Cork County Council

Draft Planning Scheme for Development of Monard Strategic Development Zone

Habitats Directive Screening Statement

Prepared by Cork County Council Planning Policy Unit,
April 2015

Contents

1 Introduction

1.1 Context

Cork County Council is in the process of preparing a Planning Scheme for the Monard Strategic Development Zone. The Strategic Development Zone was designated by the Government in May 2010, and provides for the development of four new villages and a new town centre in the townland of Monard, to cater for the projected population increase within the metropolitan area of Cork. The concept of the new town at Monard first emerged during the development of the Cork Area Strategic Plan (CASP 2001-2020) and was restated in an updated version of this plan 2008, in the Cork County Development Plan in 2009 and in the Cork County Development Plan of 2014. Monard was designated a Strategic Development Zone in May 2010 for the creation of a new rail based settlement between Cork City and Blarney. Following designation, a Planning Scheme and was prepared and adopted by Cork County Council in 2012. Following the adoption two appeals were subsequently lodged and permission was refused by An Bord Pleanála in September 2013. It was decided following careful consideration of other options to address the reasons for refusal in a revised Draft Planning Scheme. The 2010 government designation of lands in Monard as a Strategic Development Zone remains in place.

The development zone is located north west of Cork City approximately 3km east of Blarney Village and comprises a total of 391 hectares. It is planned to provide for residential development, as well as educational, recreational, community and healthcare facilities within the new settlement. It is intended to provide a maximum of 5,850 new dwellings in the settlement to cater for a population of 13,000. The site for the new development was chosen having regard to the proximity to Cork City and the rail network.

In accordance with requirements under the EU Habitats Directive (43/92/EEC) and EU Birds Directive (79/409/EEC) as transposed into the Planning and Development Act 2010, the impacts of draft Planning Schemes for Strategic Development Zones, on certain sites that are designated for the protection of nature (Natura 2000 sites[1]), must be assessed as an integral part of the process of drafting, amending or varying these. This is to determine whether or not the implementation of such schemes could have negative consequences for the habitats or plant and animal species for which these sites are designated, and to avoid such impacts. This

[1] Natura 2000 sites include Special Areas of Conservation designated under the Habitats Directive and Special Protection Areas designated under the Birds Directive. Special Areas of Conservation are sites that are protected because they support particular habitats and/or plant and animal species that have been identified to be threatened at EU community level. Special Protection Areas are sites that are protected for the conservation of species of birds that are in danger of extinction, or are rare or vulnerable. Special Protection Areas may also be sites that are particularly important for migratory birds. The designation of these sites is to contribute to ensuring biodiversity through the conservation of natural habitats and of wild fauna and flora in the European Territory.

assessment process is called a Habitats Directive Assessment (HDA). In accordance with section 177S (b) of the Planning and Development Act 2010, the responsibility for assessing such impacts is the Planning Authorities in whose area the zone is situated, or, on appeal An Bord Pleanála, as the case may be.

The draft planning scheme has been assessed in accordance with this requirement and the results of that assessment are presented in this report.

1.2 Legislative Background Habitats Directive Assessment

Habitats Directive Assessment is a process which involves the evaluation of the potential impacts of plans and projects on Natura 2000 sites and the habitats and species that they support and, where necessary, the development of mitigation measures to avoid any such impacts. It is an iterative process which runs parallel to and informs the plan making process, involving analysis and review of draft policies, or amendments/variations, as they emerge during each stage of plan making. Within this process, regard must also be had to the potential for policies or amendments to policies, to contribute to impacts which on their own may be acceptable, but which could be significant when considered in combination with the impacts arising from the implementation of other plans or policies.

Article 6 (3) of the Habitats Directive sets out the principle requirements in relation to this process as follows:

Any plan or project not directly connected with or necessary to the management of the site but likely to have a significant effect thereon, either individually or in combination with other plans or projects, shall be subject to appropriate assessment of its implications for the site in view of the site's conservation objectives. In the light of the conclusions of the assessment of the implications for the site and subject to the provisions of paragraph 4, the competent national authorities shall agree to the plan or project only after having ascertained that it will not adversely affect the integrity of the site concerned and, if appropriate, after having obtained the opinion of the general public.

EU and National Guidance sets out two main stages to the assessment process which are as follows:

Stage One: Screening
The process which identifies what might be likely impacts arising from a plan on a Natura 2000 site, either alone or in combination with other projects or plans, and considers whether these impacts are likely to be significant. No further assessment is required if no significant impacts on Natura 2000 sites are identified during the screening stage. The screening assessment is normally contained in a Habitats Directive Screening Report.

Stage Two: Appropriate Assessment

Where the possibility of significant impacts has not been discounted by the screening process, a more detailed assessment is required. This is called an Appropriate Assessment and involves the compilation of a Natura Impact Report by the Planning Authority which is a report of scientific evidence and data relating to European sites for which significant negative impacts have not been previously screened out. This is used to identify and classify any implications of the plan for these sites in view of their conservation objectives. The Appropriate Assessment must include a determination as to whether or not the plan or its proposed amendments would adversely affect the integrity of any European site or sites. The plan may be adopted if adverse effects on the integrity of European sites can be ruled out during the appropriate assessment process. The plan may not be adopted on foot of an Appropriate Assessment, if it is found that it will give rise to adverse impacts on one or more European sites, or if uncertainty remains in relation to potential impacts on one or more European sites following appropriate assessment.

The Directive provides for a derogation procedure which can allow a plan or project to proceed in spite of a finding that the plan or project could / would give rise to adverse effects on the overall integrity of one or more Natura 2000 sites. A derogation can only be progressed in very limited circumstances which are set out in Article 6(4) of the Directive.

Habitats Directive Article 6(4)
If, in spite of a negative assessment of the implications for the site and in the absence of alternative solutions, a plan or project must nevertheless be carried out for imperative reasons of overriding public interest, including those of a social or economic nature, the Member State shall take all compensatory measures necessary to ensure that the overall coherence of Natura 2000 is protected. It shall inform the Commission of the compensatory measures adopted.

EU and National Guidance identifies the procedures which must be followed in circumstances where a derogation from the Habitats Directive is sought to allow a project or a plan to proceed, despite a finding that it will give rise to adverse effects on the integrity of one or more Natura 2000 sites. These procedures can only been invoked where it has been shown that there are no alternative ways to implement the plan/project which avoid adverse effects on the integrity of one or more European sites, where it has been demonstrated that there are imperative reasons of overriding public interest for which the plan/project must proceed and where measures have been developed and provided to compensate for any losses to be incurred. These further stages are described below.

Stage Three: Assessment of alternative solutions
In circumstances where the potential for a plan to give rise to adverse effects on the integrity of a European site or sites has not been ruled out during the Appropriate Assessment process, it can only be considered for authorisation where it is demonstrated that there are no alternative solutions and that there imperative reasons of overriding public interest which can allow the plan or project to proceed. Stage three of a Habitats Directive Assessment involves the assessment of alternative solutions.

Stage Four: Assessment where no alternative solutions exist and where adverse impacts remain
The fourth stage of the Habitats Directive Assessment process involves demonstrating that imperative reasons of overriding public interest exist, and the assessment of the compensatory measures which are proposed to be implemented. In every case in which a local authority envisages approving or proceeding with a plan or project on grounds of IROPI, the Minister for Arts, Heritage and the Gaeltacht must be consulted.

This report presents the first phase of the Habitats Directive Assessment process, being the screening of the draft planning scheme. The draft scheme has been reviewed to determine whether it could give rise to a potential for significant impacts to occur on qualifying features of Natura 2000 sites. It refers to a number of previous reports prepared for this development, in particular the Habitats Directive Screening Assessment Reports prepared for

- the scheme;
- for the proposed water supply scheme; and
- for the waste water treatment proposals

as proposed in 2012

2 Methodology

2.1 Data Sources

The appropriate assessment of potential impacts on the integrity of Natura 2000 sites in this study is based on a desktop review of information relating to these sites and to the habitats and species that they support as well as environmental information produced in support of the proposed development. References and data used are cited in the back of this report.

2.2 Consultation

This report and the draft Planning Scheme will be referred to statuory consultees, and will be put on public display for a six week period from the 17th April 2015 until the 2nd June 2015. The County Manager may make recommendations for changes to the scheme to Council members on foot of these submissions. Members will consider any such recommendations for a further 6 weeks after which time it is intended that the planning scheme will be made.

2.3 Approach

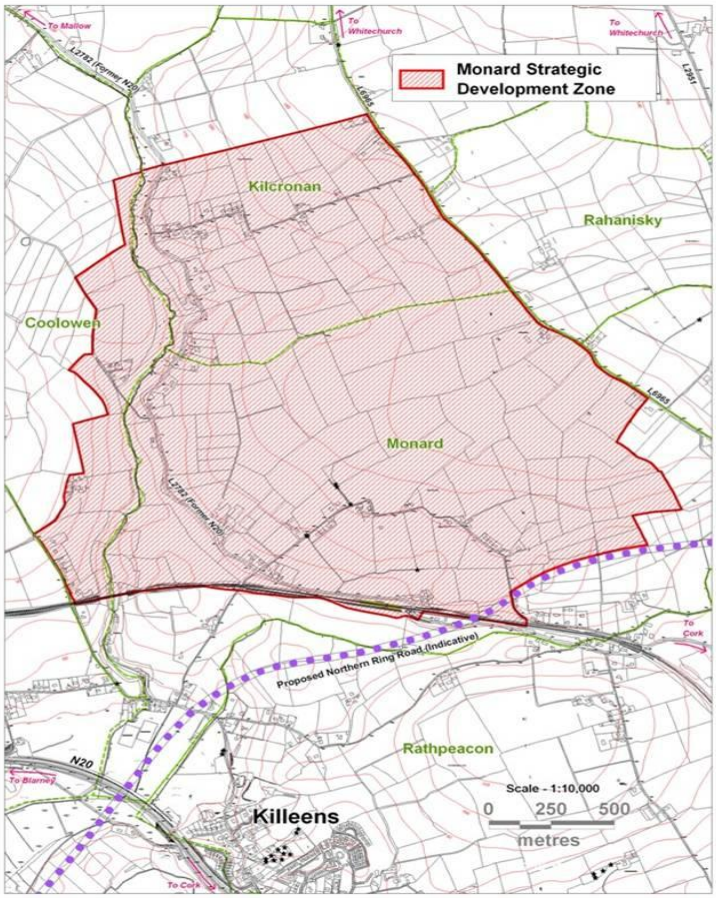
The approach taken in the making of this assessment follows the European Communities. 2002. Assessment of plans and projects significantly affecting Natura 2000 sites. Methodological guidance on the provisions of Article 6(3) and (4) of the Habitats Directive 92/43/EEC and Environment, Heritage and Local Government. 2009. Appropriate Assessment of Plans and Projects in Ireland. Guidance for Planning Authorities.

3 Draft Planning Scheme for Monard

3.1 Description of the site

Monard is located North West of Cork City approximately 3 km East of Blarney village. The N20 Cork to Limerick National Primary Route is located within the valley between Blarney and Monard. The extent of the site is 391 hectares/966 acres. The area is characterised by a rural setting with a settlement pattern concentrated along the poorly aligned local road network. The lands are primarily engaged in agriculture with a scattering of farm complexes throughout the site. Landownership within the site is held by a sizeable number of landowners (23), however some holdings are of considerable size. The main Cork to Dublin railway line forms the Southern site boundary. Much of the subject lands are elevated and exposed with long slopes down to the Old Mallow road (former N20), the upper parts of the site form the backdrop to Cork City. See **Figure 1** for site boundaries.

Figure 1: Monard Strategic Development Zone

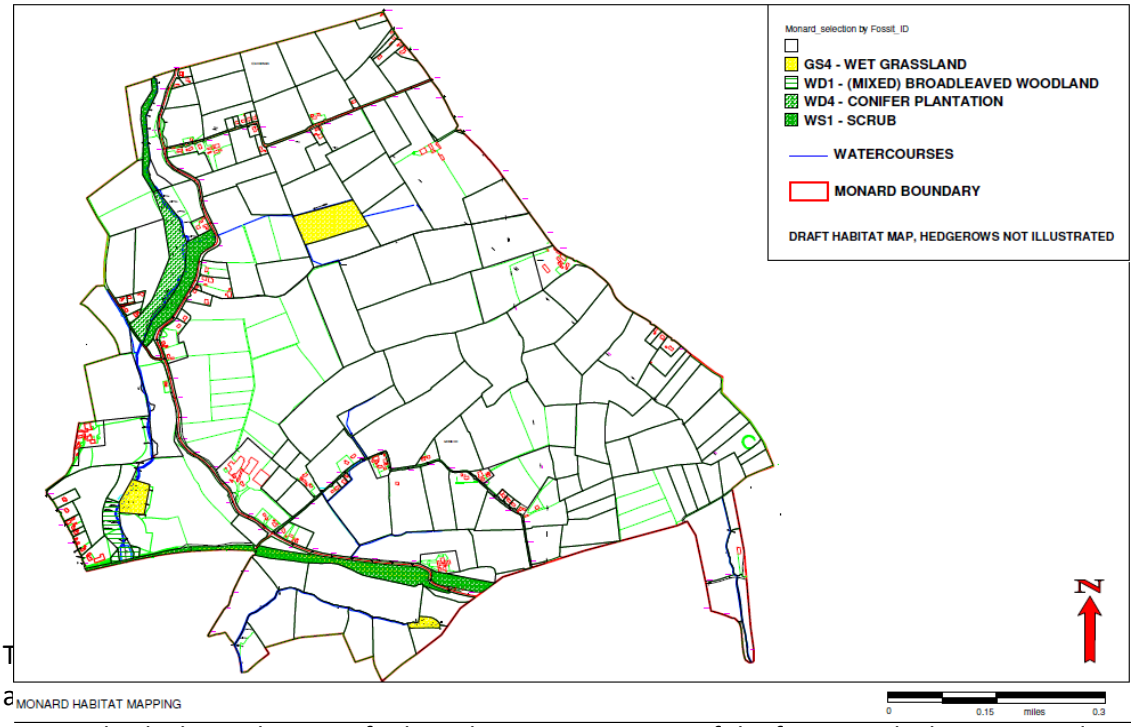


The topography of the site is undulating within an active agricultural landscape. The site rises from levels of approximately 80 meters adjoining the railway line to a plateau-type hilltop in Monard townland (c 140m OD). Monard has circa 50 hectares of land with a gradient between 1 in 5 and 1 in 12. The upper slopes form part of the backdrop from areas within Cork City. Away from the hilltop, level land is limited in Monard, with tree cover concentrated in certain parts but otherwise sparse. This renders the site quite exposed to the elements and visually very open. The Blarney River is the dominant watercourse with some smaller streams within the site. The partially wooded steep slopes of the river valley, (mixture of broadleaf and conifer plantation) forms part of the distinctive character of the site, west of the Old Mallow Road.

Habitats on site were surveyed and mapped by Atkins as part of the County Habitat Mapping Project in 2008, and riparian and freshwater habitats were surveyed in more detail by EcoFact in 2011 as part of the process of developing a sustainable urban drainage system (SuDS) for the SDZ. Detailed assessment of hedgerows was not carried out as part of either of these surveys. The occurrence of protected animal species within the site was also considered as part of the

assessment completed by EcoFact. See **Figure 2**, Monard SDZ Habitat Map, based on mapping completed in 2007 for County Habitat Mapping Project.

Figure 2: Monard SDZ Habitat Map



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removed, which is indicative of relatively intensive nature of the farming which is practised within the site.

The main habitats of ecological value are associated with watercourses within the study area, namely the Blarney River which runs along the western boundary of the zone, the Kilcronan Stream and the Rathpeacon Stream. In addition there are patches of scrub woodland along the railway line which runs along the southern boundary and semi-natural grassland was identified in few fields within the zone. The following descriptions are summarised from the Ecological Survey Report prepared by Ecofact in 2011.

Watercourses: The Blarney River and its two tributaries are described as eroding upland streams. The Blarney River is evaluated as being of high value, locally important due to the presence of emergent vegetation, salmonid habitat and the occurrence of a population of brown trout. There is wet alder/ ash woodland along much of the rivercourse, however the corridor and its associated riparian vegetation has been quite heavily modified from upstream of the railway bridge. The riparian corridors of the Kilcronan and Rathpeacon Streams are described to have lower biodiversity value, though there is also some wet willow-alder-ash woodland along these stream corridors. The Blarney River passes through Blarney Bog proposed Natural Heritage Area xkm downstream from the SDZ. It joins the Shournagh River

xkm from the SDZ and then enters the River Lee at Leemount Cross xkm downstream from the SDZ.

Semi-natural Woodland, Treelines and Scrub: A number of woodland habitats types were recorded within the site, all occurring in association with watercourses. These include wet-Willow-Alder-Ash woodland, wet Pedunculate Oak-Ash woodland, scrub woodland and conifer plantation. Wet-Willow-Alder-Ash woodland occurs along the Blarney River. Other species which were recorded in this habitat type included Sycamore, Horse Chestnut, Beech, Elder and Hawthorn. The habitat also occurs on the lower stretch of the Kilcronan Stream close to its confluence with the Blarney River. Oak-Ash woodland and scrub habitat has also been recorded along the river and stream corridors. Species recorded in this habitat include Hazel, Hawthorn, Pedunculate Oak, Ash and Alder, with non native species including Beech, Sweet Chestnut and Cypress. Scrub habitat included Willow, Gorse, Elder and Hawthorn. Treelines within the site included Ash, Alder and Sycamore. Semi-natural woodland types are evaluated to be of local importance, high value.

Wet grassland and marsh: Areas of wet grassland and marsh habitat have been identified on site. These habitats were recorded in localised areas in close proximity to the main watercourse features. Species occurring include Flag Iris, Meadow Buttercup, Angelica, Meadowsweet, Mint, Field Horsetail, Broad-leaved Dock, Mint, Ragged Robin and Willowherb as well as sedge and rush species. They have been evaluated to be of local importance, low value.

Hedgerows: Described as being primarily hawthorn hedgerows, hedgerows on site are described to be of relatively low ecological value. However, their function as ecological corridors within the landscape enhances their ecological value.

Conifer Plantation: This Sitka Spruce plantation occurs to the west of the Blarney River and is evaluated to be of local importance, low value.
Mammals: Ecological survey identified evidence of the occurrence of Otter on the site. Other mammalian species expected to occur but not recorded include Badger, Stoat, Fox and Rabbit as well as a range of bat species including Pipistrelle spp., Leislers, and Daubentons.

Birds: A range of relatively common countryside species were recorded during the survey. Of particular interest was the recording of two breeding pairs of Dipper in the Blarney River. While not recorded during this survey, Kingfisher are said to have been previously recorded along the river.

Fish and invertebrates: Of primary importance was the recorded occurrence of Brown Trout in the Blarney River. Surveys of macroinvertebrates at a number of points on the Blarney River and on the two streams, were used to assess ecological water quality status. Water quality was assessed to be good (Q4) in the upper and lower Blarney River and in the Kilcronan Stream, and moderate (Q 3-4) ecological quality in the Rathpeacon Stream.

3.2 Description Of The Draft Planning Scheme

Summary of main elements of the draft Planning Scheme. It is proposed to develop the Monard Strategic Development Zone as a single entity which will provide for infrastructure, transport connections, public and commercial services in tandem with housing. Detailed proposals including overall design, information on provision and layout of services including roads, water supply and treatment, electricity, gas and telecoms are set out in the Draft Planning Scheme documentation. In summary, the main elements of the scheme are as follows:

Four villages each with a distinct character and design approach. Each village will have its own centre and community facilities positioned to maximise commercial viability. A mixed use town centre will be located in close proximity to the new rail station.
The proposed villages will accommodate a maximum 5,850 range (4,750-5,850) new housing units, with a projected population of 13,000 persons in the new settlement.
The new settlement will also provide localised areas of employment within the town centre for the service sector, with some town centre office development adjoining the proposed Northern Ring Road.
The other main features include the provision of 5 new single stream primary schools and 1 five stream secondary school.
Community facilities proposed include a community building, playing fields, sports centre. A "Heritage Spine" or large country Park along Blarney River is also proposed for the new town.

Revisions to the 2012 scheme are included in the new scheme to address refusal reasons are summarised below:

- Further detail is provided in relation to the provision of an interchange from the N20 to facilitate the scheme and minimise potential for serious traffic congestion on local roads;
- The revised scheme proposes an increase in the number of residential units (from maximum of 5,000 to a maximum of 5,850. No changes to the target population (13,000) are proposed;
- Changes are proposed to seek to ensure that the scheme can be implemented in timely manner. These changes include proposals for land acquisition for the development of key infrastructure by the Local Authority;
- Changes are proposed to the scheme layout to ensure more sensitive integration of existing houses within the planning scheme;
- Changes are proposed to ensure that the development of the three northern villages is contingent on the prior establishment of regular maintenance of SUDS features in accordance with published protocol;
- The revised Planning Scheme provides additional incentives to landowners/developers to seek to encourage advance tree/woodland planting;
- Sections dealing with urban design at village level have been expanded to address concerns of An Bord Pleanála relating to site design and topography. Further detail has

also been provided in relation to finishes for footpaths, buildings, cycle parking and internal road access to proposed offices.

Waste Water Treatment: The original scheme proposed in 2012 included a proposal to provide for the treatment of wastewater generated at either the Carrigrennan WWTP or the then proposed new WWTP at Carrigtwohill, which is now under construction and due to be completed at the end of 2015. Both of these plants discharge treated effluent to Cork Harbour. It was proposed that interim treatment would be provided via the Killeens WWTP in the period before the population of Monard reaches a critical mass necessary for the pipe to Carrigrennan to operate effectively. It was envisaged that Cork County Council would facilitate the development of new on site sewerage infrastructure designed to cater for a population equivalent of 20,000, based on the planned provision of 5,000 new dwellings to provide for a domestic population of 13,000, and on the provision of a further 7,000 to provide for commercial and institutional sources. The original scheme envisaged the development of foul sewer rising mains to connect the Monard development to either the Carrigrennan WWTP or the Carrigtwohill WWTP. This line was required to cross the Glashaboy River which is within the Cork Harbour SPA. It was proposed to use non intrusive trenchless technology at this location, and to time any works associated with the line which were to take place within 300m of the SPA, to take place during the summer period order minimise potential for impacts on species of bird for which the SPA is designated which tend to peak in numbers within this SPA between September to March. The original scheme also provided undertakings to incorporate best practise for the management of other water crossings during the construction of the sewerage pipe at construction stage in order to minimise potential for impacts on water quality generally.

Since 2012, responsibility for management of wastewater has come under the control of Irish Water, rather than the City and County Councils. In these circumstances, it is possible that a different and possibly a more integrated solution may be preferred by Irish Water. It is stated in the revised draft Planning Scheme that Cork County Council has had preliminary discussions with Irish Water in relation to the disposal of waste water from Monard and on the Preliminary Report, and that more detailed steps can be taken as soon as Irish Water has confirmed the approach it has decided to take.

Water Supply: The original scheme for Monard included proposals for the provision for the supply of a maximum of 4,554m^3/day of water from the Inniscarra Reservoir. It was proposed to pump this water to Monard via a trunk main from the Churchfield Reservoir which is supplied from Inniscarra, to be constructed on the existing road network. The supply of water was to involve the construction of the new trunk main as well as two reservoirs (one off site, one on site) and pumping stations. While the provision of a water supply to Monard will now be the responsibility of Irish Water, no revisions to the original proposals are envisaged in the revised scheme.

Management of Surface Waters – Development of Sustainable Urban Drainage System: A site specific Sustainable Urban Drainage System strategy was developed for Monard in 2012. The aim of the strategy was to ensure a sustainable approach for dealing with surface water runoff from all development within the SDZ lands, to ensure that surface water run-off from the catchment area is restricted to the green field discharge rates, and to ensure adequate land is available to accommodate its requirements. The SUDS strategy is set out in draft planning scheme (Chapter 6). The implementation of this strategy will help to protect water quality, and to attenuate surface waters on the site, thereby preventing any increase in flood risk along the Blarney River downstream from the proposed settlement. The revised scheme identifies the importance of maintenance of features of the SUDS to ensure that it continues to function effectively, that its full benefits in terms of amenity are realised and to ensure that elements of the SUDS are valued, respected and cared for by local residents. It is stated in the revised scheme that developers will be required by planning condition to provide for ongoing maintenance of the SUDS before their estates are taken in charge, and that the Council will need to provide for maintenance of same as soon as estates start to be taken in charge.

Phasing: It is envisaged that the new settlement will be developed over a time period of between 30-40 years. It is intended to take a flexible approach to phasing at Monard, with the provision of infrastructure and services to be provided on the basis of a threshold system, which will define when schools and other services must be provided relative to current or proposed levels of development at any particular time. The provision of a service corridor combined with the natural fall in the site allows for lands to develop in a more flexible manner. The phasing of the local road improvements to facilitate development as set out in the transport assessment is determined by thresholds rather than the provision of extensive road infrastructure would contribute towards the achievement of sustainable mobility. The principle of contiguous development (i.e. development must adjoin land already developed) will allow for development to proceed in an orderly manner particularly if constructed over a long time scale. No significant changes in the overall proposals for phasing of the development are proposed in the revised scheme.

4 Natura 2000 Sites Within The Potential Impact Zone[2] Of Monard.

In accordance with national guidance, all Natura 2000 sites within 15km of Monard have been examined to determine whether there is potential for significant impacts arising from the implementation of the plan. There are no designated sites within the boundary of the Monard SDZ. Three sites were identified which occur with 15km of Monard. Watercourses within the site flow via the Blarney River into Cork Harbour which supports the Cork Harbour SPA (5.5km to the southeast of the proposed new town (the Douglas Estuary section of the SPA) and the Great Island Channel SAC approximately (11km) downstream from Monard. Potential for impacts on these sites is the primary focus of this report.

The Blackwater River SAC is located 10km from the Monard development. However, there is no hydrological connection between the SAC and Monard. Having regard to the distance of the SAC from the proposed new town, the lack of physical, hydrological or other ecological connectivity between them, potential for the development to give rise to negative impacts on this site is ruled out, and not considered any further in this document.

The potential for the development to give rise to impacts on two further Natura 2000 sites is considered in this report. This is on the basis that drinking water supply for Monard is proposed to come from the water catchment in which these sites are located. These sites are The Gearagh SAC (0108) and The Gearagh SPA (4109) located close to Macroom in the upper Lee catchment approximately 20km west of Monard.

Figure 3 shows the locations of these sites in relation to the plan area.

[2] The potential impact zone has been identified to include the plan boundary area, and the area within a 15km radius from the plan boundary. The potential for Natura 2000 sites that are >15km from the plan boundary area to be impacted was also considered. This could include sites which are hydrologically connected to watercourses or water bodies within the plan boundary area.

Figure 3: Special Areas of Conservation and Special Protection Areas within the potential impact zone of the Monard SDZ.

Great Island Channel Special Area of Conservation (1058)

This site is located approximately 11km downstream from Monard within Cork Harbour. The following description is based on NPWS Site Synopsis. The Great Island Channel SAC comprises the North Channel of Cork Harbour extending from Little Island to Midleton including the estuaries of the Owenacurra and Dungourney. The main habitats of conservation interest for which this site is designated are the sheltered tidal sand and mudflats and Atlantic salt meadows. The intertidal flats are composed mainly of soft muds which support a range of macro-invertebrate species that provide a valuable food source for large numbers of a wide range of wintering bird species. Saltmarshes are scattered through the site and are all of the estuarine type on mud substrate. The Great Island Channel is approximately xkm downstream from Monard…and forms part of the Great Island Channel Special Area of Conservation. The Great Island Channel provides valuable habitat for wintering waterbirds, and forms part of the Cork Harbour Special Protection Area (see below).

Features of Interest identified for this site (www.NPWS.ie 12/03/2015) are as follows:

> Mudflats and sandflats not covered by seawater at low tide [1140]
> Atlantic salt meadows (Glauco-Puccinellietalia maritimae) [1330]

Detailed **Conservation Objectives** have been published for this SAC (06/06/2014 Version 1). These are as follows:

> To maintain the favourable conservation condition of Mudflats and sandflats not covered by seawater at low tide in the Great Island Channel SAC.
> To restore the favourable conservation condition of Atlantic salt meadows (*Glauco Puccinellietalia maritimae*) in Great Island Channel SAC.

The attributes and targets which are associated within these objectives are available at http://www.npws.ie/sites/default/files/protected-sites/conservation_objectives/CO001058.pdf

The conservation status of the qualifying habitats for which this SAC has been designated was assessed by BEC Consultants on behalf of Cork County Council (Assessment of the Conservation Status of the Great Island Channel SAC (1058) in 2014.

The conservation status of **Mudflats and Sandflats habitat [1140]** was assessed to be unfavourable-bad. The primary source of impact on this habitat was identified to be pollution from surface waters with sources including both the Carrigtwohill and Midleton treatment plants, nutrient inputs from agricultural sources within the river catchments that discharge to the harbour, and leaks in the existing sewer network giving rise to further nutrient inputs to the system. Other sources of pressure on this habitat include the spread of *Spartina* within the estuary.

The conservation status of **Atlantic Salt Meadows habitat [1330]** was assessed to be unfavourable-inadequate. A number of sources of impact on this habitat were identified on this habitat during field survey for the assessment. These related to development of sea-walls/coastal protection infrastructure which prevents the development of salt marsh habitat, storm damage, coastal erosion, shading from treelines, water pollution, litter, *Spartina* invasion, rabbit grazing and climate change.

Cork Harbour Special Protection Area (4030)

The Douglas Estuary which forms part of the Cork Harbour SPA is located approximately 5.5km to the southeast of Monard. The following description of this site is based on NPWS Site Synopsis and on the Cork Harbour Special Protection Area Conservation Objectives Supporting Document ver 1, 2014.

This is a large sheltered bay system comprising several river estuaries including the estuary of the Owenacurra River at Midleton which is proximal to the Masterplan site. The SPA comprises most of the main intertidal areas of Cork Harbour. Muddy sandflats within the site support a range of macro-invertebrate species which are a valuable foodsource for wetland bird species that winter in the Harbour. The site also includes some areas of salt marsh, shallow bay water, Rostellan Lake which is a small brackish lake that is used by swans in the winter period and some marginal wet grassland which is of importance for feeding and roosting birds.

Cork Harbour is a wetland site which is of international importance as it regularly supports in excess of 20,000 wintering waterfowl. The site supports internationally important populations of Black-tailed Godwit and Redshank, and nationally important of a further 19 species including **Shelduck**, **Wigeon**, **Teal**, **Pintail**, **Shoveler**, **Red-breasted Merganser**, **Little Grebe**, **Great Crested Grebe**, **Cormorant**, **Grey Heron**, **Oystercatcher**, **Golden Plover**, **Grey Plover, Lapwing**, **Dunlin**, **Bar-tailed Godwit**, **Curlew**, **Black-headed Gull**, **Lesser Black-backed Gull** and **Common Tern**. Other species using the site include **Mute Swan**, **Whooper Swan**, **Pochard**, **Gadwall**, **Tufted Duck**, **Goldeneye**, **Coot**, **Ringed Plover**, **Knot** and **Turnstone**. It is an important site for a range of gull species including **Mediterranean Gull**, a species which has recently begun to occur in Ireland. It also supports a breeding population of **Little Egret**, another species which was first recorded as breeding in Ireland in the 1990's.

A range of passage waders occurs regularly in the autumn, including **Ruff**, **Spotted Redshank** and **Green Sandpiper**. The Harbour also supports a nationally important colony of Common Tern. Several of the species which occur in the Harbour are listed on Annex I of the EU Birds Directive.

The NPWS has recently (March 2015) notified Cork County Council of its intention to extend the Cork Harbour Special Protection Area to include an area of wetland habitat at Ringabella Estuary. This proposed extension to the SPA is currently subject to a public consultation process.

Features of Interest identified for this site (www.NPWS.ie 12/03/2015) are as follows:

Little Grebe (*Tachybaptus ruficollis*) [A004];
Great Crested Grebe (*Podiceps cristatus*) [A005];
Cormorant (*Phalacrocorax carbo*) [A017];
Grey Heron (*Ardea cinerea*) [A028];
Shelduck (*Tadorna tadorna*) [A048];
Wigeon (*Anas penelope*) {A050];
Teal (*Anas crecca*) [A052];
Pintail (*Anas acuta*) [A054];
Shoveler (*Anas clypeata*) [A056];
Red-breasted Merganser (*Mergus serrator*) [A069];
Oystercatcher (*Haematopus ostralegus*) [A130];
Golden Plover (*Pluvialis apricaria*) [A140];
Grey Plover (*Pluvialis squatarola*) [A141];
Lapwing (*Vanellus vanellus*) [A142];
Dunlin (*Calidris alpina*) [A149];
Black-tiled Godwit (*Limosa limosa*) [A156];
Bar-tailed Godwit (*Limosa lapponica*) [A157];
Curlew (*Numenius arquata*) [A160];
Redshank (*Tringa tetanus*) [A162];
Black-headed Gull (*Chroicocephalus ridibundus*) [A179];
Common Gull (*Larus canus*) [A183];
Lesser Black-backed Gull (*Larus fuscus*) [A183];
Common Tern (*Sterna hirundo*) [A193];
Wetland and Waterbirds.

Conservation Objectives for non-breeding waterbird species and wetland habitats have been published in the Cork Harbour SPA Conservation Objectives Supporting Document Version 1 (Nov 2014)) as follows:

1. To maintain the favourable conservation condition of the non-breeding waterbird Special Conservation Interest Species listed for the Cork Harbour SPA.

The objective is defined by the following attributes and targets :

- To be favourable, the long term (site) population trend for each waterbird Special Conservation Interest species should be stable or increasing. Waterbird populations are deemed to be unfavourable when they have declined by 25% or more, as assessed by the most recent population trend analysis.

- To be favourable, there should be no significant decrease in the range, timing or intensity of use of areas by the waterbird species of Special Conservation Interest, other than that occurring from natural patterns of variation.

2. To maintain the favourable conservation condition of the wetland habitat at Cork Harbour as a resource for the regularly-occurring migratory waterbirds that utilise it.

The objective is defined by the following attributes and targets:

- To be favourable, the permanent area occupied by the wetland habitat should be stable and not significantly less than the area of 2,587ha, other than that occurring from natural patterns of variation.

The Conservation Objective for Common Tern has been published in the Cork Harbour SPA Conservation Objectives Document (Dec 2014) as follows:

3. To maintain the favourable conservation condition of Common Term in Cork Harbour SPA.

The conservation condition of the Species of Conservation Interest (other than Common Tern) for which this SPA has been designated have been published in the Cork Harbour SPA Conservation Objectives supporting document (Dec 2014) and are as follows:

Special Conservation Interests	BoCCI Category[a]	Site Population Trend[b]	Site Conservation Condition	Current all-Ireland Trend[c]	Current International Trend[d]
Shelduck	Amber	- 39	Unfavourable	Stable	Increasing
Wigeon	Red	- 27	Unfavourable	Declining	Stable
Teal	Amber	- 1	(Intermediate) Unfavourable	Stable	Increasing
Pintail	Red	- 65	Highly Unfavourable	Increasing	Increasing
Shoveler	Red	- 75	Highly Unfavourable	Increasing	Increasing
Red-breasted Merganser	Green	- 51	Highly Unfavourable	Stable	n/c
Little Grebe	Amber	+ 16	Favourable	Stable	Increasing
Great Crested Grebe	Amber	- 46	Unfavourable	Declining	Declining?
Cormorant	Amber	- 50	Highly Unfavourable	Stable	Increasing
Grey Heron	Green	- 15	(Intermediate) Unfavourable	Stable	Increasing
Oystercatcher	Amber	- 20	(Intermediate) Unfavourable	Stable	Declining
Golden Plover	Red	+ 21	Favourable	Declining	Declining
Grey Plover	Amber	- 68	Highly Unfavourable	Declining	Declining?
Lapwing	Red	- 68	Highly Unfavourable	Declining	Stable
Dunlin	Red	- 49	Unfavourable	Declining	Stable
Black-tailed Godwit	Amber	+ 16	Favourable	Increasing	Increasing
Bar-tailed Godwit	Amber	+ 41	Favourable	Stable	Increasing
Curlew	Red	-44	Unfavourable	Declining	Declining
Redshank	Red	-29	Unfavourable	Stable	Stable/Increasing?
Black-headed Gull	Red	- 53	Highly Unfavourable	n/c	n/c
Common Gull	Amber	- 89	Highly Unfavourable	n/c	n/c
Lesser Black-backed Gull	Amber	- 83	Highly Unfavourable	n/c	n/c

[a]After Colhoun & Cummins, 2013; [b] Site population trend analysis; see Table 4.3; [c]all-Ireland trend - where a species is deemed to be increasing or declining if the annual rate of change is equal to or greater than 1.2% (after Crowe & Holt, 2013); [d] current international trend after Wetlands International (2012).

Table 4.4 also shows the relationship between a species' long-term site trend and the current all-Ireland trend for the period 1999/00 to 2010/11. The colour coding used represents the following cases:-

- Grey – un-assessed.
- Green – species whose populations are stable or increasing at both site level and all-Ireland level.
- Beige – species whose populations are declining at both site level and all-Ireland level. Therefore there is a potential for factors at a larger spatial scale to be influencing the observed trend at site level.
- Orange - species whose populations are exhibiting a 1.0 – 24.9% decline at site level but are stable or increasing at all-Ireland level.
- Pink - species whose populations are exhibiting a 25.0 – 49.9% decline at site level but are stable or increasing at all-Ireland level.
- Red - species whose populations are exhibiting a decline of >50.0% at site level but are stable or increasing at all-Ireland level.

Features of Interest identified for this site (www.NPWS.ie 12/03/2015) are as follows:

- Water courses of plain to montane levels with the Ranunculion fluitantis and Callitricho-Batrachion vegetation [3260];
- Old sessile oak woods with Ilex and Blechnum in the British Isles [91A0];
- Alluvial forests with Alnus glutinosa and Fraxinus excelsior (Alno-Padion, Alnion incanae, Salicion albae* [91E0];
- Lutra lutra (Otter) [1355]

Detailed Conservation Objectives have not been identified for this site to date. The generic Conservation Objective which applies to this site is as follows:

1. To maintain or restore the favourable conservation condition of the Annex I habitat(s) and/or the Annex II species for which the SAC has been selected:

    - Water courses of plain to montane levels with the Ranunculion flutiantis and Callitricho-Batrachion vegetation [3260];
    - Old sessile oak woods with Ilex and Blechnum in the British Isles [91A0];
    - Alluvial forests with Alnus glutinosa and Fraxinus excelsior (Alno-Padion, Alnion incanae, Salicion albae* [91E0];
    - Lutra lutra (Otter) [1355]

NPWS (2015) Conservation Objectives for The Geargh SAC [000108]. Generic Version 4.0 Department of Arts, Heritage and the Gaeltacht.

The Conservation Status of this SAC has not been assessed. However, activities which could interfere with the achievement of the Conservation Objectives for this site include activities which cause direct loss or damage to the quality of woodland habitats [91A0 and 91E0](eg woodland clearance or burning, changes in woodland grazing patterns, spread of invasive species); activities causing a deterioration in water quality which thereby has the potential to affect the quality of freshwater habitats for which the SAC is designated (habitat [3260]); and activities causing significant disturbance to Otters at their breeding sites or resting areas (eg development of river crossings), or affecting the availability of their prey species (eg impacts on water quality).

The Gearagh Special Protection Area (4109)

This site is located approximately xkm from Monard, but it is possible that the water supply for the Masterplan area will be sourced from the Inniscarra Lake which is within the catchment of this site. No description of this site is currently available on the NPWS website, however the Gearagh SAC site synopses does include some information relating to the wintering bird population as follows:

'the Gearagh supports part of an important wintering bird populations: the area most utilised by birds extends also east of the site towards Cork City (Carrigadrohid). At the Gearagh, Whooper Swans are regular (40-110, 1990's), as are Wigeon (640, average max. 1992-1994), Teal (707, average max. 1992-94), Mallard (250 in January 1993) and Tufted Duck (154, average max. 1992-94). Golden Plover utilise the site on occasions (eg 2,000 in January 1994), while there is a regular flock of Dunlin (100-200, 1990s) a species unusual at inland sites. A late summering flock of Mute Swan is regular, with numbers between 120 and 250 from 1992 to 1994. Great Crested Grebe and Tufted Duck breed in small numbers, while there is a feral flock of about 50 Grey lag Geese.'

Features of Interest identified for this site (www.NPWS.ie 12/03/2015) are as follows:

- Wigeon (*Anas penelope*) [A050]
- Teal (*Anas crecca*) [A052]
- Mallard (Anas platyrhynchos) [A125]
- Coot (*Fulica altra*) [A125]
- Wetland and Waterbirds [A999]

Detailed Conservation Objectives have not been identified for this site to date. The generic Conservation Objectives which apply to this site are as follows:

1. To maintain or restore the favourable conservation condition of the bird species listed as Special Conservation Interests for this SPA:
   - Wigeon (A050)
   - Teal (A052)
   - Mallard (A053)
   - Coot (A125)

2. To maintain or restore the favourable conservation condition of the wetland habitat at the Gearagh SPA as a resource for the regularly-occurring migratory waterbirds that utilise it.

NPWS (2015) Conservation Objectives for The Geargh SPA [004109]. Generic Version 4.0. Department of Arts, Heritage and the Gaeltacht.

The Conservation Status of this SPA has not been assessed. However activities which could interfere with the achievement of the Conservation Objectives for this site include activities which could cause significant disturbance to birds at their feeding sites or resting places or activities causing removal of the extent or deterioration of the quality of feeding habitat within the SPA.

5 Screening Assessment

5.1 Conservation Objectives and Favourable Conservation Status

The overall aim of the Habitats Directive is to maintain or restore the favourable conservation status of habitats and species of community interest within the EU. Site specific conservation objectives aim to define favourable conservation condition for a particular habitat or species at that site. The maintenance of habitats and species within Natura 2000 sites at favourable conservation condition will contribute to the overall maintenance of favourable conservation status of those habitats and species at national level.

Favourable conservation status of a habitat is achieved when:

- its natural range, and area it covers within that range, are stable or increasing, and
- the specific structure and functions which are necessary for its long-term maintenance exist and are likely to continue to exist for the foreseeable future; and
- the conservation status of its typical species is favourable.

The favourable conservation status of a species is achieved when:

- population dynamics data on the species concerned indicate that it is maintaining itself on a long-term basis as a viable component of its natural habitats, and
- the natural range of the species is neither being reduced nor is likely to be reduced for the foreseeable future; and
- there is, and probably will continue to be, a sufficiently large habitat to maintain its populations on a long-term basis.

The draft planning scheme was examined to determine whether it could give rise to impacts on Natura 2000 sites. Impacts arising from the implementation of objectives of the draft planning scheme which could cause significant impacts on the integrity and conservation objectives of Natura 2000 sites, include activities which could give rise to:

- direct impacts on habitats listed on Annex I of the Habitats Directive and for which the site is designated;
- reduction in the area of any habitats within the site;
- direct or indirect damage to the physical quality of the environment (e.g. water quality) in the Natura 2000 site.
- serious or ongoing disturbance to species or habitats for which the Natura 2000 site is selected (e.g. increased noise, illumination, human activity);
- direct or indirect damage to the size, characteristics or reproductive ability of populations of species for which the Natura 2000 site is designated;

- activities which interfere with mitigation measures put in place for other plans or projects.

As a result of the preliminary screening, it has been concluded that elements of the scheme relating to water supply and waste water treatment could potentially impact on four Natura 2000 sites. These potential impacts are discussed further below.

5.2 Consideration Of The Potential Impacts On The Great Island Channel SAC And Cork Harbour SPA

A number of elements of this scheme could have the potential to affect water quality or hydrology in Cork Harbour, to interfere with intertidal habitats within the SAC and the SPA or to give rise to disturbance to wintering birds for which the SPA is designated. These are discussed below.

1. Increasing Nutrient Inputs To Cork Harbour

The development of Monard will be likely to require an increase in volumes of treated effluent to be discharged to Cork Harbour most likely via the Carrigrennan WWTP. This plant is located close to Marino Point in the Lee Estuary (West Passage) 500m downstream from the Great Island Channel SAC and Cork Harbour SPA (North Channel and Lough Mahon), and 4km upstream from the Cork Harbour SPA (Monkstown Creek). Increased nutrient inputs to this area could have the potential to affect the quality of habitats for which the Great Island SAC is designated, by creating eutrophic and possibly anoxic conditions, increasing the potential for spread of algal blooms and reducing the diversity of organisms which can be supported by this habitat. Conversely increasing the nutrient inputs within this system, could have the potential to increase the density of pollution tolerant macro-invertebrate species thereby creating more favourable feeding conditions for a number of species of bird for which the Cork Harbour SPA is designated. However, it is a generally accepted principle that the importance of organically–enriched areas for birds should not prevent the upgrading of waste water treatment systems in the interests of the wider environment (Ramsar Convention Bureau, 1994).

Treated effluent from the Carrigrennan Treatment Plant discharges to Marino Point 500m downstream from the Great Island Channel SAC and the Cork Harbour SPA (North Channel and Lough Mahon), and 4km upstream from the Cork Harbour SPA (Monkstown Creek). The current organic loading is estimated to be 312, 640. The treatment at the plant provides for primary and secondary treatment and has the capacity to treat waste water for a PE of 413,000. Discharges from this plant are licensed by the EPA, and the most recent Annual Environmental Report indicates that the plant is compliant with license conditions with the exception of Total Nitrogen. However, it is noted also from the most recent Annual Environmental Report that upgrades to the plant are required to provide for nutrient removal capacity due to the Sensitive Waters Designation in Cork Harbour, that Cork City is named as a key pressure in Pollution Reduction programmes for the Great Island North Channel and Rostellan North, South and West

shellfisheries, and that the agglomeration is included in an ECJ case relating to failure to comply with the requirements of the Urban Waste Water Treatment Directive 91/27/EEC.

An assessment of potential for impacts of the proposed discharge from Carrigrennan on the Great Island Channel SAC and the Cork Harbour SPA was completed by the EPA prior to the granting of a discharge license D0033-01. This assessment, which was completed by the EPA based on information submitted by Cork City Council for the Carrigrennan Plant, and on information contained in the EIS for the Cork Lower Harbour Sewerage Scheme, concluded that the WWTP has had a positive impact on water quality in Cork Harbour generally through the reduction in nutrients, faecal coliforms, heavy metals and persistent organic pollutants; and that the WWTP has the capacity to treat waste water for a population equivalent of 413,000, without having an impact on the SAC or on the SPA, when considered as an individual activity, and when considered cumulatively with other activities affecting water quality in Cork Harbour.

BEC Consultants recently completed an assessment of the Conservation Status of the Great Island Channel SAC on behalf of Cork County Council (June 2014). The purpose of that assessment was to assess the conservation status of the qualifying features for which the Great Island Channel SAC is designated, and to assess the likely impacts on the SAC of increased waste water loadings generated by the 2022 population targets for the catchment area of the harbour. The assessment identified that the current conservation status of mudflat and sandflat habitat within the SAC is Unfavourable-Bad. The assessment was based on survey of the macroinvertebrate fauna of this habitat which noted an absence of some species which were previously recorded from the site which are noted to be sensitive to organic enrichment. The primary source of impact on this habitat is related to nutrient enrichment caused in part by nutrient inputs from the discharge of treated effluents from waste water treatment plants including from the Carrigtwhohill and Midleton Waste Water Treatment Plants.

The conservation status of the other qualifying habitat of the SAC, Atlantic Salt Meadows was assessed to be Unfavourable-Inadequate with a number of sources of impact on this habitat identified at individual locations where the habitat was surveyed. None of the negative impacts recorded are having a high adverse effect on saltmarsh, although many impacts with low effects were recorded. Potential for nutrient enrichment to affect the development of saltmarsh was identified as an issue of concern in the report.

The report identified a number of measures which are required to reduce the level of nutrient input to the north channel of Cork Harbour. These include

- provision of the necessary upgrades to the Carrigtwohill and Midleton Waste Water Treatment Plants in terms of capacity and treatment ability to ensure that the required standards set by the Urban Waste Water Regulations can be consistently met and that significant negative impacts on the Great Island Channel Special Area of Conservation

are thereby prevented, or relocation the discharge point for the relevant waste water treatment plants away from the SAC ;

- limitation of the level of pollution in the channel relating to storm water overflows;
- implementation of the Cork Great Island North Channel Pollution Reduction Programme 2010;
- continued implementation and enforcement of the Nitrates Directive and the Water Services (Amendment) Act 2012.

The report concludes that the prospects for recovery of habitat 1140 Mudflats and sandflats are good, and that this habitat is likely to recover if the above listed measures are implemented. It also concludes that the conservation status of this habitat type will not be compromised by the population targets included in the Cork County Development Plan 2014 (which includes the population set for Monard), provided that the proposed upgrades to the relevant WWTPs at Carrigtwohill and Midleton are in place in advance of any population increase, and provided that on-going monitoring is carried out to track any changes in water quality of the discharges and surface water, to ensure that treatment systems are operating effectively and that the licensed emission limit values continue to be set at an appropriate level to ensure the protection of the SAC. It identifies that further management measures may be required if monitoring detects a failure of water quality standards which causes a deviation from favourable conservation status of this habitat type.

Subject to

- *the development and implementation of the Wastewater Management Strategy as provided for in the Cork County Devleopment Plan for Cork Harbour;*
- *the timely provision of the necessary upgrades to the Carrigrennan, Carrigtwohill (which is currently underway) and to Midleton Wastewater Treatment Plants to a design standard which ensures compliance with the Habitats Directive and the Water-framework Directive;*
- *and to the implementation of the other measures required to reduce nutrient inputs to Cork Harbour as set out above;*

it is considered that the potential for the development of this scheme to cause or contribute to significant negative impacts relating to nutrient inputs on the Cork Harbour SPA or the Great Island Channel SAC can be ruled out. It is anticipated that any additional design measures which will be required for the Carrigrennan WWTP to ensure protection of Natura 2000 sites within Cork Harbour will be identified during the preparation of the Wastewater Management Strategy. These measures must be in place prior to the linking of the Monard development to the Carrigrennan Wastewater Treatment Plant. ***It is recommended that the final version of the Planning Scheme would reflect these requirements.***

2. **Potential for impacts on water quality relating to the construction phase associated with the development of the sewerage and water supply pipelines.**

Details in relation to the proposals for the treatment of waste water for Monard remain to be agreed with Irish Water. However, as previously stated, it is likely that wastewater will be treated at Carrigrennan Little Island. There will be likely to be a requirement to develop water crossings for the sewerage network one of which will need to traverse the Glashaboy River within the Cork Harbour Special Protection Area. Potential impacts on the SPA could be caused by disturbance to birds during construction, or by the introduction of chemical pollutants to the coastal waterbody which could affect availability of food available for birds for which the SPA is designated. Habitats for which the SAC is designated could be contaminated by the introduction of chemical pollutants arising from construction activities within or adjacent to watercourses discharging to the harbour.

In order to prevent impacts on the Glashaboy River or on the SPA, it was proposed in the original scheme to use non intrusive trenchless technology at this location. It was also proposed to complete all works within 300m of the SPA during the summer time to avoid impacts on wintering birds and it was stated that other works within or adjacent to watercourses along the sewerage network route and along the water supply route would involve a requirement to comply with best practice approaches for the control of water pollution from construction sites and with the requirements of Inland Fisheries Ireland where there may be impacts on fish bearing waters.

Since the development of the original scheme, Irish Water has assumed responsibility for the management of wastewater, and the details of the scheme may be subject to change following further scheduled discussions with this authority. Possible risks to watercourses associated with the employment of trenchless technology to facilitate crossings have also been identified since the development of the original scheme. These relate to potential risks to water quality associated with lack of site suitability, possible escapement of drilling fluids to freshwater, tunnel collapse or general poor planning and design. Having regard to its location, any such failure would be likely to have significant negative consequences for the Cork Harbour SPA, and possibly even for the Great Island Channel SAC.

Further detail in relation to the proposals for an underwater crossing of the Glashaboy River to assess the suitability of the implementation of trenchless technology will be required prior to the finalisation of the detailed waste water management plans following agreement of same with Irish Water. This element of the scheme is the subject of ongoing discussions with Irish Water and will be likely to require full Appropriate Assessment at the project stage.

Construction activities within the site itself could have the potential to affect water quality in the Blarney River, and thereby contribute to 'in combination' impacts on water quality in the greater Cork Harbour area. Of particular concern would be the introduction of chemical pollutants

which could affect habitats for which the SAC is designated and the food supply of species for which the SPA is designated.

It is considered that the potential for general construction at the Monard site to have a significant impact on habitats and species for which the Great Island Channel SAC and the Cork Harbour SPA are designated can be screened out having regard to the distance of the site from the SAC and SPA, the planned retention of a buffer zone between watercourses and development areas, and the proposals for the construction of a sustainable urban drainage system within the site. In addition, it is a stated objective within the Planning Scheme that it will be a requirement for all construction works to be carried out in accordance with best practice approaches to the control of water pollution from construction sites.

3. Surface Water Inputs/Impacts on Hydrology Operational Phase

Poorly managed surface water run-off from this site could have the potential to introduce contaminants to intertidal habitats, thereby giving rise to potential for negative impacts on habitats for which the SAC is designated, and upon which birds for which the SPA is designated are dependent. However, a Sustainable Urban Drainage System has been designed and integrated into the Planning Scheme for Monard. Furthermore it is a requirement by planning condition to ensure that preliminary elements of this scheme are put in place prior to the commencement of substantive development, and it is stated in the plan that it will be a requirement of developers (by planning condition) to provide for effective maintenance of this scheme. In addition the site proposals provide for the protection floodplains from inappropriate development.

The integration of a Sustainable Urban Drainage System into this site will provide for effective protection of water quality, protection against flooding and provide opportunities for biodiversity enhancement within the site.

A number of basic principles have been incorporated into the design and layout of the SUDS for this site in order to ensure that negative impacts on the Great Island Channel SAC and the Cork Harbour SPA and on the environment generally are avoided. These are:

- The scheme has been designed to provide for attenuation of flows in excess of those from the original Greenfield site having regard to the 1 in 30 year critical storm event. Calculations for volumes to be attenuated on site have taken account of likely future increases in rainfall taking account of climate change models (10%).
- The scheme has been designed to ensure that sufficient land is available to provide for the required levels of attenuation as set out above;
- It is a stated requirement within the scheme that performance monitoring and maintenance programmes will be required to be undertaken by the developers and

subsequently by Cork County Council to ensure that the SUDS continues to function effectively on a long term basis.

Subject to adherence to these principles at project design, authorisation (planning consent), implementation (construction) and operational stages, it is considered that risk of impacts on either the SAC or the SPA arising from the release of increased levels of surface water to the system can be minimised, and that potential for significant negative impacts on the SAC and the SPA can be screened out.

5.3 Consideration of the potential impacts on the Gearagh SAC and the Gearagh SPA

It was proposed in the original planning scheme that drinking water for the Monard Strategic Development Zone would be sourced from the Inniscarra Reservoir on the River Lee. This reservoir is recharged directly from the Carrigadrohid Reservoir which is adjacent to the Gearagh SAC and SPA. While this is now matter for Irish Water, it is not ancticipated that there will be any significant changes to this proposal. A detailed appropriate assessment screening report was prepared for this element of the original scheme which containd an assessment of the potential for the increased levels of abstraction from the Inniscarra Reservoir to affect the Gearagh Special Area of Conservation and the Gearagh Special Protection Area, both of which are located on the Lee adjacent to the Carrigadrohid Reservoir (Monard Water Supply Scheme Appropriate Assessment Screening Report, RPS, 2011).

In summary, when completed, the proposed scheme will result in an increase in the level of abstraction from the Reservoir by Cork County Council from 61,000 m^3/day to 65,554 m^3/day. The total level of abstraction allowed to CCC from the reservoir is 227, 270m^3/day, so the proposed increase would mean that CCC would go from abstracting 24% of the max. allowable, to 31% of the max. allowable). The report concluded that the increased abstraction for the Monard project would constitute a small and insignificant proportion of the total water abstracted, and would have a negligible effect on water levels in the catchment when considered on its own.

However, it was considered that the abstraction could have the potential to contribute to a lowering of water levels in the Gearagh SAC and the SPA, when considered in combination with other activities which cause fluctuating water levels in the catchment, in particular the storage and release of water from the dams at Inniscarra and Carrigadrohid for the purpose of generating electricity, the abstraction of water within the catchment for human use, and the regulation of water levels in the catchment to prevent downstream flooding in Cork City.

The Gearagh SAC is designated for three habitat types, one of which is dependent upon water levels, Alluvial Woodland. It was concluded in the AA screening report that even if the increased abstraction were to contribute to a significant reduction in upstream water levels, it would be likely that such a change would provide the conditions suitable to increase the area of Annex I

habitat Residual Alluvial Woodland in the SAC, which was significantly reduced when the valley was originally flooded. Such an impact could be considered to be positive. As the other habitats for which the SAC is designated, Floating River Vegetation and Old Oak Woodland are not dependant on water levels, it was concluded these would not be affected by any changes caused by lowered levels. The SAC is also designated for Otter, however, it was concluded that as this species exploits both deep and shallow water, and would be unlikely to be affected by an alteration in the proportion of deep to shallow water levels within the SAC.

Should the increased level of abstraction contribute to significant lowering of water levels in the Gearagh, this could increase the availability of habitat types used by many of the species for which the SPA is designated, including shallow water habitats and exposed mud, without significantly affecting the availability of deep water within the area. It was therefore concluded that the lowering of water levels at the Gearagh, which could be caused by abstraction of water from the Inniscarra Reservoir, and other activities modifying water levels in the catchment, would be unlikely to affect the species for which the SPA is designated, or interfere with the achievement of the conservation objectives for the site.

In summary it was concluded that the proposals contained in the original scheme relating to water supply did not have the potential to give rise to negative impacts on the Gearagh SAC or on the Gearagh SPA for reasons set out above. It is not anticipated that these proposals will alter significantly and therefore the same conclusions still apply. Any deviations from these proposals would require assessment.

6 Potential for In-combination Impacts

Great Island Channel SAC and Cork Harbour SPA

These two sites are located within a large harbour which is surrounded by a number of significant settlements including Cork City, and which also has significant port and marine leisure related activity. There are a very large number of plans and projects within the catchment of the harbour which can contribute to impacts on water quality and potentially cause disturbance to birds. There are approximately 30 WWTPs and over 20 facilities with IPCC licenses which discharge into the watercourses of the catchment. Water quality in the harbour has been assessed to be moderate (SWRBD Transitional and Coastal Waters Action Programme, 2010), with particular pressures on water quality identified to include pressures arising from sewer overflows, waste water treatment plants and nutrient inputs from agricultural land.

Many activities within and adjacent to the harbour including boating activities, port related activities as well the development of walking and cycling routes along the edge of the harbour have the potential to contribute to disturbance related impacts on birds for which the SPA is designated.

Gearagh SAC and SPA

Other activities within the catchment of the River Lee which have the potential to significantly affect water levels in the upper catchment include the operation of the hydroelectric station at Inniscarra; major surface water abstractions from the Inniscarra Reservoir and the Carrigadrohid Reservoir, as well as a large number of other abstractions within the catchment. Water levels in the catchment, are regulated by the ESB to manage flood risk in Cork City. Water levels in the catchment are also affected by rainfall.

7 Screening Conclusions

Natura 2000 sites within potential impact zone of the SDZ	**Special Areas of Conservation:** Gearagh Special Area of Conservation; Great Island Channel Special Area of Conservation; **Special Protection Area:** Gearagh Special Protection Area; Cork Harbour Special Protection Area;
Description of the SDZ	It is proposed to develop the Monard Strategic Development Zone as a single entity which will provide for infrastructure, transport connections, public and commercial services in tandem with housing. Detailed proposals including overall design, information on provision and layout of services including roads, water supply and treatment, electricity, gas

	and telecoms are set out in the Draft Planning Scheme documentation. In summary, the main elements of the scheme are as follows: Four villages each with a distinct character and design approach. Each village will have its own centre and community facilities positioned to maximise commercial viability. A mixed use town centre will be located in close proximity to the new rail station. The proposed villages will accommodate a maximum of 5,850 new housing units, with a projected population of 13, 000 persons in the new settlement. The new settlement will also provide localised areas of employment within the town centre for the service sector, with some town centre office development adjoining the proposed Northern Ring Road. The other main features include the provision of 5 new single stream primary schools and 1 five stream secondary school. Community facilities proposed include a community building, playing fields, sports centre. A "Heritage Spine" or large country Park along Blarney River is also proposed for the new town.
Is the proposed plan directly connected with or necessary to the management of the Natura 2000 sites identified above	No
Assessment of Significant Effects	
Describe how the plan (alone or in combination is likely to affect Natura 2000 sites)	There are no Natura 2000 sites located either within or adjacent to the Strategic Development Zone. However, elements of the scheme associated with the provision of water and wastewater infrastructure could potentially give rise to impacts on a number of designated sites. **Potential Impacts on the Gearagh SAC and on the Gearagh SPA** It is proposed to supply water to the new settlement from the Inniscarra

	Reservoir located on the River Lee. This reservoir is located within the same catchment and downstream from the Gearagh Special Area of Conservation and the Gearagh Special Protection Area. Increased levels of abstraction would be unlikely to affect water levels in the SAC and SPA, given the proposed level of abstraction relative to the size of the catchment, the location of two large reservoirs between the SAC and SPA the abstraction area, and the distance of the abstraction point from the designated sites. However, it could be possible that the new abstraction could potentially contribute to a change in the relative proportions of deep and shallow water in the SAC and the SPA, when considered in combination with other activities which influence water levels in the catchment (see list of these activities below). **Potential Impacts on the Great Island Channel SAC and Cork Harbour SPA** The proposed development site is hydrologically connected to Cork Harbour much of which is designated for nature conservation. It is possible that construction activities at Monard could affect water quality in the adjacent watercourse (Blarney River), which could potentially contribute to impacts on water quality in Cork Harbour when considered in combination with other activities affecting water quality in the catchment. In addition, it is possible that construction activities related to the development of water and waste water infrastructure could affect water quality within the Cork Harbour Catchment, in particular at the Glashaboy River within the SPA. Such impacts could contribute to a significant impact when considered in combination with other activities affecting water quality in the harbour. It is most likely that waste water generated within the site will be pumped to the Carrigrennan Waste Water Treatment Plant at Little Island, although this remains to be agreed with Irish Water. Increasing the level of discharge of treated effluent from this plants could impact on water quality by increasing the level of nutrients in the harbour generally. Elevated nutrient levels in the harbour, could increase the trophic status of mudflat habitats, which could cause the proliferation of algal mats on this habitat. This would constitute a negative impact on the SAC and on the SPA. However, elevated nutrient levels could also increase the numbers of invertebrates in the mudflats, thereby increasing food availability for birds. This would constitute a positive

	impact on species for which the SPA is designated.
Are there other projects or plans that together with the plan being assessed could affect Natura 2000 sites (provide details)	**The Gearagh SAC and the Gearagh SPA** Other activities within the catchment of the River Lee which have the potential to significantly affect water levels in the upper catchment include the operation of the hydroelectric station at Inniscarra; major surface water abstractions from the Inniscarra Reservoir and the Carrigadrohid Reservoir, as well as a large number of other abstractions within the catchment. Water levels in the catchment, are regulated by the ESB to manage flood risk in Cork City. Water levels in the catchment are also affected by rainfall. **Great Island Channel SAC and Cork Harbour SPA** Given the location of these two designated sites within a large harbour which is surrounded by a number of significant settlements including Cork City, and which also has significant Port and marine leisure related activity, there are a very large number of plans and projects within the catchment of the harbour which can contribute to impacts on water quality and potentially cause disturbance to birds. There are approximately 30 WWTPs and over 20 facilities with IPCC licenses which discharge into the watercourses of the catchment. Water quality in the harbour has been assessed to be moderate (SWRBD Transitional and Coastal Waters Action Programme, 2010), with particular pressures on water quality identified to include pressures arising from sewer overflows, waste water treatment plants and nutrient inputs from agricultural land. Many activities within and adjacent to the harbour including boating activities, port related activities as well the development of walking and cycling routes along the edge of the harbour have the potential to contribute to disturbance related impacts on birds for which the SPA is designated.
Explain why these effects are not considered significant	**The Gearagh SAC** The draft Planning Scheme for Monard has been assessed to be unlikely to cause or contribute to significant impacts on the habitats or species for which the **Gearagh SAC** is designated for the following reasons: It is highly unlikely that water levels in the Gearagh will be affected by the development having regard to the positioning of two substantive reservoirs between the SAC and the abstraction point and the capacity available to control water levels in the catchment through management of the dams; however, the potential for significant impacts on habitats

	and species for which the SAC is designated have been assessed and screened out for the following reasons: Old Oak Woodland: No potential for impact identified arising from reduction in water levels at the Gearagh as habitat is not dependant on hydrology of the site. Floating River Vegetation: No potential for impact identified, as this habitat is unlikely to be affected by altering proportion of deep water within the site. Residual Alluvial Woodland: Positive impacts possible, as much of this habitat was removed by the original flooding of this area to create the Carrigadrohid Reservoir. If the flooded area were reduced, it is possible that the area of this habitat could be increased within the SAC. Otter: No potential for impact identified, as this species exploits both deep and shallow water and it is unlikely that the overall area of habitat suitable for this species would be altered. The **Gearagh SPA** The draft Planning Scheme for Monard has been assessed to be unlikely to cause or contribute to significant impacts on the **Gearagh SPA** for the following reasons: It is highly unlikely that water levels in the Gearagh will be affected by the development having regard to the positioning of two substantive reservoirs between the SPA and the abstraction point and the capacity available to control water levels in the catchment through management of the dams; however, the potential for significant impacts on species for which the SPA is designated have been assessed and screened out for the following reason: Reducing water levels could increase the proportion of shallow water and exposed muds within the SPA, thereby increasing the availability of foraging habitat for many wintering bird species. Positive impacts possible. **Great Island Channel SAC** Potential for this scheme to give rise to impacts on the Great Island Channel relating to **increasing the levels of nutrient inputs** to Cork

	Harbour can be screened out *subject to* • *the development and implementation of the Wastewater Management Strategy as provided for in the Cork County Devleopment Plan for Cork Harbour;* • *the timely provision of the necessary upgrades to the Carrigrennan, Carrigtwohill (which is currently underway) and to Midleton Wastewater Treatment Plants to a design standard which ensures compliance with the Habitats Directive and the Water-framework Directive; and to* • *the implementation of the other measures required to reduce nutrient inputs to Cork Harbour;* *It is anticipated that any additional design measures which will be required for the Carrigrennan WWTP to ensure protection of Natura 2000 sites within Cork Harbour will be identified during the preparation of the Wastewater Management Strategy.* ***These measures must be in place prior to the linking of the Monard development to the Carrigrennan Wastewater Treatment Plant. It is recommended that the final version of the Planning Scheme would reflect these requirements.*** Potential for this scheme to give rise to impacts on the Great Island Channel SAC **relating to changes in hydrological processes and potential impacts on water quality associated with general construction** can be screened out for the following reasons: • A sustainable urban drainage system strategy has been designed and integrated into the scheme which will help to protect water quality; • It is a requirement of the scheme that all works within or adjacent to watercourses along the sewerage network route and along the water supply route will involve a requirement to comply with best practice approaches to the control of water pollution from construction sites, and with the requirements of Inland Fisheries Ireland where there may be impacts on fish bearing waters; • It is a requirement of the scheme that all construction works within Monard will be carried out in accordance with best practice approaches to the control of water pollution from construction sites, and with the requirements of Inland Fisheries

	Ireland where there may be impacts on fish bearing waters. • The scheme has been designed to ensure the retention of a buffer zone along the Blarney River within the development site which will help to prevent impacts on water quality; The proposed scheme as devised in 2012 incorporates a proposal to construct a trenchless crossing at the Glashaboy River. **Further work will be required to assess potential of this element of the scheme to give rise to impacts on the Great Island Channel SAC, if this remains an element of the scheme.** **Cork Harbour Special Protection Area** Potential for this scheme to give rise to impacts on the Cork Harbour SPA relating to **increasing the levels of nutrient inputs** to Cork Harbour can be screened out *subject to* • *the development and implementation of the Wastewater Management Strategy as provided for in the Cork County Devleopment Plan for Cork Harbour;* • *the timely provision of the necessary upgrades to the Carrigrennan, Carrigtwohill (which is currently underway) and to Midleton Wastewater Treatment Plants to a design standard which ensures compliance with the Habitats Directive and the Water-framework Directive; and to* • *the implementation of the other measures required to reduce nutrient inputs to Cork Harbour as set out above;* *It is anticipated that any additional design measures which will be required for the Carrigrennan WWTP to ensure protection of Natura 2000 sites within Cork Harbour will be identified during the preparation of the Wastewater Management Strategy. These measures must be in place prior to the linking of the Monard development to the Carrigrennan Wastewater Treatment Plant.* ***It is recommended that the final version of the Planning Scheme would reflect these requirements.*** Potential for this scheme to give rise to impacts on the Cork Harbour SPA relating to **changes in hydrological processes and potential impacts on water quality associated with general construction** can be screened out for the following reasons: • A sustainable urban drainage system strategy has been designed

	and integrated into the scheme which will help to protect water quality; • It is a requirement of the scheme that all works within or adjacent to watercourses along the sewerage network route and along the water supply route will involve a requirement to comply with best practice approaches to the control of water pollution from construction sites, and with the requirements of Inland Fisheries Ireland where there may be impacts on fish bearing waters; • It is a requirement of the scheme that all construction works within Monard will be carried out in accordance with best practice approaches to the control of water pollution from construction sites, and with the requirements of Inland Fisheries Ireland where there may be impacts on fish bearing waters. • The scheme has been designed to ensure the retention of a buffer zone along the Blarney River within the development site which will help to prevent impacts on water quality; While final details in relation to Wastewater Management remain to be agreed with Irish Water, potential for the development of the sewerage network adjacent to the Cork Harbour SPA to **cause disturbance to birds** is screened out for the following reasons: • Works at the Glashaboy River will be completed during the summer time to avoid impacts on wintering birds. The proposed scheme as devised in 2012 incorporates a proposal to construct a trenchless crossing at the Glashaboy River. **Further work will be required to assess potential for this element of the scheme to give rise to impacts on the Cork Harbour SPA, if this remains an element of the scheme.**
List of agencies consulted	This document will be referred to the National Parks and Wildlife Service, the EPA and other Statutory Consultees for consideration during the public consultation process. The outcomes of that consultation may influence the preparation of the final Planning Scheme and / or the Habitats Directive Screening Statement.
Response to consultation	All submissions made in respect of the draft planning scheme

Data Collected To Carry Out The Assessment	
Who carried out the assessment	This assessment is based on three previous AA screening assessments completed for the proposed water supply and for the development of a new sewerage network.
Sources of data	NPWS Site Synopses for the Gearagh SAC, the Gearagh SPA, Great Island Channel SAC, Cork Harbour SPA; Cork County Habitat Mapping Project, Blarney Electoral Area, 2008; Draft Planning Scheme for Monard SDZ, 2012; Monard Sewerage Scheme Environmental Report, 2012; Monard Water Supply Scheme Ecological Impact Assessment Report, 2012; Monard Water Supply Scheme Preferred Supply Option; Appropriate Assessment Screening Report, 2012; Monard Water Supply Scheme Alternative Supply Option; Appropriate Assessment Screening Report, 2012.
Level of assessment completed	Screening
Where can the full results of the assessment be accessed and viewed	See above and refs.

8 References

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