

**MOORETOWN LANDS PHASE 2,
SWORDS, CO. DUBLIN**
ENVIRONMENTAL IMPACT ASSESSMENT REPORT
(EIAR) VOLUME 3: APPENDICES

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Environmental
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Client:

Fingal County Council

Date:

27 May 2026

MOORETOWN LANDS PHASE 2, SWORDS, CO. DUBLIN
Environmental Impact Assessment Report (EIAR) Volume 3: Appendices

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Bat and Ground Mammal Assessment of Lands at Mooretown



Wildlife
Surveys
Ireland



A Bat and Ground Mammal Assessment of Lands at Mooretown Swords, Fingal, County Dublin

By Brian Keeley
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26/05/2026



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Summary

Bat species noted feeding and commuting on the site

Common pipistrelle	<i>Pipistrellus pipistrellus</i>
Soprano pipistrelle	<i>Pipistrellus pygmaeus</i>
Leisler's bat	<i>Nyctalus leisleri</i>

Ground Mammals present

Fox	<i>Vulpes vulpes</i>
Rabbit	<i>Oryctolagus cuniculus</i>
Mouse species	<i>Mus musculus</i> , <i>Apodemus sylvaticus</i>
Brown rat	<i>Rattus norvegicus</i>



Mitigation and Recommendations

- (1) All suitable trees as determined by a bat specialist shall be examined for the presence of bats. Should bats be discovered, the tree is a bat roost, and a derogation must be sought from NPWS before it can be removed. Additional mitigation measures may be required and must be agreed with NPWS.
- (2) 6 x 2FN Schwegler bat boxes shall be incorporated into the site within the northwestern corner where a park is proposed. These should be at least 3 metres high, with a clear drop below (as bats need to drop to start their flight). ***These must be placed in a dark area.*** The bat boxes provide roost opportunities for any that may be removed either current or potential future roosts from trees that will be removed. They are also an enhancement feature.
- (3) Bats will suffer a loss of feeding while birds will also lose feeding opportunities as well as nesting opportunities. Native shrubs and trees must be used within the new development. Where other climbers and shrubs are required, they should be taken from the approved list from the All-Ireland Pollinator Plan: <https://pollinators.ie/wpcontent/uploads/2023/04/Top-Ten-pollinator-plants-Guide-WEB.pdf> Semi-mature and mature trees and shrubs / shorter plants should be planted within the new development.
- (4) If bats are discovered at any stage of the development, building work must cease and both the Conservation Ranger and a bat specialist must be contacted.
- (5) A dark sky area must be designated within the development to provide commuting and feeding corridors, and light spillage and pollution must be kept to a minimum with the use of cowls, caps, and low-level bollard lighting where possible. The dark area will be associated with the new parkland and retained hedgerow areas.
- (6) Lighting shall be used judiciously for safety and access and not for ornamental use. Lighting shall be used that will not affect bats and other nocturnal fauna to such an extent that they cannot roost, commute or feed within the site following development. The full requirements are shown in the Mitigation section.

Lighting design will be in accordance with:

Bats and Lighting – Guidance Notes for Planners, Engineers, Architects and Developers (Bat Conservation Ireland, 10)

https://www.batconservationireland.org/wpcontent/uploads/2013/09/BCIrelandGuidelines_Lighting.pdf



Bats and Artificial Lighting at Night, Institute of Lighting Professionals, 2023
<https://theilp.org.uk/publication/guidance-note-8-bats-and-artificial-lighting/>

Guidance Notes for the Reduction of Obtrusive Light GN01-21 (Institute of Lighting Professionals, 2021) <https://theilp.org.uk/publication/guidance-note-1-for-the-reduction-of-obtrusive-light-2021/>

Dark Sky Ireland's Environmentally Friendly Lighting Guide <https://www.darksky.ie/lighting-documents/#guidelines>

- (7) Hedgehog access points shall be incorporated into the site from each perimeter fence / wall. (see report Mitigation section).

INTRODUCTION

All of Ireland's bats and many terrestrial mammals are protected by national and EU legislation. Any changes to a site that have the potential to affect the viability of populations of these species and any operations likely to put protected species at risk must be evaluated to determine the likelihood of impacts, the severity of impacts and the duration of impacts and to propose means by which the impacts can either be avoided entirely or lessened to such an extent that they do not affect the conservation status of any protected species.

This assessment examines the bat and ground mammal fauna (principally badger fauna) of lands at Mooretown, Swords, Fingal that are zoned for housing and for which a planning application is in process. The assessment includes a desktop survey of known data from the site as well as fieldwork to determine the presence of protected species and to thus allow an understanding of the potential for impacts upon the mammals present.

Protection of the fauna present is provided by the Irish enactment of European Communities (Birds and Natural Habitats) Regulations 2011, the former Habitats Directive (Council Directive 92/43/EEC) and Birds Directive (Directive 2009/147/EC on the conservation of wild birds) under the Wildlife Act (1976), Wildlife (Amendment) Act 2000 and all subsequent Statutory Instruments and the recognition of the part played by Planning and Development in wildlife protection is reflected in the Planning and Development Act 2000 and all subsequent amendments.



PRELIMINARY SURVEY DETAILS

Desktop survey of the existing environment

National Biodiversity Data Centre records of protected ground mammal species

<i>Hedgehog (Erinaceus europaeus)</i>	<i>2 records</i>	<i>13/09/2012</i>	<i>Atlas of Mammals in Ireland 2010-2015</i>	<i>Protected Species: Wildlife Acts</i>
<i>Wood Mouse (Apodemus sylvaticus)</i>	<i>1 record</i>	<i>13/09/2011</i>	<i>Atlas of Mammals in Ireland 2010-2015</i>	

Bat species recorded by Bat Conservation Ireland

BCIreland data: search results 25 May 2026			
Search parameters: Roosts Transects Ad-hoc observation sites with observations of all species within 1000m of O1661447680			
Roosts			
Name	Grid reference	Species observed	
Transects			
Name	Grid reference start	Species observed	
Ad-hoc observations			
Survey	Grid reference	Date	Species observed
Bat Survey - Scott Cawley	O1648	13/09/2011	Nyctalus leisleri, Myotis sp. Pipistrellus pipistrellus Pipistrellus pygmaeus



Habitat classification and descriptions (Fossitt 2000) – see Main Ecology report. Within the site, there are surviving hedgerows and trees (primarily immature trees) and a small stream runs through the site. There are houses and a historical ruin that may provide roosting opportunities close to the site. No known roosts occur within or adjacent to the site (see BC Ireland data above). No records of highly important habitat for protected mammals are reported from the site. There are limited records of protected mammal species from the townland.

Bats

Date: 18th to 19th May 2026

Sunset time: 21.23 hours

Sunrise time: 05.20 hours

Lux Levels: 0

Temperature and weather conditions: 10 Degrees Celsius at sunset

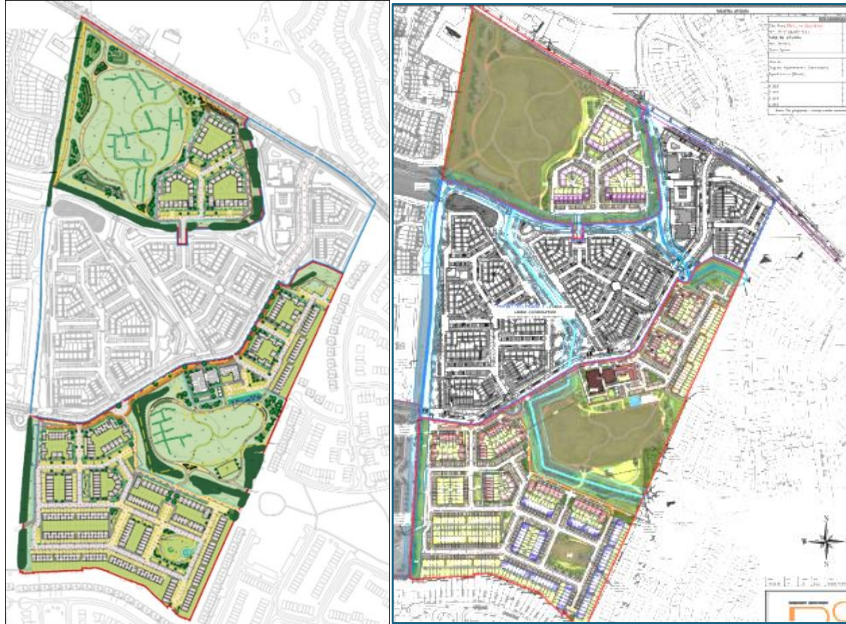
The weather conditions were varied on the night of survey and the commencement of the survey was in poor conditions, including wind and rain. The weather conditions relented prior to sunrise and the rain had ceased and the wind had also ceased. Thus, the bat activity prior to sunrise was much greater and more likely to represent the bat fauna of the site than the sunset survey period. The evaluation of the existing roost availability and feeding opportunities ensures that a good representation of the existing mammal fauna has been achieved.

PROPOSED WORKS

The proposed development consists of 360 no. residential units; a mix of houses, own-door duplexes, and apartments arranged in urban blocks ranging from 2- to 5-storeys, at a net density of 41 dwellings per hectare. A 2-storey crèche of c. 670 sq.m is proposed at the centre of the site. Supporting infrastructure proposed includes 580 no. car parking spaces (resident and visitor), 1,009 no. cycle parking spaces, public open space, communal amenity space, pedestrian and cycle links, hard and soft landscaping, connections to all utilities, and all associated and enabling site works.



Existing site



Site Landscape Masterplan

Complexity of lands and ability to cover ground during surveys

The site is extensive but has been greatly modified by its proximity to intensive construction. There are areas of former or recent agricultural land and there are remaining hedgerow and former field ditches. The lands are also separated into two blocks by an intervening construction site.



The lands are uneven but manageable in low light levels.

Survey constraints

- (1) Mobility of bats: Bat species are mobile and can move from roost to roost, depending on roost availability, feeding availability and weather conditions. They may move to roosts which have not been identified in this report in order to hibernate or create mating or feeding perches. A bat survey is a snapshot of bat activity over the survey time. This site was examined over several dates and in consecutive seasons and there is a relatively comprehensive understanding of the bat fauna of the site.
- (2) Identification of bats: It can be difficult to differentiate *Myotis* species. For this reason, sound files are included within the report. Brown long eared bats are very quiet, and their presence can be overlooked in bat surveys as they may not register on bat detectors.
- (3) Timing of survey: Bat surveys generally take place when the bats are active – May – September. A bat survey which takes place outside these dates may miss roosting activity. The bat survey dates were highly suited to determining the significance of the site for bats. Ground mammal surveys are best undertaken in winter and the survey on site was carried out in late winter / spring and was highly suited to the purpose of this assessment. The ongoing construction may restrict entry of species such as badger into the site and the mammal evaluation earlier in the year and the bat activity survey would identify their presence.
- (4) Weather unpredictability. The weather conditions changed considerably within the week of survey and rain was heavy at the start of the survey but ceased during the night of survey. Evaluation of the site includes an examination of the quality of the site in terms of roosts and feeding and this assists in ensuring that bat potential within the site is properly considered.



METHODOLOGY

Bats

Surveyors

Brian Keeley, Donna Mullen and Ferdia Keeley of Wildlife Surveys Ireland carried out nighttime and daytime surveys of the site.

Equipment

- Exide Lamps (one per surveyor)
- Petzl Tikka Head torches (one per surveyor)
- Batlogger M2 time expansion detectors and Kaleidoscope Pro sound analysis software with GPS (one per surveyor)
- One thermal imager per surveyor
- 1 Songmeter Mini Bat detectors placed overnight within the site
- Mobile phones for communication during the survey (one per surveyor)
- One lux meter per surveyor

Survey procedure

Surveyors arrive on site shortly before sunset. All lands, trees, buildings and hedgerows are assessed for suitability for bats, including their suitability as feeding habitat and/or suitability as bat roosts. Areas and features with high potential are identified throughout the site and used as points of interest during the active survey. Survey routes are planned so that a surveyor can efficiently cover as much land as possible while maintaining a focus on these key points of interest. Larger sites are divided up into sections to be covered across multiple nights. Static bat monitoring devices are placed near areas and features of especially high interest, particularly features that bats may be using as roosts, in order to provide a timeline of bat activity throughout the night.

Over the next 90 minutes, surveyors cover the walkable area of the site along their planned routes, with adjustments being made to account for especially high or low bat activity in an area – for example, a surveyor may examine a tree associated with a high level of bat activity, as it may be a bat roost. After the 90 minutes have elapsed, most bats will already have emerged from their



roosts in order to feed for the night, making the period shortly after sunset one of the best times to identify roosts and feeding habitats.

Surveyors return to a site approximately 90 minutes before sunrise the next morning. At this time, any changes in temperature and weather conditions are noted, as well as any other factors (e.g. street lighting) that may have impacted bat activity during the night. Surveyors cover the site area again, this time with particular attention paid to possible roosts, as bats can be seen returning to their roosts during this time period. Any static monitors left out the previous night are collected for analysis.

Surveys are conducted with reference to the following documents –

- (1) NPWS BAT MITIGATION GUIDELINES FOR IRELAND – V2 Ferdia Marnell, Conor Kelleher & Enda Mullen
- (2) Heritage Council's Bat Survey Guidelines for the Traditional Farm Buildings Scheme
- (3) Bat Surveys for Professional Ecologists – Good Practice Guidelines 4th Edition, 2024. Developed on behalf of the Bat Conservation Trust
- (4) C.I.E.E.M Bat Mitigation Guidelines 2023

We feel that both emergence and return surveys are necessary on most occasions and go beyond these guidelines to ensure dawn roosts are located.

Emergence/re-entry surveys

The surveys commenced prior to sunset with an initial inspection of the trees and buildings and bridges on site. Internal and external observations of the roof and attic of the derelict gate lodge were undertaken as well as a small shed / stables close to this. Farm buildings to the north of the estate house (within the site) were also examined for any evidence of roosting bats. Notable potential roosting features included ivy, open windows, and slate roofs with various gaps and lifting slates that may provide roosting opportunities. Two static bat detectors (Song Meter Mini) were left recording overnight during the surveys close to trees and buildings.



Tree assessment

The tree assessment was based on a visual inspection from ground level for most of the site but included a bat activity and emergence / return survey for trees with high roost potential based on the visual inspection

Description of trees with PBR values – Ground level tree assessment Tree Bat Roost Category Classification System (Collins, 16).

Tree Category

Description 1 Trees with multiple, highly suitable features (Potential Roosting Features = PRFs) capable of supporting larger roosts;

Description 2 Trees with definite bat potential but supporting features (PRFs) suitable for use by individual bats;

Description 3 Trees have no obvious potential although the tree is of a size and age that elevated surveys may result in cracks or crevices being found or the tree supports some features (PRFs) which may have limited potential to support bats;

Description 4 Trees have no potential.

Ground mammals

A survey for ground mammals was undertaken on 9th February 2026 and involved an examination of the entire site for evidence of protected mammal species. This included an examination for burrows (badger setts, otter holts), bedding, paw prints or tracks, foraging signs, dung or latrines, snagged hair or carcasses. The site was again examined on May 18th and 19th 2026 for any additional evidence of mammal activity.

RESULTS

Bats

No bat roosts were noted within the site. All bat activity was of feeding or commuting bats. Bats were noted to leave the site towards the northwest and east. There are suitable buildings for roosts in the immediate area to the northwest while the bat heading east may have further to reach a roost site (or potentially may be roosting



within a new building). Trees within the site are generally unsuitable for roosting bats and no obvious roost trees were noted. Mature or maturing trees that offer good foraging were noted towards the northwestern corner. One ivy covered tree offers very minor roost potential towards the southern section n of the site (Description 3) while all other trees within the development area are best described by Description 4 (no roost potential).

Bat activity

Bat species noted feeding and commuting on the site

Common pipistrelle	<i>Pipistrellus pipistrellus</i>
Soprano pipistrelle	<i>Pipistrellus pygmaeus</i>
Leisler's bat	<i>Nyctalus leisleri</i>

Bat activity was reduced in the early period of the survey by rain. This had dissipated prior to sunrise and activity was notable in two of the three survey areas but was low in the southern area and highest in the northwestern corner of the site and along hedgerow adjoining this field. Common pipistrelle activity was the highest overall while during the rain, a soprano pipistrelle was highly active on the northwestern edge where a stream passes out of the site and to the north of existing housing.

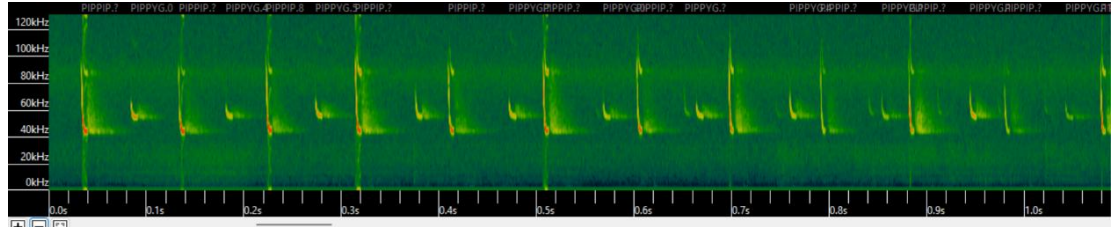
Bat activity recorded by a static monitor within the middle section of the site 18th to 19th May 2026

Bat species	8	9	10	11	12	01	02	03	04	Grand Total
NoID	24		20	11				30		85
Noise	568	72	20			13		15	240	928
Leisler's bat	8	126	30	55				45		264
Common pipistrelle	216	72	110	88	84	104	84	45	80	883
Soprano pipistrelle	112	81	190	44	108	13	70	60	48	726
Grand Total	928	351	370	198	192	130	154	195	368	2886

Bat activity recorded by surveyor 1 on 18th to 19th May 2026

	Bat passes per hour		
Bat species	9	04	Total
Pipistrelle		2	2
Common pipistrelle		36	36
Soprano pipistrelle	32	34	66
Grand Total	32	72	104

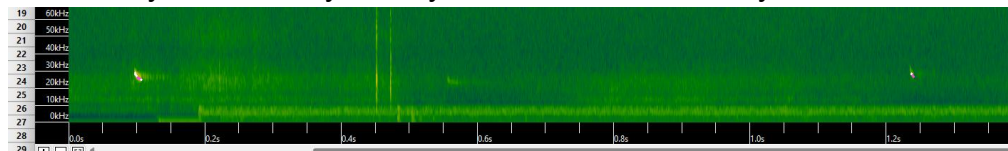
Bat spectrograms



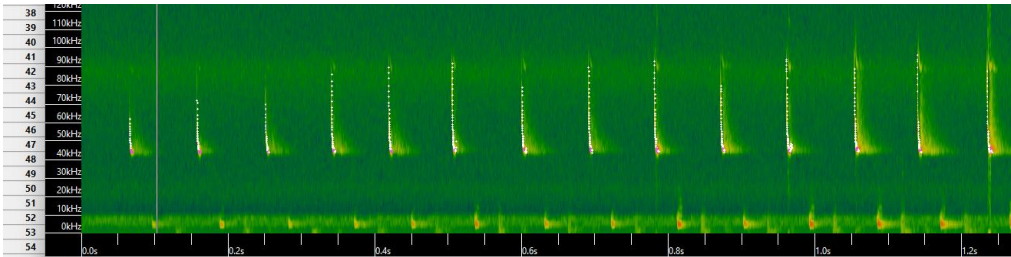
Common and soprano pipistrelle along hedge 04.14 hours



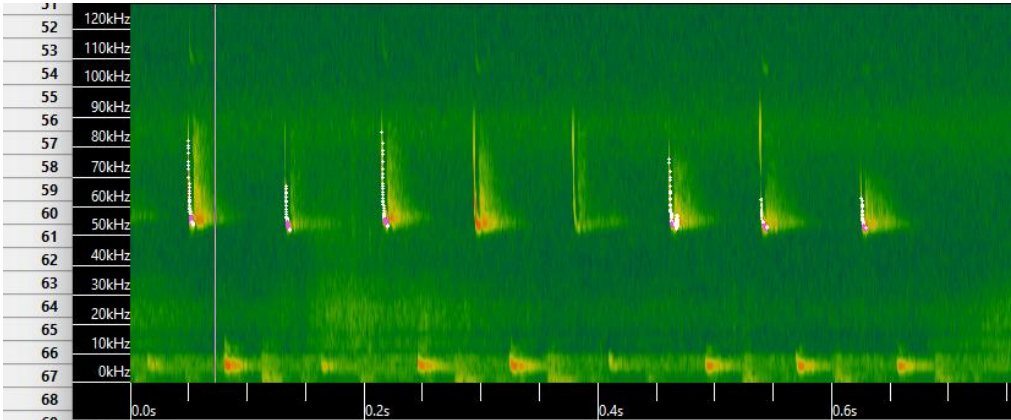
Bat activity recorded by surveyor 1 on 18th to 19th May 202r



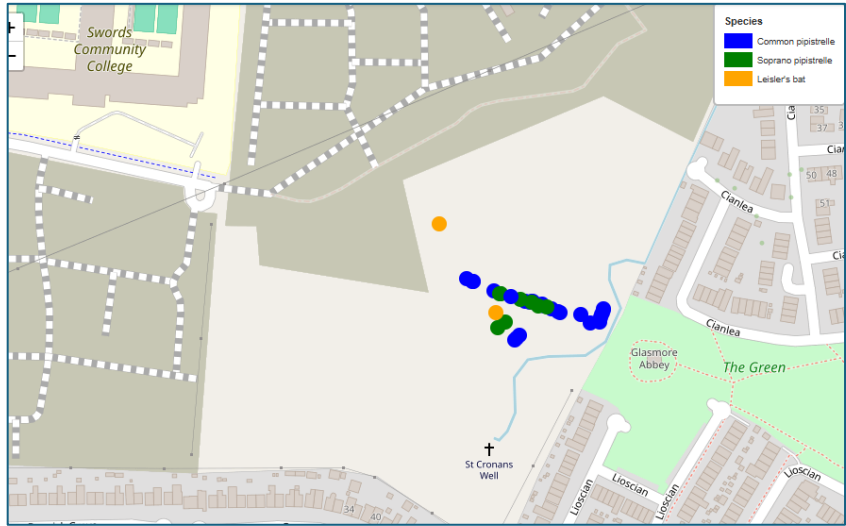
Leisler's bat 4.11



Common pipistrelle 4.19



Soprano pipistrelle 4.25



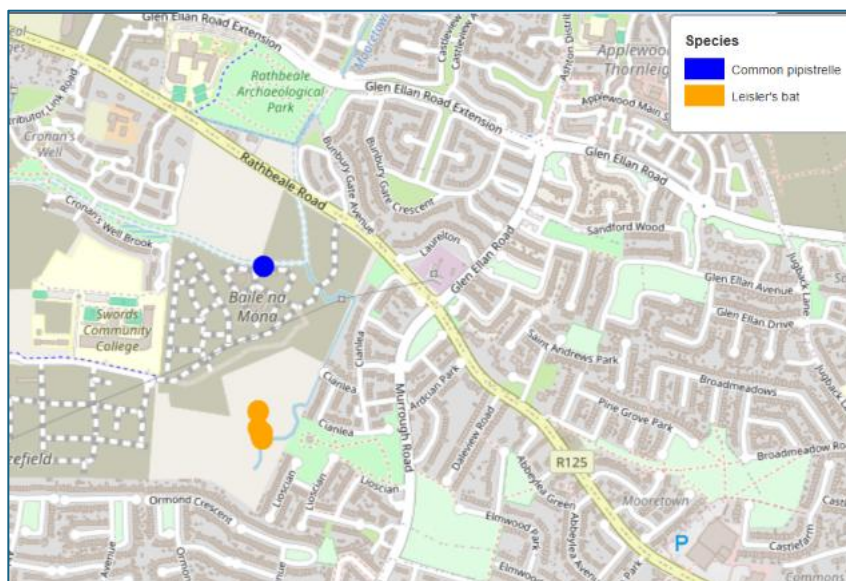
Map of bat activity recorded by surveyor 2 on 18th to 19th May 2026

File	Help	FOLDER	IN FILE	OUT FILE FS	OUT FILE ZC	AUTO ID	PULSES	MATCHING	MATCH RATIO	MANUAL ID
1			22200020.wav			NYCLEI	3	3	1.000000	
2			22200072.wav			NYCLEI	2	2	1.000000	
3			22200011.wav			Noise				



	FOLDER	IN FILE	OUT FILE FS	OUT FILE ZC	AUTO ID	PULSES	MATCHING	MATCH RATIO	MANUAL ID
41		22200078.wav			Noise				
42		22200079.wav			Noise				
43		22200039.wav			PIPPIP	69	69	1.000000	
44		22200033.wav			PIPPIP	63	61	0.968000	
45		22200045.wav			PIPPIP	70	61	0.871000	
46		22200032.wav			PIPPIP	57	56	0.982000	
47		22200043.wav			PIPPIP	59	51	0.864000	
48		22200023.wav			PIPPIP	33	33	1.000000	
49		22200053.wav			PIPPIP	34	33	0.971000	
50		22200021.wav			PIPPIP	32	32	1.000000	
51		22200025.wav			PIPPIP	32	32	1.000000	
52		22200026.wav			PIPPIP	32	32	1.000000	
53		22200037.wav			PIPPIP	33	32	0.970000	
54		22200061.wav			PIPPIP	30	30	1.000000	
55		22200062.wav			PIPPIP	26	25	0.962000	
56		22200047.wav			PIPPIP	28	25	0.893000	
57		22200024.wav			PIPPIP	23	23	1.000000	
58		22200041.wav			PIPPIP	22	22	1.000000	
59		22200044.wav			PIPPIP	18	17	0.944000	
60		22200040.wav			PIPPIP	12	12	1.000000	
61		22200063.wav			PIPPIP	13	12	0.923000	
62		22200036.wav			PIPPIP	12	10	0.833000	
63		22200058.wav			PIPPIP	10	7	0.700000	
64		22200022.wav			PIPPIP	6	6	1.000000	
65		22200046.wav			PIPPIP	4	4	1.000000	
66		22200049.wav			PIPPIP	5	4	0.800000	
67		22200038.wav			PIPPIP	2	2	1.000000	
68		22200051.wav			PIPPIP	2	2	1.000000	
69		22200052.wav			PIPPIP	2	2	1.000000	
70		22200048.wav			PIPPIP	2	1	0.500000	
71		22200030.wav			PIPPYG	97	75	0.773000	
72		22200057.wav			PIPPYG	66	68	1.000000	
73		22200057.wav			PIPPYG	57	57	1.000000	
74		22200055.wav			PIPPYG	43	43	1.000000	
75		22200028.wav			PIPPYG	41	41	1.000000	
76		22200068.wav			PIPPYG	70	39	0.557000	
77		22200054.wav			PIPPYG	28	28	1.000000	
78		22200060.wav			PIPPYG	9	9	1.000000	
79		22200031.wav			PIPPYG	5	5	1.000000	
80		22200029.wav			PIPPYG	3	3	1.000000	

All bat activity recorded by surveyor 2 18th to 19th May 2026



Map of bat activity recorded by surveyor 3 on 18th to 19th May 2026

All bat activity recorded by surveyor 3



Bat species	Bat passes per hour	
	04	Total
Leisler's bat	12	12
Common pipistrelle	1	1
Grand Total	13	13

Ground Mammals

Protected mammal species within the site (with the exception of bats): None observed. All field signs were attributable to common mammal species. None of the species noted are protected by the Wildlife Act. As noted earlier, there are records of hedgehog from the townland recorded by the National Biodiversity Data Centre and it is probable that the species is still present here.

Ground Mammals present based on field signs

Fox	<i>Vulpes vulpes</i>
Rabbit	<i>Oryctolagus cuniculus</i>
Mouse species	<i>Mus musculus</i> , <i>Apodemus sylvaticus</i>
Brown rat	<i>Rattus norvegicus</i>

Impact assessment procedure:

Potential impacts assessed

- Habitats and Fauna
- Roosts
- Flight paths
- Feeding areas



POTENTIAL IMPACTS AND PREDICTED IMPACTS BEFORE MITIGATION

Bats

- (1) Loss of feeding and commuting habitat. Three species of bat are feeding and commuting along and within the grassland and hedgerow which may be removed in this development. This will not affect the conservation status of any species present even in the absence of mitigation. This will have a moderate long-term impact on individuals within these species.
- (2) Loss of roosting habitat. The trees if allowed develop would have roosting potential. Removal of the trees and hedgerow will have a slight long-term negative impact on individual bats.
- (3) Light Pollution -Lighting of the development and areas around it will have a moderate long-term impact on individual bats or of a greater number of bats.

Ground mammals

The main evidence for mammals within the site was fox and rabbit and these species are not protected under the Wildlife Act. No protected species, other than bats were noted. Wood mouse and hedgehog are recorded previously from the site and are likely to still be present. Hedgehogs will be exposed to greater traffic risk, restrictions on access to areas and risks from pets.

MITIGATION AND RECOMMENDATIONS

Mitigation measures should follow the hierarchy of 1) avoid the impact, 2) reduce or minimise the scale or severity of the impact and, if these are not possible, then 3) abate the impact at the source or 4) abate the impact at the receptor through provision of alternative feeding areas, roosts or flight path features (e.g. hedgerows, treelines). (*Bat Conservation Ireland Appropriate Assessment Guidelines*)

- (1) All suitable trees as determined by a bat specialist shall be examined for the presence of bats. Should bats be discovered, the tree is a bat roost,



and a derogation must be sought from NPWS before it can be removed. Additional mitigation measures may be required and must be agreed with NPWS.

- (2) 6 x 2FN Schwegler bat boxes shall be incorporated into the site within the northwestern corner where a park is proposed. These should be at least 3 metres high, with a clear drop below (as bats need to drop to start their flight). ***These must be placed in a dark area.*** The bat boxes provide roost opportunities for any that may be removed either current or potential future roosts from trees that will be removed. They are also an enhancement feature.
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https://www.batconservationireland.org/wp-content/uploads/2013/09/BCIrelandGuidelines_Lighting.pdf



Bats and Artificial Lighting at Night, Institute of Lighting Professionals, 2023
<https://theilp.org.uk/publication/guidance-note-8-bats-and-artificial-lighting/>

Guidance Notes for the Reduction of Obtrusive Light GN01-21 (Institute of Lighting Professionals, 2021) <https://theilp.org.uk/publication/guidance-note-1for-the-reduction-of-obtrusive-light-2021/>

Dark Sky Ireland's Environmentally Friendly Lighting Guide
<https://www.darksky.ie/lighting-documents/#guidelines>

Mitigation Options and Recommendations (Eurobats)

	Measure	Recommendations
Avoidance	<i>Conserve dark areas</i>	High priority areas that should remain dark: • protected areas, including roosting and underground hibernation sites • feeding areas (natural areas, vegetation patches) • commuting routes (forest edges, hedgerows, rivers, tree lines)
Only if lighting is necessary, and after an assessment of bat occupancy and patterns of activity within the landscape framework of functional habitats:		
Mitigation	<i>Part-night lighting</i>	Turn off public outdoor lighting within 2 hours after sunset (civil twilight): • Especially during bat reproduction and migration periods • Particular attention within home ranges of maternity colonies
	<i>Dimming</i>	• Adapt dimming strategy to human activities • Keep illuminance levels as low as possible according to EU standards (not going over minimum illuminance required)
	<i>Avoid light trespass</i>	Avoid light trespass over 0.1 lx on surrounding surfaces: • Use fully shielded luminaires • No illumination at or above horizontal • Control street light height, especially along pedestrian pathways and tree lines • Use fewer light sources at points low to the ground • Consider the interaction between light from luminaires and reflecting structures, such as roads and walls
<i>General lighting and not sports</i>	<i>Adapt lamp spectra</i>	Avoid lamps emitting wavelengths below 540 nm (blue and UV ranges) and with a correlated colour temperature > 2700 K
Compensation	<i>Restore dark areas</i>	No net loss of darkness: • Restore darkness to the same extent as the proportion of dark areas lost • Enhance alternative dark corridors that connect roosts and feeding areas

The Eurobats guidelines (Voigt et al. 18) for lighting at night and bat conservation considerations include:

- **Limiting the duration of night-time lighting • Dimming illuminance and limiting light trespass**
- **Limiting the short wavelength (UV and blue) content of the light spectrum** (wavelengths in the UV range can be filtered without any decrease in *illuminance* level)

There are several ways of lessening the impact of lighting upon bats. A number of these are given here:

- 1. Lighting must be cowed if required to prevent light overspill on to surrounding trees**
Light modelling would provide appropriate information on how light will be restricted from the trees while providing illumination for pedestrians and cyclists. Internal louvres are the most efficient means of controlling light overspill / pollution.
- 2. Lighting operation should be based on levels of activity** This should mirror the levels of use of the infield area. Lighting is unnecessary except at times of darkness and when games or training is under way.
- 3. Lighting should be sufficiently controlled to provide for low levels at ground level.** The design should strive to achieve 3 lux at ground level in the case where bats are found to be present, through landscaping or similar, to control spill as required. It is easier to control light overspill from shorter columns, but this is not possible for sports lighting. The measures below may assist in creating darker areas for bats that would in some areas be less than 3 lux.
- 4. LED lights should be considered as the option for the lighting** LED lights are an energy efficient and highly controllable light source, are highly adaptable in terms of direction and strength and can be timed to switch on and off as they light quickly to the level required. These should ensure energy efficiency and money-saving as well as ecological advantages.
- 5. Planting should be used to reduce / prevent light overspill and create commuting corridors**
Planting of treelines and hedgerow can prevent lighting from creating a barrier to movement and provide feeding for birds and mammals lost by

the removal of vegetation. This should include species that will grow to tree height rather than low shrubs.

- (7) Hedgehog access points shall be incorporated into the site from each perimeter fence / wall. Hedgehogs require a minimum width and height of 13 cm X 13 cm for access. This may be achieved in a number of ways but should be marked as not for closure to prevent accidental blocking of access.

Hedgehog access options



IMPACTS AFTER MITIGATION

- (1) Loss of feeding and commuting habitat. The addition of semi mature trees and hedgerow will reduce the overall effect to a slight long-term impact on individuals within these species. Hedgehogs will have continued access to the site. There will be a long-term to permanent loss of foraging for birds and bats.



Loss of roosting / resting habitat. There will be a potential loss of roosting for bats through tree removal. The addition of bat boxes will reduce the impact to a slight long term negative impact on individual bats.

(2) Light Pollution – There will be light pollution with this development. However, creating dark sky areas within the development will reduce the impact to a slight long term negative impact on individual bats.

Given the scale of changes to the area, this may result in a slight negative impact on local bat and mammal populations, with proper implementation of the above measures but may have a short-term slight to moderate negative impact upon individual mammals.

APPENDICES

Bat Biology

Female bats gather in groups known as maternity roosts in summer to have their young. They generally have one baby each year, so are slow to reproduce, and disturbance of a maternity roost can be catastrophic.

In winter bats move to old stonework, trees and caves to hibernate. They are especially vulnerable here as they are slow to awaken, and if tree felling is carried out, they can easily be killed.

Species descriptions from Bat Conservation Ireland (2025), Biodiversity Ireland (2025) and further as listed below:

Common Pipistrelle and Soprano Pipistrelle

Pipistrellus pipistrellus and *Pipistrellus pygmaeus*

Ireland's two smallest bat species, and also the commonest, the common and soprano pipistrelles are the bats most likely to be seen flying around soon after dusk in both urban and rural areas. Both have a rapid, twisting flight as they pursue tiny prey of midges, mosquitoes and small moths. A single pipistrelle (weighing no more than 5-6g, the weight of a 1-euro piece) may consume as many as 3,000 of these



insects in one night. Pipistrelles are frequently found roosting in houses, although they also roost in other locations such as tree holes. In houses they prefer to occupy confined spaces such as behind hanging tiles and soffit boards or between roofing felt and roof tiles, rather than the main attic space.

The two are called common and soprano because the latter echolocates at a higher frequency peaking at 55kHz, compared with the former which echolocates at a peak frequency of 46kHz. The soprano pipistrelle tends to form nursery (or maternity) roosts with larger numbers of individuals (up to 1,500) compared with the common pipistrelle which would typically have a much smaller nursery roost size.

Trends in these species are monitored annually using the [Car-based Bat Monitoring Scheme](#). Results from this scheme indicate that since 03 the soprano pipistrelle has increased significantly while the common pipistrelle has also increased, albeit more slowly. The reasons for these increases are poorly understood but both species may be recovering from past declines or responding to increased woodland cover and/or climate change.

Conservation status

HABITATS DIRECTIVE ARTICLE 17 REPORTING

Range: Favourable

Population: Favourable

Habitat: Favourable

Future Prospects: Favourable

Overall Assessment of Conservation Status: Favourable

Overall Trend in Conservation Status: N/A Source:

NPWS 2013.

IUCN Conservation Status

Ireland: Least Concern

Europe: Least Concern

Global: Least Concern

Sources: (1) Marnell, F. et al 2009; (2) Hutson T., et al 07 (3)

Hutson, A.M. et al 08



Legal status

Protected by the following legal instruments:

- Habitats Directive (92/43/EEC), Annex IV
- Convention on the Conservation of European Wildlife and Natural Habitats (Bern Convention) Appendix II
- Agreement on the Conservation of Populations of European Bats (EUROBATS)
- Wildlife Act (1976)
- Wildlife (Amendment) Act (2000) - Wildlife (N.I.) Order of 1985

Leisler's bat

Nyctalus leisleri

This is the biggest Irish bat, and it is often found roosting in buildings although 13% of its roosts recorded in Ireland have been in trees. The Leisler's bat has distinctive level flight at greater heights than the other Irish species, from which it dives down after dung flies and beetles. It can be seen soon after sunset flying over open spaces such as parks and fields. Because it is one of the first bats to emerge in the evening and is quite large, the Leisler's may be confused with swifts that may also be flying around. They are best told apart by the wing shape; the swift's wings are smoothly curved and scimitar-like. Swifts also shriek, while the Leisler's bat is inaudible without a bat detector. The Leisler's bat is rare in Britain and the rest of Europe, but it is relatively common here. For this reason, the Irish population of Leisler's bats is considered of International Importance.

Leisler's bat is monitored by the [Car-based Bat Monitoring Scheme](#) and its annual trend has shown significant increases since 03. The reason for the increase is poorly understood but it may be recovering from past declines or responding to increased woodland cover and/or climate change.

Conservation status

HABITATS DIRECTIVE ARTICLE 17 REPORTING

Range: Favourable



Population: Favourable

Habitat: Favourable

Future Prospects: Favourable

Overall Assessment of Conservation Status: Favourable

Overall Trend in Conservation Status: N/A Source:
NPWS 2013.

IUCN Conservation Status

Ireland: Near Threatened

Europe: Least Concern

Global: Least Concern

Sources: (1) Marnell, F. et al 2009; (2) Hutson T., et al 07 (3)
Hutson, A.M. et al 08

Legal status

Protected by the following legal instruments:

- Habitats Directive (92/43/EEC), Annex IV
- Convention on the Conservation of European Wildlife and Natural Habitats (Bern Convention) Appendix II
- Agreement on the Conservation of Populations of European Bats (EUROBATS)
- Wildlife Act (1976)
- Wildlife (Amendment) Act (2000) - Wildlife (N.I.) Order of 1985

Daubenton's bat

Myotis daubentonii

Often called the 'water bat', this species is easily recognised in flight by its low, level flight a few centimetres above the surface of lakes, slowmoving rivers and canals. It skims like a hovercraft above the water in search of caddisflies, mayflies and midges, and may even scoop prey from the water surface using its big feet. Many other bats feed over lakes and rivers, but none has such a close association with water as the Daubenton's. The Daubenton's bat can even swim if it makes a mistake and ends up in the water.



Daubenton's bats roost under stone bridges, in ruins, canal tunnels, trees and damp caves.

The Daubenton's bat annual trend is monitored using a volunteer-based programme – the [All Ireland Daubenton's Bat Waterways Survey](#). This scheme has been ongoing since 06 and the Daubenton's bat trend has been reasonably stable since this time.

Conservation status

HABITATS DIRECTIVE ARTICLE 17 REPORTING

Range: Favourable

Population: Favourable

Habitat: Favourable

Future Prospects: Favourable

Overall Assessment of Conservation Status: Favourable

Overall Trend in Conservation Status: N/A Source:

NPWS 2013.

IUCN Conservation Status

Ireland: Least Concern

Europe: Least Concern

Global: Least Concern

Sources: (1) Marnell, F. et al 2009; (2) Hutson T., et al 07 (3) Hutson, A.M. et al 08

Legal status

Protected by the following legal instruments:

- Habitats Directive (92/43/EEC), Annex IV
- Convention on the Conservation of European Wildlife and Natural Habitats (Bern Convention) Appendix II
- Agreement on the Conservation of Populations of European Bats (EUROBATS)
- Wildlife Act (1976)
- Wildlife (Amendment) Act (2000) - Wildlife (N.I.) Order of 1985

Natterer's bat



Myotis nattereri

One of the rarer Irish bat species, the Natterer's bat likes woodland, mature hedgerow and pasture habitats. The Natterer's bat has broad wings so can fly with great manoeuvrability among trees and around hedgerows. It sometimes gleans insects or even spiders from foliage and may eat larger prey at a feeding perch. Its usual roost sites are in tree holes, old stone buildings such as churches and barns, and under bridges. This species has a fringe of stiff bristles along the trailing edge of its tail membrane, which may help to hold or trap its prey.

Conservation status

HABITATS DIRECTIVE ARTICLE 17 REPORTING

Range: Favourable

Population: Favourable

Habitat: Favourable

Future Prospects: Favourable

Overall Assessment of Conservation Status: Favourable

Overall Trend in Conservation Status: N/A Source:
NPWS 2013.

IUCN Conservation Status

Ireland: Least Concern

Europe: Least Concern

Global: Least Concern

Sources: (1) Marnell, F. et al 2009; (2) Hutson T., et al 07 (3)
Hutson, A.M. et al 08

Legal status

Protected by the following legal instruments:

- Habitats Directive (92/43/EEC), Annex IV
- Convention on the Conservation of European Wildlife and Natural Habitats (Bern Convention) Appendix II
- Agreement on the Conservation of Populations of European Bats (EUROBATS)
- Wildlife Act (1976)



- Wildlife (Amendment) Act (2000) - Wildlife (N.I.) Order of 1985

Whiskered bat

Myotis mystacinus

Another uncommon and little-known bat, the whiskered is closely related to the Natterer's, Daubenton's and Brandt's bats. The whiskered bat typically forages along forest tracks or near water. It has a rapid fluttering flight and flies along a regular 'beat' over and over again. It is sometimes found roosting in attics of old buildings but there are very few confirmed roosts in Ireland. It is also sometimes found roosting in crevices under stone bridges and in trees.

Conservation status

HABITATS DIRECTIVE ARTICLE 17 REPORTING

Range: Favourable

Population: Favourable

Habitat: Favourable

Future Prospects: Favourable

Overall Assessment of Conservation Status: Favourable

Overall Trend in Conservation Status: N/A Source:
NPWS 2013.

IUCN Conservation Status

Ireland: Least Concern

Europe: Least Concern

Global: Least Concern

Sources: (1) Marnell, F. et al 2009; (2) Hutson T., et al 07 (3)
Hutson, A.M. et al 08

Legal status

Protected by the following legal instruments:

- Habitats Directive (92/43/EEC), Annex IV
- Convention on the Conservation of European Wildlife and Natural Habitats (Bern Convention) Appendix II
- Agreement on the Conservation of Populations of European Bats (EUROBATS)



- Wildlife Act (1976)
- Wildlife (Amendment) Act (2000)
- Wildlife (N.I.) Order of 1985

Brown long eared bat

Plecotus auritus

The huge ears of this bat are its most distinctive feature – they are almost as long as the body. Although they are probably quite common in Ireland, it is difficult to see long-eared bats in flight because they prefer to forage in woodland flying amongst the foliage, picking moths and other insects off leaves. These bats emit their quiet echolocation sounds through their nose. Larger prey items such as noctuid moths are taken to a feeding perch, often in a porch or outhouse. These perches are recognisable by the piles of insect remains, such as moth wings, which collect under them. The long-eared bat roosts in buildings such as houses with large attic spaces, churches, outbuildings and in tree holes.

A scheme for monitoring the brown long-eared bat at its roosts was developed in 07 (the [Brown Long-eared Bat Roost Monitoring Scheme](#)). Thus far its population has been stable.

Conservation status

HABITATS DIRECTIVE ARTICLE 17 REPORTING

Range: Favourable

Population: Favourable

Habitat: Favourable

Future Prospects: Favourable

Overall Assessment of Conservation Status: Favourable

Overall Trend in Conservation Status: N/A Source:

NPWS 2013.

IUCN Conservation Status

Ireland: Least Concern

Europe: Least Concern



Global: Least Concern

Sources: (1) Marnell, F. et al 2009; (2) Hutson T., et al 07 (3) Hutson, A.M. et al 08

Legal status

Protected by the following legal instruments:

- Habitats Directive (92/43/EEC), Annex IV
- Convention on the Conservation of European Wildlife and Natural Habitats (Bern Convention) Appendix II
- Agreement on the Conservation of Populations of European Bats (EUROBATS)
- Wildlife Act (1976)
- Wildlife (Amendment) Act (2000)
- Wildlife (N.I.) Order of 1985

Legislation

Bats are protected under the 1996 Wildlife Act, the 2000 Wildlife (Amendment) Act, S.I. No 477 of 11, The Habitats Directive, The Bonn and Bern Convention, and the Eurobats agreement.

The European Community (Natural Habitats) Regulations S.I. No 477 of 11 states:

51. (1) The Minister shall take the requisite measures to establish a system of strict protection for the fauna consisting of the species referred to in Part 1 of the First Schedule. (2) Notwithstanding any consent, statutory or otherwise, given to a person by a public authority or held by a person, except in accordance with a licence granted by the Minister under Regulation 54, a person who in respect of the species referred to in Part 1 of the First Schedule— (a) deliberately captures or kills any specimen of these species in the wild, (b) deliberately disturbs these species particularly during the period of breeding, rearing, hibernation and migration, (c) deliberately takes or destroys eggs of those species from the wild, (d) damages or destroys a breeding site or resting place of such an animal, or (e) keeps, transports, sells, exchanges, offers for sale or offers for exchange any specimen of these species taken in



the wild, other than those taken legally as referred to in Article 12(2) of the Habitats Directive, shall be guilty of an offence. (3) The prohibitions referred to in paragraph (2) shall apply to all stages of life of the biological cycle of fauna to which this Regulation applies. (4) The Minister shall establish a system to monitor the incidental capture and killing of fauna consisting of the animal species referred to in Part 1 of the First Schedule and, having regard to the information gathered, he or she shall conduct further research or take such conservation measures as required to ensure that incidental capture and killing does not have a significant negative impact on the species concerned.

The EU Habitats Directive (92/43/EEC) lists all Irish bat species in Annex IV and one Irish species, the lesser horseshoe bat (*Rhinolophus hipposideros*), in Annex II. Annex II includes animal and plant species of community interest whose conservation requires the designation of Special Areas of Conservation (SACs) because they are endangered, rare, vulnerable or endemic. Annex IV includes various species that require strict protection. Article 11 of the Habitats Directive requires member states to monitor all species listed in the Habitats Directive and Article 17 requires States to report to the EU on the findings of monitoring schemes.

The Bern and Bonn Conventions:

Ireland is also a signatory to a number of conservation agreements pertaining to bats such as the Bern and Bonn Conventions. The European Bats Agreement (EUROBATS) is an agreement under the Bonn Convention. Ireland and the UK are two of the 31 signatories. The Agreement has an Action Plan with priorities for implementation. Devising strategies for monitoring of populations of selected bat species in Europe is among the resolutions of EUROBATS.

1.3.1 The Bern Convention:

Article 6 of the "Convention on the Conservation of European Wildlife and Natural Habitats" (Berne Convention) reads:

"Each Contracting Party shall take appropriate and necessary legislative and administrative measures to ensure the special protection of the wild fauna species specified in Appendix II. The following will in particular be prohibited for these species:



- a) all forms of deliberate capture and keeping and deliberate killing;
- b) the deliberate damage to or destruction of breeding or resting sites;
- c) the deliberate disturbance of wild fauna, particularly during the period of breeding, rearing and hibernation, insofar as disturbance would be significant in relation to the objectives of this Convention; ...

Appendix II lists strictly protected fauna species and this list includes "Microchiroptera, all species except *Pipistrellus pipistrelles*".

The EUROBATS Agreement:

The 'Agreement on the Conservation of Populations of European Bats' (EUROBATS) was negotiated under the 'Convention for the Conservation of Migratory Wild Species' (Bonn Convention) and came into force in January 1994. The legal protection of bats and their habitats are given in Article III as fundamental obligations:

- "1. Each Party shall prohibit the deliberate capture, keeping or killing of bats except under permit from its competent authority
- 2. Each Party shall identify those sites within its own area of jurisdiction which are important for the conservation status, including for the shelter and protection, of bats. It shall, taking into account as necessary economic and social considerations, protect such sites from damage or disturbance. In addition, each Party shall endeavour to identify and protect important feeding areas for bats from damage or disturbance."

The Agreement covers all European bat species.

Contact Details: Our email address is briantkeeley@gmail.com or batsurveydm@gmail.com. Our phone numbers are 087 7454233 or 087 6753201. Our website is <https://www.wildlifesurveys.net/>



About Our Team

Wildlife Surveys Ireland Ltd. was founded by Brian Keeley and Donna Mullen. The company undertakes a variety of ecological evaluations and operations and have provided advice to County Councils, government departments, NPWS, OPW, developers, individuals applying for planning applications, local community groups, Tidy Towns organisations and many more. Brian and Donna have been engaged in bat detector surveys since the late 1980s on a voluntary basis and were first trained by Bat Conservation Trust in 1992. They have been involved in surveying for over 30 years and have surveyed in every county on the island of Ireland.

Brian and Donna are engaged in all surveys undertaken by Wildlife Surveys Ireland and are involved in the fieldwork for all larger projects or where there is a project that requires long-term experience and expertise. All reports are cowritten by either Director and the principal fieldworker, to ensure that they address the issues of bat conservation correctly and thoroughly.

We trial our mitigation at our own nature reserve in North Meath – Golashane Nature Reserve, so we have first-hand knowledge of working mitigation. Our company was a finalist in the RDS Rural Sustainability Awards in May 22. In 19, we achieved a Rural Inspiration Award and presented our work on our nature reserve to Mr Phil Hogan in Brussels. A tree is planted on our reserve for each survey and 5% of our company profits are given to charities.

Brian Keeley BSc (Hons) Zool

Director

Brian has been involved in overseas survey work in Wales, England, France, Hungary and Poland and was involved in the compilation of the NRA / TII publications on bat survey and mitigation for roads. Brian has been involved in bat conservation since 1988 and founded the Dublin Bat Group (and later Bat Conservation Group Dublin) and Bat Conservation Ireland and has served as chair of this group for much of its existence. Brian is still a Council member of



BCIreland. Brian has been vaccinated against Rabies and is licensed to disturb roosts for the purpose of survey.

Donna Mullen M.P.P.M D.E.N.V.S.P

Director

Donna Mullen is a founder member of Bat Conservation Ireland and the Irish Environmental Network. She was involved in drawing up the guidelines for the Heritage Council on bats and traditional farm buildings and has worked on providing new roosts and adapting old roosts to facilitate bats. This work includes surveying, advising architects, working with derogations and monitoring. She has also worked with the Irish Landmark Trust and the OPW providing advice on castles and old buildings. She has a strong interest in environmental law and worked on case 183/05 which was successful in the ECJ. She has recently published a book "Make Your Home A Nature Reserve" – O'Brien Press and is a frequent contributor on wildlife matters with the Claire Byrne Show on RTE. Donna has been vaccinated against Rabies and is licensed to disturb roosts for the purpose of survey.

Ferdia Keeley BSc (Hons). Cert in Field survey techniques

Field ecologist

Ferdia Keeley has been undertaking bat surveys for seven years. During this time, he has been tutored by both Brian and Donna in bat activity survey techniques and has operated a variety of bat detectors including Echometer EM2 and EM3, Echometer Touch, Echometer Touch 2 Pro, Anabat, Batbox III, Pettersson D240X and most recently Batlogger M2. Ferdia has also installed static monitors within sites: Songmeter 2, Songmeter Mini Bat and Songmeter Mini Bat 2. Ferdia has been trained in bat tree surveys with Flight Ecology Surveying England. He is training with Bat Conservation Ireland for trapping techniques and has been training with WSI in capturing and handling bats and identification of Irish bats. Ferdia has been vaccinated against Rabies and is licensed to disturb roosts for the purpose of survey. (Note: the welfare of bats is paramount in the survey work of WSI and once a roost has been established, no further disturbance to the roost is permitted).



Saoirse Keeley BCL(Hons) (Law and business, Maynooth University)
Legal support

Saoirse has a bachelor's degree in law and business and has a particular interest in European Law and Environmental Regulation. She helps with the preparation of environmental reports and contributes to applications for derogation licences. Her understanding of legal frameworks – particularly around EU and constitutional environmental legislation – has been really useful in ensuring our work meets regulatory requirements. She also brings strong research, analytical and communication skills to the team. Saoirse has also trained with Bat Conservation Ireland and frequently leads bat walks. Saoirse is rabies vaccinated.

Hugh Keeley

Student surveyor

Hugh assists in surveying under instruction from a senior ecologist. Hugh has an interest in business economics and is studying for a degree in Maynooth University. Hugh assists with bat walks and talks and is particularly good in dealing with bat rehabilitation. Hugh is vaccinated against rabies.

Appendix I -Definition of Effects – EPA 17

TABLE 3. DEFINITION OF SIGNIFICANCE OF EFFECTS.

Significance of Effects	Definition
Imperceptible	An effect capable of measurement but without significant consequences.
Not significant	An effect which causes noticeable changes in the character of the environment but without significant consequences.
Slight Effects	An effect which causes noticeable changes in the character of the environment without affecting its sensitivities.
Moderate Effects	An effect that alters the character of the environment in a manner that is consistent with existing and emerging baseline trends.
Significant Effects	An effect which, by its character, magnitude, duration or intensity alters a sensitive aspect of the environment
Very Significant	An effect which, by its character, magnitude, duration or intensity significantly alters most of a sensitive aspect of the environment.
Profound Effects	An effect which obliterates sensitive characteristics

3.5.2.3 Criteria Used to Define Duration of Effects

In line with the EPA Guidelines (EPA, 2017), the following terms are defined when quantifying duration and frequency of effects. See Table 4, below.

TABLE 4. DEFINITION OF DURATION OF EFFECTS.

Quality	Definition
Momentary Effects	Effects lasting from seconds to minutes
Brief Effects	Effects lasting less than a day
Temporary Effects	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



Appendix II – Additional Bat Data

BCIreland data: search results 25 May 2026

Search parameters: Roosts Transects Ad-hoc observation sites with observations of all species within 10000m of O1661447680

Roosts

Name	Grid reference	Species observed
153 Ard na Mara	O2145	Unidentified bat
15DITA10WC	O2550	
15DITA11WC	O2550	
15DITA12WC	O2550	Nyctalus leisleri
15DITA13WC	O2450	
15DITA14WC	O2450	
15DITA15WC	O2450	
15DITA16WC	O2450	
15DITA17WC	O2450	
15DITA18WC	O2450	
15DITA19WC	O2450	
15DITA1WC	O2549	
15DITA20WC	O2450	
15DITA21WC	O2450	
15DITA22WC	O2450	
15DITA23WC	O2450	
15DITA24WC	O2450	
15DITA25WC	O2450	
15DITA26WC	O2450	
15DITA27WC	O2450	
15DITA28WC	O2450	
15DITA29WC	O2550	
15DITA2WC	O2549	
15DITA30WC	O2550	
15DITA3WC	O2549	
15DITA4WC	O2550	
15DITA5WC	O2550	
15DITA6WC	O2550	
15DITA7WC	O2550	
15DITA8WC	O2550	Pipistrellus spp. (45kHz/55kHz)
15DITA9WC	O2550	Pipistrellus spp. (45kHz/55kHz)
52 River Valley Grove	O1745	Pipistrellus spp. (45kHz/55kHz)
Abbotstown House	O0939	Nyctalus leisleri



Agricultural Buildings, St. Itas	O2550	Plecotus auritus,Pipistrellus pygmaeus
Blanchardstown Hospital	O0839	Pipistrellus spp. (45kHz/55kHz),Pipistrellus pygmaeus
Brady Residence	O1355	Pipistrellus spp. (45kHz/55kHz)
Cedarwood Cottage	O1346	Nyctalus leisleri
Farm building		
Newtowncorduff	O1953	Plecotus auritus
Farmyard Suralstown	O1247	Pipistrellus pipistrellus (45kHz)
Fieldstown House	O1150	Nyctalus leisleri,Pipistrellus pygmaeus,Pipistrellus pipistrellus
Flatroof Building, St. Itas	O2450	Plecotus auritus,Pipistrellus pygmaeus,Pipistrellus pipistrellus
Garage house roost	O2241	Pipistrellus pygmaeus
Haybarn, Fingal Co. Council Depot	O2050	Pipistrellus spp. (45kHz/55kHz)
House	O2256	Pipistrellus pipistrellus (45kHz)
Kinsaley House	O2142	Plecotus auritus,Pipistrellus spp. (45kHz/55kHz)
Martin Residence	O2350	Unidentified bat
Robertstown House	O0851	Plecotus auritus
Roncallic House	O2254	
Santry, Tree Roost	O1640	Unidentified bat
Seamount House	O2345	Pipistrellus pipistrellus (45kHz)
Seamount Lodge	O2345	Plecotus auritus
Skidoo House	O1550	Pipistrellus pygmaeus
Skidoo House stable	O1550	Pipistrellus pygmaeus
Sport Ireland Bat Box Scheme - BB1	O0939	Unidentified bat
Sport Ireland Bat Box Scheme - BB10	O0938	Unidentified bat
Sport Ireland Bat box Scheme - BB11	O0938	Unidentified bat
Sport Ireland Bat Box Scheme - BB12	O0938	Unidentified bat
Sport Ireland Bat Box Scheme - BB13	O0938	Unidentified bat
Sport Ireland Bat Box Scheme - BB14	O0938	Unidentified bat
Sport Ireland Bat Box Scheme - BB15	O0938	Unidentified bat
Sport Ireland Bat Box Scheme - BB16	O0938	Unidentified bat
Sport Ireland Bat Box Scheme - BB17	O0939	Unidentified bat



Sport Ireland Bat Box Scheme - BB18	00939	Pipistrellus spp. (45kHz/55kHz)
Sport Ireland Bat Box Scheme - BB19	00939	Pipistrellus spp. (45kHz/55kHz)
Sport Ireland Bat Box Scheme - BB2	00939	Pipistrellus spp. (45kHz/55kHz)
Sport Ireland Bat Box Scheme - BB20	00939	Unidentified bat
Sport Ireland Bat Box Scheme - BB21	00939	Unidentified bat
Sport Ireland Bat Box Scheme - BB22	00939	Unidentified bat
Sport Ireland Bat Box Scheme - BB23	00939	Pipistrellus spp. (45kHz/55kHz)
Sport Ireland Bat Box Scheme - BB25	00939	Unidentified bat
Sport Ireland Bat Box Scheme - BB26	00939	Unidentified bat
Sport Ireland Bat Box Scheme - BB27	00939	Unidentified bat
Sport Ireland Bat Box Scheme - BB28	00939	Unidentified bat
Sport Ireland Bat Box Scheme - BB29	00939	Pipistrellus spp. (45kHz/55kHz)
Sport Ireland Bat Box Scheme - BB3	00939	Unidentified bat
Sport Ireland Bat Box Scheme - BB30	00939	Unidentified bat
Sport Ireland Bat Box Scheme - BB31	00939	Unidentified bat
Sport Ireland Bat Box Scheme - BB32	00939	Unidentified bat
Sport Ireland Bat Box Scheme - BB33	00939	Unidentified bat
Sport Ireland Bat Box Scheme - BB34	00939	Unidentified bat
Sport Ireland Bat Box Scheme - BB35	00939	Unidentified bat
Sport Ireland Bat Box Scheme - BB36	00939	Pipistrellus spp. (45kHz/55kHz)
Sport Ireland Bat Box Scheme - BB37	00939	Unidentified bat



Sport Ireland Bat Box Scheme - BB38	O0939	Unidentified bat
Sport Ireland Bat Box Scheme - BB39	O0939	Unidentified bat
Sport Ireland Bat Box Scheme - BB4	O0939	Unidentified bat
Sport Ireland Bat Box Scheme - BB40	O0939	Unidentified bat
Sport Ireland Bat Box Scheme - BB41	O0939	Unidentified bat
Sport Ireland Bat Box Scheme - BB42	O0939	Unidentified bat
Sport Ireland Bat Box Scheme - BB43	O0939	Unidentified bat
Sport Ireland Bat Box Scheme - BB44	O0939	Unidentified bat
Sport Ireland Bat Box Scheme - BB45	O0939	Unidentified bat
Sport Ireland Bat Box Scheme - BB46	O0939	Unidentified bat
Sport Ireland Bat Box Scheme - BB47	O0939	Unidentified bat
Sport Ireland Bat Box Scheme - BB48	O0939	Pipistrellus pygmaeus
Sport Ireland Bat Box Scheme - BB49	O0939	Unidentified bat
Sport Ireland Bat Box Scheme - BB5	O0939	Pipistrellus spp. (45kHz/55kHz)
Sport Ireland Bat Box Scheme - BB50	O0939	Unidentified bat
Sport Ireland Bat Box Scheme - BB6	O0939	Unidentified bat
Sport Ireland Bat Box Scheme - BB7	O0939	Unidentified bat
Sport Ireland Bat Box Scheme - BB8	O0939	Unidentified bat
Sport Ireland Bat Box Scheme - BB9	O0939	Unidentified bat
Sports Ireland Bat Box Scheme - BB24	O0939	Unidentified bat
St Peters Yellow walls	O0743	Pipistrellus spp. (45kHz/55kHz)
Thompson Residence	O2353	Unidentified bat
Tree	O2052	Pipistrellus pygmaeus



Unused Building, fingal Council Depot	O2050	Pipistrellus spp. (45kHz/55kHz)
Warrenstown House, Blanchardstown Road North, Blanchardstown, Dublin 15	O0740	Pipistrellus pipistrellus (45kHz),Pipistrellus pygmaeus, Nyctalus leisleri,Pipistrellus spp. (45kHz/55kHz)
Transects	Grid reference	
Name	start	Species observed
Abbotstown Bridge Transect	O0938	Myotis daubentonii,Unidentified bat
Bridge North of Killeek Transect spot 1	O1446	Myotis daubentonii
Bridge North of Killeek Transect spot 10	O1446	Myotis daubentonii
Bridge North of Killeek Transect spot 2	O1446	Myotis daubentonii
Bridge North of Killeek Transect spot 3	O1446	Myotis daubentonii
Bridge North of Killeek Transect spot 4	O1446	Myotis daubentonii
Bridge North of Killeek Transect spot 5	O1446	Myotis daubentonii
Bridge North of Killeek Transect spot 6	O1446	Myotis daubentonii,Unidentified bat
Bridge North of Killeek Transect spot 7	O1446	Myotis daubentonii,Unidentified bat
Bridge North of Killeek Transect spot 8	O1446	Myotis daubentonii
Bridge North of Killeek Transect spot 9	O1446	Myotis daubentonii
Cardiff Bridge Transect	O1237	Myotis daubentonii,Unidentified bat
Castleknock Transect, Spot 10	O0838	Pipistrellus pygmaeus,Pipistrellus pipistrellus (45kHz), Pipistrellus spp. (45kHz/55kHz),Myotis spp.
Castleknock Transect, Spot 2	O0737	
Castleknock Transect, Spot 3	O0737	Unidentified bat,Pipistrellus pygmaeus,Pipistrellus pipistrellus (45kHz),Pipistrellus spp. (45kHz/55kHz),Myotis spp.
Castleknock Transect, Spot 4	O0737	Pipistrellus pygmaeus,Pipistrellus pipistrellus (45kHz), Myotis spp.
Castleknock Transect, Spot 5	O0737	Pipistrellus pygmaeus,Pipistrellus pipistrellus (45kHz), Pipistrellus nathusii,Pipistrellus spp. (45kHz/55kHz), Myotis spp.,

[illegible]

[illegible]

[illegible]



Bat Eco Services	O2342	28/05/2021	Pipistrellus pygmaeus
Bat Eco Services	O2342	28/05/2021	Pipistrellus pygmaeus
Bat Eco Services	O2343	28/05/2021	Pipistrellus pygmaeus
Bat Eco Services	O2343	28/05/2021	Pipistrellus pygmaeus
Bat Eco Services	O2343	28/05/2021	Pipistrellus pygmaeus
Bat Eco Services	O2343	28/05/2021	Pipistrellus pygmaeus
Bat Eco Services	O2343	28/05/2021	Pipistrellus pygmaeus
Bat Eco Services	O2343	28/05/2021	Pipistrellus pygmaeus
Bat Eco Services	O2343	28/05/2021	Pipistrellus pygmaeus
Bat Eco Services	O2343	28/05/2021	Pipistrellus pygmaeus
Bat Eco Services	O2343	28/05/2021	Pipistrellus pygmaeus
Bat Eco Services	O2343	28/05/2021	Pipistrellus pygmaeus
Bat Eco Services	O2343	28/05/2021	Pipistrellus pygmaeus
Bat Eco Services	O2343	28/05/2021	Pipistrellus pygmaeus
Bat Eco Services	O2342	28/05/2021	Pipistrellus pygmaeus
Bat Eco Services	O2342	28/05/2021	Pipistrellus pygmaeus
Bat Eco Services	O2342	28/05/2021	Pipistrellus pygmaeus
Bat Eco Services	O2342	28/05/2021	Pipistrellus pygmaeus
Bat Eco Services	O2342	28/05/2021	Pipistrellus pygmaeus
Bat Eco Services	O2342	28/05/2021	Pipistrellus pygmaeus
Bat Eco Services	O2342	28/05/2021	Pipistrellus pygmaeus
Bat Eco Services	O2342	28/05/2021	Pipistrellus pygmaeus
Bat Eco Services	O2342	28/05/2021	Pipistrellus pygmaeus
Bat Eco Services	O2342	28/05/2021	Pipistrellus pygmaeus
Bat Eco Services	O2342	28/05/2021	Pipistrellus pygmaeus
Bat Eco Services	O2342	28/05/2021	Pipistrellus pygmaeus
Bat Eco Services	O2342	28/05/2021	Pipistrellus pygmaeus
Bat Eco Services	O2342	28/05/2021	Pipistrellus pygmaeus
Bat Eco Services	O2342	28/05/2021	Pipistrellus pygmaeus
Bat Eco Services	O2342	28/05/2021	Pipistrellus pygmaeus
Bat Eco Services	O2342	28/05/2021	Pipistrellus pygmaeus
Bat Eco Services	O2342	28/05/2021	Pipistrellus pygmaeus
Bat Eco Services	O2342	28/05/2021	Pipistrellus pygmaeus
Bat Eco Services	O2342	28/05/2021	Pipistrellus pygmaeus
Bat Eco Services	O2342	28/05/2021	Pipistrellus pygmaeus
Bat Eco Services	O2342	28/05/2021	Pipistrellus pygmaeus
Bat Eco Services	O2342	28/05/2021	Pipistrellus pygmaeus
Bat Eco Services	O2342	28/05/2021	Pipistrellus pygmaeus
Bat Eco Services	O2342	03/06/2021	Pipistrellus pygmaeus

[illegible]



Bat Eco Services	O2342	03/06/2021	Pipistrellus pygmaeus
Bat Eco Services	O2342	03/06/2021	Pipistrellus pygmaeus
Bat Eco Services	O2342	03/06/2021	Pipistrellus pygmaeus
Bat Eco Services	O2342	03/06/2021	Pipistrellus pygmaeus
Bat Eco Services	O2342	03/06/2021	Pipistrellus pygmaeus
Bat Eco Services	O0938	02/05/2021	Pipistrellus pygmaeus
Bat Eco Services	O0938	02/05/2022	Pipistrellus pygmaeus
Bat Eco Services	O0938	02/05/2022	Pipistrellus pygmaeus
Bat Eco Services	O0938	02/05/2022	Pipistrellus pygmaeus
Bat Eco Services	O0938	02/05/2022	Pipistrellus pygmaeus
Bat Eco Services	O0938	02/05/2022	Pipistrellus pygmaeus
Bat Eco Services	O0938	02/05/2022	Pipistrellus pygmaeus
Bat Eco Services	O0938	02/05/2022	Pipistrellus pygmaeus
Bat Eco Services	O0938	02/05/2022	Pipistrellus pygmaeus
Bat Eco Services	O0938	02/05/2022	Myotis daubentonii,Pipistrellus pygmaeus
Bat Eco Services	O0938	02/05/2022	Myotis daubentonii
Bat Eco Services	O0938	02/05/2022	Myotis daubentonii
Bat Eco Services	O0938	02/05/2022	Myotis daubentonii
Bat Eco Services	O0938	02/05/2022	Myotis daubentonii
Bat Eco Services	O0938	02/05/2022	Pipistrellus pygmaeus
Bat Eco Services	O0938	02/05/2022	Myotis daubentonii
Bat Eco Services	O0938	02/09/2021	Nyctalus leisleri,Pipistrellus pipistrellus (45kHz)
Bat Eco Services	O0937	28/07/2021	Nyctalus leisleri
Bat Eco Services	O0938	28/07/2021	Nyctalus leisleri
Bat Eco Services	O0937	28/07/2021	Nyctalus leisleri
Bat Eco Services	O0938	02/05/2022	Pipistrellus pygmaeus
Bat Eco Services	O0838	02/05/2022	Pipistrellus pygmaeus
Bat Eco Services	O0938	02/09/2021	Pipistrellus pipistrellus (45kHz)
Bat Eco Services	O0938	02/09/2021	Pipistrellus pipistrellus (45kHz)
Bat Eco Services	O0938	02/09/2021	Pipistrellus pipistrellus (45kHz)
Bat Eco Services	O0938	02/05/2022	Pipistrellus pygmaeus
Bat Eco Services	O1037	02/09/2021	Pipistrellus pipistrellus (45kHz)
Bat Eco Services	O0937	02/09/2021	Pipistrellus pipistrellus (45kHz)
Bat Eco Services	O0938	02/09/2021	Pipistrellus pipistrellus (45kHz)
Bat Eco Services	O0938	02/09/2021	Pipistrellus pipistrellus (45kHz)
Bat Eco Services	O0938	02/09/2021	Pipistrellus pipistrellus (45kHz)
Bat Eco Services	O0938	02/09/2021	Pipistrellus pipistrellus (45kHz)
Bat Eco Services	O0937	02/09/2021	Pipistrellus pipistrellus (45kHz)
Bat Eco Services	O0937	02/09/2021	Pipistrellus pipistrellus (45kHz)



Bat Eco Services	O1037	02/09/2021	Pipistrellus pipistrellus (45kHz)
Bat Eco Services	O1037	02/09/2021	Pipistrellus pipistrellus (45kHz)
Bat Eco Services	O0937	02/09/2021	Pipistrellus pipistrellus,Pipistrellus pygmaeus
Bat Eco Services	O0938	28/07/2021	Pipistrellus pipistrellus (45kHz)
Bat Eco Services	O0937	28/07/2021	Pipistrellus pipistrellus (45kHz)
Bat Eco Services	O0937	28/07/2021	Pipistrellus pipistrellus (45kHz)
Bat Eco Services	O0937	28/07/2021	Pipistrellus pipistrellus (45kHz)
Bat Eco Services	O0937	28/07/2021	Pipistrellus pipistrellus (45kHz)
Bat Eco Services	O0938	28/07/2021	Pipistrellus pipistrellus (45kHz)
Bat Eco Services	O0938	02/05/2022	Pipistrellus pygmaeus
Bat Eco Services	O0937	28/07/2021	Pipistrellus pipistrellus (45kHz) Myotis daubentonii,Pipistrellus pipistrellus,
Bat Eco Services	O0938	02/05/2022	Pipistrellus pygmaeus
Bat Eco Services	O0938	02/05/2022	Pipistrellus pipistrellus (45kHz)
Bat Eco Services	O0938	02/05/2022	Pipistrellus pygmaeus
Bat Eco Services	O0938	02/05/2022	Pipistrellus pipistrellus (45kHz)
Bat Eco Services	O0938	02/05/2022	Pipistrellus pipistrellus (45kHz)
Bat Eco Services	O0938	02/05/2022	Pipistrellus pipistrellus, Pipistrellus pygmaeus
Bat Eco Services	O0938	02/05/2022	Pipistrellus pipistrellus (45kHz)
Bat Eco Services	O0938	02/05/2022	Pipistrellus pipistrellus (45kHz)
Bat Eco Services	O0938	02/05/2022	Pipistrellus pipistrellus (45kHz)
Bat Eco Services	O0838	02/05/2022	Pipistrellus pipistrellus (45kHz)
Bat Eco Services	O0938	02/05/2022	Pipistrellus pipistrellus (45kHz)
Bat Eco Services	O0938	02/05/2022	Pipistrellus pipistrellus (45kHz)
Bat Eco Services	O0938	02/05/2022	Myotis daubentonii,Pipistrellus pipistrellus
Bat Eco Services	O0938	02/05/2022	Pipistrellus pipistrellus
Bat Eco Services	O0938	02/05/2022	Pipistrellus pipistrellus
Bat Eco Services	O0838	02/05/2022	Pipistrellus pipistrellus
Bat Eco Services	O0737	02/05/2022	Pipistrellus pipistrellus
Bat Eco Services	O0737	02/05/2022	Pipistrellus pipistrellus
Bat Eco Services	O0938	02/05/2022	Pipistrellus pygmaeus
Bat Eco Services	O0938	02/05/2022	Pipistrellus pipistrellus,Pipistrellus pygmaeus
Bat Eco Services	O0938	02/05/2022	Pipistrellus pipistrellus
Bat Eco Services	O0938	02/05/2022	Pipistrellus pygmaeus
Bat Eco Services	O0938	02/05/2022	Pipistrellus pygmaeus
Bat Eco Services	O0937	02/09/2021	Pipistrellus pygmaeus
Bat Eco Services	O0937	02/09/2021	Pipistrellus pygmaeus
Bat Eco Services	O0938	02/09/2021	Pipistrellus pygmaeus
Bat Eco Services	O0938	02/09/2021	Pipistrellus pygmaeus



Bat Eco Services	O0937	02/09/2021	Pipistrellus pygmaeus
Bat Eco Services	O0937	02/09/2021	Pipistrellus pygmaeus
Bat Eco Services	O0937	02/09/2021	Pipistrellus pygmaeus
Bat Eco Services	O0937	02/09/2021	Pipistrellus pygmaeus
Bat Eco Services	O0937	02/09/2021	Pipistrellus pygmaeus
Bat Eco Services	O0938	02/09/2021	Pipistrellus pygmaeus
Bat Eco Services	O0938	02/09/2021	Pipistrellus pygmaeus
Bat Eco Services	O0938	02/09/2021	Pipistrellus pygmaeus
Bat Eco Services	O0938	02/09/2021	Pipistrellus pygmaeus
Bat Eco Services	O0937	02/09/2021	Pipistrellus pygmaeus
Bat Eco Services	O0937	02/09/2021	Pipistrellus pygmaeus
Bat Eco Services	O0937	02/09/2021	Pipistrellus pipistrellus, Pipistrellus pygmaeus
Bat Eco Services	O0937	02/09/2021	Pipistrellus pygmaeus
Bat Eco Services	O0937	02/09/2021	Pipistrellus pygmaeus
Bat Eco Services	O0937	02/09/2021	Pipistrellus pygmaeus
Bat Eco Services	O1037	02/09/2021	Pipistrellus pygmaeus
Bat Eco Services	O1037	02/09/2021	Pipistrellus pygmaeus
Bat Eco Services	O0937	28/07/2021	Pipistrellus pygmaeus
Bat Eco Services	O0938	28/07/2021	Pipistrellus pygmaeus
Bat Eco Services	O0938	28/07/2021	Pipistrellus pygmaeus
Bat Eco Services	O0938	28/07/2021	Pipistrellus pygmaeus
Bat Eco Services	O0938	28/07/2021	Pipistrellus pygmaeus
Bat Eco Services	O0938	28/07/2021	Pipistrellus pygmaeus
Bat Eco Services	O0937	28/07/2021	Pipistrellus pygmaeus
Bat Eco Services	O0937	28/07/2021	Pipistrellus pygmaeus
Bat Eco Services	O0937	28/07/2021	Pipistrellus pygmaeus
Bat Eco Services	O1037	28/07/2021	Pipistrellus pygmaeus
Bat Eco Services	O0838	02/05/2022	Pipistrellus pygmaeus
Bat Eco Services	O0938	02/05/2022	Pipistrellus pipistrellus, Pipistrellus pygmaeus
Bat Eco Services	O0737	02/05/2022	Pipistrellus pygmaeus Pipistrellus pipistrellus (45kHz), Pipistrellus pygmaeus, Nyctalus leisleri,
Bat Eco Services	O0838	02/05/2022	Myotis daubentonii Pipistrellus pipistrellus (45kHz), Pipistrellus
Bat Eco Services	O0737	02/05/2022	pygmaeus, Nyctalus leisleri, Pipistrellus nathusii Nyctalus leisleri, Pipistrellus pipistrellus (45kHz),
Bat Survey - Scott Cawley	O1039	02/08/2005	Pipistrellus pygmaeus
Bat Survey - Scott Cawley	O1339	05/09/2006	Pipistrellus pygmaeus



Bat Survey - Scott Cawley	O0939	31/07/2008	Pipistrellus pipistrellus (45kHz), Pipistrellus pygmaeus
Bat Survey - Scott Cawley	O1842	2010-10-00	Pipistrellus pipistrellus (45kHz),Pipistrellus pygmaeus,Nyctalus leisleri
Bat Survey - Scott Cawley	O1440	07/09/2010	Pipistrellus pipistrellus (45kHz),Nyctalus leisleri, Pipistrellus spp. (45kHz/55kHz)
Bat Survey - Scott Cawley	O1741	31/05/2011	Pipistrellus pygmaeus,Pipistrellus pipistrellus (45kHz),Pipistrellus spp. (45kHz/55kHz), Nyctalus leisleri,Unidentified bat
Bat Survey - Scott Cawley	O1648	13/09/2011	Nyctalus leisleri,Myotis spp., Pipistrellus pipistrellus (45kHz), Pipistrellus pygmaeus
Bat Survey - Scott Cawley	O1440	30/08/2011	Pipistrellus pipistrellus (45kHz),Pipistrellus pygmaeus,Nyctalus leisleri,Unidentified bat, Pipistrellus spp. (45kHz/55kHz)
Bat Survey - Scott Cawley	o1540	30/08/2016	Nyctalus leisleri
Bat Survey - Scott Cawley	o1540	31/08/2016	Nyctalus leisleri
Bat Survey - Scott Cawley	o1540	06/09/2016	Nyctalus leisleri,Pipistrellus pipistrellus
Bat Survey - Scott Cawley	o1539	30/08/2016	Nyctalus leisleri
Bat Survey - Scott Cawley	o1540	06/09/2016	Nyctalus leisleri,Pipistrellus pipistrellus (45kHz)
Bat Survey - Scott Cawley	o1539	06/09/2016	Unidentified bat,Pipistrellus pipistrellus (45kHz) Pipistrellus pipistrellus (45kHz),Nyctalus leisleri,
Bat Survey - Scott Cawley	o1440	31/08/2016	Pipistrellus pygmaeus Nyctalus leisleri,Pipistrellus pipistrellus (45kHz),
Bat Survey - Scott Cawley	O0739	25/08/2015	Pipistrellus pygmaeus Pipistrellus pygmaeus,Pipistrellus pipistrellus
Bat Survey - Scott Cawley	O1539	30/08/2016	(45kHz),Nyctalus leisleri Pipistrellus pygmaeus,Pipistrellus pipistrellus
Bat Survey - Scott Cawley	O1550	13/06/2017	(45kHz),Nyctalus leisleri,Myotis spp. Myotis nattereri,Nyctalus leisleri,
Bat Surveys - Tina Aughney	O1546	31/08/2006	Pipistrellus pipistrellus (45kHz) Pipistrellus pipistrellus (45kHz),
Bat Surveys - Tina Aughney	O1546	30/08/2006	Nyctalus leisleri,Myotis nattereri Plecotus auritus,Pipistrellus pipistrellus,
Bat Surveys - Tina Aughney	O2242	06/05/2017	Pipistrellus pygmaeus,Nyctalus leisleri Pipistrellus pipistrellus (45kHz),Pipistrellus pygmaeus,Nyctalus leisleri,Myotis daubentonii,
Bat Surveys - Tina Aughney	O1748	11/08/2017	Plecotus auritus Pipistrellus pipistrellus (45kHz),Pipistrellus
BATLAS 2010	O1540	01/08/2008	pygmaeus,Nyctalus leisleri Pipistrellus pipistrellus (45kHz),Pipistrellus
BATLAS 2010	O1640	01/08/2008	pygmaeus,Nyctalus leisleri
BATLAS 2010	O1538	01/08/2008	Pipistrellus pipistrellus (45kHz)



BATLAS 2010	O1744	30/07/2008	Pipistrellus pipistrellus (45kHz), Pipistrellus pygmaeus, Nyctalus leisleri
BATLAS 2010	O1542	31/07/2008	Pipistrellus pipistrellus (45kHz), Nyctalus leisleri
BATLAS 2010	O1850	29/07/2008	Pipistrellus pipistrellus (45kHz), Pipistrellus pygmaeus
BATLAS 2010	O1848	30/07/2008	Pipistrellus pipistrellus (45kHz), Pipistrellus pygmaeus, Myotis daubentonii
BATLAS 2010	O1442	16/07/2008	Nyctalus leisleri
BATLAS 2010	O1542	16/07/2008	Nyctalus leisleri
BATLAS 2010	O1543	16/07/2008	Nyctalus leisleri
BATLAS 2010	O1642	16/07/2008	Nyctalus leisleri
BATLAS 2010	O1643	16/07/2008	Nyctalus leisleri
BATLAS 2010	O0638	17/09/2008	Pipistrellus pipistrellus (45kHz), Pipistrellus pygmaeus, Nyctalus leisleri, Myotis daubentonii
BATLAS 2010	O0637	15/08/2008	Myotis daubentonii
BATLAS 2010	O0751	15/08/2008	Nyctalus leisleri, Myotis spp.
BATLAS 2020	O0640	22/08/2018	
BATLAS 2020	O1142	14/09/2017	Pipistrellus spp. (45kHz/55kHz)
BATLAS 2020	O1050	15/09/2016	Pipistrellus pipistrellus (45kHz), Pipistrellus pygmaeus, Myotis daubentonii, Myotis nattereri
BATLAS 2020	O0851	18/08/2017	Pipistrellus pipistrellus (45kHz), Pipistrellus pygmaeus, Nyctalus leisleri
BATLAS 2020	O0751	18/08/2017	
BATLAS 2020	O0656	18/08/2017	Pipistrellus pipistrellus (45kHz), Pipistrellus pygmaeus
Dublin Bat Group surveys	O1137	08/09/1999	Myotis daubentonii, Pipistrellus pygmaeus
Dublin Bat Group surveys	O1137	08/09/1999	Nyctalus leisleri, Pipistrellus pipistrellus, Pipistrellus pygmaeus, Plecotus auritus, Myotis daubentonii
East Coast Project	O2549	18/08/2024	Myotis daubentonii, Pipistrellus nathusii, Nyctalus leisleri, Pipistrellus pipistrellus (45kHz), Pipistrellus pygmaeus, Plecotus auritus, Myotis daubentonii, Myotis nattereri, Myotis mystacinus
East Coast Project	O2639	18/08/2024	Nyctalus leisleri, Pipistrellus pipistrellus (45kHz), Pipistrellus pygmaeus
East Coast Project	O2549	09/09/2024	Pipistrellus pipistrellus (45kHz), Pipistrellus pygmaeus
East Coast Project	O2639	09/09/2024	Nyctalus leisleri, Pipistrellus pipistrellus (45kHz),



EIS and Road Surveys - Conor Kelleher	O0938	22/06/2005	Pipistrellus pygmaeus, Plecotus auritus, Myotis daubentonii, Myotis nattereri, Myotis spp.
EIS and Road Surveys - Conor Kelleher	O1640	22/06/2005	Pipistrellus pygmaeus, Pipistrellus pipistrellus (45kHz), Nyctalus leisleri
EIS and Road Surveys - Conor Kelleher	O1344	14/09/2002	Pipistrellus pygmaeus, Nyctalus leisleri, Pipistrellus pipistrellus (45kHz)
EIS and Road Surveys - Conor Kelleher	O1444	14/09/2002	Pipistrellus pipistrellus (45kHz), Pipistrellus pygmaeus, Plecotus auritus, Nyctalus leisleri
EIS and Road Surveys - Conor Kelleher	O1544	14/09/2002	Pipistrellus pipistrellus (45kHz), Pipistrellus pygmaeus, Plecotus auritus, Nyctalus leisleri
EIS surveys - Brian Keeley	O2043	09/07/2004	Pipistrellus pipistrellus (45kHz), Pipistrellus pygmaeus, Nyctalus leisleri, Plecotus auritus
EIS surveys - Brian Keeley	O2041	20/09/2005	Pipistrellus pipistrellus (45kHz), Pipistrellus pygmaeus, Nyctalus leisleri, Plecotus auritus
EIS surveys - Brian Keeley	O2150	08/09/2005	Pipistrellus pipistrellus (45kHz), Pipistrellus pygmaeus, Nyctalus leisleri, Plecotus auritus
EIS surveys - Brian Keeley	O2551	01/09/2005	Pipistrellus pipistrellus (45kHz), Pipistrellus pygmaeus, Nyctalus leisleri, Plecotus auritus
EIS surveys - Brian Keeley	O2145	05/07/2006	Pipistrellus pipistrellus (45kHz), Pipistrellus pygmaeus, Nyctalus leisleri, Plecotus auritus
EIS surveys - Brian Keeley	O2551	07/07/2006	Pipistrellus pipistrellus (45kHz), Pipistrellus pygmaeus, Nyctalus leisleri, Plecotus auritus
EIS surveys - Brian Keeley	O1641	02/06/2006	Pipistrellus pipistrellus (45kHz), Pipistrellus pygmaeus, Nyctalus leisleri
EIS surveys - Brian Keeley	O2054	16/09/2007	Nyctalus leisleri
EIS surveys - Brian Keeley	O1342	30/08/2007	Pipistrellus pipistrellus (45kHz), Pipistrellus pygmaeus, Nyctalus leisleri
EIS surveys - Brian Keeley	O2343	10/07/2007	Nyctalus leisleri, Pipistrellus pipistrellus (45kHz)
EIS surveys - Brian Keeley	O2345	19/05/2009	Pipistrellus pygmaeus, Pipistrellus pipistrellus (45kHz), Nyctalus leisleri
EIS surveys - Brian Keeley	O1237	13/09/2010	Pipistrellus pipistrellus (45kHz), Nyctalus leisleri, Plecotus auritus
EIS surveys - Brian Keeley	O1953	27/06/2012	Pipistrellus pipistrellus (45kHz), Pipistrellus pygmaeus, Nyctalus leisleri
EIS surveys - Brian Keeley	O1654	26/06/2012	Nyctalus leisleri, Pipistrellus pygmaeus, Pipistrellus pipistrellus (45kHz)
EIS surveys - Brian Keeley	O1842	09/08/2012	Myotis daubentonii, Pipistrellus pygmaeus, Pipistrellus pipistrellus (45kHz), Plecotus auritus
EIS surveys - Brian Keeley	O1151	03/08/2012	Pipistrellus pipistrellus (45kHz), Nyctalus leisleri, Pipistrellus pygmaeus, Plecotus auritus
EIS surveys - Brian Keeley	O0953	04/08/2012	Pipistrellus pipistrellus (45kHz), Nyctalus leisleri, Pipistrellus pygmaeus, Plecotus auritus



EIS Surveys - Niamh Roche	O1744	20/09/2003	Nyctalus leisleri
EIS Surveys - Niamh Roche	O2151	21/07/2003	Nyctalus leisleri
EIS Surveys - Niamh Roche	O2050	21/07/2003	Nyctalus leisleri
EIS Surveys - Niamh Roche	O1047	09/05/2006	Pipistrellus pygmaeus
EIS Surveys - Niamh Roche	O1047	09/05/2006	Pipistrellus pipistrellus (45kHz) Pipistrellus pipistrellus (45kHz),
EIS Surveys - Niamh Roche	O1047	09/05/2006	Myotis mystacinus/brandtii Pipistrellus pipistrellus (45kHz),
EIS Surveys - Niamh Roche	O1048	09/05/2006	Nyctalus leisleri
EIS Surveys - Niamh Roche	O1047	09/05/2006	Myotis mystacinus/brandtii Nyctalus leisleri, Pipistrellus pipistrellus,
Faith Wilson	O0640	07/10/2007	Pipistrellus pygmaeus
Faith Wilson	O0640	07/10/2007	Myotis daubentonii, Pipistrellus pygmaeus Pipistrellus pipistrellus (45kHz), Pipistrellus
Faith Wilson	O0739	07/10/2007	pygmaeus, Nyctalus leisleri Pipistrellus pipistrellus (45kHz),
Faith Wilson	O0838	11/08/2008	Pipistrellus pygmaeus, Myotis daubentonii Pipistrellus pipistrellus (45kHz), Pipistrellus pygmaeus, Nyctalus leisleri,
Faith Wilson	O0838	09/10/2007	Myotis daubentonii, Plecotus auritus
Faith Wilson	O0938	09/10/2007	Pipistrellus pipistrellus (45kHz)
Faith Wilson	O2250	24/10/2016	Unidentified bat
National Biodiversity Data Centre Bat Records	O1538	01/05/2014	Pipistrellus pygmaeus
National Biodiversity Data Centre Bat Records	O1152	31/07/2021	Pipistrellus spp. (45kHz/55kHz)
National Biodiversity Data Centre Bat Records	O2245	17/06/2017	Pipistrellus spp. (45kHz/55kHz)
National Biodiversity Data Centre Bat Records	O2449	17/09/2020	Unidentified bat
National Biodiversity Data Centre Bat Records	O1553	14/05/2022	Pipistrellus spp. (45kHz/55kHz) Myotis nattereri, Pipistrellus pygmaeus,
National Biodiversity Data Centre Bat Records	O1438	06/06/2021	Nyctalus leisleri
National Biodiversity Data Centre Bat Records	O1438	07/06/2021	Pipistrellus pipistrellus (45kHz), Pipistrellus pygmaeus
National Biodiversity Data Centre Bat Records	O1438	04/06/2021	Nyctalus leisleri
National Biodiversity Data Centre Bat Records	O1438	05/06/2021	Nyctalus leisleri
National Biodiversity Data Centre Bat Records	O0838	18/07/2021	Pipistrellus spp. (45kHz/55kHz)



National Biodiversity Data Centre Bat Records	O2539	07/04/2020	Pipistrellus pygmaeus
National Biodiversity Data Centre Bat Records	O2655	29/05/2021	Pipistrellus spp. (45kHz/55kHz) Pipistrellus nathusii, Pipistrellus spp. (45kHz/55kHz), Pipistrellus pygmaeus,
National Biodiversity Data Centre Bat Records	O1453	03/06/2022	Myotis daubentonii
National Biodiversity Data Centre Bat Records	O2146	10/11/2021	Unidentified bat
National Biodiversity Data Centre Bat Records	O1541	24/06/2022	Pipistrellus spp. (45kHz/55kHz), Nyctalus leisleri
National Biodiversity Data Centre Bat Records	O1540	24/06/2022	Pipistrellus pygmaeus
National Biodiversity Data Centre Bat Records	O1540	24/06/2022	Nyctalus leisleri
National Biodiversity Data Centre Bat Records	O0938	08/11/2023	Unidentified bat
National Biodiversity Data Centre Bat Records	O0938	03/04/2024	Unidentified bat
National Biodiversity Data Centre Bat Records	O2148	26/02/2024	Pipistrellus pygmaeus
Niamh Roche	O2151	21/07/2003	Pipistrellus pygmaeus, Myotis spp.
Wildlife Surveys Ireland Surveys	O1740	29/05/2025	Pipistrellus pipistrellus (45kHz), Pipistrellus pygmaeus, Nyctalus leisleri

Appendix 8.2a

Winter Bird Survey Mooretown Swords



**Winter Bird Survey of Lands at Mooretown,
Swords,
Co. Dublin
November 2025 to March 2026.**



Fig 1. Meadow Pipit. Red listed bird species as detected at Moortown Lands, Swords.

Photos by John Fox.

Report prepared by John Fox

April 2026

Background.

Brady Shipman Martin, on behalf of Fingal County Council, commissioned a winter bird survey of lands at Moortown, Swords, Co Dublin, as outlined red on the map at fig 2. The lands are located at the western edge of Swords town. The lands can be accessed through the Glenveagh Homes building site, which is accessed from the R125 Rathbeale Road. The lands are bounded on the north by said building site. To the west they are bounded by a recently constructed or under construction housing development and Swords Community College. To the South and east they are bounded by existing housing estates. The lands are primarily arable farmland now in a fallow state. There are spoil heaps associated with the building site over much of the land and the site edges have been fenced off to create a buffer zone several meters wide parallel to the boundaries presumably to protect hedgerows. These buffer zones were not accessed during the surveys.

The lands are divided into two fields which are separated from each other by mature hedgerows that contain a variety of native plant species and some semi-mature trees. The boundaries to the lands themselves are made up of similar hedgerows in most areas, other than along the northern edge where there is a temporary wire mesh security fence.



Fig 2. Aerial Photo indicating extent of survey lands. (Site outlined red).

The primary objective of the survey was to gather information on the birds using the lands.

This report presents the result of a bird surveys conducted on 20th of November and 11th of December 2025, 7th of January, 9th of February and 4th of March 2026. Five visits were

made to the land to record the birds present. Each visit was for a duration of about two hours. The survey area is about 8 Ha.



Fig 3. Herring Gull. Amber listed bird species as seen in flight over Moortown Lands.

Method.

The site was visited five times between November 2025 and March 2026. Each visit was for a duration of less than 2 hours. The visits were made in the early morning when conditions were suitable for winter bird surveying.

The lands were scanned from various points with 42x10 binoculars. The accessible hedgerows were walked slowly, any birds heard or seen were identified, when possible, their behaviour noted, numbers counted and their locations plotted on aerial photography. Transects were also walked across open areas of the lands to look and listen for any birds that might be present away from the hedgerows.

Results.

A total of 31 bird species were recorded on the lands (Table 1). These are all common and widespread bird species of Ireland. They include two Red-listed and six Amber-listed species. (Gilbert *et al* 2021).

The red listed species were Snipe and Meadow Pipit. A maximum of just 2 Snipe was flushed during a single visit with single birds flushed on other occasions. A small flock of five wintering Meadow Pipit was detected during one visit while one to three individuals were detected on other occasions.

The six amber listed species were Mallard, Herring Gull, Skylark, Starling, House Sparrow and Linnet. A single pair of Mallard were seen in flight over the lands on just one occasion. Herring Gulls were seen infrequently and only in flight over the lands. A single Skylark was seen on one occasion only in the southwestern area of the site.

Common Name	BTO Code	Species	Activity	Estimated Maximum Numbers Detected
Mallard	MA	<i>Anas platyrhynchos</i>	In Flight	2 birds
Pheasant	PH	<i>Phasianus colchicus</i>	Foraging	5 birds
Buzzard	BZ	<i>Buteo buteo</i>	Hunting, Soaring	1 bird
Herring Gull	HG	<i>Larus argentatus</i>	In Flight	6 birds
Gt Black-backed Gull	GB	<i>Larus marinus</i>	In Flight	1 bird
Feral Pigeon	FP	<i>Columba livia (domest)</i>	In Flight	4 birds
Woodpigeon	WP	<i>Columba palumbus</i>	Foraging	10 birds
Collared Dove	CD	<i>Streptopelia decaocto</i>	Foraging	3 birds
Skylark	S.	<i>Alauda arvensis</i>	Foraging	1 bird
Snipe	SN	<i>Gallinago gallinago</i>	Foraging	3 birds
Meadow Pipit	MP	<i>Anthus pratensis</i>	Foraging	Flock of up to 5 birds
Wren	WR	<i>Troglodytes troglodytes</i>	Foraging	5 birds
Duncock	D.	<i>Prunella modularis</i>	Foraging	3 birds
Robin	R.	<i>Erithacus rubecula</i>	Foraging	3 birds
Stonechat	SC	<i>Saxicola torquatus</i>	Foraging	2 birds
Song Thrush	ST	<i>Turdus philomelos</i>	Foraging	3 birds
Mistle Thrush	M	<i>Turdus pilaris</i>	Foraging	1 birds
Blackbird	B.	<i>Turdus merula</i>	Foraging	5 birds
Great Tit	GT	<i>Parus major</i>	Foraging	2 birds
Blue Tit	BT	<i>Parus caeruleus</i>	Foraging	3 birds
Magpie	MG	<i>Pica pica</i>	Foraging	2 birds
Jackdaw	JD	<i>Corvus monedula</i>	Foraging	6 birds
Rook	RO	<i>Corvus frugilegus</i>	Foraging	4 birds
Hooded Crow	HC	<i>Corvus corone cornix</i>	Foraging	2 birds
Starling	SG	<i>Sturnus vulgaris</i>	Foraging	Flock of up to 4 birds.
House Sparrow	HS	<i>Passer domesticus</i>	Foraging	1 bird
Chaffinch	CH	<i>Fringilla coelebs</i>	Foraging	Flocks of up 5 birds
Linnet	LI	<i>Carduelis cannabina</i>	Foraging	Flocks of up to 6 birds
Goldfinch	GO	<i>Carduelis carduelis</i>	Foraging	Flocks of up to 4 birds
Bullfinch	BF	<i>Pyrrhula pyrrhulla</i>	Foraging	2 birds
Reed Bunting	RB	<i>Emberiza schoeniclus</i>	Foraging	1 female bird

Table 1. List of Bird Species found at the Moortown lands. Text colour indicates species conservation status (Red, Amber, or Green listed).

Small foraging flocks of up to four Starling and six Linnets were observed on the lands on a few occasions. A single House Sparrow was found along the eastern boundary hedge close to housing in that location.

23 Green listed species were also detected on the lands, most of which were observed on several occasions.

Only three waterbird species were recorded on the lands. Those species were Herring Gull Great Black-backed Gull and Snipe. Herring Gull was observed foraging on top of the spoil heaps on one occasion when 6 birds were present. Herring and Great Black-backed Gull were seen flying over the lands, but sightings were infrequent. Snipe were flushed from the northern field during three visits with a maximum of 2 birds seen during one visit. The possibility is that more Snipe were present but remained undetected.

No Brent Geese were observed during any of the visits and none of their droppings were found. Currently there is no suitable grazing habitat for Brent Geese within the lands.

Discussion.

Five early morning visits were made when conditions were suitable for bird surveying however as all five were winter visits, most birds would not have been singing and therefore many may not have been detected.

Two red listed species of highest conservation concern were detected; these were Snipe and Meadow Pipit.

Six amber listed species of medium conservation concern were detected; these were Mallard, Herring Gull, Skylark, Starling, House Sparrow and Linnet.

An additional 23 green listed species of least conservation concern were also detected; these were, Pheasant, Buzzard, Great Black-backed Gull, Feral Pigeon, Wood Pigeon, Collared Dove, Wren, Dunnock, Robin, Stonechat, Song Thrush, Mistle Thrush, Blackbird, Great Tit, Blue Tit, Magpie, Rook, Jackdaw, Hooded Crow, Chaffinch, Goldfinch, Bullfinch and Reed Bunting.

Just one species of birds of prey was detected: Buzzard. A single bird was seen in flight over the lands during one visit.

Woodpigeons were most commonly detected, usually along the hedgerows often flushed from the trees. Feral pigeons were seen in small flocks flying over the site while sightings of Collared Doves were along the southern and eastern boundaries close to housing.

Wren, Dunnock, Robin, Stonechat, Song Thrush, Mistle Thrush, Blackbird, Great tit, Blue Tit, were occasionally detected along or close to hedgerows or in areas of scrub.

Four corvid species were detected these were Magpie, Jackdaw, Rook and Hooded Crow. All were seen in small numbers only, usually along hedgerows. Flocks of up to 30 Rooks and 12 Jackdaws were seen in flight over the lands shortly after dawn.

Small flocks of finches such as Chaffinch, Goldfinch and Linnet were encountered in flight, perched along hedgerows or foraging in the fields themselves. A single male Bullfinch was seen along the hedge at the western boundary. A female Reed Bunting was seen foraging along an area of scrub close to the eastern boundary.

There appeared to be very little amenity use of the lands now that it has been fenced off. No walkers or dogs were observed at any time.

References.

Gilbert G., Stanbury A., & Lewis L. 2021. Birds of Conservation Concern in Ireland 2020-2026. Irish Birds, 43: 1-22. Birdwatch Ireland, Kilcoole Co Wicklow.

Appendix 8.2b

Breeding Bird Survey Mooretown Swords



**Early Season Breeding Bird Survey of Lands at
Mooretown,
Swords,
Co. Dublin
April to May 2026.**



Fig 1. Meadow Pipit. Red listed bird species as detected at Mooretown Lands, Swords.

Photos by John Fox.

Report prepared by John Fox

May 2026

Background.

Brady Shipman Martin, on behalf of Fingal County Council, commissioned a breeding bird survey of lands at Mooretown, Swords, Co Dublin, as outlined red on the map at fig 2. The lands are located at the western edge of Swords town. The lands can be accessed through the Glenveagh Homes building site, which is accessed from the R125 Rathbeale Road. The lands are bounded on the north by said building site. To the west they are bounded by a recently constructed or under construction housing developments and Swords Community College. To the south and east they are bounded by existing housing estates. The lands are primarily arable farmland, now in a fallow state. There are spoil heaps associated with the building site over much of the land and the site edges have been fenced off to create a buffer zone several meters wide parallel to the boundaries presumably to protect hedgerows. These buffer zones were also accessed during the surveys.

The lands are divided into two fields which are separated from each other by mature hedgerows that contain a variety of native plant species and some semi-mature trees. The boundaries to the lands themselves are made up of similar hedgerows in many areas but most are quite degraded. Along the northern edge there is a temporary wire mesh security fence.



Fig 2. Aerial Photo indicating extent of survey lands. (Site outlined red).

The primary objective of the survey was to gather information on the birds breeding on the lands.

This report presents the result of a bird surveys conducted on 13th of April and 6th and 26th of May 2026. Three visits were made to the land to record the birds present. Each visit was for a duration of about two hours. The survey area is about 8 Ha.



Fig 3. Whitethroat. Green listed bird species as seen singing at the Moortown Lands.

Method.

The site was visited three times between April and late May 2026. Each visit was for a duration of about 2 hours. The visits were made in the early morning when conditions were suitable for breeding bird surveying. Surveys were not started until after 07.10 as site access was not available earlier.

The lands were scanned from various points with 42x10 binoculars. The accessible hedgerows were walked slowly, any birds heard or seen were identified, when possible, their breeding behaviour noted, numbers counted and their locations plotted on aerial photography. Transects were also walked across open areas of the lands to look and listen for any birds that might be present away from the hedgerows.

A conservation status was also assigned to each species based on their latest conservation status as indicated in Birds of Conservation Concern in Ireland 4: 2020-2026 (Gilbert et al 2021).

Conservation Status: A list of “Birds of Conservation Concern in Ireland 4: 2020 to 2026” (Gilbert et al 2021) indicates three categories of concern as follows. See appendix 1 for more detail.

- Red list species (high conservation concern).
- Amber list species (medium conservation concern).
- Green list species (least conservation concern).

These statuses have been assigned to all regularly occurring species in Ireland. The criteria on which they have been assessed is based on their international conservation status, historical breeding declines, recent population declines, European conservation status, breeding rarity, localised distribution and the international importance of populations.

Breeding Status Indicators: The following breeding status indicators were used to establish breeding status.

1. **Confirmed Breeding:** Eggs/nest, Occupied nest, Adult carrying faecal sac or food for young or recently fledged young.
2. **Probable Breeding:** Paired birds seen, Agitated behaviour, Permanent territory, Courtship or display, Nest building or visiting a nest site.
3. **Possible Breeding:** Species in suitable habitat during breeding season or singing male present.
4. **Non-Breeding:** Birds present but not likely breeding due to a lack of suitable nesting habitat and no behavioural evidence to suggest breeding on the site.

Results.

A total of 28 bird species were recorded on the lands (Table 1). These are all common and widespread bird species of Ireland. They include one Red-listed and six Amber-listed species. (Gilbert et al 2021).

21 additional Green listed species were also detected on the lands, most of which were observed on several occasions.

Just one waterbird species was recorded on the lands, that species was Herring Gull. Herring Gull was observed foraging on top of the spoil heaps on one occasion when four birds were present. Herring Gull were seen flying over the lands frequently.

Common Name	BTO Code	Species	Breeding Status	Estimated Maximum Numbers Detected
Pheasant	PH	<i>Phasianus colchicus</i>	Probable	1 - 3 birds
Herring Gull	HG	<i>Larus argentatus</i>	Non	4 birds
Feral Pigeon	FP	<i>Columba livia (domest)</i>	Possible	4 birds
Woodpigeon	WP	<i>Columba palumbus</i>	Probable	8 - 12 birds
Collared Dove	CD	<i>Streptopelia decaocto</i>	Probable	2 singing males
Barn Swallow	SL	<i>Hirundo rustica</i>	Non	1 bird in flight
House Martin	HM	<i>Delichon urbicum</i>	Non	1 bird in flight
Meadow Pipit	MP	<i>Anthus pratensis</i>	Probable	2 birds
Wren	WR	<i>Troglodytes troglodytes</i>	Possible	4 - 6 singing males
Dunnoch	D.	<i>Prunella modularis</i>	Confirmed	2 - 3 singing males
Robin	R.	<i>Erithacus rubecula</i>	Confirmed	2 - 4 singing males
Blackcap	BC	<i>Sylvia atricapilla</i>	Possible	1 singing male
Whitethroat	WH	<i>Sylvia communis</i>	Possible	1 singing male
Stonechat	SC	<i>Saxicola torquatus</i>	Confirmed	2 pairs
Song Thrush	ST	<i>Turdus philomelos</i>	Possible	2 singing males
Blackbird	B.	<i>Turdus merula</i>	Confirmed	5 - 6 birds
Great Tit	GT	<i>Parus major</i>	Possible	1 bird
Blue Tit	BT	<i>Parus caeruleus</i>	Possible	2 - 3 birds
Magpie	MG	<i>Pica pica</i>	Possible	2 birds
Jackdaw	JD	<i>Corvus monedula</i>	Possible	6 birds
Rook	RO	<i>Corvus frugilegus</i>	Non	4 birds
Hooded Crow	HC	<i>Corvus corone cornix</i>	Possible	2 birds
Starling	SG	<i>Sturnus vulgaris</i>	Confirmed	Flocks of up to 45 birds.
House Sparrow	HS	<i>Passer domesticus</i>	Confirmed	1 bird
Chaffinch	CH	<i>Fringilla coelebs</i>	Possible	1 - 2 singing males
Linnet	LI	<i>Carduelis cannabina</i>	Possible	3 - 4 birds
Goldfinch	GO	<i>Carduelis carduelis</i>	Possible	2- 4 birds
Reed Bunting	RB	<i>Emberiza schoeniclus</i>	Probable	1 pair

Table 1. List of Bird Species found at the Moortown lands. Text colour indicates species conservation status (Red, Amber, or Green listed).

The one red listed species was Meadow Pipit. A maximum of just 2 Meadow Pipits were found during any visit.

The six amber listed species were Herring Gull, Barn Swallow, House Martin, Starling, House Sparrow and Linnet. Herring Gulls were seen often in flight over the lands, and a group of four Herring Gulls were seen foraging at the spoil heaps during the second visit.



Fig 4. Aerial Photo indicating approximate location of Red and Amber listed species. (Red listed species indicated with red text. Amber listed species indicated with white text). For BTO species codes ref to Table 1.

A single Barn Swallow and a single House Martin were seen in flight over the lands during the second visit. Small foraging flocks of up to twelve Starling were occasionally found on the lands. Many recently fledged Starlings were present during the third visit. House Sparrow was found along the southern and eastern boundary hedge close to housing in that location. During the final visit, recently fledged House Sparrow were found on the spoil heaps with adult birds. Small groups of up to three Linnets were observed on the lands on a few occasions often in flight having been flushed from the southern field.

Discussion.

Three early morning visits were made when conditions were suitable for bird surveying.

A single red listed species of highest conservation concern, Meadow Pipit, was detected, Meadow Pipit was identified as a probable breeding species due to their agitated behaviour.

Six amber listed species of medium conservation concern were detected; these were Herring Gull, Barn Swallow, House Martin, Starling, House Sparrow and Linnet.

Herring Gull, Barn Swallow and House Sparrow were identified as non-breeding species as there are no suitable nest sites within the lands for these species.

Starling and House Sparrow were confirmed as breeding species however it is more likely that both Starling and House Sparrow do not breed on the actual lands. Both species are more likely to breed in some of the housing close to the lands. Linnet however was identified as a possible breeding species and would most likely breed on the lands themselves.

An additional 21 green listed species of least conservation concern were also detected; these were, Pheasant, Feral Pigeon, Wood Pigeon, Collared Dove, Wren, Dunnock, Robin, Blackcap, Whitethroat, Stonechat, Song Thrush, Blackbird, Great Tit, Blue Tit, Magpie, Rook, Jackdaw, Hooded Crow, Chaffinch, Goldfinch and Reed Bunting.

No species of birds of prey were detected.

Woodpigeons were the most common species detected, usually along the hedgerows often singing or flushed from the trees. Feral pigeons were found foraging and in flight, while Collared Doves were found singing along the southern and eastern boundaries close to housing.

Wren, Dunnock, Robin, Blackcap, Whitethroat, Stonechat, Song Thrush, Blackbird, Great Tit, Blue Tit, were occasionally detected along or close to hedgerows or in areas of scrub. All were heard singing and therefore can be considered possible breeding species. Recently fledged Dunnock, Robin and Stonechat which were found on the land elevate their breeding status to confirmed. A Blackbird was seen carrying food which also confirms it as a breeding species.

Four corvid species were detected these were Magpie, Jackdaw, Rook and Hooded Crow. All were seen in small numbers only, usually along hedgerows. Magpie, Jackdaw and Hooded Crow are possible breeding species, but Rook is considered nonbreeding as there is no obvious Rookery within the lands.

Finches such as Chaffinch, Goldfinch and Linnet were encountered in flight, perched along hedgerows or foraging in the fields themselves. All three species were also heard singing along hedgerows and therefore are identified as possible breeding species.

Male and female Reed Bunting were seen foraging along an area of scrub close to the eastern boundary. These two birds are probably a pair and were identified as a probable breeding species.

There appeared to be very little amenity use of the lands now that it has been fenced off. No walkers or dogs were observed at any time.

Appendix 1.

Birds of Conservation of Concern in Ireland (BoCCI)

The first comprehensive analysis of the population status of birds on the island which identified those species most in need of conservation was published in 1999. (Newton et al 1999). It was an initial review following the publication of the Irish Red Data Book by Wilde in 1993. A further review followed several years later (Lynas et al 2007), which include data for the first time on an all-Ireland basis. A third review six years later BoCCI (Colhoun and Cummin 2013) followed and was also on an all-Ireland basis. BoCCI in Ireland 4: (Gilbert et al 2021) was published in 2021 and forms the basis on which the conservation statuses were assigned to the bird species in this report.

Seven quantitative criteria have been adopted to determine population status for birds in Ireland.

These include, assessments of global and European conservation status, recent population decline (both in terms of numbers and distribution), historical population decline, breeding rarity, localised distribution and international importance.

The status of 211 species in Ireland was assessed against each of the chosen criteria.

Of these, 54 species, were assigned to the Red List. A further 79 species were assigned to the Amber List. The remaining 78 species were assigned to the Green List. In terms of conservation concern the Red listed species are species of immediate conservation concern, Amber listed species are of medium-term concern while Green listed species are currently of least conservation concern.

References.

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Appendix 9.1

NRA/TII Criteria for Rating the Magnitude and Significance of Soils and Geological Impacts at EIA Stage National Roads Authority

NRA/TII, 2009

Table 1 Criteria for rating site Attributes – Estimation of Importance of Soil and Geology Attributes (NRA)

Importance	Criteria	Typical Examples
Very High	Attribute has a high quality, significance or value on a regional or national scale Degree or extent of soil contamination is significant on a national or regional scale Volume of peat and/or soft organic soil underlying route is significant on a national or regional scale*	Geological feature rare on a regional or national scale (NHA) Large existing quarry or pit Proven economically extractable mineral resource
High	Attribute has a high quality, significance or value on a local scale. Degree or extent of soil contamination is significant on a local scale. Volume of peat and/or soft organic soil underlying route is significant on a local scale. *	Contaminated soil on site with previous heavy industrial usage Large recent landfill site for mixed wastes Geological feature of high value on a local scale (County Geological Site) Well drained and/or high fertility soils Moderately sized existing quarry or pit Marginally economic extractable mineral resource
Medium	Attribute has a medium quality, significance or value on a local scale Degree or extent of soil contamination is moderate on a local scale Volume of peat and/or soft organic soil underlying route is moderate on a local scale*	Contaminated soil on site with previous light industrial usage Small recent landfill site for mixed wastes Moderately drained and/or moderate fertility soils Small existing quarry or pit Sub-economic extractable mineral resource
Low	Attribute has a low quality, significance or value on a local scale Degree or extent of soil contamination is minor on a local scale. Volume of peat and/or soft organic soil underlying route is small on a local scale*	Large historical and/or recent site for construction and demolition wastes. Small historical and/or recent landfill site for construction and demolition wastes. Poorly drained and/or low fertility soils. Uneconomically extractable mineral resource.

* Relative to the total volume of inert soil disposed of and/or recovered

Source: Box 4.1: 'Guidelines on Procedures for Assessment and Treatment of Geology, Hydrology and Hydrogeology for National Road Schemes' by the National Roads Authority (NRA, 2009)

Table 2 Criteria for Rating Impact Significance at EIA Stage - Estimation Of Magnitude of Impact on Soil / Geology Attribute (NRA)

Magnitude of Impact	Criteria	Typical Examples
Large Adverse	Results in loss of attribute	Loss of high proportion of future quarry or pit reserves Irreversible loss of high proportion of local high fertility soils Removal of entirety of geological heritage feature Requirement to excavate / remediate entire waste site Requirement to excavate and replace high proportion of peat, organic soils and/or soft mineral soils beneath alignment
Moderate Adverse	Results in impact on integrity of attribute or loss of part of attribute	Loss of moderate proportion of future quarry or pit reserves Removal of part of geological heritage feature Irreversible loss of moderate proportion of local high fertility soils Requirement to excavate / remediate significant proportion of waste site Requirement to excavate and replace moderate proportion of peat, organic soils and/or soft mineral soils beneath alignment
Small Adverse	Results in minor impact on integrity of attribute or loss of small part of attribute	Loss of small proportion of future quarry or pit reserves Removal of small part of geological heritage feature Irreversible loss of small proportion of local high fertility soils and/or high proportion of local low fertility soils Requirement to excavate / remediate small proportion of waste site Requirement to excavate and replace small proportion of peat, organic soils and/or soft mineral soils beneath alignment
Negligible	Results in an impact on attribute but of insufficient magnitude to affect either use or integrity	No measurable changes in attributes

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Magnitude of Impact	Criteria	Typical Examples
Minor Beneficial	Results in minor improvement of attribute quality	Minor enhancement of geological heritage feature
Moderate Beneficial	Results in moderate improvement of attribute quality	Moderate enhancement of geological heritage feature
Major Beneficial	Results in major improvement of attribute quality	Major enhancement of geological heritage feature

Source: Box 5.1: 'Guidelines on Procedures for Assessment and Treatment of Geology, Hydrology and Hydrogeology for National Road Schemes' by the National Roads Authority (NRA, 2009)

Table 3 Rating of Significant Environmental Impacts at EIA Stage (NRA)

Importance of Attribute	Magnitude of Importance			
	Negligible	Small Adverse	Moderate Adverse	Large Adverse
Extremely High	Imperceptible	Significant	Profound	Profound
Very High	Imperceptible	Significant/moderate	Profound/Significant	Profound
High	Imperceptible	Moderate/Slight	Significant/moderate	Profound/Significant
Medium	Imperceptible	Slight	Moderate	Significant
Low	Imperceptible	Imperceptible	Slight	Slight/Moderate

Source: Box 5.4: 'Guidelines on Procedures for Assessment and Treatment of Geology, Hydrology and Hydrogeology for National Road Schemes' by the National Roads Authority (NRA, 2009)

Appendix 10.1

NRA/TII Criteria for Rating the Magnitude and Significance of Geological and Hydrogeological Impacts at EIA Stage National Roads Authority

NRA/TII, 2009

Table 1 Criteria for rating site Attributes – Estimation of Importance of Soil and Geology Attributes (NRA)

Importance	Criteria	Typical Examples
Very High	Attribute has a high quality, significance or value on a regional or national scale Degree or extent of soil contamination is significant on a national or regional scale Volume of peat and/or soft organic soil underlying route is significant on a national or regional scale*	Geological feature rare on a regional or national scale (NHA) Large existing quarry or pit Proven economically extractable mineral resource
High	Attribute has a high quality, significance or value on a local scale. Degree or extent of soil contamination is significant on a local scale. Volume of peat and/or soft organic soil underlying route is significant on a local scale. *	Contaminated soil on site with previous heavy industrial usage Large recent landfill site for mixed wastes Geological feature of high value on a local scale (County Geological Site) Well drained and/or high fertility soils Moderately sized existing quarry or pit Marginally economic extractable mineral resource
Medium	Attribute has a medium quality, significance or value on a local scale Degree or extent of soil contamination is moderate on a local scale Volume of peat and/or soft organic soil underlying route is moderate on a local scale*	Contaminated soil on site with previous light industrial usage Small recent landfill site for mixed wastes Moderately drained and/or moderate fertility soils Small existing quarry or pit Sub-economic extractable mineral resource
Low	Attribute has a low quality, significance or value on a local scale Degree or extent of soil contamination is minor on a local scale. Volume of peat and/or soft organic soil underlying route is small on a local scale*	Large historical and/or recent site for construction and demolition wastes. Small historical and/or recent landfill site for construction and demolition wastes. Poorly drained and/or low fertility soils. Uneconomically extractable mineral resource.

* Relative to the total volume of inert soil disposed of and/or recovered

Source: Box 4.1: 'Guidelines on Procedures for Assessment and Treatment of Geology, Hydrology and Hydrogeology for National Road Schemes' by the National Roads Authority (NRA, 2009)

Table 2 Criteria for Rating Impact Significance at EIA Stage - Estimation Of Magnitude of Impact on Soil / Geology Attribute (NRA)

Magnitude of Impact	Criteria	Typical Examples
Large Adverse	Results in loss of attribute	Loss of high proportion of future quarry or pit reserves Irreversible loss of high proportion of local high fertility soils Removal of entirety of geological heritage feature Requirement to excavate / remediate entire waste site Requirement to excavate and replace high proportion of peat, organic soils and/or soft mineral soils beneath alignment
Moderate Adverse	Results in impact on integrity of attribute or loss of part of attribute	Loss of moderate proportion of future quarry or pit reserves Removal of part of geological heritage feature Irreversible loss of moderate proportion of local high fertility soils Requirement to excavate / remediate significant proportion of waste site Requirement to excavate and replace moderate proportion of peat, organic soils and/or soft mineral soils beneath alignment
Small Adverse	Results in minor impact on integrity of attribute or loss of small part of attribute	Loss of small proportion of future quarry or pit reserves Removal of small part of geological heritage feature Irreversible loss of small proportion of local high fertility soils and/or high proportion of local low fertility soils Requirement to excavate / remediate small proportion of waste site Requirement to excavate and replace small proportion of peat, organic soils and/or soft mineral soils beneath alignment
Negligible	Results in an impact on attribute but of insufficient magnitude to affect either use or integrity	No measurable changes in attributes
Minor Beneficial	Results in minor improvement of attribute quality	Minor enhancement of geological heritage feature

Magnitude of Impact	Criteria	Typical Examples
Moderate Beneficial	Results in moderate improvement of attribute quality	Moderate enhancement of geological heritage feature
Major Beneficial	Results in major improvement of attribute quality	Major enhancement of geological heritage feature

Source: Box 5.1: 'Guidelines on Procedures for Assessment and Treatment of Geology, Hydrology and Hydrogeology for National Road Schemes' by the National Roads Authority (NRA, 2009)

Table 3 Criteria for rating Site Attributes - Estimation of Importance of Hydrogeology Attributes (NRA)

Magnitude of Impact	Criteria	Typical Examples
Extremely High	Attribute has a high quality or value on an international scale	Groundwater supports river, wetland or surface water body ecosystem protected by EU legislation e.g. SAC or SPA status
Very High	Attribute has a high quality or value on a regional or national scale	Regionally Important Aquifer with multiple well fields Groundwater supports river, wetland or surface water body ecosystem protected by national legislation – NHA status Regionally important potable water source supplying >2500 homes Inner source protection area for
High	Attribute has a high quality or value on a local scale	Regionally Important Aquifer Groundwater provides large proportion of baseflow to local rivers Locally important potable water source supplying >1000 homes Outer source protection area for regionally important water source Inner source protection area for locally important water source
Medium	Attribute has a medium quality or value on a local scale	Locally Important Aquifer Potable water source supplying >50 homes Outer source protection area for locally important water source
Low	Attribute has a low quality or value on a local scale	Poor Bedrock Aquifer Potable water source supplying <50 homes

Source: Box 4.3: 'Guidelines on Procedures for Assessment and Treatment of Geology, Hydrology and Hydrogeology for National Road Schemes' by the National Roads Authority (NRA, 2009)

Table 4 Criteria for Rating Impact Significance at EIS Stage – Estimation of Magnitude of Impact on Hydrogeology Attribute (NRA)

Magnitude of Impact	Criteria	Typical Examples
Large Adverse	Results in loss of attribute and /or quality and integrity of attribute	Removal of large proportion of aquifer. Changes to aquifer or unsaturated zone resulting in extensive change to existing water supply springs and wells, river baseflow or ecosystems. Potential high risk of pollution to groundwater from routine run- off. ¹ Calculated risk of serious pollution incident >2% annually. ²
Moderate Adverse	Results in impact on integrity of attribute or loss of part of attribute	Removal of moderate proportion of aquifer. Changes to aquifer or unsaturated zone resulting in moderate change to existing water supply springs and wells, river baseflow or ecosystems. Potential medium risk of pollution to groundwater from routine run-off. ¹ Calculated risk of serious pollution incident >1% annually. ²
Small Adverse	Results in minor impact on integrity of attribute or loss of small part of attribute	Removal of small proportion of aquifer. Changes to aquifer or unsaturated zone resulting in minor change to water supply springs and wells, river baseflow or ecosystems. Potential low risk of pollution to groundwater from routine run- off. ¹ Calculated risk of serious pollution incident >0.5% annually. ²
Negligible	Results in an impact on attribute but of insufficient magnitude to affect either use or integrity	Calculated risk of serious pollution incident <0.5% annually. ²

1: refer to Annex 1, Method C, Annex 1 of HA216/06

2: refer to Appendix B3 / Annex 1, Method D, Annex 1 of HA216/06

Source: Box 5.3: 'Guidelines on Procedures for Assessment and Treatment of Geology, Hydrology and Hydrogeology for National Road Schemes' by the National Roads Authority (NRA, 2009)

Table 5 Rating of Significant Environmental Impacts at EIA Stage (NRA)

Importance of Attribute	Magnitude of Importance			
	Negligible	Small Adverse	Moderate Adverse	Large Adverse
Extremely High	Imperceptible	Significant	Profound	Profound
Very High	Imperceptible	Significant/moderate	Profound/Significant	Profound
High	Imperceptible	Moderate/Slight	Significant/moderate	Profound/Significant
Medium	Imperceptible	Slight	Moderate	Significant
Low	Imperceptible	Imperceptible	Slight	Slight/Moderate

Source: Box 5.4: 'Guidelines on Procedures for Assessment and Treatment of Geology, Hydrology and Hydrogeology for National Road Schemes' by the National Roads Authority (NRA, 2009)

Appendix 10.2

NRA/TII Criteria for Rating the Magnitude and Significance of Hydrological Impacts at EIA Stage National Roads Authority

NRA/TII, 2009

Table 1 Criteria for rating Site Attributes - Estimation of Importance of Hydrogeology Attributes (NRA)

Magnitude of Impact	Criteria	Typical Examples
Extremely High	Attribute has a high quality or value on an international scale	Groundwater supports river, wetland or surface water body ecosystem protected by EU legislation e.g. SAC or SPA status
Very High	Attribute has a high quality or value on a regional or national scale	Regionally Important Aquifer with multiple well fields Groundwater supports river, wetland or surface water body ecosystem protected by national legislation – NHA status Regionally important potable water source supplying >2500 homes Inner source protection area for a regionally important potable water supply
High	Attribute has a high quality or value on a local scale	Regionally Important Aquifer Groundwater provides large proportion of baseflow to local rivers Locally important potable water source supplying >1000 homes Outer source protection area for regionally important water source Inner source protection area for locally important water source
Medium	Attribute has a medium quality or value on a local scale	Locally Important Aquifer Potable water source supplying >50 homes Outer source protection area for locally important water source
Low	Attribute has a low quality or value on a local scale	Poor Bedrock Aquifer Potable water source supplying <50 homes

Source: Box 4.3: 'Guidelines on Procedures for Assessment and Treatment of Geology, Hydrology and Hydrogeology for National Road Schemes' by the National Roads Authority (NRA, 2009)

Table 2 Criteria for Rating Impact Significance at EIS Stage – Estimation of Magnitude of Impact on Hydrogeology Attribute (NRA)

Magnitude of Impact	Criteria	Typical Examples
Large Adverse	Results in loss of attribute and /or quality and integrity of attribute	Removal of large proportion of aquifer. Changes to aquifer or unsaturated zone resulting in extensive change to existing water supply springs and wells, river baseflow or ecosystems. Potential high risk of pollution to groundwater from routine run- off. ¹ Calculated risk of serious pollution incident >2% annually. ²
Moderate Adverse	Results in impact on integrity of attribute or loss of part of attribute	Removal of moderate proportion of aquifer. Changes to aquifer or unsaturated zone resulting in moderate change to existing water supply springs and wells, river baseflow or ecosystems. Potential medium risk of pollution to groundwater from routine run-off. ¹ Calculated risk of serious pollution incident >1% annually. ²
Small Adverse	Results in minor impact on integrity of attribute or loss of small part of attribute	Removal of small proportion of aquifer. Changes to aquifer or unsaturated zone resulting in minor change to water supply springs and wells, river baseflow or ecosystems. Potential low risk of pollution to groundwater from routine run- off. ¹ Calculated risk of serious pollution incident >0.5% annually. ²
Negligible	Results in an impact on attribute but of insufficient magnitude to affect either use or integrity	Calculated risk of serious pollution incident <0.5% annually. ²

1: refer to Annex 1, Method C, Annex 1 of HA216/06

2: refer to Appendix B3 / Annex 1, Method D, Annex 1 of HA216/06

Source: Box 5.3: 'Guidelines on Procedures for Assessment and Treatment of Geology, Hydrology and Hydrogeology for National Road Schemes' by the National Roads Authority (NRA, 2009)

Table 3 Criteria for Rating Site Attributes – Estimation of Importance of Hydrological Attributes (NRA)

Importance	Criteria	Typical Examples
Extremely High	Attribute has a high quality or value on an international scale	River, wetland or surface water body ecosystem protected by EU legislation e.g. 'European sites' designated under the Habitats Regulations or 'Salmonid waters' designated pursuant to the European Communities (Quality of Salmonid Waters) Regulations, 1988.
Very High	Attribute has a high quality or value on a regional or national scale	River, wetland or surface water body ecosystem protected by national legislation – NHA status. Regionally important potable water source supplying >2500 homes. Quality Class A (Biotic Index Q4, Q5). Flood plain protecting more than 50 residential or commercial properties from flooding. Nationally important amenity site for wide range of leisure activities.
High	Attribute has a high quality or value on a local scale	Salmon fishery. Locally important potable water source supplying >1000 homes. Quality Class B (Biotic Index Q3-4). Flood plain protecting between 5 and 50 residential or commercial properties from flooding. Locally important amenity site for wide range of leisure activities.
Medium	Attribute has a medium quality or value on a local scale	Coarse fishery. Local potable water source supplying >50 homes. Quality Class C (Biotic Index Q3, Q2- 3). Flood plain protecting between 1 and 5 residential or commercial properties from flooding.
Low	Attribute has a low quality or value on a local scale	Locally important amenity site for small range of leisure activities. Local potable water source supplying <50 homes Quality Class D (Biotic Index Q2, Q1). Flood plain protecting 1 residential or commercial property from flooding. Amenity site used by small numbers of local people.

Table 4 Criteria for Rating Site Attributes – Estimation of Magnitude of Impact on Hydrological Attribute (NRA)

Magnitude of Impact	Criteria	Typical Examples
Large Adverse	Results in loss of attribute	Loss or extensive change to a waterbody or water dependent habitat. Increase in predicted peak flood level >100mm. Extensive loss of fishery. Calculated risk of serious pollution incident >2% annually. Extensive reduction in amenity value.
Moderate Adverse	Results in impact on integrity of attribute or loss of part of attribute	Increase in predicted peak flood level >50mm. Partial loss of fishery. Calculated risk of serious pollution incident >1% annually. Partial reduction in amenity value.
Small Adverse	Results in minor impact on integrity of attribute or loss of small part of attribute	Increase in predicted peak flood level >10mm. Minor loss of fishery. Calculated risk of serious pollution incident >0.5% annually. Slight reduction in amenity value.
Negligible	Results in an impact on attribute but of insufficient magnitude to affect either use or integrity	Negligible change in predicted peak flood level. Calculated risk of serious pollution incident <0.5% annually.
Minor Beneficial	Results in minor improvement of attribute quality	Reduction in predicted peak flood level >10mm. Calculated reduction in pollution risk of 50% or more where existing risk is <1% annually.
Moderate Beneficial	Results in moderate improvement of attribute quality	Reduction in predicted peak flood level >50mm. Calculated reduction in pollution risk of 50% or more where existing risk is >1% annually.

Magnitude of Impact	Criteria	Typical Examples
Major Beneficial	Results in major improvement of attribute quality	Reduction in predicted peak flood level >100mm

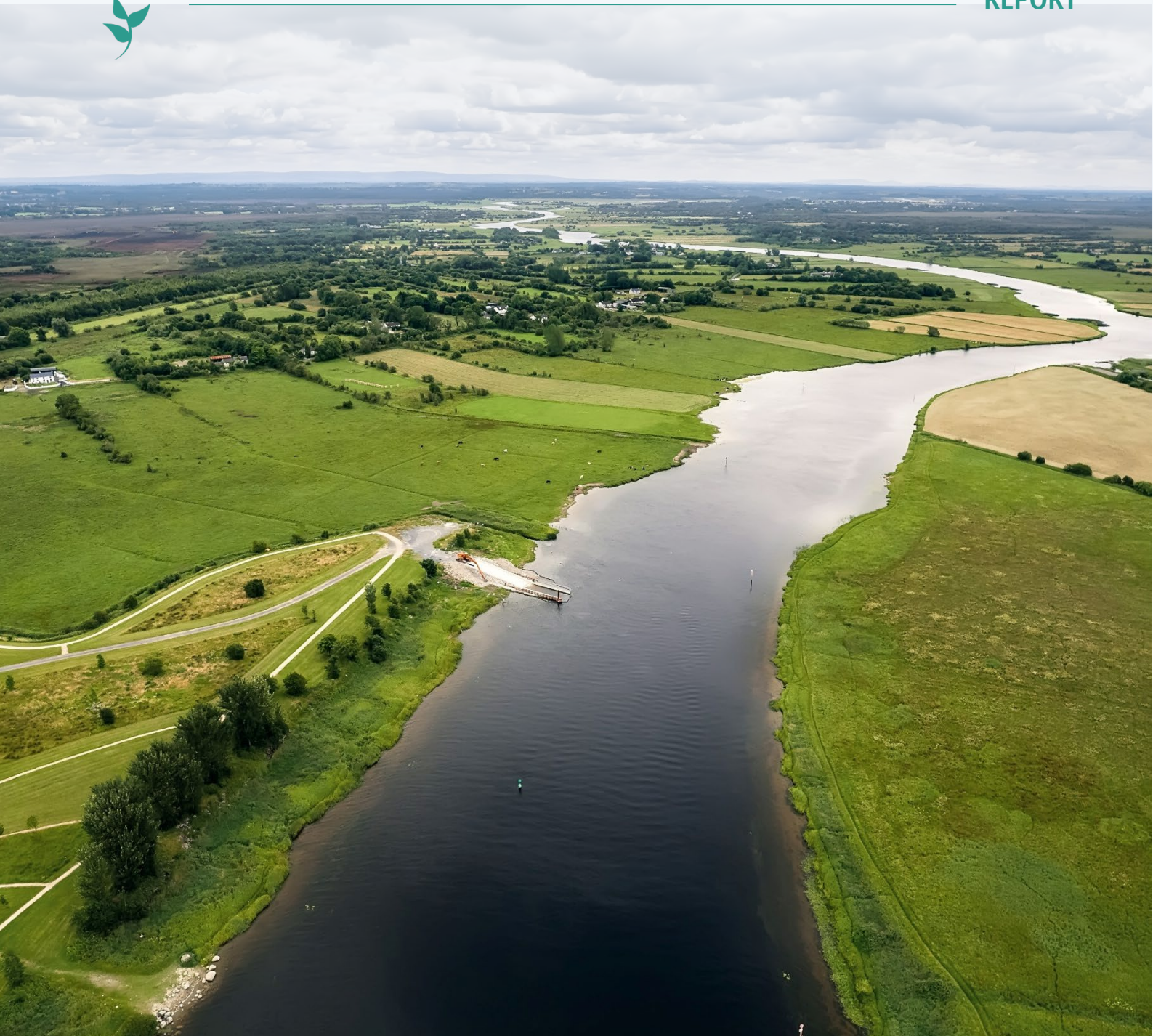
Table 5 Rating of Significant Environmental Impacts at EIS Stage (NRA)

Importance of Attribute	Magnitude of Importance			
	Negligible	Small Adverse	Moderate Adverse	Large Adverse
Extremely High	Imperceptible	Significant	Profound	Profound
Very High	Imperceptible	Significant/moderate	Profound/Significant	Profound
High	Imperceptible	Moderate/Slight	Significant/moderate	Profound/Significant
Medium	Imperceptible	Slight	Moderate	Significant
Low	Imperceptible	Imperceptible	Slight	Slight/Moderate

Appendix 10.3 Water Framework Directive (WFD) Assessment







Trinity
Consultants

awnconsulting

Water Framework Directive Assessment

Mooretown Lands Phase 2, Swords, Co. Dublin

CLIENT

Fingal County Council

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1. INTRODUCTION

1.1 Background

AWN Consulting Limited (AWN) has prepared this Water Framework Directive (WFD) Assessment to support the competent authority in determining whether the Proposed Development has the potential to give rise to significant effects on the WFD status of the receiving waterbodies. A full description of the Proposed Development is set out in Chapter 5 (Description of the Proposed Development) of the EIAR.

In summary, the Proposed Development comprises a residential development consisting of 360 no. residential units and a crèche, together with associated infrastructure and site development works. These works include internal roads, footpaths, car and bicycle parking, public and private open spaces, bin and bicycle stores, public lighting, landscaping/amenity areas, and all related surface water and foul drainage infrastructure. Vehicular access will be provided through the Phase 1 construction accesses currently under construction (Planning Ref. LADP/002/24), consistent with the permitted Mooretown development phasing strategy.

The Proposed Development lands extend to c. 14.75 ha and consists of two (2) no. distinct land parcels situated on the southern side of Rathbeale Road located on the western side of Swords, Co. Dublin. The northern parcel is directly bounded by the road, while the southern parcel lies immediately south and east of Phase 1 of the Mooretown development. The southern parcel is enclosed on three sides by existing and emerging residential development. The two parcels are separated by the Phase 1 lands, reflecting the planned, sequential build-out of the wider Mooretown strategic residential lands.

The surrounding environment is predominantly suburban to the east and south, characterised by established medium-density residential neighbourhoods, educational facilities, and a network of green spaces. To the west, the landscape transitions to a more semi-rural character, comprising open agricultural fields and areas of glasshouse horticulture, reflecting the historical land use of the wider Mooretown area.

This WFD Assessment has been prepared in response to the requirements of the Water Framework Directive 2000/60/EC. This WFD compliance document should be read in conjunction with Chapter 10 of the Environmental Impact Assessment Report (EIAR).

The objective of the assessment is to address the following:

- ▶ Does the development cause deterioration of a water body from its current status or potential for reaching "Good" status?
- ▶ Does the development impact on any water dependent protected areas, priority species, habitats etc.?
- ▶ Does the development support the achievement of water body objectives and programme of measures?

1.2 Experience of Authors

This report was prepared by Denis Power and Alan Wilson. Alan Wilson (BSc, AISEP) is an Environmental Consultant at AWN with over five years of professional experience in environmental assessment and consultancy. Alan holds a BSc (Hons) in Environmental Management in Agriculture and Environmental and Geographical Sciences. He has worked on a wide range of large-scale infrastructure and development projects, contributing to the preparation of Land, Soils, Geology and Hydrology & Hydrogeology Environmental Impact Assessment Reports (EIARs), site-specific Flood Risk Assessments (Stages 1 and 2), baseline environmental studies, hydrological and hydrogeological risk assessments, Water Framework Directive (WFD) assessments, assimilative capacity assessments, environmental sensitivity assessments and environmental due diligence assessments (Stages 1 and 2). Alan also has experience in supervising site investigations, as well as groundwater and surface water monitoring on operational developments and both greenfield and brownfield sites. Prior to his role at AWN, he gained additional experience within

ecology and forestry-related projects. Alan is a member of the International Association of Hydrogeologists (IAH), Irish Group, and holds Associate (AISEP) membership with the Institute of Sustainability and Environmental Professionals (ISEP).

Denis Power is a Junior Environmental Consultant with AWN Consulting with ongoing roles within the water department. Denis has a BSc in Environmental Management and planning from Dublin Technical University and has studied in Utrecht University's Earth surface and water master's programme. Denis has worked on a range of projects including ground and surface water monitoring and sampling, environmental impact assessment reports, hydrological risk assessments, lake abstraction assessments and QGIS mapping. Denis is a member of the International Association of Hydrogeologists (Irish Group).

1.3 Source of Information

Desk-based hydrological and hydrogeological information in the vicinity of the site was obtained through accessing databases and other archives where available. Data was sourced from the following:

- ▶ Geological Survey of Ireland- online mapping (GSI, 2026).
- ▶ GSI - Geological Heritage Sites & Sites of Special Scientific Interest.
- ▶ Ordnance Survey of Ireland (OSI).
- ▶ Teagasc subsoil database.
- ▶ National Parks and Wildlife services (NPWS, 2026).
- ▶ Environmental Protection Agency (EPA) – website mapping and database information. Envision water quality monitoring data for watercourses in the area.
- ▶ WFD Cycle 2 – Nanny-Delvin Catchment Report – Sub-Catchment - Broadmeadow_SC_010 (EPA, 2018).
- ▶ WFD Cycle 3 – HA 08 Nanny-Delvin Catchment Report (EPA, 2024).
- ▶ Water Action Plan 2024 - A River Basin Management Plan for Ireland, (Department of Housing Local Government & Heritage, Sept 2024).
- ▶ The Planning System and Flood Risk Management, Guidelines for Planning Authorities (Department of the Environment, Heritage and Local Government (DoEHLG) and the Office of Public Works (OPW)).
- ▶ Office of Public Works (OPW) flood mapping data (www.floodmaps.ie)

Site specific data was derived from the following sources:

- ▶ Various design site plans and drawings, as submitted with this planning application.
- ▶ Infrastructure Report - Residential Development on Lands at Mooretown, Swords or Fingal County Council (AKM, February 2026).
- ▶ Construction & Environmental Management Plan (CEMP) – Mooretown Phase 2 – Fingal County Council (AKM, March 2026).
- ▶ Surface Water Management Plan (SWMP) – Mooretown Phase 2 – Fingal County Council (AKM, March 2026)
- ▶ Consultation with design engineers.

The principal attributes (and effects) assessed include the following:

- ▶ Water Framework Directive (WFD) Status and potential for increased risk of deterioration of this status due to the activities of the site.
- ▶ River and aquifer water quality in the vicinity of the site (where available).
- ▶ Surface, transitional and coastal watercourses near the site and potential impact on surface water quality arising from Proposed Development related works including any discharge of surface water run-off.
- ▶ Localised flooding (potential increase or reduction) and floodplains including benefitting lands and drainage districts (if any); and
- ▶ Surface water features within the area of the site.

- ▶ High-yielding water supply springs/ wells in the vicinity of the site to within a 2km radius and the potential for increased risk presented by the Proposed Development.
- ▶ Classification (regionally important, locally important etc) and extent of aquifers underlying the site perimeter area and increased risks presented to them by the Proposed Development e.g. removal of subsoil cover, removal of aquifer (in whole or part), drawdown in water levels, alteration in established flow regimes, change in groundwater quality.
- ▶ Natural hydrogeological/ karst features in the area and potential for increased risk presented by the activities at the site; and,
- ▶ Groundwater-fed ecosystems and the increased risk presented by operations both spatially and temporarily.

Relevant legislation and guidance is as follows:

- ▶ European Communities 920030, Common Implementation Strategy for the Water Framework Directives (2000/60/EC) Guidance Document No.2.
- ▶ EPA (May 2015), An approach to characterisation as part of the Water Framework Directive V2 revised.
- ▶ EPA (2010) Methodology for Establishing Groundwater Threshold Values, the Assessment of Chemical and Quantitative Status for Groundwater and Groundwater Trends.
- ▶ Common Implementation Strategy (CIS) (2017) Guidance Document No. 36 'Exemptions to the environmental objectives according to Article 4(7) provides comprehensive guidance on the application of Article 4(7).
- ▶ Joint Assistance to Support Projects in European Regions (JASPERS) (2018) Water Framework Directive Project assessment checklist tool.
- ▶ UKTAG (2012) Groundwater Chemical Classification for the Water Framework Directive. Paper 11b(i).
- ▶ UK Technical Advisory Group on the Water Framework Directive.
- ▶ UKTAG (2012) Groundwater Quantitative Classification for the Water Framework Directive. Paper 11b(ii), UK Technical Advisory Group on the Water Framework Directive.
- ▶ Inland Fisheries Ireland (IFI) – A Guideline on Planning for Watercourses in the Urban Environment.

This WFD assessment was based on desktop review of the Environmental Protection agency (EPA) and Local Authority Waters Programme water quality records which were obtained from the portal www.catchments.ie (accessed in March 2026). From the aforementioned source of information, the WFD Status classification and Risk score were obtained for the identified water bodies.

1.4 Site Setting and WFD General Screening

AWN Consulting Limited (AWN) has prepared this Water Framework Directive (WFD) Assessment report on behalf of the Applicant to support the assessment of potential impacts associated with the Proposed Development at Mooretown, Swords, Co. Dublin. The Proposed Development comprises a Large-scale Residential Development (LRD) consisting of 360 no. residential units and a crèche, along with all associated infrastructure, landscaping and services across two (2) no. distinct development parcels.

According to EPA mapping (2026), the Proposed Development is located within the Nanny-Delvin Catchment (Catchment ID: 08) and the Broadmeadow_SC_010 Sub-Catchment. The site lies within the Broadmeadow Water Management Unit (WMU), which forms part of the Broadmeadow River catchment. Hydrological connectivity is present between the Proposed Development site and a network of local surface water features, including several drainage ditches and small watercourses that traverse or bound both parcels of the Proposed Development.

This WFD Screening has identified three (3) no. WFD surface waterbodies and one (1) no. WFD groundwater body of potential relevance, due to their proximity to the Proposed Development and the hydrological connections established via the existing drainage network. These include the Broadmeadow_040 WFD river waterbody, the Broadmeadow Water transitional waterbody and Malahide Bay coastal waterbody. The Swords groundwater body (GWB) underlies the Proposed Development.

The potential water bodies are listed in Table 1-1 below which also presents the most recent WFD Status and Risk Score for these waterbodies.

Table 1-1. Current WFD Status and Risk Score of the relevant waterbodies

Waterbody Name/European Code	EPA Name(s)	Type	WFD Status (2019-2024)	3rd Cycle Risk Score	Location
BROADMEADOW_040 (IE_EA_08B020800)	Newtown 08 Mooretown 09 Broadmeadow 08	River(s)	Poor	At Risk	On-Site / Downstream
Broadmeadow Water (IE_EA_060_0100)	Broadmeadow Water	Transitional	Moderate	At Risk	c. 4 km Downstream
Malahide Bay (IE_EA_060_0000)	Malahide Bay	Coastal	Moderate	At Risk	c. 7.5 km Downstream
Swords (IE_EA_G_011)	Swords	Groundwater	Good	Not at Risk	Underlying

1.5 Legislation and Guidance

The Water Framework Directive (WFD) 2000/60/EC aims to protect and enhance the quality of the water environment (both surface water and groundwater) across all European Union member states. The WFD was transposed into Irish law by the European Communities (Water Policy) regulations 2003 (S.I. No 722 of 2003). The WFD requires that EU Member States achieve at least “Good” status for all water bodies by the year of 2027 at the latest. Additionally, where Member States assign “High” status objectives to water bodies, the “High” status must be achieved or maintained by 2027.

The concept of ‘deterioration of the status’ of a body of surface water in Article 4(1)(a)(i) of Directive 2000/60 is interpreted as meaning that there is deterioration as soon as the status of at least one of the quality elements, within the meaning of Annex V to the directive, falls by one class, even if that fall does not result in a fall in classification of the body of the surface water as a whole. However, if the quality element concerned, within the meaning of that annex, is already in the lowest class, any deterioration of that element constitutes a ‘deterioration of the status’ of a body of surface water, within the meaning of Article 4(1)(a)(i).

As part of the WFD implementation process the EPA completes a risk assessment and the outcomes are implemented through River Basin Management Plans (RBMPs) in six-year cycles. Ireland is currently in WFD third cycle 2022-2027 i.e. Water Action Plan 2024 - A River Basin Management Plan for Ireland, (Department of Housing Local Government & Heritage, Sept 2024). Waterbodies are either “At Risk” or “Not at Risk” of meeting WFD environmental objectives. Where a waterbody is “At Risk”, the EPA determines the significant pressures that are placing the water body at risk of meeting its status objective. This determination focuses the Programme of Measures for the relevant subcatchment(s).

The primary aim of the RBMP is that water bodies identified as being ‘At Risk’ of not achieving their WFD environmental objectives need to have targeted measures implemented to achieve objectives under this Plan. The EPA determines the significant pressures that are placing the water body at risk of meeting its status objective. This determination focuses the programme of Measures for the relevant subcatchment(s).

As part of its role, the EPA and other stakeholders such as local authorities must consider whether proposals for new developments (other than where exemptions apply Article 4.4 - 4.7 of the WFD) have the potential to:

- ▶ Cause a deterioration of a water body from its current status or potential; and/ or
- ▶ Prevent future attainment of good status or potential where not already achieved.

As a result, new developments that have the potential to impact on current or predicted WFD status are required to assess their compliance against the WFD objectives of the potentially affected water bodies.

1.6 Methodology

This WFD assessment is based on desktop review of the Environmental Protection Agency (EPA) dataset which was obtained from the portal www.catchments.ie (accessed in March 2026).

The water bodies identified for this assessment are related to the vicinity of the Proposed Development and its direct or indirect hydrological or hydrogeological connection. From the aforementioned source of information, the WFD Status classification, and Risk score were obtained for the identified water bodies and are presented in Table 1-1 above.

Besides the status classification of water bodies, the WFD also requires that 'designated sites' meet their environmental requirements and conservation objectives. Designated sites are Natura 2000 sites (Special Areas of Conservation, SACs, with water-dependent habitats, and Special Protection Areas for species listed in the EU Habitats Directive); drinking water protected areas; bathing waters; shellfish waters; salmonid waters; and nutrient sensitive waters. Environmental requirements and conservation objectives for designated sites are stipulated in existing regulations or are being developed by the relevant public bodies (e.g., National Parks and Wildlife Service for SACs).

1.6.1 WFD Risk Status

The WFD Risk score is the risk for each waterbody of failing to meet their WFD objectives by 2027. The risk of not meeting WFD objectives has been determined by assessment of monitoring data, data on the pressures and data on the measures that have been implemented. Waterbodies that are At Risk are prioritised for implementation of measures. This assessment was completed in 2020 by the EPA Catchments Unit in conjunction with other public bodies and was primarily based on monitoring data up to the end of 2018.

The three risk categories are:

- ▶ Waterbodies that are 'At Risk' of not meeting their Water Framework Directive objectives. For these waterbodies an evidence-based process was undertaken to identify the significant pressures; once a pressure is designated as 'significant', measures and accompanying resources are needed to mitigate the impact(s) from this pressure. These 'At Risk' waterbodies require not only implementation of the existing measures described in the various regulations, e.g., the Good Agricultural Practices Regulations, but also in many instances more targeted supplementary measures.
- ▶ Waterbodies that are categorised as 'Review' either because additional information is needed to determine their status before resources and more targeted measures are initiated or the measures have been undertaken, e.g., a wastewater treatment plant upgrade, but the outcome hasn't yet been measured/monitored.
- ▶ Waterbodies that are 'Not at Risk' and therefore are meeting their Water Framework Directive objectives. These require maintenance of existing measures to protect the satisfactory status of the water bodies.

1.6.2 WFD Water Body Status

Surface water body status is classified by the EPA on the basis of chemical and ecological status or potential. This system is summarised in Appendix A Figure 1. Under the WFD, groundwater body status is classified on the basis of quantitative and chemical status. This system is summarised in Appendix A Figure 2.

1.6.3 Surface Water No Deterioration Assessment

Table 1-2 below presents the matrix used to assess the effect of the Proposed Development on surface water status or potential class. It ranges from a major beneficial effect (i.e., a positive change in overall WFD status) through no effect to deterioration in overall status class. The colour coding used in Table 1-2 is applied to the 'No Deterioration Assessment' spreadsheet provided in Appendix B of this report.

Table 1-2. Surface Water Assessment Matrix

Effect	Description/ Criteria	Outcome
Major Beneficial	Impacts that taken on their own or in combination with others have the potential to lead to the improvement in the ecological status or potential of a WFD quality element for the entire waterbody	Increase in status of one or more WFD element giving rise to a predicted rise in status class for that waterbody.
Minor/ localised beneficial	Impacts when taken on their own or in combination with others have the potential to lead to a minor localised or temporary improvement that does not affect the overall WFD status of the waterbody or any quality elements	Localised improvement, no change in status of WFD element
No Impact	No measurable change to any quality elements.	No change
Localised / temporary adverse effect	Impacts when taken on their own or in combination with others have the potential to lead to a minor localised or temporary deterioration that does not affect the overall WFD status of the waterbody or any quality elements. Consideration will be given to habitat creation measures.	Localised deterioration, no change in status of WFD element when balanced against mitigation measures embedded in the project.
Adverse effect on class of WFD element	Impacts when taken on their own or in combination with others have the potential to lead to the deterioration in the WFD status class of one or more biological quality elements, but not in the overall status of the waterbody. Consideration will be given to habitat creation measures.	Decrease in status of WFD element when balanced against positive measures embedded in the project.
Adverse effect on overall WFD class of waterbody	Impacts when taken on their own or in combination with others have the potential to lead to the deterioration in the ecological status or potential of a WFD quality element, which then lead to a deterioration of status/potential of waterbody.	Decrease in status of overall WFD waterbody status when balanced against positive measures embedded in the project.

1.6.4 Groundwater No Deterioration Assessment

Table 1-3 below presents the matrix used to assess the effect of the Proposed Development on groundwater status class. It ranges from a beneficial effect but no change in status to deterioration in overall status class. The colour coding used in Table 1-3 is applied to the final 'No Deterioration Assessment' spreadsheet in Appendix B of this report.

Table 1-3. Groundwater Assessment Matrix

Magnitude of Impact of the Proposed Development on WFD Element	Effect on WFD Element within the assessment boundary	Effect on Status of WFD element at the Groundwater Body Scale
Impacts lead to beneficial effect	Combined impacts have the potential to have a beneficial effect on the WFD element.	Improvement but no change to status of WFD element
No measurable change to groundwater levels or quality.	No measurable change to WFD elements.	No change and no deterioration in status of WFD element
Impacts when taken on their own have the potential to lead to a minor localised or temporary effect	Combined impacts have the potential to lead to a minor localised or temporary adverse effect on the WFD element.	Combined impacts have the potential to lead to a minor localised or temporary effect on the WFD element. No change to status of WFD element and no significant deterioration at groundwater body scale.
Impacts when taken on their own have the potential to lead to a widespread or prolonged effect.	Combined impacts have the potential to have an adverse effect on the WFD element.	Combined impacts have the potential to have an adverse effect on the WFD element, resulting in significant deterioration but no change in status class at groundwater body scale.
Impacts when taken on their own have the potential to lead to a significant effect.	Combined impacts in combination with others have the potential to have a significant adverse effect on the WFD element.	Combined impacts in combination with others have the potential to have an adverse effect on the WFD element AND change its status at the groundwater body scale

1.6.5 Assessment against Future Status Objectives

River Basin Management Plans are used to outline water body pressures and the actions that are required to address them. The future status objective assessment considers the ecological and chemical potential of a surface water body and the mitigation measures stated in the River Basin Management plans that defined the ecological and chemical potential. Assessments are based on the project (including mitigation measures) risks (construction and operation) with regard to the objectives for achieving good status as set out in the 3rd Cycle RBMP 2022-2027 i.e. Water Action Plan 2024. The assessment considers whether the Proposed Development has the potential to prevent the implementation or impact the effectiveness of the defined measures in these plans.

2. DESCRIPTION OF HYDROLOGICAL AND HYDROGEOLOGICAL ENVIRONMENT

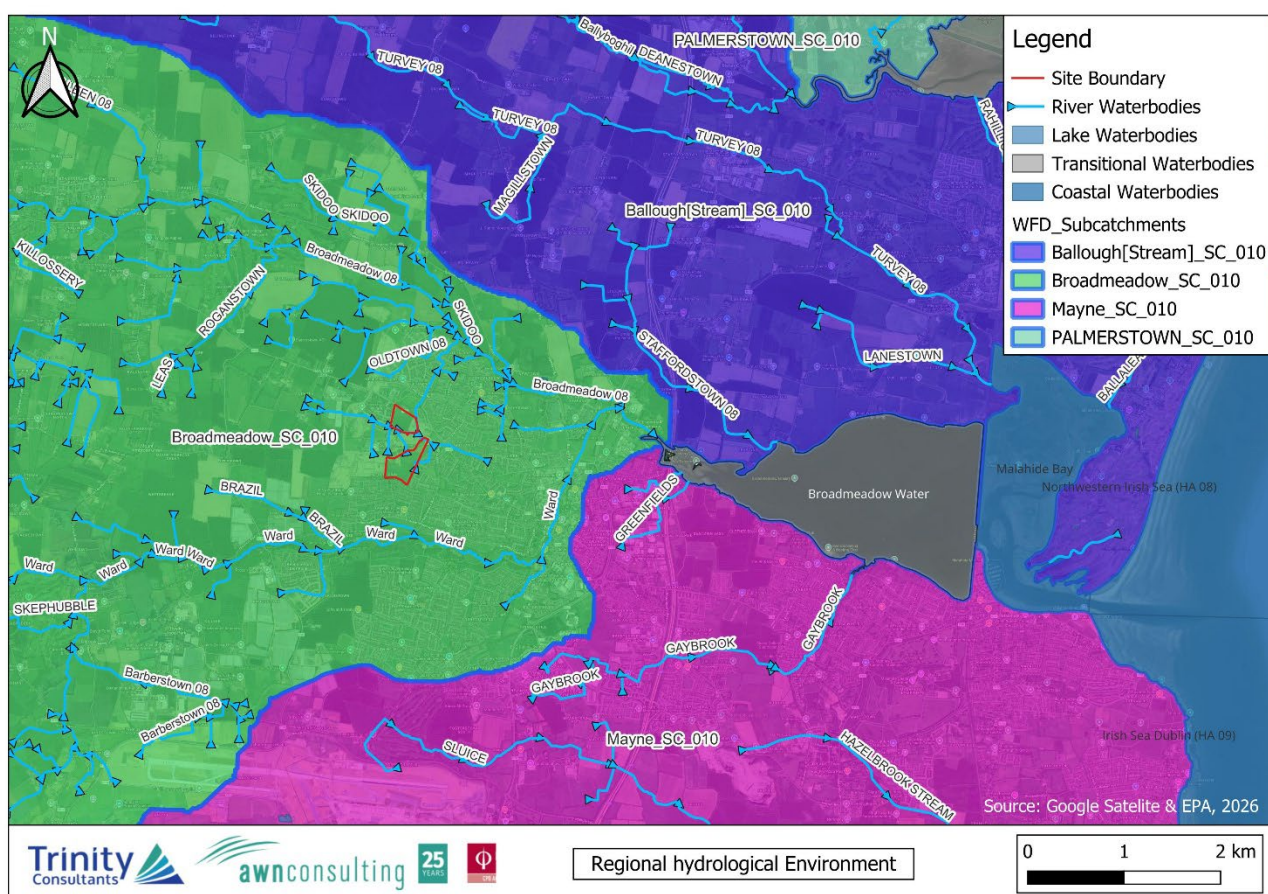
2.1 Hydrology

2.1.1 Regional Hydrological Environment

The Proposed Development is located within the former Eastern River Basin District (ERBD) (now the Irish River Basin District), as defined under the European Communities Directive 2000/60/EC, establishing a framework for community action in the field of water policy - this is commonly known as the Water Framework Directive (WFD). According to EPA Maps, the site lies within the Nanny-Delvin Catchment (Catchment ID: 08) and the Broadmeadow_SC_010 Sub-Catchment (Sub-Catchment ID: 08_3). According to EPA mapping, the Proposed falls under Nanny-Delvin Hydrometric Area the Irish River Network. It lies within the IE_EA_Broadmeadow Water Management Unit (WMU).

Figure 2.1 below presents the Proposed Development location and regional hydrological environment as per the latest EPA mapping.

Figure 2-1. Regional Hydrological Environment (EPA, 2026)



2.1.2 Local Hydrological Environment

According to EPA mapping (2026), there are several drainage ditches and streams that traverse and bound the southern and northern parcels of the Proposed Development. The southern parcel contains a drainage ditch that traverses the centre of the site from west to east/east to west. This drainage ditch appears to

be hydrologically connected to the Newtown 08 river(European Code: IE_EA_08B020800) located along the eastern boundary of the northern parcel, commonly referred to as the Mooretown Water.

Site topography falls from approximately 40 m AOD in the south-west to approximately 24 m AOD to the north, with localised low points associated with existing drainage ditches.

As stated above, the drainage ditch traverses the southern parcel from west to east/east to west and is connected to two (2) no. unnamed EPA river waterbodies located to the immediate east and north-west of the southern parcel, respectively. The eastern unnamed waterbody flows north through a residential area and appears to be culverted for most of its route, before discharging to another unnamed waterbody c. 400 m downstream of where it exits the southern parcel. This unnamed waterbody discharges to the Newtown 08 river along the eastern boundary of the northern parcel.

The unnamed waterbody along the north-western boundary of the southern parcel appears to originate where the drainage ditch intersects the western boundary. This waterbody flows north and is also largely culverted beneath the Baile na Móna residential area, before discharging to the Newtown 08 river along the southern boundary of the northern parcel. The Mooretown 09 river is located along the western boundary of the Phase 1 wider Mooretown development (Planning Ref. LADP/002/24), i.e. north of the southern parcel and south of the northern parcel and discharges to the Newtown 08 along the southern boundary of the northern parcel.

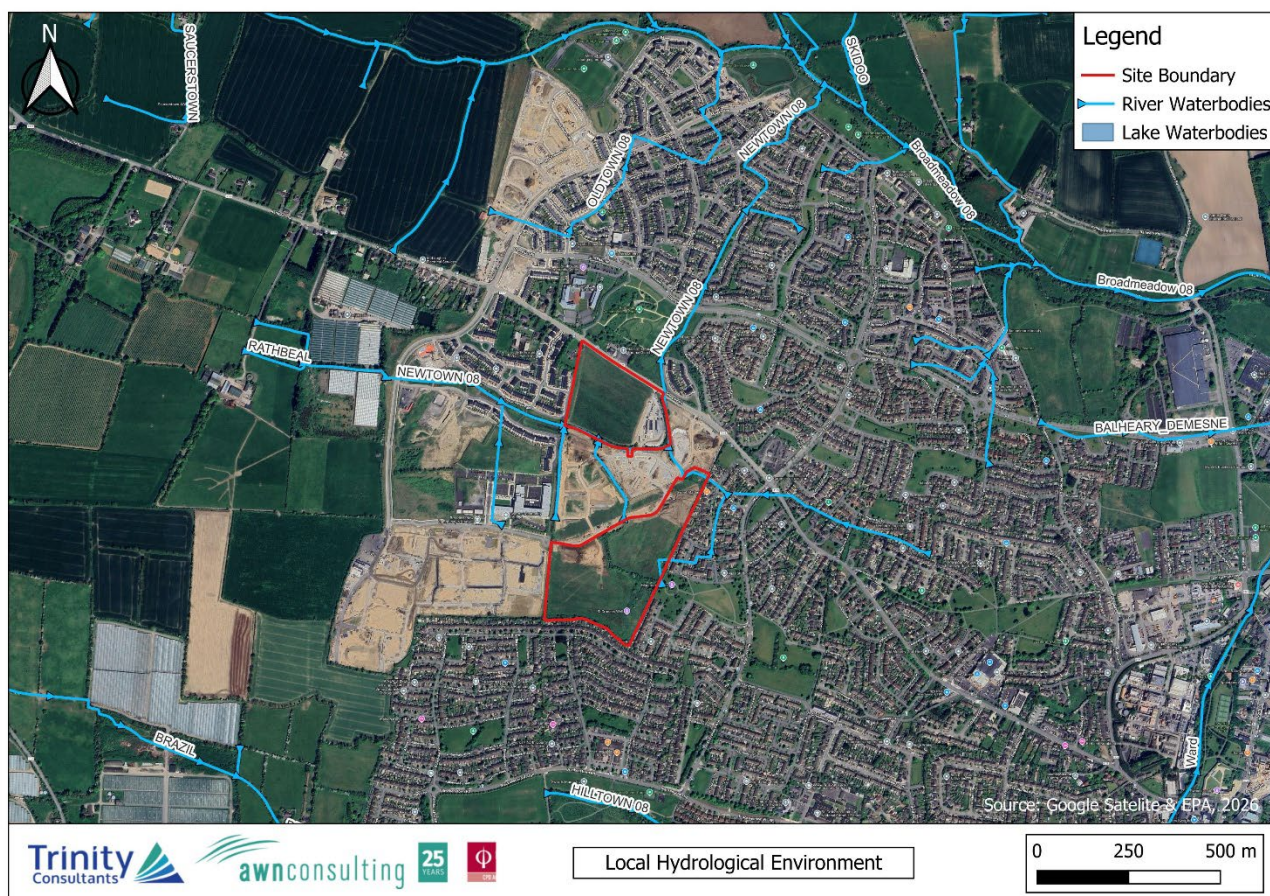
The Newtown 08 river flows along the southern and eastern boundary of the northern parcel of the Proposed Development, establishing hydrological connectivity between both parcels. From here, the Newtown 08 flows north before discharging into the Broadmeadow 08 (Broadmeadow River) approximately 1.4 km downstream / c. 1.1 km north of the northern parcel of the Proposed Development.

It should be noted that all of the aforementioned river waterbodies belong to the Broadmeadow_040 WFD river waterbody.

The Broadmeadow 08 river flows in an easterly direction before discharging to the Broadmeadow Water Transitional Waterbody (European Code: IE_EA_060_0100) c. 4 km downstream / c. 2.6 km east of the Proposed Development. A further 3.5 km downstream, the Broadmeadow Water transitional waterbody discharges to the Malahide Bay coastal waterbody (European Code: IE_EA_060_0000).

Refer to Figure 2-2 below for the local hydrological environment in the context of the Proposed Development.

Figure 2-2. Local Hydrological Environment (EPA, 2026)



2.1.3 Surface Water Quality

The Proposed Development lies within the Nanny-Delvin Catchment (Catchment ID: 09) and the Broadmeadow_SC_010 Sub-Catchment (Sub-Catchment ID: 08_3).

The Broadmeadow_040 WFD river waterbody (which hosts the aforementioned river waterbodies; refer to Section 10.3.2.2) is classified as having a 'Poor' status for the WFD period 2019–2024, with a current risk score 'At Risk' of not achieving good status for the 3rd Cycle i.e. by 2027. Its overall ecological status is poor, reflecting deficits in biological and habitat quality, while chemical status also fails to meet good standards, likely due to elevated priority pollutants common in urban catchments. Hydromorphology is significantly impacted by altered channel morphology and habitat degradation, contributing to the poor ecological outcome. The main pressures on Broadmeadow_040 are associated with agriculture and Hydromorphology sources, particularly farmyards and channelisation, respectively, as reported in the WFD Cycle 2 Sub-Catchment Assessment Report on the Broadmeadow_SC_010 Sub-Catchment (EPA, December 2018). These findings are consistent with the Cycle 3 Nanny-Delvin Catchment Report (HA08, EPA, May 2024), which highlights ongoing concerns about nutrient enrichment and hydromorphological alterations.

The Broadmeadow Water transitional waterbody is classified as having a 'Moderate' status for the WFD period 2019–2024, with a current risk score 'At Risk' of not achieving good status for the 3rd Cycle i.e. by 2027. Its overall ecological status is moderate, reflecting deficits in biological and habitat quality, while chemical status also fails to meet good standards, likely due to elevated priority pollutants common in urban catchments. The main pressures on Broadmeadow Water transitional waterbody are associated with domestic wastewater and urban wastewater sources, particularly wastewater discharge and agglomeration PE > 10,000, respectively, as reported in the WFD Cycle 2 Sub-Catchment Assessment Report on the

Broadmeadow_SC_010 Sub-Catchment (EPA, December 2018). These findings are consistent with the Cycle 3 Nanny-Delvin Catchment Report (HA08, EPA, May 2024), which highlights ongoing concerns about nutrient enrichment and organics associated with urban wastewater and DWTS.

Malahide Bay coastal waterbody is classified as having a 'Moderate' status for the WFD period 2019–2024, with a current risk score 'At Risk' of not achieving good status for the 3rd Cycle i.e. by 2027. Its overall ecological status is moderate, reflecting deficits in biological and habitat quality, while chemical status achieved a high status. The main pressures on Malahide Bay coastal waterbody are associated urban wastewater sources as reported in the Cycle 3 Nanny-Delvin Catchment Report (HA08, EPA, May 2024), which highlights ongoing concerns about nutrient enrichment and organics associated with urban wastewater.

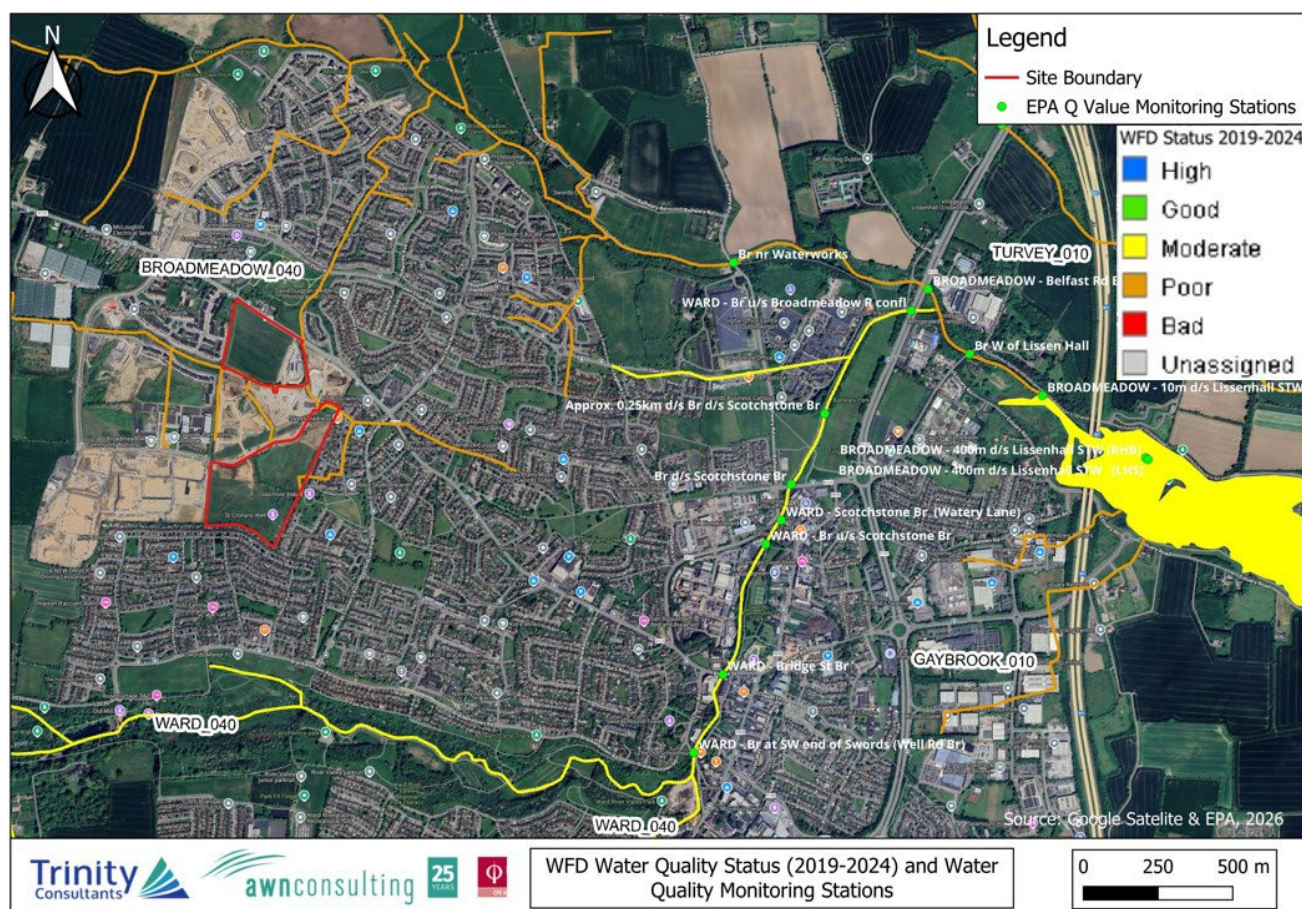
Surface water quality is monitored periodically by the EPA at various regional locations along with principal and other smaller watercourses. The EPA assess the water quality of rivers and streams across Ireland using a biological assessment method, which is regarded as a representative indicator of the status of such waters and reflects the overall trend in conditions of the watercourse. The biological indicators range from Q5 - Q1. Level Q5 denotes a watercourse with good water quality and high community diversity, whereas Level Q1 denotes very low community diversity and bad water quality.

In relation to the Proposed Development, there are no EPA water quality monitoring stations located upstream or downstream within the Broadmeadow_040 WFD river waterbody. The nearest (active) surface waterbody EPA water quality monitoring station is 'Br d/s Scotchstone B' (Station Code: RS08W010610), located approximately 1.6km to the east in the Ward River i.e. Ward_040 WFD river waterbody (European Code: IE_EA_08W010610). Although there is no hydrological connection between this EPA water quality monitoring station and the Proposed Development, it is located within the same WFD sub-catchment i.e. Broadmeadow_SC_010.

The water quality at this station was classified by the EPA as 'Q3-4 - Moderate', based on data obtained by the EPA in 2024. This 'Moderate' status is in relation to the waterbody's ecological status or potential supporting chemistry conditions.

The locations of the EPA Q Value monitoring stations and the WFD river waterbody status (WFD Period: 2019-2024) are presented in Figure 2-3 below.

Figure 2-3 Surface Waterbody Status (WFD: 2019-2024) and EPA River Monitoring Stations (EPA, 2026)



2.1.4 Areas of Conservation

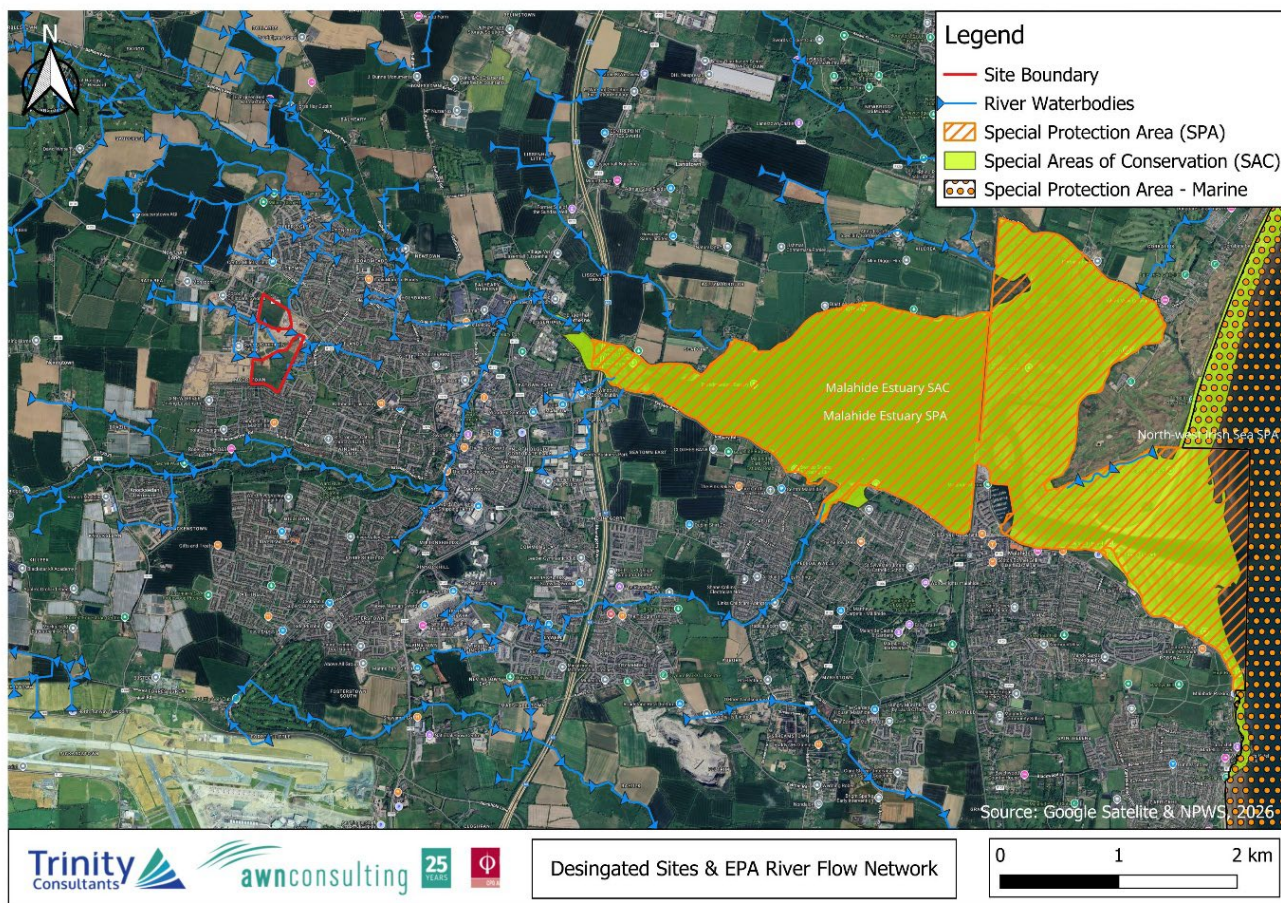
The Environmental Protection Agency (EPA) and National Parks and Wildlife Service (NPWS) (2026) online databases have been reviewed to identify designated conservation sites within or near the Proposed Development. This review confirms that there are no Special Protection Areas (SPAs) established under the EU Birds Directive (79/409/EEC), no Special Areas of Conservation (SACs) established under the EU Habitats Directive, and no Natural Heritage Areas (NHAs) or proposed NHAs (pNHAs) designated under the Wildlife Acts 1976–2000 (as amended) located on or within the boundary of the Proposed Development.

At a broader regional scale, the nearest Natura 2000 sites occur within the Broadmeadow Water transitional waterbody and the Malahide Bay coastal waterbody, both of which support the Malahide Estuary SPA (Site Code: 004025), SAC, (Site Code :000205) and pNHA (Site Code: 000205). Along the Malahide coastline at Donabate Beach, the North-West Irish Sea SPA (Site Code: 004236) is also present; however, this SPA lies along the exposed Irish Sea coastline, outside the hydrodynamic influence of the Broadmeadow transitional system, and therefore no hydrological connectivity exists between the Proposed Development and this site.

Given the significant separation distance, the dilution capacity along the downstream hydrological pathway, and the absence of a direct hydrological linkage between the Proposed Development and these designated coastal and transitional waterbodies, the Proposed Project is unlikely to have any hydrological connection to the relevant SACs, SPAs, or NHA.

Refer to Figure 2-4 below for the spatial context of these designated sites relative to the Proposed Development. Further assessment is provided in Chapter 8 – Biodiversity of the EIA.

Figure 2-4 Areas of Conservation and Regional Hydrological Environment (EPA and NPWS, 2026)



2.1.5 Bathing Waters and Recreational Waterbodies

A review of the Environmental Protection Agency's (EPA) online mapping that includes the Register of Protected Areas (RPA) under the Water Framework Directive (WFD) has shown that there are no Recreational Waters or Bathing Waterbodies located in the vicinity of, or downstream of the Proposed Development. The nearest designated bathing waters are:

- ▶ Portmarnock, Velvet Strand Beach, located approximately 8.6km southeast of the Proposed Development. This is a long, gently sloping, east facing beach and is an EPA designated bathing water.
- ▶ Donabate, Balcarrick Beach, located approximately 8.3km north-east of the Proposed Development. This is a southeast facing sandy beach designated as a bathing water by the EPA.

These bathing waters are located within the Irish Sea Dublin (Hydrometric Area 09) and the Northwestern Irish Sea (Hydrometric Area 08), respectively. As confirmed through EPA hydrological datasets and RPA mapping, no hydrological connection exists between the Proposed Development site and these coastal bathing waterbodies.

2.1.6 Water Supplies

A review of the Environmental Protection Agency's (EPA) online mapping, which includes the Register of Protected Areas (RPA) established under the Water Framework Directive (WFD), indicates the Broadmeadow_040 WFD river waterbody is not located within a designated Surface Water Drinking RPA.

This classification of drinking water river lines has been delineated in accordance with the European Communities (Drinking Water) (No. 2) Regulations 2007 (SI No. 278/2007). This regulatory framework aims to ensure the protection of water resources utilised for human consumption, thus safeguarding public health and the environment.

2.1.7 Water Infrastructure

There are no existing water infrastructure assets currently within the Proposed Development site.

2.2 Hydrogeology

2.2.1 Regional Groundwater Quality

The Proposed Development is underlain entirely by the Swords Groundwater Body (GWB) (European Code: IE_EA_G_011), which currently holds a Water Framework Directive (WFD) status of 'Good' for the period 2019-2024. The WFD risk score for the third cycle is presently classified as 'Not at Risk'. This status reflects compliance with both quantitative and chemical groundwater conditions.

It should be noted that no groundwater samples or analysis was undertaken during the ground investigations carried out by Site Investigations Ltd (SIL) in April 2024.

2.2.2 Aquifer Classification and Vulnerability

The GSI has devised a system for classifying the bedrock aquifers in Ireland. The aquifer classification for bedrock depends on a number of parameters including, the area extent of the aquifer (km²), well yield (m³/d), specific capacity (m³/d/m) and groundwater throughput (mm³/d). There are three main classifications: regionally important, locally important and poor aquifers. Where an aquifer has been classified as regionally important, it is further subdivided according to the main groundwater flow regime within it. This sub-division includes regionally important fissured aquifers (Rf) and regionally important karstified aquifers (Rk). Locally important aquifers are sub-divided into those that are generally moderately productive (Lm) and those that are generally moderately productive only in local zones (LI). Similarly, poor aquifers are classed as either generally unproductive except for local zones (PI) or generally unproductive (Pu).

The bedrock aquifer underlying the Proposed Development, according to the GSI National Bedrock Aquifer Map, is the Tober Colleen formation which is classified as a 'PI - Poor Aquifer – Bedrock which is generally unproductive except for local zones'. This aquifer type typically has low permeability and limited groundwater storage, providing only small, localised yields. Groundwater flow is generally restricted to isolated fractures, meaning that connectivity, recharge potential, and the potential for contaminant migration are all low and confined to very local scales.

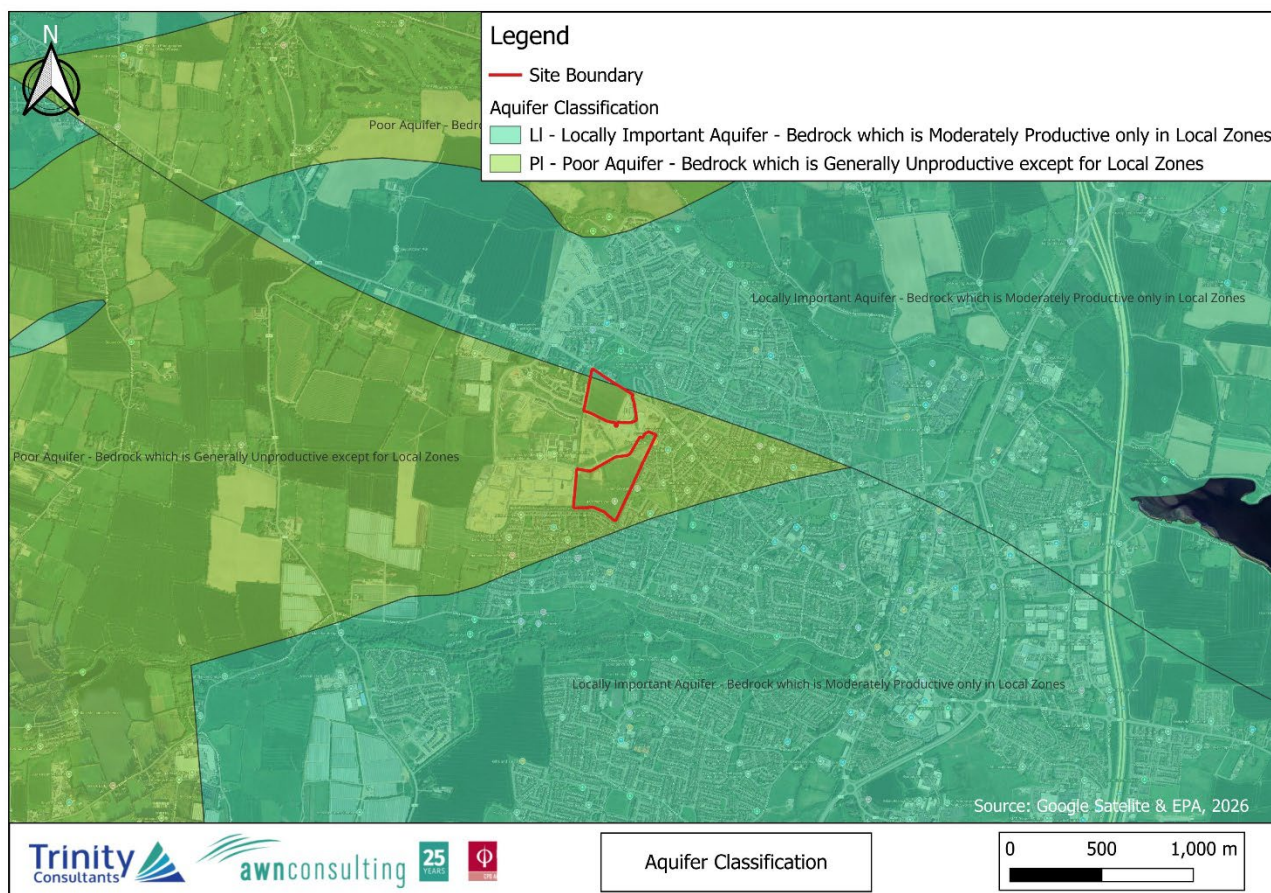
The northern plot of the Proposed Development is bounded to the north by the Malahide formation which is a 'Locally Important Aquifer - Bedrock which is Moderately Productive only in Local Zones (LI)'. These aquifers can support smaller public or group water supplies but still exhibit limited permeability and low regional connectivity. The potential for significant vertical or lateral migration of groundwater within this aquifer is limited to local zones of enhanced fracturing.

The GSI mapping does not identify any structural faults beneath the site, further reducing the likelihood of preferential pathways for groundwater movement

The Proposed Development is underlain entirely by the Swords Groundwater Body (GWB) (European Code: IE_EA_G_011), which currently holds a Water Framework Directive (WFD) status of 'Good' for the period 2019-2024. The WFD risk score for the third cycle is presently classified as 'Not at Risk'. This status reflects compliance with both quantitative and chemical groundwater conditions.

Refer to Figure 2-5 below for the aquifer classification in the region of the Proposed Development site.

Figure 2-5. Aquifer Classification (GSI, 2026)



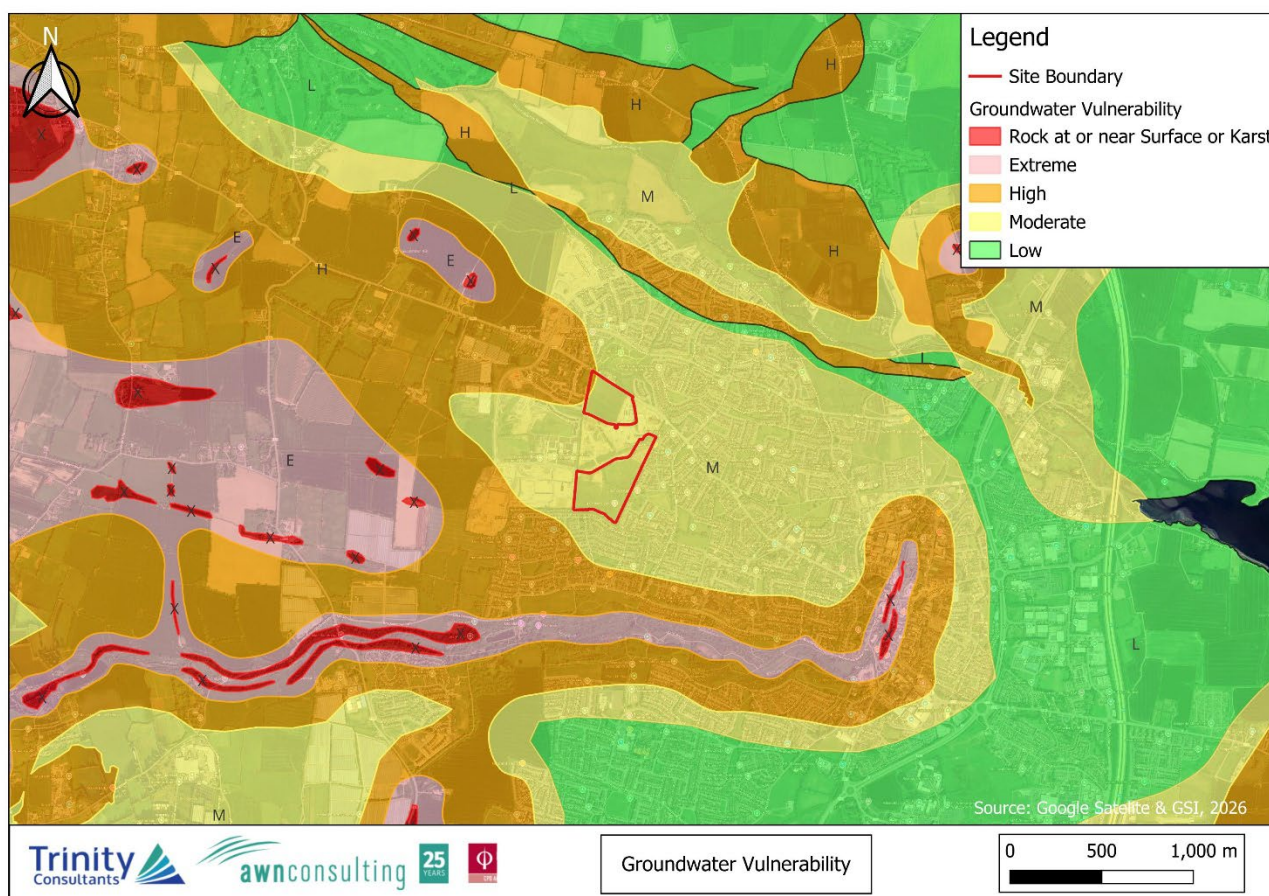
Groundwater vulnerability is an indication of how easily the aquifer can become contaminated by human activity. It is dependent on the thickness and permeability of the overlying soils and depth to the water table. For example, a bedrock aquifer with minimal thickness of overburden or with a thin layer of permeable overburden will be more vulnerable to contamination than a bedrock aquifer which has a thick layer of low permeability overburden. Extreme groundwater vulnerability is also associated with karst landforms as these are a direct pathway for water and contaminants to enter the aquifer from the surface.

The GSI (2026) mapping indicates that the Proposed Development is underlain by areas of 'Moderate' (M) groundwater vulnerability. Within Carboniferous Limestone till, this typically corresponds to overburden depths in the region of approximately 3-10 m, where the cohesive, generally low permeability till provides a moderate degree of protection to the underlying aquifer. To the immediate west of the northern plot, an area of 'High' (H) vulnerability is mapped, generally associated with shallower overburden depths of less than 3 m, where thinner or more permeable till deposits offer reduced natural protection and increase susceptibility to contamination arising from human activities.

Groundwater vulnerability is governed by the thickness and permeability of subsoils overlying the bedrock aquifer. As the Proposed Development is largely underlain by limestone till, which typically affords moderate protection due to its clay rich, low permeability characteristics, the mapped classifications are considered appropriate. Given the localised variations in till thickness, these vulnerability ratings may be conservative in places. Considering the overburden depths, groundwater is not considered a sensitive receptor in this context.

Refer to Figure 2-6 below for the groundwater vulnerability underlying / in in the region of the Proposed Development site.

Figure 2-6. Aquifer Vulnerability (GSI, 2026)



2.2.2.1 Site Investigation

The recent ground investigation carried out by Site Investigations Ltd (SIL) in April 2024 confirms that the site is predominantly underlain by cohesive glacial till, with ground conditions characterised by firm brown to very stiff black slightly sandy, slightly gravelly silty clay with high cobble content. Subsoil depths extend to the full depth of investigation, with trial pits and boreholes advanced to between 6.70m BGL and 8.80m BGL, where drilling refusal was encountered on large cobbles or possible boulders. Bedrock was not encountered at any location, indicating that the rockhead lies deeper than previously indicated by GSI mapping.

Only localised Made Ground was identified at four trial pit locations (generally <0.70 m BGL, up to 1.80m BGL at TP004), consisting of slightly sandy, slightly gravelly silty clay containing small quantities of anthropogenic material. The cohesive glacial till beneath this Made Ground is of low permeability, and laboratory testing confirmed high fines content (41–45%) and low to intermediate plasticity, typical of dense, protective till deposits.

Although groundwater ingress was recorded in several trial pits, it was variable and generally shallow, occurring between 0.40 m BGL and 3.50 m BGL, reflecting perched or discontinuous groundwater conditions typical of clay-rich tills. Groundwater ingress was also observed in all boreholes, with depths ranging from 2.50 m BGL (BH10) to 3.50 m BGL (BH09). Across the 46 trial pits, ingress rates ranged from slow seepage to rapid inflows, further indicating localised pockets of perched groundwater rather than a

continuous or well-developed groundwater horizon. No significant or sustained flowing groundwater horizons were encountered.

These findings indicate that actual groundwater vulnerability at the site is lower than suggested by GSI mapping, as the presence of thick, low-permeability cohesive till provides natural attenuation and protection to the underlying aquifer. The absence of bedrock encounters and the cohesive nature of the subsoil further support this interpretation.

Refer to Chapter 9 – Land, Soils and Geology of the EIA for further detail on the ground conditions and geological environment encountered on site. Additional supporting information, including the full Mooretown Phase 2 Site Investigation Report (July 2024), is provided in the Infrastructure Report (Document Ref: 25051-AKM-XXXX-XX-RP-C01-100001), prepared by AKM Design Group for Fingal County Council (February 2026), where the complete investigation data is presented in Appendix B.

2.2.3 Source Protection Areas

There are no recorded source protection areas within a 2 km radius of the Proposed Development. The nearest source protection areas are Curragha PWS and Dunboyne PWS, located c. 14.13 km north-west and c. 15 km south-west of the Proposed Development, respectively.

2.2.4 Hydrogeological Features

There is no evidence of springs or karstification in the vicinity of the Proposed Development (c. < 6 km) according to the GSI Karst and well database.

3. WATERBODIES IDENTIFICATION AND STATUS

The Water Framework Directive (WFD) 2000/60/EC was adopted in 2000 as a single piece of legislation covering rivers, lakes, groundwater, transitional (estuarine) and coastal waters. In addition to protecting said waters, its objectives include the attainment of 'Good Status' in water bodies that are of lesser status at present and retaining 'Good Status' or better where such status exists at present. 'Good Status' was to be achieved in all waters by 2015 or at least by 2027, as well as maintaining 'high status' where the status already exists. The EPA co-ordinates the activities of the River Basin Districts, local authorities and state agencies in implementing the directive, and operates a groundwater quality monitoring programme undertaking surveys and studies across the Republic of Ireland.

As presented in Section 1.4 above, this WFD Screening has identified three (3) no. WFD surface water bodies i.e. Broadmeadow_040 WFD river waterbody, Broadmeadow Water transitional waterbody and Malahide Bay coastal waterbody and one (1) no. WFD groundwater body (GWB) i.e. Swords GWB of relevance due to the close proximity and/or connection of these waterbodies with the Proposed Development and additionally, for hosting Natura 2000 sites downstream in the Broadmeadow Water transitional waterbody and the Malahide Bay coastal waterbody, both of which support the Malahide Estuary SPA (Site Code: 004025) and Malahide Estuary SAC (Site Code: 000205).

In accordance with the WFD, each river catchment within the former RBD was assessed by the EPA and a water management plan detailing the programme of measures was put in place for each.

Currently, as presented in Table 1-1 above, the Broadmeadow_040 WFD river waterbody (which hosts the aforementioned river waterbodies; refer to Section 2.1.2 above) is classified as having a 'Poor' status for the WFD period 2019–2024, with a current risk score 'At Risk' of not achieving good status for the 3rd Cycle i.e. by 2027. Its overall ecological status is poor, reflecting deficits in biological and habitat quality, while chemical status also fails to meet good standards, likely due to elevated priority pollutants common in urban catchments. Hydromorphology is significantly impacted by altered channel morphology and habitat degradation, contributing to the poor ecological outcome. The main pressures on Broadmeadow_040 are associated with agriculture and Hydromorphology sources, particularly farmyards and channelisation, respectively, as reported in the WFD Cycle 2 Sub-Catchment Assessment Report on the Broadmeadow_SC_010 Sub-Catchment (EPA, December 2018). These findings are consistent with the Cycle 3 Nanny-Delvin Catchment Report (HA08, EPA, May 2024), which highlights ongoing concerns about nutrient enrichment and hydromorphological alterations.

The Broadmeadow Water transitional waterbody is classified as having a 'Moderate' status for the WFD period 2019–2024, with a current risk score 'At Risk' of not achieving good status for the 3rd Cycle i.e. by 2027. Its overall ecological status is moderate, reflecting deficits in biological and habitat quality, while chemical status also fails to meet good standards, likely due to elevated priority pollutants common in urban catchments. The main pressures on Broadmeadow Water transitional waterbody are associated with domestic wastewater and urban wastewater sources, particularly wastewater discharge and agglomeration PE > 10,000, respectively, as reported in the WFD Cycle 2 Sub-Catchment Assessment Report on the Broadmeadow_SC_010 Sub-Catchment (EPA, December 2018). These findings are consistent with the Cycle 3 Nanny-Delvin Catchment Report (HA08, EPA, May 2024), which highlights ongoing concerns about nutrient enrichment and organics associated with urban wastewater and DWTS.

Malahide Bay coastal waterbody is classified as having a 'Moderate' status for the WFD period 2019–2024, with a current risk score 'At Risk' of not achieving good status for the 3rd Cycle i.e. by 2027. Its overall ecological status is moderate, reflecting deficits in biological and habitat quality, while chemical status achieved a high status. The main pressures on Malahide Bay coastal waterbody are associated urban wastewater sources as reported in the Cycle 3 Nanny-Delvin Catchment Report (HA08, EPA, May 2024), which highlights ongoing concerns about nutrient enrichment and organics associated with urban wastewater.

As mentioned in Section 2.2.1 above, the Proposed Development is underlain entirely by the Swords Groundwater Body (GWB) (European Code: IE_EA_G_011), which currently holds a Water Framework Directive (WFD) status of 'Good' for the period 2019-2024. The WFD risk score for the third cycle is presently classified as 'Not at Risk'. This status reflects compliance with both quantitative and chemical groundwater conditions. A review of the WFD Cycle 2 Sub-Catchment Assessment Report on the Broadmewdow_SC_010 Sub-Catchment (EPA, December 2018) and the Cycle 3 Nanny-Delvin Catchment Report (HA08, EPA, May 2024), shows there are no significant issues or pressures identified on the groundwater body.

Other surface waterbodies that are hydrologically connected to the Proposed Development site but located at significantly greater distances, namely the Northwestern Irish Sea (HA 08; European Code: IE_EA_020_0000) and the Irish Sea Dublin (HA 09; European Code: IE_EA_070_0000), were excluded from this assessment due to their substantial separation from the site, the negligible contaminant loading associated with the Proposed Development, and the significant dilution and tidal dispersion that occur within the Broadmeadow Water transitional waterbody and Malahide Bay coastal waterbody along the hydrological pathway.

Figures 3-1 to Figure 3-4 below summarise the water quality of the aforementioned surface water and groundwater bodies.

Figure 3-1. Water Quality for the Broadmeadow_040 WFD River Waterbody (EPA, 2026)

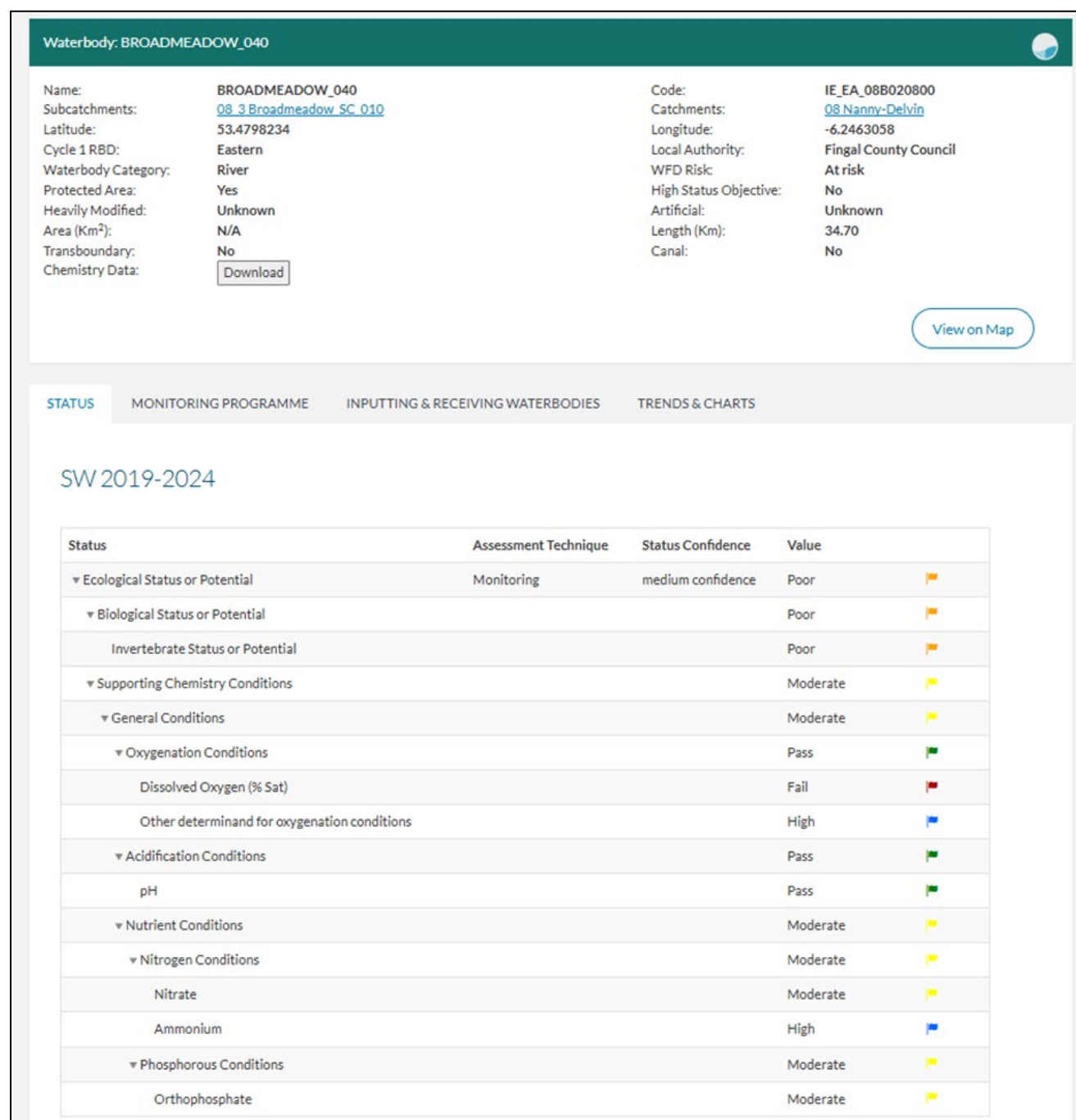


Figure 3-2. Water Quality for the Broadmeadow Water Transitional Waterbody (EPA, 2026)

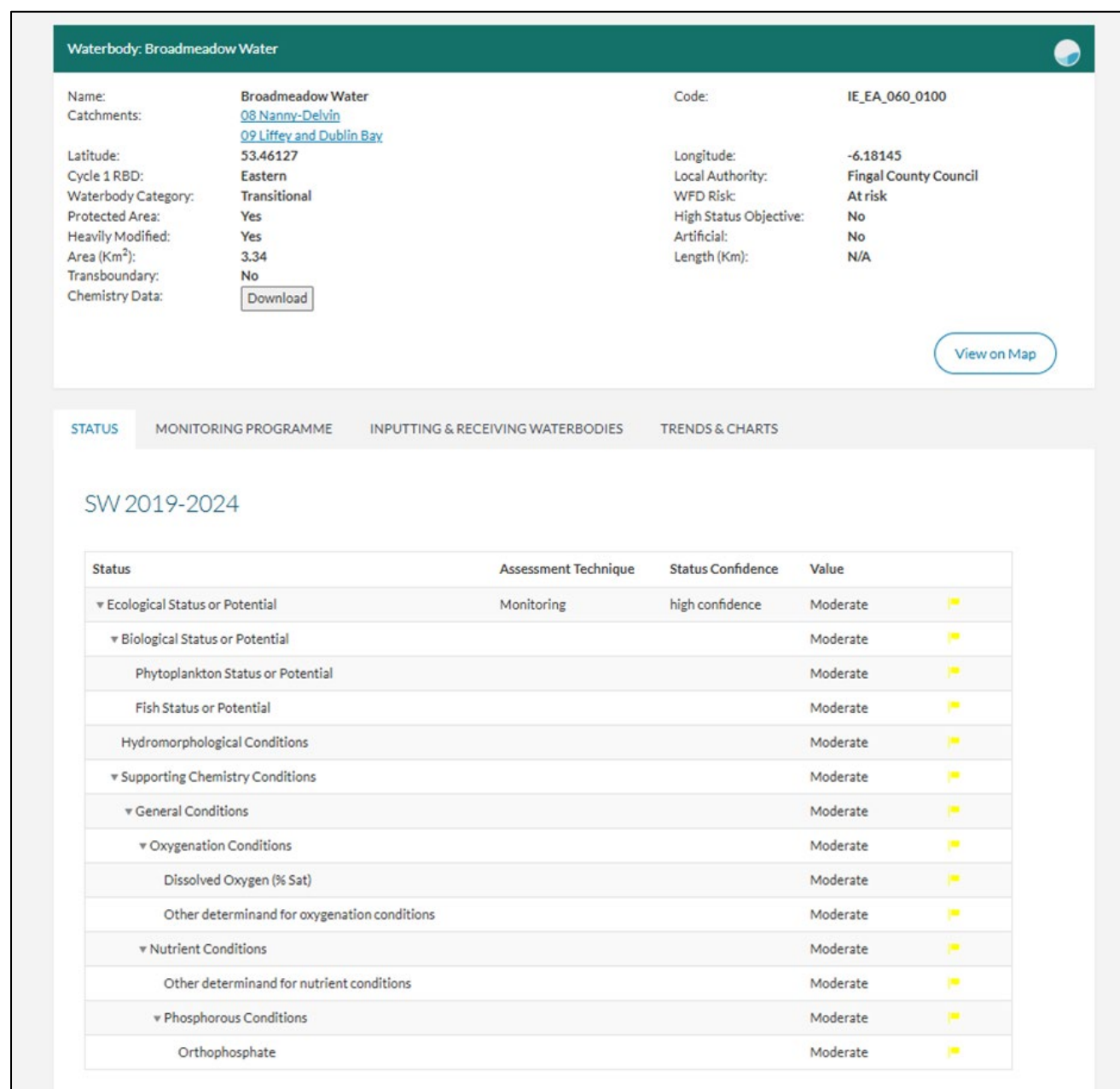


Figure 3-3. Water Quality for Malahide Bay Coastal Waterbody (EPA, 2026)

Waterbody: Malahide Bay

Name:

Malahide Bay

Catchments:

[08 Nanny-Delvin](#)

[09 Liffey and Dublin Bay](#)

Latitude:

53.46362

Cycle 1 RBD:

Eastern

Waterbody Category:

Coastal

Protected Area:

N/A

Heavily Modified:

N/A

Area (Km²):

N/A

Transboundary:

No

Chemistry Data:

Download

Code:

IE_EA_060_0000

Longitude:

-6.14379

Local Authority:

Fingal County Council

WFD Risk:

At risk

High Status Objective:

No

Artificial:

N/A

Length (Km):

N/A

View on Map

STATUS

MONITORING PROGRAMME

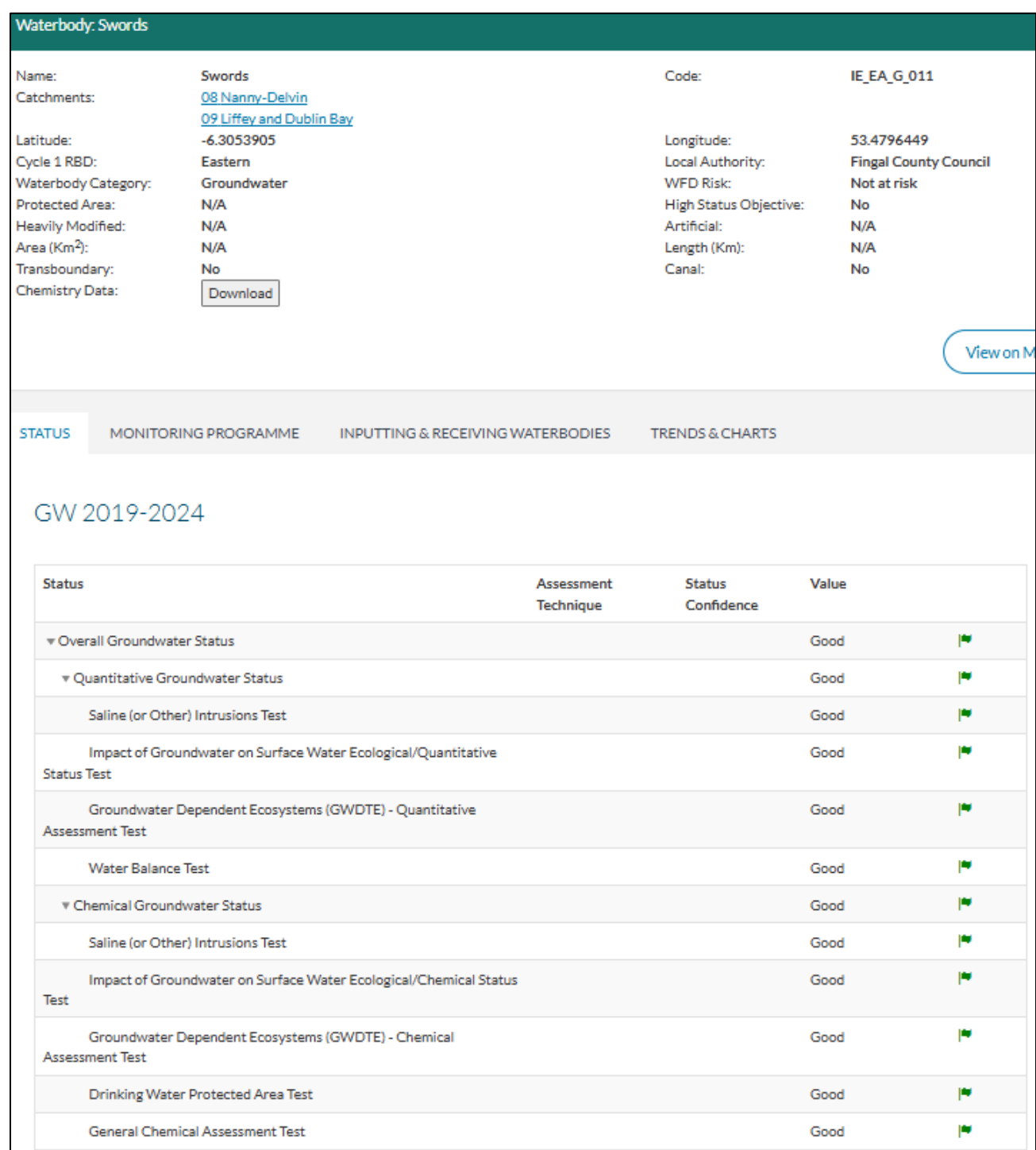
INPUTTING & RECEIVING WATERBODIES

TRENDS & CHARTS

SW 2019-2024

Status	Assessment Technique	Status Confidence	Value	
▼ Ecological Status or Potential	Monitoring	high confidence	Moderate	
▼ Biological Status or Potential			Moderate	
Phytoplankton Status or Potential			High	
▼ Other Aquatic Flora Status or Potential			Moderate	
Macroalgae Status or Potential			Moderate	
Angiosperm Status or Potential			Good	
Hydromorphological Conditions			Good	
▼ Supporting Chemistry Conditions			High	
▼ General Conditions			High	
▼ Oxygenation Conditions			High	
Dissolved Oxygen (% Sat)			High	
Other determinand for oxygenation conditions			High	
▼ Nutrient Conditions			High	
Other determinand for nutrient conditions			High	
▼ Phosphorous Conditions			High	
Orthophosphate			High	
Specific Pollutant Conditions			Pass	

Figure 3-4. Water Quality for Swords Groundwater Body (EPA, 2026)



4. DESCRIPTION OF THE PROPOSED DEVELOPMENT

This section provides an overview of the key elements of the construction and operational phases of the Proposed Development, as relevant to the Water Framework Directive (WFD) Assessment. The information summarised herein is informed by the project design but does not constitute the full project description and should be read alongside the complete planning documentation.

A full description of the Proposed Development is provided in Chapter 5 – Description of the Proposed Development of the EIA Report. Chapter 5 provides a detailed overview of the lifecycle of the project, including reference to architectural and civil engineering drawings, plans, reports, and other relevant documents used to define the Proposed Development.

The development lands extend to c. 14.75 ha on the western side of Swords, directly fronting Rathbeale Road. The site comprises two (2) no. distinct land parcels located south of Rathbeale Road.

In summary, the Proposed Development comprises a residential development consisting of 360 no. residential units, 1 no. childcare facility, and all ancillary development works including internal streets, cycle and pedestrian links, SuDS infrastructure, public open spaces, and landscaped areas across two land parcels at Mooretown, Swords, Co. Dublin. The Proposed Development also includes foul and surface water drainage infrastructure, utilities installations, public realm improvements, and connections to the permitted Phase 1 Mooretown development (Planning Ref. LADP/002/24). Access will be provided via the Phase 1 construction accesses.

4.1 Construction Phase

The activities required for the construction phase of the Proposed Development represent the greatest risk of potential impact on the hydrological and hydrogeological environment. These activities primarily pertain to the site preparation, excavation, earthworks and installation of infrastructure required to facilitate construction of the Proposed Development.

The Proposed Development site comprises two (2) no. land parcels containing existing drainage ditches and unnamed tributaries, all of which are hydrologically connected to the Newtown 08 river and ultimately to the Broadmeadow 08 river; forming part of the Broadmeadow_040 WFD river waterbody. Accordingly, there is an indirect hydrological pathway between the Proposed Development and downstream WFD waterbodies (refer to Section 2.1.2 above) during the construction phase.

Given the cohesive nature of the underlying glacial till soils, the shallow, perched groundwater encountered (0.40–3.50 m BGL) during the ground investigations carried out by Site Investigations Ltd (SIL) in April 2024, and the presence of existing overland drainage pathways, there is potential for surface water runoff, suspended solids, hydrocarbons or cementitious materials to enter the local drainage network if not appropriately controlled.

Subject to consultation with Fingal County Council and Uisce Éireann, construction-phase water requiring discharge (e.g. dewatering flows, treated runoff) may enter the existing L-2040 public stormwater network, which ultimately conveys flows to the Broadmeadow 08 river. Therefore, an indirect hydrological pathway exists between the site and downstream receiving waters.

The proposed works are expected to generate the following volumes:

- ▶ Estimated total volume of excavation material: 21,860 m³
- ▶ Volume to be reused on site: 21,860 m³
- ▶ Volume to be removed off-site: 0 m³
- ▶ Imported fill required: 35,000 m³
- ▶ Maximum excavation depth: 3.93 m

Due to excavation depths within cohesive tills, localised dewatering may be required to remove perched groundwater and stormwater accumulating in excavations. Dewatering will be undertaken using sump pumps and controlled discharge systems.

Construction water will be retained and treated prior to discharge, with treated flows released to the existing stormwater network under the appropriate licence. Where water quality does not meet the required discharge standards, construction water will instead be removed off-site to a licensed facility for appropriate treatment and disposal. During construction, if inadequately managed, surface water runoff has the potential to enter the existing hydrological pathways within the site through overland flows; or through the proposed storm water connection which conveys storm water flows to the Broadmeadow 08 river. These include the onsite drainage ditches within both development parcels, the unnamed tributaries, and subsequently the Newtown 08 river and Broadmeadow 08 river; and the wider Broadmeadow_040 WFD river waterbody.

At a minimum, the construction works will be carried out according to international best practice guidelines including, but not limited to:

- ▶ CIRIA (2001) – Control of Water Pollution from Construction Sites (C532)
- ▶ CIRIA (2002) – Control of Water Pollution from Construction Sites (SP156)
- ▶ CIRIA (2005) – Environmental Good Practice on Site (C650/C741 equivalent)
- ▶ BPGCS005 – Oil Storage Guidelines
- ▶ CIRIA (2007) – The SuDS Manual (C697)
- ▶ UK Pollution Prevention Guidelines (PPGs) – UK Environment Agency

These measures will control silt, manage runoff, prevent pollution, and minimise disturbance to downstream hydrology.

4.2 Operational Phase

There will be no bulk oil storage during the operational phase. The Proposed Development incorporates a fully separated surface water drainage system which discharges to the existing drainage ditch network and ultimately to the Broadmeadow 08 river, consistent with the established drainage pattern through the Phase 1 Mooretown lands.

As a result, an indirect hydrological pathway exists from the Proposed Development site to the Newtown 08 river, the Broadmeadow 08 river i.e. the Broadmeadow_040 WFD waterbody; and further downstream to the Broadmeadow Water Transitional Waterbody (c. 4 km downstream) and Malahide Bay coastal waterbody (c. 7.5 km downstream).

To ensure appropriate treatment and protection of water quality, a comprehensive Sustainable Drainage Systems (SuDS) strategy will be implemented across the development. This includes attenuation tanks, bioretention ponds and raingardens, permeable paving, swales and vegetated conveyance routes, tree-pit bioretention systems, Class 1 petrol interceptors at strategic outfalls, and filtration units installed on both the inlet and outlet pipework of underground attenuation systems. Collectively, these measures provide multi-stage water quality treatment capable of reducing suspended solids, hydrocarbons and heavy metals prior to discharge.

In terms of surface water quantity control, the development will increase the extent of hardstanding (c. 5.471 ha). However, due to the low permeability of the underlying cohesive glacial tills, operational impacts on groundwater recharge are minimal. Surface water discharge from the site will be restricted to greenfield run-off rates (QBAR), with a maximum permitted discharge of 1.8 l/s based on a QBAR value of 2.0 l/s/ha. All runoffs will be attenuated on-site to accommodate the 1-in-100-year storm event, including a 20% climate change allowance and 10% urban creep factor, ensuring no increase in downstream flood risk. Following treatment and attenuation, surface water will ultimately discharge via the existing storm sewer network to the Broadmeadow 08 river (Broadmeadow River).

The proposed foul drainage system is fully separated from surface water and has been designed in accordance with the Uisce Éireann Code of Practice. The northern parcel of the development (approximately 53 units) will discharge by gravity to the Phase 1 pumping station (Ref. CDS2400952001), while the southern parcel will connect to the Phase 1 foul network via four gravity connections before discharging to the public foul sewer at Cronan's Well Estate.

A Pre-Connection Enquiry (CDS25003155) received a Confirmation of Feasibility from Uisce Éireann on August 26th, 2025, confirming that adequate capacity is available, subject to completion of the Glen Ellen Road storage tank upgrade. According to current capacity information, the Swords Wastewater Treatment Plant (WWTP; Active Licence Number: D0024-01) has sufficient operational capacity to accommodate the Proposed Developments peak foul effluent discharge of 10.81 l/s.

This foul loading will not adversely impact the operational capacity of Swords WWTP nor downstream surface water environments within the wider Nanny-Delvin WFD catchment. According to the Swords Waste Water Treatment Plant (WWTP) Annual Environmental Report (AER, 2024), the plant's reported peak hydraulic capacity is 60,750 m³/day (703.125 l/s). The Proposed Development's peak foul effluent discharge of 10.81 l/s represents approximately 1.54% of this capacity. This level of additional loading is negligible in hydraulic terms and will not constrain the ability of Swords WWTP to continue operating within its licensed limits or to meet the relevant environmental objectives for the receiving waters. All foul water conveyed to Swords WWTP will receive full treatment prior to discharge, ensuring no operational-phase pathway to the hydrological or hydrogeological environment.

For detailed information on the operational foul drainage layout and Pre-Connection Enquiry (PCE), refer to the Infrastructure Report (AKM Design Group, 2026) and Drawing Number: 5051-AKM-XXXX-XX-DR-C01-300001 (Proposed Storm and Foul Drainage – General Layout, AKM Design Group, 2026) submitted as part of the planning application.

5. ASSESSMENT OF SOURCE-PATHWAY-RECEPTOR (SPR) MODEL

A conceptual site model is developed based on a good understanding of the hydrological and hydrogeological environment, plausible sources of impact and knowledge of receptor requirements. This in turn allows possible Source Pathway Receptor (S-P-R) linkages to be identified. If no S-P-R linkages are identified, then there is no risk to identified receptors.

5.1 Construction Phase

During the construction phase, potential contaminant sources include suspended solids, hydrocarbons, concrete washings, and accidental spills arising from excavation, groundworks and the use of construction plant. The Proposed Development site is located within the Nanny–Delvin Catchment (HA 08) and the Broadmeadow_SC_010 Sub-Catchment and contains several drainage ditches and unnamed tributaries that are hydrologically connected to the Newtown 08 river and Broadmeadow 09 river, forming part of the Broadmeadow_040 WFD river waterbody, and subsequently into the Broadmeadow Water transitional waterbody and Malahide Bay coastal waterbody. As such, an indirect hydrological pathway exists from the construction site to downstream WFD receptors.

The underlying hydrogeological environment comprises the Swords Groundwater Body (European Code: IE_EA_G_011), classified as a 'PI - Poor Aquifer - Bedrock which is generally unproductive except for local zones', overlain by thick cohesive glacial tills. Groundwater occurs as shallow perched pockets (0.40–3.50 m BGL) according to ground investigation data (SIL, April 2024), with limited connectivity and low permeability, restricting the potential for vertical or lateral contaminant migration. Localised, shallow temporary dewatering may be required during excavation, but any such activity would be highly confined and short-lived, with no potential to alter the wider groundwater regime. Natural recharge constraints and the slow movement within the Poor Aquifer ensure resilience to temporary disturbance.

If unmitigated, polluted runoff could enter the onsite drainage ditches, the eastern and western unnamed tributaries, and subsequently the Newtown 08 and Broadmeadow 08 rivers. However, with the implementation of the Construction Environmental Management Plan (CEMP) and Surface Water Management Plan (SWMP) (AKM Design Group, March 2026), which include silt control, settlement treatment, controlled discharge, bunded fuel storage, and spill-response procedures; the risk of contaminants reaching downstream receptors is effectively eliminated.

Furthermore, significant natural attenuation within the cohesive subsoils, combined with substantial dilution along the downstream hydrological pathway, ensures that no deterioration of WFD status or impact on designated sites including the Malahide Estuary SPA (Site Code: 004025), Malahide Estuary SAC (000205), and the Malahide Estuary Natural Heritage Area (NHA; Site Code: 000205) would occur.

More distant receiving waters along the Malahide coastline, i.e., the Northwestern Irish Sea (HA 08) and the Irish Sea Dublin (HA 09), which hosts the North-West Irish Sea SPA (Site Code: 004236) and includes the Malahide Estuary SAC (Site Code: 000205), are also present; however, these coastal waterbodies are located along the exposed Irish Sea coastline, outside the hydrodynamic influence of the Broadmeadow transitional system. Therefore, no direct hydrological connectivity exists between the Proposed Development and these sites. For this reason, they were not considered receptors due to their distance from the site and the extremely high dilution capacity within the transitional and coastal environment.

Likewise, although hydrologically connected at the broad estuarine scale, the North-West Irish Sea SPA and the Rockabill to Dalkey Island SAC are not considered part of the WFD assessment, as any theoretical contaminant loading would fully disperse long before reaching these designations.

5.2 Operational Phase

During the operational phase, potential pollutant sources primarily relate to runoff from hardstanding areas containing low concentrations of suspended solids, hydrocarbons, or metals. However, the Proposed Development incorporates a fully separated surface water system with a SuDS-led design that includes permeable paving, bioretention systems, raingardens, swales, detention basins, attenuation tanks, and Class 1 petrol interceptors. These measures provide multi-stage treatment, ensuring that only high-quality, attenuated runoff is discharged to the receiving hydrological environment. Surface water will ultimately drain to the Newtown 08 river and onward to the Broadmeadow 08 river, maintaining flows at QBAR greenfield equivalent rates (1.8l/s), thereby preventing hydromorphological or hydraulic impacts to downstream waterbodies.

Given the cohesive, low-permeability glacial till that underlies the Proposed Development, operational impacts on groundwater recharge are minimal. The underlying 'PI - Poor Aquifer - Bedrock, which is generally unproductive except for local zones', and 'Locally Important Aquifer - Bedrock which is Moderately Productive only in Local Zones (LI)' located to the immediate north of the northern parcel; are naturally protected, and the operational drainage system introduces no infiltration-based pathways that could convey contamination to groundwater. As such, no significant groundwater pathway exists during operation.

Foul wastewater will be fully separated from surface water and routed to the public foul sewer, ultimately discharging to Swords WWTP (Active Licence Number: D0024 01). The peak foul effluent load from the Proposed Development is 10.81 l/s, representing only a very small proportion of the available capacity at Swords WWTP. According to the Swords Waste Water Treatment Plant Annual Environmental Report (AER, 2024), the facility has a reported peak hydraulic capacity of 60,750 m³/day (703.125 l/s). The Proposed Development's peak foul discharge therefore equates to approximately 1.54% of this capacity, a level of loading that is negligible in hydraulic terms and will not adversely impact the operational performance of the plant.

This foul loading will not constrain the WWTP's ability to continue operating within its EPA licensed limits, nor will it affect its capacity to meet the relevant environmental objectives for the receiving waters within the wider Nanny–Delvin WFD catchment. Treated effluent from Swords WWTP is discharged in accordance with its EPA licence, ensuring no adverse impact on the Broadmeadow Estuary or broader WFD receptors.

Given that all foul water from the Proposed Development will undergo full treatment prior to discharge and considering the high level of available capacity at Swords WWTP, there is no operational phase pathway linking foul wastewater from the Proposed Development to local surface water or groundwater receptors.

Overall, when combined with the embedded SuDS measures and the protective characteristics of the underlying geology, the operational phase of the Proposed Development does not give rise to any significant Source–Pathway–Receptor linkages. No deterioration of WFD status, no impact on the Swords Groundwater Body, and no adverse effects on downstream designated sites or waterbodies are anticipated.

Table 5-1 below describes the S-P-R model for the Proposed Development site and includes the robust mitigation and design measures which will be incorporated into the Proposed Development throughout the construction and operational phases.

Table 5-1. Pollutant Linkage (S-P-R) Assessment

Source	Pathway	Receptor	Risk of Impact	Mitigation/Design Measures
Construction Impacts (summary)				
Unmitigated leak from an oil tank to ground/ unmitigated leak from construction vehicle (1,000 litres worst case scenario). Discharge to ground of runoff water with: ▶ High pH from cement processes i.e. concrete washout areas. ▶ Hydrocarbons from construction vehicles. ▶ Run-off containing a high concentration of suspended solids. Accidental discharge of wastewater from temporary welfare facilities (if required). Temporary connection to the public foul sewer (subject to licence), to accommodate vehicle washdown water following pollution control and attenuation measures.	Vertical migration through contaminated overburden to underlying 'PI - Poor Aquifer - Bedrock which is generally unproductive except for local zones'. Groundwater flow is generally restricted to isolated fractures, meaning that connectivity, recharge potential, and the potential for contaminant migration are all low and confined to very local scales, reducing potential for off-site lateral migration. The GSI (2026) mapping indicates that the Proposed Development is underlain by 'Moderate' (M) groundwater vulnerability, denoting depths of c. 3-10 m within Carboniferous Limestone till. Excavations will temporarily increase the aquifer vulnerability. According to site investigations carried out trial pits and boreholes advanced to between 6.70m BGL and 8.80m BGL, and bedrock was not encountered at any location, indicating that the rockhead lies deeper than previously indicated by GSI mapping.	Underlying 'PI - Poor Aquifer - Bedrock which is generally unproductive except for local zones'. Underlying Swords Groundwater Body (GWB) (European Code: IE_EA_G_011). Broadmeadow_040 WFD River Waterbody (European Code: IE_EA_08B020800), including Newtown 08, Mooretown 09, Broadmeadow 08, and unnamed tributaries. Broadmeadow Water transitional waterbody (European Code: IE_EA_060_0100), located c. 4km downstream / c. 2.6 km east of the Proposed Development. Malahide Bay coastal waterbody (European Code: IE_EA_060_0000), located c. 7.5km downstream / c. 5.7 km east of the Proposed Development.	No likely impact on the WFD status of the underlying 'PI - Poor Aquifer - Bedrock, which is generally unproductive except for local zones', or the underlying Swords Groundwater Body (GWB) (European Code: IE_EA_G_011), due to low potential loading, shallow depth of excavations (c. 3.93 m BGL), natural attenuation within the underlying subsoils (cohesive glacial tills; SIL, April 2024), depth to bedrock > c. 6.7-8.8m BGL (SIL, April 2024) and implementation of mitigation measures during construction (refer to CEMP & SWMP, AKM Design Group, March 2026). No likely impacts on the WFD status of WFD surface waterbodies (Broadmeadow_040 WFD River Waterbody, Broadmeadow Water transitional waterbody and Malahide Bay coastal waterbody), due to low potential loading, natural attenuation within the	Mitigation measures relate only to the potential for temporary impacts arising from accidental releases during construction. All works will be carried out in accordance with the project CEMP, which is a live document and will be updated throughout the construction stage. It sets out the requirements and standards to be implemented and includes all relevant mitigation measures identified in the CEMP, SWMP, and any subsequent planning conditions. Measures include the proper management of soils, secure refuelling and chemical-handling procedures, protection of watercourses, control of construction-phase water (including settlement, filtration and appropriate discharge routes), and treatment of any contaminated water prior to discharge, where required.

Source	Pathway	Receptor	Risk of Impact	Mitigation/Design Measures
Surface water run-off discharged to the existing surface water sewer network, following treatment (settlement tanks/ponds, Class 1 Petrol Interceptors and spill control measures). Temporary connection to the public foul sewer (subject to licence), to accommodate vehicle washdown water following pollution control and attenuation measures.	Indirect pathway to hydrological environment (Broadmeadow Estuary transitional waterbody) via temporary connection to the public foul sewer (subject to licence) which receives treatment at Swords WWTP; to accommodate vehicle washdown water following pollution control and attenuation measures.	Malahide Estuary SPA (Site Code: 004025). Malahide Estuary SAC (000205). Malahide Estuary Natural Heritage Area (NHA; Site Code: 000205).	underlying subsoils (cohesive glacial tills; SIL, April 2024), high level of dilution in the surface water sewer and hydrological environment (including Newtown 08, Mooretown 09, Broadmeadow 08, and unnamed tributaries), tidal flushing nature of Broadmeadow Water transitional waterbody and Malahide Bay coastal waterbody, and proposed temporary connection to the public foul sewer (subject to licence) receiving full treatment at Swords WWTP prior to discharge to Broadmeadow Estuary transitional waterbody. In addition, implementation of mitigation measures during construction (refer to CEMP & SWMP, AKM Design Group, March 2026).	
Operational Impacts (summary)				

Source	Pathway	Receptor	Risk of Impact	Mitigation/Design Measures
Discharge to ground of hydrocarbons from roads, car parking, and hardstanding areas (70 litres worst case scenario). Discharge of foul water to Swords Wastewater Treatment Plant (WWTP; Active Licence Number: D0024-01). Discharge of surface water to the receiving surface water sewer that convey flows to the Broadmeadow 08 river (Broadmeadow_040 WFD river waterbody).	Indirect pathway to hydrological environment via proposed surface water drainage system that discharges to the surface water sewer network which conveys flows to the Broadmeadow 08 river; SuDS features include Permeable Paving, Rain Gardens / Bioretention Swales, Detention Basins & Underground Storage and Class 1 petrol interceptors. (Designed in accordance with full Sustainable Drainage Systems; SuDS), Indirect pathway to hydrological environment via connection to the public foul sewer (subject to licence) which receives treatment at Swords WWTP, prior to outfall at Broadmeadow Estuary transitional waterbody.	Broadmeadow_040 WFD River Waterbody (European Code: IE_EA_08B020800), including Newtown 08, Mooretown 09, Broadmeadow 08, and unnamed tributaries. Broadmeadow Water transitional waterbody (European Code: IE_EA_060_0100), located c. 4 km downstream / c. 2.6 km east of the Proposed Development. Malahide Bay coastal waterbody (European Code: IE_EA_060_0000), located c. 7.5 km downstream / c. 5.7 km east of the Proposed Development. Malahide Estuary SPA (Site Code: 004025). Malahide Estuary SAC (000205). Malahide Estuary Natural Heritage Area (NHA; Site Code: 000205).	No perceptible risk due to the implementation of the design measures which includes SuDS and the use of interceptors along the drainage system. Furthermore, the extent of loading of potential contaminant, distance between the source and the receptors along with significant dilution in the drainage network will ensure any released hydrocarbons and other contaminants are at background levels (i.e., with no likely impact above water quality objectives as outlined in S.I. No. 272 of 2009, S.I. No. 386 of 2015 and S.I. No. 77 of 2019). No perceptible risk to the hydrological environment following treatment in the EPA licenced Swords Wastewater Treatment Plant (WWTP; Active Licence Number: D0024-01). This foul loading will not adversely impact the operational capacity of Swords WWTP nor downstream surface water environments. According to the Swords Waste Water Treatment Plant (WWTP)	The Proposed Development will not require bulk storage of oils or fuels during operation and has been designed to protect the hydrological and hydrogeological environment through the incorporation of a comprehensive Sustainable Drainage Systems (SuDS) strategy. SuDS measures include permeable paving, bioretention areas/rain gardens, swales, detention basins, underground attenuation storage, and Class 1 petrol interceptors. These features collectively manage, treat, and attenuate surface water runoff prior to discharge. Surface water generated within the development is directed through the SuDS treatment train to the attenuation system, where its storage capacity is maximised. Flow control devices are installed downstream of the attenuation systems to ensure controlled, restricted discharge to greenfield equivalent rates. Attenuated runoff will discharge to the downstream network, ultimately conveying flows to the Broadmeadow 08 river (Broadmeadow_040 WFD river waterbody), and ultimately to the Broadmeadow Water transitional waterbody and Malahide Bay coastal waterbody.

Source	Pathway	Receptor	Risk of Impact	Mitigation/Design Measures
			Annual Environmental Report (AER, 2024), the plant's reported peak hydraulic capacity is 60,750 m³/day (703.125 l/s). The Proposed Development's peak foul effluent discharge of 10.81 l/s represents approximately 1.54% of this capacity. All foul water conveyed to Swords WWTP will receive full treatment prior to discharge, ensuring no operational-phase pathway/impacts to the hydrological or hydrogeological environment.	The operational design delivers positive effects on the receiving hydrological environment, as the new surface water management system will significantly improve the existing discharge regime to by providing enhanced water quality treatment and increased storage. Wastewater generated by the development will discharge to the public foul water network for treatment at Swords Wastewater Treatment Plant (WWTP; Active Licence Number: D0024-01). Uisce Éireann has confirmed the feasibility of this connection through the Wastewater Pre-Connection Enquiry and subsequent Confirmation of Feasibility.

6. NO-DETERIORATION ASSESSMENT

6.1 Hydrological Environment

As stated in Section 5 above, an indirect hydrological pathway exists from the Proposed Development site to the Newtown 08 river, the Broadmeadow 08 river i.e. the Broadmeadow_040 WFD river waterbody; and further downstream to the Broadmeadow Water Transitional Waterbody (c. 4 km downstream) and Malahide Bay coastal waterbody (c. 7.5 km downstream) through the existing onsite drainage ditches, unnamed tributaries and the proposed stormwater drainage system. These features form part of the Broadmeadow_040 WFD river waterbody, which is currently classified as having a 'Poor' WFD status (WFD Period: 2019-2024) and 'At Risk' of not achieving a 'Good' status for the third WFD cycle.

6.1.1 Construction Phase

During the construction phase, all works will be undertaken in accordance with the project-specific Construction and Environmental Management Plan (CEMP) and Surface Water Management Plan (SWMP). These documents set out detailed site controls relating to sediment, concrete, fuel, wastewater, dewatering, runoff management and emergency response. Implementation of these measures will ensure that no untreated surface water or contaminated runoff enters the existing drainage ditches, unnamed tributaries, the Newtown_08 river or the Broadmeadow 09 river (Broadmeadow_040 WFD river waterbody).

Although there is a theoretical potential for accidental discharges should mitigation fail, any such occurrence would be temporary, short-lived and of limited volume. Given the cohesive nature of the underlying glacial tills, the significant attenuation capacity provided by the subsoils, the distance to the downstream transitional and coastal receptors, and the high dilution potential within the receiving waterbodies, such events would not affect long-term water quality or the WFD status of the Broadmeadow_040 WFD river waterbody or downstream waters i.e. the Broadmeadow Water Transitional Waterbody (c. 4 km downstream) and Malahide Bay coastal waterbody (c. 7.5 km downstream).

Accordingly, there is no potential for accidental releases during the construction phase to result in significant deterioration or to prevent the attainment of the WFD objectives for the Broadmeadow_040 WFD river waterbody, the Broadmeadow Water transitional waterbody, or the Malahide Bay coastal waterbody.

The construction-phase mitigation measures will ensure that there will be no negative impact on the quantitative, qualitative or morphological characteristics of downstream surface waterbodies.

6.1.2 Operational Phase

During the operational phase, the Proposed Development will continue to have an indirect hydrological connection with the Broadmeadow_040 WFD river waterbody and downstream waters i.e. the Broadmeadow Water Transitional Waterbody (c. 4 km downstream) and Malahide Bay coastal waterbody (c. 7.5 km downstream), through the Proposed Developments stormwater drainage system. However, the proposed drainage strategy incorporates a robust Sustainable Drainage Systems (SuDS) design that prevents pollutants from entering the receiving hydrological environment. This SuDS system includes permeable paving, bioretention areas, swales, detention basins, underground attenuation storage, filter drains and Class 1 petrol interceptors, supported by flow-control devices that restrict discharge to greenfield equivalent rates.

In the unlikely event of an unmitigated hydrocarbon leak or similar incident occurring on hardstanding areas, any such event would be temporary, short lived, and significantly mitigated by the multi-stage SuDS

treatment process. The expected contaminant loading from such an event would be extremely low and further reduced through natural attenuation and dilution before reaching any downstream WFD receptor.

There are no proposed diversions, culverting, or modifications to the existing drainage ditches or watercourses as part of the Proposed Development. The SuDS strategy has been designed explicitly to minimise impacts on the hydrological and hydrogeological environment and to ensure full compliance with the WFD.

Overall, the potential effects of the Proposed Development on the WFD status of the downstream surface waterbodies are considered no impact, i.e., no change in hydrological WFD elements and no deterioration in status during either the construction or operational phases.

6.2 Hydrogeological Environment

The Proposed Development is underlain by the Swords Groundwater Body (GWB; European Code: IE_EA_G_011), which currently holds 'Good' WFD status (WFD Period: 2019-2024) and is classified as 'Not at Risk'. The underlying aquifer comprises a 'PI – Poor Aquifer – Bedrock which is generally unproductive except for local zones', characterised by low permeability and limited groundwater connectivity. Site Investigation results (SIL, April 2024) confirm the presence of deep cohesive glacial tills (6.7–8.8 m BGL), high fines content and perched, discontinuous groundwater conditions, indicating that the aquifer is not sensitive to either short-term construction impacts or longer-term operational loading.

6.2.1 Construction Phase

No significant dewatering is expected during construction. Localised minor dewatering may be required where perched water is encountered within shallow excavations; however, groundwater is not anticipated to be encountered at volumes capable of affecting the underlying aquifer regime. Any water arising from excavations will be treated in accordance with the CEMP and SWMP and will not be discharged directly to ground or to any watercourse without appropriate settlement and filtration.

There is no potential for changes in groundwater levels or long-term alterations to the groundwater regime due to the limited extent of temporary dewatering and the low permeability of the underlying till deposits. The mitigation measures implemented during construction, including strict controls on fuel storage, spill prevention, concrete handling, and runoff management, will ensure that no adverse effects occur on the qualitative or quantitative status of the groundwater body.

Any accidental discharges that might occur would be temporary and localised and would not result in long-term deterioration of the underlying aquifer. The cohesive glacial till and low permeability subsoil provide substantial protection and attenuation, ensuring that any contaminants would not migrate to depth or affect groundwater quality in a way that would influence WFD status.

6.2.2 Operational Phase

During the operational phase, the risk to the underlying aquifer is low due to the presence of hardstanding across much of the site and the implementation of a SuDS drainage network that provides multiple stages of attenuation and treatment prior to any infiltration or surface water discharge. There are no operational discharges to ground and no long-term dewatering is required.

The underlying aquifer's low permeability further reduces the potential for pollutant migration. As a result, no deterioration in groundwater levels, flow regime, or chemical quality is anticipated during operation. The Proposed Development will not impact the WFD status of the Swords GWB.

Overall, the potential effects on the groundwater bodies are considered no impact, i.e., no change in WFD status or the underlying hydrogeological environment during construction or operation.

6.3 Assessment in Terms of Future Good Status

The Proposed Development is located within the Nanny-Delvin catchment (Catchment ID: 08) and the Broadmeadow_SC_010 sub-catchment (Sub Catchment ID: 08_3). According to the WPA water features database (2026) the Broadmeadow_040 WFD river waterbody interacts with the Proposed Development, within and along its boundaries (refer to Section 2.1.2 above).

The Broadmeadow_040 WFD river waterbody, the Broadmeadow Water transitional waterbody and the Malahide Bay coastal waterbody surface waterbodies have the most recent WFD surface water status (WFD Period: 2019–2024) of 'Poor', 'Moderate' and 'Moderate' respectively. Their current WFD risk scores (3rd risk cycle) are all 'At Risk' of not achieving good status by 2027, meaning they have not achieved their objectives, and their overall status is below what is considered acceptable by 2027. As mentioned above the EPA classifies the WFD Ecological Status for the Broadmeadow_040 WFD river waterbody and its tributaries network (RATHBEAL and NEWTOWN_08) as having a 'Poor' status (WFD Period: 2019–2024) with a current WFD River Waterbody Risk score of 'At Risk' of not achieving good status. The Broadmeadow_040 WFD river waterbody failed to achieve 'Good' status due to 'Poor' biological status or potential, in addition to 'Moderate' supporting chemical status.

The Broadmeadow Water transitional waterbody, located c. 4km downstream from the Proposed Development, has a 'Moderate' status and a risk score of 'At Risk' of not achieving good status. The Broadmeadow Water was unable to achieve 'Good' status due to 'Moderate' ecological status and potential, in addition to 'Moderate' supporting chemistry conditions. Particular areas of concern for the Broadmeadow Water transitional waterbody relate to wastewater discharge and agglomeration PE > 10,000.

Malahide Bay coastal waterbody, located c. 7.5km downstream from the Proposed Development, has a 'Moderate' status and a risk score of 'At Risk' of not achieving good status. Malahide Bay was unable to achieve 'Good' status due to 'Moderate' macroalgae status or potential.

The main pressures associated with the Broadmeadow_SC_010 sub-catchment (Sub Catchment ID: 08_3) are hydromorphological (due to channelisation), nutrients from agriculture, and nutrient and organics from domestic and urban wastewater based on the WFD 2nd Cycle Report produced by the EPA in December 2018 and the WFD 3rd Cycle Nanny-Delvin Catchment Report produced in May 2024. With respect to these pressures and in relation to urban wastewater, no perceptible risk to the hydrological or hydrogeological environment is foreseen following treatment in the EPA-licensed Swords WWTP (Reg: D0024-01).

Swords WWTP has sufficient operational capacity to accommodate the Proposed Developments peak foul effluent discharge of 10.81l/s. According to the Swords Waste Water Treatment Plant (WWTP) Annual Environmental Report (AER, 2024), the plant's reported peak hydraulic capacity is 60,750m³/day (703.125l/s). The Proposed Development's peak foul effluent discharge of 10.81l/s represents approximately 1.54% of this capacity. This level of additional loading is negligible in hydraulic terms and will not constrain the ability of Swords WWTP to continue operating within its licensed limits or to meet the relevant environmental objectives for the receiving waters. All foul water conveyed to Swords WWTP will receive full treatment prior to discharge, ensuring no operational-phase pathway to the hydrological or hydrogeological environment.

With respect to agricultural and farmyard activities, the Proposed Development is not associated with activities related to these pressures.

Presently, the groundwater body in the region of the site (Swords GWB), for which the site is located entirely within, has a WFD status of 'Good' (WFD Period: 2019–2024) and a WFD risk score (3rd Cycle) of 'Not at Risk' of not achieving good status, meaning it has achieved its objectives and its overall status is considered good.

The Proposed Development will incorporate SuDS measures within the landscape and drainage design in order to manage run-off quality, and foul sewer management will be in compliance with UÉ specifications. No dewatering is required during operation. All discharges will be adequately treated through the proposed SuDS measures as outlined in Section 4.2 above. As such, there will be no change to the existing status as a result of the Proposed Development.

Based on the above information, it is not considered that any aspects of the Proposed Development will prevent the WFD objectives from being achieved or the requirements and/or objectives in the Water Action Plan 2024 – A River Basin Management Plan for Ireland (Department of Housing, Local Government & Heritage, 2024) from being met.

7. CONCLUSIONS

Appendix A contains the background information and the WFD classification elements for surface water and groundwater body status. The colour coded system referred to in Appendix A, is used in Appendix B – Table 1 and Table 2 to give a visual impression of the surface water and groundwater assessment, respectively

The WFD assessment indicates that, based on the current understanding of the Proposed Development, there is no potential for adverse or minor temporary, long-term or localised effects on the Broadmeadow_040 WFD river waterbody [European code: IE_EA_08B020800], the Broadmeadow Water transitional waterbody [European code: IE_EA_060_0100] and the Malahide Bay coastal waterbody [European code: IE_EA_060_0000].

Therefore, it has been assessed that the Proposed Development will not cause any significant deterioration or change in water body status or prevent attainment, or potential to achieve, future good status or to meet the requirements and/or objectives in the Water Action Plan 2024 - A River Basin Management Plan for Ireland, (Department of Housing Local Government & Heritage, Sept 2024).

The WFD assessment indicates that there is no potential for adverse or minor temporary or localised effects on the Swords GWB (European Code: IE_EA_G_011). Therefore, it has been assessed that it is unlikely that the Proposed Development will cause any significant deterioration or change on its water body status or prevent attainment, or potential to achieve the WFD objectives or to meet the requirements and/or objectives in the Water Action Plan 2024 - A River Basin Management Plan for Ireland, (Department of Housing Local Government & Heritage, Sept 2024).

No further assessment of WFD is recommended given that no significant deterioration or change in water body status is expected based on the current understanding of the Proposed Development during construction and operation.

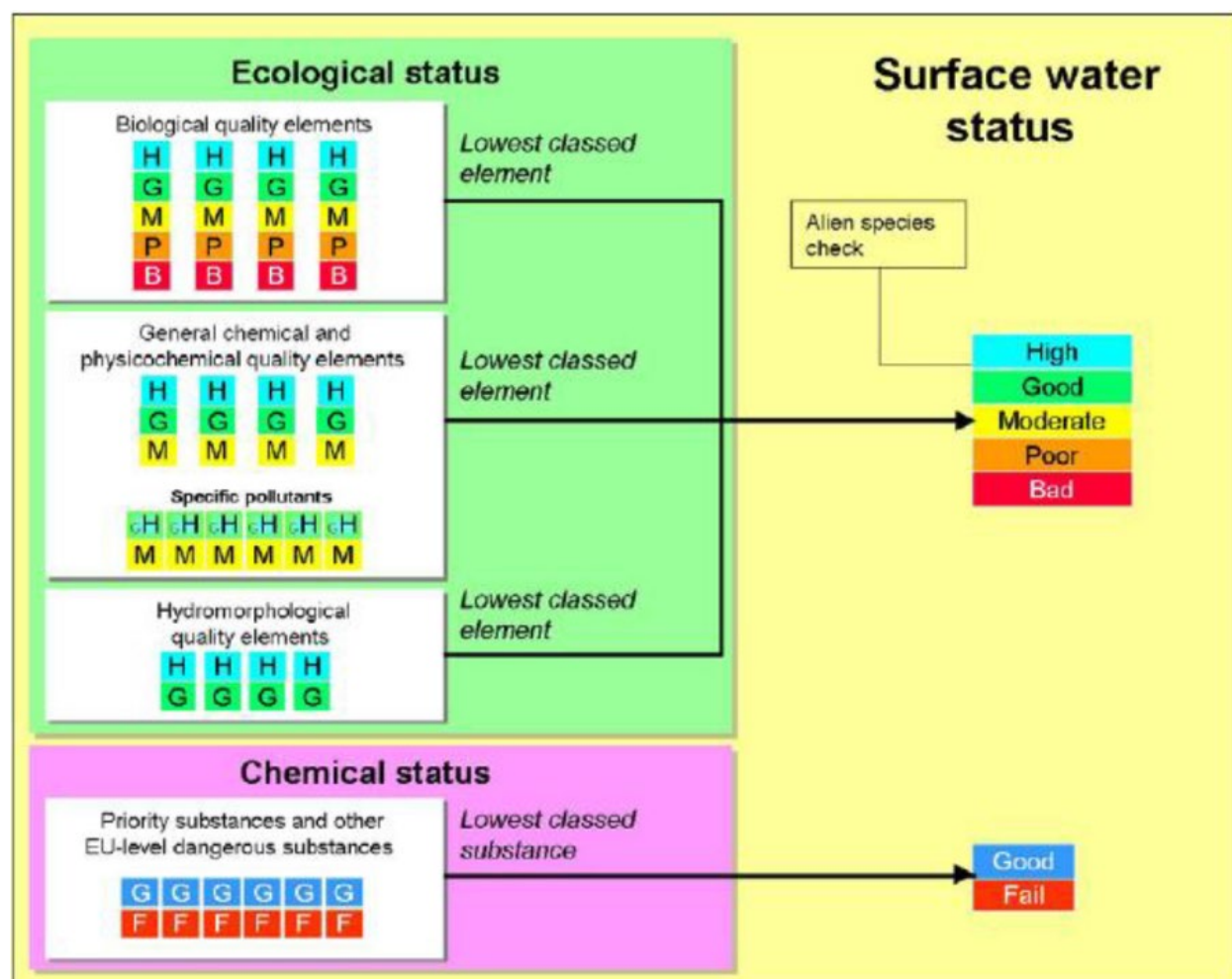
APPENDIX A. WFD ASSESSMENT MATRIX

WATER FRAMEWORK DIRECTIVE ASSESSMENT MATRIX

Background to Surface Water Body Status & Groundwater Body Status

Under the WFD, surface water body status is classified on the basis of chemical and ecological status or potential. Ecological status is assigned to surface water bodies that are natural and considered by the EPA not to have been significantly modified for anthropogenic purposes (i.e., culverting). Ecological potential is assigned to artificial and man-made water bodies (such as canals), or natural water bodies that have undergone significant modification. The term 'ecological potential' is used as it may be impossible to achieve good ecological status because of modification for a specific use, such as navigation or flood protection. The ecological potential represents the degree to which the quality of the water body approaches the maximum it could achieve. The worst-case classification is assigned as the overall surface water body status, in a 'one-out all-out' system (i.e., by taking the worst case of all the combined risk outcomes). This system is summarised below in Figure 1.

Figure 1. WFD classification elements for surface water body status (Environmental Agency, 2015)



Chemical Status

Chemical status is defined by compliance with environmental standards for chemicals that are priority substances and/or priority hazardous substances, in accordance with the Environmental Quality Standards Directive (2008/105/EC). This is assigned on a scale of good or fail. Surface water bodies are only

monitored for priority substances where there are known discharges of these pollutants; otherwise, surface water bodies are reported as being at good chemical status.

Ecological Status

Ecological status or potential is defined by the overall health or condition of the watercourse. This is assigned on a scale of High, Good, Moderate, Poor or Bad, and on the basis of four classification elements or 'tests', as follows:

- ▶ **Biological:** This test is designed to assess the status indicated by a biological quality element such as the abundance of fish, invertebrates or algae and by the presence of invasive species. The biological quality elements can influence an overall water body status from Bad through to High.
- ▶ **Physico-chemical:** This test is designed to assess compliance with environmental standards for supporting physicochemical conditions, such as dissolved oxygen, phosphorus and ammonia. The physicochemical elements can only influence an overall water body status from Moderate through to High.
- ▶ **Specific pollutants:** This test is designed to assess compliance with environmental standards for concentrations of specific pollutants, such as zinc, cypermethrin or arsenic. As with the physico-chemical test, the specific pollutant assessment can only influence an overall water body status from Moderate through to High.
- ▶ **Hydromorphology:** For natural waterbodies, this test is undertaken when the biological and physicochemical tests indicate that a water body may be of High status. It specifically assesses elements such as water flow, sediment composition and movement, continuity, and structure of the habitat against reference or 'largely undisturbed' conditions. If the hydromorphological elements do not support High status, then the status of the water body is limited to Good overall status. For artificial or highly modified waterbodies, hydromorphological elements are assessed initially to determine which of the biological and physico-chemical elements should be used in the classification of ecological potential. In all cases, assessment of baseline hydromorphological conditions are an important factor in determining possible reasons for classifying biological and physicochemical elements of a water body as less than Good, and hence in determining what mitigation measures may be required to address these failing water bodies.

Background to Groundwater Body Status

Under the WFD, groundwater body status is classified on the basis of quantitative and chemical status. Status is assessed primarily using data collected from the EPA monitoring network; therefore, the scale of assessment means that groundwater status is mainly influenced by larger scale effects such as significant abstraction or widespread/ diffuse pollution. The worst-case classification is assigned as the overall groundwater body status, in a 'one-out all-out' system. This system is summarised in Figure 2 below.

Quantitative Status

Quantitative status is defined by the quantity of groundwater available as baseflow to watercourses and water-dependent ecosystems, and as 'resource' available for use as drinking water and other consumptive purposes. This is assigned on a scale of Good or Poor, and on the basis of four classification elements or 'tests' as follows:

- ▶ **Saline or other intrusions:** This test is designed to identify groundwater bodies where the intrusion of poor quality water, such as saline water or water of different chemical composition, as a result of groundwater abstraction is leading to sustained upward trends in pollutant concentrations or significant impact on one or more groundwater abstractions.
- ▶ **Surface water:** This test is designed to identify groundwater bodies where groundwater abstraction is leading to a significant diminution of the ecological status of associated surface water bodies.

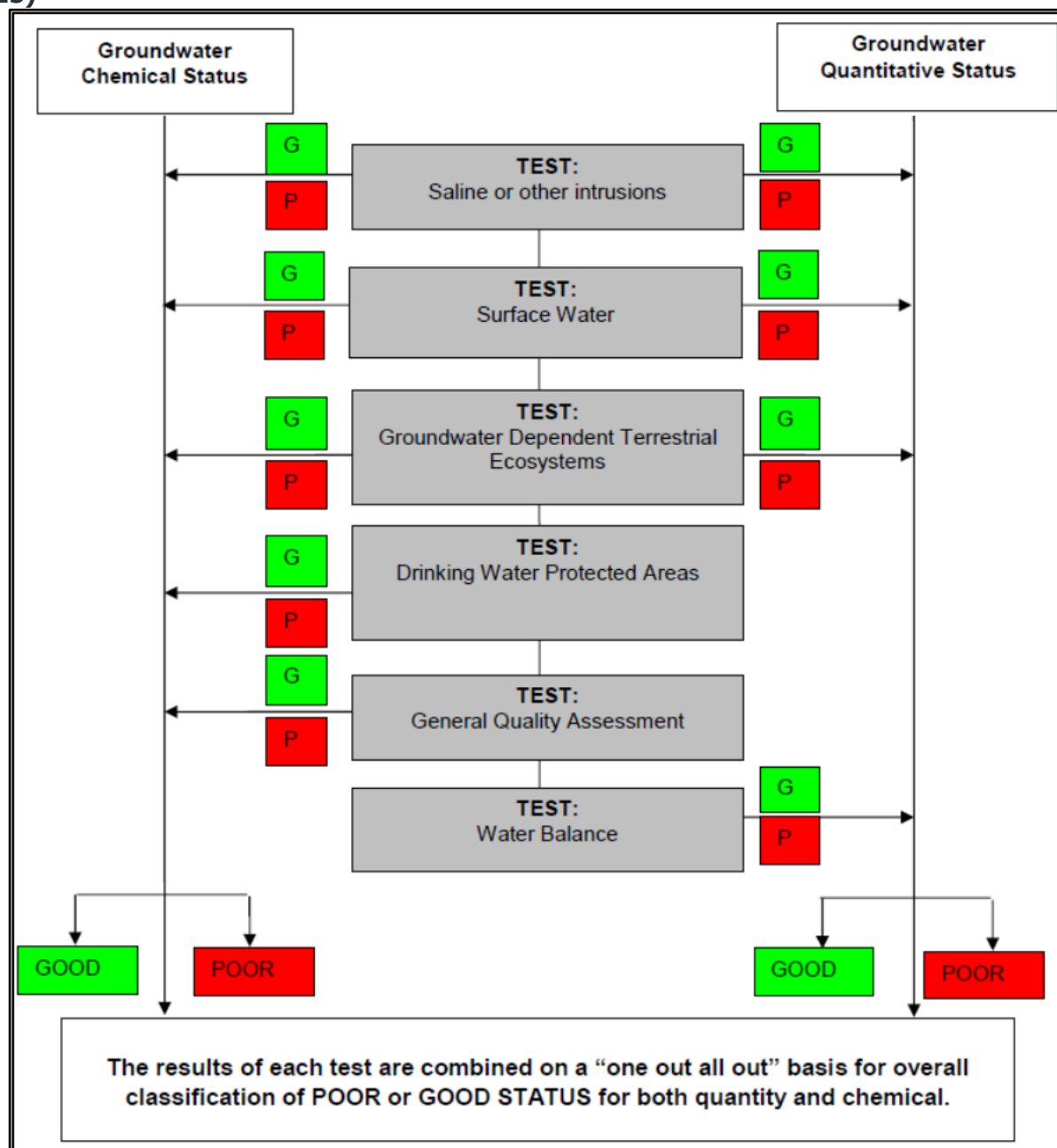
- ▶ Groundwater Dependent Terrestrial Ecosystems (GWDTEs): This test is designed to identify groundwater bodies where groundwater abstraction is leading to “significant damage” to associated GWDTEs (with respect to water quantity).
- ▶ Water balance: This test is designed to identify groundwater bodies where groundwater abstraction exceeds the “available groundwater resource”, defined as the rate of overall recharge to the groundwater body itself, as well as the rate of flow required to meet the ecological needs of associated surface water bodies and GWDTEs.

Chemical Status

Chemical status is defined by the concentrations of a range of key pollutants, by the quality of groundwater feeding into watercourses and water-dependent ecosystems and by the quality of groundwater available for drinking water purposes. This is assigned on a scale of Good or Poor, and on the basis of five classification elements or ‘tests’ as follows:

- ▶ Saline or other intrusions: This test is designed to identify groundwater bodies where the intrusion of poor-quality water, such as saline water or water of different chemical composition, as a result of groundwater abstraction is leading to sustained upward trends in pollutant concentrations or significant impact on one or more groundwater abstractions.
- ▶ Surface water: This test is designed to identify groundwater bodies where groundwater abstraction is leading to a significant diminution of the chemical status of associated surface water bodies.
- ▶ GWDTEs: This test is designed to identify groundwater bodies where groundwater abstraction is leading to “significant damage” to associated GWDTE’s (with respect to water quality).
- ▶ Drinking Water Protected Areas (DrWPAs): This test is designed to identify groundwater bodies failing to meet the DrWPA objectives defined in Article 7 of the WFD or at risk of failing in the future.
- ▶ General quality assessment: This test is designed to identify groundwater bodies where widespread deterioration in quality has or will compromise the strategic use of groundwater.

Figure 2. WFD classification elements for groundwater body status (Environmental Agency, 2015)



APPENDIX B. NON-DETERIORATION ASSESSMENT

Risk screening of potential to cause deterioration of current WFD status

	Surface Water	Scheme Elements	Proposed Development						Mitigation Measures	Overall Impact with mitigation measures
	Broadmeadow_040 WFD River Waterbody (European Code: IE_EA_08B020800)	Phase (Construction/ Operation)	Construction	Construction	Construction	Construction	Operation	Operation		
		Identified Quantitative Impacts	Increased run-off and sediment loading	Temporary land-take during the construction phase	Pollution due to accidental discharges or spillages during the construction phase	Release of sediments, pollutants and construction material during Bridge construction.	Increase in Hardstanding	Storage of Fuel		
WFD Status	Macrophytes and phytobenthos - combined	Predicted change to status elements (green = none, amber = possibly, red = likely)	No measurable change anticipated.	No measurable change anticipated.	No measurable change anticipated.	No measurable change anticipated.	No measurable change anticipated.	No measurable change anticipated.	Construction: The project-specific CEMP will include robust mitigation measures to protect the hydrological environment. The CEMP will be a live document and it will go through a number of iterations before works commence and during the works. It will set out requirements and standards which must be met during the construction stage and will include the relevant mitigation measures outlined in the EIA Report and any subsequent conditions relevant to the proposed development. These include management of soils, re-fuelling machinery and chemical handling and control of water during the construction phase.	No anticipated impacts to the hydrological environment with no deterioration to the WFD Status
	Macroinvertebrates		No measurable change anticipated.	No measurable change anticipated.	No measurable change anticipated.	No measurable change anticipated.	No measurable change anticipated.	No measurable change anticipated.		No anticipated impacts to the hydrological environment with no deterioration to the WFD Status
	Fish		No measurable change anticipated.	No measurable change anticipated.	No measurable change anticipated.	No measurable change anticipated.	No measurable change anticipated.	No measurable change anticipated.		No anticipated impacts to the hydrological environment with no deterioration to the WFD Status
Physio-Chemical Status	Total Ammonia	Predicted change to status elements (green = none, amber = possibly, red = likely)	No measurable change anticipated.	No measurable change anticipated.	No measurable change anticipated.	No measurable change anticipated.	No measurable change anticipated.	No measurable change anticipated.		No anticipated impacts to the hydrological environment with no deterioration to the WFD Status
	Total Nitrogen		No measurable change anticipated.	No measurable change anticipated.	No measurable change anticipated.	No measurable change anticipated.	No measurable change anticipated.	No measurable change anticipated.		No anticipated impacts to the hydrological environment with no deterioration to the WFD Status
	Ortho-Phosphate		No measurable change anticipated.	No measurable change anticipated.	No measurable change anticipated.	No measurable change anticipated.	No measurable change anticipated.	No measurable change anticipated.		No anticipated impacts to the hydrological environment with no deterioration to the WFD Status
Hydromorphological Elements	Quantity and dynamics of river flow	Predicted change to status elements (green = none, amber = possibly, red = likely)	No measurable change anticipated.	No measurable change anticipated.	No measurable change anticipated.	No measurable change anticipated.	No measurable change anticipated.	No measurable change anticipated.	Operation: The Proposed Development will not require bulk storage of oils or fuels during operation and has been designed to protect the hydrological environment through the incorporation of a comprehensive Sustainable Drainage Systems (SuDS) strategy. SuDS measures include permeable paving, bioretention areas/rain gardens, swales, detention basins, underground attenuation storage, and Class 1 petrol interceptors. These features collectively manage, treat, and attenuate surface water runoff prior to discharge. No significant abstraction is required during the operation phase.	No anticipated impacts to the hydrological environment with no deterioration to the WFD Status
	Connection to Groundwater		No measurable change anticipated.	No measurable change anticipated.	No measurable change anticipated.	No measurable change anticipated.	No measurable change anticipated.	No measurable change anticipated.		No anticipated impacts to the hydrological environment with no deterioration to the WFD Status
	River continuity		No measurable change anticipated.	No measurable change anticipated.	No measurable change anticipated.	No measurable change anticipated.	No measurable change anticipated.	No measurable change anticipated.		No anticipated impacts to the hydrological environment with no deterioration to the WFD Status
	River depth and width variation bed		No measurable change anticipated.	No measurable change anticipated.	No measurable change anticipated.	No measurable change anticipated.	No measurable change anticipated.	No measurable change anticipated.		No anticipated impacts to the hydrological environment with no deterioration to the WFD Status
	Structure and substrate of river bed		No measurable change anticipated.	No measurable change anticipated.	No measurable change anticipated.	No measurable change anticipated.	No measurable change anticipated.	No measurable change anticipated.		No anticipated impacts to the hydrological environment with no deterioration to the WFD Status
	Structure of riparian zone		No measurable change anticipated.	No measurable change anticipated.	No measurable change anticipated.	No measurable change anticipated.	No measurable change anticipated.	No measurable change anticipated.		No anticipated impacts to the hydrological environment with no deterioration to the WFD Status

Risk screening of potential to cause deterioration of current WFD status									
	Groundwater	Scheme Elements	Proposed Development					Mitigation Measures	Overall Impact
	Swords Groundwater Body (GWB) (European Code: IE_EA_G_011)	Phase (Construction/ Operation)	Construction	Construction	Construction	Operation	Operation		
		Identified Quantitative Impacts	Increased run-off and sediment loading	Release of sediments, pollutants and construction material during Bridge construction.	Pollution due to accidental discharges or spillages during the construction phase	Increase in Hardstanding	Storage of Fuel		
Quantitative Elements	Saline or other intrusions. To identify groundwater bodies where the intrusion of poor quality water as a result of groundwater abstraction is leading to sustained upward trends in pollutant concentrations or significant impact on one or more groundwater abstractions.	Predicted change to status elements (green = none, amber = possibly, red = likely)	No measurable change anticipated.	No measurable change anticipated.	No measurable change anticipated.	No measurable change anticipated.	No measurable change anticipated.	Construction: The project-specific CEMP will include robust mitigation measures to protect the underlying hydrogeological environment. The CEMP will be a live document and it will go through a number of iterations before works commence and during the works. It will set out requirements and standards which must be met during the construction stage and will include the relevant mitigation measures outlined in the EIA Report and any subsequent conditions relevant to the proposed development. These include management of soils, re-fuelling machinery and chemical handling and control of water during the construction phase. No significant dewatering is required which could impact on quantitative status.	No anticipated impacts to the hydrological environment with no deterioration to the WFD Status
	Surface water. To assess the impact of groundwater abstractions on the ecological status of surface water bodies.		No measurable change anticipated.	No measurable change anticipated.	No measurable change anticipated.	No measurable change anticipated.	No measurable change anticipated.		No anticipated impacts to the hydrological environment with no deterioration to the WFD Status
	Groundwater Dependent Terrestrial Ecosystems (GWDTE's) To assess the impact of groundwater abstractions on the condition of GWDTE'S.		No measurable change anticipated.	No measurable change anticipated.	No measurable change anticipated.	No measurable change anticipated.	No measurable change anticipated.		No anticipated impacts to the hydrological environment with no deterioration to the WFD Status
	Water balance To identify groundwater bodies where abstractions exceed the available resource.		Not Applicable (no dewatering anticipated)	Not Applicable (no dewatering anticipated)	Not Applicable (no dewatering anticipated)	Not Applicable (no water supply from borehole anticipated)	Not Applicable (no water supply from borehole anticipated)		Not Applicable
Chemical Elements	Saline or other intrusions. To identify groundwater bodies where the intrusion of poor quality water as a result of groundwater abstraction is leading to sustained upward trends in pollutant concentrations or significant impact on one or more groundwater abstractions.	Predicted change to status elements (green = none, amber = possibly, red = likely)	No measurable change anticipated.	No measurable change anticipated.	No measurable change anticipated.	No measurable change anticipated.	No measurable change anticipated.	Operation: The Proposed Development will not require bulk storage of oils or fuels during operation and has been designed to protect the hydrogeological environment through the incorporation of a comprehensive Sustainable Drainage Systems (SuDS) strategy. SuDS measures include permeable paving, bioretention areas/rain gardens, swales, detention basins, underground attenuation storage, and Class 1 petrol interceptors. These features collectively manage, treat, and attenuate surface water runoff prior to discharge. No significant abstraction is required during the operation phase.	No anticipated impacts to the hydrological environment with no deterioration to the WFD Status
	Surface water. To assess the impact of groundwater abstractions on the ecological status of surface water bodies.		No measurable change anticipated.	No measurable change anticipated.	No measurable change anticipated.	No measurable change anticipated.	No measurable change anticipated.		No anticipated impacts to the hydrological environment with no deterioration to the WFD Status
	Groundwater Dependent Terrestrial Ecosystems (GWDTE's) To assess the impact of nutrient concentrations in groundwater (primarily phosphates) on GWDTE's.		No measurable change anticipated.	No measurable change anticipated.	No measurable change anticipated.	No measurable change anticipated.	No measurable change anticipated.		No anticipated impacts to the hydrological environment with no deterioration to the WFD Status
	Drinking Water Protected Areas (DrWPAs) To identify groundwater bodies failing to meet the DrWPA objectives defined in Article 7 of the WFD or at risk of failing in the future.		No measurable change anticipated.	No measurable change anticipated.	No measurable change anticipated.	No measurable change anticipated.	No measurable change anticipated.		No anticipated impacts to the hydrological environment with no deterioration to the WFD Status
	General quality assessment To identify groundwater bodies where widespread deterioration in quality has or will compromise the strategic use of groundwater.		No measurable change anticipated.	No measurable change anticipated.	No measurable change anticipated.	No measurable change anticipated.	No measurable change anticipated.		No anticipated impacts to the hydrological environment with no deterioration to the WFD Status

Appendix 15.1 Summary of Relevant Legislation



Historic and Archaeological Heritage and Miscellaneous Provisions Act (2023)

The Historic and Archaeological Heritage and Miscellaneous Provisions Act 2023 was enacted in October 2023 and this Act is now law. The Minister for DHLGH commenced certain provisions in May 2024 (S.I. No. 252/2024) which relate to World Heritage Property in the State, inventories, the protection of certain records, the promotion of heritage, and the issuing of statutory guidance. Certain related and supporting provisions concerning implementation and enforcement are also commenced. Further provisions in December 2024 (S.I. No. 663/2024) relate to underwater cultural heritage and another Commencement Order in March 2025 (S.I. No. 88/2025) relates to prohibitions, offences, defences and procedural matters. However, until the Act is fully commenced, the National Monuments Acts and the Architectural Heritage (National Inventory) and Historic Monuments (Miscellaneous Provisions) Act have not yet been repealed and therefore remain in force.

The Act also contains transitional provisions which will, if necessary, enable certain aspects of the existing National Monuments Acts 1930 to 2014 to continue in operation while successor provisions are being brought fully into operation. An example of this would be provisions enabling the Record of Monuments and Places to continue to have effect pending the establishment of a new Register of Monuments.

A person performing a function under this Act shall recognise and take due account of the following principles in performing that function:

- that historic heritage is a non-renewable resource of great cultural and scientific importance which, in addition to its intrinsic value, provides evidence for the development of society and promotes public understanding and appreciation of all periods of the past;
- that the first option to be considered should be the protection in situ of historic heritage and that there ought to be a presumption in favour of this option;
- that any removal or alteration of historic heritage should be accompanied by all necessary and appropriate recording of such heritage;
- that the Valletta Convention should be adhered to as well as any other international treaty, to which the State is a party, the provisions of which are aimed at promoting or securing the protection of the archaeological, architectural or other historic heritage;
- that responsibility for the protection of historic heritage is, as a resource of benefit to all, shared by all and, accordingly, that those permitted to remove or interfere with such heritage should, in the normal course, bear the costs of any recording or protective work necessitated by, or associated with, such removal or interference.

For the avoidance of doubt, it is hereby declared that the destruction, whether in whole or in part and by whatever means, of a monument to which general protection or special protection applies shall not prejudice the continuation of such protection to the remainder (if any) of the monument, including the site, surrounding area and immediate surroundings of the monument.

The Historic and Archaeological Heritage and Miscellaneous Provisions Act 2023 will establish a Register of Monuments which will replace and supersede the existing Record of Monuments and Places and the Register of Historic Monuments. The Register shall include

- prescribed monuments known to the Minister which are deemed appropriate to be entered in the Register;
- relevant things of a relevant interest deemed appropriate to be entered in the Register.



A prescribed monument will be a relevant thing of archaeological interest or of other relevant interest. It may be prescribed by reference to any one or more than one of the following criteria:

- age, date or period (including by reference to any terminology relating to periods) that, in the opinion of the Minister, is or has been in use in archaeology or other relevant disciplines;
- morphology;
- condition;
- typology (including by reference to typologies which, in the opinion of the Minister, are or have been in use in archaeology or other relevant disciplines);
- the environment in which the relevant thing is situated (including whether or not the relevant thing is situated under water);
- the circumstances in which the relevant thing is found (including the manner of finding);
- whether the relevant thing is or is not marked or shown on any edition of any ordnance map, or map prescribed for the purposes of this paragraph.

“Relevant thing” means any of the following things, means any of the following things, whether situated on, in or under land and whether or not attached to the surface of the land or forming part of land and whether or not intentionally or originally in the sites where they respectively are:

- any artificial structure, construction, deposit, feature or layer (including any building and any burial or interment);
- any artificially altered structure, construction, deposit, feature or layer, whether or not natural in origin;
- any wreck;
- any ritual or ceremonial site;
- any site where an historic event took place, including any other site directly associated with that event;
- any battlefield;
- any site with legendary or mythological associations;
- any feature, deposit or layer, whether or not natural in origin and whether or not artificially altered, containing or providing information or evidence relating to the past environment;

The Register shall be in the form of an electronic database which is easily accessible to members of the public through public telecommunication networks. The registered monument may include a surrounding area which is considered reasonably necessary to secure the protection of the monument or thing.

Where a person finds, or believes that he or she has found a prescribed monument other than a registered monument, the person shall make a preliminary report Minister or a member of An Garda Síochána within 72 hours, or in the case of discovery in the course of licensable activity, that it be reported to the Minister in such a manner as specified in the licence.

Special protection may be applied to a registered monument taking into account whether the monument is, in terms of such heritage, of special or particular interest, character, integrity, community or amenity value, whether at a local, regional, national or international level. This includes

- a national monument,
- a wreck of 100 or more years old, or
- a guardianship monument.



A person shall not carry out works at, on, in, under, to, or within the immediate surroundings of a monument to which special protection applies, or direct or authorise the carrying out of such works, other than under and in accordance with a licence. This shall be deemed to apply to a registered monument in the ownership or guardianship of the Minister or a local authority where special protection does not otherwise apply to the monument.

General protection applies to

- a registered monument to which special protection does not apply, and
- a prescribed monument (not being a registered monument).

A person shall not carry out works at, on, in, under, to, or within the immediate surroundings of a monument to which general protection applies, or direct or authorise the carrying out of such works, other than under and in accordance with a licence.

A person shall not, except under and in accordance with a licence, do any of the following at, on, in, over, under or in the vicinity of a wreck 100 or more years old, a registered monument or prescribed monument which is under water, or an archaeological object which is underwater:

- dive or direct or authorise diving;
- use or possess, or direct or authorise the use or possession of, diving, survey or salvage equipment;
- dump or deposit, or direct or authorise the dumping or deposition of, any thing whether or not it interferes with or causes damage to the thing;
- interfere, remove or tamper in any way (whether with or without causing damage) with the thing.

The Minister may prescribe a licence, consent, approval, permission or other authorisation where a licence, consent, approval, permission or other authorisation is required to be granted, issued or given under an enactment (not being the Act of 2000) for works to be carried out which may require an EIA, and the Minister is satisfied that such works are capable of being at, on, in, under, to, or within the immediate surroundings of a monument, and it is reasonable and proportionate to do so and compatible with the protection of monuments,

The Minister shall consider whether or not the relevant works in respect of which they should be made subject to conditions and may require all or any of the following:

- the carrying out of an assessment of heritage interest or potential including an assessment by way of archaeological excavation, use of detection devices or any form of photographic or geophysical survey equipment or any other appropriate form of survey or inspection;
- the recording of the monument as a whole or any part or aspect of it (including its immediate surroundings) or any objects on, in, under or within it or its immediate surroundings including recording by way of archaeological excavation, use of detection devices or any form of photographic or geophysical survey equipment or any other appropriate form of survey or inspection;
- the carrying out of any form of monitoring (including archaeological monitoring), supervision or inspection;
- the salvaging, collection or protection of any part of the monument (including its immediate surroundings) or any object on, in, under or within it or its immediate surroundings and, where appropriate, the preparation of such part or object for deposition in an appropriate museum or other site for such deposition;
- the specification of the time period when the relevant works are to be carried out;



- that the relevant works be done in a specified manner or be funded or carried out by a specified person or a person falling within a specified category of persons.

The Minister shall make a screening determination for EIA in respect of the proposed relevant works on the basis of the information provided by the applicant. The Minister shall ensure that, before the application is determined, proposed relevant works likely to have significant effects on the environment by virtue of their nature, size or location (or any combination thereof) are made subject to an EIA. The applicant shall in this case submit to the Minister an EIAR in respect of the proposed relevant works, having regard to guidelines issued by the Minister.

The Minister may appoint himself or herself, or with the consent of a local authority, appoint the local authority as the guardian of a registered monument to which special protection applies. A national monument under the Act of 1930 will be deemed both a registered monument and a guardianship monument.

Any archaeological object where such object has no known owner shall be vested in the State. An owner or owner exception of land, not being the State, or a finder of an archaeological object is deemed not to acquire any rights of ownership to an archaeological object found on, in or under the land.

Where a person finds, or believes that he or she has found an archaeological object, the person shall make a preliminary report of the finding of the thing to the Board of the National Museum of Ireland or a member of An Garda Síochána within 72 hours, in the case of licensable activity, to the Minister or the Board in such manner as is specified in the licence. A person, other than a relevant person, shall not interfere with or remove a relevant archaeological object, or cause it to be interfered with or removed, except under and in accordance with a licence, or where there is reasonable grounds to believe that it is necessary to remove the thing from the site where he or she found it for the purposes of the safekeeping of the thing.

“Architectural heritage” means—

- structures and buildings together with their settings and attendant grounds, fixtures and fittings,
- groups of structures and buildings referred to in paragraph (a),
- and sites, that are of archaeological, architectural, cultural, historic, scientific, social or technical interest;

A person shall not, other than under and in accordance with a licence—

- undertake or carry out, or direct or authorise the undertaking or carrying out of, archaeological excavation,
- ... archaeological monitoring,
- search for or collect... archaeological objects lying exposed on the surface of land, whether or not any such object is known to be on, in or under that land,
- search for... wrecks one hundred or more years old or archaeological objects or prescribed monuments, or other relevant things of archaeological interest, situated on, in or under the sea bed or land covered by water...
- be in possession of a detection device in, at, on, over or above, or within the immediate surroundings of, a registered monument or a wreck one hundred or more years old, or
- use... a detection device for the purpose of identifying, locating (including searching for), investigating, surveying or recording any archaeological object or monument or relevant thing of archaeological interest...



Anything done by a person in the course of his or her employment shall, in any proceedings brought under this Act, be treated as done also by that person's employer, whether or not it was done with the employer's knowledge or approval. Anything done by a person as agent for another person, with the authority (whether express or implied and whether precedent or subsequent) of that other person shall, in any proceedings brought under this Act, be treated as done also by that other person.

National Monuments Legislation (1930-2014)

The National Monument Act, 1930 (as amended) provides the formal legal mechanism to protect monuments in Ireland. Protection of a monument is provided via:

- Record of Monuments and Places (RMP);
- National Monument in the ownership or guardianship of the Minister for Arts, Heritage, Regional, Rural & Gaeltacht Affairs or a Local Authority;
- National Monument subject to a Preservation Order (or temporary Preservation Order);
- Register of Historic Monuments (RHM).

The definition of a monument is specified as:

- any artificial or partly artificial building, structure or erection or group of such buildings, structures or erections;
- any artificial cave, stone or natural product, whether forming part of the ground, that has been artificially carved, sculptured or worked upon or which (where it does not form part of the place where it is) appears to have been purposely put or arranged in position;
- any, or any part of any, prehistoric or ancient tomb, grave or burial deposit, or (ii) ritual, industrial or habitation site; and
- any place comprising the remains or traces of any such building, structure or erection, any cave, stone or natural product or any such tomb, grave, burial deposit or ritual, industrial or habitation site.

Under Section 14 of the Principal Act (1930):

It shall be unlawful...

to demolish or remove wholly or in part or to disfigure, deface, alter, or in any manner injure or interfere with any such national monument without or otherwise than in accordance with the consent hereinafter mentioned (a licence issued by the Office of Public Works National Monuments Branch),

or

to excavate, dig, plough or otherwise disturb the ground within, around, or in the proximity to any such national monument without or otherwise than in accordance...

Under Amendment to Section 23 of the Principal Act (1930):

A person who finds an archaeological object shall, within four days after the finding, make a report of it to a member of the Garda Síochána...or the Director of the National Museum...

The latter is of relevance to any finds made during a watching brief.

In the 1994 Amendment of Section 12 of the Principal Act (1930), all the sites and 'places' recorded by the Sites and Monuments Record of the Office of Public Works are provided with a new status in law.



This new status provides a level of protection to the listed sites that is equivalent to that accorded to 'registered' sites [Section 8(1), National Monuments Amendment Act 1954] as follows:

The Commissioners shall establish and maintain a record of monuments and places where they believe there are monuments and the record shall be comprised of a list of monuments and such places and a map or maps showing each monument and such place in respect of each county in the State.

The Commissioners shall cause to be exhibited in a prescribed manner in each county the list and map or maps of the county drawn up and publish in a prescribed manner information about when and where the lists and maps may be consulted.

In addition, when the owner or occupier (not being the Commissioners) of a monument or place which has been recorded, or any person proposes to carry out, or to cause or permit the carrying out of, any work at or in relation to such monument or place, he shall give notice in writing of his proposal to carry out the work to the Commissioners and shall not, except in the case of urgent necessity and with the consent of the Commissioners, commence the work for a period of two months after having given the notice.

The National Monuments Amendment Act enacted in 2004 provides clarification in relation to the division of responsibilities between the Minister of Environment, Heritage and Local Government, Finance and Arts, Sports and Tourism together with the Commissioners of Public Works. The Minister of Environment, Heritage and Local Government will issue directions relating to archaeological works and will be advised by the National Monuments Section and the National Museum of Ireland. The Act gives discretion to the Minister of Environment, Heritage and Local Government to grant consent or issue directions in relation to road developments (Section 49 and 51) approved by An Bord Pleanála and/or in relation to the discovery of National Monuments.

14A. (1) The consent of the Minister under section 14 of this Act and any further consent or licence under any other provision of the National Monuments Acts 1930 to 2004 shall not be required where the works involved are connected with an approved road development.

14A. (2) Any works of an archaeological nature that are carried out in respect of an approved road development shall be carried out in accordance with the directions of the Minister, which directions shall be issued following consultation by the minister with the Director of the National Museum of Ireland.

Subsection 14A (4) Where a national monument has been discovered to which subsection (3) of this section relates, then the road authority carrying out the road development shall report the discovery to the Minister subject to subsection (7) of this section, and pending any directions by the Minister under paragraph (d) of this subsection, no works which would interfere with the monument shall be carried out, except works urgently required to secure its preservation carried out in accordance with such measures as may be specified by the Minister.

The Minister will consult with the Director of the National Museum of Ireland for a period not longer than 14 days before issuing further directions in relation to the national monument.

The Minister will not be restricted to archaeological considerations alone, but will also consider the wider public interest.



Appendix 15.2 Glossary of Impact Assessment



Appraisal Method for the Assessment of Impacts

The assessment methodology has regard to the EPA assessment criteria (EPA 2022) and to the TII Guidelines (TII 2024). Archaeological and cultural heritage sites are a non-renewable resource and such assets are generally considered to be location sensitive. In this context, any change to their environment, such as construction activity and ground disturbance works, could adversely affect these sites.

Ongoing interaction with the wider EIAR team took place, in particular the the architectural heritage specialists, as well as the engineering design team for the Proposed Scheme. This facilitated an interdisciplinary approach for the assessment of archaeology and cultural heritage.

Potential impacts on the receiving archaeological and cultural heritage environment can be described as direct physical impacts, indirect physical impacts, and impacts on setting (i.e. the surroundings in which an archaeological / cultural heritage asset can be experienced; Historic England 2017).

Direct physical impacts are those development activities that directly cause damage to the fabric of an archaeological / cultural heritage asset. Typically, these activities are related to construction works (e.g. they could include excavation of foundations, earthmoving / site preparation creation of access roads, cycle paths, and the excavation of service trenches).

Indirect physical impacts are those processes, triggered by development activity, that lead to the degradation of archaeological / cultural heritage assets (e.g. dewatering, which would affect organic archaeological material in water-logged deposits).

Impacts on the setting of archaeological / cultural heritage assets describe how the presence of a development changes the surroundings of an asset in such a way that it affects (positively or negatively) the heritage significance of that asset. Visual impacts are most commonly encountered. Such impacts may be encountered at all stages in the life cycle of a development, but they are only likely to be considered significant during the prolonged operational life of the development. Where recorded monuments are also designated architectural heritage assets post-1700 in date and are deemed to be of primarily architectural heritage significance, their setting will be assessed in Chapter 16 (Architectural Heritage) of the EIAR.

Significance / Sensitivity Criteria

In accordance with EPA Guidelines (EPA 2022), the context, character, significance and sensitivity of each archaeological / cultural heritage receptor requires evaluation and the significance of the impact is then determined by considering the importance of the asset and the predicted magnitude of the impact. In accordance with the TII Guidelines (TII 2024), the importance criteria used to evaluate an archaeological site, monument or complex take into account the character and integrity of the asset and any available data regarding it. This can be ascertained by looking at the criteria described in Table 16-7 (compiled by Courtney Deery Heritage Consultancy Ltd, based on standard authorities and guidelines as listed in Section 16.4 of Chapter 16. While these criteria contribute to the importance of a feature they should not be treated as definitive. However, these criteria contribute to a wider judgement based on the individual circumstances of these archaeological / cultural heritage assets.

An evaluation of the importance of archaeological / cultural heritage receptors is based on their designation and on the extent to which these assets contribute to the archaeological or cultural heritage environment, though their individual or group qualities, either directly or potentially. Table 16-8 presents the scale of importance together with criteria as per the TII Guidelines. Undesignated



archaeological or cultural heritage sites can be assigned a low, medium or high sensitivity value, taking into consideration the criteria cited in Table A15.2-1

Table A15.2-1 Explanation of Archaeology and Cultural Heritage Receptor Assessment Criteria

Criteria	Explanation
Existing status	The level of protection associated with an archaeological / cultural heritage asset is an important consideration.
Condition / preservation / integrity	The survival of an archaeological / cultural heritage asset's archaeological potential both above and below ground is an important consideration and should be assessed in relation to its present condition and surviving features. Well-preserved sites should be highlighted. This assessment can only be based on a field inspection.
Documentation / data	The significance of an archaeological / cultural heritage asset may be enhanced by the existence of records of previous investigations or contemporary documentation supported by written evidence or historic maps. Sites with a definite historical association or an example of a notable event or person should be highlighted.
Group value / character	The value of a single archaeological / cultural heritage asset may be greatly enhanced by its association with related contemporary monuments or with monuments from different periods indicating an extended time presence in any specific area. In some cases, it may be preferable to protect the complete group, including associated and adjacent land, rather than to protect isolated monuments within that group.
Rarity / character	The rarity of some archaeological / cultural heritage asset types can be a central factor affecting response strategies for development, whatever the condition of the individual feature. It is important to recognise sites that have a limited distribution.
Visibility in the landscape / character / integrity	Archaeological / cultural heritage assets that are highly visible in the landscape have a heightened physical presence. The intervisibility between monuments may also be explored in this category.
Fragility / vulnerability / integrity	It is important to assess the level of threat to an archaeological / cultural heritage asset from erosion, natural degradation, agricultural activity, land clearance, neglect, careless treatment or development.
Amenity value / character	Regard should be taken of the existing and potential amenity value of an archaeological / cultural heritage asset.



Table A15.2-2 Importance Criteria (per TII Guidelines (TII 2024))

Criteria	Explanation
Very High	Designated built heritage receptors rated as being of international importance, including associated historic gardens and designed landscapes. Designated features of international intangible heritage value. Designated historic landscapes of international value. National Monuments. Other designated cultural heritage receptors of international importance. World Heritage Properties.
High	Architectural Conservation Areas. Built heritage receptors rated as being of national importance by the NIAH, including associated historic gardens and designed landscapes. Historic landscapes (designated or undesignated) of outstanding interest and of demonstrable national value. These will be well-preserved historic landscapes exhibiting considerable coherence, time-depth, or other critical factors. Other designated or undesignated cultural heritage receptors of demonstrable national importance. Places or features of national intangible heritage value. Protected Structures. Recorded Monuments (or sites and monuments scheduled for inclusion on the RMP) of high quality and importance. Sites and monuments subject to a Preservation Order or Temporary Preservation Order. Undesignated receptors of high quality and importance. World Heritage Tentative List properties.
Medium	Recorded Monuments (or sites and monuments scheduled for inclusion on the RMP). Built heritage receptors rated as being of regional importance by the NIAH, including associated historic gardens and designed landscapes. Historic landscapes of regional value (designated or undesignated). Historic townscapes or built-up areas with demonstrable historic integrity in their buildings or built settings (e.g. including street furniture and other structures). Other designated or undesignated receptors of regional cultural heritage importance. Places or features of regional intangible heritage value.
Low	Built heritage receptors rated as being of local importance by the NIAH, including associated historic gardens and designed landscapes. Historic landscapes whose value is limited by poor preservation and/or poor survival of contextual associations.



Criteria	Explanation
	Historic townscape or built-up areas of limited historic integrity in their buildings, or built settings (e.g. including street furniture and other structures). Other designated or undesignated cultural heritage receptors of local importance. Places or features of local intangible heritage value. Receptors compromised by poor preservation of contextual associations with inherent, albeit limited, cultural heritage value. Undesignated historic buildings of modest quality in their fabric or historical association.
Negligible	Receptors / landscapes with very little surviving cultural heritage interest.

Magnitude of Impact

When assessing the impact magnitude, the following need to be considered:

- Extent – size, scale and spatial distributions of the impact;
- Duration – period of time over which the impact will occur;
- Frequency – how often the impact will occur; and
- Context – how will the extent, duration and frequency contrast with the accepted baseline conditions;
- Quality of impact (i.e. positive, negative, none);
- Probability of impact (i.e. likelihood that the identified impact will occur).

Table A15.2-3 Magnitude of Impact Criteria (per TII Guidelines)

Impact Magnitude	Explanation Criteria
Very High	Major alteration to, or complete loss of, a Cultural Heritage Receptor. Effects likely to be experienced at a very large scale; considered permanent and irreversible.
High	Notable or long-term change to a Cultural Heritage Receptor.
Medium	Moderate or long-term change over a restricted area or a moderate change to a Cultural Heritage Receptor.
Low	Minor, short- or medium-term change over a restricted area or a minor change to a Cultural Heritage Receptor.
Negligible	Imperceptible change to a Cultural Heritage Receptor.



Significance of Effect

The likely significance of effect is determined by considering the baseline rating (importance) of the asset upon which there is an impact and the magnitude of the effect. The effect significance is defined as Imperceptible, Not Significant, Slight, Moderate, Significant, Very Significant, or Profound (Table 16-10 and image below).

Table A15.2-4 Defining Significance of Impacts (per TII Guidelines)

Impact	Definition
Profound	An effect which obliterates a Cultural Heritage Receptor of high or very high importance.
Very Significant	An effect which, by its character, magnitude, duration or intensity considerably alters most of an important aspect of the Cultural Heritage Receptor.
Significant	An effect which, by its character, magnitude, duration or intensity alters an important aspect of the Cultural Heritage Receptor.
Moderate	An effect that alters the character of the Cultural Heritage Receptor in a manner that is consistent with existing and emerging baseline trends.
Slight	An effect which causes noticeable changes in the character of the Cultural Heritage Receptor without affecting its importance.



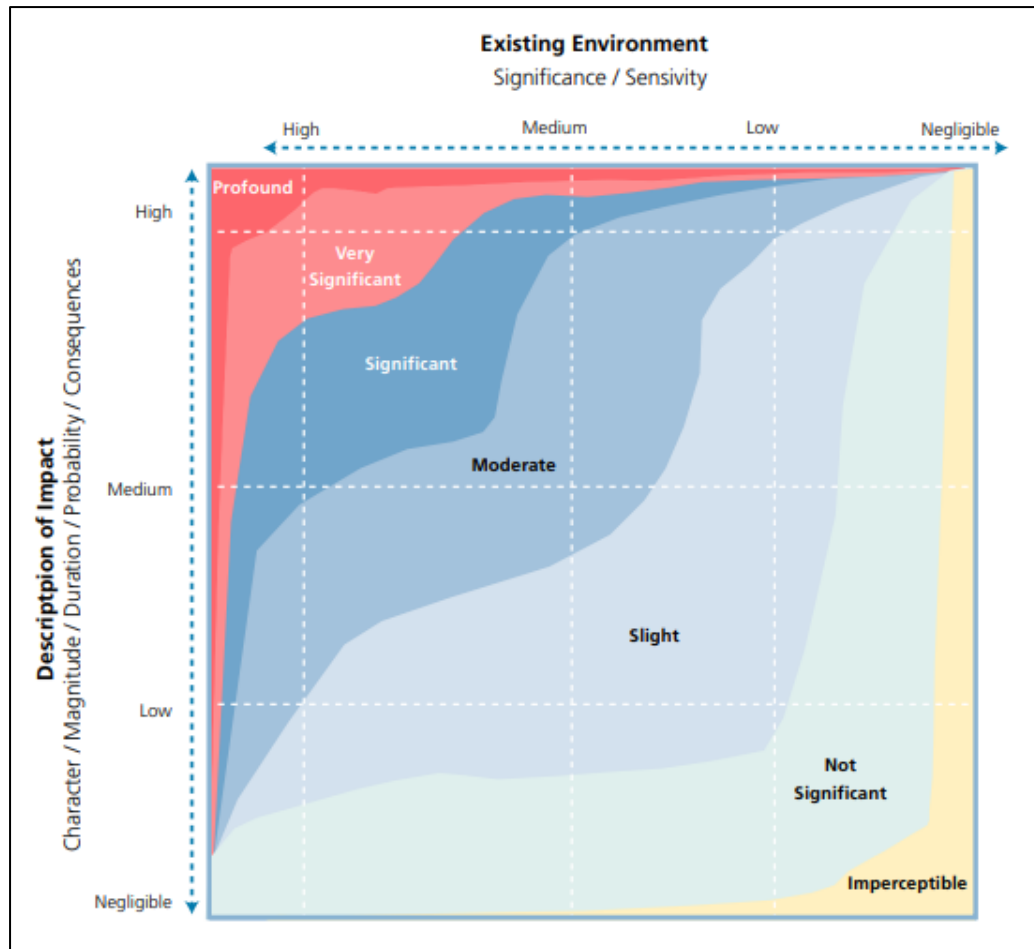


Figure A15.2-1 Description of Impacts from the EPA Guidelines on the Information to be Contained in EIAR (EPA 2022)



Appendix 15.3 County Development Plan (2023-2029) – April 2023, Chapter 10: Heritage, Culture and Arts



Policies and Objectives

Policy HCAP1 - Fingal Heritage Plan Implement the current Fingal Heritage Plan 2018–2023 and to support the preparation and implementation of the Fingal Heritage Plan 2023–2029.

Archaeological Heritage Policies and Objectives

Policy HCAP2 – Importance of Archaeological Resource Recognise the importance of our archaeological resource and provide appropriate objectives to ensure its appropriate retention, promotion and recording.

Policy HCAP3 – Record of Monuments and Places/ Sites and Monuments Record Safeguard archaeological sites, monuments, objects and their settings listed in the Record of Monuments and Places (RMP), Sites and Monuments Record (SMR), underwater cultural heritage including protected wrecks and any additional newly discovered archaeological remains.

Policy HCAP4 – Preservation-in-situ Favour the preservation in-situ (or at a minimum preservation by record) of all sites and features of historical and archaeological interest.

Objective HCAO1 – Preservation-in-situ Favour the preservation in situ or at a minimum preservation by record, of archaeological sites, monuments, features or objects in their settings. In securing such preservation the Council will have regard to the advice and recommendations of the National Monuments Service of the Department of the Housing, Local Government and Heritage.

Objective HCAO2 – Protection of RMPs/SMRs Protect all archaeological sites and monuments, underwater archaeology, and archaeological objects, which are listed in the Record of Monuments and Places, Wreck Inventory of Ireland and all sites and features of archaeological and historic interest discovered subsequent to the publication of the Record of Monuments and Places, and to seek their preservation in situ (or at a minimum, preservation by record) through the planning process.

Objective HCAO3 – Management of Archaeological Resource Encourage and promote the appropriate management and maintenance of the County's archaeological heritage, including historical burial grounds and underwater cultural heritage in accordance with conservation principles and best practice guidelines.

Objective HCAO4 – Industrial or Military Heritage Secure the preservation in-situ of significant examples of industrial or military heritage.

Objective HCAO5 – Community Monuments Fund Support the implementation of the Community Monuments Fund in order to ensure the monitoring and adaptation of archaeological monuments and mitigate against damage caused by climate change.

Objective HCAO6 – Climate Change and the Archaeological Resource Co-operate with other agencies in the investigation of climate change on archaeological sites and monuments and to develop suitable adaptation measures to strengthen resilience and reduce the vulnerability of archaeological heritage in line with the National Climate Change Sectoral Adaptation Plan for Built and Archaeological Heritage 2019.

Policy HCAP5 – Development Design Incorporate heritage features into infrastructure design at an early stage in the development planning and management process to protect and promote the cultural heritage resource and create awareness and interpretation.



Objective HCAO7 – Archaeology and Development Design Ensure archaeological remains are identified and fully considered at the very earliest stages of the development process, that schemes are designed to avoid impacting on the archaeological heritage.

Objective HCAO8 – Archaeological Impact Assessment Require that proposals for linear development over one kilometre in length; proposals for development involving ground clearance of more than half a hectare; or developments in proximity to areas with a density of known archaeological monuments and history of discovery; to include an Archaeological Impact Assessment and refer such applications to the relevant Prescribed Bodies.

Objective HCAO9 – Archaeology in the Landscape Ensure that in general development will not be permitted which would result in the removal of archaeological monuments with above ground features, protected wrecks and that this will be especially the case in relation to archaeological monuments which form significant features in the landscape.

Objective HCAO10 – Context of Archaeological Monuments Ensure that development within the vicinity of a Recorded Monument or Zone of Archaeological Notification does not seriously detract from the setting of the feature and is sited and designed appropriately.

Objective HCAO11 – Impacts of large-scale development Ensure that proposals for large scale developments and infrastructure projects consider the impacts on the archaeological heritage and seek to avoid them.

Objective HCAO12 – Coastal and Maritime Heritage Co-operate with other agencies in the assessment of the potential for climate change to impact on coastal, riverine, inter-tidal and sub-tidal sites and their environments including shipwreck sites.

Objective HCAO13 – Findings of Archaeological Activity Encourage reference to or incorporation of significant archaeological finds into development schemes, where appropriate and sensitively designed, through layout, in situ and virtual presentation of archaeological finds and by using historic place names and the Irish language where appropriate.

Objective HCAO14 – Archaeology in Open Space Retain and manage appropriately archaeological monuments within open space areas in or beside developments, ensuring that such monuments are subject to an appropriate conservation management plan, are presented appropriately and are not left vulnerable, whether in the immediate or longer term, to dangers to their physical integrity or possibility of loss of amenity.

Policy HCAP6 – Promotion Promote the tourism potential of Fingal's cultural heritage and improve legibility by providing guidance for appropriate interpretation in line with the Fingal Heritage Signage and Trails Guidance 2021.

Policy HCAP7 – Community Initiatives Support community initiatives and projects regarding preservation, presentation and access to archaeological heritage and underwater cultural heritage, provided such are compatible with appropriate conservation policies and standards, having regard to the guidance and advice of the Department of Housing, Local Government and Heritage.

Objective HCAO15 – Best Practice Promote best practice for archaeological excavation by ensuring that they are undertaken according to best practice as outlined by the National Monuments Service, Department of Housing, Local Government and Heritage, The National Museum of Ireland and the Institute of Archaeologists of Ireland.



Objective HCAO16 – Conservation Plans Manage the archaeological sites and monuments that Fingal County Council owns or is responsible for according to best practice and according to Conservation Plans where they exist.

Objective HCAO17 – Dissemination Ensure the public dissemination of the findings of licenced archaeological activity in Fingal through the Dublin County Archaeological GIS project, publications, public lectures and events to promote awareness of, and access to, Fingal's archaeological inheritance and foster high quality community archaeology.

Objective HCAO18 – Public Awareness Raise public awareness of the cultural heritage and improve legibility by providing appropriate interpretation in areas, sites, villages, and buildings of archaeological and historic significance.

Objective HCAO19 – Community Archaeology Strategy Continue to implement the findings of the Community Archaeology Strategy for Fingal.

Objective HCAO20 – Cultural Tourism Support the growth of cultural tourism in the County, including the potential for niche heritage based tourism products by facilitating the development of heritage events, infrastructure such as heritage trails, walkways and cycleways etc. and activities such as community excavation.

Objective HCAO21 – Climate Change Promote awareness and the appropriate adaptation of Ireland's built and archaeological heritage to deal with the effects of climate change.

Architectural Heritage Policies and Objectives

Policy HCAP8 – Protection of Architectural Heritage Ensure the conservation, management, protection and enhancement of the architectural heritage of Fingal through the designation of Protected Structures and Architectural Conservation Areas, the safeguarding of designed landscapes and historic gardens, and the recognition of structures and elements with no specific statutory designation that contribute positively to the vernacular, industrial, maritime or 20th century heritage of the County.

Policy HCAP9 – Re-use of Architectural Heritage Champion the maintenance, repair, re-use and sensitive retro-fitting of the architectural heritage and older building stock of the County as a cornerstone of its sustainable development policy and will require that adaptative re-use and regeneration adheres to best conservation practice.

Policy HCAP10 – Retention Continue to support and encourage the sympathetic and appropriate reuse, rehabilitation and retention of protected structures and historic buildings ensuring the special interest, character and setting of the building or structure is preserved.

Policy HCAP11 – Conservation of Architectural Heritage Conserve and protect buildings, structures and sites of special architectural, historical, archaeological, artistic, cultural, scientific, social or technical interest by adding or retaining them on the Record of Protected Structures or by designating groups of structures as Architectural Conservation Areas.

Policy HCAP12 – Interventions to Protected Structures Ensure that direct or indirect interventions to Protected Structures or adjoining development affecting them are guided by architectural conservation principles so that they are sympathetic, sensitive and appropriate to the special interest, appearance, character, and setting of the Protected Structure and are sensitively scaled and designed.



Policy HCAP13 – Retention of Protected Structures Require the retention and appropriate active use of Protected Structures.

Policy HCAP14 – Architectural Conservation Areas Protect the special interest and character of all areas which have been designated as an Architectural Conservation Area (ACA). Development within or affecting an ACA must contribute positively to its character and distinctiveness and take opportunities to protect and enhance the character and appearance of the area and its setting wherever possible. Development shall not harm buildings, spaces, original street patterns, archaeological sites, historic boundaries or features, which contribute positively to the ACA.

Policy HCAP15 – Character of Architectural Conservation Areas Support and encourage the sympathetic and appropriate adaptive reuse, refurbishment, and upgrading of protected structures and buildings or structures that contribute to the character of an Architectural Conservation Area ensuring that their special interest, character and setting is retained. Prohibit development that seeks the demolition of a Protected Structure or buildings that contribute to the character of an ACA in almost all circumstances.

Policy HCAP16 – Conservation Best Practice Promote best conservation practice and encourage the use of appropriately qualified and experienced conservation professionals, contractors, and craft persons.

Objective HCAO22 – Record of Protected Structures Review the Record of Protected Structures (RPS) to assess current entries and to add structures of special architectural, historical, archaeological, artistic, cultural, scientific, social or technical interest as appropriate.

Objective HCAO23 – Expansion of Record of Protected Structures Expand the RPS to include structures of industrial, maritime, vernacular and twentieth century heritage where they are of sufficient significance and complete the assessment of the few remaining Ministerial Recommendations from the National Inventory of Architectural Heritage (NIAH) Survey of Fingal.

Objective HCAO24 – Alteration and Development of Protected Structures and ACAs Require proposals for any development, modification, alteration, extension or energy retrofitting affecting a Protected Structure and/or its setting or a building that contributes to the character of an ACA are sensitively sited and designed, are compatible with the special character, and are appropriate in terms of the proposed scale, mass, height, density, architectural treatment, layout, materials, impact on architectural or historic features.

Objective HCAO25 – Architectural Heritage Impact Statement Require an Architectural Heritage Impact Statement as part of the planning documentation for development that has the potential to affect the relationship between the Protected Structure and any complex of adjoining associated buildings, designed landscape features, or designed views or vistas from or to the structure. This particularly relates to large landholdings such as country estates, institutional complexes, and industrial sites where groups of structures have a functional connection or historical relationship with the principal building.

Objective HCAO26 – Use of Protected Structures Where required to support active use or facilitate suitable adaptive re-use of Protected Structures the Council may in certain circumstances consider the relaxation of site zoning restrictions to secure the preservation and conservation of the Protected Structure where the use proposed is compatible with the existing structure. This will only be permitted where the development is consistent with conservation policies and the proper planning and sustainable development of the area.



Objective HCAO27 – Protected Structures within Larger Developments Where permission is being sought for a development in which works to the Protected Structure are one element of a larger proposal, the Council will seek for the repair and refurbishment of the Protected Structure to be contained and completed within the first phase.

Objective HCAO28 – Conservation Plans for Protected Structures Demonstrate best practice in relation to the management, care and maintenance of Protected Structures by continuing the programme of commissioning Conservation Plans for the principal heritage properties in the Council's ownership (several of which are also ACAs), implement the policies and actions of these Conservation Plans where they exist, and ensure the Plans are used by all sections of the Council to inform and direct the design of interventions within the heritage properties, both to buildings and landscapes.

Objective HCAO29 – Protected Structures Audit Carry out an audit and assess the condition of all Protected Structures within the Council's ownership and pilot a management/maintenance plan as a template for these structures.

Policy HCAP17 – Maintenance and Energy Retrofitting Promote good housekeeping principles of routine maintenance checks, with repair and conservation of building fabric where required as a mechanism to assist with achieving the best thermal performance from a building. Support and promote the sensitive retro fitting of energy efficiency measure and the use of renewable energy sources in traditional and historic buildings, including Protected Structures. Ensure that the measures are compatible with traditional construction methods and materials and do not have a detrimental physical, aesthetic or visual impact on the structure.

Objective HCAO30 – Retrofitting Pilot Project Demonstrate best practice on energy retrofitting of historic buildings through a pilot project using suitable case studies to improve comfort levels and reduce energy consumption for the occupier.

Policy HCAP18 – Designed Landscape Features, Settings and Views Protect the setting, significant views, and built features of historic designed landscapes and promote the conservation of their essential character, both built and natural.

Policy HCAP19 – Development and Historic Demesnes Resist proposals or developments that would lead to the loss or, or cause harm to the character, principal components or setting of historic designed landscapes and demesnes of significance in the County.

Policy HCAP20 – Conservation and Woodland Management Plans Support the commissioning of Conservation Plans and Woodland Management Plans and the cataloguing of the collections for the historic designed landscapes in the Council's ownership. Encourage private owners to undertake Conservation Plans and Woodland Management Plans for their historic landscapes. **Objective HCAO31 – Protection of Designed Landscapes** Identify the historic designed landscapes of significance in the County and determine the appropriate mechanism to ensure their future protection. Several of the most significant are already designated, as Architectural Conservation Areas.

Objective HCAO32 – Designed Landscape Appraisal Require that proposals for development within historic designed landscapes include a Designed Landscape Appraisal (including an ecological assessment) as part of the planning documentation to fully consider the potential impacts of the proposal. The appraisal should be carried out prior to the initial design of any development, in order that this evaluation to inform the design which must be sensitive to and respect the built heritage elements and green space values of the site.



Objective HCAO33 – Conservation Plans Continue the programme of commissioning Conservation Plans for the principal heritage properties in the Council’s ownership that contain historic designed landscapes.

Objective HCAO34 – Perimeter of Phoenix Park Ensure that development within Fingal along the perimeter of the Phoenix Park adheres to the Office of Public Works’ (OPW), Phoenix Park Conservation Management Plan, does not have a detrimental impact on the Park, does not damage any of the built elements along its boundary, or interrupt any important vistas into or out of it.

Policy HCAP21 – Built Heritage Assets Protect and enhance the historic environment and built heritage assets, including elements of historic street furniture, paving and historic boundary treatments.

Policy HCAP22 – Retention and Reuse of Existing Building Stock Seek the retention, appreciation and appropriate revitalisation of the historic and vernacular building stock, and 20th century built heritage of Fingal in both the urban and rural areas of the County by deterring the replacement buildings with modern structures and by protecting (through the use of Architectural Conservation Areas and the Record of Protected Structures and in the normal course of Development Management) these buildings where they contribute to the character of an area and/or where they are rare examples of a structure type, a distinctive piece of architecture or have an innate value. (See also Table 14.26)

Policy HCAP23 – Heritage-led Regeneration Require that adaptative re-use of older buildings and historic centre heritage-led regeneration adheres to best conservation practice and principles. There will be a presumption against the demolition of older buildings where restoration or adaption is a feasible option.

Policy HCAP24 – Works to Vernacular Buildings Works to vernacular buildings should adhere to best conservation practice and use traditional, especially vernacular, building methods and materials.

Policy HCAP25 – Retention of Historic Fabric Encourage the retention of the original or historic fabric such as windows, doors, wall renders, roof coverings, shopfronts, pub fronts and other significant features of older or historic buildings, whether protected or not.

Policy HCAP26 – Historic Townscapes Recognise the importance of historic townscapes or streetscapes in creating a sense of place when the urban fabric or groups of buildings are read together and how the gradual attrition of historic fabric or detailing, or the demolition and replacement of individual modest buildings can fundamentally alter the character of the place.

Objective HCAO35 – Appropriate Maintenance, Repair and Re-use Advocate for and support appropriate maintenance, repair, re-use and sensitive retro-fitting of the architectural heritage, vernacular buildings and the older building stock of the County, whether protected or not, to deliver the Council’s sustainable development policy.

Objective HCAO36 – Extensions to Vernacular Dwellings Require that the size, scale, design, form, layout and materials of extensions to vernacular dwellings or conversions of historic outbuildings take direction from the historic building stock of Fingal and are in keeping and sympathetic with the existing structure.

Objective HCAO37 – Thatched Buildings Audit Audit and map the historic thatched buildings of Fingal and devise measures to assist their continued survival.

Objective HCAO38 – Infill Development Support the development of sustainable backland and infill development that is appropriate in scale and character to historic town and village centres, that



transitions appropriately, accommodates surviving structures where appropriate and retains the historic streetscape form.

Objective HCAO39 – Character of Historic Townscapes Maintain and enhance the character and quality of historic townscapes or streetscapes by seeking those interventions to the exteriors of existing buildings are appropriately detailed and use good quality materials. Original finishes/fabric should be retained or replicated.

Objective HCAO40 – Public Realm Works Require that public realm works, proposed infrastructural and public utility works do not remove historic street furniture such as limestone or granite kerbs, cobblestones, cast-iron post boxes, water pumps, milestones and historic street-lamp standards, except where an exceptional need has been clearly established.

Objective HCAO41 – Modern Street Furniture Sensitively design, locate and rationalise modern street furniture and elements such as utility boxes, cables, bins, bike racks, poles, wires, antenna and signage. Defunct or obsolete telephone boxes/kiosks should be removed rather than replaced.

Objective HCAO42 – Undergrounding Cables Underground cables and wires in historic urban environments or designated sites, such as SAAO's and ACAs, where appropriate, and where it does not detrimentally impact on other elements of heritage e.g. archaeology, natural heritage.

Objective HCAO43 – Historic Street Elements Audit Commission a study to map historic street furniture, stone setts, historic kerbing and historic pavers/ flags, and associated features in the public realm, to be protected, conserved or reintroduced.

Industrial Heritage

Policy HCAP27 – Recognition of Industrial Heritage Recognise the value of the industrial heritage of the County and seek to protect and retain it through designation or appropriately scaled and designed development for its continued or adaptive re-use, taking direction from the ICOMOS (International Council on Monuments and Sites) and TICCIH (The International Committee for the Conservation of the Industrial Heritage) Principles for the Conservation of Industrial Heritage (The Dublin Principles).

Policy HCAP28 – Awareness of Industrial Heritage Promote awareness of Fingal's industrial, military, maritime, canal and railway heritage.

Objective HCAO44 – Fingal industrial Heritage Survey Update and publish the Fingal Industrial Heritage Survey to outline the history of the development of industry in the County and use it to identify significant industrial heritage structures that should be added to the Record of Protected Structure or industrial heritage complexes that should be designated as Architectural Conservation Areas.

Objective HCAO45 – Development and Industrial Heritage Utilise the information provided within the Fingal Industrial Heritage Survey when assessing development proposals for surviving industrial heritage sites.

Objective HCAO46 – Preservation of Industrial Heritage Secure the preservation in-situ of significant examples of industrial, military and nautical heritage that form part of our post-medieval archaeological heritage, and examples of which may date from periods up to and including the 20th century.



Objective HCAO47 – Historic Harbours Ensure that repairs and new insertions to the historic harbours, piers and quays are appropriate in the materials used and, in the design, and scale of any new structures or equipment.

Objective HCAO48 – Historic Bridges Seek the retention and appropriate repair/maintenance of the historic road and rail bridges of the County whether Protected Structures or not.

Objective HCAO49 – Royal Canal Protect and enhance the built and natural heritage of the Royal Canal and ensure that development along it or within its vicinity is sensitively designed and does not have a detrimental effect on the character of the Canal, its built elements and its natural heritage values. Works to the built fabric of Royal Canal should have regard to the Waterways Ireland's Heritage Plan and Guidelines for Conservation of the Built Heritage – Repair and maintenance of heritage structures on the inland waterways of Ireland 2015.

Climate Change

Policy HCAP29 – Climate Change and Heritage Advance and support mechanisms through which the Council can develop resilience, adapt or mitigate the impact of Climate Change on the archaeological and built heritage of the County.

Policy HCAP30 – Effects of Climate Change Co-operate with other agencies in the investigation of climate change on the fabric of historic buildings and traditional construction to enhance adaptive capacity, strengthen resilience and reduce the vulnerability of the built heritage.

Objective HCAO50 – Climate Change Mitigation Utilise the data provided by the Fingal Cultural Heritage and Climate Change Risk Assessment 2021 to address or mitigate, where possible, the potential Climate Change impacts identified. Where managed loss is the most appropriate option to ensure the site or structure is fully recorded and the data retained by the Council.

Objective HCAO51 – Adaptation Strategies Develop resilience and adaptation strategies for the built and archaeological heritage in the Council's ownership.

Objective HCAO52 – Risk Management Pilot Pilot a disaster risk management plan for a Council owned heritage property to serve as a template for other historic buildings in the Council's ownership.

Access to the Heritage Resource

Policy HCAP31 – Access Improve access, visitor facilities, enhance animation of heritage sites and upgrade visitor infrastructure at Council owned heritage sites, where appropriate.

Objective HCAO53 – Tourism Promote the tourism potential of Fingal's cultural heritage and improve legibility by providing guidance for appropriate interpretation in line with the Fingal Heritage Signage and Trails Guidance 2021.

Objective HCAO54 – Understanding of the Heritage Resource Promote and enhance the understanding of the archaeological and architectural heritage of Fingal through the development of cultural tourism products, talks, exhibitions and publications. digital access through interactive maps, videos, virtual exhibitions, and podcasts.

Objective HCAO55 – Universal Access Accommodate and improve universal access to Council owned archaeological and architectural heritage sites open to the general public, where possible. Ensure the archaeological and architectural heritage significance of the site is taken into account when providing such access and is not damaged or compromised.



Culture

Policy HCAP32 – Protection of Cultural Infrastructure Ensure that culture infrastructure is valued and protected as an integral part of the fabric of Fingal, in line with national and regional policy.

Policy HCAP33 – Cultural Resources Support the growth and expansion of the many cultural resources within Fingal, particularly where proposals increase the opportunity for greater engagement with local communities, the young, the marginalised and people with disabilities.

Objective HCAO57 – Arts and Culture Infrastructure Policy Develop an Arts and Culture Infrastructure policy document for Fingal that informs the preparation of audits, use of vacant spaces and toolkits for provision of cultural and arts facilities

Objective HCAO58 – Swords Castle Cultural Quarter Support the enhancement of the identity, cultural and tourism development of Swords by protecting, conserving and enhancing the historic site of Swords Castle and its environs and the improvement of public and civic facilities and spaces of Swords Town Centre through the delivery of the Swords Cultural Quarter.

Objective HCAO59 – Cultural Assets Ensure that regeneration contributes to the cultural assets of the community with new spaces provided at street level in larger regeneration projects that will accommodate and provide for new local cultural uses.

Objective HCAO60 – Cultural Spaces Develop the range of cultural spaces and facilities in tandem with new housing developments to meet the needs of an increased population within Fingal.

Objective HCAO61 – Temporary Cultural Provision Facilitate the temporary use of underused sites or buildings for artistic or cultural provision. Where applications are made seeking to demolish or replace a cultural space/use, the development must re-accommodate the same or increased volume of space/use or a similar use within the redevelopment. Cultural uses include theatres, cinemas, artist studios, performance spaces, music venues, nightclubs, studios and dance space.

Language Heritage

Policy HCAP34 – Irish Language Promote, support and preserve the Irish Language within the County.

Objective HCAO62 – Irish Language Facilities Highlight the profile of the Irish language in the urban and rural environment and support the Irish language by facilitating the provision of Irish language facilities and activities.

Objective HCAO63 – Naming of Residential Schemes Ensure that the naming of mixed residential and mixed-use schemes reflect local history, folklore and/or place names and are stated in the Irish language.

Objective HCAO64 – Townland Names Encourage the use and promotion of historical and current townland names in the urban and rural environment in both the Irish and English languages, with a view to supporting the provision of townlands' place names markers/signage.

Objective HCAO65 – Shopfronts Actively support the use of the Irish language on shopfronts.



Objective HCAO66 – Promotion of Irish Language Promote Irish language and traditional culture in Fingal and support events celebrating Irish as a living language and our cultural heritage.

Objective HCAO67 – Irish Language Supports Continue to promote the established Coiste Gaeilge Comhairle Fhine Gall, a Fingal County Irish Language Committee, which encourages the use of the Irish language, the development of Seachtain na Gaeilge and promotes the use of Gaeilge on shop fronts.

Multi-Culturalism

Policy HCAP35 – Promotion of Multi-Culturalism Promote the County’s multi-cultural heritage.

Policy HCAP36 – Language Heritage Promote and support the language heritage of new Irish/migrant communities within the County.

Objective HCAO68 – Environment for Multi-Culturalism Establish an environment for promoting cross cultural awareness, racial harmony, mutual understanding and appreciation of all religious and ethnic traditions within the County, including development of public spaces with cross-cultural appeal and relevance.

Arts

Policy HCAP37 – Fingal Arts Plan 2019–2025 Support the implementation of the Fingal County Council Arts Plan 2019–2025 (and updates thereto) by facilitating and encouraging the provision of new or improved arts and cultural facilities within the County.

Objective HCAO70 – Artist’s Spaces Develop and provide spaces for artist studios within Fingal and avail of opportunities for utilising underused buildings and local buildings with heritage value, to promote the expansion of cultural uses within existing spaces and communities, for artistic and cultural purposes.

Objective HCAO71 – Inclusivity Support greater inclusivity as part of the cultural experience by supporting adaptation to existing facilities and support initiatives and investments in arts and cultural spaces that aim to promote increased cultural engagement for minority groups, people with disabilities, young people, socially excluded, members of the Travelling community and LGBTQ+ community members.



Appendix 19.1: Resource & Waste Management Plan



Trinity
Consultants

awnconsulting

Resource & Waste Management Plan

Mooretown Lands Phase 2, Swords, Co. Dublin
Appendix 19.1

CLIENT

Fingal
County
Council

DOCUMENT REFERENCE

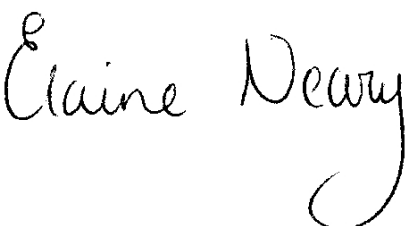
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Disclaimer

This report considers the specific instructions and requirements of our client. It is not intended for third-party use or reliance, and no responsibility is accepted for any third party. The provisions in this report apply solely to this project and should not be assumed applicable to other developments without review and modification.



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1. INTRODUCTION

AWN Consulting, a Trinity Consultants Company, has prepared this Construction and Demolition (C&D) Resource & Waste Management Plan (RWMP) on behalf of Glenveagh Homes Ltd. The Proposed Development comprises a residential development consisting of 360 no. residential units and a crèche, together with associated infrastructure and site development works. These works include internal roads, footpaths, car and bicycle parking, public and private open spaces, bin and bicycle stores, public lighting, landscaping/amenity areas, and all related surface water and foul drainage infrastructure. Vehicular access will be provided through the Phase 1 construction accesses currently under construction (Planning Ref. LADP/002/24), consistent with the permitted Mooretown development phasing strategy.

This plan provides information necessary to ensure that the management of C&D waste at the site is undertaken in accordance with the current legal and industry standards including the *Waste Management Act 1996* as amended and associated Regulations ¹, *Environmental Protection Agency Act 1992* as amended ², *Litter Pollution Act 1997* as amended ³, the National Waste Management Plan for a Circular Economy 2024 - 2030 (NWMPCE) (2024) ⁴. In particular, this plan aims to ensure maximum recycling, reuse and recovery of waste with diversion from landfill, wherever possible. It also provides appropriate measures in relation to the collection and transport of waste from the site to prevent issues associated with litter or more serious environmental pollution (e.g. contamination of soil and/or water).

This RWMP includes information on the legal and policy framework for C&D waste management in Ireland, estimates of the type and quantity of waste to be generated by the Proposed Development and prescribes measures for the management of different waste streams. The RWMP should be viewed as a live document and will be regularly revisited throughout the project's lifecycle so that opportunities to maximise waste reduction / efficiencies are exploited throughout, and that data is collected on an ongoing basis so that it is as accurate as possible.

2. OVERVIEW OF WASTE MANAGEMENT IN IRELAND

2.1 National level

The Irish Government issued a policy statement in September 1998, *Changing Our Ways*⁵, which identified objectives for the prevention, minimisation, reuse, recycling, recovery and disposal of waste in Ireland. The target for C&D waste in this report was to recycle at least 50% of C&D waste within a five year period (by 2003), with a progressive increase to at least 85% over fifteen years (i.e. 2018).

In response to the *Changing Our Ways* report, a task force (Task Force B4) representing the waste sector of the already established Forum for the Construction Industry, released a report entitled '*Recycling of Construction and Demolition Waste*'⁶ concerning the development and implementation of a voluntary construction industry programme to meet the Government's objectives for the recovery of C&D waste.

In September 2020, the Irish Government published a policy document outlining a new action plan for Ireland to cover the period of 2020-2025. This plan, '*A Waste Action Plan for a Circular Economy*'⁷ (WAPCE), replaces the previous national waste management plan, '*A Resource Opportunity*' (2012), and was prepared in response to the 'European Green Deal' which sets a roadmap for a transition to an altered economical model, where climate and environmental challenges are turned into opportunities.

The WAPCE sets the direction for waste planning and management in Ireland up to 2025. This reorientates policy from a focus on managing waste to a much greater focus on creating circular patterns of production and consumption. Other policy statements of a number of public bodies already acknowledge the circular economy as a national policy priority.

The policy document contains over 200 measures across various waste areas including circular economy, municipal waste, consumer protection and citizen engagement, plastics and packaging, construction and demolition, textiles, green public procurement and waste enforcement.

One of the first actions to be taken was the development of the *Whole of Government Circular Economy Strategy 2022-2023 'Living More, Using Less'* (2021)⁸ to set a course for Ireland to transition across all sectors and at all levels of Government toward circularity and was issued in December 2021. It is anticipated that the Strategy will be updated in full every 18 months to 2 years.

The Circular Economy and Miscellaneous Provisions Act 2022⁹ was signed into law in July 2022. The Act underpins Ireland's shift from a "take-make-waste" linear model to a more sustainable pattern of production and consumption, that retains the value of resources in our economy for as long as possible and that will work to significantly reduce our greenhouse gas emissions. The Act defines Circular Economy for the first time in Irish law, incentivises the use of recycled and reusable alternatives to wasteful, single-use disposable packaging, introduces a mandatory segregation and incentivised charging regime for commercial waste, streamlines the national processes for End-of-Waste and By-Products decisions, tackling the delays which can be encountered by industry, and supporting the availability of recycled secondary raw materials in the Irish market, and tackles illegal fly-tipping and littering.

The Environmental Protection Agency (EPA) of Ireland issued '*Best Practice Guidelines for the Preparation of Resource & Waste Management Plans for Construction & Demolition Projects*' in November 2021¹⁰. These guidelines replace the previous 2006 guidelines issued by The National Construction and Demolition Waste Council (NCDWC) and the Department of the Environment, Heritage and Local Government (DoEHLG) in 2006¹¹. The guidelines provide a practical approach which is informed by best practice in the prevention and management of C&D wastes and resources from design to construction of a project, including consideration of the deconstruction of a project.

These guidelines have been followed in the preparation of this document and include the following elements:

- ▶ *Predicted C&D wastes and procedures to prevent, minimise, recycle and reuse wastes;*
- ▶ *Design teams roles and approach;*
- ▶ *Relevant EU, national and local waste policy, legislation and guidelines;*
- ▶ *Waste disposal/recycling of C&D wastes at the site;*
- ▶ *Provision of training for Resource Waste Manager (RM) and site crew;*
- ▶ *Details of proposed record keeping system;*
- ▶ *Details of waste audit procedures and plan; and*
- ▶ *Details of consultation with relevant bodies i.e. waste recycling companies, Local Authority, etc.*

Section 3 of the Guidelines identifies thresholds above which there is a requirement for the preparation of a bespoke RWMP for developments. The new guidance classifies developments on a two-tiered system. Developments which do not exceed any of the following thresholds may be classed as Tier 1 development, which require a simplified RWMP:

- ▶ *New residential development of less than 10 dwellings.*
- ▶ *Retrofit of 20 dwellings or less.*
- ▶ *New commercial, industrial, infrastructural, institutional, educational, health and other developments with an aggregate floor area less than 1,250m².*
- ▶ *Retrofit of commercial, industrial, infrastructural, institutional, educational, health and other developments with an aggregate floor area less than 2,000m²; and*
- ▶ *Demolition projects generating in total less than 100m³ in volume of C&D waste.*

A development which exceeds one or more of these thresholds is classed as Tier-2 development.

This development requires a RWMP as a Tier 2 development as it is above following criterion:

- ▶ *New residential development of less than 10 dwellings.*

The Department of Housing, Local Government and Heritage authored *Sustainable Residential Development and Compact Settlements - Guidelines for Planning Authorities (2024)*¹². *Suggest the below thresholds at which the need for supplemental information such as the RWMP should be considered.*

- ▶ *30 or more residential units,*
- ▶ *1,000 sq. meters of mixed-use development*

Other guidelines followed in the preparation of this report include 'Construction and Demolition Waste Management – a handbook for Contractors and Site Managers'¹³, published by FÁS and the Construction Industry Federation in 2002 and the previous guidelines, 'Best Practice Guidelines for the Preparation of Waste Management Plans for Construction and Demolition Projects' (2006).

These guidance documents are considered to define best practice for C&D projects in Ireland and describe how C&D projects are to be undertaken such that environmental impacts and risks are minimised and maximum levels of waste recycling are achieved.

2.2 Regional Level

The Proposed Development is located in the Local Authority area of Fingal County Council.

The Eastern Midlands Region (EMR) Waste Management Plan 2015 – 2021, which previously governed waste management policy in the FCC area, has been superseded as of March 2024 by the NWMPC 2024 – 2030, the new national waste management plan for Ireland.

The NWMPC does not dissolve the three regional waste areas. The NWMPC sets the ambition of the plan to have a 0% total waste growth per person over the life of the Plan with an emphasis on non-household wastes including waste from commercial activities and the construction and demolition sector. This Plan seeks to influence sustainable consumption and prevent the generation of waste, improve the capture of materials to optimise circularity and enable compliance with policy and legislation.

The national plan sets out the following strategic targets for waste management in the country that are relevant to the development:

National Targets

- 1B. (Construction Materials) 12% Reduction in Construction & Demolition Waste Generated by 2030.
- 3B. (Reuse Facilities) Provide for reuse at 10 Civic Amenity Sites, minimum

Municipal landfill charges in Ireland are based on the weight of waste disposed. In the Leinster Region, charges are approximately €140 - €160 per tonne of waste which includes an €85 per tonne landfill levy introduced under the *Waste Management (Landfill Levy) (Amendment) Regulations 2015 (as amended)*¹⁶. *The Circular Economy (Waste Recovery Levy) Regulations 2024*¹⁵ will also incur a levy of €10 per tonne for waste accepted for recovery. This will include backfilling at authorised recovery sites and at municipal waste landfills.

The *Fingal Development Plan 2023 – 2029*¹⁶ (2023) sets out a number of objectives for the Fingal region in line with the objectives of the national waste management plan, including the following:

- ▶ **Objective DMSO241 - Construction and Demolition Waste Management Plan** - Require that Construction Waste Management Plans be submitted as part of any planning application for projects in excess of any of the following thresholds:
 - New residential development of 10 units or more.
 - New developments other than above, including institutional, educational, health and other public facilities, with an aggregate floor area in excess of 1,250 sqm.
 - Renovation / refurbishment projects generating in excess of 100m³ in volume of construction waste.
 - Civil engineering projects in excess of 500m³ of waste materials used for development of works on the site.

2.3 Legislative Requirements

The primary legislative instruments that govern waste management in Ireland and applicable to the development are:

- ▶ *Waste Management Act 1996 as amended;*
- ▶ *Environmental Protection Agency Act 1992 as amended;*
- ▶ *Litter Pollution Act 1997 as amended;*
- ▶ *Planning and Development Act 2000 as amended*¹⁷;
- ▶ *Circular Economy and Miscellaneous Provisions Act 2022.*

One of the guiding principles of European waste legislation, which has in turn been incorporated into the *Waste Management Act 1996* as amended and subsequent Irish legislation, is the principle of "Duty of

Care". This implies that the waste producer is responsible for waste from the time it is generated through until its legal recycling, recovery or disposal (including its method of disposal). As it is not practical in most cases for the waste producer to physically transfer all waste from where it is produced to the final destination, waste contractors will be employed to physically transport waste to the final destination. Following on from this is the concept of *"Polluter Pays"* whereby the waste producer is liable to be prosecuted for pollution incidents, which may arise from the incorrect management of waste produced, including the actions of any contractors engaged (e.g. for transportation and disposal/recovery/recycling of waste).

It is therefore imperative that the developer ensures that the waste contractors engaged by construction contractors are legally compliant with respect to waste transportation, recycling, recovery and disposal. This includes the requirement that a contractor handle, transport and recycle/recover/dispose of waste in a manner that ensures that no adverse environmental impacts occur as a result of any of these activities.

A collection permit to transport waste must be held by each waste contractor which is issued by the National Waste Collection Permit Office (NWCPO). Waste receiving facilities must also be appropriately permitted or licensed. Operators of such facilities cannot receive any waste, unless in possession of a Certificate of Registration (COR) or waste permit granted by the relevant Local Authority under the *Waste Management (Facility Permit & Registration) Regulations 2007 as amended* or a Waste Licence granted by the EPA. The COR / permit / licence held will specify the type and quantity of waste able to be received, stored, sorted, recycled, recovered and/or disposed of at the specified site.

3. DESIGN APPROACH

The client and the design team have integrated the *'Best Practice Guidelines for the Preparation of Resource & Waste Management Plans for Construction & Demolition Projects'* guidelines into the design workshops, to help review processes, identify and evaluate resource reduction measures and investigate the impact on cost, time, quality, buildability, second life and management post construction. Further details on these design principals can be found within the aforementioned guidance document.

The design team have undertaken the design process in line with the international best practice principles to firstly prevent wastes, reuse where possible and thereafter sustainably reduce and recover materials. The below sections have been the focal point of the design process and material selections and will continued to be analysed and investigated throughout the design process and when selecting material.

As noted in the EPA guidelines, the approaches presented are based on international principles of optimizing resources and reducing waste on construction projects through:

- ▶ *Prevention;*
- ▶ *Reuse;*
- ▶ *Recycling;*
- ▶ *Green Procurement Principles;*
- ▶ *Off-Site Construction;*
- ▶ *Materials Optimisation; and*
- ▶ *Flexibility and Deconstruction.*

3.1 Designing For Prevention, Reuse and Recycling

Undertaken at the outset and during project feasibility and evaluation the Client and Design Team considered:

- ▶ Establishing the potential for any reusable site assets (buildings, structures, equipment, materials, soils, etc.);
- ▶ Assessing any existing buildings on the site that can be refurbished either in part or wholly to meet the Client requirements; and
- ▶ Enabling the optimum recovery of assets on site.

3.2 Designing for Green Procurement

Waste prevention and minimisation pre-procurement have been discussed and will be further discussed in this section. The Design Team will discuss proposed design solutions, encourage innovation in tenders and incentivise competitions to recognise sustainable approaches. They will also discuss options for packaging reduction with the main Contractor and subcontractors/suppliers using measures such as 'Just-in-Time' delivery and use ordering procedures that avoid excessive waste. The Green procurement extends from the planning stage into the detailed design and tender stage and will be an ongoing part of the long-term design and selection process for this development.

3.3 Designing for Off-Site Construction

Use of off-site manufacturing has been shown to reduce residual wastes by up to 90% (volumetric building versus traditional). The decision to use offsite construction is typically cost led but there are significant benefits for resource management. Some further considerations for procurement which are being investigated as part of the planning stage design process are listed as follows:

- ▶ Modular buildings as these can displace the use of concrete and the resource losses associated with concrete blocks such as broken blocks, mortars, etc.;
- Modular buildings are typically pre-fitted with fixed plasterboard and installed insulation, eliminating these residual streams from site.
- ▶ Use of pre-cast structural concrete panels which can reduce the residual volumes of concrete blocks, mortars, plasters, etc.;
- ▶ The use of prefabricated composite panels for walls and roofing to reduce residual volumes of insulation and plasterboards;
- ▶ Using pre-cast hollow-core flooring instead of in-situ ready mix flooring or timber flooring to reduce the residual volumes of concrete/formwork and wood/packaging, respectively; and
- ▶ Designing for the preferential use of offsite modular units.

3.4 Designing for Materials Optimisation During Construction

To ensure manufacturers and construction companies adopt lean production models, including maximising the reuse of materials onsite as outlined in section 3.1, structures should be designed with the intent of designing out waste. This helps to reduce the environmental impacts associated with transportation of materials and from waste management activities. This includes investigating the use of standardised sizes for certain materials to help reduce the amount of offcuts produced on site, focusing on promotion and development of off-site manufacture.

3.5 Designing for Flexibility and Deconstruction

Design flexibility has and will be investigated throughout the design process to ensure that where possible products (including buildings) only contain materials that can be recycled and are designed to be easily disassembled. Material efficiency is being considered for the duration and end of life of a building project to produce; flexible, adaptable spaces that enable a resource-efficient, low-waste future change of use; durability of materials and how they can be recovered effectively when maintenance and refurbishment are undertaken and during disassembly/deconstruction.

4. DESCRIPTION OF THE DEVELOPMENT

4.1 Location, Size and Scale of the Development

The Proposed Development comprises a residential development consisting of 360 no. residential units and a crèche, together with associated infrastructure and site development works. These works include internal roads, footpaths, car and bicycle parking, public and private open spaces, bin and bicycle stores, public lighting, landscaping/amenity areas, and all related surface water and foul drainage infrastructure. Vehicular access will be provided through the Phase 1 construction accesses currently under construction (Planning Ref. LADP/002/24), consistent with the permitted Mooretown development phasing strategy.

The Proposed Development lands extend to c. 14.75 ha and consists of two (2) no. distinct land parcels situated on the southern side of Rathbeale Road located on the western side of Swords, Co. Dublin. The northern parcel is directly bounded by the road, while the southern parcel lies immediately south and east of Phase 1 of the Mooretown development. The southern parcel is enclosed on three sides by existing and emerging residential development. The two parcels are separated by the Phase 1 lands, reflecting the planned, sequential build-out of the wider Mooretown strategic residential lands. The proposed site layout is illustrated in Figure 4.1.

A full description of the Proposed Development is outlined in Chapter 5 'Description of the Proposed Development' of this EIAR.

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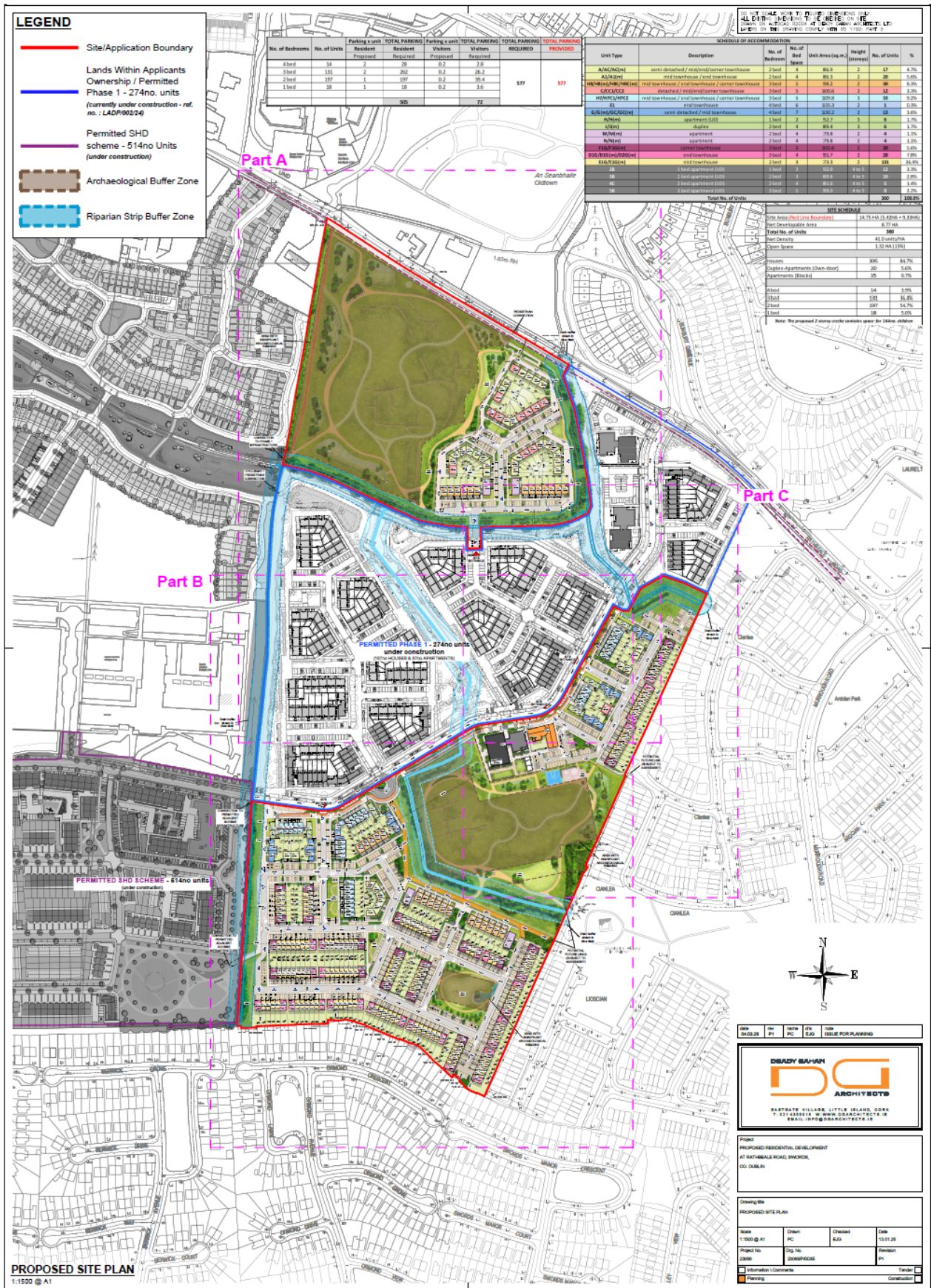


Figure 4.1 Proposed Site Layout Plan (Source: Deady Grahan Architects 2026)

4.2 Details of the Non-Hazardous Wastes to be Produced

There will be no waste materials generated from demolition activities as there is no demolition associated with this Proposed Development.

There will be topsoil and subsoil excavated to facilitate construction of new foundations, roads and the installation of underground services. The project engineers (AKM Design Group) have estimated that c. 21,860m³ of material will need to be excavated to do so. It is currently envisaged that c. 21,860m³ will be able to be reused on site in landscaping and site levelling functions. Where material is deemed unsuitable for reuse, this material will be taken for appropriate offsite reuse, recovery, recycling and / or disposal.

During the construction phase there may be a surplus of building materials, such as timber off-cuts, broken concrete blocks, cladding, plastics, metals and tiles generated. There may also be excess concrete during construction which will need to be disposed of. Plastic and cardboard waste from packaging and supply of materials will also be generated. The contractor will be required to ensure that oversupply of materials is kept to a minimum and opportunities for reuse of suitable materials is maximised.

Waste will also be generated from construction workers e.g. organic / food waste, dry mixed recyclables (waste paper, newspaper, plastic bottles, packaging, aluminium cans, tins and Tetra Pak cartons), mixed non-recyclables and potentially sewage sludge from temporary welfare facilities provided on site during the construction phase. Waste printer / toner cartridges, waste electrical and electronic equipment (WEEE) and waste batteries may also be generated infrequently from site offices.

4.3 Potential Hazardous Wastes Arising

4.3.1 Contaminated Soil

Site investigations (SI) were undertaken by Site Investigations Ltd in 2024 at the site of the Proposed Development and samples from the SI were sent off for environmental testing and waste classification. Further environmental soil testing and classification may be undertaken prior to any material being removed offsite, however as the site is greenfield with history of agricultural use it is not expected that any contaminated material will be encountered.

Environmental testing was completed on six samples from the investigation and the results are provided in Appendix 6. For material to be removed from site, Suite I testing was carried out to determine if the material is hazardous or non-hazardous and then the leachate results were compared with the published waste acceptance limits of BS EN 12457-2 to determine whether the material on the site could be accepted as 'inert material' by an Irish landfill.

The Waste Classification report created using HazWasteOnline™ software shows that the material tested can be classified as non-hazardous material.

Following this analysis of the solid test results, the leachate disposal suite results showed that the determinands remained within the Inert waste thresholds.

Six samples were tested for analysis but it cannot be discounted that any localised contamination may have been missed. Any made ground excavated on site should be stockpiled separately to natural soils to avoid any potential cross contamination of the soils. Additional testing of these soils may be requested by the individual landfill before acceptance and a testing regime designed by an environmental engineer would be recommended to satisfy the landfill.

In the unlikely event that any potentially contaminated material is encountered, it will need to be segregated from clean / inert material, tested and classified as either non-hazardous or hazardous in accordance with the EPA publication entitled '*Waste Classification: List of Waste & Determining if Waste*

is Hazardous or Non-Hazardous¹⁸ using the *HazWasteOnline* application (or similar approved classification method). The material will then need to be classified as clean, inert, non-hazardous or hazardous in accordance with the *EC Council Decision 2003/33/EC*¹⁹, which establishes the criteria for the acceptance of waste at landfills.

In the unlikely event that Asbestos Containing Materials (ACMs) are found within the excavated material, the removal will only be carried out by a suitably permitted waste contractor, in accordance with *the Safety, Health and Welfare at Work (Exposure to Asbestos) Regulations 2006-2010 and the Best Practice Guidance for Handling Asbestos (2023)*²⁰. All asbestos will be taken to a suitably licensed or permitted facility.

In the unlikely event that hazardous soil, or historically deposited waste is encountered during the construction phase, the contractor will notify FCC (depending on the location) and provide a Hazardous / Contaminated Soil Management Plan, to include estimated tonnages, description of location, any relevant mitigation, destination for disposal / treatment, in addition to information on the authorised waste collector(s).

4.3.2 Fuel/Oils

Fuels and oils are classed as hazardous materials; any on-site storage of fuel / oil, and all storage tanks and all draw-off points will be bunded and located in a dedicated, secure area of the site. Provided that these requirements are adhered to and the site crew are trained in the appropriate refuelling techniques, it is not expected that there will be any fuel / oil waste generated at the site.

4.3.3 Invasive Plant Species

Multiple site surveys were undertaken by (Brady Shipman Martin) between 2024 - 2025. This included a site walkover surveys of the entire site, and around part of the outside perimeter to search for any invasive species listed on the Third Schedule of the European Communities (Birds and Natural Habitats) Regulations 2011 (as amended). No invasive species listed in the Third Schedule of the EU Habitats Regulations (such as Japanese knotweed or giant hogweed) have been recorded on the Mooretown lands during the biodiversity surveys carried out to date. Further surveys will be undertaken prior to the submission of the planning application to confirm these findings.

4.3.4 Asbestos

As there is no demolition associated with the Proposed Development it is unlikely that asbestos or ACMs will be encountered.

In the unlikely event that asbestos or ACMS are encountered, removal of asbestos or ACMs will be carried out by a suitably qualified contractor and ACMs will only be removed from site by a suitably permitted / licenced waste contractor, in accordance with the *Safety, Health and Welfare at Work (Exposure to Asbestos) Regulations 2006-2010 and the Best Practice Guidance for Handling Asbestos (2023)*¹⁸. All material will be taken to a suitably licensed or permitted facility.

4.3.5 Other Known Hazardous Substances

Paints, glues, adhesives and other known hazardous substances will be stored in designated areas. They will generally be present in small volumes only and associated waste volumes generated will be kept to a minimum. Wastes will be stored in appropriate receptacles pending collection by an authorised waste contractor.

In addition, WEEE (containing hazardous components), printer toner / cartridges, batteries (Lead, Ni-Cd or Mercury) and / or fluorescent tubes and other mercury containing waste may be generated from during C&D activities or temporary site offices. These wastes, if generated, will be stored in appropriate receptacles in designated areas of the site pending collection by an authorised waste contractor.

5. ROLES AND RESPONSIBILITIES

The *Best Practice Guidelines on the Preparation of Resource Waste Management Plans for Construction and Demolition Projects* promotes that a suitably qualified Resource Manager (RM) with expertise in waste and resource management to implement the RWMP should be appointed. The RM may be performed by number of different individuals over the life-cycle of the Project, however it is intended to be a reliable person chosen from within the Planning/Design/Contracting Team, who is technically competent and appropriately trained, who takes the responsibility to ensure that the objectives and measures within the Project RWMP are complied with. The RM is assigned the requisite authority to meet the objective and obligations of the RWMP. The role will include the important activities of conducting waste checks/audits and adopting construction methodology that is designed to facilitate maximum reuse and/or recycling of waste.

5.1 Role of the Client

The Client are the body establishing the aims and the performance targets for the project.

- ▶ The Client has commissioned the preparation and submission of this RWMP as part of the design and planning submission;
- ▶ The Client is to commission the preparation and submission of an updated RWMP as part of the construction tendering process;
- ▶ The Client will ensure that the RWMP is agreed on and submitted to the local authority and their agreement obtained prior to commencement of works on site;
- ▶ The Client will request the end-of-project RWMP from the Contractor.

5.2 Role of the Client Advisory Team

The Client Advisory Team or Design Team is formed of architects, consultants, quantity surveyors and engineers and is responsible for:

- ▶ Drafting and maintaining the RWMP through the design, planning and procurement phases of the project;
- ▶ Appointing a RM to track and document the design process, inform the Design Team and prepare the RWMP.
- ▶ Including details and estimated quantities of all projected waste streams with the support of environmental consultants/scientists. This will also include data on waste types (e.g. waste characterisation data, contaminated land assessments, site investigation information) and prevention mechanisms (such as by-products) to illustrate the positive circular economy principles applied by the Design Team;
- ▶ Handing over of the RWMP to the selected Contractor upon commencement of construction of the development, in a similar fashion to how the safety file is handed over to the Contractor;
- ▶ Working with the Contractor as required to meet the performance targets for the project.

5.3 Future Role of the Contractor

The future construction Contractors have not yet been decided upon for this RWMP. However, once select they will have major roles to fulfil. They will be responsible for:

- ▶ Preparing, implementing and reviewing the RWMP throughout the construction phases (including the management of all suppliers and sub-contractors) as per the requirements of the EPA guidelines;
- ▶ Identifying a designated and suitably qualified RM who will be responsible for implementing the RWMP;

- ▶ Identifying all hauliers to be engaged to transport each of the resources / wastes off-site;
- ▶ Implementing waste management policies whereby waste materials generated on site are to be segregated as far as practicable;
- ▶ Renting and operating a mobile-crusher to crush concrete for temporary reuse onsite during construction and reduce the amount of HGV loads required to remove material from site;
- ▶ Applying for the appropriate waste permit to crush concrete onsite;
- ▶ Identifying all destinations for resources taken off-site. As above, any resource that is legally classified as a 'waste' must only be transported to an authorised waste facility;
- ▶ End-of-waste and by-product notifications addressed with the EPA where required;
- ▶ Clarification of any other statutory waste management obligations, which could include on-site processing;
- ▶ Full records of all resources (both wastes and other resources) will be maintained for the duration of the project; and
- ▶ Preparing a RWMP Implementation Review Report at project handover.

6. KEY MATERIALS & QUANTITIES

6.1 Project Resource Targets

Project specific resource and waste management targets for the site have not yet been set and this information will be updated for these targets once these targets have been confirmed by the client. However, it is expected for projects of this nature that a minimum of 70% of waste is fully re-used, recycled or recovered. Target setting will inform the setting of project-specific benchmarks to track target progress. Typical Key Performance Indicators (KPIs) that will be used to set targets include (as per guidelines):

- ▶ Weight (tonnes) or Volume (m3) of waste generated per construction value;
- ▶ Weight (tonnes) or Volume (m3) of waste generated per construction floor area (m2);
- ▶ Fraction of resource reused on site;
- ▶ Fraction of resource notified as by-product;
- ▶ Fraction of waste segregated at source before being sent off-site for recycling/recovery; and
- ▶ Fraction of waste recovered, fraction of waste recycled, or fraction of waste disposed.

6.2 Main Construction and Demolition Waste Categories

The main non-hazardous and hazardous waste streams that could be generated by the construction activities at a typical site are shown in Table 6.1. The List of Waste (LoW) code (2018) for each waste stream is also shown.

Table 6.1 Typical Waste Types Generated and LoW Codes (individual waste types may contain hazardous substances)

Waste Material	LoW Code
Concrete, bricks, tiles, ceramics	17 01 01-03 & 07
Wood, glass and plastic	17 02 01-03
Treated wood, glass, plastic, containing hazardous substances	17-02-04*
Bituminous mixtures, coal tar and tarred products	17 03 01*, 02 & 03*
Metals (including their alloys) and cable	17 04 01-11
Soil and stones	17 05 03* & 04
Gypsum-based construction material	17 08 01* & 02
Paper and cardboard	20 01 01
Mixed C&D waste	17 09 04
Green waste	20 02 01
Electrical and electronic components	20 01 35 & 36
Batteries and accumulators	20 01 33 & 34
Liquid fuels	13 07 01-10
Chemicals (solvents, pesticides, paints, adhesives, detergents etc.)	20 01 13, 19, 27-30
Insulation materials	17 06 04
Organic (food) waste	20 01 08
Mixed Municipal Waste	20 03 01

* Individual waste type may contain hazardous substances

6.3 Demolition Waste Generation

There will be no waste materials generated from demolition activities as there is no demolition associated with this Proposed Development.

6.4 Construction Waste Generation

Table 6.2 shows the breakdown of C&D waste types produced on a typical site based on data from the EPA *National Waste Reports*¹⁹ and the joint EPA & GMIT study²⁰.

Table 6.2 Waste Materials Generated on a Typical Irish Construction Site

Waste Types	%
Mixed C&D	33
Timber	28
Plasterboard	10
Metals	8
Concrete	6
Other	15
Total	100

Table 6.3, below, shows the estimated construction waste generation for the proposed Project based on the gross floor area of construction and other information available to date, along with indicative targets for management of the waste streams. The estimated amounts for the main waste types (with the exception of soils and stones) are based on an average large-scale development waste generation rate per m², using the waste breakdown rates shown in Table 6.2. These have been calculated from the schedule of development areas provided by the architect.

Table 6.3 Predicted On and Off-Site Reuse, Recycle and Disposal Rates for Construction Waste

Waste Type	Tonnes	Reuse		Recycle Recovery /		Disposal	
		%	Tonnes	%	Tonnes	%	Tonnes
Mixed C&D	643.8	10	64.4	80	515.0	10	64.4
Timber	546.2	40	218.5	55	300.4	5	27.3
Plasterboard	195.1	30	58.5	60	117.1	10	19.5
Metals	156.1	5	7.8	90	140.5	5	7.8
Concrete	58.5	30	17.6	65	38.0	5	2.9
Other	292.6	20	58.5	60	175.6	20	58.5
Total	1892.4		425.3		1286.6		180.5

In addition to the waste streams in Table 6.3 There will be topsoil and subsoil excavated to facilitate construction of new foundations, roads and the installation of underground services The project engineers (AKM Design Group) have estimated that c. 21,860m³ m3 of material will need to be excavated to do so. It is currently envisaged that c. 21,860m³ will be able to be reused on site in landscaping and site levelling functions. Where material is deemed unsuitable for reuse, this material will be taken for appropriate offsite reuse, recovery, recycling and / or disposal.

It should be noted that until final materials and detailed construction methodologies have been confirmed, the exact materials and quantities may be subject to some degree of change and variation during the construction process.

6.5 Proposed Resource and Waste Management Options

Waste materials generated will be segregated on-site, where it is practical. Where the on-site segregation of certain wastes types is not practical, off-site segregation will be carried out. There will be skips and receptacles provided to facilitate segregation at source, where feasible. All waste receptacles leaving the site will be covered or enclosed. The appointed waste contractor will collect and transfer the wastes as receptacles are filled. There are numerous waste contractors in the Dublin region that provide this service.

All waste arisings will be handled by an approved waste contractor holding a current waste collection permit. All waste arisings requiring disposal off-site will be reused, recycled, recovered or disposed of at a facility holding the appropriate registration, permit or licence, as required.

National End-of-Waste Decision EoW-N001/2023 (Regulation 28) published by the EPA in September 2023, establishes criteria determining when recycled aggregate resulting from a recovery operation ceases to be waste. Material from this Proposed Development will be investigated to see if it can cease to be a waste under the requirements of the National End of Waste Criteria for Aggregates.

During construction, some of the sub-contractors on site will generate waste in relatively low quantities. The transportation of non-hazardous waste by persons who are not directly involved with the waste business, at weights less than or equal to 2 tonnes, and in vehicles not designed for the carriage of waste, are exempt from the requirement to have a waste collection permit (per Article 30 (1) (b) of the Waste Collection Permit Regulations 2007, as amended). Any sub-contractors engaged that do not generate more than 2 tonnes of waste at any one time can transport this waste off-site in their work vehicles (which are not designed for the carriage of waste). However, they are required to ensure that the receiving facility has the appropriate COR / permit / licence.

Written records will be maintained by the contractor(s), detailing the waste arising throughout the C&D phases, the classification of each waste type, waste collection permits for all waste contractors who collect waste from the site and COR / permit / licence for the receiving waste facility for all waste removed off-site for appropriate reuse, recycling, recovery and / or disposal

Dedicated bunded storage containers will be provided for hazardous wastes which may arise, such as batteries, paints, oils, chemicals, if required.

The anticipated management of the main waste streams is outlined as follows:

Topsoil and Subsoil

The waste hierarchy states that the preferred option for waste management is prevention and minimisation of waste, followed by preparing for reuse and recycling / recovery, energy recovery (i.e. incineration) and, least favoured of all, disposal. The excavations are required to facilitate construction works so the preferred option (prevention and minimisation) cannot be accommodated for the excavation phase.

It is anticipated that all of the topsoil and subsoil will be reused on site. In the event that excess excavated material requires removal off-site it could be reused as a by-product (and not as a waste). If this is done, it will be done in accordance with Regulation 27 of the European Communities (Waste Directive) Regulations 2011, as amended, which requires that certain conditions are met and that by-product notifications are made to the EPA via their online notification form. Excavated material should not be removed from site until approval from the EPA has been received. The potential to reuse material as a by-product will be confirmed during the course of the excavation works, with the objective of eliminating any unnecessary disposal of material.

The next option (beneficial reuse) may be appropriate for the excavated material, pending environmental testing to classify the material as hazardous or non-hazardous in accordance with the EPA *Waste*

Classification – List of Waste & Determining if Waste is Hazardous or Non-Hazardous publication. Clean inert material may be used as fill material in other construction projects or engineering fill for waste licensed sites. Beneficial reuse of surplus excavation material as engineering fill may be subject to further testing to determine if materials meet the specific engineering standards for their proposed end use.

Any nearby sites requiring clean fill/capping material will be contacted to investigate reuse opportunities for clean and inert material. If any of the material is to be reused on another site as a by-product (and not as a waste), this will be done in accordance with Regulation 27. Similarly, if any soils/stones are imported onto the site from another construction site as a by-product, this will also be done in accordance with Regulation 27. Regulation 27 will be investigated to see if the material can be imported onto this site for beneficial reuse instead of using virgin materials.

If the material is deemed to be a waste, then removal and reuse / recovery / disposal of the material will be carried out in accordance with the Waste Framework Directive (Directive 2008/98/EC), the *Waste Management Act 1996* as amended, the *Waste Management (Collection Permit) Regulations 2007* as amended and the *Waste Management (Facility Permit & Registration) Regulations 2007* as amended. Once all available beneficial reuse options have been exhausted, the options of recycling and recovery at waste permitted and licensed sites will be considered.

In the event that contaminated material is encountered and subsequently classified as hazardous, this material will be stored separately to any non-hazardous material. It will require off-site treatment at a suitable facility or disposal abroad via Transfrontier Shipment of Wastes (TFS).

Bedrock

While it is not envisaged that bedrock will be encountered, if bedrock is encountered, it is anticipated that it will not be crushed on site. Any excavated rock is expected to be removed off-site for appropriate reuse, recovery and / or disposal. If bedrock is to be crushed on-site, the appropriate mobile waste facility permit will be obtained from FCC, where required.

Silt & Sludge

During the construction phase, silt and petrochemical interception will be carried out on run-off and pumped water from site works, where required. Sludge and silt will then be collected by a suitably licensed contractor and removed off-site.

Concrete Blocks, Bricks, Tiles & Ceramics

The majority of concrete blocks, bricks, tiles and ceramics generated as part of the construction works are expected to be clean, inert material and will be recycled, where possible. If concrete is to be crushed on-site, the appropriate mobile waste facility permit will be obtained from FCC.

Hard Plastic

As hard plastic is a highly recyclable material, much of the plastic generated will be primarily from material off-cuts. All recyclable plastic will be segregated and recycled, where possible.

Timber

Timber that is uncontaminated, i.e. free from paints, preservatives, glues, etc., will be disposed of in a separate skip and recycled off-site.

Metal

Metals will be segregated, where practical, and stored in skips. Metal is highly recyclable and there are numerous companies that will accept these materials.

Plasterboard

There are currently a number of recycling services for plasterboard in Ireland. Plasterboard from the construction phases will be stored in a separate skip, pending collection for recycling. The site Manager will ensure that oversupply of new plasterboard is carefully monitored to minimise waste.

Glass

Glass materials will be segregated for recycling, where possible.

Waste Electrical & Electronic Equipment (WEEE)

Any WEEE will be stored in dedicated covered cages / receptacles / pallets pending collection for recycling.

Other Recyclables

Where any other recyclable wastes, such as cardboard and soft plastic, are generated, these will be segregated at source into dedicated skips and removed off-site.

Non-Recyclable Waste

C&D waste which is not suitable for reuse or recovery, such as polystyrene, some plastics and some cardboards, will be placed in separate skips or other receptacles. Prior to removal from site, the non-recyclable waste skip / receptacle will be examined by a member of the waste team (see Section 9) to determine if recyclable materials have been placed in there by mistake. If this is the case, efforts will be made to determine the cause of the waste not being segregated correctly and recyclable waste will be removed and placed into the appropriate receptacle.

Asbestos Containing Materials

In the unlikely event that any asbestos or ACM are found on-site, they will be removed by a suitably competent contractor and disposed of as asbestos waste before the works begin. All asbestos removal work or encapsulation work must be carried out in accordance with the *Safety, Health and Welfare at Work (Exposure to Asbestos) Regulations 2006-2010*.

Other Hazardous Wastes

On-site storage of any hazardous wastes produced (i.e. contaminated soil if encountered and / or waste fuels) will be kept to a minimum, with removal off-site organised on a regular basis. Storage of all hazardous wastes on-site will be undertaken so as to minimise exposure to on-site personnel and the public and to also minimise potential for environmental impacts. Hazardous wastes will be recovered, wherever possible, and failing this, disposed of appropriately.

On-Site Crushing

It is currently not envisaged that the crushing of waste materials will occur on-site. However, if the crushing of material is to be undertaken, a mobile waste facility permit will first be obtained from FCC, where required and the destination of the accepting waste facility or if an application under regulation 28 will be made using National End-of-Waste Decision EoW-N001/2023, will be supplied to the FCC waste unit.

It should be noted that until a construction contractor is appointed it is not possible to provide information on the specific destinations of each construction waste stream. Prior to commencement of construction and removal of any waste offsite, details of the proposed destination of each waste stream will be provided to FCC by the project team.

6.6 Tracking and Documentation Procedures for Off-Site Waste

All waste will be documented prior to leaving the site. Waste will be weighed by the contractor, either by a weighing mechanism on the truck or at the receiving facility. These waste records will be maintained on site by the nominated project RM (see Section 8).

All movement of waste and the use of waste contractors will be undertaken in accordance with the Waste Framework Directive (Directive 2008/98/EC), the *Waste Management Act 1996* as amended, *Waste Management (Collection Permit) Regulations 2007* as amended and *Waste Management (Facility Permit & Registration) Regulations 2007* and amended. This includes the requirement for all waste contractors to have a waste collection permit issued by the NWCPO. The nominated project RM (see Section 9) will maintain a copy of all waste collection permits on-site.

If the waste is being transported to another site, a copy of the Local Authority waste COR / permit or EPA Waste Licence for that site will be provided to the nominated project Waste Manager (see Section 9). If the waste is being shipped abroad, a copy of the Transfrontier Shipping (TFS) notification document will be obtained from DCC (as the relevant authority on behalf of all Local Authorities in Ireland) and kept on-site along with details of the final destination (COR, permits, licences, etc.). A receipt from the final destination of the material will be kept as part of the on-site waste management records.

All information will be entered in a waste management recording system to be maintained on-site.

7. ESTIMATED COST OF WASTE MANAGEMENT

An outline of the costs associated with different aspects of waste management is outlined below. The total cost of C&D waste management will be measured and will take into account handling costs, storage costs, transportation costs, revenue from rebates and disposal costs.

7.1 Reuse

By reusing materials on site, there will be a reduction in the transport and recycle / recovery / disposal costs associated with the requirement for a waste contractor to take the material off-site. Clean and inert soils, gravel, stones, etc., which cannot be reused on-site may be used as access roads or capping material for landfill sites, etc. This material is often taken free of charge or at a reduced fee for such purposes, reducing final waste disposal costs.

7.2 Recycling

Salvageable metals will earn a rebate, which can be offset against the costs of collection and transportation of the skips.

Clean, uncontaminated cardboard and certain hard plastics can also be recycled. Waste contractors will charge considerably less to take segregated wastes, such as recyclable waste, from a site than mixed waste.

Timber can be recycled as chipboard. Again, waste contractors will charge considerably less to take segregated wastes, such as timber, from a site than mixed waste.

7.3 Disposal

Landfill charges are currently at around €140 - €160 per tonne which includes a €85 per tonne landfill levy specified in the *Waste Management (Landfill Levy) Regulations 2015* as amended and *The Circular Economy (Waste Recovery Levy) Regulations 2024*¹⁵ will also incur a levy of €10 per tonne for waste accepted for recovery. In addition to disposal costs, waste contractors will also charge a collection fee for skips.

Collection of segregated C&D waste usually costs less than municipal waste. Specific C&D waste contractors take the waste off-site to a licensed or permitted facility and, where possible, remove salvageable items from the waste stream before disposing of the remainder to landfill. Clean soil, rubble, etc., is also used as fill / capping material, wherever possible.

8. TRAINING PROVISIONS

A member of the construction team will be appointed as the RM to ensure commitment, operational efficiency and accountability in relation to waste management during the C&D phases of the development.

8.1 Resource Manager Training and Responsibilities

The nominated RM will be given responsibility and authority to select a waste team if required, i.e. members of the site crew that will aid them in the organisation, operation and recording of the waste management system implemented on site.

The RM will have overall responsibility to oversee, record and provide feedback to the client on everyday waste management at the site. Authority will be given to the Waste Manager to delegate responsibility to sub-contractors, where necessary, and to coordinate with suppliers, service providers and sub-contractors to prioritise waste prevention and material salvage.

The RM will be trained in how to set up and maintain a record keeping system, how to perform an audit and how to establish targets for waste management on site. The RM will also be trained in the best methods for segregation and storage of recyclable materials, have information on the materials that can be reused on site and be knowledgeable in how to implement this RWMP.

8.2 Site Crew Training

Training of site crew in relation to waste is the responsibility of the RM and, as such, a waste training program will be organised. A basic awareness course will be held for all site crew to outline the RWMP and to detail the segregation of waste materials at source. This may be incorporated with other site training needs such as general site induction, health and safety awareness and manual handling.

This basic course will describe the materials to be segregated, the storage methods and the location of the Waste Storage Areas (WSAs). A sub-section on hazardous wastes will be incorporated into the training program and the particular dangers of each hazardous waste will be explained.

9. TRACKING AND TRACING / RECORD KEEPING

Records will be kept for all waste material which leaves the site, either for reuse on another site, recycling or disposal. A recording system will be put in place to record the waste arisings on Site.

A waste tracking log will be used to track each waste movement from the site. On exit from the site, the waste collection vehicle driver will stop at the site office and sign out as a visitor and provide the security personnel or RM with a waste docket (or Waste Transfer Form (WTF) for hazardous waste) for the waste load collected. At this time, the security personnel will complete and sign the Waste Tracking Register with the following information:

- ▶ Date
- ▶ Time
- ▶ Waste Contractor
- ▶ Company waste contractor appointed by, e.g. Contractor or subcontractor name
- ▶ Collection Permit No.
- ▶ Vehicle Reg.
- ▶ Driver Name
- ▶ Docket No.
- ▶ Waste Type
- ▶ LoW
- ▶ Weight/Quantity
- ▶ Receiving Waste Facility Details

The waste vehicle will be checked by security personal or the RM to ensure it has the waste collection permit no. displayed and a copy of the waste collection permit in the vehicle before they are allowed to remove the waste from the site.

The waste transfer dockets will be transferred to the RM on a weekly basis and can be placed in the Waste Tracking Log file. This information will be forwarded onto the FCC Waste Regulation Unit when requested.

Each subcontractor that has engaged their own waste contractor will be required to maintain a similar waste tracking log with the waste dockets / WTF maintained on file and available for inspection on site by the main contractor as required. These subcontractor logs will be merged with the main waste log.

Waste receipts from the receiving waste facility will also be obtained by the site contractor(s) and retained. A copy of the Waste Collection Permits, CORs, Waste Facility Permits and Waste Licences will be maintained on site at all times and will be periodically reviewed by the RM. Subcontractors who have engaged their own waste contractors, will provide the main contractor with a copy of the waste collection permits and COR / permit / licence for the receiving waste facilities and maintain a copy on file, available for inspection on site as required.

10. OUTLINE WASTE AUDIT PROCEDURE

10.1 Responsibility for Waste Audit

The appointed RM will be responsible for conducting a waste audit at the site during the C&D phase of the proposed Project. Contact details for the nominated RM will be provided to the FCC Waste Regulation Unit after the main contractor is appointed and prior to any material being removed from site.

10.2 Review of Records and Identification of Corrective Actions

A review of all waste management costs and the records for the waste generated and transported off-site will be undertaken mid-way through the construction phase of the proposed Project.

If waste movements are not accounted for, the reasons for this will be established in order to see if and why the record keeping system has not been maintained. The waste records will be compared with the established recovery / reuse / recycling targets for the site. Each material type will be examined, in order to see where the largest percentage waste generation is occurring. The waste management methods for each material type will be reviewed in order to highlight how the targets can be achieved.

Upon completion of the C&D phase, a final report will be prepared, summarising the outcomes of waste management processes adopted and the total recycling / reuse / recovery figures for the development.

11. CONSULTATION WITH RELEVANT BODIES

11.1 Local Authority

Once construction contractors have been appointed and have appointed waste contractors, and prior to removal of any C&D waste materials off-site, details of the proposed destination of each waste stream will be provided to the FCC Waste Regulation Unit.

FCC will also be consulted, as required, throughout the excavation and construction phases in order to ensure that all available waste reduction, reuse and recycling opportunities are identified and utilised and that compliant waste management practices are carried out.

11.2 Recycling / Salvage Companies

The appointed waste contractor for the main waste streams managed by the construction contractors will be audited in order to ensure that relevant and up-to-date waste collection permits and facility registrations / permits / licences are held. In addition, information will be obtained regarding the feasibility of recycling each material, the costs of recycling / reclamation, the means by which the wastes will be collected and transported off-site, and the recycling / reclamation process each material will undergo off-site.

12. SUMMARY AND CONCLUSION

Adherence to this plan will also ensure that waste management during the construction phase at the Proposed Development is carried out in accordance with the requirements in the EPA's Best Practice Guidelines for the Preparation of Resource & Waste Management Plans for Construction & Demolition Projects and the FCC Waste Bye-Laws and the NWMPCE.

13. REFERENCES

1. Waste Management Act 1996 as amended,
2. Environmental Protection Agency Act 1992 as amended.
3. Litter Pollution Act 1997 (S.I. No. 12 of 1997) as amended
4. Regional Waste Management Planning Offices, *The National Waste Management Plan for a Circular Economy 2024 – 2030 (2024)*.
5. Department of Environment and Local Government (DoELG) *Waste Management – Changing Our Ways, A Policy Statement (1998)*.
6. Forum for the Construction Industry – *Recycling of Construction and Demolition Waste*.
7. Department of Communications, Climate Action and Environment (DCCAE), *Waste Action Plan for the Circular Economy - Ireland's National Waste Policy 2020-2025 (Sept 2020)*.
8. DCCAE, *Whole of Government Circular Economy Strategy 2022-2023 'Living More, Using Less' (2021)*
9. Circular Economy and Miscellaneous Provisions Act 2022.
10. Environmental Protection Agency (EPA) *'Best Practice Guidelines for the Preparation of Resource and Waste Management Plans for Construction & Demolition Projects' (2021)*
11. Department of Environment, Heritage and Local Government, *Best Practice Guidelines on the Preparation of Waste Management Plans for Construction and Demolition Projects (2006)*.
12. Department of Housing, Local Government and Heritage authored *Sustainable Residential Development and Compact Settlements - Guidelines for Planning Authorities (2024)*
13. FÁS and the Construction Industry Federation (CIF), *Construction and Demolition Waste Management – a handbook for Contractors and site Managers (2002)*.
14. Waste Management (Landfill Levy) Regulations 2015 (as amended)
15. Circular Economy (Waste Recovery Levy) Regulations 2024
16. Fingal County Council (FCC), *Fingal County Development Plan 2023 – 2029 (2023)*.
17. Planning and Development Act 2000 (S.I. No. 30 of 2000) as amended
18. EPA, *Waste Classification – List of Waste & Determining if Waste is Hazardous or Non-Hazardous (2018)*
19. Local Government Ireland, *Best practice guidance for handling asbestos (2023)*
20. Council Decision 2003/33/EC, establishing criteria and procedures for the acceptance of waste at landfills pursuant to Article 16 of and Annex II to Directive 1999/31/EC.
21. Local Government Ireland, the Best Practice Guidance for Handling Asbestos (2023).
22. Environmental Protection Agency (EPA), National Waste Database Reports 1998 – 2020 and the Circular Economy and National Waste Database Report 2021 - 2022
23. EPA and Galway-Mayo Institute of Technology (GMIT), *EPA Research Report 146 – A Review of Design and Construction Waste Management Practices in Selected Case Studies – Lessons Learned (2015)*.
24. European Commission, *Guidelines for the waste audits before demolition and renovation works of buildings (May 2018)*.

APPENDIX A. WASTE FACILITIES IN THE FINGAL REGION

A full list of currently licensed waste facilities that can potentially be used for this development can be found on the National Waste Collection Permit Office Website - <https://facilityregister.nwcpo.ie/>.

There is a number of licensed, permitted and registered waste facilities in the Fingal and Dublin regions, in the surrounding counties, the eastern midlands waste region and in Ireland and Northern Ireland. However, these sites may not be available for use when required or may be limited by the waste contractor selected to service the development in the appropriate phase. In addition, there is potential for more suitably placed waste facilities or recovery facilities to become operational in the future which may be more beneficial from an environmental perspective.

Licensed waste facilities have annual limitations on material that they can import as part of their license agreements. Because of this it would not make it possible to commit to a singular specific receiving facility as it is not may not be available throughout the project or at the time the project begins. It would not be viable to cease a development and wait until a receiving facilities annual receiving quotas are reset. In a normal development waste facilities would switch between facilities with available capacity.

The ultimate selection of waste contractors and waste facilities would be subject to appropriate selection criteria proximity, competency, capacity, serviceability, and cost.

Waste Facilities in the Fingal Area

Authorisation Reference	Name	Trading As	Address
WFP-FG-15-0006-02	Cyclone Corporate Services Group Limited		Unit 19 North Park Finglas Co. Dublin D11 HVX0
COR-FG-21-0001-01	GMC Utilities Group Ltd		GMC House Millennium Business Park Ballycoolin Dublin 11
COR-FG-21-0003-01	Breffni Building & Civil Engineering Ltd	Breffni Group	Ballyhack Farm Ballyhack Kilsallaghan Co.Dublin
WFP-FG-22-0001-01	Amazon Data Storage Ireland Ltd.		Unit 632 Northwest Logistics Park Kilshane Park Northwest Business Park, Dublin 15 D15 K6PC
WFP-FG-15-0001-04	M50 Skip Hire and Recycling Ltd		Unit 1 & 8, Advance Business Park Old Airport Road Cloghran Co Dublin K67 A9X8
WFP-FG-18-0001-02	Gannons City Recovery and Recycling Services Ltd		Unit 7 Roseville Industrial Estate Turvey Avenue Donabate Co Dublin K36 X085
COR-FG-24-0001-01	Irish Packaging Recycling Unlimited		Cappagh Road Dublin 11 D11 KR25
WFP-FG-18-0002-03	Wilton Waste Holdings Limited	O'Reilly Recycling Ltd.	Unit 30 Rosemount Park Drive Rosemount Business Park, Blanchardstown Dublin 11. D11 AW71

Authorisation Reference	<u>Name</u>	<u>Trading As</u>	<u>Address</u>
<u>WFP-FG-24-0001-01</u>	Re:Cycle Reverse Logistics		Unit 633 & 634, Northwest Logistics Park Ballycoolin Dublin 15 D15 RPYO
<u>WFP-FG-20-0003-02</u>	Frylite Dublin Ltd		Saint Anne's Business Park Ballystruan Lane Swords Co Dublin
<u>WFP-FG-10-0001-05</u>	Environmentally Controlled Automotive recycling Solutions LTD		Wimbletown Ballyboughal Co. Dublin A41 E179
<u>WFP-FG-13-0001-04</u>	Johmick Ltd		Main Street Garristown Co. Dublin
<u>WFP-FG-25-0001-01</u>	Starrus Eco Holdings Limited		Unit 8A Rosemount Business Park Ballycoolin Road Dublin 11
<u>SSF-COR-FG-25-0001-01</u>	Ward & Burke Water Limited		Regional Biosolids Storage Facility Kilshane Cross Newtown Co Dublin D11 H29W
<u>WFP-FG-15-0004-03</u>	TD Euro Scrap Metal Ltd.		Unit 6D Rosemount Park Drive Rosemount Business Park Dublin 11 D11 RW10
<u>WFP-FG-17-0001-05</u>	Padraig Thornton Waste Disposal Ltd		Unit 1, Cappogue Industrial Park Ballycoolin Road Cappogue Dublin 11
<u>WFP-FG-13-0002-04</u>	St. Margaret's Recycling & Transfer Centre Limited		Sandyhills St. Margaret's Co Dublin K67 EW73

Waste Facilities in the Dublin Area

Authorisation Reference	<u>Name</u>	<u>Trading As</u>	<u>Address</u>
<u>WFP-DC-09-0015-03</u>	Chevron Environmental Ltd	Electronic Recycling	Unit 20 Jamestown Business Park Jamestown Road Finglas D11 X2HN
<u>WFP-DC-11-0023-03</u>	Padraig Thornton Waste Disposal Ltd (PTWDL)	Thornton's Recycling	Unit 6 S3B Henry Road Park West Business Park D12 KT91
<u>COR-DC-21-0010-01</u>	Fridge Spares Wholesale Ltd		Unit 15, Blackwater Road Dublin Industrial Estate Glasnevin Dublin 11 D11 YK26
<u>WFP-DC-11-0022-03</u>	Dawnlane Limited	Mullen Scrap	31 & 32 Upper Clanbrassil Street Dublin 8 D08 XY92
<u>WFP-DC-11-0025-03</u>	Rehab Enterprises Limited	Rehab Recycle	The Rehab Building Kylemore Road Ballyfermot Dublin 10 D10 Y443
<u>WFP-DC-11-0027-03</u>	Tom Murphy Recovery & Towing Services Ltd		Block 4, Unit 24 Port Tunnel Business Park Clonsaugh Industrial Estate Dublin 17

Authorisation Reference	Name	Trading As	Address
<u>WFP-DC-22-0059-01</u>	Derek Beahan Limited	Derek Beahan Recovery	Unit 7 Concorde Industrial Estate Naas Road Dublin 12 D12 YD30
<u>COR-DC-22-0011-01</u>	Soaktech Limited		Unit 16, Butterly Business Park Kilmore Road Artane Dublin 5, D05 X079
<u>WFP-DC-22-0060-01</u>	Edward O'Reilly	E.O'Reilly Recycling	92E Fairview Strand Ballybough Dublin 3
<u>WFP-DC-10-0021-04</u>	Padraig Thornton Waste Disposal Ltd	Thornton's Recycling	Unit 51 Henry Road Park West Business Park Dublin 12 D12 FH68
<u>WFP-DC-11-0028-03</u>	Mitchell Taylor (Exports) Limited	MT oils	The Old Brewery Newmarket Dublin 8 D08 FPF6
<u>WFP-DC-18-0045-02</u>	J. Ryan Haulage Limited - Mobile Plant		Former Bailey Gibson Site 326-328 South Circular Road Dublin 8 D08 N8X6
<u>WFP-DC-10-0018-03</u>	Summerhill Spares Limited		Unit 3 Newtown Industrial Estate Malahide Road Coolock Dublin 17 D17 VY80
<u>WFP-DC-10-0020-03</u>	Everyday Waste & Skiphire	All Away Recycling	84E Pigeon House Road Ringsend Dublin 4 D04 R7N0
<u>WFP-DC-23-0061-01</u>	Wills Bros Limited		Terminal 4 North Lands, Dublin Port (bounded by Bond Road, Tolka Quay Road & Promenade Road) Dublin 1
<u>WFP-DC-24-0062-01</u>	Tinnelly Group	John Tinnelly & Sons Ireland Limited	Unit 5B, Unit 5H Fingal Bay Business Park Co. Dublin K32 NY57
<u>WFP-DC-17-0043-02</u>	Barnmore Demolition & Civil Engineering Ltd - Mobile Plant		At sepcific sites in the Dublin City Council Functional Area with planning permission as applied for under Condition 1.13 of this permit and listed in Appendix 1 of this permit
<u>WFP-DC-17-0040-02</u>	Shannon Valley Plant Hire		Corederay Drumshanbo Co. Leitrim
<u>WFP-DC-17-0041-02</u>	John J Duffy Construction Limited	JJ Duffy Demolition & Civil Engineering	the Commons Navan Co. Meath C15E725
<u>COR-DC-24-0012-01</u>	Smith Demolition Ltd		Killoughteen Newcastle West Co. Limerick V42 YH58
<u>WFP-DC-18-0046-02</u>	Breffni Building & Civil Engineering Limited - Mobile Plant		Specific sites - mobile plant Ballyhack Kilasallaghan Co Dublin K67 R984
<u>WFP-DC-24-0063-01</u>	Micks Recycling Limited	Micks Skips	Unit 3a Ballyboggan Business Centre Glasnevin Dublin 11

Authorisation Reference	<u>Name</u>	<u>Trading As</u>	<u>Address</u>
<u>WFP-DC-19-0048-02</u>	Sunflower Recycling Company (Limited by Guarantee)		Shamrock Terrace Five Lamps, North Strand Dublin 1 D01 DX67
<u>WFP-DC-19-0049-02</u>	McManus Crushing Ltd - Mobile Plant		Rooskey Bealnamulla Athlone Co Roscommon N37 T6N9
<u>WFP-DC-08-0002-04</u>	G & T McGoverns Ltd		2-4, 9 & 12 Prices Lane Rear 31 Ranelagh Road Ranelagh Dublin 6
<u>WFP-DC-22-0056-01 (T)</u>	Dembachel Ltd.		Kylemore Business Park 2 Kylemore Way Inchicore Dublin 8
<u>WFP-DC-25-0064-01</u>	Martin Services (Industrial) Ltd		Unit 10/11 Bluebell Business Park Bluebell, Old Naas Road Dublin 12 D12 W995
<u>WFP-DC-20-0054-02</u>	Shanowen Plant Hire Ltd - Mobile Plant		Various Sites Various Sites Various Sites

Waste to Energy Facilities

Currently licensed Waste to Energy Facilities in the EMR.

Facility Name & License No.	Location	Status
Dublin Waste to Energy Limited W0232-02 (IED)	Dublin Waste to Energy Limited, Pigeon House Road, Poolbeg Peninsula, Dublin 4	Licensed
Indaver Ireland Limited W0167-03 (IED)	Indaver Ireland Limited (Duleek), Carranstown, Duleek, Meath.	Licensed

Soil Recovery Facilities

Currently licensed Soil Recovery Facilities in the EMR.

Facility Name & License No.	Location	Status
Kiernan Sand & Gravel Limited W0262-01	Kiernan Sand & Gravel Ltd, Foxtown, Summerhill, Co. Meath, Meath.	Licensed
Clashford Recovery Facilities Limited W0265-01	Clashford Recovery Facilities LTD, Naul Townland, Naul, Meath.	Licensed
Roadstone Limited W0278-01	Roadstone Limited, Mullaghcrone Quarry, Platin and Cruicerath Townlands, Donore, County Meath	Licensed

Inert landfill facilities accept wastes which comply with the waste acceptance criteria limits for inert landfills as described in the EU Landfill Directive. The currently licensed inert landfill facilities in Ireland

Facility Name & License No.	Location	Status
Integrated Materials Solution (IMS) (W0129-02)	MS Hollywood, Hollywood Great, Nag's Head, Naul, Co. Dublin	Licensed
Walshestown Restoration (W0254-01) County Kildare;	Blackhall Naas Co. Kildare	Licensed
Kyletalesha Landfill (W0026-03) County Laois.	Kyletalesha, Portlaoise, Co. Laois	Licensed

In addition, Boliden Tara Mines Limited (P0516-04) located County Meath is not an inert landfill, however, the site's waste acceptance criteria, as per the IE Licence for Tara Mines, includes waste acceptance of greenfield and non-greenfield soil and stone for backfill.

Landfill

The following operational municipal landfills are situated within the EMR, and their respective waste management capacities (EPA, 2022) are noted:

Facility Name License No. Location	Total Capacity	Waste Types accepted for Disposal	Waste Types accepted for Recovery
Knockharley Landfill (W0146-02) County Meath:	Total capacity for waste accepted for disposal (maximum tonnes per annum) - 175,000;	Waste types accepted for disposal (maximum tonnes per annum) - 100,000 household, 45,000 commercial, and 30,000 industrial;	Waste types accepted for recovery (maximum tonnes per annum) - 25,000 construction & demolition and 70,000 inert waste.
Drehid Landfill (W0201-03) County Kildare:	Total capacity for waste accepted for disposal (maximum tonnes per annum) - 175,000;	Waste types accepted for disposal (maximum tonnes per annum) - 120,000 non-hazardous municipal, commercial and industrial wastes;	Waste types accepted for recovery (maximum tonnes per annum) - No limit for inert waste where used in landfill engineering.
Ballynagran Landfill (W0165-02) County Wicklow:	Total capacity for waste accepted for disposal (maximum tonnes per annum) - 175,000;	Waste types accepted for disposal (maximum tonnes per annum) - 62,500 household, 67,500 commercial, and 45,000 industrial;	Waste types accepted for recovery (maximum tonnes per annum) - 28,000 construction & demolition

Appendix 19.2: Operational Waste Management Plan



Trinity
Consultants



awnconsulting

Operational Waste Management Plan

Mooretown Lands Phase 2, Swords, Co. Dublin
Appendix 19.2

CLIENT

Fingal
County
Council

DOCUMENT REFERENCE

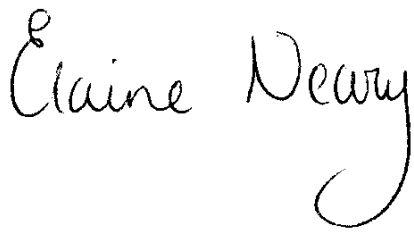
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15/05/2026

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Signature		
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Title	Associate	Associate
Date	15/05/2026	15/05/2026

Disclaimer

This report considers the specific instructions and requirements of our client. It is not intended for third-party use or reliance, and no responsibility is accepted for any third party. The provisions in this report apply solely to this project and should not be assumed applicable to other developments without review and modification.



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1. INTRODUCTION

AWN Consulting, a Trinity Consultants Company, has prepared this Operational Waste Management Plan (OWMP) on behalf of Fingal County Council. The Proposed Development comprises a residential development consisting of 360 no. residential units and a crèche, together with associated infrastructure and site development works. These works include internal roads, footpaths, car and bicycle parking, public and private open spaces, bin and bicycle stores, public lighting, landscaping/amenity areas, and all related surface water and foul drainage infrastructure. Vehicular access will be provided through the Phase 1 construction accesses currently under construction (Planning Ref. LADP/002/24), consistent with the permitted Mooretown development phasing strategy.

This OWMP has been prepared to ensure that the management of waste during the operational phase of the proposed Development is undertaken in accordance with the current legal and industry standards including, the *Waste Management Act 1996 as amended* and associated Regulations¹, *Environmental Protection Agency Act 1992 as amended*², *Litter Pollution Act 1997 as amended*³, the *National Waste Management Plan for a Circular Economy 2024 - 2030* (NWMPCE) (2024)⁴ and *Fingal County Council Segregation Storage, Presentation and of Household and Commercial Waste* (2020)⁵. In particular, this OWMP aims to provide a robust strategy for the storage, handling, collection and transport of the wastes generated at site.

This OWMP aims to ensure maximum recycling, reuse and recovery of waste with diversion from landfill, wherever possible. The OWMP also seeks to provide guidance on the appropriate collection and transport of waste to prevent issues associated with litter or more serious environmental pollution (e.g. contamination of soil or water resources). The plan estimates the type and quantity of waste to be generated from the proposed development during the operational phase and provides a strategy for managing the different waste streams.

At present, there are no specific national guidelines in Ireland for the preparation of OWMPs. Therefore, in preparing this document, consideration has been given to the requirements of national and regional waste policy, legislation and other guidelines.

2. OVERVIEW OF WASTE MANAGEMENT IN IRELAND

2.1 National level

The Irish Government issued a policy statement in September 1998 entitled 'Changing Our Ways' ⁶, which identified objectives for the prevention, minimisation, reuse, recycling, recovery and disposal of waste in Ireland. A heavy emphasis was placed on reducing reliance on landfill and finding alternative methods for managing waste. Amongst other things, Changing Our Ways stated a target of at least 35% recycling of municipal (i.e. household, commercial and non-process industrial) waste.

A further policy document, 'Preventing and Recycling Waste – Delivering Change' was published in 2002 ⁷. This document proposed a number of programmes to increase recycling of waste and allow diversion from landfill. The need for waste minimisation at source was considered a priority.

This view was also supported by a review of sustainable development policy in Ireland and achievements to date, which was conducted in 2002, entitled 'Making Ireland's Development Sustainable – Review, Assessment and Future Action' ⁸. This document also stressed the need to decouple economic growth and waste generation, again through waste minimisation and reuse of discarded material.

In order to establish the progress of the Government policy document Changing Our Ways, a review document was published in April 2004 entitled 'Taking Stock and *Moving Forward*' ⁹. Covering the period 1998 – 2003, the aim of this document was to assess progress to date with regard to waste management in Ireland, to consider developments since the policy framework and the local authority waste management plans were put in place, and to identify measures that could be undertaken to further support progress towards the objectives outlined in *Changing Our Ways*.

In particular, *Taking Stock and Moving Forward* noted a significant increase in the amount of waste being brought to local authority landfills. The report noted that one of the significant challenges in the coming years was the extension of the dry recyclable collection services.

In September 2020, the Irish Government published a new policy document outlining a new action plan for Ireland to cover the period of 2020-2025. This plan '*A Waste Action Plan for a Circular Economy*'¹⁰ (WAPCE), was prepared in response to the 'European Green Deal' which sets a roadmap for a transition to a new economy, where climate and environmental challenges are turned into opportunities, replacing the previous national waste management plan "*A Resource Opportunity*" (2012).

The WAPCE sets the direction for waste planning and management in Ireland up to 2025. This reorientates policy from a focus on managing waste to a much greater focus on creating circular patterns of production and consumption. Other policy statements of a number of public bodies already acknowledge the circular economy as a national policy priority.

The policy document contains over 200 measures across various waste areas including circular economy, municipal waste, consumer protection and citizen engagement, plastics and packaging, construction and demolition, textiles, green public procurement and waste enforcement.

One of the first actions to be taken was the development of the Whole of Government Circular Economy Strategy 2022-2023 'Living More, Using Less' (2021) ¹¹ to set a course for Ireland to transition across all sectors and at all levels of Government toward circularity and was issued in December 2021. It is anticipated that the Strategy will be updated in full every 18 months to 2 years.

The Circular Economy and Miscellaneous Provisions Act 2022 ¹² was signed into law in July 2022. The Act underpins Ireland's shift from a "take-make-waste" linear model to a more sustainable pattern of production and consumption, that retains the value of resources in our economy for as long as possible and that will to significantly reduce our greenhouse gas emissions. The Act defines Circular Economy for

the first time in Irish law, incentivises the use of recycled and reusable alternatives to wasteful, single-use disposable packaging, introduces a mandatory segregation and incentivised charging regime for commercial waste, streamlines the national processes for End-of-Waste and By-Products decisions, tackling the delays which can be encountered by industry, and supporting the availability of recycled secondary raw materials in the Irish market, and tackles illegal fly-tipping and littering.

The Department of Housing, Local Government and Heritage authored Sustainable Residential Development and Compact Settlements - Guidelines for Planning Authorities (2024) ¹³, suggests the below thresholds at which the need for the supplemental information such as the OWMP should be considered.

▶ *30 or more residential units*

Since 1998, the Environmental Protection Agency (EPA) has produced periodic 'National Waste (Database) Reports' which as of 2023 have been renamed Circular Economy and Waste Statistics Highlight Reports ¹⁴ detailing, among other things, estimates for household and commercial (municipal) waste generation in Ireland and the level of recycling, recovery and disposal of these materials. The 2025 National Circular Economy and Waste Statistics web resource, which is the most recent study published, along with the national waste statistics web resource (2025) reported the following key statistics for 2023:

- ▶ *Ireland generated 3.13 million tonnes of municipal waste in 2023, relatively unchanged compared to the 3.19 million tonnes generated in 2022.*
- ▶ *Between 2016 and 2023, municipal waste increased from 2.7 million tonnes to 3.13 million tonnes.*
- ▶ *Some 1.3 million tonnes of municipal waste generated in Ireland was recycled in 2023, resulting in a recycling rate of 42%. This indicates that we face significant challenges to meet the upcoming EU recycling targets for 2025 to 2035.*
- ▶ *Of the municipal waste recycled in 2023, over 814,000 tonnes went for material recycling (approximately the same as 2022) and over 480,000 tonnes were treated by composting/anaerobic digestion (approximately the same as 2022 but up 37% on 2020).*
- ▶ *A rounded 1.3 million tonnes of Ireland's municipal waste went for incineration with energy recovery in 2023. This tonnage is 43% of municipal waste managed.*
- ▶ *Ireland's landfill rate for municipal waste managed was 14% in 2023. This is a 1% decrease from 2022's rate of 15%.*
- ▶ *There has been a steep decline in Ireland's landfill rate for municipal waste from over 80% in 2001. Ireland must reduce the share of municipal waste landfilled to 10% or less by 2035, which includes waste landfilled at each step along the waste treatment process in Ireland and abroad.*
- ▶ *An estimated 42% (1.2 million tonnes) of all municipal waste managed was exported abroad in 2023, an increase from the 39% in 2022. Of the waste exported, most went for recycling (49%) or energy recovery (36%) while 11% went for composting or anaerobic digestion.*

2.2 Regional Level

The proposed Development is located in the Local Authority administrative area of Fingal County Council (FCC).

The Eastern Midlands Region (EMR) Waste Management Plan 2015 – 2021, which previously governed waste management policy in the FCC area, has been superseded as of March 2024 by the NWMPC 2024 – 2030, the new national waste management plan for Ireland.

The NWMPC does not dissolve the three regional waste areas. The NWMPC sets the ambition of the plan to have a 0% total waste growth per person over the life of the Plan with an emphasis on non-household wastes including waste from commercial activities and the construction and demolition sector. This Plan seeks to influence sustainable consumption and prevent the generation of waste, improve the capture of materials to optimise circularity and enable compliance with policy and legislation.

The national plan sets out the following strategic targets for waste management in the country that are relevant to the development:

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National Targets

- 1A. *(Residual Municipal Waste) 6% Reduction in Residual Municipal Waste per person by 2030*
- 2A. *(Contamination of Materials) 90% of Material in Compliance in the Dry Recycling Bin*
- 2B. *(Material Compliance Residual) 10% per annum increase in Material Compliance in the residual bin. (90% by the end of 2030)*
- 3A. *(Reuse of Materials) 20kg Per person / year – Reuse of materials like cloths or furniture to prevent waste.*

Municipal landfill charges in Ireland are based on the weight of waste disposed. In the Leinster Region, charges are approximately €140-160 per tonne of waste, which includes a €85 per tonne landfill levy introduced under the *Waste Management (Landfill Levy) (Amendment) Regulations 2015* ¹⁵. The *Circular Economy (Waste Recovery Levy) Regulations 2024* ¹⁶ will also have a levy of €10 per tonne to waste accepted for recovery.

The *Fingal Development Plan 2023 – 2029* ¹⁷ (2023) sets out a number of policies and objectives for the Fingal region in line with the objectives of the regional waste management plan, including the following:

- ▶ *Objective IUO34 – Waste Management in New Developments - Require the provision of appropriate, well designed, accessible space to support the storage, separation and collection of as many waste and recycling streams as possible in all new commercial and residential developments within the County.*
- ▶ *Objective DMSO234 – Provision of Public Bring Banks - Ensure the provision of public bring banks in all large retail developments, unless there are existing facilities within a 1 km radius. Bring bank facilities will generally be required at appropriate locations in the following development types:*
 - *In conjunction with significant new commercial developments, or extensions to existing developments.*
 - *In conjunction with new waste infrastructure facilities, proposals should include bring facilities for the acceptance of non-hazardous and hazardous wastes from members of the public and small businesses.*
 - *In conjunction with medium and large scale residential and mixed-use developments providing in excess of 10 residential units, proposals should provide recycling and bring bank facilities to serve residents and in some appropriate locations, the wider community.*
 - *In conjunction with all large retail developments provide space for reverse vending machines to promote the circular economy.*
- ▶ *Objective DMSO235 – Communal Refuse Storage Provision - In the case of communal refuse storage provision, the collection point for refuse should be accessible both to the external collector and to the resident and be secured against illegal dumping by non-residents. In the case of individual houses,*

the applicant shall clearly show within a planning application the proposed location and design of bin storage to serve each dwelling, and having regard to the number of individual bins required to serve each dwelling at the time of the application and any possible future requirements for refuse storage/collection. The following criteria will be considered in the assessment of the design and siting of waste facilities and bring facilities:

- *The location and design of any refuse storage or recycling facility should ensure that it is easily accessible both for residents and/or public and for bin collection, be insect and vermin proofed, will not present an odour problem, and will not significantly detract from the residential amenities of adjacent property or future occupants.*
 - *Provision for the storage and collection of waste materials shall be in accordance with the guidelines for waste storage facilities in the relevant Regional Waste Management Plan and the design considerations contained in Section 4.8 and 4.9 of the Sustainable Urban Housing: Design Standards for New Apartments Guidelines for Planning Authorities, DHLGH (2020).*
 - *Refuse storage for houses should be externally located, concealed / covered and adequate to cater for the size and number of bins normally allocated to a household. For terraced houses, the most appropriate area for bins to be stored is to the front of the house, which should be located in well-designed enclosures that do not detract from visual amenity.*
 - *All applications shall clearly identify the waste storage and collection points and detail the anticipated waste collection schedule having regard to the impact on road users both within the development and the surrounding area.*
 - *Access to private waste storage in residential schemes should be restricted to residents only.*
- ▶ *Objective DMSO236 – Segregation and Collection of Waste - Ensure all new large-scale residential and mixed-use developments include appropriate facilities for source segregation and collection of waste.*
- ▶ *Objective DMSO237 – Distance from Front Door to Communal Bin Area - Ensure all new residential schemes include appropriate design measures for refuse storage areas, details of which should be clearly shown at pre-planning and planning application stage. Ensure refuse storage areas are not situated immediately adjacent to the front door or ground floor window, unless adequate screened alcoves or other such mitigation measures are provided.*
- ▶ *Objective DMSO239 – Refuse storage areas - Ensure all new residential schemes include appropriate design measures for refuse storage areas, details of which should be clearly shown at pre-planning and planning application stage. Ensure refuse storage areas are not situated immediately adjacent to the front door or ground floor window, unless adequate screened or other such mitigation measures are provided.*
- ▶ *Objective DMSO240 – Distance to Communal Bin Areas - Ensure the maximum distance between the front door to a communal bin area does not exceed 50 metres.*

2.3 Legislative Requirements

The primary legislative instruments that govern waste management in Ireland and applicable to the proposed Development are:

- ▶ *Waste Management Act 1996 as amended;*
- ▶ *Environmental Protection Agency Act 1992 as amended;*
- ▶ *Litter Pollution Act 1997 as amended;*
- ▶ *Planning and Development Act 2000 as amended* ¹⁸;
- ▶ *Circular Economy and Miscellaneous Provisions Act 2022.*

These Acts and subordinate Regulations transpose the relevant European Union Policy and Directives into Irish law.

One of the guiding principles of European waste legislation, which has in turn been incorporated into the Waste Management Act 1996 as amended and subsequent Irish legislation, is the principle of "Duty of Care". This implies that the waste producer is responsible for waste from the time it is generated through until its legal disposal (including its method of disposal). As it is not practical in most cases for the waste producer to physically transfer all waste from where it is produced to the final disposal area, waste contractors will be employed to physically transport waste to the final waste disposal site.

It is, therefore, imperative that the residents, the childcare unit staff and any proposed facilities management company undertake on-site management of waste in accordance with all legal requirements and that the facilities management company employ suitably permitted / licenced contractors to undertake off-site management of their waste in accordance with all legal requirements. This includes the requirement that a waste contractor handle, transport and reuse / recover / recycle / dispose of waste in a manner that ensures that no adverse environmental impacts occur as a result of any of these activities.

A collection permit to transport waste must be held by each waste contractor which is issued by the National Waste Collection Permit Office (NWCPO). Waste receiving facilities must also be appropriately permitted or licensed. Operators of such facilities cannot receive any waste, unless in possession of a Certificate of Registration (COR) or waste permit granted by the relevant Local Authority under the Waste Management (Facility Permit & Registration) Regulations 2007, as amended, or a Waste Licence granted by the EPA. The COR / permit / licence held will specify the type and quantity of waste able to be received, stored, sorted, recycled, recovered and / or disposed of at the specified site.

2.3.1 Fingal County Council Waste Management Bye-Laws

The FCC "Fingal County Council (Segregation Storage, Presentation and of Household and Commercial Waste) Bye-Laws (2020)" came into use on the 1st of April 2020. These bye-laws repeal the previous 'Fingal County Council Bye-Laws for the Storage, Presentation and Collection of Household Waste (2006)'. The Bye-Laws set a number of enforceable requirements on waste holders with regard to storage, separation and presentation of waste within the FCC functional area. Key requirements under these Bye-Laws of relevance to the development include the following

- ▶ *Kerbside waste presented for collection shall not be presented for collection earlier than 6.00 pm on the day immediately preceding the designated waste collection day;*
- ▶ *All containers used for the presentation of kerbside waste and any uncollected waste shall be removed from any roadway, footway, footpath or any other public place no later than 9:00am on the day following the designated waste collection day, unless an alternative arrangement has been approved in accordance with bye-law 4;*
- ▶ *Documentation, including receipts, is obtained and retained for a period of no less than one year to provide proof that any waste removed from the premises has been managed in a manner that conforms to these bye-laws, to the Waste Management Act and, where such legislation is applicable to that person, to the European Union (Household Food Waste and Bio-Waste) Regulations 2015; and*
- ▶ *Adequate access and egress onto and from the premises by waste collection vehicles is maintained.*

The full text of the Waste Bye-Laws is available from the FCC website.

2.4 Regional Waste Management Service Providers and Facilities

Various contractors offer waste collection services for the residential and commercial sector in the FCC region. Details of waste collection permits (granted, pending and withdrawn) for the region are available from the NWCPO.

As outlined in the regional waste management plan, there is a decreasing number of landfills available in the region. Only three municipal solid waste landfills remain operational and all are operated by the private sector. There are a number of other licensed and permitted facilities in operation in the region including waste transfer stations, hazardous waste facilities and integrated waste management facilities. There are two existing thermal treatment facilities, one in Duleek, Co. Meath and a second in Poolbeg in Dublin.

There is the Civic Amenity / Recycling Centre at Seatown Park, Seatown Park, Sword, Dublin, Leinster, Ireland, K67V003, located c. 3.3 km to the east of the development site, which can be utilised by the residents of the proposed development for other household waste streams while a bottle bank can be found c. 1.1 km to the south at , Manor Shopping Centre, Swords, Dublin, Ireland, K67X8X8.

A copy of all CORs and waste permits issued by the Local Authorities are available from the NWCPO website and all Waste Licenses issued are available from the EPA.

3. DESCRIPTION OF THE DEVELOPMENT

3.1 Location, Size and Scale of the Development

The Proposed Development comprises a residential development consisting of 360 no. residential units and a crèche, together with associated infrastructure and site development works. These works include internal roads, footpaths, car and bicycle parking, public and private open spaces, bin and bicycle stores, public lighting, landscaping/amenity areas, and all related surface water and foul drainage infrastructure. Vehicular access will be provided through the Phase 1 construction accesses currently under construction (Planning Ref. LADP/002/24), consistent with the permitted Mooretown development phasing strategy.

The Proposed Development lands extend to c. 14.75 ha and consists of two (2) no. distinct land parcels situated on the southern side of Rathbeale Road located on the western side of Swords, Co. Dublin. The northern parcel is directly bounded by the road, while the southern parcel lies immediately south and east of Phase 1 of the Mooretown development. The southern parcel is enclosed on three sides by existing and emerging residential development. The two parcels are separated by the Phase 1 lands, reflecting the planned, sequential build-out of the wider Mooretown strategic residential lands.

The proposed site layout is illustrated in Figure 3.1.

A full description of the proposed development is outlined in Chapter 5 'Description of the Proposed Development' of this EIAR.

3.2 Typical Waste Categories

The typical non-hazardous and hazardous wastes that will be generated at the proposed development will include the following:

- ▶ Dry Mixed Recyclables (DMR) - includes waste paper (including newspapers, magazines, brochures, catalogues, leaflets), cardboard and plastic packaging, metal cans, plastic bottles, aluminium cans, tins and Tetra Pak cartons;
- ▶ Organic waste – food waste and green waste generated from internal plants / flowers;
- ▶ Glass; and
- ▶ Mixed Non-Recyclable (MNR) / General Waste.

In addition to the typical waste materials that will be generated at the development on a daily basis, there will be some additional waste types generated less frequently / in smaller quantities which will need to be managed separately including:

- ▶ Drink Cans and Bottles (Deposit Return Scheme)
- ▶ Green / garden waste may be generated from external landscaping;
- ▶ Batteries (both hazardous and non-hazardous);
- ▶ Waste electrical and electronic equipment (WEEE) (both hazardous and non-hazardous);
- ▶ Printer cartridges / toners;
- ▶ Chemicals (paints, adhesives, resins, detergents, etc.);
- ▶ Light bulbs;
- ▶ Textiles;
- ▶ Waste cooking oil (if any generated by the residents and/or childcare unit);
- ▶ Furniture (and, from time to time, other bulky wastes); and
- ▶ Abandoned bicycles.

Wastes should be segregated into the above waste types to ensure compliance with waste legislation and guidance while maximising the re-use, recycling and recovery of waste with diversion from landfill wherever possible.

3.3 List of Waste Codes

In 1994, the *European Waste Catalogue*¹⁹ and *Hazardous Waste List*²⁰ were published by the European Commission. In 2002, the EPA published a document titled the *European Waste Catalogue and Hazardous Waste List*²¹, which was a condensed version of the original two documents and their subsequent amendments. This document has recently been replaced by the EPA 'Waste Classification – List of Waste & Determining if Waste is Hazardous or Non-Hazardous'²² 2018. This waste classification system applies across the EU and is the basis for all national and international waste reporting, such as those associated with waste collection permits, COR's, permits and licences and EPA National Waste Database.

Under the classification system, different types of wastes are fully defined by a code. The List of Waste (LoW) code for typical waste materials expected to be generated during the operation of the proposed development are provided in Table 3.1 below.

Table 3.1 Typical Waste Types Generated and LoW Codes

Waste Material	LoW Code
Paper and Cardboard	20 01 01

Plastics	20 01 39
Metals	20 01 40
Mixed Non-Recyclable Waste	20 03 01
Glass	20 01 02
Biodegradable Kitchen Waste	20 01 08
Oils and Fats	20 01 25
Textiles	20 01 11
Batteries and Accumulators*	20 01 33* - 34
Printer Toner/Cartridges*	20 01 27* - 28
Green Waste	20 02 01
WEEE*	20 01 35*-36
Chemicals (solvents, pesticides, paints & adhesives, detergents, etc.) *	20 01 13*/19*/27*/28/29*30
Fluorescent tubes and other mercury containing waste*	20 01 21*
Bulky Wastes	20 03 07

** Individual waste type may contain hazardous materials*

4. ESTIMATED WASTE ARISING

A waste generation model (WGM) developed by AWN has been used to predict waste types, weights and volumes expected to arise from operations within the proposed development. The WGM incorporates building area and use and combines these with other data, including Irish and US EPA waste generation rates.

The estimated quantum / volume of waste that will be generated from the residential units (inc houses, duplexes, and apartments) has been determined based on the predicted occupancy of the units. While the floor area usage (m²) has been used to estimate the waste arising from childcare unit.

The estimated waste generation for the proposed development for the main waste types is presented in Tables 4.1 – 4.2.

Table 4.1 Estimated Waste Generation for Proposed Residential Units

Waste Type	Waste Volume (m ³ / week)			
	1-Bed Apartment (Individual WSAs)	2-Bed Houses, Apartments & Duplexes (Individual WSAs)	3-Bed Houses (Individual WSAs)	4-Bed Houses (Individual WSAs)
Organic Waste	0.01	0.02	0.02	0.02
DMR	0.08	0.11	0.13	0.18
Glass	>0.01	>0.01	>0.01	>0.01
MNR	0.05	0.07	0.08	0.09
Total	0.14	0.20	0.23	0.29

Table 4.2 Estimated Waste Generation for Proposed Apartment Block and Childcare Unit

Waste Type	Waste Volume (m ³ / week)	
	Apartment Block (Shared WSA)	Childcare Unit (Individual WSA)
Organic Waste	0.55	0.08
DMR	3.87	3.08
Glass	0.11	0.01
MNR	2.04	1.68
Total	6.56	4.86

BS5906:2005 Waste Management in Buildings – Code of Practice ²³ has been considered in the calculations of waste estimates. AWN's modelling methodology is based on recently published data and data from numerous other similar developments in Ireland and is based on AWN's experience, it provides a more representative estimate of the likely waste arisings from the proposed development.

5. WASTE STORAGE AND COLLECTION

This section provides information on how waste generated within the Site will be stored and collected. This has been prepared with due consideration of the proposed Site layout as well as best practice standards, local and national waste management requirements, including those of FCC. In particular, consideration has been given to the following documents:

- ▶ BS 5906:2005 Waste Management in Buildings – Code of Practice,
- ▶ The NWMPCE (2024);
- ▶ *Fingal Development Plan 2023 – 2029 (2023)*;
- ▶ *Fingal County Council Segregation Storage, Presentation and of Household and Commercial Waste (2020)*; and
- ▶ DoHLGH, Sustainable Urban Housing: Design Standards for New Apartments, Guidelines for Planning Authorities (2025) ²⁸

Waste Storage Areas

Locations of all Waste Storage Areas (WSAs) can be viewed on the drawings submitted with the planning application under separate cover and in Appendix A of this plan.

Houses, Duplex and Duplex Apartment Units

These residential units will have their own individual WSAs allocated at the rear of their home where external access to the rear yard is possible. When external access to the rear of the property is unavailable, bins will be stored at the front of the unit, shielded from view of the road.

Apartment Block

One (1 no.) shared WSA has been allocated within the proposed development design. This has been strategically located externally on ground floor level.

Childcare Unit

One (1 no.) WSA has been allocated within the development design for each of the childcare unit. This has been strategically located externally on ground floor level.

Using the estimated waste generation volumes in Tables 4.1 – 4.2, above, the waste receptacle requirements for MNR, DMR, organic waste and glass have been established for the WSAs. It is envisaged that all waste types from the proposed development will be collected on a weekly basis.

Waste Storage Requirements

Estimated waste storage requirements for the operational phase of the proposed development are detailed in Table 5.1, below.

Table 5.1 Waste storage requirements for the proposed development

Area/Use	Bins Required			
	MNR ¹	DMR ²	Glass	Organic
Residential Units (Individual WSAs)	1 no. 240 L	1 no. 240 L	Bottle Bank	1 no. 120 L
Apartment Block (Shared WSA)	2 no. 1100 L	3 no. 1100 L 2 no. 240L	1 no. 240 L	3 no. 240 L
Childcare Unit (Individual WSA)	2 no. 1100 L	3 no. 1100 L	1 no. 120 L	1 no. 120 L

Note: 1 = Mixed Non-Recyclables

2 = Dry Mixed Recyclables

The waste receptacle requirements have been established from distribution of the total weekly waste generation estimate into the holding capacity of each receptacle type.

Waste storage receptacles as per Table 5.1 above (or similar appropriate approved containers) will be provided by the facilities management company in the WSAs.

The types of bins used will vary in size, design and colour dependent on the appointed waste contractor. However, examples of typical receptacles to be provided in the WSAs are shown in Figure 5.1. All waste receptacles used will comply with the SIST EN 840-1:2020 and SIST EN 840-2:2020 as the standards for performance requirements of mobile waste containers, where appropriate.



Figure 5.1 Typical waste receptacles of varying size (240L and 1100L)

Receptacles for organic, DMR, glass and MNR waste will be provided in the shared WSAs prior to first occupation of the proposed development i.e. prior to the first residential unit being occupied. Residential and the childcare unit with individual WSAs will be required to obtain their own waste receptacles from their selected waste contractor. Training will be provided to the relevant staff on the implementation of the Plan.

This Plan will be provided to each resident and the childcare unit from first occupation of the proposed development i.e. once the childcare unit is operational or the first residential unit is occupied.

This Plan will be supplemented, as required, by the property management company with any new information on waste segregation, storage, reuse and recycling initiatives that are subsequently introduced.

5.1 Waste Storage – Apartment Blocks (Shared WSA)

Residents of the apartment block will be required to segregate waste into the following main waste streams:

- ▶ DMR;
- ▶ MNR;
- ▶ Glass; and
- ▶ Organic waste.

Residents will be required to take their segregated waste materials to their designated WSA and deposit their segregated waste into the appropriate bins. The location of the WSA is illustrated in the drawings submitted with the planning application under separate cover and in Appendix A of this OWMP.

Provision will be made in all residential units to accommodate 3 no. bin types to facilitate waste segregation at source. An example of a potential 3 bin storage system is provided in Figure 5.2 below.



Figure 5.2 Example three bin storage system to be provided within the unit design

Each bin / container in the WSA will be clearly labelled and colour coded to avoid cross contamination of the different waste streams. Signage will be posted above or on the bins to show exactly which waste types can be placed in each bin.

Access to the apartment block WSA will be restricted to authorised residents, facilities management and waste contractors by means of a key or electronic fob access.

Other waste materials such as textiles, batteries, printer toner / cartridges, light bulbs and WEEE may be generated infrequently by the residents. Residents will be required to identify suitable temporary storage areas for these waste items within their own units and dispose of them appropriately. Further details on additional waste types can be found in Section 5.5

5.2 Waste Storage - Residential

Residents in the houses, duplexes and duplex apartment units will be required to segregate their waste into the following waste categories within their own units:

- ▶ DMR;
- ▶ MNR;
- ▶ Glass; and
- ▶ Organic waste.

It is anticipated that residents with external access to the rear of their property will store waste in bins at the back of the units. For units with no external access to the rear, a dedicated shielded area for storage of 2 no. 240l and 1 no. 120l wheelie bins have been allocated at the front or side of the property.

It is anticipated that DMR, MNR and organic waste will be collected on a fortnightly basis. Glass waste will be required to be brought to the nearest bottle bank for disposal.

Other waste materials such as textiles, batteries, printer toner/cartridges and WEEE may be generated infrequently by the residents. Residents will be required to identify suitable temporary storage areas for

these waste items within their own units and dispose of them appropriately. Further details on additional waste types can be found in Section 5.5.

5.3 Waste Storage – Childcare Unit

The childcare unit, will be required to segregate waste within their own unit into the following main waste types:

- ▶ Organic Waste;
- ▶ DMR;
- ▶ Glass; and
- ▶ MNR.

The commercial tenants will be required to take their segregated waste materials to their designated WSA and deposit their segregated waste into the appropriate bins. The location of the WSA is illustrated in the drawings submitted with the planning application under separate cover and in Appendix A of this report.

Suppliers for the childcare unit will be requested by the tenants to:

- ▶ Delivery goods in reusable containers;
- ▶ Minimise packaging; and
- ▶ Remove packaging after delivery where possible.

If any kitchens are allocated within the unit, they will contribute an increased portion of the daily waste volume. Therefore, it is important that adequate provision is made for the storage and transfer of waste from these areas to the WSA.

If kitchens are required it is anticipated that waste will be generated in kitchens throughout the day, primarily at the following locations:

- ▶ Food Storage Areas (i.e. cold stores, dry store, freezer stores and stores for decanting of deliveries);
- ▶ Meat Preparation Area;
- ▶ Vegetable Preparation Area;
- ▶ Cooking Area; and
- ▶ Dish-wash and Glass-wash Area.

Small bins will be placed adjacent to each of these areas for temporary storage of waste generated during the day. Waste will then be transferred from these areas to the designated WSA.

All bins / containers in the childcare unit and WSA will be clearly labelled and colour coded to avoid cross-contamination of waste streams. Signage will be posted above or on the bins to indicate which wastes can be put in each.

Other waste materials such as textiles, batteries, lightbulbs, WEEE, cooking oil and printer toner / cartridges will be generated less frequently. The tenants will be required to store these waste types within their own unit and arrange collection with an appropriately licensed waste contractor. Facilities management may arrange collection, depending on the agreement. Further details on additional waste types can be found in Section 5.5.

5.4 Waste Collection

There are numerous private contractors that provide waste collection services in the FCC area. All waste contractors servicing the proposed development must hold a valid waste collection permit for the specific

waste types collected. All waste collected must be transported to registered / permitted / licensed facilities only.

Residents from the houses, duplexes, duplex apartments and the childcare unit with their own individual WSAs and will be responsible for moving their waste receptacles to and from the curb, before and after collection.

The waste receptacles from the residential shared WSA will be collected by facilities management staff or the waste contractor, prior to collection and brought to where the bins will be staged temporarily awaiting collection.

The staging areas are as such that it will not obstruct traffic or pedestrians (allowing a footway path of at least 1.8m, the space needed for two wheelchairs to pass each other) as is recommended in the *Design Manual for Urban Roads and Streets* (2019) ²³.

All locations for staging areas can be viewed on the drawings submitted with the planning application under separate cover and in Appendix A of this plan. The auto track for the waste truck can be viewed in Appendix B and on drawings submitted with the planning application under separate cover.

Suitable access and egress have been provided to enable the bins to be moved easily from the temporary staging area to the waste collection vehicles on the appropriate days. Waste will be collected at agreed days and times by the nominated waste contractors.

All waste receptacles should be clearly identified as required by waste legislation and the requirements of the FCC *Waste Bye-Laws*. Waste will be presented for collection in a manner that will not endanger health, create a risk to traffic, harm the environment or create a nuisance through odours or litter.

It is recommended that bin collection times are staggered to reduce the number of bins required to be emptied at once and the time the waste vehicle is on-site. This will be determined during the process of appointment of a waste contractor.

5.5 Additional Waste Materials

In addition to the typical waste materials that are generated on a daily basis, there will be some additional waste types generated from time to time that will need to be managed separately. A non-exhaustive list is presented below.

Deposit Return Scheme

Most drinks containers can be recycled via the deposit return scheme, such as bottles, cans and tins made from plastic, aluminium or steel can be returned once they are between 150ml and 3 litres in size and have the Re-turn logo on them.

At the shops you can either return the containers:

- ▶ Using a Reverse Vending Machine (RVM)
- ▶ Manually in the shop

If a shop does not have a RVM but they sell containers with the Re-turn logo, the shop may allow you to manually return containers in store, unless they have a take back exemption.

Locations of RVM machines can be found via the Re-turn website (www.re-turn.ie)

Green Waste

Green waste may be generated from gardens, external landscaping and internal plants / flowers. Green waste generated from landscaping of external areas will be removed by external landscape contractors. Green waste generated from gardens internal plants / flowers can be placed in the organic waste bins.

Batteries

A take-back service for waste batteries and accumulators (e.g. rechargeable batteries) is in place in order to comply with the S.I. No. 283/2014 - European Union (Batteries and Accumulators) Regulations 2014, as amended. In accordance with these regulations, consumers are able to bring their waste batteries to their local civic amenity centre or can return them free of charge to retailers which supply the equivalent type of battery, regardless of whether or not the batteries were purchased at the retail outlet and regardless of whether or not the person depositing the waste battery purchases any product or products from the retail outlet.

The childcare unit cannot use the civic amenity centre. They must segregate their waste batteries and either avail of the take-back service provided by retailers or arrange for recycling / recovery of their waste batteries by a suitably permitted / licenced contractor. The childcare unit may arrange collection, depending on the agreement.

Waste Electrical and Electronic Equipment (WEEE)

The WEEE Directive (Directive 2002/96/EC) and associated Waste Management (WEEE) Regulations have been enacted to ensure a high level of recycling of electronic and electrical equipment. In accordance with the regulations, consumers can bring their waste electrical and electronic equipment to their local recycling centre. In addition, consumers can bring back WEEE within 15 days to retailers when they purchase new equipment on a like for like basis. Retailers are also obliged to collect WEEE within 15 days of delivery of a new item, provided the item is disconnected from all mains, does not pose a health and safety risk and is readily available for collection.

As noted above, the childcare unit cannot use the civic amenity centre. They must segregate their WEEE and either avail of the take-back / collection service provided by retailers or arrange for recycling / recovery of their WEEE by a suitably permitted / licenced contractor. The childcare unit may arrange collection, depending on the agreement.

Printer Cartridge / Toners

It is recommended that a printer cartridge / toner bin is provided in the childcare unit, where appropriate. The childcare unit will be required to store this waste within their unit and arrange for return to retailers or collection by an authorised waste contractor, as required.

Waste printer cartridge / toners generated by residents can usually be returned to the supplier free of charge or can be brought to a civic amenity centre.

Chemicals

Chemicals (such as solvents, paints, adhesives, resins, detergents, etc) are largely generated from building maintenance works. Such works are usually completed by external contractors who are responsible for the off-site removal and appropriate recovery / recycling / disposal of any waste materials generated.

Any waste cleaning products or waste packaging from cleaning products generated in the childcare unit that are classed as hazardous (if they arise) will be appropriately stored within the unit. The childcare unit staff may arrange collection, depending on the agreement.

Any waste cleaning products or waste packaging from cleaning products that are classed as hazardous (if they arise) generated by the residents should be brought to a civic amenity centre.

Light Bulbs

Waste light bulbs (fluorescent, incandescent and LED) may be generated by lighting at the childcare unit. It is anticipated that childcare unit will be responsible for arranging for the off-site removal and appropriate recovery / disposal of these wastes. The childcare unit may arrange collection, depending on the agreement.

Light bulbs generated by residents should be taken to the nearest civic amenity centre for appropriate storage and recovery / disposal.

Textiles

Where possible, waste textiles should be recycled or donated to a charity organisation for reuse. childcare unit and residents will be responsible for disposing of waste textiles appropriately.

Waste Cooking Oil

If the childcare unit use cooking oil, waste cooking oil will need to be stored within the unit on a bunded area or spill pallet and regular collections by a dedicated waste contractor will need to be organised as required. Under sink grease traps will be installed in any cooking space.

If the residents generate waste cooking oil, this can be brought to a civic amenity centre.

Furniture & Other Bulky Waste Items

Furniture and other bulky waste items (such as carpet, etc.) may occasionally be generated by the childcare unit. The childcare unit may arrange collection of any bulky waste, depending on the agreement. If residents wish to dispose of furniture, this can be brought a civic amenity centre.

Abandoned Bicycles

Bicycle parking areas are planned for the development. As happens in other developments, residents sometimes abandon faulty or unused bicycles, and it can be difficult to determine their ownership. Abandoned bicycles should be donated to charity if they arise or facilities management may arrange collection by a licensed waste contractor.

5.6 Waste Storage Area Design

The commercial WSAs and shared residential WSAs should be designed and fitted-out to meet the requirements of relevant design Standards, including:

- ▶ Be fitted with a non-slip floor surface;
- ▶ Provide ventilation to reduce the potential for generation of odours with a recommended 6-10 air changes per hour for a mechanical system for internal WSAs;
- ▶ Provide suitable lighting – a minimum Lux rating of 400 is recommended;
- ▶ Be easily accessible for people with limited mobility;
- ▶ Be restricted to access by nominated personnel only;
- ▶ Be supplied with hot or cold water for disinfection and washing of bins;
- ▶ Be fitted with suitable power supply for power washers;
- ▶ Have a sloped floor to a central foul drain for bins washing run-off;
- ▶ Have appropriate signage placed above and on bins indicating correct use;
- ▶ Have access for potential control of vermin, if required; and
- ▶ Be fitted with CCTV for monitoring.

The facilities management company, childcare unit staff and residents will be required to maintain the resident bins and storage areas in good condition as required by the FCC Waste Bye-Laws.

5.7 Facility Management Responsibilities

It shall be the responsibility of the facilities management company, and childcare unit operators and staff to ensure that all waste generated by residents and the childcare unit is managed to ensure correct storage prior to collection by an appropriately permitted waste management company.

Facilities management company and the childcare unit operators will provide the following items:

- ▶ Provision of a Waste Management Plan document, prepared by the Facilities Management Company and the childcare unit to all residential units and childcare unit staff, respectively, which shall clearly state the methods of source waste segregation, storage, reuse and recycling initiatives that shall apply to the management of the development;
- ▶ Provision and maintenance of appropriate graphical signage to inform residents and childcare unit of their obligation to reduce waste, segregate waste and in the correct bin;
- ▶ Preparation of an annual waste management report for all residential units and the childcare unit;
- ▶ Designation of access routes to common waste storage areas to ensure safe access from the apartment units by mobility impaired persons;
- ▶ Provision of an appropriately qualified and experienced staff member, who will be responsible for all aspects of waste management at the development;
- ▶ Daily inspection of waste storage areas and signing of a daily check list, which shall be displayed within the area; and
- ▶ Maintenance of a weekly register, detailing the quantities and breakdown of wastes collected from the development and provision of supporting documentation by the waste collector to allow tracking of waste recycling rates.

5.8 Pest Management

A pest control operator will be appointed as required to manage pests onsite during the operational phase of this development. All waste generated within the development will be stored in closed waste receptacles both within units and within the WSAs. Any waste receptacles will be carefully managed to prevent leaks, odours and pest problems.

The childcare unit and shared residential WSAs will have access for potential control of vermin, if required, be supplied with hot or cold water, drainage point and will be regularly inspected by facilities management to deter pests.

6. SUMMARY AND CONCLUSION

In summary, this OWMP presents a waste strategy that addresses all legal requirements, waste policies and best practice guidelines and demonstrates that the required storage areas have been incorporated into the design of the proposed development.

Implementation of this OWMP will ensure a high level of recycling, reuse and recovery at the development. All recyclable materials will be segregated at source to reduce waste contractor costs and ensure maximum diversion of materials from landfill, thus contributing to the targets set out in *the NWMPCE*.

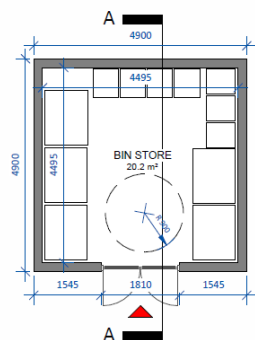
Adherence to this plan will also ensure that waste management at the development is carried out in accordance with the requirements of the *FCC Waste Bye-Laws*.

The waste strategy presented in this document will provide sufficient storage capacity for the estimated quantity of segregated waste. The designated areas for waste storage will provide sufficient room for the required receptacles in accordance with the details of this strategy.

7. REFERENCES

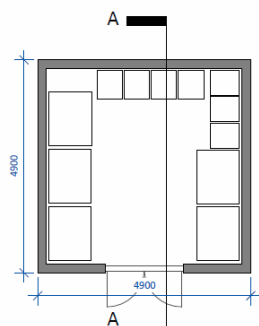
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APPENDIX A. WASTE STORAGE AREAS AND WASTE STAGING AREAS



Ground Floor Level

SCALE 1 : 100

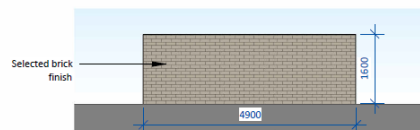


Roof Plan

SCALE 1 : 100

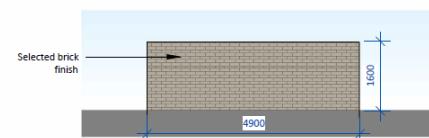
B3 **B4** Bin Store B3 & B4 shown

Refer to Site Plan (drawing no. 23068/P/003E) for the orientation of individual bin stores



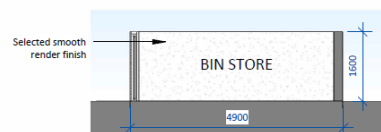
Side Elevation 01

SCALE 1 : 100



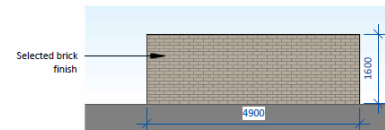
Side Elevation 02

SCALE 1 : 100



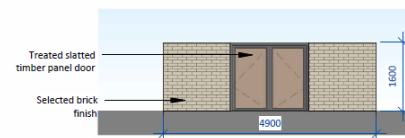
Section A-A

SCALE 1 : 100



Rear Elevation

SCALE 1 : 100



Front Elevation

SCALE 1 : 100



Key Plan

SCALE 1 : 10000

DO NOT SCALE. WORK TO PROVIDED DIMENSIONS ONLY.
ALL EXISTING DIMENSIONS TO BE CHECKED ON SITE.
DRAWN ON AUTOCAD 2014 AT DESBY GAHAN ARCHITECTS LTD
LAYERS ON THIS DRAWING COMPLY WITH BS 1192: PART 8

BIN STORE SCHEDULE	
2/3/4 Bed Detached/Semi-Detached/Townhouse Units	
(161no. 2 Beds, 58no. 3 Beds & 1no. 4 Beds)	
- 170c required per 2 bed unit**	
- 240c required per 3 bed unit**	
- 310c required per 4 bed unit**	
- 41,600c required	
*Unit Types A/AC/A1 (End Townhouse), C/C1/C2 (End Townhouse), E1 (End Townhouse), G/SC (Semi Detached), D1G/D2G (End Townhouse) & F3G (End Townhouse) have direct access to allocated or private amenity space and can utilise this for bin storage	
B3	3no. 120L bins each (x220no.)
Total provided = 79,200c	
**Meets standards set out in Table 1 of BS 5906: 2003	
2 Bed Own-Door Apartment	
(10no. 2 Beds)	
- 170c required per 2 bed unit**	
- 2,700c required	
*Unit Types H (Ground Floor Apartment) & M (Ground Floor Apartment) have direct access to allocated or private amenity space and can utilise this for bin storage	
B2	3no. 120L bins each (x10no.)
Total provided = 3,600c	
**Meets standards set out in Table 1 of BS 5906: 2003	
1/2/3 Bed Apartments	
(17no. 1 Beds, 15no. 2 Beds & 3no. 3 Beds)	
- 100c required per 1 bed unit**	
- 170c required per 2 bed unit**	
- 240c required per 3 bed unit**	
- 5,670c required	
B3	3no. 1,100L + 7no. 240L bins provided (Secure)
Total provided = 7,180c	
**Meets standards set out in Table 1 of BS 5906: 2003	
16no. Child Crèche	
B4	3no. 1,100L + 7no. 240L bins provided (Secure)
Total provided = 7,180c	
TOTAL BINS PROVIDED = 97,160L	

DATE	REV	BY	CHK	APP
03.03.26	P1	PBC	EJG	ISSUE FOR PLANNING



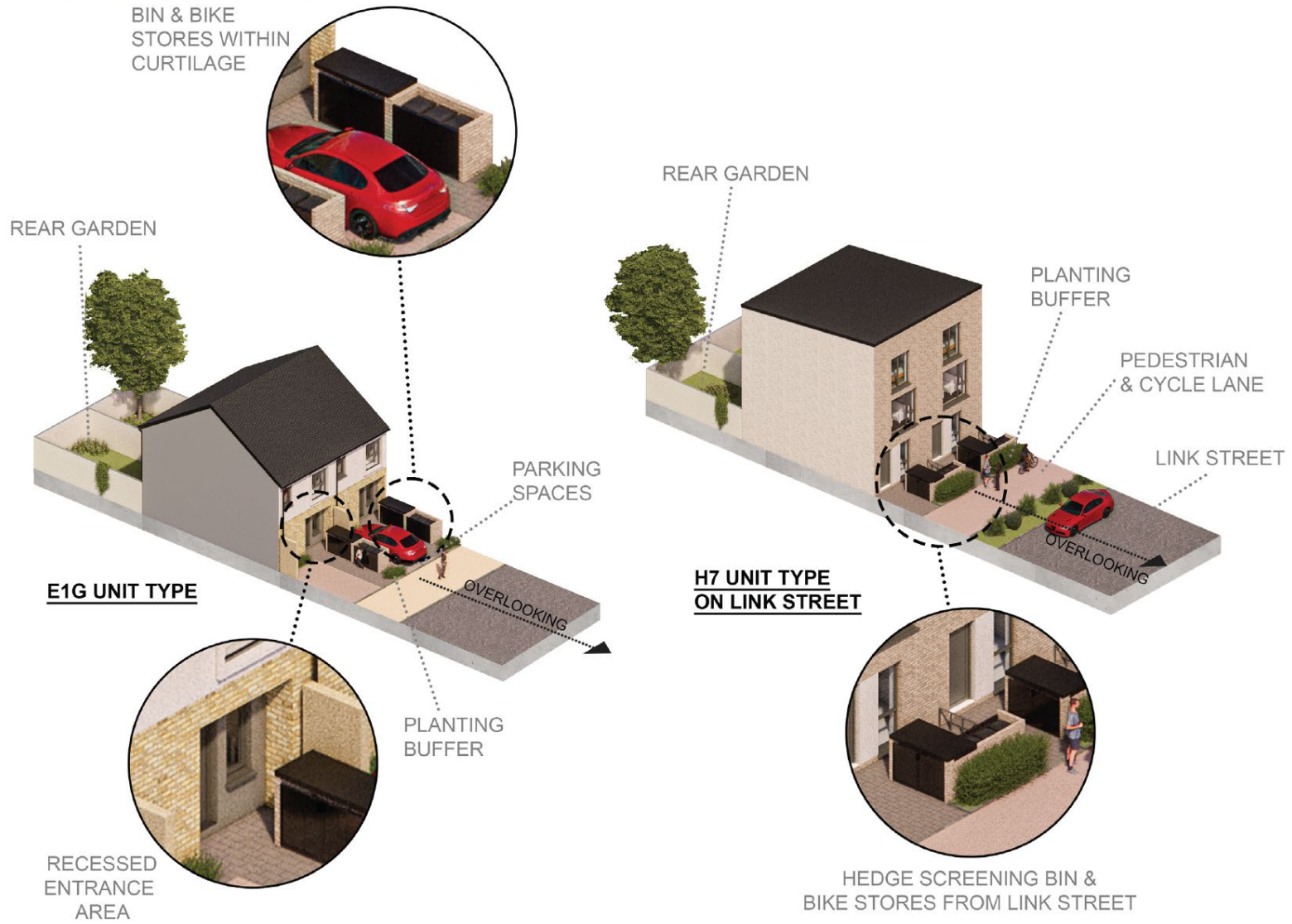
Project
PROPOSED RESIDENTIAL DEVELOPMENT
AT RATHBALE ROAD, SWORDS,
CO. DUBLIN

Drawing title
Communal Bin Stores B3 & B4

Scale As indicated @ A3	Drawn PBC	Checked EJG	Date 08.01.26
Project No. 23068	DWG No. 23068-P/0008	Revision P1	Tender ☐
Information/Comments ☐ Planning		Construction ☐	

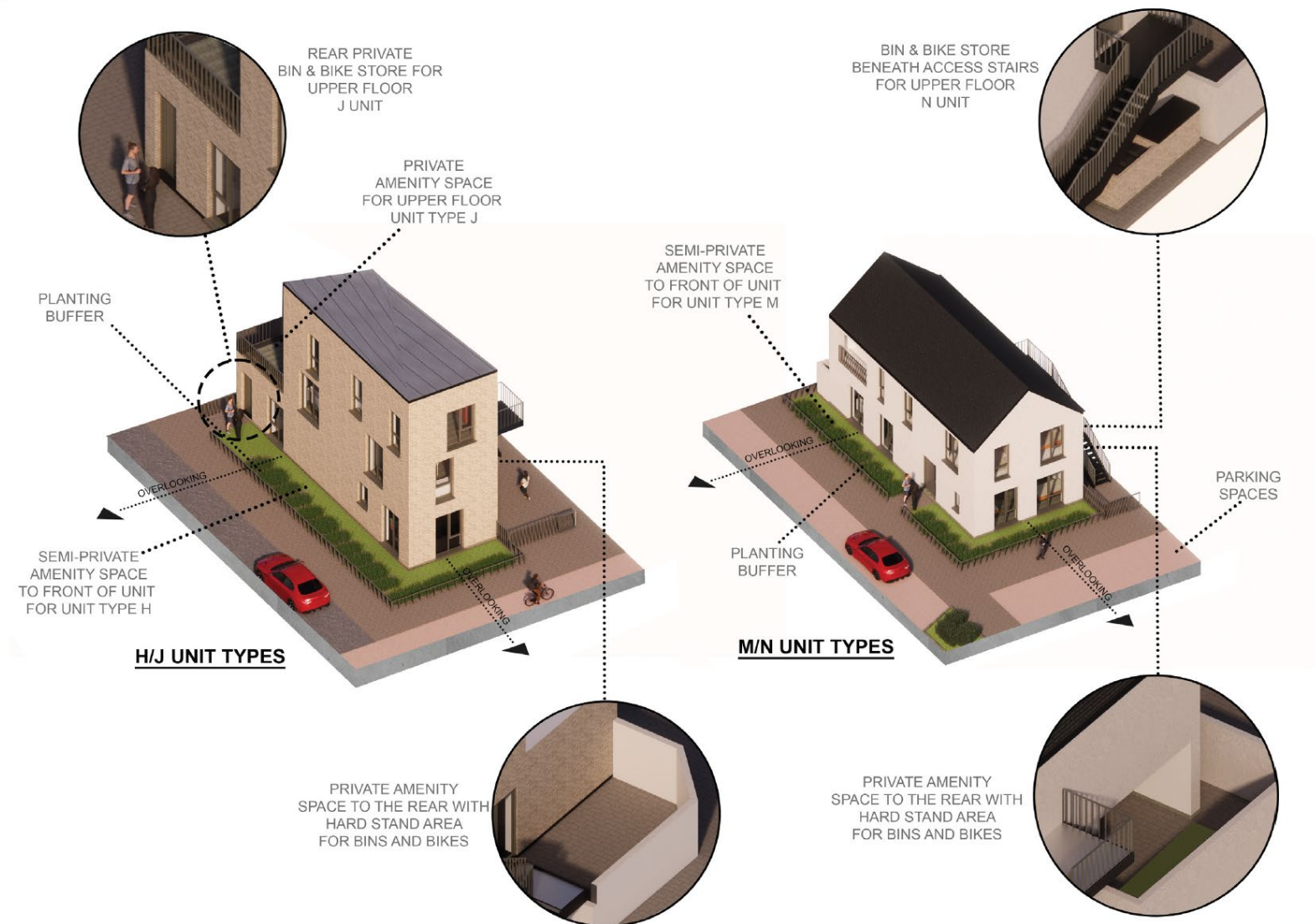
03 PROPOSED DESIGN

CELL STUDY- UNIT ARRANGEMENT

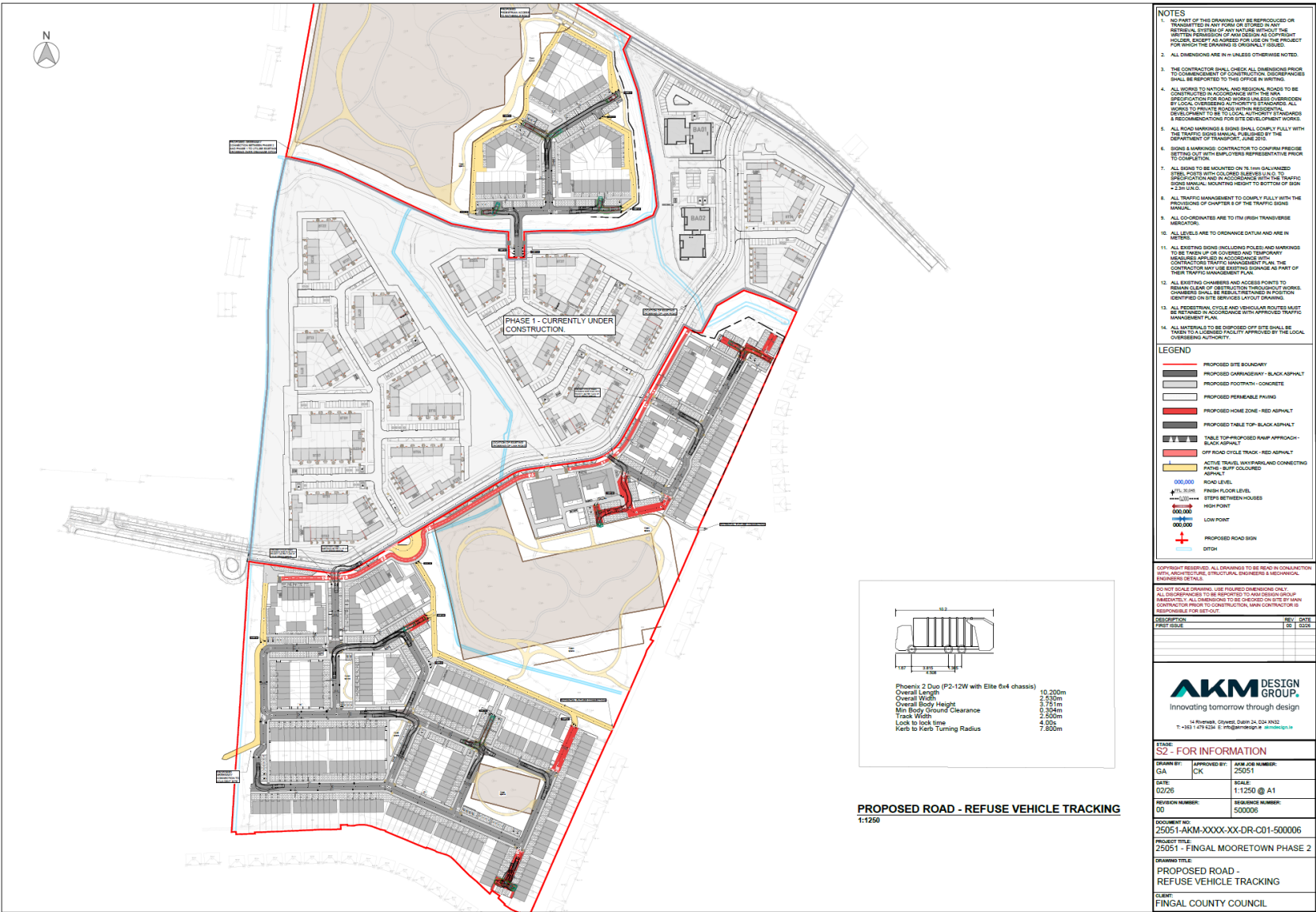


03 PROPOSED DESIGN

CELL STUDY- UNIT ARRANGEMENT



APPENDIX B. ROAD SWEEP ANALYSIS FOR REFUSE TRUCK



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