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Administration,
Environmental Licensing Programme,
Office of Climate,
Licensing & Resource Use,
Environmental Protection Agency,
P.O.Box 3000,
Johnstown Castle Estate,
County Wexford.



9th March 2011

Re: **Notice in accordance with Regulation 25(c)(ii) of the Waste Water Discharge (Authorisation) Regulations 2007**
Agglomeration of Minane Bridge, County Cork
Application Register Number A0356-01

Dear Sir/Madam,

I refer to the above and to a letter received from the Agency dated 14th December 2010 regarding Regulation 24 compliance requirements. I enclose a submission to the Agency in response to the matters raised in the said letter.

In addition to this further information request, a revised certificate application is being submitted for the Minane Bridge Agglomeration due to the taking in charge of a private waste water treatment plant by Cork County Council. The revised certificate application due 11th March, 2011 contains a revised Non Technical Summary for the Minane Bridge Agglomeration.

The following are the documents enclosed as per the revised certificate application and the request for further information received..

- 1 No. signed hard copy reply.
- 1 No. copy of the original.
- 4 CD-ROM with documentation in electronic searchable PDF.
- 1 No. signed hard copy reply.
- 2 No. copy of the original.
- 1 CD-ROM with documentation in electronic searchable PDF.

Yours faithfully,

A handwritten signature in black ink, appearing to read 'Noel O'Keeffe', written over a horizontal line.

Noel O'Keeffe,
County Engineer & Director of Water Services,
Cork County Council,
County Hall, Cork.





CORK COUNTY COUNCIL
Comhairle Contae Chorcaí
Water Services South
County Hall
Carrigrohane Road
Cork

**SUBMISSION TO ACHIEVE
COMPLIANCE WITH
REGULATION 24
OF THE
WASTE WATER DISCHARGE
(AUTHORISATION)
REGULATIONS 2007
FOR
Minane Bridge
(A0356-01)**

March 2011

QUESTION 1 “ASSESS THE LIKELIHOOD OF SIGNIFICANT EFFECTS OF THE WASTE WATER DISCHARGE ON THE RELEVANT EUROPEAN SITES...”

1.0 Background

The Village of Minane Bridge is situated approximately 20km south of Cork City and 7km south of Carrigaline, on the main route to the coastal resorts of Robert’s Cove and Rocky Bay. This settlement is a small centre for the rural hinterland.

Cork County Council South is the Water Services Authority serving Minane Bridge. The agglomeration boundary can be seen at Attachment A.1 of the revised certificate application. The population of the Minane Bridge agglomeration is approximately 150.

There are two separate collection/treatment systems in place in Minane Bridge. There is a waste water treatment plant within River Valley Housing Estate which was taken in charge by Cork County Council on 22nd November 2010. There is a septic tank serving Spruce Grove, which made up the original application in 2009. Please see Attachment A1 which highlights this information.

A gravity waste water collection system serves River Valley. There are no pumping stations within the collection system. There are no secondary discharges from the collection system. There are no storm overflows from the collection system. All waste water collected drains to the waste water treatment plant to the rear of the estate.

The waste water treatment plant at River Valley consists of a two stage extended biological filtration treatment process which is linked to a reed bed filtration system which ultimately leads to the primary discharge point. This system provides tertiary treatment. Full details on the operation of the treatment plant are provided in Section C of the revised application form. This details primary settlement, biological treatment and final settlement processes.

A gravity waste water collection system serves Spruce Grove. There are no pumping stations within the collection system. There are no secondary discharges from the collection system. There are no storm overflows from the collection system. All the waste water collected drains to the septic tank to the rear of the estate.

The septic tank provides primary treatment only. The primary treatment is achieved by settlement which according to the National Urban Waste Water Study (NUWWS) reduces BOD loading by approximately 30% and Suspended Solids by approximately 50%.

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All treated effluent from the septic tank drains by gravity to a nearby soak pit where it discharges directly to groundwater. The soak pit is located approximately 75m from the Minane River. The Minane River flows into Ringabella Creek, which is located 5.0km outside the mouth of Cork Harbour (Roche's Point).

The agglomeration is not within or is not nearby any Natura 2000 site. The closest Natura 2000 site is Cork Harbour SPA. Minane Bridge is approximately 5km from Ringabella Creek. Ringabella Creek is approximately a further 5km from Roche's Point, the mouth to Cork Harbour.

1.1 Habitats Directive Assessment

The Habitats Directive 92/43/EEC is transposed into Irish Law under the European Union (Natural Habitats) Regulations SI 94/1997 (The Regulations). The Regulations require the assessment of all projects or plans that have the potential to impact on nature conservation sites, including SPAs. This assessment is referred to as a Habitats Directive Assessment. The purpose of a Habitats Directive Assessment is to identify potential impacts on nature conservation sites arising from a project or plan and to predict the effect of such impacts on the integrity of the sites.

The European Union has provided guidance on Habitats Directive Assessment which identifies four stages in the assessment process as follows:

1. *Stage One - Screening*
Screening identifies the likely impacts on a Natura 2000 site of a project or plan, whether alone or in combination with other projects or plans, and considers whether or not these impacts are likely to be significant.
2. *Stage Two – Appropriate Assessment*
This assessment considers the impact on the integrity of the Natura 2000 site of a project or plan, either alone or in combination with other projects or plans, with respect to the site's structure and function and its conservation objectives. Additionally, where there are adverse impacts, the Appropriate Assessment considers the potential mitigation of those impacts.
3. *Stage Three - Assessment of Alternative Solutions*
This assessment examines alternative ways of achieving the objectives of the project or plan that avoid adverse impacts on the integrity of the Natura 2000 site.
4. *Stage Four - Assessment Where No Alternative Solutions Exist and Where Adverse Impacts Remain*
This assessment considers compensatory measures, where in the light of an assessment of imperative reasons of overriding public interest, it is deemed that the project or plan should proceed.

This Submission brings together all of the information necessary to make determination as to whether or not there are likely to be significant impacts arising from the discharges from the Minane Bridge Agglomeration on the Minane Bridge Marsh proposed Natural Heritage Area (pNHA) and Cork Harbour SPA. A flow diagram in accordance with Appendix 1 of Circular Letter L8/08 is included at Appendix 1 of this Submission.

1.2 Stage One - Screening

Screening identifies the likely impacts on a Natura 2000 site of a project or plan, whether alone or in combination with other projects or plans, and considers whether or not these impacts are likely to be significant. Screening comprises of 5 steps as follows:

1. Step One – Description of Project or Plan

Provide a description of the project or plan and other projects or plans that, alone or in combination, have the potential to have significant effects on Natura 2000 sites within the potential impact zone.

2. Step Two – Identification of Impacted Natura 2000 Sites

Identify Natura 2000 sites which may be impacted by the project or plan, and compile information on their qualifying interests and conservation objectives.

3. Step Three – Assessment Criteria

Determine whether the project or plan needs to be screened for potential impacts on Natura 2000 sites.

4. Step Four – Assessment of Likely Effects

Carry out an assessment of likely effects – direct, indirect and cumulative – undertaken on the basis of available information as a desk study or field survey or primary research as necessary.

5. Step Five – Significance of Effects

Assess the significance of any such effects on the Natura 2000 sites within the impact zone.

Steps 1 to 5 are presented as an Appropriate Assessment Screening Matrix below. This assessment has been prepared in accordance with the following guidance:

- European Commission (2000) Managing Natura 2000 sites: the provisions of Article 6 of the Habitats Directive 92/43/EEC;
- European Commission (2001) Assessment of plans and projects significantly affecting Natura 2000 sites: Methodological guidance on the provisions of Articles 6(3) and (4) of the Habitats Directive 92/43/EEC;
- Appropriate Assessment of Plans and Projects in Ireland. Guidance for Planning Authorities. Environment, Heritage and Local Government, 2009.

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Step One - Description of Project or Plan	
Location	Minane Bridge, Co Cork.
Description of the key components of the project	<p>Minane Bridge Agglomeration is served by a Waste Water Treatment Plant at River Valley Housing Estate and Septic Tank at Spruce Grove Housing Estate. River Valley WWTP provides tertiary treatment by means of primary settlement, a two stage biological treatment process, final settlement and reed bed filtration, and discharges to surface water. The estimated daily discharge from the WWTP is 23m³/day.</p> <p>Spruce Grove Septic Tank provides primary treatment. Treated effluent discharges to groundwater through a percolation area located 75m from the Minane River. The septic tank provides primary treatment only which according to the National Urban Waste Water Study (NUWWS) reduces the BOD load by approximately 30% and the Suspended Solids load by approximately 50%. On average approx. 6cu.m./day of effluent is discharged to the percolation area.</p>
Distance from designated sites in potential impact zone	<p>The Minane River runs in an easterly direction downstream of Minane Bridge Village for approximately 5km before reaching coastal waters at Ringabella Creek. The receiving waters at Ringabella Creek are not deemed sensitive. Ringabella Creek is approximately 2.5km from Fountainstown Beach which is designated bathing waters.</p> <p>Fountainstown Beach is presently monitored in accordance with the Directive EU 76/160/EEC and the Quality of Bathing Water Regulations 1992 (SI 155/1992) and amendments. From the 2011 bathing season onwards (mid May to 31st August annually) the monitoring and reporting of bathing waters will commence under new legislation 'The Bathing Water Quality Regulations 2008 (SI No.79 of 2008 Directive 2006/7/EC)'.</p> <p>Ringabella Creek is located approximately 5km outside the mouth of Cork Harbour (Roche's Point). The discharge point at Minane Bridge is approx. 10 Km distance from the mouth to Cork Harbour which contains a Special Protected Area (SPA).</p> <p>The primary discharge point is located at the downstream end of a proposed Natural Heritage Area (pNHA) called Minane Bridge Marsh – site code 001966. The location of the pNHA and primary discharge point is highlighted in Attachment Map 10 of the revised application form.</p>

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Step Two – Identification of Impacted Natura 2000 Sites ¹	
Name	Minane Bridge Marsh Proposed Natural Heritage Area
Site Code	001966
Site Description	<p>The Minane Bridge Marsh pNHA</p> <p>This is not a Natura 2000 Site, however is a proposed Natural Heritage Area, and has been noted as such.</p> <p>Discharge from the River Valley WWTP occurs at the downstream end of the pNHA.</p> <p>Spruce Grove Septic Tank discharges via a percolation area to groundwater, downstream of the pNHA and does not affect it.</p> <p>No bird count data was available for Minane Marsh. Data available in relation to Ringabella Creek forms Appendix II of this document and Attachment Section F1 of the revised Application Form (March 2011)</p>
Qualifying Interests of Minane Bridge Marsh pNHA	None
Other Notable Features of Minane Bridge pNHA.	None
Conservation Objectives	<p>To avoid deterioration of the habitats of and qualifying species and species of special conservation interest, or significant disturbance to these species, thus ensuring that the integrity of the site is maintained.</p> <p>To ensure for the qualifying species and species of special conservation interest that the following are maintained in the long-term:</p> <ul style="list-style-type: none"> • The population of the species as a viable component of the site; • The distribution and extent of habitats supporting the species; • The structure, function and supporting processes of habitats supporting the species. <p>Source – National Parks and Wildlife Service.</p>

¹ Natura 2000 sites within the potential impact zone of the proposed development have been identified in accordance with guidance provided in the NPWS circular L8/08.

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Name	Cork Harbour Special Protection Area
Site Code	4130
Site Description	<p>The Cork Harbour SPA is an estuarine complex which is primarily comprised of intertidal habitats, mainly mudflats as well as some other coastal and marine habitats. These habitats support very high numbers of wintering waterfowl that feed on the macro invertebrates inhabiting the mudflats. The Harbour regularly supports in excess of 20,000 wintering birds, making it an internationally important site and the fifth most important wintering waterfowl site in the country.</p> <p>Discharges from the Minane Bridge Agglomeration occur approx 10km outside of Cork Harbour SPA. Any impacts on this SPA site from discharges at Minane Bridge are considered negligible.</p>
Qualifying Interests of Cork Harbour SPA.	<p>Internationally important numbers of Black-tailed Godwit and Redshank; Nationally important numbers of Cormorant, Shelduck, Oystercatcher, Golden Plover, Lapwing, Dunlin and Curlew; 20,000 wintering water birds. <i>Source – National Parks and Wildlife Service</i></p>
Other Notable Features of Cork Harbour SPA	<p>Little Grebe, Great-crested Grebe, Grey Heron, Wigeon, Teal, Pintail, Shoveler, Red-breasted Merganser, Grey Plover, Black-headed Gull, Common Gull, Lesser Black-backed Gull, wetland and water birds. <i>Source – National Parks and Wildlife Service.</i> See Appendix III</p>
Conservation Objectives	<p>To avoid deterioration of the habitats of the qualifying species and species of special conservation interest, or significant disturbance to these species, thus ensuring that the integrity of the site is maintained.</p> <p>To ensure for the qualifying species and species of special conservation interest that the following are maintained in the long-term:</p> <ul style="list-style-type: none"> ○ the population of the species as a viable component of the site; ○ the distribution and extent of habitats supporting the species; ○ the structure, function and supporting processes of habitats supporting the species; <p><i>Source – National Parks and Wildlife Service</i></p>

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Step Three – Assessment Criteria	
Describe the elements of the project likely to give rise to impacts on the Natura 2000 site.	<ol style="list-style-type: none"> 1. River Valley WWTP; 2. Spruce Grove Septic Tank.
<p>Describe any likely direct, indirect or secondary impacts of the project (either alone or in combination with other plans or projects) on the Natura 2000 site taking into account the following:</p> <ul style="list-style-type: none"> • Size and scale • Land-take • Distance from the Natura 2000 site or key features of the site: • Resource requirements (water abstraction etc.) • Emissions (disposal to land, water or air) • Excavation Requirements • Transportation Requirements • Duration of construction, operation, decommissioning • Other. 	<p>The agglomeration has a total population equivalent of 161. The average daily output of the WWTP is estimated at 23cu. m/day. The maximum capacity of the WWTP is 50cu. m/day so at present the WWTP has not reached 50% capacity. The Septic Tank at Spruce Grove receives approx 6cu.m/day. Minane Bridge is located approx 10km outside the mouth of Cork Harbour which contains an SPA. Any impacts from the discharges at Minane Bridge on Cork Harbour SPA are deemed negligible.</p> <p>Discharges could give rise to elevated nutrients entering the Minane River on the eastern end of the Minane Bridge Marsh proposed Natural Heritage Area (pNHA). The primary discharge point for the agglomeration discharges on the northern side of the Minane River. The Minane River forms a northern boundary to the Minane Bridge Marsh (please see Attachment Map 10 in the revised certificate application for location details).</p> <p>Increased nutrient levels may impact on the ecology of an area by changing the composition of floral communities and reducing the ability of less robust plants to survive. Increased nutrient levels may also result in increasing the invertebrate populations in the estuary, thereby increasing bird population levels.</p> <p>The combined impact of the above-listed WWTP (primary discharge) on the proposed Natural Heritage Area may require an ecological assessment of the pNHA. This assessment has not been undertaken in the preparation of this Submission. However, consideration is currently being given by Cork County Council to such an assessment.</p> <p>The primary discharge point is located upstream of the Minane Bridge Infiltration Gallery. The infiltration gallery can take up to approx. 98cu. m/day from groundwaters. The annual output of the infiltration gallery is approximately 25cu.m/day. A study of the infiltration gallery carried out by Geological Survey of Ireland note that 'water (is) drawn in from the stream, which lies just over 100metres south of the gallery. Given the small hydraulic head which the gallery develops, this is probably a negligible source of water to the gallery. This seems to be confirmed by the hydrochemistry of the water'. Furthermore the report adds: 'Subsurface flow from the hillside of the north of the gallery, plus shallow subsurface flow ('interflow') and surface runoff infiltrates into the ground at the foot of the slope. Since the gallery is orientated at right angles to the direction of this flow, it is optimally placed to intercept it. Hence it is expected that this source contributes most of the flow into the gallery'. The report later states that 'infiltration from the stream (Minane River) to the gallery is probably negligible'. The revised certificate application detailed the zones of contribution and inner protection zone for the infiltration gallery.</p> <p>Cork County Council took the River Valley WWTP in charge on 22nd November 2010. A proposed programme of improvement works for the WWTP based on items identified and listed by Cork County Council forms Attachment G3 of the revised application.</p>

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<p>Describe any likely changes to the site arising as a result of:</p> <ul style="list-style-type: none"> • Reduction in habitat area • Disturbance to key species • Habitat or species fragmentation • Reduction in species density • Changes in key indicators of conservation value (water quality etc) • Climate Change 	<p>Reduction in habitat area Not significant.</p> <p>Disturbance to key species The operation of the Septic Tank does not cause any disturbance to any Natura Sites. The WWTP is located at the downstream end of Minane Bridge Marsh (pNHA) however the treatment process employed at the WWTP provides tertiary treatment. There are no key species listed at the pNHA.</p> <p>Habitat or species fragmentation No habitat fragmentation has been caused as a result of the operation of this facility.</p> <p>Reduction in species density No significant impacts are evident or predicted on species for which the SPA is designated.</p> <p>Changes in key indicators of conservation value – e.g. water quality The status of the section of the Minane River is “moderate”. There has been no deterioration downstream of the discharges in this respect.</p> <p>Climate Change Not significant.</p>
<p>Describe any likely impacts on the Natura 2000 site as a whole in terms of:</p> <ul style="list-style-type: none"> • Interference with the key relationships that define the structure of the site • Interference with key relationships that define the function of the site 	<p>Interference with the key relationships that define the structure of the site The structure of the SPA is not impacted by the operation of this facility.</p> <p>Interference with key relationships that define the function of the site The function of the SPA is not impacted by the operation of this facility.</p>
<p>Describe from the above those elements of the project of plan, or combination of elements, where the above impacts are likely to be significant or where the scale or magnitude of impacts is not known.</p>	<p>Cork County Council took the WWTP in charge in November 2010. A programme of sampling is due to commence on the primary discharge point in 2011 with 6 samples to be taken and tested. These results will give a more accurate representation of the likely impacts of the WWTP. A screening programme has not been carried out to date on the plant under the Dangerous Substances Directive. This maybe necessary in order to assess the full impact of the WWTP. In addition a proposed programme of improvement works has been identified by Cork County Council (and forms Attachment G3 of the revised application form) and work should begin in remedying any defects noted, and upgrading the plant in 2011.</p>

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Step Four – Assessment of Likely Effects	
Name of project or plan	Minane Bridge Agglomeration
Name and location of Natura 2000 site	Cork Harbour SPA (over 10km from the discharge point) Primary Discharge Point within proposed Natural Heritage Area pNHA of Minane Bridge Marsh.
Description of the project or plan	Minane Bridge Agglomeration is served by a waste water treatment plant which provides tertiary treatment and discharges to Minane River, and a septic tank which provides primary treatment only which discharges to groundwater approx 75m from the Minane River.
Is the project or plan directly connected with or necessary to the management of the site (provide details)?	No
Describe how the project or plan (alone or in combination) is likely to affect the Natura 2000 Site.	Discharges from the River Valley WWTP could give rise to elevated nutrients within the pNHA (not a Natura 200 site). Increased nutrient levels may impact on the ecology of an area by changing the composition of floral communities and reducing the ability of less robust plants to survive. Increased nutrient levels may also result in increasing the invertebrate populations in the estuary, thereby increasing bird population levels. A programme of sampling is due to commence on the primary discharge point in 2011 with 6 samples to be taken and tested. These results will give a more accurate picture of likely affects.

Step Five – Significance of Effects	
Explain why these effects are not considered significant.	<ul style="list-style-type: none"> • Small quantities of effluent (max PE 161 current PE 133); • 20% Effluent discharges to groundwater; 80% effluent undergoes tertiary treatment process. • Dilution and assimilative capacities of Minane River and Cork Harbour; • Minane River has ongoing "moderate" status; • No significant impacts are evident or predicted on species for which the pNHA is designated. Negligible impacts of Cork SPA which is over 10km away. No Natura 2000 site in area.
List of agencies consulted: provide contact name and telephone or email address	<ul style="list-style-type: none"> • National Parks and Wildlife Service; • Birdwatch Ireland.
Response to consultation	<ul style="list-style-type: none"> • Draft Conservation Objectives and a copy of Intention to Designate Cork Harbour as SPA was received previously from the NPWS; • Bird count data was received previously from Birdwatch Ireland.

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Data collected to carry out the assessment			
Who carried out the assessment	Sources of data	Level of assessment completed	Where can the full results of the assessment be accessed and viewed
Brendan O' Leary, Assistant Engineer, Water Services Operations, Cork County Council	Nation Parks & Wildlife Service Website; Birdwatch Ireland Website. Geological Survey of Ireland	Desktop review of cited data.	This Submission.

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QUESTION 2 “CONFIRM THE DESIGN CAPACITY OF THE WASTE WATER TREATMENT PLANT ...”

The waste water treatment plant serving River Valley has a capacity of 250PE. It currently serves 28 houses with an estimated PE of 105. In addition conditional planning has been granted on a nearby site for 8 dwellings which could increase loading by an estimated 28PE – bringing a total possible future PE loading of 133 (53% of total capacity). This loading would still be below the capacity of the plant, so the plant would not be overloaded.

The septic tank was designed to treat waste water arising from 8 no. dwellings – i.e. a PE of 28. The current PE treated by the septic tank is estimated to be 28. The septic tank is therefore at capacity and not overloaded.

The current PE includes the maximum average weekly loading for the agglomeration having taken account of local festivals, peak holiday seasons, etc.

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QUESTION 3 “PROVIDE A REVISED DRAWING CLEARLY DETAILING THE BOUNDARY OF THE AGGLOMERATION...”

Attachment Map 02 “Section A1 – Non-Technical Summary – Minane Bridge Location Map” has been revised to include all areas serviced by the sewer network as well as the newly taken in charge waste water treatment plant and existing septic tank. The revised drawing forms part of the revised Waste water application March 2011. The revised application details the treatment processes used at the treatment plant as well as proposed improvement programme of works to upgrade the plant.

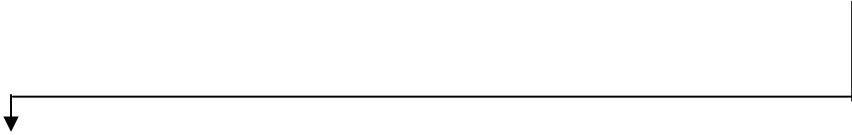
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APPENDIX I

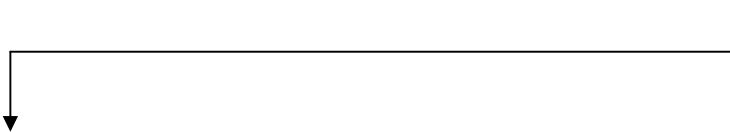
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Minane Bridge Flow Chart – A0356-01

Is the development in a nature conservation site – **NO**



Is the development in the surface water catchment of a nature conservation site (or part of such a site) – **NO**



Is the development in the surface groundwater catchment of other water dependent Annex II species, other rare or protected species or salmonid waters? – **NO**

No further action required

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APPENDIX II

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Appendix II – Ringabella Creek – Bird Numbers

Irish Wetland Bird Survey: Waterbird monitoring in Ireland

Location:	Ringabella Creek
Year	Bird Numbers
2001/02	1,377
2002/03	801
2003/04	976
2004/05	1,111
2005/06	954
2006/07	1,498
2007/08	1,195

Species occurring in significant numbers
Black Tailed Godwit

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APPENDIX III

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SITE SYNOPSIS

Site Name: Minane Bridge Marsh proposed Natural Heritage Area
Site Code: 001966

Minane Bridge Marsh **pNHA 1966** is located to the south west of Minane Bridge village. The area is listed for its unusual vegetation type which throughout much of the country has been drained. In November 2010 Cork County Council published the Carrigaline Electoral Area Local Area Plan Review. Within this review Cork County Council recognise that ‘the village of Minane Bridge adjoins this environmental designation (the proposed Natural Heritage Area and)....any further expansion westwards will impact on the intactness of the designation’. Within the Local Area Plan Review (LAP Review) Cork County Council outlined the methodology behind carrying out various environmental studies while also underlining their commitments to environmental protection.

A habitat study has not been carried out on the Minane Bridge Marsh proposed Natural Heritage Area. No information is available at present detailing the species, flora or fauna specific to this area. It is not deemed a bird area of international or national importance. Ringabella Creek, 5km downstream of Minane Bridge is designated a nationally important site supporting > 1,000 waterbirds. The black tailed godwit has been spotted in nationally important numbers at Ringabella Creek. There has been no detrimental effect to this species numbers as a result of discharges from Minane Bridge.

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SITE SYNOPSIS

SITE NAME: CORK HARBOUR SPA

SITE CODE: 004030

Cork Harbour is a large, sheltered bay system, with several river estuaries – principally those of the Rivers Lee, Douglas and Owenacurra. The SPA site comprises most of the main intertidal areas of Cork Harbour, including all of the North Channel, the Douglas Estuary, inner Lough Mahon, Lough Beg, Whitegate Bay and the Rostellan inlet.

Owing to the sheltered conditions, the intertidal flats are often muddy in character. These muds support a range of macro-invertebrates, notably *Macoma balthica*, *Scrobicularia plana*, *Hydrobia ulvae*, *Nephtys hombergi*, *Nereis diversicolor* and *Corophium volutator*. Green algae species occur on the flats, especially *Ulva lactuca* and *Enteromorpha* spp. Cordgrass (*Spartina* spp.) has colonised the intertidal flats in places, especially where good shelter exists, such as at Rossleague and Belvelly in the North Channel. Salt marshes are scattered through the site and these provide high tide roosts for the birds. Salt marsh species present include Sea Purslane (*Halimione portulacoides*), Sea Aster (*Aster tripolium*), Thrift (*Armeria maritima*), Common Saltmarsh-grass (*Puccinellia maritima*), Sea Plantain (*Plantago maritima*), Laxflowered Sea-lavender (*Limonium humile*) and Sea Arrowgrass (*Triglochin maritima*). Some shallow bay water is included in the site. Cork Harbour is adjacent to a major urban centre and a major industrial centre. Rostellan lake is a small brackish lake that is used by swans throughout the winter. The site also includes some marginal wet grassland areas used by feeding and roosting birds.

Cork Harbour is an internationally important wetland site, regularly supporting in excess of 20,000 wintering waterfowl, for which it is amongst the top five sites in the country. The five-year average annual core count for the entire harbour complex was 34,661 for the period 1996/97-2000/01. Of particular note is that the site supports an internationally important population of Redshank (1,614) – all figures given are average winter means for the 5 winters 1995/96-1999/00. A further 15 species have populations of national importance, as follows: Great Crested Grebe (218), Cormorant (620), Shelduck (1,426), Wigeon (1,750), Gadwall (15), Teal (807), Pintail (84), Shoveler (135), Red-breasted Merganser (90), Oystercatcher (791), Lapwing (3,614), Dunlin (4,936), Black-tailed Godwit (412), Curlew (1,345) and Greenshank (36). The Shelduck population is the largest in the country (9.6% of national total), while those of Shoveler (4.5% of total) and Pintail (4.2% of total) are also very substantial. The site has regionally or locally important populations of a range of other species, including Whooper Swan (10), Pochard (145), Golden Plover (805), Grey Plover (66) and Turnstone (99). Other species using the site include Bat-tailed Godwit (45), Mallard (456), Tufted Duck (97), Goldeneye (15), Coot (77), Mute Swan (39), Ringed Plover (51), Knot (31), Little Grebe (68) and Grey Heron (47). Cork Harbour is an important site for gulls in winter and autumn, especially

Minane Bridge – Reg 24 Response

Common Gull (2,630) and Lesser Black-backed Gull (261); Black-headed Gull (948) also occurs.

A range of passage waders occur regularly in autumn, including Ruff (5-10), Spotted Redshank (1-5) and Green Sandpiper (1-5). Numbers vary between years and usually a few of each of these species over-winter.

The wintering birds in Cork Harbour have been monitored since the 1970s and are counted annually as part of the I-WeBS scheme.

Cork Harbour has a nationally important breeding colony of Common Tern (3-year mean of 69 pairs for the period 1998-2000, with a maximum of 102 pairs in 1995). The birds have nested in Cork Harbour since about 1970, and since 1983 on various artificial structures, notably derelict steel barges and the roof of a Martello Tower. The birds are monitored annually and the chicks are ringed.

Extensive areas of estuarine habitat have been reclaimed since about the 1950s for industrial, port-related and road projects, and further reclamation remains a threat. As Cork Harbour is adjacent to a major urban centre and a major industrial centre, water quality is variable, with the estuary of the River Lee and parts of the Inner Harbour being somewhat eutrophic. However, the polluted conditions may not be having significant impacts on the bird populations. Oil pollution from shipping in Cork Harbour is a general threat. Recreational activities are high in some areas of the harbour, including jet skiing which causes disturbance to roosting birds.

Cork Harbour has is of major ornithological significance, being of international importance both for the total numbers of wintering birds (i.e. > 20,000) and also for its population of Redshank. In addition, there are at least 15 wintering species that have populations of national importance, as well as a nationally important breeding colony of Common Tern. Several of the species which occur regularly are listed on Annex I of the E.U. Birds Directive, i.e. Whooper Swan, Golden Plover, Bar-tailed Godwit, Ruff and Common Tern. The site provides both feeding and roosting sites for the various bird species that use it.

APPENDIX IV

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Cork County Council, November 2010, Carrigaline Electoral Area Local Area Plan Review – Summary of Extracts

Introduction

Minane Bridge Marsh **pNHA 1966** is located to the south west of Minane Bridge village. The area is listed for its unusual vegetation type which throughout much of the country has been drained. In November 2010 Cork County Council published the Carrigaline Electoral Area Local Area Plan Review. Within this review Cork County Council recognise that ‘the village of Minane Bridge adjoins this environmental designation (the proposed Natural Heritage Area and)....any further expansion westwards will impact on the intactness of the designation’. Within the Local Area Plan Review (LAP Review) Cork County Council outlined the methodology behind carrying out various environmental studies while also underlining their commitments to environmental protection. The following are excerpts from the Cork County Council’s Carrigaline Electoral Area Local Area Plan Review, which relate to the Minane Bridge Agglomeration:

Ecological Networks

It is the intention of CCC to map areas of high biodiversity value and corridors. The ecological network approach promotes management of linkages between areas of high biodiversity value, between areas of high and low biodiversity value, between areas used by species for different functions and between local populations of different species. Corridors and linking areas can support migration, dispersal and daily movements. This process has begun with the Habitat Mapping programmes completed in Blarney and Carrigaline and recently begun in Middleton. The objectives of the Carrigaline Electoral District Habitat Survey and Mapping project are

- To carry out a survey of habitats within the Carrigaline Electoral district (ED);
- To map semi-natural habitats identified to level 111 of Fossitt (2000) classification scheme;
- To survey, map and provide supplementary information relating to all habitat listed on Annex 1 of the European union Habitats Directive 992/43/EEC) that occur within the survey area:
- To survey, map and provide supplementary information relating to sites of local biodiversity value and ecological corridors with the survey area;
- To provide a GIS database of habitat mapping and other data.

Many areas of local biodiversity value correspond to sites already designated by the Department of the Environment, Heritage and local Government as Special areas of Conservation (SACs), special protection areas for birds (SPAs) or proposed natural heritage areas (pNHAs). Ecological corridors linking high biodiversity areas were also identified. The conservation value and threats to areas of local biodiversity value were assessed in greater detail. Management recommendations were made to maintain or enhance the conservation value of areas of local biodiversity value. As most of the lands identified in the habitat survey database are in private ownership, achieving ecologically beneficial management will in many cases require a cooperative engagement with landowners.

Issues

Impacts on protected areas, European (e.g. Special areas of Conservation (SACs), Special Protection Areas (SPAs), Ramsar sites) and Nationally Designated Sites (e.g. Natural Heritage Areas (NHAs));

- Impacts on flora and fauna including protected species
- Impacts on sensitive habitats outside protected areas;
- Protecting and enhancing biodiversity at a regional level;
- Potential for habitat loss and fragmentation

Features of geological/ geomorphologic interest

To date sites of geological interest have not been comprehensively covered by the existing nature conservation designations. This is currently being addressed by the Department of Environment Heritage and Local Government and the Geological Survey of Ireland who are drawing up a list of sites of geological interest that will be proposed as Natural Heritage Areas. The 2009 Cork County Development Plan identifies areas of geological interest in the county.

Site	Geological Interest	Location
Fountainstown Creek to Ringabella Beach	Lower Carboniferous	Ringabella Tn, Minane Bridge

Potential Pressures on Water Quality

The principal suspected causes of less than satisfactory water in the state are discharges, principally of nutrients, from agricultural activities and from municipal wastewater treatment works. Industrial discharges, wastewater from unsewered properties and discharges from several other activities have also been identified as contributing. Action should concentrate in the first instance on these issues which pose the greatest threat to the water environment, but it is also important to address other possible sources of water pollution and impact, including issues such as water abstraction and physical modification and issues specific to the RBD.

The RBD Plans identify a programme of measures to protect and restore water status by addressing the main pressures (that is sources of pollution or status impact) in the district. Many of the measures are already provided for in national legislation and are being implemented. These include, for example, the Urban Waste Water Treatment Regulations 2001 to 2010 and the Good Agricultural Practice for the Protection of Waters Regulations of 2009. Other measures have been recently introduced (for example new Bathing Water Regulations, 2008) or are under preparation (for example proposed authorisation regulations for abstractions and physical modifications). The key measures include:

- Control of urban wastewater discharges;
- Control of unsewered waste water discharges;
- Control of agricultural sources of pollution;
- Water pricing policy;

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- Sub-basin management plans and programmes of measures for the purpose of achieving environmental water quality objectives for Natura 2000 sites designated for the protection of Freshwater Pearl Mussel populations;
- Pollution reduction programmes for the purpose of achieving water quality standards for designated shellfish waters; and
- Control of environmental impacts from forestry.

Mapping of Environmental Sensitivities

Introduction

The following section explains how cumulative environmental sensitivity was identified and mapped. A composite map for the electoral area has been produced based on the environmental sensitivity data. Environmental sensitivities have been categorised in a range from robust (green) to vulnerable (yellow) to highly vulnerable (orange, red and dark red). It should be recognised that the impacts of cumulative developments causes a slow but measurable deterioration of environmental resources.

Methodology

This aim of the cumulative environmental sensitivity assessment and the resulting map is to present the sensitivities within the electoral area from a purely environmental point of view. The purpose in essence is to highlight highly vulnerable lands within the electoral area where proposed developments or small developments on an incremental scale could have significant environmental effects which would lead to conflict between development and the environment. However, the assessment has also identified environmentally robust areas where it is considered that the environmental capacity is greater. Vulnerable areas have also been identified and this categorisation lies between the above two. It is important to note that there may be individual environmental issues in lands that are designated as vulnerable or robust. Thus information provided in the baseline environment section of this Environmental Report should be examined to determine these issues as the baseline environment identifies and explores localised environment issues within these areas in more detail.

The environmental sensitivity assessment of this electoral area was provided through a GIS based evaluation of environmental sensitivities involving a number of analytical maps, which are weighted and overlapped to produce a combined Environmental Sensitivity Map (synthesis map) for the electoral area. The combined map indicates the range of environmental sensitivities in the electoral area and rates vulnerability from robust to highly vulnerable. For the purposes of the assessment of environmental sensitivities, 3 categories were identified i.e. robust (green) to vulnerable (yellow) to highly vulnerable (orange and red). The darker the green the more robust the area is and the darker the red means that area is more vulnerable. For the assessment of environmental sensitivity, indicators were classified into 8 groups as follows:

- Biodiversity
- Population and Human Health
- Soil and Geology

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- Water Resources
- Air and Climate
- Cultural Heritage
- Landscape
- Material Assets

Each of the above indicators was then divided into sub-indicators e.g. biodiversity is subdivided into SAC's, SPA's, NHA's and pNHA's.. For the purposes of the assessment of environmental sensitivity, indicators and their sub-indicators were allocated a certain weighting depending on their environmental importance. **Figure 6.1** (Cumulative Assessment Indicators - Weighting) presents the weighting allocated to each indicator. The sum of the weighting of all 8 indicators is equal to one and the sum of all sub indicators under each of the individual indicators is also equal to one.

Figure 6.1. Cumulative Assessment Indicators - Weighting

- BIODIVERSITY 21.97
- POPULATION & HUMAN HEALTH 37.62
- SOIL & GEOLOGY 8.1
- WATER RESOURCES 11.81
- AIR & CLIMATE 11.81
- CULTURAL HERITAGE 2.55
- LANDSCAPE 1.64
- MATERIAL ASSETS 4.5

It is clear from the figure above that Population and Human Health has got a heavy weighting as two of the sub indicators that were considered within this indicator were the availability of a municipal wastewater treatment plant and the availability of a public drinking water supply. Thus if both criteria were met then it is likely that the area in question will be more robust while areas do not have either will be more environmentally vulnerable. Biodiversity also gets a high rating due to the significance of Natura 2000 sites which are important at a European level.

The next figure (Figure 6.2) shows the 8 environmental indicators and sub indicators. Colour coding indicates the type of sub indicator i.e. protected areas under the WFD, performance indicators (e.g. achieving objectives under the River Basin District Management Plans).

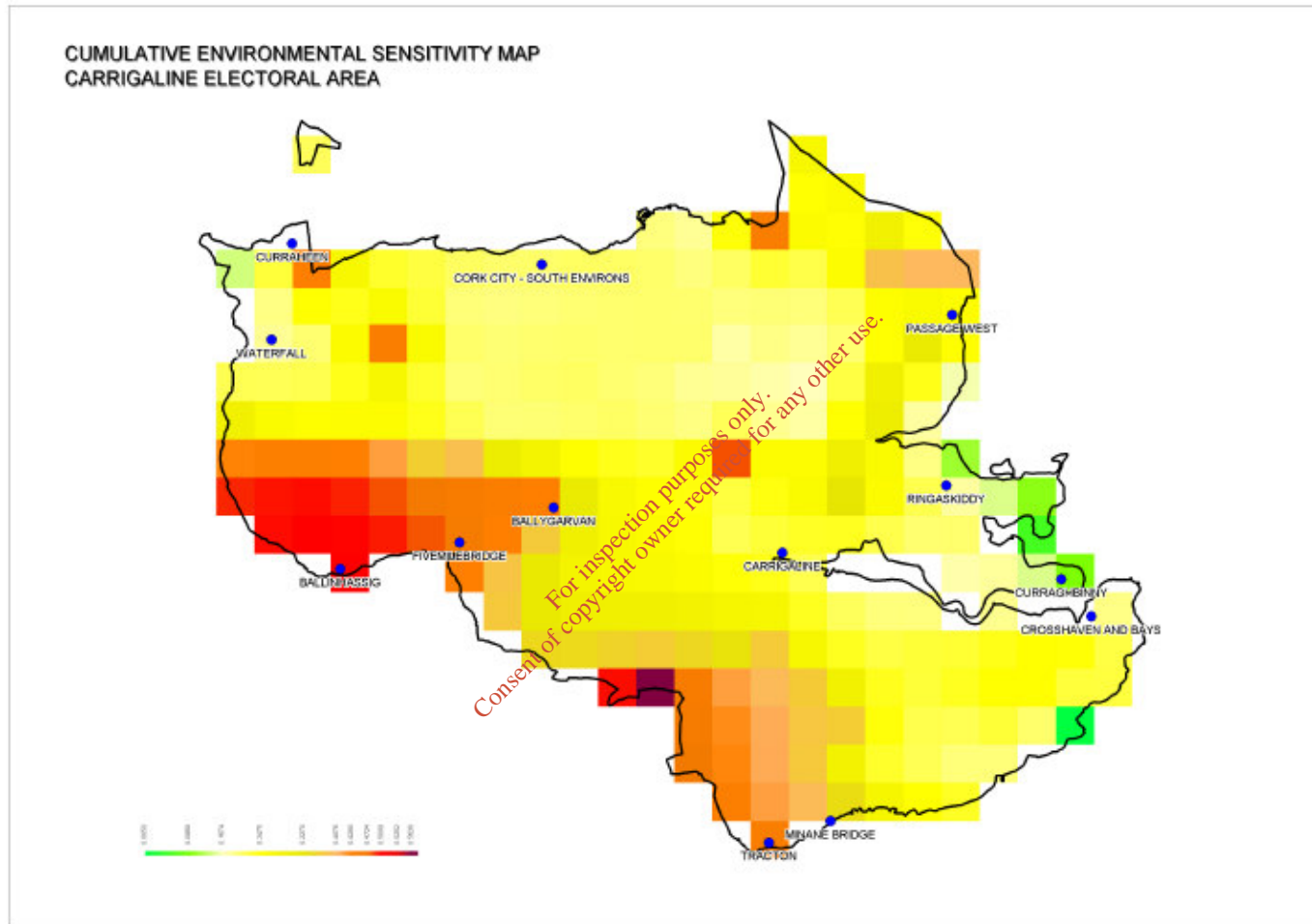
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Fig 6.2

BIODIVERSITY	POPULATION AND HUMAN HEALTH	SOIL AND GEOLOGY	WATER RESOURCES	AIR AND CLIMATE	CULTURAL HERITAGE	LANDSCAPE	MATERIAL ASSETS
SAC	Population growth	Soil Productivity	Surface and groundwater water ecological status	Air quality	Gaeltacht areas	Landscape character assessment	Quarries density
SPA	Public water supply availability		Bathing water	Public Transport	Protected structures	Scenic Landscapes	
NHA	Public Wastewater availability		Overall surface water objectives				
pNHA	Drinking water		Overall groundwater objectives				
Freshwater Pearl mussel							
Nutrient sensitive areas							
Shellfish waters							

	protected areas
	driving force indicator
	pressure indicators
	state indicator
	performance indicators

Map 6.6 presents the results of the assessment and is the Cumulative Environmental Sensitivity Map for the electoral area. It must be noted that this map represents the combining and overlapping of environmental receptors in the electoral area and thus will not highlight individual environmental issues within individual settlements. For example, it is clear from an examination of **Map 6.6** that the area around the main towns are generally regarded as less sensitive as these settlements have municipal wastewater treatment and a public water supply. However **Map 6.6** does not measure the performance or capacity of the wastewater treatment or quality of the drinking water in these settlements and these must be assessed separately using data from the environmental baseline. Overall this environmental sensitivity assessment highlights the need to make the best use of lands within the electoral area from an environmental perspective. However, in order to achieve this, areas of conflict within the electoral areas highly vulnerable lands must be determined. For the purposes of the LAP Environmental Report it was assumed that development pressure areas are the actual settlements within the electoral areas. Thus it is assumed that conflict will occur where settlements and highly vulnerable lands overlap. As stated previously, the individual environmental issues for the electoral area must also be taken into consideration as the environmental sensitivity map is only an assessment on a broad cumulative scale.



Map 6.6: Cumulative Environmental Sensitivity Map

Conclusion

Cork County Council have committed in the most recent Local Area Plan Review (November 2010) to identifying, assessing and safeguarding the environment across a range of areas such as biodiversity, material assets, water resources, air and climate etc. Cork County Council are actively engaging in carrying out environmental reviews across the County, with studies already beginning in the Carrigaline Electoral Area. The results of these studies are not yet known but will form the basis of future development plans with environmental issues being a primary concern.

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