

6 BIODIVERSITY

The Biodiversity assessment has been undertaken by Altamar Limited. It assesses the biodiversity value of the proposed development area and the potential impacts of the development on the ecology of the surrounding area and within the potential zone of influence (ZOI). Standard construction and operational phase control measures, in addition to monitoring measures are proposed, to minimise potential impacts of the proposed development and to improve the biodiversity potential of the proposed development site post construction.

6.1 INTRODUCTION

The programme of work in relation to biodiversity assessment was designed to identify and describe the existing ecology of the area and detail designated sites, habitats or species of conservation interest that could potentially be impacted by the proposed development. It also assesses the significance of the likely impacts of the scheme on the biodiversity elements, and designs mitigation measures to alleviate identified impacts.

A separate Natura Impact Statement, in accordance with the requirements of Article 6(3) of the EU Habitats Directive, has been produced to identify potential impacts of the development on Natura 2000 sites, Annex species or Annex habitats. It concludes that *'In a strict application of the precautionary principle, it has been concluded that significant effects on the Dundalk Bay SAC and Dundalk Bay SPA are likely from the proposed works in the absence of standard control or mitigation measures, primarily as a result of a short in-direct hydrological connection via the surface water strategy which utilises the streams on the periphery of the site which ultimately discharge to the estuarine environment of Castletown Estuary. There is the potential for downstream impacts from the project during site clearance, enabling, construction, landscaping and drainage works. For this reason, a NIS was carried out to assess whether the proposed project, either alone or in combination with other plans or projects, in view of best scientific knowledge and in view of the sites conservation objectives, will adversely affect the integrity of the European Site. All other European sites were screened out at initial screening.*

'Following the implementation of the mitigation measures outlined, the construction and operation of this development would not be deemed to have a significant impact on the Cunnick Stream, Castletown Stream and Castletown Estuary which are seen as the indirect pathways to Dundalk Bay SAC and Dundalk Bay SPA. No significant negative effects are likely on European sites, alone in combination with other plans and projects based on the implementation of mitigation measures.'

6.1.1 Quality Assurance and Competence

Altamar Ltd. is an established environmental consultancy that is based in Greystones, Co. Wicklow that has been in operating in Ireland since 2001. Bryan Deegan MCIEEM is the Managing Director of Altamar Ltd. and holds a M.Sc. Environmental Science, BSc (Hons.) in Applied Marine Biology and a National Diploma in Applied Aquatic Science. He has over 31 years' experience as an environmental consultant in Ireland and was involved in a number of surveys for this project.

Altamar, has carried out approximately 250 ecological reports (e.g. AA Screening, Natura Impact Statements, Ecological Impact Assessments and Biodiversity Chapters of EIAR's) on housing developments in the past three years. These projects have included simple one off housing to large scale Nationally important housing projects (e.g. for LDA including the Central Mental Hospital in Dundrum), with protected species on site, within and proximate to designated sites and have involved the acquisition of derogation licences, the translocation of protected species including badger breeding setts and detailed consultation with statutory bodies including Inland Fisheries Ireland and NPWS.

6.1.2 Description of the Proposed Development

The proposed development comprises 1,058no. dwellings (765no. houses, 150no. duplex units, and 143no. apartments) including 2no. duplexes with an option to accommodate a childcare facility at ground floor level; a local centre comprising ground floor retail units, a medical unit, and mobility hub; provision of a childcare facility; all in buildings ranging in height from 1 to 6 storeys. All associated and ancillary site development and infrastructural works, hard and soft landscaping and boundary treatment works, including public, communal and private open space; public lighting; surface car parking spaces; bicycle parking; ESB substations; bin stores; provision of a foul sewage pumping station; laying a foul rising main along Castletown Road from the proposed new access to the development eastward to the Castletown Road and Bellewsbridge Road Junction. The proposed development will be accessed from two new combined vehicular, cyclist and pedestrian junction at Castletown and at Mount Avenue. A separate pedestrian and cyclist access is also provided at Mount Avenue. A Heritage Park, a playing pitch and a site reserved for a future educational/school facility are also being provided.

The proposed development is located at lands in the Townlands of Newtownbalregan, Castletown and Farrandreg, at Mount Avenue, Castletown, Dundalk, Co. Louth.

6.2 ASSESSMENT METHODOLOGY

A pre-survey biodiversity data search was carried out in August 2024 and updated in May 2025. This included examining records and data from the National Parks and Wildlife Service (NPWS), National Biological Data Centre (NBDC) and the Environmental Protection Agency (EPA), in addition to aerial, 6 inch maps and satellite imagery. 20 surveys of the site were undertaken within the respective appropriate seasonal timeframe for terrestrial fieldwork. Field surveys were carried out as outlined in Table 6.1. All surveys were carried out in the appropriate seasons.

Area	Surveyors	Survey Dates
Terrestrial Ecology	Bryan Deegan (MCIEEM)	21 st September 2024,
Bat Fauna	Bryan Deegan (MCIEEM)	21 st September 2024
Mammal Assessment	Frank Spellman	6 th March 2025
Amphibian Survey	Bryan Deegan (MCIEEM)	21 st September 2024
	Frank Spellman	6 th March 2025
Wintering Bird Assessment	Frank Spellman	11 th /23 rd October 2024, 7 th /15 th November 2024, 4 th /11 th December 2024, 9 th /27 th January 2025, 10 th February 2025, 6 th /14 th /19 th March 2025.
Breeding Bird Assessment	Frank Spellman	7 th May, 4 th June and 19 th June 2025

Table 6.1. Field Surveys

Desk studies were carried out to obtain relevant existing biodiversity information within the ZOI. The assessment also extends beyond the immediate development area to include those species and habitats that are likely to be impacted upon by the project. Given the scale of the proposed development, the nature of the construction works, and recognising that it is proposed to direct surface water drainage to adjacent watercourses that outfall ultimately to the estuarine environment at Castletown Estuary and marine environment at Dundalk Bay, it is considered that out of an abundance of caution in line with precautionary principle (EC,2000)¹ the potential ZOI of the proposed works extends beyond the site outline to include the onsite watercourses, the Castletown Estuary and Dundalk Bay. The proposed layout, drainage strategy and landscape design were reviewed to inform

¹ Methodological guidance on the provisions of Article 6(3) and (4) of the Habitats Directive 92/43/EEC.

this assessment. Further, Chapter 7 Land, Soils and Geology, Chapter 8 Water, Chapter 9 Climate (Air Quality), Chapter 10 Climate (Climate Change) of this submission were reviewed.

6.2.1 Proximity to designated conservation sites and habitats or species of conservation interest

The designated conservation sites within 15km, and beyond 15km with the potential for a direct or indirect pathway, of the site were examined for potential impact. This assessment included sites of international importance; Natura 2000 sites (Special Areas of Conservation (SAC), Special Protection Areas (SPA)), Ramsar sites and sites of National importance ((Natural Heritage Areas (NHA), proposed Natural Heritage Areas (pNHA)). Up to date GIS data (2024 NPWS data shapefiles) were acquired and plotted against 1, 5, 10 and 15km buffers from the proposed development site. Additional information on rare and threatened species was researched through the National Biodiversity Data Centre maps.

6.2.2 Terrestrial and Avian Ecology

A pre-survey data search was carried out. This included a literature review to identify and collate relevant published information and ecological studies previously conducted and comprised of information from the following sources; the National Parks and Wildlife Service, National Biodiversity Data Centre, EPA WMS watercourses data, in addition to aerial, 6 inch, satellite imagery. Following the desktop study, walk-over assessments of the site were carried out on the 21st September 2024, 11th/23rd October 2024, 7th/15th November 2024, 4th/11th December 2024, 9th/27th January 2025, 10th February 2025, 6th/14th/19th March 2025, 7th May, 4th June and 19th June 2025. Surveys were carried out by means of a thorough search within the potential ZOI. The presence of mammals is indicated principally by their signs, such as resting areas, feeding signs or droppings - though direct observations are also occasionally made. Habitat mapping was carried out according to Fossitt (2000) using ArcGIS 10.5 and displayed on Bing satellite imagery or street mapping. Any rare or protected species or habitats were noted, and invasive species recorded. Wintering bird surveys (12 total) between October 2024 and March 2025 targeted all winter wading birds (in particular those listed as Qualifying Interests of SPAs within 15km), red-listed Birds of Conservation Concern in Ireland (BoCCI) and birds of prey of which all behaviours, abundances and occurrences were mapped, counted, and recorded. Breeding bird surveys recorded breeding behaviour by all bird species within the site by visual observations and calls/song/behavioural evidence which were mapped and classed based on the BoCCI classification of red, amber and green, which is based on an assessment of the conservation status of all regularly occurring birds on the island of Ireland.

6.2.3 Bat Fauna

A ground level roost assessment was carried upon arrival to the site and used to examine trees and structures on site for features that could form bat roosts. Potential roosting features include heavy ivy growth, broken limbs, areas of decay, vertical or horizontal cracks, cracks in bark, roof rafters, cracks in buildings, attic spaces, stone walls etc. Onsite trees were inspected for bats and/or their signs using a powerful torch (141 Lumens) – Petzl MYO RXP No existing structures were present within the site. All trees on site were assessed for bat roosting potential, specifically for potential roosting features such as dense ivy growth, cracks, split branches, and holes/hollows. Following the emergence survey, the entire site was circumnavigated twice to assess bat foraging activity using an Echo Meter Touch Pro 2 Pro. The site survey was supplemented by a review of Bat Conservation Ireland's (BCIreland) National Bat Records Database. The bat detector and emergent survey was carried out by Bryan Deegan on the 21st September 2024.

6.2.4 Rating of Effects

The terminology for rating impacts is derived from the EPA Guidelines on the information to be contained in Environmental Impact Assessment Reports (2022).

6.2.5 Difficulties Encountered

No difficulties were encountered in relation to the preparation of the Biodiversity report. The bat survey was undertaken within the active bat period (April to September) and a detector survey was possible. Insects were observed in flight during the bat survey. Flora, amphibian, habitat, wintering bird, breeding bird and mammal assessments were carried out within the optimal survey period. The entire site was fully accessible.

6.2.6 Consultation

Consultation was carried out with the project team in relation to the proposed project. Rare and protected species data was acquired from the National Biodiversity Centre (NBDC).

6.3 RECEIVING ENVIRONMENT

6.3.1 Zone of Influence

The potential ZOI of the project was deemed to include the site outline, the Cunnicar and Castletown streams adjacent to and downstream of the development, and consequentially the downstream estuarine and marine environments via the proposed surface water as well as the foul drainage strategy. This site outline is shown in figure 6-1.

6.3.2 Designated sites

As can be seen from Figures 6.2 (SAC's within 15km), 6.3 (SPA's within 15km), 6.4 (NHA and pNHA within 15km), 6.5 (Ramsar sites within 15km), 6.6 (Watercourses proximate to the site), there are seven Natura 2000 sites (Dundalk Bay SAC, Carlingford Mountain SAC, Slieve Gullion SAC, Carlingford Shore SAC, Dundalk Bay SPA, Stabannan-Braganstown SPA, and Carlingford Lough SPA) within 15km and two National conservation sites (Drumcah, Toprass and Cortial Loughs pNHA and Dundalk Bay pNHA) within five kilometres of the proposed development site. The Dundalk Bay Ramsar site is located 3.2km from the proposed development. The distance and details of the conservation sites within 15km of the proposed development, and beyond 15km with the potential for a hydrological pathway, are seen in Table 6.2a and Table 6.2b. There is an indirect hydrological pathway to designated conservation sites located within Castletown Estuary and Dundalk Bay via the proposed foul and surface water drainage strategy. Foul wastewater drainage will be directed to a network that ultimately discharges to Dundalk Wastewater Treatment Plant (WwTP). Foul wastewater will be treated along this network under license. After attenuation onsite, surface water drainage will be directed to the Cunnicar and Castletown Streams along the northwest and southern boundaries respectively, which outfall to the Castletown Estuary and ultimately the marine environment at Dundalk Bay. Given the scale of the proposed development, the proximity to watercourses and the surface water strategy, in the absence of mitigation, there is the potential for downstream impacts on designated conservation sites located within Castletown Estuary and Dundalk Bay during the construction and operational phases of development via pollution and contaminated surface water runoff during construction which may enter the Cunnicar and/or Castletown Streams. Watercourses and designated conservation sites located proximate to the proposed development site are demonstrated in Figures 6.6-6.10.

Natura 2000 Site	Distance	Direct Hydrological / Biodiversity Connection
Special Areas of Conservation		
Dundalk Bay SAC	2.1 km	No (indirect)
Carlingford Mountain SAC	7.2 km	No
Slieve Gullion SAC	10 km	No
Carlingford Shore SAC	15.6 km	No (indirect)
Special Protection Areas		

Dundalk Bay SPA	737 m	No (indirect)
Stabannan-Braganstown SPA	13 km	No
Carlingford Lough SPA	16 km	No (indirect)

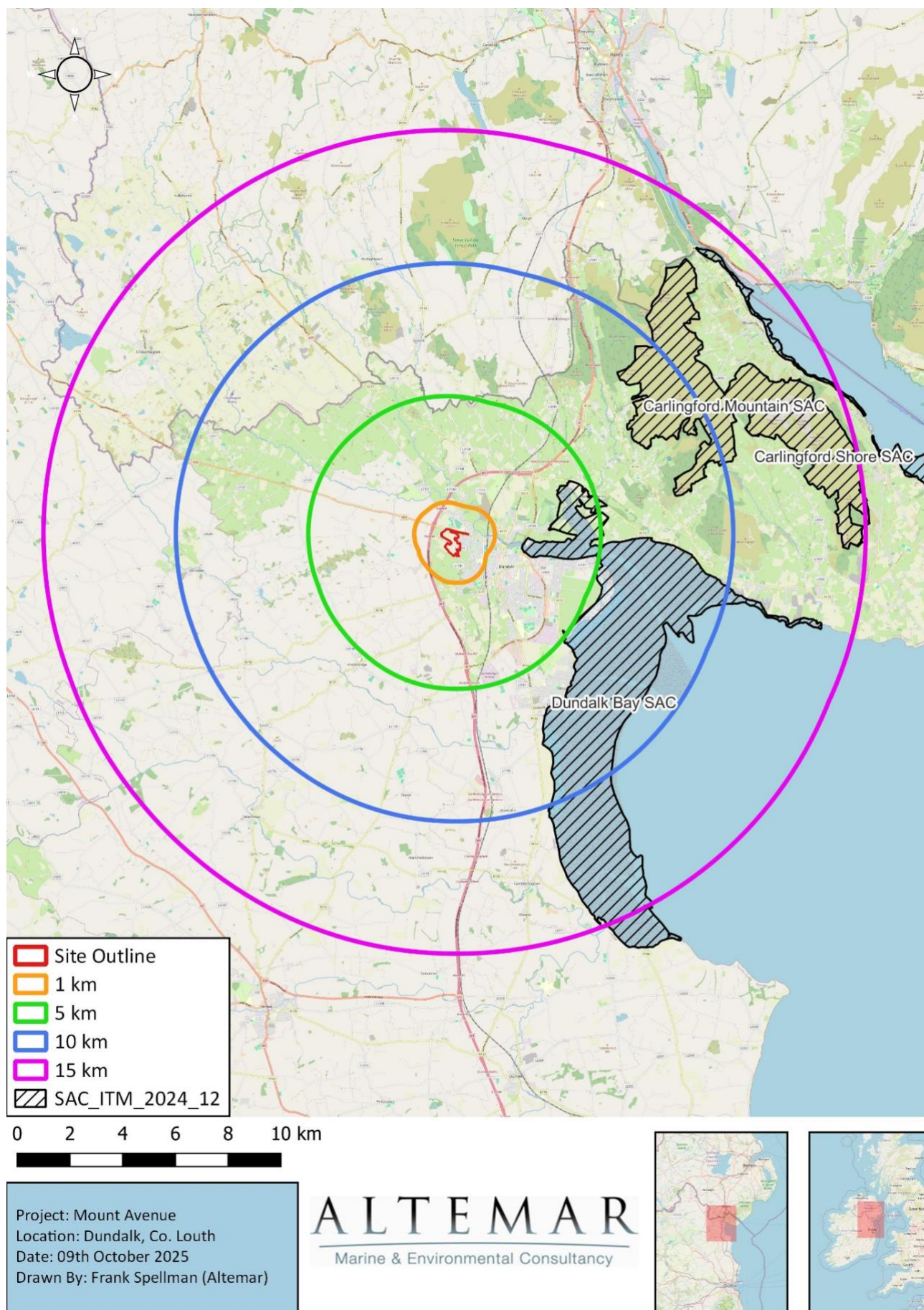
Table 6.2a. Natura 2000 sites within 15km, and beyond 15km with the potential for a hydrological pathway, of the proposed development

Designation	Conservation Sites	Distance	Direct Hydrological / Biodiversity Connection
pNHA	Drumcah, Toprass and Cortial Loughs	2.5 km	No
pNHA	Dundalk Bay	2.8 km	No (indirect)
pNHA	Stephenstown Pond	5.2 km	No
pNHA	Trumpet Hill (Louth)	6 km	No
pNHA	Carlingford Mountain	7.1 km	No
pNHA	Ravensdale Plantation	7.7 km	No
pNHA	Darver Castle Woods	9.1 km	No
pNHA	Stabannan-Braganstown	12 km	No
pNHA	Lough Hall and Ardee Woods	12.8 km	No
pNHA	Woodland at Omeath Park	13 km	No
pNHA	Carlingford Lough	13.4 km	No (indirect)
Ramsar	Dundalk Bay	3.2 km	No (indirect)

Table 6.2b. Nationally designated and Ramsar sites within 15km, and beyond 15km with the potential for a hydrological pathway, of the proposed development



Figure 6.1: Proposed Development Site



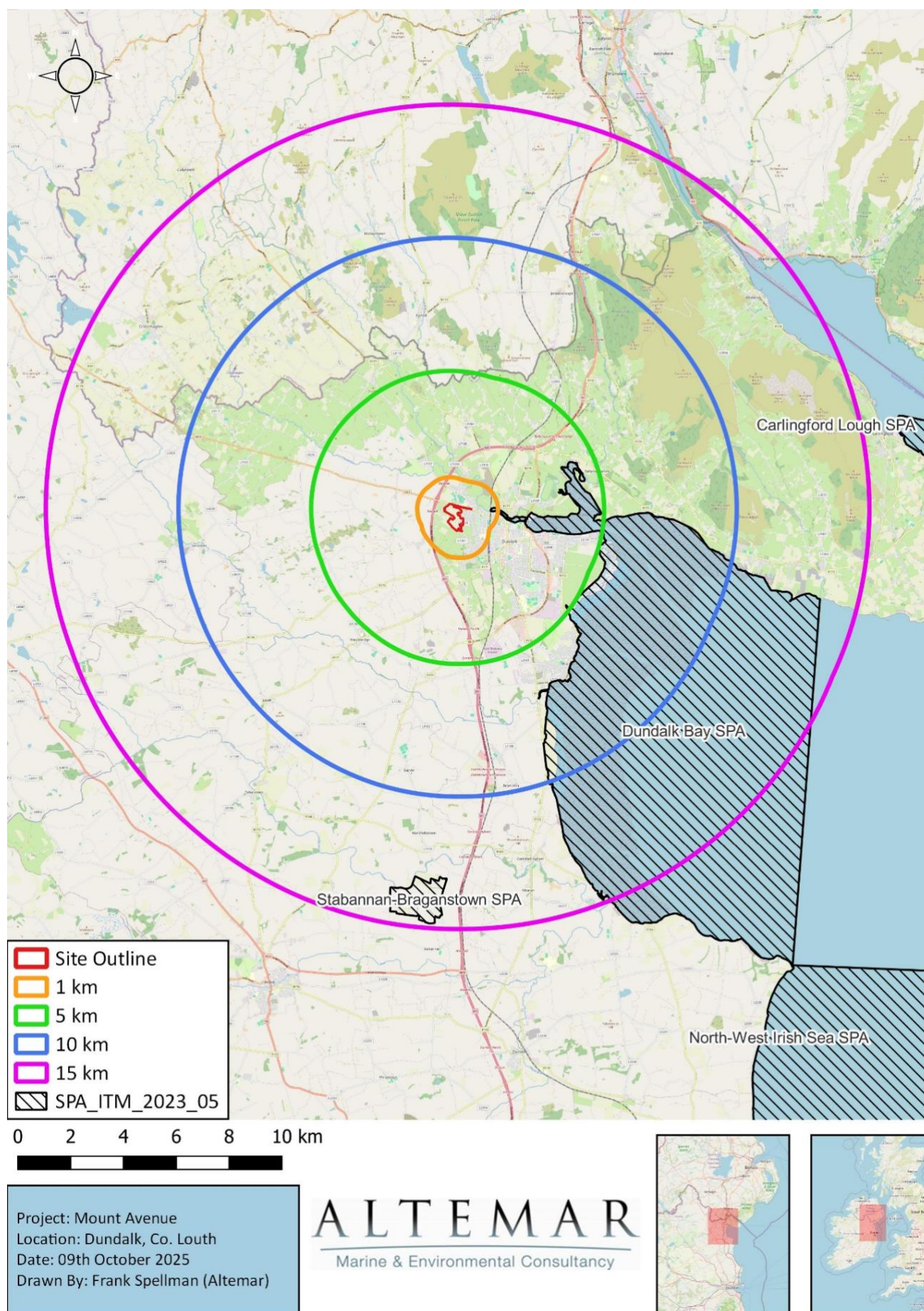


Figure 6.3: Special Protection Areas within 15km

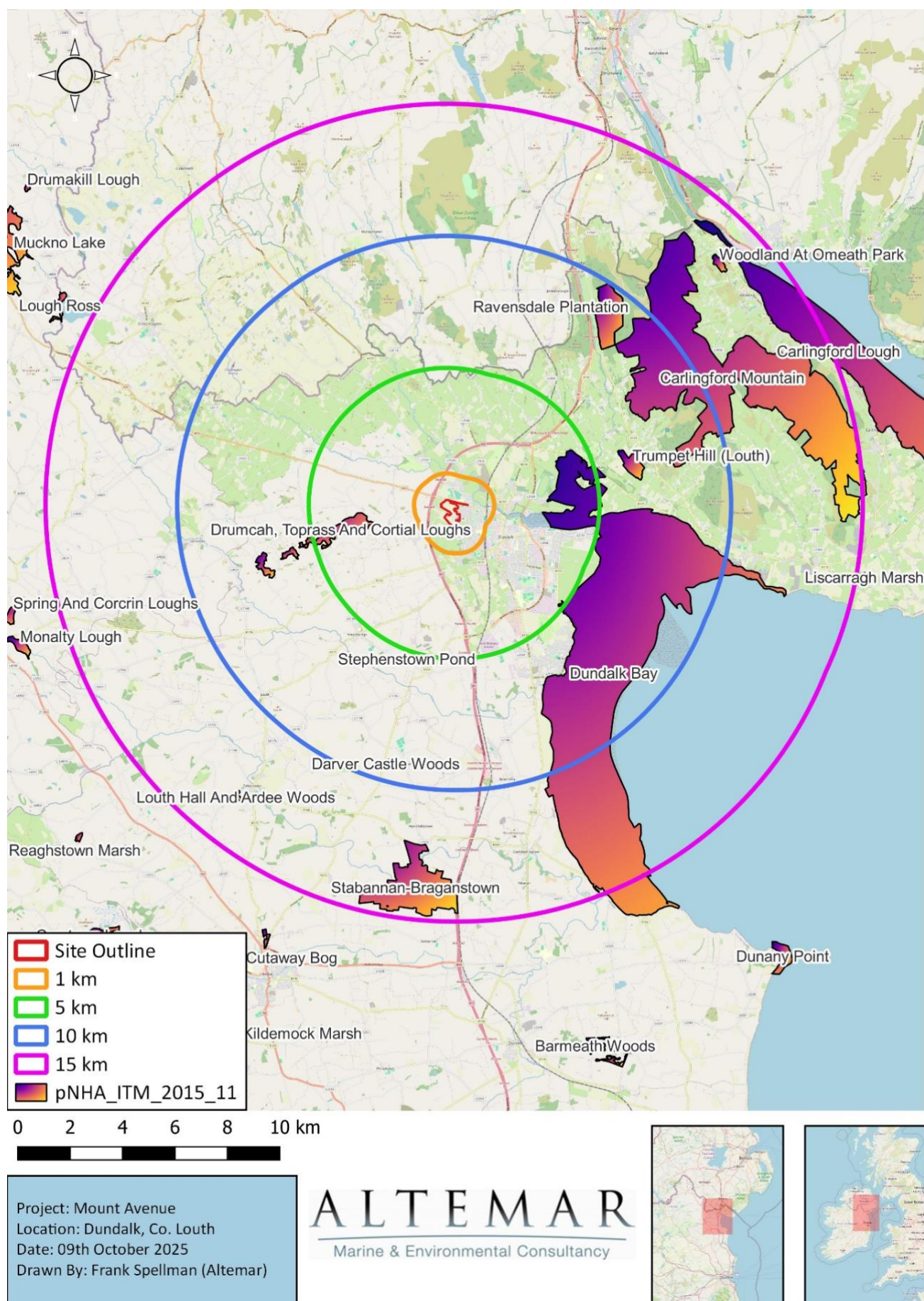
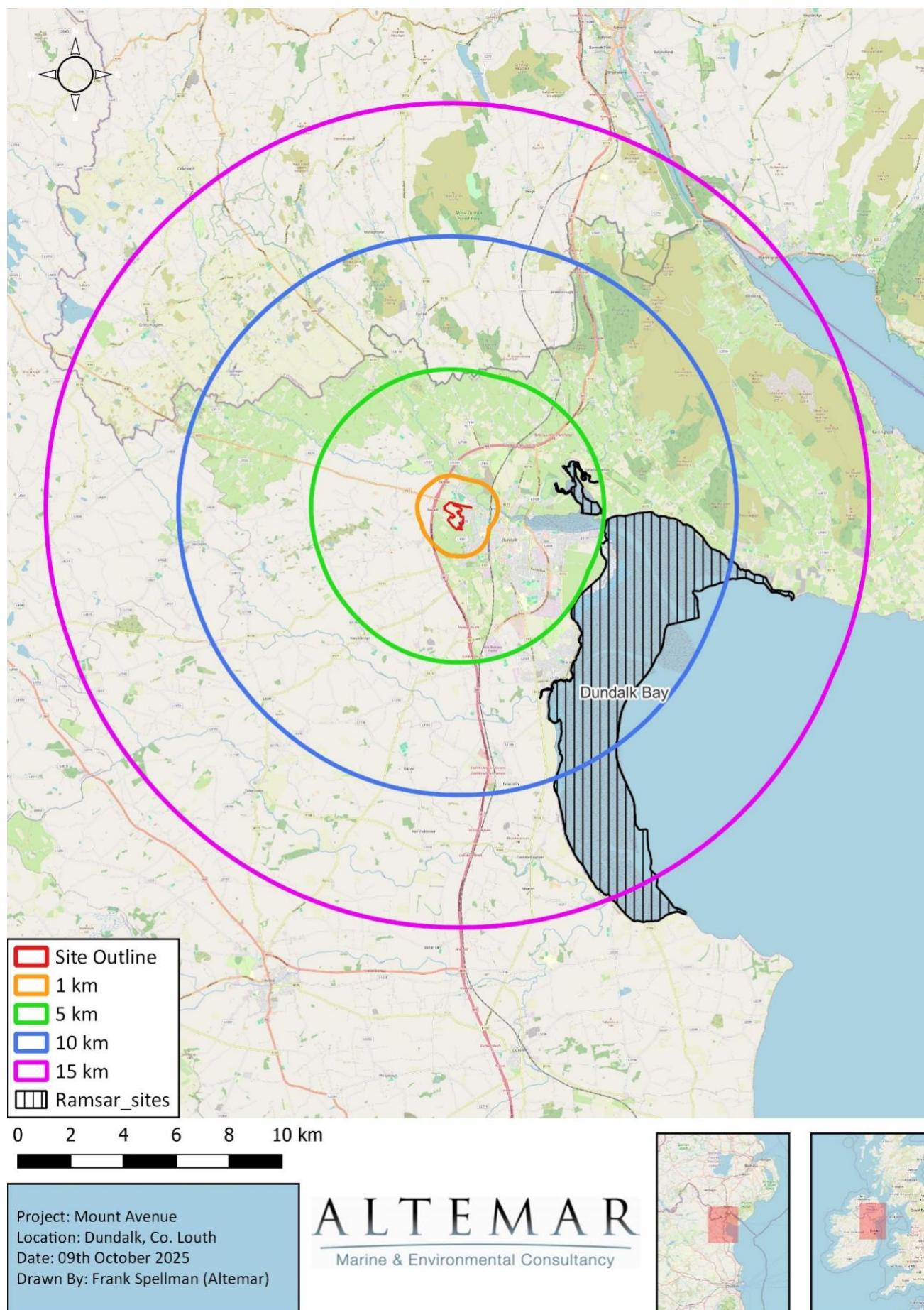
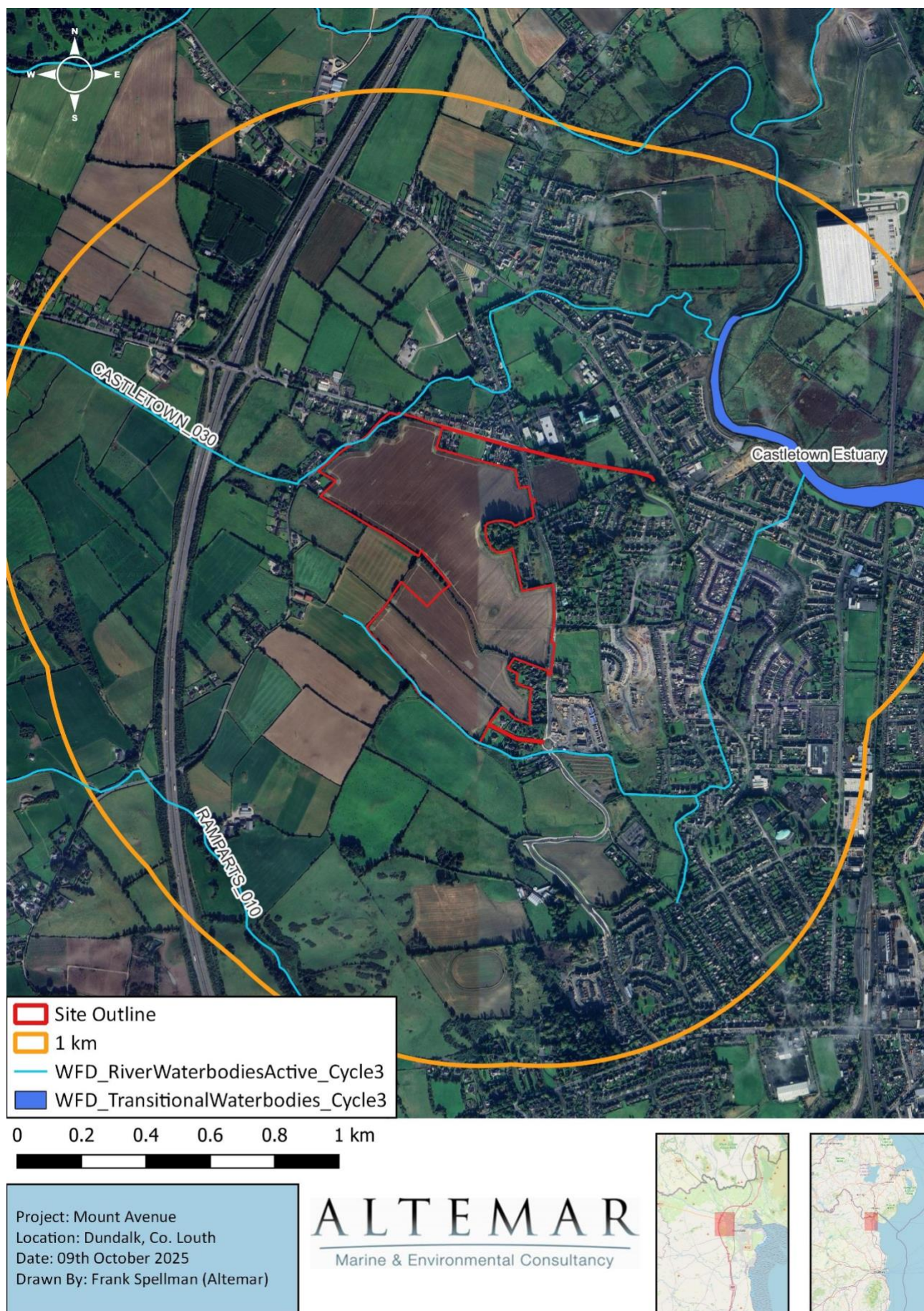


Figure 6.4: Proposed Natural Heritage Areas within 15km.





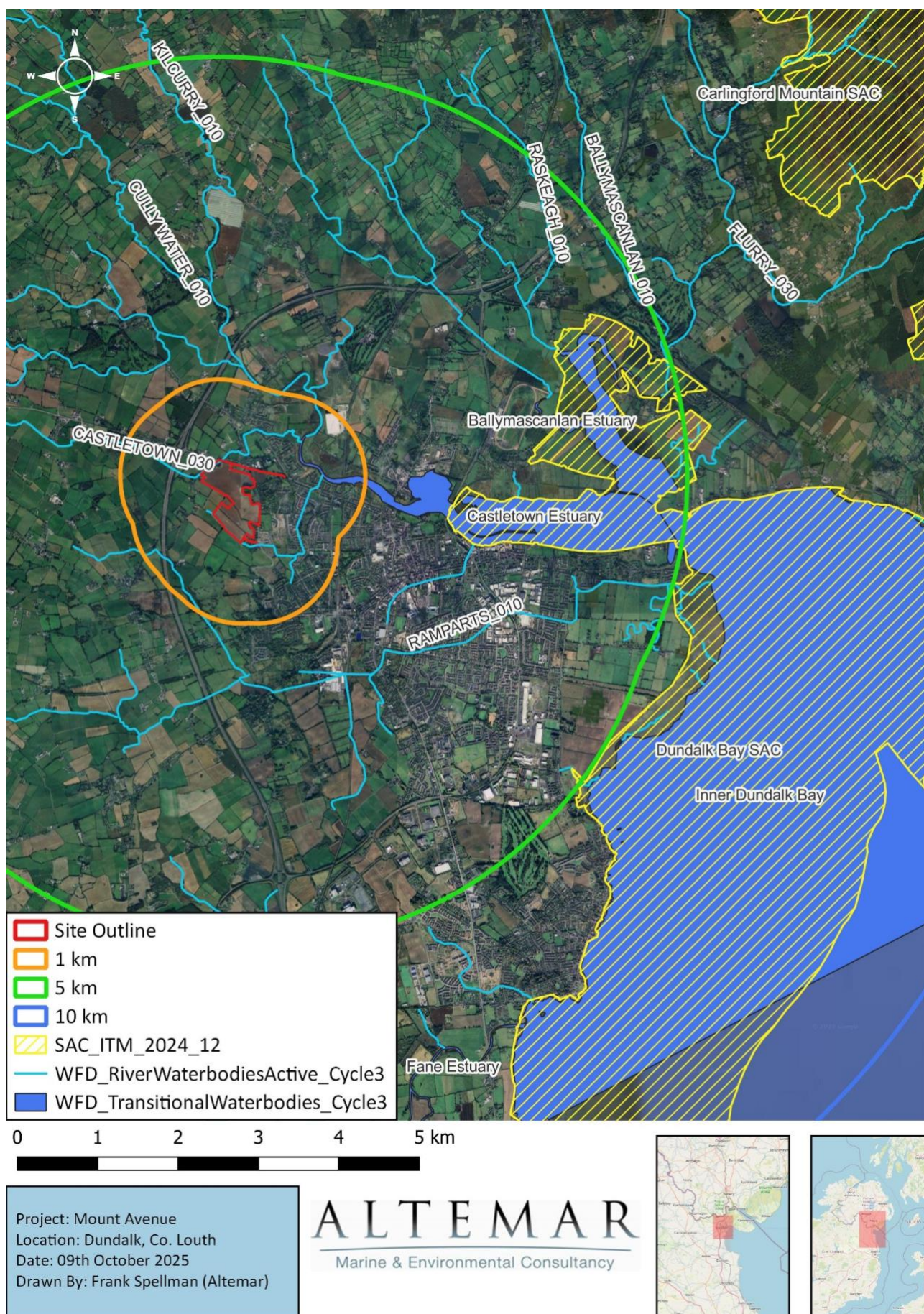


Figure 6.7: Watercourses and SACs with the potential for a hydrological connection

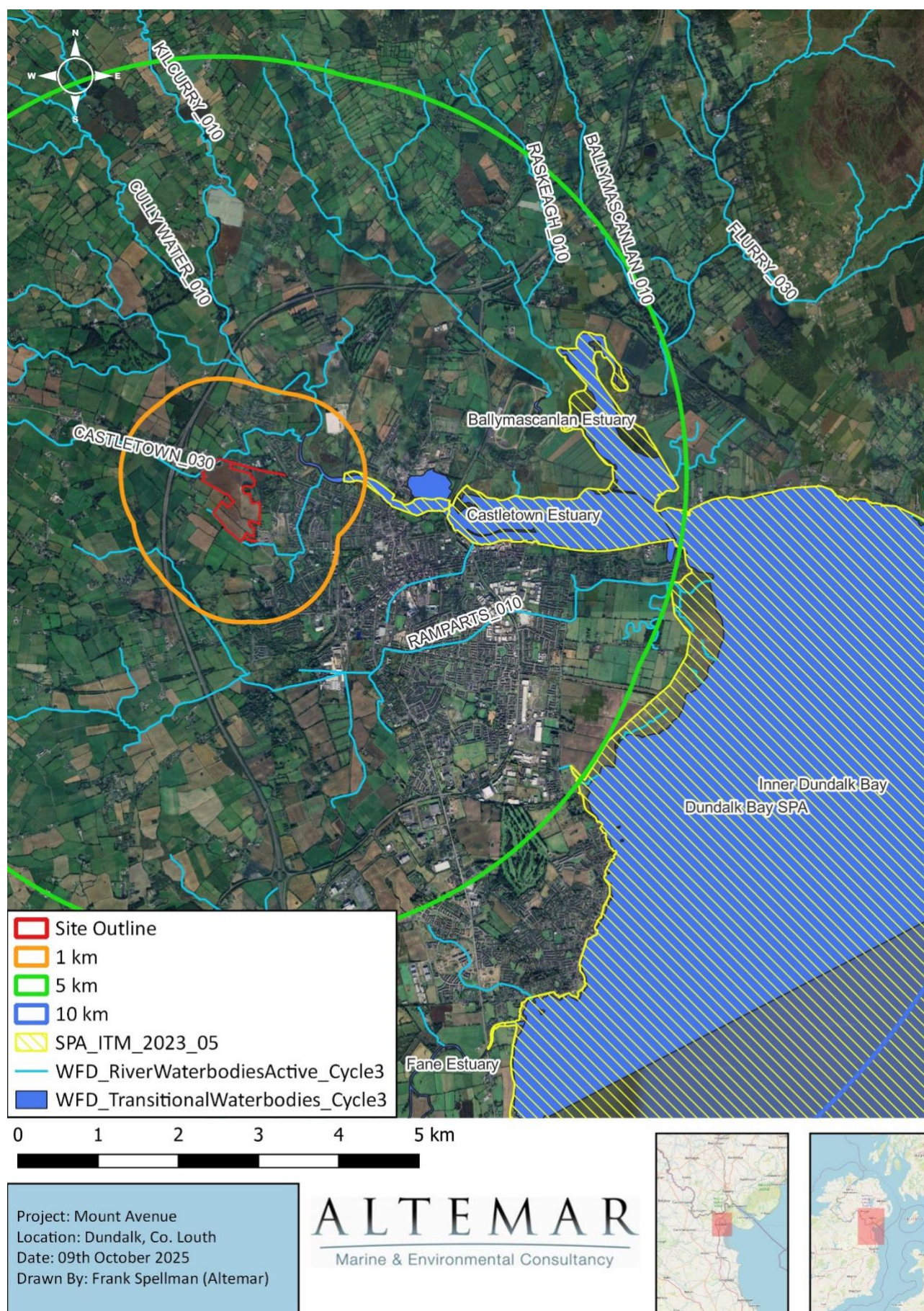
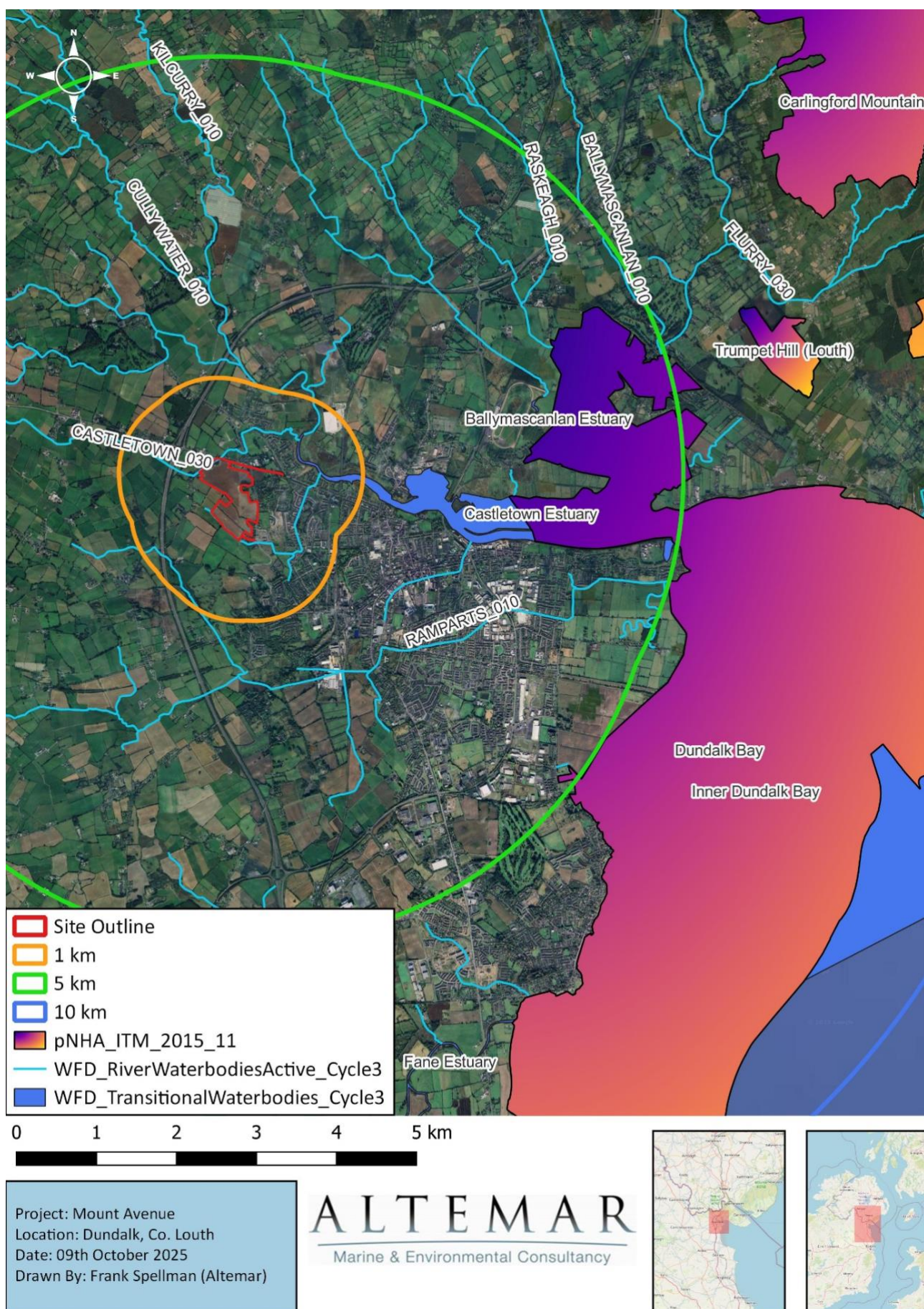


Figure 6.8: Watercourses and SPAs with the potential for a hydrological connection



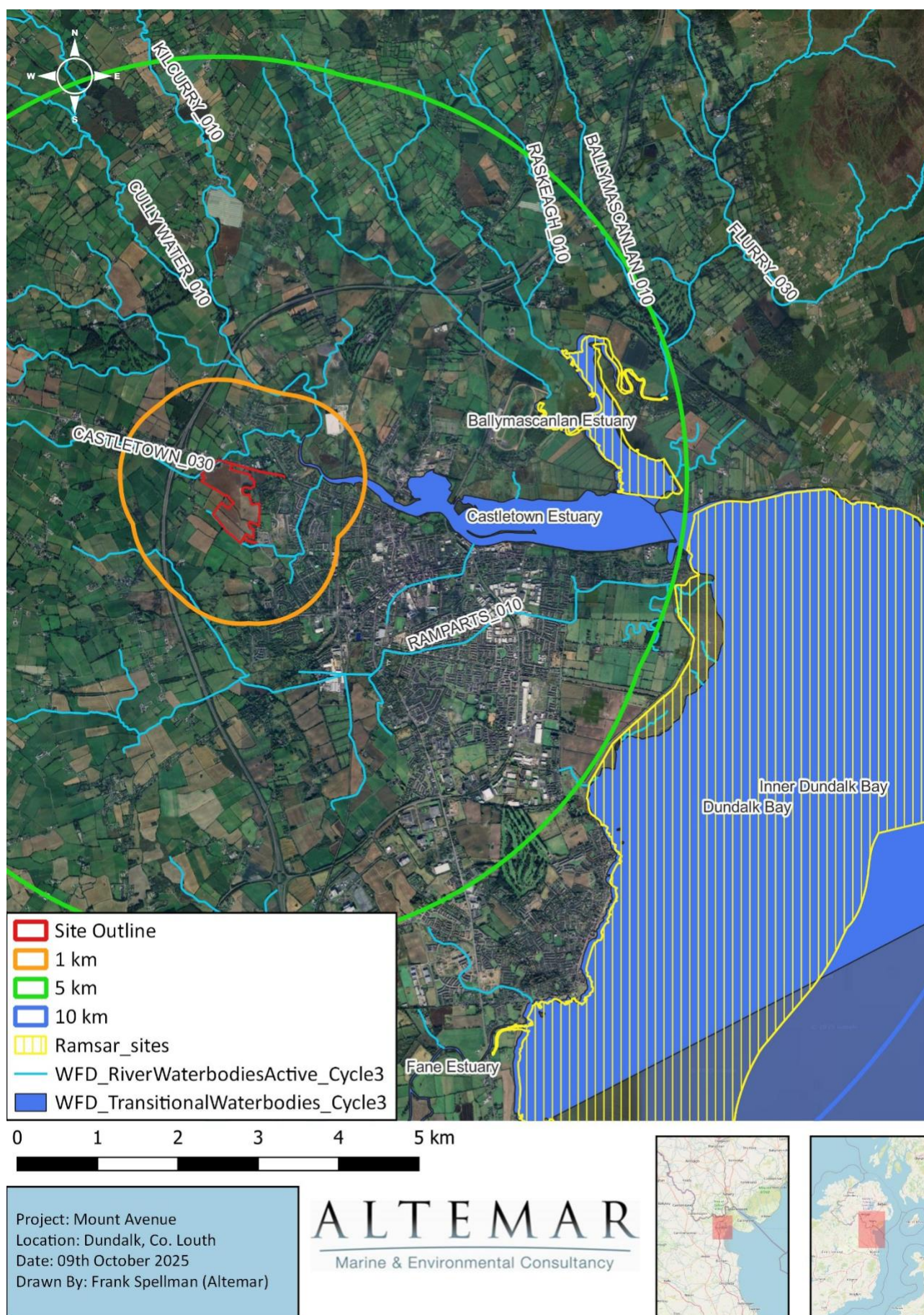


Figure 6.10: Watercourses and Ramsar sites with the potential for a hydrological connection

6.3.3 Species data

It should be noted that no species of conservation importance were noted on site, based on NPWS and NBDC records as fine resolution. Species recorded within the 2km² grid include are seen in Table 6.3.

Mite (*Acari*), *Erpobdella*, *Glossiphonia*, *Lumbricidae*, *Lumbriculidae*, *Tubificid Worm Sp.* (*Tubificidae*), *Blackbird* (*Turdus merula*), *Blackcap* (*Sylvia atricapilla*), *Bullfinch* (*Pyrrhula pyrrhula*), *Buzzard* (*Buteo buteo*), *Chaffinch* (*Fringilla coelebs*), *Coal Tit* (*Periparus ater*), *Common Sandpiper* (*Actitis hypoleucos*), *Dunnock* (*Prunella modularis*), *Goldcrest* (*Regulus regulus*), *Hooded Crow* (*Corvus cornix*), *Jackdaw* (*Coloeus monedula*), *Long-tailed Tit* (*Aegithalos caudatus*), *Sparrowhawk* (*Accipiter nisus*), *Swallow* (*Hirundo rustica*), *Swift* (*Apus apus*), *Woodpigeon* (*Columba palumbus*), *Wren* (*Troglodytes troglodytes*), *European Eel* (*Anguilla anguilla*), *Freshwater Shrimp* (*Gammarus*) (*Gammarus*), *Gammarus duebeni*, *Gammarus pulex/fossarum agg.*, *Water hog lice/slaters* (*Asellus* (*Asellus*) *aquaticus*), *Ash* (*Fraxinus excelsior*), *Beech* (*Fagus sylvatica*), *Cow Parsley* (*Anthriscus sylvestris*), *Creeping Buttercup* (*Ranunculus repens*), *Groundsel* (*Senecio vulgaris*), *Hawthorn* (*Crataegus monogyna*), *Japanese Knotweed* (*Fallopia japonica*), *Pedunculate Oak* (*Quercus robur*), *Sycamore* (*Acer pseudoplatanus*), *Taraxacum agg.*, *Winter Heliotrope* (*Petasites fragrans*), *Wood Aven* (*Geum urbanum*), *10-spot Ladybird* (*Adalia decempunctata*), *11-spot Ladybird* (*Coccinella undecimpunctata*), *14-spot Ladybird* (*Propylea quattuordecimpunctata*), *22-spot Ladybird* (*Psyllobora vigintiduopunctata*), *7-spot Ladybird* (*Coccinella septempunctata*), *Contacyphon palustris*, *Elmidae*, *Elmis aenea*, *Halipilidae*, *Helophorus brevipalpis*, *Limnius volckmari*, *Prasocuris marginella*, *Large White* (*Pieris brassicae*), *Small Tortoiseshell* (*Aglais urticae*), *Small White* (*Pieris rapae*), *Speckled Wood* (*Pararge aegeria*), *Glossosomatida*, *Goeridae*, *Hydropsyche*, *Hydropsychidae*, *Lepidostomatidae*, *Limnephilidae*, *Polycentropodidae*, *Polycentropus*, *Rhyacophila*, *Rhyacophilidae*, *Sericostoma*, *Banded Demoiselle* (*Calopteryx splendens*), *Baetis*, *Baetis rhodani/atlanticus*, *Blue-winged Olive* (*Serratella ignita*), *Caenis*, *Ecdyonurus*, *Green Drake* (*Ephemera danica*), *Heptagenia*, *Rhithrogena*, *Golden Dot* (*Stigmella aurella*), *Peppered Moth* (*Biston betularia*), *Leuctra*, *Biting Midge* (*Ceratopogonidae*), *Black flies* (*Simuliidae*), *Daddy-long-legs*, *Crane fly* (*Tipulidae*), *Dicranota*, *Fly* (*Diptera*), *Muscidae*, *Non-biting midges* (*Chironomidae*), *Jenkins' Spire Snail* (*Potamopyrgus antipodarum*), *Pond snails* (*Lymnaeidae*), *River limpets* (*Ancylus fluviatilis*), *Wandering Snail* (*Ampullaceana balthica*), *Badger* (*Meles meles*), *Common Pipistrelle* (*Pipistrellus pipistrellus sensu stricto*), *Daubenton's Bat* (*Myotis daubentonii*), *Hedgehog* (*Erinaceus europaeus*), *Leisler's Bat* (*Nyctalus leisleri*), *Otter* (*Lutra lutra*), *Red Fox* (*Vulpes vulpes*), *Soprano Pipistrelle* (*Pipistrellus pygmaeus*)

Table 6.3. National Biodiversity Data Centre Records within the 2km² grid (J00J)

6.3.4 Site Survey

Site assessments were carried out on the various dates as outlined above. Habitats within the proposed development site were classified according to Fossitt (2000) (Figure 6.13) and the species noted within each habitat are described.



Figure 6.11: Fossitt Habitats on site (See habitat descriptions for the explanation to the Fossitt codes). (Orange circle-Evidence of otter activity. Blue circle-frogspawn in pond)

BC1 – Arable crops**Plate 6.1. BC1-rable crops.**

The majority of the subject site comprised of highly managed arable crop fields. The crop planted during the site visit was potato (*Solanum tuberosum*). There was very little wild vegetation within this habitat and signs of herbicide use was noted. However, red bistort (*Persicaria amplexicaulis*), cats-ear (*Hypochaeris radicata*) and sow-thistle (*Sonchus asper*) was noted on the outskirts of this habitat.

WL1/2- Hedgerow/Treeline**Plate 6.2. WL1/2- Hedgerow/Treeline.**

An unmanaged, predominantly native hedgerow bordered many of the fields onsite, with some sections of mature treeline included. This habitat contained mature and early mature trees of a maximum of 18m tall. The tree and shrub species noted here included sycamore (*Acer pseudoplatanus*), ash (*Fraxinus excelsior*), alder (*Alnus glutinosa*), elder (*Sambucus nigra*), beech (*Fagus sylvatica*), birch (*Betula pendula*), sessile oak (*Quercus petraea*), cyprus (*Cupressus spp.*), Spindle (*Euonymus europaeus*), hawthorn (*Crataegus monogyna*), crab apple (*Malus sylvestris*), rose-hip (*Rosa canina* agg.), holly (*Ilex aquifolium*), hazel (*Corylus avellana*), blackthorn (*Prunus spinosa*) and red clusterberry (*Cotoneaster parneyi*). Nettle (*Urtica dioica*) and rose-bay willowherb (*Chamaenerion angustifolium*) were noted in the ground flora.

WS1 – Scrub**Plate 6.3. WS1-Scrub.**

An unmanaged scrub habitat was noted in two main areas on the east of the site. A large area (3681.021 m²) in the southeast corner of the site and a smaller area (1472.670 m²) at the foot of an area of woodland on the upper east border. The species within this habitat included gorse (*Ulex europaeus*), elder (*Sambucus nigra*), brambles (*Rubus fruticosus* agg), birch (*Betula pendula*), nettle (*Urtica dioica*), rapeseed (*Brassica napus*), everlasting sweet pea (*Lathyrus latifolius*), broad-leaved docks (*Rumex obtusifolius*), long-headed poppy (*Polygonum arenastrum*), bracken (*Pteridium aquilinum*), cow parsley (*Anthriscus sylvestris*), field bindweed (*Convolvulus arvensis*), common ragwort (*Jacobaea vulgaris*) and the medium-impact invasive cherry laurel (*Laurocerasus officinalis*).

WD1 – Mixed broad-leaf woodland**Plate 6.4. WD1 – Mixed broad-leaf woodland.**

The woodland habitat noted was situated in the northwest of the site and consisted predominantly of sycamore (*Acer pseudoplatanus*) and ash (*Fraxinus excelsior*) with wild cherry (*Prunus avium*), horse chestnut (*Aesculus hippocastanum*), beech (*Fagus sylvatica*), and elm (*Ulmus glabra*).

GS2 – Dry meadow and grassy verges

Along the outskirts of the eastern portion of the site along Mount Avenue were gassy verges. The species noted within this habitat included grass species, dandelion (*Taraxacum* spp.), daisy (*Bellis perennis*), creeping buttercup (*Ranunculus repens*), changing forget-me-not (*Myosotis discolor*), common ragwort (*Jacobaea vulgaris*), cow parsley (*Anthriscus sylvestris*), broad-leaved docks (*Rumex obtusifolius*), nettle (*Urtica dioica*), prickly sow-thistle (*Sonchus asper*) and red bistort (*Persicaria amplexicaulis*).

GS4 – Wet grassland



Plate 6.5. GS4 – Wet grassland.

A small area (2326.979 m²) of wet grassland was noted in the northwest of the site. The area was bordered by woodland, the river and the arable crop field. The area was species poor with field forget-me-not (*Myosotis arvensis*), elder (*Sambucus nigra*) saplings, Dence thistles (*Cirsium* spp.), cow parsley (*Anthriscus sylvestris*), brambles (*Rubus fruticosus* agg) and prickly sow-thistle (*Sonchus asper*).

ED2 – Bare ground

A small patch of bare ground was noted in the northeast of the site. No signs of animals or plant species of conservational importance was noted there.

FW2 – Lowland/depositing river



Plate 6.6. FW2 – Lowland/depositing river.

The Cunnicar Stream flows north along and through the northwest boundary of the subject site. The Castletown River flows along the southern boundary of the site.

BL3 – Built land

The built land on site was of mainly roadways, including portions of Mount Avenue, but primarily of the Castletown Road north of the site running east to the junction of Castletown Road and Bellevsbridge Road junction. These habitats do not support wild species and are not of conservational value.

Evaluation of Habitats

The proposed development site consists of arable crop fields, hedgerows, treelines, scrub, mixed broadleaf woodland, grassy verges, wet grassland, bare ground, watercourses and built land. No habitats of conservation importance were noted on site. However, the mixed broadleaf woodland and watercourses would be considered to be of local ecological importance.

Birds

A total of 48 bird species were recorded across breeding bird and wintering bird surveys combined.

Six species listed as Qualifying Interests of Dundalk Bay SPA were recorded on, over, or adjacent to the proposed site: black-headed gull, common gull, herring gull, lapwing, oystercatcher and mallard. However, neither of these species occurred in numbers considered significant, and the majority of individuals and observations of these species occurred over or outside the proposed development. In addition, four red-listed species of conservation concern in Ireland (BoCCI) were recorded: grey wagtail, meadow pipit, redwing, and snipe.

Thirteen species were recorded breeding or displaying breeding behaviour, including one red-listed bird of conservation concern in Ireland (BoCCI) (yellowhammer), and four amber-listed BoCCI (linnet, spotted flycatcher, starling, willow warbler). Swift (red-listed BoCCI) was recorded foraging on site but no features of breeding potential for this species was noted. The majority of breeding habitat utilised consisted of hedgerows/treelines and scrub within the site. The following bird species were noted on site:

Species	Latin name	BoCCI Status
Blackbird	<i>Turdus merula</i>	Green
Blackcap	<i>Sylvia atricapilla</i>	Green
Black-headed Gull	<i>Larus ridibundus</i>	Amber
Blue Tit	<i>Cyanistes caeruleus</i>	Green
Bullfinch	<i>Pyrrhula pyrrhula</i>	Green
Buzzard	<i>Buteo buteo</i>	Green
Chaffinch	<i>Fringilla coelebs</i>	Green
Chiffchaff	<i>Phylloscopus collybita</i>	Green
Collared Dove	<i>Streptopelia decaocto</i>	Green
Common Gull	<i>Larus canus</i>	Amber
Dunnock	<i>Prunella modularis</i>	Green
Feral Pigeon	<i>Columba livia f. domestica</i>	Green
Fieldfare	<i>Turdus pilaris</i>	Green
Goldcrest	<i>Regulus regulus</i>	Amber
Goldfinch	<i>Carduelis carduelis</i>	Green
Great Tit	<i>Parus major</i>	Green

Species	Latin name	BoCCI Status
Greenfinch	<i>Chloris chloris</i>	Amber
Grey Wagtail	<i>Motacilla cinerea</i>	Red
Herring Gull	<i>Larus argentatus</i>	Amber
Hooded Crow	<i>Corvus cornix</i>	Green
House Martin	<i>Delichon urbicum</i>	Amber
House Sparrow	<i>Passer domesticus</i>	Amber
Jackdaw	<i>Corvus monedula</i>	Green
Lapwing	<i>Vanellus vanellus</i>	Red
Linnet	<i>Carduelis cannabina</i>	Amber
Long-tailed Tit	<i>Aegithalus caudatus</i>	Green
Magpie	<i>Pica pica</i>	Green
Mallard	<i>Anas platyrhynchos</i>	Amber
Meadow Pipit	<i>Anthus pratensis</i>	Red
Oystercatcher	<i>Haematopus ostralegus</i>	Red
Pheasant	<i>Phasianus colchicus</i>	Green
Pied Wagtail	<i>Motacilla alba yarrellii</i>	Green
Raven	<i>Corvus corax</i>	Green
Redwing	<i>Turdus iliacus</i>	Red
Robin	<i>Erithacus rubecula</i>	Green
Rook	<i>Corvus frugilegus</i>	Green
Sedge Warbler	<i>Acrocephalus schoenobaenus</i>	Green
Siskin	<i>Spinus spinus</i>	Green
Snipe	<i>Gallinago gallinago</i>	Red
Song Thrush	<i>Turdus philomelos</i>	Green
Spotted Flycatcher	<i>Musciapa striata</i>	Amber
Starling	<i>Sturnus vulgaris</i>	Amber
Swallow	<i>Hirundo rustica</i>	Amber
Swift	<i>Apus apus</i>	Red
Willow Warbler	<i>Phylloscopus trochilus</i>	Amber
Woodpigeon	<i>Columba palumbus</i>	Green
Wren	<i>Troglodytes troglodytes</i>	Green
Yellowhammer	<i>Emberiza citrinella</i>	Red

Table 6.5: Bird Species noted in the vicinity of the proposed development.

Plant Species

The plant species encountered at the various locations on site are detailed above. No rare or plant species of conservation value were noted during the field assessment. Records of rare and threatened species from NBDC and NPWS were examined. No rare or threatened plant species were recorded in

the vicinity of the proposed site. No invasive plant species that could hinder removal of soil from the site during groundworks, such as Japanese knotweed, giant rhubarb, Himalayan balsam or giant hogweed were noted on site. However, a treeline/hedgerow along the Castletown Stream and treeline and woodland along the Cunnicar stream would be considered to be of local importance.

Bat Fauna

Three bat species were noted foraging on site (Soprano Pipistrelle, Common Pipistrelle, Lesser Noctule (Leisler's bat)). Bat foraging was noted on site and noted to be particularly active along hedgerows/treelines on the periphery of the site, but also occurred to a lesser extent within open space over arable crop fields. No trees of bat roosting potential are noted within the proposed site. No emergence of bats from trees of low to moderate bat roosting potential and castle of high bat roosting potential, to the east of the site surrounding and including Cú Chullain's Castle, was recorded.

Amphibians/Reptiles

No observed evidence of smooth newt, common frog, or common lizard was recorded. It is likely that amphibians utilise wet areas within riparian corridors of the Cunnicar and Castletown Streams.

Terrestrial Mammals

An active outlier badger sett (confirmed by video evidence being occasionally used by a single badger) was confirmed on site along the western boundary of the site. Some evidence of foraging by badgers was observed west of this sett. No other mammals or evidence of their presence was observed within the site.

6.4 POTENTIAL IMPACT OF THE PROPOSED DEVELOPMENT

Altamar has consulted with the design team to limit the potential impact of the proposed development on biodiversity. The proposed development will involve the removal of the existing terrestrial habitats on site, re-profiling, excavations, and the construction of residential units. In the absence of mitigation the following impacts are foreseen:

6.4.1 Proposed Development

6.4.1.1 Construction Stage

The construction of the proposed development would impact on the existing ecology of the site and the surrounding area. These potential construction impacts would include impacts that may arise during the site clearance, re-profiling, excavations, and the building phases of the proposed development.

Construction phase mitigation measures are required on site particularly as reprofiling of the site is proposed which will remove/alter existing terrestrial habitats and can lead to silt laden and contaminated runoff to the watercourses traversing the subject site. In the absence of mitigation measures, there is the potential for contaminated surface water runoff to enter the watercourses and proximate surface water drainage networks with the potential for downstream impacts on the Castletown Estuary and designated conservation sites located within the estuary and Dundalk Bay. In addition, protected species are on site and need to be protected. Bats are noted on site and need to be protected during the construction stage.

Designated Conservation sites within 15km, and outside 15km with a potential hydrological pathway

The proposed development is not within a designated conservation site. The nearest designated conservation site is Dundalk Bay SPA (737 m). Runoff during site groundworks and construction of project elements could impact on the Cunnicar Stream and Castletown Stream, and the surface water network with water quality impacts into the estuarine and marine environment from the proposed development site. In the absence of mitigation, impacts on the watercourses would be seen as the primary pathway for impacts on conservation sites. Given the scale of the proposed development, the nature of the construction works, and recognising that it is proposed to direct surface water

drainage to onsite watercourses, out of an abundance of caution it is considered that the potential ZOI of the proposed works extends beyond the site outline to include the onsite watercourses, Castletown Estuary, and designated conservation sites located within Castletown Estuary and Dundalk Bay. In the absence of mitigation, there is the potential for dust and contaminated surface water runoff to enter the Castletown Estuary with the potential for downstream impacts on downstream conservation sites.

Impacts: Low adverse / International/ Negative Impact / Not significant / short term. Mitigation is needed to prevent impacts on the watercourses, surface water network, and downstream designated sites.

Biodiversity

The impact of the development during the construction phase will be a loss of the majority of existing habitats and species within the site. In the absence of mitigation, it would be expected that the flora and fauna associated with these habitats would also be displaced.

Terrestrial mammalian species

An active badger sett was noted on site with recent use confirmed by a fresh latrine and camera footage. This is considered an outlier sett due to the infrequent use by a single badger. Some foraging by badger was also noted in the west of the site. No evidence of otter activity was noted along the watercourses. The existing riparian corridors and their associated vegetation are to be maintained.

Disturbance during construction has the potential to damage and/or disrupt badgers and the active sett. Pollution and silt from the site could lead a reduction in the water quality of the Cunnicar and Castletown Streams and Castletown Estuary, and impact on the prey of otter.

Impacts: moderate adverse/ local / Negative Impact / Not significant / short term. Mitigation is needed in the form of 30 metre exclusion zone during construction from the active badger sett, a pre-construction inspection for terrestrial mammals of conservation importance, and the protection of the Cunnicar and Castletown Streams from silt and pollution.

Flora

No protected flora was noted on site. The site is largely of low value to flora due to active arable crop farming of the site. Site clearance will remove the flora species on site and in particular sections of hedgerows on site. The riparian corridor of the Cunnicar and Castletown Streams, as well as the mixed broadleaf woodland in the northwest of the site, are to be maintained.

Impacts: Low adverse / site / Negative Impact / Not Significant / Short term. Mitigation is required on site to protect treelines and hedgerows on site from construction activities.

Bat Fauna

Three bat species were noted foraging on site (Soprano Pipistrelle, Common Pipistrelle, and Lesser Noctule). Bat foraging was noted on site primarily along treelines and hedgerows along the periphery of the site. No bats were noted roosting on site. Lighting during construction could impact on foraging activity.

Impacts: Moderate adverse / local/ Negative Impact / Not significant / short term. Mitigation is needed in the form of ecological supervision of lighting on site and for the protection of treelines and hedgerows on site.

Aquatic Biodiversity

There are two watercourses running along the northwest and southern boundaries of the subject site. Given the nature of the proposed works, and the fact that it is proposed to discharge surface water drainage to the existing watercourses, there is the potential for impacts on aquatic biodiversity from silt or petrochemicals via contaminated surface water runoff.

Impacts: Moderate adverse / local / Negative Impact / Not Significant / Short term. Mitigation is required to protect aquatic habitats on and adjacent to the site from silt and pollution. The riparian vegetation of the Cunnicar and Castletown Streams also require protection from construction works.

Bird Fauna

The proposed development is located 737 m from the nearest SPA (Dundalk Bay SPA). Six species (black-headed gull, common gull, herring gull, lapwing, oystercatcher and mallard) listed as Qualifying interests of this SPA were noted on, over or immediately adjacent to the site. Four of these species, black-headed gull, herring gull, oystercatcher and lapwing, were observed foraging on the subject site. None of these species occurred in numbers on site >1% of the National population. Foraging habitat within the site for these species will be lost during construction. However, the impact of this reduction in foraging habitat is limited due to the limited use of the site by these species and the scale of available alternative foraging habitat in the surrounding area.

Site clearance during construction will result in a loss of breeding habitat within the site for a number of species. However, the majority of breeding habitat within and along the boundary of the site is to be retained.

Impacts: Low adverse / Local / Negative Impact / Not significant / short term. Mitigation is needed in the form of site clearance outside bird nesting season.

6.4.1.2 Operational Stage

Once constructed all onsite drainage will be connected to separate foul and surface water systems. Surface water runoff will comply with SUDS. Key habitats including the Cunnicar Stream, Castletown Stream and mixed broadleaf woodland, will be maintained. The biodiversity value of the site would be expected to improve as the landscaping matures.

Designated Conservation sites within 15km, and outside 15km with a potential hydrological pathway

Given that it is proposed to discharge surface water drainage to the Cunnicar and Castletown streams, in the absence of mitigation, there is the potential for downstream impacts on designated sites via contaminated surface water runoff which may enter the Cunnicar Stream and/or Castletown Stream during operation.

Impacts: Low adverse / local / Negative Impact / Not significant / long term. Standard mitigation in relation to surface water is required.

Biodiversity

Biodiversity value of the site will improve as landscaping matures.

Terrestrial mammalian species

An active badger sett was noted on site with recent use confirmed by a fresh latrine and camera trap footage. This is considered an outlier sett due to the infrequent use by a single badger. Some foraging by badger was also noted in the west of the site. No evidence of otter activity was noted along the watercourses. The existing riparian corridors and their associated vegetation are to be maintained. The landscape incorporates the required 30 m buffer zone to facilitate continuation of the sett as an active resting place. The landscape design will facilitate corridors for movement of badgers to and from the sett through the site and to surrounding areas. Additional habitat will be created on site.

Impacts: Low adverse / site / Negative Impact / Not significant / long term.

Flora

No protected flora was noted on site. The site is largely of low value to flora due to active arable crop farming of the site. Site clearance will remove the flora species on site and in particular sections of hedgerows on site. The riparian corridor of the Cunnicar and Castletown Streams, as well as the mixed broadleaf woodland in the northwest of the site, are to be maintained. Landscaping will increase flora diversity on site.

Impacts: Negligible-beneficial / site / Negative Impact / Not significant / long-term

Bat Fauna

The proposed development will change the local environment as new structures are to be erected and some of the existing vegetation will be removed. No bat roosts or potential bat roosts will be lost due to this development. A potential loss in foraging by three species of bats will be noted as a result of the proposed development. However, lighting has been designed to be within compliance with bat lighting guidelines, with the implementation of low-level warm lighting. The retention of hedgerows and treelines around the periphery of the site will maintain the primary bat foraging corridors. Lighting has been implemented to prevent light spill along these corridors. However, development and lighting within the site will displace open areas available for bat foraging. The proposed development would not be seen to have a significant collision risk for bat strikes.

Impacts: Moderate adverse / International / Negative Impact / Not significant / long term.

Mitigation is required in relation to light spill on site.

Aquatic Biodiversity

Given that it is proposed to discharge surface water drainage, after attenuation, to watercourses running along the site's boundaries, and ultimately the Castletown Estuary, in the absence of mitigation, there is the potential for downstream impacts on aquatic biodiversity via contaminated surface water runoff during operation.

Impacts: Low adverse / site / Negative Impact / Not Significant / Short term

Bird Fauna

The proposed development will change the local environment as new structures are to be erected. The buildings are comprised of solid materials consisting of a solid material on the exterior which includes sections of concrete and glass. These buildings would be clearly visible to bird species and would not pose a significant collision risk. There will be reduced overall foraging habitat for wintering birds within the site during operation compared to present levels. However, the site is currently of low value for foraging by wintering bird species (including those listed as conservation objectives of nearby SPAs).

The presence of buildings on site and the proposed landscaping strategy will likely provide additional nesting potential for passerine bird and gull species as a result of increased flora and habitat diversity within the site outline, and retention of a large proportion of the existing breeding habitat on site.

The proposed development would not be seen to have a significant collision risk for bird strikes.

Impacts: Low adverse / site / Negative Impact / Not significant / long term.

6.4.1.3 Do-Nothing Impact

The site would continue to be farmed and the biodiversity value would remain stable. The flow regimes and water quality of watercourses traversing the subject site boundaries would likely remain within existing parameters.

6.4.2 Cumulative

Cumulative Impacts can be defined as *"impacts that result from incremental changes caused by other past, present or reasonably foreseeable actions together with the project"*. Effects which are caused by the interaction of effects, or by associated or off-site projects, are classed as indirect effects. Cumulative effects are often indirect, arising from the accumulation of different effects that are individually minor. Such effects are not caused or controlled by the project developer.

A review of other off-site developments and proposed developments was completed as part of this assessment. The following projects and plans were reviewed and considered for possible cumulative effects with the Proposed Development.

Table 6.5a & 6.5b detail the existing, proposed and granted planning permissions on record in the area:

6.4.2.1 Construction Stage

Planning Ref. No.	Address	Proposal
211173	Mount Avenue, Dundalk, Co. Louth	Part 8 - Notice is hereby given that Louth County Council proposes to carry out the development of 93 no. residential units and all associated/ancillary works on lands at Mount Avenue, Dundalk - total area of site 2.83 hectares. The development comprises the following: 3 no. 3 bed single storey dwellings (bungalows); 2 no. 2 bed single storey dwellings (bungalows); 21 no. 2 bed two storey dwellings; 26 no. 3 bed two storey dwellings; 9 no. 4 bed two storey dwellings; Duplexes: 4 no. 2 bed ground floor apartments with 4 no. 3 bed two storey Maisonette units over; Duplexes: 12 no. 3 bed two storey Maisonette units with 12no. 1 bed apartments over; All associated road works, boundaries, utilities & services, landscaping and ancillary site development works.
2360190	Hearthfield , Farndreg Mount Avenue Headford , Dundalk Co. Louth	Planning permission for revisions to 25 no. dwellings that form part of the permitted residential development to be known as "Hearthfield" granted under P.A. Ref. No. 18/943 (An Bord Pleanala Ref. No. 303628-19) at Farndreg, Mount Avenue, Headford, Dundalk, Co. Louth. The development will consist of raising the finished floor levels of the 25 no. dwellings (No.'s 1-11; 36 -45 and 47-50 of the permitted development). The proposed development also provides for amendments to elevations and roof profile of a two-storey terraced block along the western site boundary encompassing House No.'s 47-50. The development also provides for all associated site development works including landscaping and boundary treatments.
23103	Clan Na Gael GFC Sports Ground , Ard Easmuinn Road , Dundalk Co Louth	Permission for the demolition of an existing single storey gym and a storage type building, the construction of a new single storey building with 4 number changing rooms, ancillary toilet and shower facilities, gymnasium, coffee dock, photovoltaic panels to the southern and western roof facades inclusive of all associated site development works
22458	Castletown Road , Dundalk , Co Louth	Permission for the construction of a 3 storey apartment block consisting of 4 no. 2 bedroom ground floor apartments and 4 no. 3 bedroom duplex apartments; a separate 2 storey apartment block consisting of 2 no. 2 bedroom ground floor apartments with 2 no. 2 bedroom first floor apartments above and a final 3 storey apartment block consisting of 2 no. 2 bedroom ground floor apartments and 2 no. 3 bedroom duplex apartments all with associated site development works to include for 21 no. car parking spaces, bin storage, public and communal open space which are to service the proposed developments with private amenity space to service individual apartments. *Significant Further Information received on 03/05/2023 with revised development description as follows; development will consist of the construction of a 3 storey apartment block consisting of 4no. 2-bedroom ground floor apartments

Planning Ref. No.	Address	Proposal
		and 4 no. 3-bedroom duplex apartments and a separate 2 storey apartment block consisting of 2 no. 2-bedroom ground floor apartments with 2 no. 2-bedroom first floor apartment above all with associated site development works to include for 12 no. car parking spaces, Bin Storage, public and communal open space which are to service the proposed developments with private amenity spaces to service individual apartments.
21783	Lands at Lisdoon Townland, Dundalk, Co Louth	Permission for development that will consist of the completion of 34 units comprising 22 no. 3 bedroom terrace, 4 no. 2 bedroom terrace, 4 no. 1 bedroom apartments and 4 no. 3 bedroom duplex's and all associated site development and drainage works
23103	Dundalk North Business Park , Armagh Road , Dundalk	Permission is sought by Urban Green Private Ltd. acting for TrippierLtd to vary Condition 3 of the permission granted on 19/12/22 (Reg. Ref 22/524) for a warehouse development of 37,289 sq.m at Dundalk North BusinessPark, Armagh Road, Dundalk, County Louth. Condition 3 limited the hours of operation to 0800 hr - 1800hrs Monday - Saturday. This application seeks to vary this condition such that hours of operation of the facility should be unrestricted.

Table 6.5a. Potential Cumulative Impacts (Construction Stage)

As part of the assessment of the impact of the proposed development, account has also been taken of cumulative projects, i.e. developments that are currently permitted or under construction within the surrounding area, but whose environmental impact are not yet fully realised within the existing environmental baseline. Following a review of projects located in proximity to the proposed development it was determined that no significant projects are proposed or currently under construction that could potentially cause in combination effects on designated conservation sites.

Given this, it is considered that in combination effects on biodiversity, with other existing and proposed developments in proximity to the application area, would be unlikely, neutral, not significant and localised. It is concluded that no significant effects on designated conservation sites will be seen as a result of the proposed development alone or in combination with other projects.

6.4.2.2 Operational Stage

Planning Ref. No.	Address	Proposal
211173	Mount Avenue, Dundalk, Co. Louth	Part 8 - Notice is hereby given that Louth County Council proposes to carry out the development of 93 no. residential units and all associated/ancillary works on lands at Mount Avenue, Dundalk - total area of site 2.83 hectares. The development comprises the following: 3 no. 3 bed single storey dwellings (bungalows); 2 no. 2 bed single storey dwellings (bungalows); 21 no. 2 bed two storey dwellings; 26 no. 3 bed two storey dwellings; 9 no. 4 bed two storey dwellings; Duplexes: 4 no. 2 bed ground floor apartments with 4 no. 3 bed two storey Maisonette units over; Duplexes: 12 no. 3 bed two storey Maisonette units with 12no. 1 bed apartments over; All associated road works, boundaries, utilities & services, landscaping and ancillary site development works.

Planning Ref. No.	Address	Proposal
2360190	Hearthfield , Farndreg Mount Avenue Headford , Dundalk Co. Louth	Planning permission for revisions to 25 no. dwellings that form part of the permitted residential development to be known as "Hearthfield" granted under P.A. Ref. No. 18/943 (An Bord Pleanala Ref. No. 303628-19) at Farndreg, Mount Avenue, Headford, Dundalk, Co. Louth. The development will consist of raising the finished floor levels of the 25 no. dwellings (No.'s 1-11; 36 -45 and 47-50 of the permitted development). The proposed development also provides for amendments to elevations and roof profile of a two-storey terraced block along the western site boundary encompassing House No.'s 47-50. The development also provides for all associated site development works including landscaping and boundary treatments.
23103	Clan Na Gael GFC Sports Ground , Ard Easmuinn Road , Dundalk Co Louth	Permission for the demolition of an existing single storey gym and a storage type building, the construction of a new single storey building with 4 number changing rooms, ancillary toilet and shower facilities, gymnasium, coffee dock, photovoltaic panels to the southern and western roof facades inclusive of all associated site development works
22458	Castletown Road , Dundalk , Co Louth	Permission for the construction of a 3 storey apartment block consisting of 4 no. 2 bedroom ground floor apartments and 4 no. 3 bedroom duplex apartments; a separate 2 storey apartment block consisting of 2 no. 2 bedroom ground floor apartments with 2 no. 2 bedroom first floor apartments above and a final 3 storey apartment block consisting of 2 no. 2 bedroom ground floor apartments and 2 no. 3 bedroom duplex apartments all with associated site development works to include for 21 no. car parking spaces, bin storage, public and communal open space which are to service the proposed developments with private amenity space to service individual apartments. *Significant Further Information received on 03/05/2023 with revised development description as follows; development will consist of the construction of a 3 storey apartment block consisting of 4no. 2-bedroom ground floor apartments and 4 no. 3-bedroom duplex apartments and a separate 2 storey apartment block consisting of 2 no. 2-bedroom ground floor apartments with 2 no. 2-bedroom first floor apartment above all with associated site development works to include for 12 no. car parking spaces, Bin Storage, public and communal open space which are to service the proposed developments with private amenity spaces to service individual apartments.
21783	Lands at Lisdoon Townland, Dundalk, Co Louth	Permission for development that will consist of the completion of 34 units comprising 22 no. 3 bedroom terrace, 4 no. 2 bedroom terrace, 4 no. 1 bedroom apartments and 4 no. 3 bedroom duplex's and all associated site development and drainage works
23103	Dundalk North Business Park ,	Permission is sought by Urban Green Private Ltd. acting for TrippierLtd to vary Condition 3 of the permission

Planning Ref. No.	Address	Proposal
	Armagh Road , Dundalk	granted on 19/12/22 (Reg. Ref 22/524) for a warehouse development of 37,289 sq.m at Dundalk North BusinessPark, Armagh Road, Dundalk, County Louth. Condition 3 limited the hours of operation to 0800 hr - 1800hrs Monday - Saturday. This application seeks to vary this condition such that hours of operation of the facility should be unrestricted.

Table 6.5b. Potential Cumulative Impacts (Operational Stage)

As part of the assessment of the impact of the proposed development, account has also been taken of cumulative projects, i.e. developments that are currently permitted or under construction within the surrounding area, but whose environmental impact are not yet fully realised within the existing environmental baseline. Following a review of projects located in proximity to the proposed development it was determined that no significant projects are proposed or currently under construction that could potentially cause in combination effects on designated conservation sites. Given this, it is considered that in combination effects on biodiversity, with other existing and proposed developments in proximity to the application area, would be unlikely, neutral, not significant and localised. It is concluded that no significant effects on designated conservation sites will be seen as a result of the proposed development alone or in combination with other projects.

6.4.2.3 Do-Nothing Impact

The site would continue to be farmed and the biodiversity value would remain stable. The flow regimes and water quality of watercourses traversing the subject site boundaries would likely remain within existing parameters.

6.5 MITIGATION MEASURES (AMELIORATIVE, REMEDIAL OR REDUCTIVE MEASURES)

6.5.1 Proposed Development

6.5.1.1 Construction Stage

In addition to mitigation measures outlined elsewhere in the EIAR, the following measures will be implemented to protect biodiversity:

- An Ecological Clerk of Works (ECoW) will be appointed to oversee the construction phase and to oversee the implementation of all mitigation including compliance with Wildlife Acts and Water Pollution Acts and ensure that biodiversity within the site and neighbouring areas, including mammals, birds, bats and watercourses, will not be impacted.
- Relevant guidelines and legislation (Section 40 of the Wildlife Acts, 1976 to 2012) in relation to the removal of trees and timing of nesting birds will be followed e.g. do not remove trees or shrubs during the nesting season (1st March to 31st August). If removal is required during this season the removal of woody material will be carried out under the supervision of an ecologist. If nesting birds are present NPWS will be contacted, and removal will be subject to conditions outlined by NPWS.
- The full suite of mitigation measures as outlined in the accompanying Natura Impact Statement (NIS) should be implemented to minimise the risk of significant effects on the Castletown Estuary and Dundalk Bay, and the Natura 2000 sites located there. These include measures outlined in the CEMP in relation to surface water runoff and silt/petrochemical interception.
- During the construction phase, lights should be incorporated onto cranes (if required) illuminating their entirety to reduce collision risk to birds from cranes and other relevant equipment/structures.

- The construction area will be marked out prior to the commencement of construction. All construction work will be confined strictly to the construction area. Any construction works required outside the construction area will require prior approval from the ER.
- Lighting during construction should not spill outside the proposed development.
- The adjacent watercourses along the perimeter of the site will be maintained in their current states and sufficient measures implemented and monitored to prevent downstream impacts on Dundalk Bay SPA during construction and operation.
- The effectiveness of the proposed mitigation will be monitored throughout the construction period.
- A preconstruction survey for mammals will be carried out to determine activity levels at the sett, whether any new badger setts have been established, and whether any additional protected mammal species have become established within the site since the original survey was carried out.
- A minimum 30m exclusion zone around the active badger sett will be marked out and sign-posted prior to construction. No personnel (excluding ECoW and relevant bodies), machinery, equipment, materials or works (ground, landscaping or otherwise) will be permitted within the exclusion zone.
- Construction operations outside of daylight hours should be kept to a minimum in order to minimise disturbance to fauna in addition to roosting bird species.
- Silt interception should be integrated into all surface water run-off during construction prior to discharge off site.
- Large pipes (> 300mm) laid on the ground will be sealed at both ends.
- Excavations will be carried out leaving an escape route/slope for mammals.

6.5.1.2 Operational Stage

The biodiversity value of the site would be expected to improve as the landscaping matures. The proposed development has a sustainable drainage strategy and detailed landscape strategy and mitigation during operation will be carried out as outlined elsewhere in the EIAR. The following operation mitigation measures will be carried out:

- A project ecologist will be appointed to oversee completion of all landscape, lighting and drainage works.
- Petrochemical interception will be inspected by the project ecologist to ensure compliance with Water Pollution Acts and County Council requirements.

6.5.2 Cumulative

6.5.2.1 Construction Stage

No mitigation is required in relation to cumulative impact during construction.

6.5.2.2 Operational Stage

No mitigation is required in relation to cumulative impact during operation.

6.6 RESIDUAL IMPACT OF THE PROPOSED DEVELOPMENT

The construction and operational mitigation proposed for the development satisfactorily addresses the mitigation of potential impacts on the sensitive receptors through the design and the application of construction and operational phase controls. In relation to bats, foraging within the site would be

reduced and this would be considered to be a moderate adverse/negative/site/long term/ not significant impact on bats. In relation to birds, foraging within the site would be reduced, flights overhead would persist, and breeding habitat would decrease in the short/medium term but increase to similar or higher levels in the long-term and would be considered to be a net low adverse/negative/site/long term/ not significant impact on birds. In relation to mammals, available habitat within the site would be reduced and this would be considered to be a low adverse/negative/site/long term/ not significant impact on mammals. In relation to aquatic environment, following mitigation, and considering the integrity of the riparian zones will be maintained, surface water discharge to the Cunnigar and Castletown Streams will not result in a significant reduction in water quality within these waterbodies or the estuarine and marine environments to which they discharge, and this would be considered to be a negligible/neutral/site/long term/ not significant impact on the aquatic environment. The overall impact on the ecology of the proposed development will result in a low Adverse / Negative/ site/ not significant / long term impact on the ecology of the area and locality overall. This is primarily as a result of the loss of terrestrial habitats including arable land and hedgerows on site, supported by the creation of an improved biodiversity focused landscape plan incorporating additional biodiversity features, standard construction and operational controls and a sensitive native planting strategy.

6.7 MONITORING

6.7.1 Proposed Development

6.7.1.1 Construction Stage

A project ecologist will oversee works on site.

6.7.1.2 Operational Stage

A project ecologist will oversee works on site including the lighting, landscape and drainage networks.

6.8 DIFFICULTIES ENCOUNTERED

No difficulties were encountered in relation to the preparation of the Biodiversity report. The bat surveys were undertaken within the active bat period (April to September) and a detector survey was possible. Insects were observed in flight during the bat survey. Flora, habitat, mammal wintering bird and breeding bird assessments were carried out within the optimal survey period.