Importance, Higher Value	Accidental silt, cement or hydrocarbon pollution; disturbance to banks during construction of the outfall; effects on water quality, bank stability, hydraulics and flood conditions.	**Negative, moderate and potentially long-term at the local level. Significant at the local geographic scale in the absence of mitigation.**	Minimum 10m construction buffer; no instream works; water-quality and sediment controls; fuel and concrete controls; controlled outfalls and erosion protection; SuDS, attenuation and hydrocarbon interception; clear span bridge*; pumping station is located outside the post-development flood extent for 1%AEP extents construction monitoring by a suitably qualified ecologist.	No significant effect on stream hydrology or riparian habitat. Effects on aquatic ecology will be **Negative, imperceptible, local and long-term (Based on Chapter 7 of EIAR)**. Not significant.
Drainage ditches – Local Importance, Lower Value	Removal or modification of ditches and changes to local drainage patterns; potential loss of low-value amphibian habitat.	**Negative, slight and long-term at the local level.**	Pre-works ecological inspection; water-quality controls; replacement drainage and SuDS features, including infiltration basins; translocation under licence if frog spawn or tadpoles are unexpectedly found.	**Negative, slight and long-term at the local level**. Not significant.

Ecological receptor and evaluation	Potential effect	Effect before mitigation	Mitigation and enhancement	Residual effect
Buddleia, Wild Clematis, Sycamore and Montbretia	Spread of plant material or contaminated soils during clearance and earthworks, potentially affecting retained and newly created habitats.	**Negative, slight and long-term at the local level** in the absence of management. Not significant above the local level.	Implementation of the Invasive Species Management Plan; demarcation of affected areas; species-specific control and removal; appropriate handling and disposal of plant material and soils; machinery biosecurity; revegetation and follow-up monitoring. Sycamore removal will be limited to trees identified for removal under the proposed development and arboricultural proposals.	No residual adverse effect following implementation of the ISMP. **Not significant.**
Otter – site of low value; no signs recorded, but occasional passage along the stream cannot be excluded	Construction disturbance; indirect effects through impacts on fish or aquatic invertebrates; temporary interference with movement along the stream corridor.	**Negative, slight and medium to long-term at the local level.** Not significant.	Retention of the riparian corridor; 10 m buffer; no instream works or barrier to movement; water-quality controls; lighting directed away from the watercourse and boundary habitat.	**Negative, slight and medium-term at the local level**, with no significant effect on Otter movement, resting habitat or food resources. Not significant.
Badger – no sett, signs or evidence of site use recorded	Potential accidental injury or disturbance during clearance and excavation if Badger use changes before construction.	Based on the survey results, no likely effect has been identified. **Neutral imperceptible, long-term.**	General mammal-protection measures; maintenance of site permeability; good construction practice. A pre-construction mammal check	**Neutral imperceptible, long-term.** Not significant.

Ecological receptor and evaluation	Potential effect	Effect before mitigation	Mitigation and enhancement	Residual effect
			would provide confirmation that baseline conditions remain unchanged.	
Other non-volant mammals, including Hedgehog, Pygmy Shrew, Irish Stoat and Red Fox – Local Value	Habitat loss, fragmentation, disturbance, accidental injury or entrapment during construction; increased activity, lighting and human presence during operation.	**Negative, slight and medium to long-term at the local level.**	Retention and enhancement of hedgerows and understorey habitat; native planting; approximately 13 cm × 13 cm gaps in garden fencing; four Hedgehog domes; protection of retained corridors; control of construction and operational lighting.	**Negative, slight and long-term at the local level.** Not significant.
Bats – moderate local value for foraging and commuting; negligible to low roosting potential	Removal of woodland, scrub, buildings, hedgerows and treelines; fragmentation of commuting routes; possible accidental harm during tree or building removal; increased operational lighting reducing the value of retained and replacement habitats.	Construction and operation: **negative, slight to moderate and medium to long-term at the local level**. Potentially significant at the local level, particularly for less light-tolerant species (occasional foraging of light sensitive species)	Pre-demolition building inspection; supervised soft-felling of suitable trees; seasonal felling; cessation of works if bats are found; protection of retained hedgerows and treelines; directional construction lighting; 2,700 K fully cut-off operational lighting; dark external boundaries; native linear planting; installation of bat boxes and ecological monitoring.	**Negative, slight and long-term at the local level** Light levels will increase over the site but light-sensitive species may continue to forage in dark areas (note as per Molloy Lighting report part of newly planted areas along north-eastern boundary will be <1lux, retained grassland area

Ecological receptor and evaluation	Potential effect	Effect before mitigation	Mitigation and enhancement	Residual effect
				to south will be <1lux and riparian area along Maglin North will be largely <1lux. Not significant in long-term
Common Frog and reptiles – low-value potential frog habitat (none recorded); No suitable reptile habitat recorded	Removal of wet grassland and drainage ditches; possible accidental injury if frogs colonise before construction.	Common Frog: **neutral, imperceptible and long-term at the local level**. Reptiles: no effect. Not significant.	Pre-clearance inspection of wet grassland and ditches; obtain an NPWS licence and translocate spawn or tadpoles if recorded; creation of infiltration and SuDS habitats.	**Neutral, imperceptible and long-term at the local level**. Not significant.
Breeding birds– Local Value; common farmland and woodland-edge assemblage, including one Red List species (Meadow Pipit) and several Amber-listed species. Breeding Swallow breeding in building	Removal of woodland, scrub, hedgerows, treelines and occupied buildings; loss of nesting and foraging habitat; disturbance over the approximately five-year construction period; risk of injury to eggs, nests and young.	**Negative, slight to moderate and medium-term at the local level.** Potentially significant at the local level in the absence of measures preventing nest damage.	Vegetation and building clearance outside the nesting season where possible; avoidance of the peak April–June period; pre-clearance survey where works occur during the breeding season; protection of retained habitat; native planting; Swift bricks, Swallow and House Martin cups, Treecreeper boxes and other bird boxes.	Short to medium term: **Negative, slight at the local level**. Long term, as planting and nesting features become established: **Positive, not significant and long-term at the local level**. Not significant.

Ecological receptor and evaluation	Potential effect	Effect before mitigation	Mitigation and enhancement	Residual effect
Wintering birds, including Cork Harbour SPA SCI species	Loss of grassland and disturbance. Small numbers of Snipe and Meadow Pipit may lose wintering habitat; no SPA SCI species were recorded.	SCI species: **Neutral, imperceptible in the long-term**. Other wintering birds: **Negative, slight and long-term at the local level**.	Native meadow, hedgerow and tree planting (as per SRLA landscape masterplan); berry-producing species; retention of boundary habitat; habitat creation and management.	SCI birds: **Neutral, imperceptible in the long-term**. Other wintering birds: **Neutral, not-significant and long-term at the local level**. Not significant.
Fish and aquatic invertebrates – Maglin North Stream of low to moderate fisheries value	Construction runoff, siltation, accidental pollution and effects from works; operational runoff and changes to hydraulic conditions.	**Negative, moderate and temporary to long-term at the local level in the absence of controls. Significant at the local level.**	Water-protection measures; 10m buffer; and no instream works; attenuation, SuDS, hydrocarbon interception and silt control; controlled discharge rates; ecological monitoring.	**Neutral, imperceptible and long-term at the local level.** Not significant.
Terrestrial invertebrates – Local Value	Loss of woodland, scrub, semi-natural grassland and hedgerow habitat during construction.	**Negative, slight and medium-term at the local level.** Not significant.	Native meadow and tree planting; retention of boundary habitat and deadwood; four loggeries; three insect hotels; pollinator-friendly planting and SuDS habitats.	**Positive, not significant and long-term at the local level.** Not significant.
Cumulative effects on biodiversity receptors	Potential additive habitat loss, disturbance, lighting, surface-water and wastewater effects	No significant cumulative effect was identified in the chapter, subject to	Full implementation of project mitigation, CEMP measures, drainage design, habitat creation and monitoring;	No significant cumulative residual effect, either alone or in combination

Ecological receptor and evaluation	Potential effect	Effect before mitigation	Mitigation and enhancement	Residual effect
	associated with permitted or proposed development in the Ballincollig area.	implementation of the project-specific mitigation.	compliance with relevant development-plan biodiversity and water objectives.	with other plans or projects.

* The development provides for the construction of a bridge across the Maglin North River. And although the bridge will not be constructed as part of the Carriganarra LRD, the assessment of its construction is included in the EIAR for completeness.