

Habitats Directive Assessment (Screening Report) in respect of

Application by Cork County Council to the EPA

for Wastewater Discharge License

for Ballygarvan's WWTP.

July, 2012

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## 1 Introduction

1.1 Ballygarvan is located approximately 10 kilometres south of Cork City, in the Owenabue Valley. In the overall strategy of the Local Area Plan, Ballygarvan is designated as a village within the Metropolitan Cork. The village is surrounded by the Metropolitan Green Belt, where it is an objective to preserve the largely undeveloped nature of the lands and to reserve lands generally for agriculture, open space or recreation uses.

The plant at Ballygarvan is an Activated Sludge Treatment Plant. Influent initially gravitates into an underground inlet sump. From the inlet sump the effluent is pumped through an automatic screen to an Anoxic Tank which is fitted with a submersible mixer that operates on a continuous basis. The effluent then flows into two aeration tanks for further treatment via flexible membrane fine bubble diffusers. Settlement zones in the treatment tanks have a surface area of approx 9m<sup>2</sup> each. Ferric dosing to the aeration tanks is the method used for the removal of phosphorus. The effluent then passes through automatic sand filtration for tertiary treatment. The final effluent is discharged to the Owenboy River at a point approx 7km upstream of the Owenboy Estuary which is part of the Cork Harbour SPA. The Owenboy River first flows into the Cork Harbour Special Protection Area at Owenboy Estuary before entering the main harbour at Crosshaven.

1.2 The plant is located approx. 7km upstream of the Owenboy Estuary which is part of the Cork Harbour Special Protection Area and which is designated under the **EU Birds Directive (79/409/EEC)** as transposed into Irish Law under the European Union (Natural Habitats) Regulations SI 94/1997. As this is the case, and in accordance with requirements under this Directive, the potential impacts of proposed developments that have the potential to impact on Special Protection Areas must be assessed. The procedure to do this is called a **Habitats Directive Assessment**. The purpose of such an assessment is to identify whether there may be potential for elements of the project to have a significant impact on nature conservation sites within its impact zone, and if so, to predict the potential for such impacts to affect the overall integrity of such nature conservation sites. The European Union has provided guidance as to how to make a Habitats Directive Assessment which identifies four main stages in the process as follows:

**Stage One: Screening**

*The process which identifies the likely impacts upon a Natura 2000 site of a project or plan, wither alone or in combination with other projects or plans, and considers whether these impacts are likely to be significant.*

**Stage Two: Appropriate assessment**

*The consideration of the impact on the integrity of the Natura 2000 site of the 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, an assessment of the potential mitigation of those impacts.*

**Stage Three: Assessment of alternative solutions**

*The process which examines alternative ways of achieving the objectives of the project or plan that avoid adverse impacts on the integrity of the Natura 2000 site.*

Stage Four: Assessment where no alternative solutions exist and where adverse impacts remain.

*An assessment of 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.*

- 1.3 This document brings together all of the information necessary to make determination as to whether there are likely to be significant impacts arising from the discharge from Ballygarvan WWTP on the adjacent Cork Harbour Special Protection Area and represents the first stage of this process (Screening).

Step 1:

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

Step 2:

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

Step 3:

*Determine whether the plan needs to be screened for potential impacts on Natura 2000 sites;*

Step 4:

*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;*

Step 5:

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

- 1.4 The 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.

## 2 Appropriate Assessment Screening Matrix

2.1 Description of project	
Location	Ballygarvan WWTP, Ballygarvan, County Cork.
Description of the key components of the project	The plant at Ballygarvan is an Activated Sludge Treatment Plant. Influent initially gravitates into an underground inlet sump. From the inlet sump the effluent is pumped through an automatic screen to an Anoxic Tank which is fitted with a submersible mixer that operates on a continuous basis. The effluent then flows into two aeration tanks for further treatment via flexible membrane fine bubble diffusers. Settlement zones in the treatment tanks have a surface area of approx 9m <sup>2</sup> each. Ferric dosing to the aeration tanks is the method used for the removal of phosphorus. The effluent then passes through automatic sand filtration for tertiary treatment. The final effluent is discharged to the Owenboy River at a point approx 7km upstream of the Owenboy Estuary which is part of the Cork Harbour SPA. The Owenboy River first flows into the Cork Harbour Special Protection Area at Owenboy Estuary before entering the main harbour at Crosshaven.
Distance from designated sites in potential impact zone*	Approx. 7 km distance from the Discharge point to the Owenboy Estuary which is part of the Cork Harbour SPA.

2.2 Description of the Natura 2000 sites within the potential impact zone	
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>Ballygarvan WWTP discharges to the Owenboy River at a point approx 7km upstream of the Owenboy Estuary which is part of the Cork Harbour SPA.</p>

\* 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.



	<p>The Owenboy River flows into the Owenboy Estuary which is a part of the Cork Harbour Special Protection Area at Carrigaline before entering the main harbour at Crosshaven. At these locations the main habitats of importance are intertidal mudflats.</p> <p>More information on the Cork Harbour SPA is contained in appendix 1 of this document. Bird count data is provided in appendix 3.</p>
Qualifying Interests of Cork Harbour SPA.	<p>Internationally important numbers of Black-tailed Godwit; Nationally important numbers of Greenshank and Redshank; <i>Source - National Parks and Wildlife Service</i></p> <p>See appendix 3 for bird count data for Cork Harbour 1998/2000 - 2007/2008.</p>
Other Notable Features of Cork Harbour SPA	<p>Shelduck, Grey Heron, wetland and water birds. <i>Source - National Parks and Wildlife Service</i></p> <p>See appendix 3 for bird count data for Cork Harbour 1998/2000 - 2007/2008.</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"> <li>o the population of the species as a viable component of the site;</li> <li>o the distribution and extent of habitats supporting the species;</li> <li>o the structure, function and supporting processes of habitats supporting the species;</li> </ul> <p><i>Source - National Parks and Wildlife Service</i></p>

2.3 Assessment Criteria	
Describe the individual elements of the project (either alone or in combination with other plans or projects) likely to give rise to impacts on the Natura 2000 site.	<p><b>Discharge from Ballygarvan WWTP:</b> The treated effluent discharges from the WWTP to the Owenboy River which flows into the Owenboy Estuary which is part of the Cork Harbour SPA and is approx 7 km from the point of discharge.</p> <p>At present the plant is in commissioning stage and it is predicted that the discharge will consist of high quality treated effluent from the WWTP.</p> <p><b>Other Significant Discharges to the River Lee between the Owenboy Estuary and Halfway WWTP:</b></p>

	<p>Treated Wastewater from Ballinhassig discharges to the Owenboy River approx 12Km upstream of the Owenboy Estuary.</p> <p>Treated Wastewater from Five Mile Bridge discharges to the Owenboy River approx 10Km upstream of the Owenboy Estuary.</p> <p>Treated Wastewater from Halfway discharges to the Owenboy River approx 16Km upstream of the Owenboy Estuary.</p>
<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"> <li>○ Size and scale</li> <li>○ Land-take</li> <li>○ Distance from the Natura 2000 site or key features of the site:</li> <li>○ Resource requirements (water abstraction etc.)</li> <li>○ Emissions (disposal to land, water or air)</li> <li>○ Excavation Requirements</li> <li>○ Transportation Requirements</li> <li>○ Duration of construction, operation, decommissioning</li> <li>○ Other.</li> </ul>	<p>Discharges could give rise to elevated nutrients entering the Owenboy Estuary. 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>However the potential for the WWTP discharge to result in elevated nutrients within the Estuary is reduced by the following factors:</p> <ol style="list-style-type: none"> <li>1. The plant is currently in commissioning stage and it is predicted that the quality of the effluent will be of a good standard.</li> <li>2. From the monitoring data available there is no deterioration in water quality in the rivers downstream of the discharge.</li> <li>3. The discharge from the plant is approx 7Km upstream from the Owenboy Estuary which is a part of the Cork Harbour SPA and where the Owenboy River meets the Estuary there is a large and well exchanged body of water with unlimited dilution capacity.</li> </ol> <p><b>1 The standard of treated effluent is high.</b>  Ballygarvan WWTP is currently being operated by a private contractor (EPS) under a short term Operation and Maintenance Contract on behalf of Cork County Council. The plant is fully automated with permanent phone links to the operator if a problem should arise. The site is visited at least once per week for inspection and maintenance.</p> <p><b>Note 1:</b> See appendix 2 for effluent quality results for 2012.</p> <p><b>2 No deterioration in water quality in the Rivers downstream.</b>  According to the upstream and downstream monitoring carried out there is no significant deterioration in water quality associated with the Ballygarvan WWTP discharge.</p> <p><b>Note 1:</b> See appendix 2 for upstream and downstream monitoring data.</p> <p>It should also be noted that at Ballea Bridge a point</p>

	<p>downstream from the discharge the Q value is 3-4 (Slightly Polluted)</p> <p><b>3 Treated effluent discharges into Harbour body</b> The treated effluent enters the Cork Harbour SPA at Owenboy Estuary which is a large and well exchanged body of water with unlimited dilution capacity. The endless dilution capability of the Estuary means that the discharge is properly diluted once within the SPA.</p> <p>The point of discharge is also approx 7km upstream from the Owenboy Estuary.</p>
<p>Describe any likely changes to the site arising as a result of:</p> <ul style="list-style-type: none"> <li>○ Reduction in habitat area</li> <li>○ Disturbance to key species</li> <li>○ Habitat or species fragmentation</li> <li>○ Reduction in species density</li> <li>○ Changes in key indicators of conservation value (water quality etc)</li> <li>○ Climate Change</li> </ul>	<p><b>Reduction in habitat area:</b> Effluent is discharging to a large well-exchanged body of water where dilution and dispersion potential is high. No significant impacts are evident or predicted on habitats within the Estuary arising from the operation of this facility.</p> <p><b>Disturbance to key species:</b> The operation of the WWTP does not cause any disturbance to species within the SPA.</p> <p><b>Habitat or species fragmentation:</b> No habitat fragmentation has been caused as a result of the operation of this facility.</p> <p><b>Reduction in species density:</b> Effluent is discharging to a large well-exchanged body of water where dilution and dispersion potential is high. No significant impacts are evident or predicted on species for which the SPA is designated.</p> <p><b>Changes in key indicators of conservation value e.g. water quality:</b> Monitoring of the rivers water quality indicates that there is no significant deterioration in water quality associated with the Ballygarvan discharge. See appendix 2 for upstream and downstream monitoring data.</p> <p>It should also be noted that at Ballea Bridge a point downstream from the discharge the Q value is 3-4 (Slightly Polluted)</p>
<p>Describe any likely impacts on the Natura 2000 site as a whole in terms of:</p> <ul style="list-style-type: none"> <li>○ Interference with the key relationships that define the structure of the site</li> <li>○ Interference with key relationships that define the function of the site</li> </ul>	<p><b>Interference with the key relationships that define the structure of the site:</b> The structure of the SPA is not impacted by the operation of this facility.</p> <p><b>Interference with key relationships that define the function of the site:</b> The function of the SPA is not impacted by the operation of this facility.</p>
<p>Describe from the above</p>	<p>No significant impacts are predicted.</p>

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.	
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#### 4. Finding of No Significant Effects Report Matrix Cork Harbour Special Protection Area

Name of project or plan	Ballygarvan WWTP.
Name and location of Natura 2000 site	Cork Harbour Special Protection Area
Description of the project or plan	The plant at Ballygarvan is an Activated Sludge Treatment Plant. Influent initially gravitates into an underground inlet sump. From the inlet sump the effluent is pumped through an automatic screen to an Anoxic Tank which is fitted with a submersible mixer that operates on a continuous basis. The effluent then flows into two aeration tanks for further treatment via flexible membrane fine bubble diffusers. Settlement zones in the treatment tanks have a surface area of approx 9m <sup>2</sup> each. Ferric dosing to the aeration tanks is the method used for the removal of phosphorus. The effluent then passes through automatic sand filtration for tertiary treatment. The final effluent is discharged to the Owenboy River at a point approx 7km upstream of the Owenboy Estuary which is part of the Cork Harbour SPA. The Owenboy River first flows into the Cork Harbour Special Protection Area at Owenboy Estuary before entering the main harbour at Crosshaven.
Is the project or plan directly connected with or necessary to the management of the site (provide details)?	No
<b>The assessment of significance of effects</b>	
Describe how the project or plan (alone or in combination) is likely to affect the Natura 2000 Site.	<p>Discharges from the Ballygarvan WWTP either alone or in combination with discharges from other sources could give rise to elevated nutrients entering the Owenboy Estuary. 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>It is considered that the discharge from Ballygarvan WWTP is not having a significant impact because of its distance from Cork Harbour SPA and because of the large dilution capacity of the Owenboy Estuary.</p>

<p>Explain why these effects are not considered significant.</p>	<p>Treated effluent discharges approx 7Km upstream of the SPA and the river discharges to a large well-exchanged body of water where dilution and dispersion potential is high. No significant impacts are evident or predicted on species for which the SPA is designated.</p>
<p>List of agencies consulted: provide contact name and telephone or email address</p>	<p>National Parks and Wildlife Service -  Natureconservation@environ.ie,  cyril.saich@environ.ie</p> <p>Birdwatch Ireland - Data request.</p>
<p>Response to consultation</p>	<p>Draft Conservation Objectives and a copy of Intention to Designate Cork Harbour as SPA was received previously from the NPWS.</p> <p>Bird count data was received previously from Birdwatch Ireland.</p>

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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
Tim O'Farrell, Madeleine Healy and Sharon Casey, Cork County Council	IWebs Bird Data supplied by BirdWatch Ireland; Water Quality Monitoring Data CCC;	Desktop review of cited data.	This report.

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# APPENDIX 1

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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, Owenboy and Owennacurra. The SPA site comprises most of the main intertidal areas of Cork Harbour, including all of the North Channel, the Douglas River Estuary, inner Lough Mahon, Monkstown Creek, Lough Beg, the Owenboy River Estuary, Whitegate Bay and the Rostellan and Poul nabibe inlets.

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.

The site is a Special Protection Area (SPA) under the E.U. Birds Directive, of special conservation interest for the following species: Little Grebe, Great Crested Grebe, Cormorant, Grey Heron, Shelduck, Wigeon, Teal, Pintail, Shoveler, Red-breasted Merganser, Oystercatcher, Golden Plover, Grey Plover, Lapwing, Dunlin, Blacktailed Godwit, Bar-tailed Godwit, Curlew, Redshank, Black-headed Gull, Common Gull, Lesser Black-backed Gull and Common Tern. The site is also of special conservation interest for holding an assemblage of over 20,000 wintering waterbirds. The E.U. Birds Directive pays particular attention to wetlands and, as these form part of this SPA, the site and its associated waterbirds are of special conservation interest for Wetland & Waterbirds.

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 two-year mean of summed annual peaks for the entire harbour complex was 55,401 for the period 1995/96 and 1996/97. Of particular note is that the site supports internationally important populations of Black-tailed Godwit (905) and Redshank (1,782) - all figures given are average winter means for the two winters 1995/96 and 1996/97. At least 18 other species have populations of national importance, as follows: Little Grebe (51), Great Crested Grebe (204), Cormorant (705), Grey Heron (63), Shelduck (2,093), Wigeon (1,852), Teal (922), Pintail (66), Shoveler (57), Red-breasted Merganser (88), Oystercatcher (1,404), Golden Plover (3,653), Grey Plover (84), Lapwing (7,688), Dunlin (10,373), Bartailed Godwit (417), Curlew (1,325) and Greenshank (26). The Shelduck

population is the largest in the country (over 10% of national total). The site has regionally or locally important populations of a range of other species, including Whooper Swan (10), Pochard (145) and Turnstone (79). Other species using the site include Gadwall (13), Mallard (456), Tufted Duck (113), Goldeneye (31), Coot (53), Mute Swan (38), Ringed Plover (34) and Knot (38). Cork Harbour is a nationally important site for gulls in winter and autumn, especially Black-headed Gull (4,704), Common Gull (3,180) and Lesser Black-backed Gull (1,440).

A range of passage waders occurs regularly in autumn, including such species as 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 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 populations of Black-tailed Godwit and Redshank. In addition, there are at least 18 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 2

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## Ballygarvan WWDL licence application

<b>Ballygarvan WWTP Discharge Outlet</b>				Mean value	UWW/Reg Limits
Sample	Effluent	Effluent	Effluent		
Sample Code	GW281	GW382	GW526		
Sample Date	18/04/2012	17/05/2012	27/06/2012		
Sample Type	Grab	Grab	Grab		
Flow: M <sup>3</sup> /Day	*	*	*		
BOD mg/L	93	84	60	79.0	25
COD mg/L	305	245	236	272	125
Suspended Solids mg/L	153	88	114	118	35
O-PO <sub>4</sub> -P mg/l	*	5.43	*	*	
TP-P mg/l	*	7.6	*	*	
Ammonia-N mg/l	*	42.7	*	*	
TN-N mg/l	*	47.23	*	*	
Nitrate-N mg/l	*	<0.50	*	*	
TON mg/l	*	<0.50	*	*	
Nitrite-N mg/l	*	<0.1	*	*	
Sulphate mg/l	*	76.7	*	*	
Chloride mg/l	*	53	*	*	

exceeds Urban Wastewater Regulations Limits  
half of LOD for statistical purposes

<b>Ballygarvan River U/S</b>	
Sample	River
Sample Code	GW368
Sample Date	17/05/2012
Sample Type	Grab
pH	7.4
BOD mg/L	1.2
Suspended Solids mg/L	<2.5
TP-P mg/l	<0.05
O-PO <sub>4</sub> -P mg/l	0.005
Ammonia-N mg/l	0.014
TN-N mg/l	4.93
Nitrate-N mg/l	4.9
TON mg/l	4.904
Nitrite-N mg/l	0.004
Conductivity at 20°C uS/cm	207
Sulphate mg/l	<30
Chloride mg/l	<25
DO mg/l	11.37
Temperature °C	12.2

<b>Ballygarvan River D/S</b>	
Sample	River
Sample Code	GW367
Sample Date	17/05/2012
Sample Type	Grab
pH	7.5
BOD mg/L	<1.0
Suspended Solids mg/L	<2.5
TP-P mg/l	<0.05
O-PO4-P mg/l	0.008
Ammonia-N mg/l	0.036
TN-N mg/l	4.91
Nitrate-N mg/l	4.68
TON mg/l	4.684
Nitrite-N mg/l	0.004
Sulphate mg/l	<30
Chloride mg/l	<25
Conductivity at 20°C uS/cm	209
DO mg/l	11.3
Temperature °C	11.4

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# APPENDIX 3

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Site code: IE0004030 NATURA 2000 Data Form

## NATURA 2000

### STANDARD DATA FORM

FOR SPECIAL PROTECTION AREAS (SPA)  
FOR SITES ELIGIBLE FOR IDENTIFICATION AS SITES OF  
COMMUNITY IMPORTANCE (SCI)  
AND FOR SPECIAL AREAS OF CONSERVATION (SAC)

1

Site code: IE0004030 NATURA 2000 Data Form

### 1. SITE IDENTIFICATION

*1.5. RELATION WITH OTHER NATURA 2000 SITES:*

*1.1. TYPE 1.2. SITE CODE 1.3. COMPILATION DATE 1.4. UPDATE*

J IE0004030 200311

NATURA 2000 SITE CODES

IE0001058

*1.6. RESPONDENT(S):*

National Parks & Wildlife Service of the Department of Arts, Heritage, Gaeltacht and the Islands. 51 St. Stephen's Green, Dublin 2, Ireland

*DATE SITE PROPOSED AS ELIGIBLE AS SCI: DATE CONFIRMED AS SCI:*

*DATE SITE CLASSIFIED AS SPA:*

199411

*DATE SITE DESIGNATED AS SAC:*

*1.7. SITE NAME:*

Cork Harbour SPA

*1.8. SITE INDICATION AND DESIGNATION/CLASSIFICATION DATE:*

2

Site code: IE0004030 NATURA 2000 Data Form

*2.1. SITE CENTRE LOCATION*

LONGITUDE LATITUDE

W

W/E (Greenwich)

8 19 0 51 53 0

*2.2. AREA (HA): 2.3. SITE LENGTH (KM):*

2587.25

*2.4. ALTITUDE (M):*

-5

MINIMUM MAXIMUM MEAN

5 -1

### 2. SITE LOCATION

*2.6. BIOGEOGRAPHIC REGION:*

Alpine Atlantic Boreal Continental Macaronesian Mediterranean

NUTS CODE REGION NAME % COVER

*2.5. ADMINISTRATIVE REGION:*

IE025 South-West (IRL) 2

Marine area not covered by a NUTS-region 98

3

Site code: IE0004030 NATURA 2000 Data Form

### 3. ECOLOGICAL INFORMATION

*3.1. HABITAT types present on the site and assessment for them:*

*ANNEX I HABITAT TYPES:*

CODE %COVER REPRESENTATIVITY RELATIVE SURFACE CONSERVATION

STATUS

GLOBAL

ASSESSMENT

4

Site code: IE0004030 NATURA 2000 Data Form

### 3.2. SPECIES

**covered by Article 4 of Directive 79/409/EEC and listed in Annex II of  
Directive 92/43/EEC site assessment for them**

5

Site code: IE0004030 NATURA 2000 Data Form

**3.2.a. BIRDS listed on Annex I of Council directive 79/409/EEC**



**3.2.b. Regularly occurring Migratory Birds not listed on Annex I of Council directive 79/409/EEC**

Population

SITE ASSESSMENT

Resident Migratory

CODE NAME POPULATION

Conservation Isolation

Breed Winter Stage

Pluvialis 805 i

apricaria

A140 C B C

A157 Limosa lapponica 45 i C B C

A038 Cygnus cygnus 10 i C C C

A151 Philomachus pugnax 1-5 i 5-10 i C B C

A193 Sterna hirundo 69 p B B C A

Population

SITE ASSESSMENT

Resident Migratory

CODE NAME POPULATION

Conservation Isolation

Breed Winter Stage

A005 Podiceps cristatus 218 i B A C A

Phalacrocorax 620 i

carbo

A017 B A C A

A048 Tadorna tadorna 1426 i B A C A

A050 Anas penelope 1750 i C A C

A052 Anas crecca 807 i C A C

A054 Anas acuta 84 i B A C A

A056 Anas clypeata 135 i B A C A

A069 Mergus serrator 90 i B A C

Haematopus 791 i

ostralegus

A130 C A C

Pluvialis 66 i

squatarola

A141 C A C

A142 Vanellus vanellus 3614 i C A C

A149 Calidris alpina 4936 i B A C A

A156 Limosa limosa 412 i B A C

A160 Numenius arquata 1345 i B A C

A162 Tringa totanus 1614 i B A C A

A164 Tringa nebularia 36 i C A C

A169 Arenaria interpres 99 i C A C

A179 Larus ridibundus 948 i C A C

A182 Larus canus 2630 i B A C A

A051 Anas strepera 15 i C B C

A053 Anas platyrhynchos 456 i C A C

A059 Aythya ferina 145 i C B C

A061 Aythya fuligula 97 i C B C

A067 Bucephala clangula 15 i C B C

A125 Fulica atra 77 i C B C

6

Site code: IE0004030 NATURA 2000 Data Form

**3.2.c. MAMMALS listed on Annex II of Council directive 92/43/EEC**

**3.2.d. AMPHIBIANS and REPTILES listed on Annex II of Council directive 92/43/EEC**

**3.2.e. FISHES listed on Annex II of Council directive 92/43/EEC**

**3.2.f. INVERTEBRATES listed on Annex II of Council directive 92/43/EEC**

**3.2.g. PLANTS listed on Annex II of Council directive 92/43/EEC**

Charadrius 51 i

hiaticula

A137 C B C

A143 Calidris canutus 31 i C B C

A183 Larus fuscus 261 i B A C A

A161 Tringa erythropus 1-3 i 1-5 i C B C

A165 Tringa ochropus 1-3 i 1-5 i C B C

7

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### 3.3. Other Important Species of Flora and Fauna

(B = Birds, M = Mammals, A = Amphibians, R = Reptiles, F = Fish, I = Invertebrates, P = Plants)

SCIENTIFIC NAME POPULATION MOTIVATION

B M A R F I P

GROUP

B Tachybaptus ruficollis 68 i c

B Ardea cinerea 47 i C

B Cygnus olor 39 i c

8

Site code: IE0004030 NATURA 2000 Data Form

## 4. SITE DESCRIPTION

### 4.1. GENERAL SITE CHARACTER:

#### Habitat classes % cover

Tidal rivers, Estuaries, Mud flats, Sand flats, Lagoons (including saltwork basins)

94

Salt marshes, Salt pastures, Salt steppes 1

Shingle, Sea cliffs, Islets 1

Inland water bodies (Standing water, Running water) 1

Bogs, Marshes, Water fringed vegetation, Fens 1

Humid grassland, Mesophile grassland 1

Other land (including Towns, Villages, Roads, Waste places, Mines,

Industrial sites)

1

Total habitat cover 100 %

#### Other site characteristics

Cork Harbour is a large, sheltered bay system, with several river estuaries - principally those of the Rivers Lee, Douglas, Owenboy and Owenacurra. The site comprises the main intertidal areas of Cork Harbour, including all of the North Channel, the Douglas Estuary, inner Lough Mahon, Monkstown Creek, Lough Beg, the Owenboy Estuary, Whitegate Bay and the Rostellan inlet. Owing to the sheltered conditions, the intertidal flats are often muddy in character. Salt marshes are scattered through the site and these provide high tide roosts for the birds. Otherwise, birds roost on stony shorelines and in some areas fields adjacent to the shore. Some shallow bay water is included in the site. Cork Harbour is adjacent to a major urban centre and a major industrial centre.

### 4.2. QUALITY AND IMPORTANCE:

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. It supports an internationally important population of *Tringa totanus*. A further 15 species have populations of national importance, with particularly notable numbers of *Tadorna tadorna* (9.6% of national total), *Anas clypeata* (4.5% of total), *Anas acuta* (4.2% of total) and *Phalacrocorax carbo* (4.1% of total) occurring. It has regionally important populations of *Pluvialis apricaria* and *Limosa lapponica*. Passage waders are regular, including *Philomachus pugnax* and *Tringa erythropus*. It is an important site for gulls in winter and autumn, especially *Larus canus* and *Larus fuscus*. The site provides both feeding and roosting areas for the waterfowl species. The quality of most of the estuarine habitats is good. The wintering birds have been well-monitored since the 1970s. The site has a breeding colony of *Sterna hirundo* which is of national importance. The colony is monitored annually and the chicks ringed.

### 4.3. VULNERABILITY

There are no serious imminent threats to the wintering birds. Though the intertidal areas receive polluted water, there are no apparent significant impacts on the associated flora and fauna. Oil pollution from shipping in Cork Harbour is a general threat. Aquaculture occurs though it is not known if this has significant impacts on the birds. Recreational activities are high in some areas, including jet skiing which causes disturbance to roosting birds. Extensive areas of estuarine habitat has been reclaimed since about the 1950s for industrial, port-related and road projects, and further reclamation remains a threat.

9

Site code: IE0004030 NATURA 2000 Data Form

### 4.4. SITE DESIGNATION:

#### 4.5. OWNERSHIP

State: Department of Communications, Marine and Natural Resources

Private: multiple

#### 4.6. DOCUMENTATION

Colhoun, K. (2001). I-WeBS Report 1998-99. BirdWatch Ireland, Dublin.

Curtis, T.G.F. and Sheehy Skeffington, M.J. (1998). The salt marshes of Ireland: an inventory and account of their geographical variation. Biology and

Environment, Proceedings of the Royal Irish Academy 98B: 87-104.  
 Hannon, C. (1997). The 1995 All-Ireland Tern Survey. BirdWatch Ireland Conservation Report No. 97/1.  
 Hannon, C., Berrow, S.D. and Newton S.F. (1997). The status and distribution of breeding Sandwich *Sterna sandvicensis*, Roseate *S. dougallii*, Common *S. hirundo*, Arctic *S. paradisaea* and Little Terns *S. albigrons* in Ireland in 1995. Irish Birds 6: 1-22.  
 Hunt, J., Derwin, J., Coveney, J. and Newton, S. (2000). Republic of Ireland. Pp. 365-416 in Heath, M.F. and Evans, M.I. (eds). Important Bird Areas in Europe: Priority Sites for Conservation 1: Northern Europe. Cambridge, UK: BirdLife International (BirdLife Conservation Series No. 8).  
 Hutchinson, C.D. and O'Halloran, J. (1984). The waterfowl of Cork Harbour. Irish Birds 2: 445-456.  
 Irish Wetland Birds Survey (I-WeBS) Database, 1994/95-2000/01. BirdWatch Ireland, Dublin.  
 McGarrigle, M.L., Bowman, J.J., Clabby, K.J., Lucey, J., Cunningham, P., MacCarthaigh, M., Keegan, M., Cantrell, B., Lehane, M., Clenaghan, C. and Toner, P.F. (2002). Water Quality in Ireland 1998-2000. Environmental Protection Agency, Wexford.  
 Merne, O.J. (1989). Important bird areas in the Republic of Ireland. In: Grimmett, R.F.A. and Jones, T.A. (eds). Important Bird Areas in Europe. ICBP Technical Publication No. 9. Cambridge.  
 O'Donoghue, P.D. and O'Halloran, J. (1994). The behaviour of a wintering flock of whooper swans *Cygnus cygnus* at Rostellan Lake, Cork. Biology and Environment, Proceedings of the Royal Irish Academy 94B: 109-118.  
 Sheppard, R. (1993). Ireland's Wetland Wealth. IWC, Dublin.  
 Smiddy, P., O'Halloran, J., Coveney, J.A., Leonard, P.G. and Shorten, M. (1995). Winter waterfowl populations of Cork Harbour: an update. Irish Birds 5: 285-294.  
 Wilson, J., O'Mahony, B. and Smiddy, P. (2000). Common Terns *Sterna hirundo* breeding in Cork Harbour. Irish Birds 6: 597-599.

10

Site code: IE0004030 NATURA 2000 Data Form

## 5. SITE PROTECTION STATUS AND RELATION WITH CORINE BIOTOPES

**5.1. DESIGNATION TYPES at National and Regional level:**

**5.2. RELATION OF THE DESCRIBED SITE WITH OTHER SITES:**

**5.3. RELATION OF THE DESCRIBED SITE WITH CORINE BIOTOPE SITES:**

designated at National or Regional level:

designated at International level:

CODE % COVER

IE05 10

TYPE CODE SITE NAME OVERLAP TYPE % COVER

IE05 Douglas Estuary Wildfowl Sanctuary + 10

CORINE SITE CODE OVERLAP TYPE % COVER

800000079

11

Site code: IE0004030 NATURA 2000 Data Form

## 6. IMPACTS AND ACTIVITIES IN AND AROUND THE SITE

**6.1. GENERAL IMPACTS AND ACTIVITIES AND PROPORTION OF THE SURFACE OF THE SITE AFFECTED**

**6.2. SITE MANAGEMENT AND PLANS**

IMPACTS AND ACTIVITIES WITHIN the site

IMPACTS AND ACTIVITIES AROUND the site

CODE INTENSITY % OF SITE INFLUENCE

200 A B C 1 + 0 -

622 A B C 10 + 0 -

701 A B C 50 + 0 -

210 A B C 5 + 0 -

220 A B C 10 + 0 -

520 A B C 10 + 0 -

621 A B C 20 + 0 -

626 A B C 20 + 0 -

CODE INTENSITY INFLUENCE

400 A B C + 0 -

410 A B C + 0 -

403 A B C + 0 -

120 A B C + 0 -

502 A B C + 0 -

504 A B C + 0 -

**BODY RESPONSIBLE FOR THE SITE MANAGEMENT  
SITE MANAGEMENT AND PLANS**

The National Parks and Wildlife Service is responsible for managing the Douglas Estuary as a Wildfowl Sanctuary.

A Conservation Plan for the management of this site is in preparation.

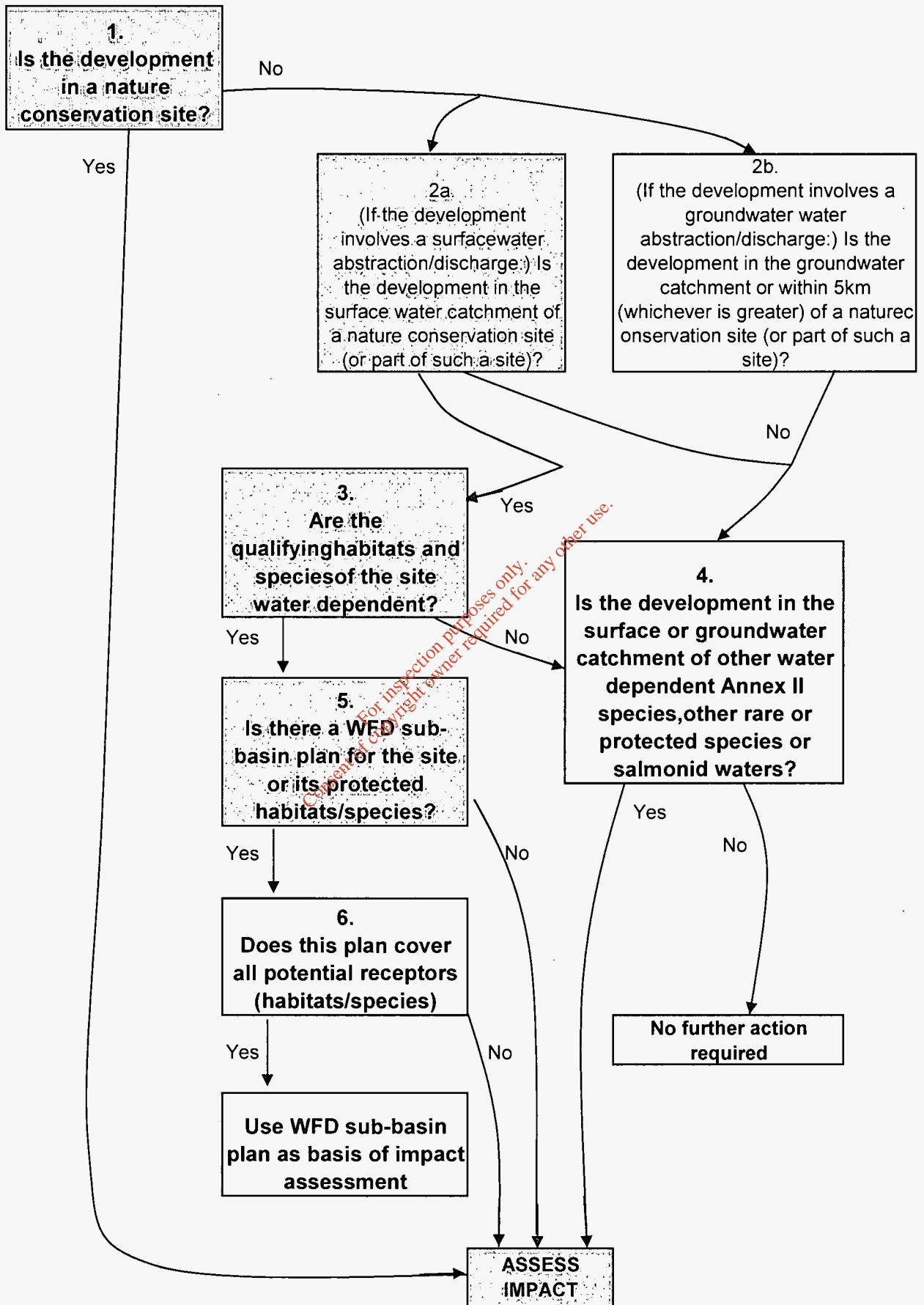
12

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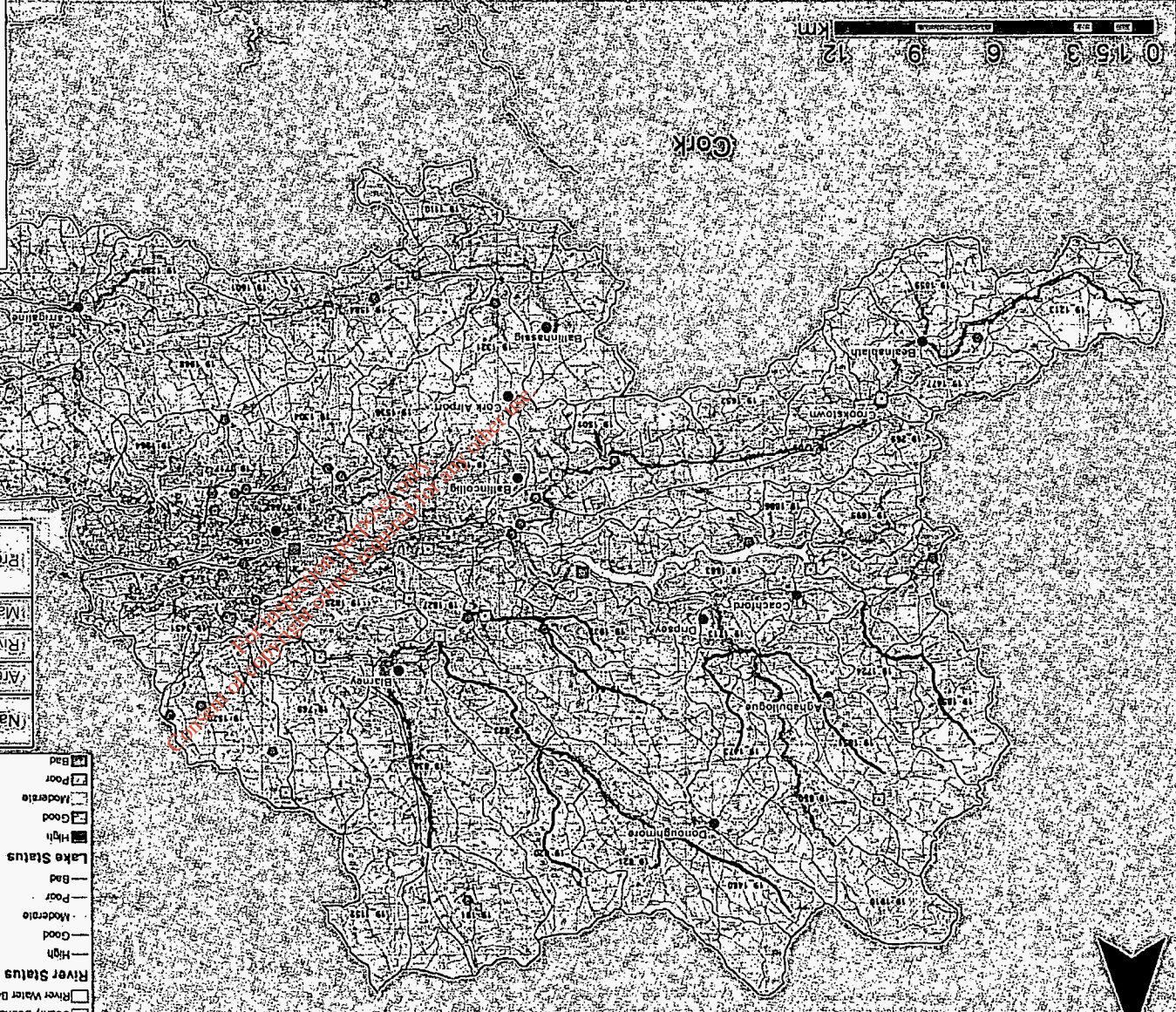
Flow Diagram - Route Highlighted Red & Shaded Grey



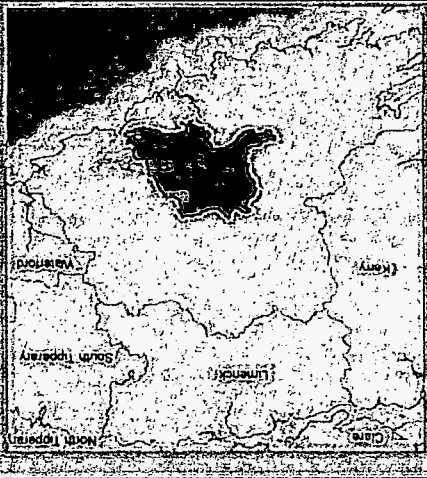
Conclusion: An appropriate assessment is required for Ballygarvan



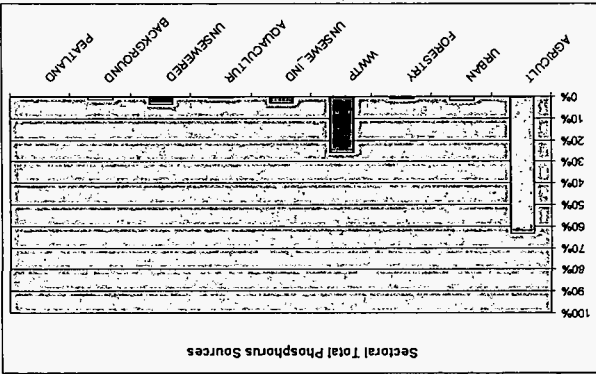
# Lower Lee - Owenboy WMU



- Legend**
- Towns and Villages
  - EPA Licensed Facility (IPPC)
  - Local Authority Licensed Discharge
  - Wastewater Treatment Plants
  - Water Treatment Plants
  - County Boundary
  - River Water Body Boundary
  - High
  - Moderate
  - Poor
  - Bad
  - High
  - Good
  - Moderate
  - Poor
  - Bad



Name	Lower Lee Owenboy Water management Unit
Area	845km <sup>2</sup>
River Basin District	SWRBD
Main Counties	Cork
Projected Areas	2 surface drinking water: Iniscarra Reservoir and Lee River 1 UWWTD - Lower Lee Estuary



Calculated in accordance with OSPAR HARP Guidelines.  
 Not an indication of risk, rather an indication of potential to cause risk.



# Lower Lee Owenboy Water Management Unit Action Plan

STATUS/IMPACTS	
Overall status	There are 43 river water bodies in this WMU - 9 High, 9 Good, 11 Moderate, 14 Poor Status.
Status elements	2 Poor water bodies are dictated by Q Score, and 2 are dictated by Fish Status. 3 moderate water bodies are dictated by Q score and 3 are dictated by Physchem. Both Q and Physchem and Good / High for the good/high status water bodies that have been monitored. Lake status is dictated by macrophytes, chlorophyll and fish.
Possible Impacts - EPA Water Quality	<p><b>AUGHNABOY (CORK) – SW_19_1584</b>            2005 – With deterioration, to slightly polluted condition, recorded at the lowermost location (0300) in August 2005 the overall quality reverted to 1999 status.            2008 – Good ecological quality at the only scheduled sampling location. .            Status of WB 2009: Poor status dictated by Q score (physchem high).</p> <p><b>BLARNEY – SW_19_769</b>            2008 – Good quality recorded in successive surveys - prior to 2005 had been less than satisfactory. .            Status of WB 2009: Moderate status dictated by PHYSCHEM.</p> <p><b>BRIDE (LEE) – SW_19_1213; SW_19_1477; SW_19_1709</b>            2008 – Satisfactory throughout with high ecological quality at three of the sites. Significant improvement was recorded at Crookstown (0610) where high ecological quality was recorded but the hydromorphological condition of the site was only moderate. Some artificial siltation was recorded along right-hand margin of river at the final location (1600) but overall quality was satisfactory. .            SW_19_1213 Status of WB 2009: Good status dictated by Q score.            SW_19_1477 Status of WB 2009: Moderate status dictated by physchem status            SW_19_1709 Status of WB 2009: Good status dictated by Q score.</p> <p><b>SHOURNAGH – SW_19_821; SW_19_823; SW_19_1827</b>            2005 - No change. Continuing mostly satisfactory but again slightly polluted at Tower Bridge            2008 - Satisfactory throughout with high status at two of the locations.            SW_19_821 Status of WB 2009: Good status dictated by Q score.            SW_19_823 Status of WB 2009: High status dictated by Q score.            SW_19_1827 Status of WB 2009: Moderate status dictated by Q score.</p> <p><b>DRIPSEY – SW_19_1910; SW_19_850; SW_19_1713</b>            2001 - Satisfactory apart from uppermost location (0010) where large crops of filamentous algae were recorded downstream of forestry plantation.            2005- No change since previous survey. Satisfactory except at upper location (0010) where again slightly polluted.            2008 - No change with good quality at two of the three locations and the uppermost one continuing in high status.            SW_19_1910 Status of WB 2009: Moderate status dictated by Q score.            SW_19_850 Status of WB 2009: Good status dictated by Q score            SW_19_1713 Status of WB 2009: Good status dictated by Q score</p> <p><b>LEE (CORK) – SW_19_1663</b>            2001- No significant change. Satisfactory apart from Inishcarra Bridge (0600) where again highly eutrophic. The protected pearl mussel has apparently become scarce in the river in the past two decades.            2005- Major disruption to fauna at first location, upstream of Gouganebarra Lake (0010), where salmonid parr and other age classes had been killed. The pH of the water was 10.66 on the day, outside the limit of tolerance for these fish, which resulted from concreting work on a small bridge upstream of the sampling site. Further downstream the water quality status was the same as that of the previous survey with highly eutrophic conditions again recorded at Inishcarra Bridge (0600).            2008- Satisfactory apart from at Inishcarra Bridge where again poor ecological quality was recorded.            SW_19_1663 Status of WB 2009: Poor status dictated by Q score</p> <p><b>MARTIN – SW_19_838; SW_19_191</b>            2001 - No change since last survey with the first and final location (0100, 0600) again unsatisfactory due respectively to moderate and slight pollution effects. The sources of the pollution are suspected to be agricultural at the former and domestic (Blarney) at the latter.            2005- Satisfactory throughout, for only the second time since surveys began in 1971, following improvements in condition at the uppermost (0100) and lowermost(0600) locations.            2008 - Satisfactory apart from uppermost location where only moderate status. .            SW_19_838 Status of WB 2009: Good status dictated by Q score and physchem            SW_19_191 Status of WB 2009: Moderate status dictated by Q score</p> <p><b>OWENBOY (CORK) – SW_19_1321; SW_19_1584; SW_19_1968</b>            2005 - Deterioration, to moderately polluted conditions, at two locations (0200, 0600) since previous survey in 2003. Continuing slightly polluted at lowermost location (1400).            2008 - Continuing with only moderate ecological quality at final location but otherwise satisfactory with good status.            SW_19_1321 Status of WB 2009: Good status, dictated by Q score            SW_19_1584 Status of WB 2009: Poor status dictated by Q score            SW_19_1968 Status of WB 2009: Moderate status dictated by Q score</p>

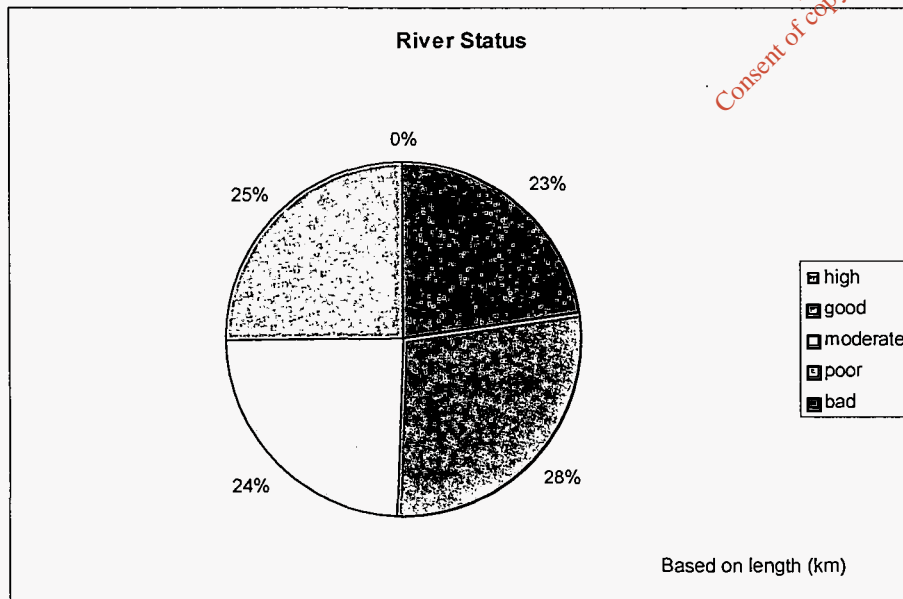
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# Lower Lee Ownboy Water Management Unit Action Plan

PRESSURES/RISKS	
Nutrient sources	Main source of TP is from unsewered industry (64%) and agriculture (26%).
Point pressures	24 WWTP - ghabullogue, Ballincollig New WWTP, Ballinhassig, Ballygarvan, Blarney/Tower WWTP, Cloughroe WWTP, Cloughduv, Coachford WWTP, Crookstown, Crossbarry, Dripsey WWTP, Five Mile Bridge, Grenagh, Half Way, Kerrypike, Killeens, Kilmoney, Rylane, Whitechurch, Carrigrenan, Cobh, North Cobh, Passage/Monkstown, Ringaskiddy; 2 WTP (Inniscarra Pws, Lee Rd. Water Works); 21 Section 4s 26 IPPC's 1 contaminated site
WWTP risks	The following WWTPs are causign risk: Ballincollig New WWTP Ballygarvan Blarney/Tower WWTP Carrigrenan Cloughroe WWTP Coachford WWTP Cobh Crookstown Crossbarry Dripsey WWTP Killeens Passage/Monkstown Ringaskiddy Ringaskiddy Carrigaline Crosshaven Whitechurch

PRESSURES/RISKS	
Quarries, Mines & Landfills	14 quarries and 5 landfills. 3 WB at risk from quarries - SW_19_1663, SW_19_1584, SW_19_1968.
Agriculture	39 WBs at risk - SW_19_1520, SW_19_769, SW_19_1827, SW_19_1709, SW_19_1304, SW_19_1321, SW_19_1110, SW_19_1744, SW_19_1968, SW_19_1601, SW_19_163, SW_19_1451, SW_19_1964, SW_19_1825, SW_19_1717, SW_19_820, SW_19_191, SW_19_1652, SW_19_841, SW_19_1473, SW_19_838, SW_19_1480, SW_19_850, SW_19_823, SW_19_1713, SW_19_1663, SW_19_1213, SW_19_1477, SW_19_821, SW_19_1651, SW_19_1501, SW_19_1536, SW_19_1559, SW_19_269, SW_19_1686, SW_19_1280, SW_19_1584, SW_19_1695, SW_19_1937.
On-site systems	There are 15275 septic tanks in this WMU. 963 of these are located in areas of very high or extreme risk.
Forestry	Significant area of SW_19_1910 is under forestry
Dangerous substances	None at risk
Morphology	3 WBs at risk - SW_19_1663, SW_19_1744, SW_19_1825 - Water Regulation and Impoundments - Inniscarra Reservoir is a HMWB. (the local authority also note some drainage & channelisation of WB 19-1584 in the past particularly between Ballinhassig & Halfway when road was realigned, also some drainage upstream of Halfway in 2006)
Abstractions	1 WB at risk - SW_19_1663
Other	Local authority note possible impact of Bride confluence with Lee upstream of Inniscarra Bridge due to different chemistry of river waters (19-1663)



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## Future Pressures and Developments

Throughout the river basin management cycle future pressures and developments will need to be managed to ensure compliance with the objectives of the Water Framework Directive and the Programme of Measures will need to be developed to ensure issues associated with these new pressures are addressed.

# Lower Lee Owenboy Water Management Unit Action Plan

SELECTED ACTION PROGRAMME	
NB All relevant basic measures and general supplementary measures/surveys apply	
Point Sources	Section 4 & IPPC licensed facilities – review licenses  See below for WWTP action programme.
Diffuse Sources	AGRICULTURE - Good Agricultural Practice Regulations and Enforcement FORESTRY – investigate impact of forestry on SW_19_1910 Septic Tanks: At Risk septic tanks are to be prioritised for inspections. Subsequent upgrade or connection to municipal systems depends on inspection and economic tests.
Other	Protection of drinking water, abstraction control and future licensing. Ensure licensing of quarries under Section 4 of Water Pollution Act 1977. MORPHOLOGY - Investigation into the impact of historical channelisation on morphological and fish status between Ballinhassig & Halfway. Carry out impassable barriers investigation at SW_19_1663, SW_19_1744, SW_19_1825.

Discharge		Measures							Waterbody	
Point Source Discharge	County	Plants Requiring Capital Works	Agglomerations Requiring Further Investigation/Prior to Capital Works	Plants Requiring to Commence Implementation of Pollution Reduction Programmes for Shellfish Waters	Plants Requiring the Implementation of an Appropriate Performance Management System	Plants Requiring the Investigation of CSOs	Plants Required to Ensure Capacity of Treatment Plant is not Exceeded	Extended Timescale for Measure Implementation	Waterbody Code	Extended Deadline to Achieve Waterbody Objective
Ballincollig New WW	Cork South	Yes						No	SW_19_1663	Yes
Ballygarvan	Cork South						Yes	No	SW_19_1968	No
Blarney/Tower WWT	Cork South					Yes	Yes	Yes	SW_19_1827	Yes
Carrigrenan	Cork City	Yes		Yes				Yes	SW_060_0750	Yes
Cloghroe WWTP	Cork South				Yes		Yes	No	SW_19_841	No
Coachford WWTP	Cork South		Yes				Yes	Yes	SW_19_1663	Yes
Cobh	Cork South	Yes	Yes	Yes				Yes	SW_060_0750	Yes
Crookstown	Cork South		Yes					No	SW_19_1477	No
Crossbarry	Cork South					Yes		No	SW_19_1584	No
Dripsey WWTP	Cork South				Yes			No	SW_19_1713	No
Killeens	Cork South	Yes						No	SW_19_769	No
Passage/Monkstown	Cork South	Yes	Yes	Yes				Yes	SW_060_0750	Yes
Ringaskiddy	Cork South		Yes					Yes	SW_060_0000	Yes
Ringaskiddy Carrigal	Cork South	Yes	Yes	Yes				Yes	SW_060_0000	Yes
Whitechurch	Cork South						Yes	No	SW_19_1520	No

OBJECTIVES	
Good status 2015	Protect 18 waterbodies.
Alternative Objectives	Restore 25 waterbodies by 2021 (SW_19_1110, SW_19_1152, SW_19_1304, SW_19_1321, SW_19_1451, SW_19_1477, SW_19_1520, SW_19_1536, SW_19_1559, SW_19_1584, SW_19_1601, SW_19_163, SW_19_1663, SW_19_1686, SW_19_1695, SW_19_1717, SW_19_1744, SW_19_1825, SW_19_1827, SW_19_191, SW_19_1910, SW_19_1964, SW_19_1968, SW_19_269, SW_19_769) – extended deadline for nitrogen losses to surface water via groundwater. (Two of which are also extended to allow wastewater infrastructure to be put in place (SW_19_1827 and SW_19_1663))

**Transitional Status** – Refer to separate transitional waters action programme  
**Groundwater Status** – Refer to separate groundwater action programme

# Lower Lee Owenboy Water Management Unit Action Plan - Rivers

IE SW LowerLee/Owenboy																			
Member State Code	Monitored Year (Extrapolated (N))	Donor Watershed	Biological Elements					Supporting Elements					Protected Areas					Objective	Target Year
			Macroinvertebrates (Q)	Fresh Water Pearl Mussels	Fish	Phytoplankton (Algae)	Morphology	Special Pollutants	Physio-chemical	Ecological Status	Chemical Status	Special Areas of Conservation	Special Protection Area	Nature Sensitive Waters	Drinking Water				
SW_19_1110	N	SW_19_1584										P					GES	2021	
SW_19_1152	N	SW_18_2169										M					GES	2021	
SW_19_1213	Y		G									G					GES	2009	
SW_19_1280	N	SW_20_1209										G					GES	2009	
SW_19_1304	N	SW_19_1536										P					GES	2021	
SW_19_1321	Y		P									P					GES	2021	
SW_19_1451	N	SW_19_755										M					GES	2021	
SW_19_1473	N	SW_19_1480										H					HES	2009	
SW_19_1477	Y		P								M	P					GES	2021	
SW_19_1480	Y				H							H					HES	2009	
SW_19_1501	N	SW_19_1709										G					GES	2009	
SW_19_1520	N	SW_19_755										M					GES	2021	
SW_19_1536	Y				P							P					GES	2021	
SW_19_1559	N	SW_19_1875										P					GES	2021	
SW_19_1584	Y		P								H	P					GES	2021	
SW_19_1601	N	SW_19_1793										P					GES	2021	
SW_19_163	N	SW_19_1744										P					GES	2021	
SW_19_1651	N	SW_19_1480										H					HES	2009	
SW_19_1652	N	SW_20_1209										G					GES	2009	
SW_19_1663	Y		P								H	P				Y	GES	2021	
SW_19_1686	N	SW_19_1875										P					GES	2021	
SW_19_1695	N	SW_19_1875										P					GES	2021	
SW_19_1709	Y		G								H	G					GES	2009	
SW_19_1713	Y		G								G	G					GES	2009	

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# Lower Lee Owenboy Water Management Unit Action Plan - Rivers

IE SW LowerLee/Owenboy																			
Member State Code	Nonhazardous (Exempt) (N)	Donor Watershed	Biological Elements				Supporting Elements				Protected Areas								
			Macroinvertebrates (Q)	Freshwater Pearl Mussel	Fish	Phytoplankton (Diatoms)	Morphology	Specific Pollutants	Physiochemical	Ecological Status	Chemical Status	Special Area of Conservation	Special Protection Area	Nature Sensitive Waters	Drinking Water	Other	Other		
SW_19_1717	N	SW_19_1968									M							GES	2021
SW_19_1724	N	SW_19_1880									H							HES	2009
SW_19_1744	Y				P						P							GES	2021
SW_19_1825	N	SW_19_755									M							GES	2021
SW_19_1827	Y		G							M	M							GES	2021
SW_19_1854	N	SW_19_1880									H							HES	2009
SW_19_191	Y		M							G	M							GES	2021
SW_19_1910	Y		M							G	M							GES	2021
SW_19_1937	N	SW_19_1480									H							HES	2009
SW_19_1964	N	SW_19_1968									M							GES	2021
SW_19_1968	Y		M								H	M						GES	2021
SW_19_269	N	SW_19_1477									P							GES	2021
SW_19_769	Y		G							M	M							GES	2021
SW_19_820	N	SW_19_1480									H							HES	2009
SW_19_821	Y		G								G							GES	2009
SW_19_823	Y		H								H							HES	2009
SW_19_838	Y		G								G	G						GES	2009
SW_19_841	N	SW_19_1480									H							HES	2009
SW_19_850	Y		G								H	G						GES	2009

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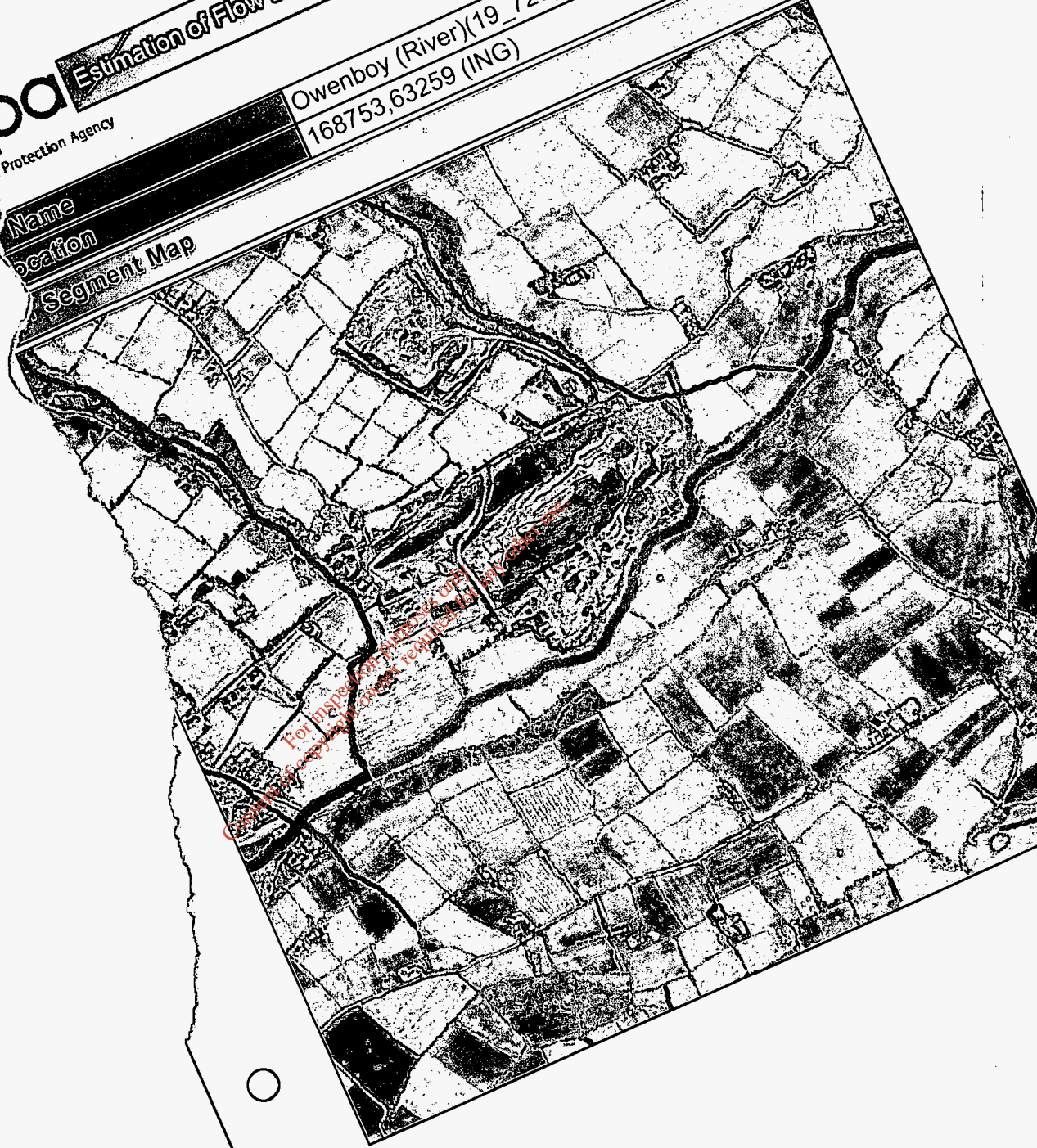


# Estimation of Flow Duration Curve for Ungauged Catchment

Name  
Location

Owenboy (River)(19\_726)  
168753,63259 (ING)

Segment Map



**Disclaimer**  
The source hydrometric data used to estimate the flow duration curve ordinates for this catchment are derived from (1) water level data and (2) the rating curve(s) generated for each hydrometric station. The Office of Public Works used these data, respectively, to calculate the flow duration curve ordinates for the catchment. The Environmental Protection Agency to prepare flow duration curves for the catchment. The Environmental Protection Agency is not responsible for the subsequent handling of the data.

Habitats Directive Assessment (Screening Report) in respect of

Application by Cork County Council to the EPA

for Wastewater Discharge License

for Ballygarvan's WWTP.

July, 2012

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## 1 Introduction

1.1 Ballygarvan is located approximately 10 kilometres south of Cork City, in the Owenabue Valley. In the overall strategy of the Local Area Plan, Ballygarvan is designated as a village within the Metropolitan Cork. The village is surrounded by the Metropolitan Green Belt, where it is an objective to preserve the largely undeveloped nature of the lands and to reserve lands generally for agriculture, open space or recreation uses.

The plant at Ballygarvan is an Activated Sludge Treatment Plant. Influent initially gravitates into an underground inlet sump. From the inlet sump the effluent is pumped through an automatic screen to an Anoxic Tank which is fitted with a submersible mixer that operates on a continuous basis. The effluent then flows into two aeration tanks for further treatment via flexible membrane fine bubble diffusers. Settlement zones in the treatment tanks have a surface area of approx 9m<sup>2</sup> each. Ferric dosing to the aeration tanks is the method used for the removal of phosphorus. The effluent then passes through automatic sand filtration for tertiary treatment. The final effluent is discharged to the Owenboy River at a point approx 7km upstream of the Owenboy Estuary which is part of the Cork Harbour SPA. The Owenboy River first flows into the Cork Harbour Special Protection Area at Owenboy Estuary before entering the main harbour at Crosshaven.

1.2 The plant is located approx. 7km upstream of the Owenboy Estuary which is part of the Cork Harbour Special Protection Area and which is designated under the **EU Birds Directive (79/409/EEC)** as transposed into Irish Law under the European Union (Natural Habitats) Regulations SI 94/1997. As this is the case, and in accordance with requirements under this Directive, the potential impacts of proposed developments that have the potential to impact on Special Protection Areas must be assessed. The procedure to do this is called a **Habitats Directive Assessment**. The purpose of such an assessment is to identify whether there may be potential for elements of the project to have a significant impact on nature conservation sites within its impact zone, and if so, to predict the potential for such impacts to affect the overall integrity of such nature conservation sites. The European Union has provided guidance as to how to make a Habitats Directive Assessment which identifies four main stages in the process as follows:

**Stage One: Screening**

*The process which identifies the likely impacts upon a Natura 2000 site of a project or plan, wither alone or in combination with other projects or plans, and considers whether these impacts are likely to be significant.*

**Stage Two: Appropriate assessment**

*The consideration of the impact on the integrity of the Natura 2000 site of the 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, an assessment of the potential mitigation of those impacts.*

**Stage Three: Assessment of alternative solutions**

*The process which examines alternative ways of achieving the objectives of the project or plan that avoid adverse impacts on the integrity of the Natura 2000 site.*

Stage Four: Assessment where no alternative solutions exist and where adverse impacts remain.

*An assessment of 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.*

- 1.3 This document brings together all of the information necessary to make determination as to whether there are likely to be significant impacts arising from the discharge from Ballygarvan WWTP on the adjacent Cork Harbour Special Protection Area and represents the first stage of this process (Screening).

Step 1:

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

Step 2:

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

Step 3:

*Determine whether the plan needs to be screened for potential impacts on Natura 2000 sites;*

Step 4:

*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;*

Step 5:

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

- 1.4 The 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.

## 2 Appropriate Assessment Screening Matrix

2.1 Description of project	
Location	Ballygarvan WWTP, Ballygarvan, County Cork.
Description of the key components of the project	The plant at Ballygarvan is an Activated Sludge Treatment Plant. Influent initially gravitates into an underground inlet sump. From the inlet sump the effluent is pumped through an automatic screen to an Anoxic Tank which is fitted with a submersible mixer that operates on a continuous basis. The effluent then flows into two aeration tanks for further treatment via flexible membrane fine bubble diffusers. Settlement zones in the treatment tanks have a surface area of approx 9m <sup>2</sup> each. Ferric dosing to the aeration tanks is the method used for the removal of phosphorus. The effluent then passes through automatic sand filtration for tertiary treatment. The final effluent is discharged to the Owenboy River at a point approx 7km upstream of the Owenboy Estuary which is part of the Cork Harbour SPA. The Owenboy River first flows into the Cork Harbour Special Protection Area at Owenboy Estuary before entering the main harbour at Crosshaven.
Distance from designated sites in potential impact zone*	Approx. 7 km distance from the Discharge point to the Owenboy Estuary which is part of the Cork Harbour SPA.
2.2 Description of the Natura 2000 sites within the potential impact zone	
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>Ballygarvan WWTP discharges to the Owenboy River at a point approx 7km upstream of the Owenboy Estuary which is part of the Cork Harbour SPA.</p>

\* 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.

	<p>The Owenboy River flows into the Owenboy Estuary which is a part of the Cork Harbour Special Protection Area at Carrigaline before entering the main harbour at Crosshaven. At these locations the main habitats of importance are intertidal mudflats.</p> <p>More information on the Cork Harbour SPA is contained in appendix 1 of this document. Bird count data is provided in appendix 3.</p>
Qualifying Interests of Cork Harbour SPA.	<p>Internationally important numbers of Black-tailed Godwit; Nationally important numbers of Greenshank and Redshank; <i>Source - National Parks and Wildlife Service</i></p> <p>See appendix 3 for bird count data for Cork Harbour 1998/2000 - 2007/2008.</p>
Other Notable Features of Cork Harbour SPA	<p>Shelduck, Grey Heron, wetland and water birds. <i>Source - National Parks and Wildlife Service</i></p> <p>See appendix 3 for bird count data for Cork Harbour 1998/2000 - 2007/2008.</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"> <li>o the population of the species as a viable component of the site;</li> <li>o the distribution and extent of habitats supporting the species;</li> <li>o the structure, function and supporting processes of habitats supporting the species;</li> </ul> <p><i>Source - National Parks and Wildlife Service</i></p>

### 2.3 Assessment Criteria

Describe the individual elements of the project (either alone or in combination with other plans or projects) likely to give rise to impacts on the Natura 2000 site.	<p><b>Discharge from Ballygarvan WWTP:</b> The treated effluent discharges from the WWTP to the Owenboy River which flows into the Owenboy Estuary which is part of the Cork Harbour SPA and is approx 7 km from the point of discharge.</p> <p>At present the plant is in commissioning stage and it is predicted that the discharge will consist of high quality treated effluent from the WWTP.</p> <p><b>Other Significant Discharges to the River Lee between the Owenboy Estuary and Halfway WWTP:</b></p>
---	--

	<p>Treated Wastewater from Ballinhassig discharges to the Owenboy River approx 12Km upstream of the Owenboy Estuary.</p> <p>Treated Wastewater from Five Mile Bridge discharges to the Owenboy River approx 10Km upstream of the Owenboy Estuary.</p> <p>Treated Wastewater from Halfway discharges to the Owenboy River approx 16Km upstream of the Owenboy Estuary.</p>
<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"> <li>○ Size and scale</li> <li>○ Land-take</li> <li>○ Distance from the Natura 2000 site or key features of the site:</li> <li>○ Resource requirements (water abstraction etc.)</li> <li>○ Emissions (disposal to land, water or air)</li> <li>○ Excavation Requirements</li> <li>○ Transportation Requirements</li> <li>○ Duration of construction, operation, decommissioning</li> <li>○ Other.</li> </ul>	<p>Discharges could give rise to elevated nutrients entering the Owenboy Estuary. 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>However the potential for the WWTP discharge to result in elevated nutrients within the Estuary is reduced by the following factors:</p> <ol style="list-style-type: none"> <li>1. The plant is currently in commissioning stage and it is predicted that the quality of the effluent will be of a good standard.</li> <li>2. From the monitoring data available there is no deterioration in water quality in the rivers downstream of the discharge.</li> <li>3. The discharge from the plant is approx 7Km upstream from the Owenboy Estuary which is a part of the Cork Harbour SPA and where the Owenboy River meets the Estuary there is a large and well exchanged body of water with unlimited dilution capacity.</li> </ol> <p><b>1 The standard of treated effluent is high.</b>  Ballygarvan WWTP is currently being operated by a private contractor (EPS) under a short term Operation and Maintenance Contract on behalf of Cork County Council. The plant is fully automated with permanent phone links to the operator if a problem should arise. The site is visited at least once per week for inspection and maintenance.</p> <p><b>Note 1:</b> See appendix 2 for effluent quality results for 2012.</p> <p><b>2 No deterioration in water quality in the Rivers downstream.</b>  According to the upstream and downstream monitoring carried out there is no significant deterioration in water quality associated with the Ballygarvan WWTP discharge.</p> <p><b>Note 1:</b> See appendix 2 for upstream and downstream monitoring data.</p> <p>It should also be noted that at Ballea Bridge a point</p>

	<p>downstream from the discharge the Q value is 3-4 (Slightly Polluted)</p> <p><b>3 Treated effluent discharges into Harbour body</b>  The treated effluent enters the Cork Harbour SPA at Owenboy Estuary which is a large and well exchanged body of water with unlimited dilution capacity. The endless dilution capability of the Estuary means that the discharge is properly diluted once within the SPA.</p> <p>The point of discharge is also approx 7km upstream from the Owenboy Estuary.</p>
<p>Describe any likely changes to the site arising as a result of:</p> <ul style="list-style-type: none"> <li>○ Reduction in habitat area</li> <li>○ Disturbance to key species</li> <li>○ Habitat or species fragmentation</li> <li>○ Reduction in species density</li> <li>○ Changes in key indicators of conservation value (water quality etc)</li> <li>○ Climate Change</li> </ul>	<p><b>Reduction in habitat area:</b>  Effluent is discharging to a large well-exchanged body of water where dilution and dispersion potential is high. No significant impacts are evident or predicted on habitats within the Estuary arising from the operation of this facility.</p> <p><b>Disturbance to key species:</b>  The operation of the WWTP does not cause any disturbance to species within the SPA.</p> <p><b>Habitat or species fragmentation:</b>  No habitat fragmentation has been caused as a result of the operation of this facility.</p> <p><b>Reduction in species density:</b>  Effluent is discharging to a large well-exchanged body of water where dilution and dispersion potential is high. No significant impacts are evident or predicted on species for which the SPA is designated.</p> <p><b>Changes in key indicators of conservation value e.g. water quality:</b>  Monitoring of the rivers water quality indicates that there is no significant deterioration in water quality associated with the Ballygarvan discharge. See appendix 2 for upstream and downstream monitoring data.</p> <p>It should also be noted that at Ballea Bridge a point downstream from the discharge the Q value is 3-4 (Slightly Polluted)</p>
<p>Describe any likely impacts on the Natura 2000 site as a whole in terms of:</p> <ul style="list-style-type: none"> <li>○ Interference with the key relationships that define the structure of the site</li> <li>○ Interference with key relationships that define the function of the site</li> </ul>	<p><b>Interference with the key relationships that define the structure of the site:</b>  The structure of the SPA is not impacted by the operation of this facility.</p> <p><b>Interference with key relationships that define the function of the site:</b>  The function of the SPA is not impacted by the operation of this facility.</p>
<p>Describe from the above</p>	<p>No significant impacts are predicted.</p>



<p>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>	
---	--

**4. Finding of No Significant Effects Report Matrix  
Cork Harbour Special Protection Area**

Name of project or plan	Ballygarvan WWTP.
Name and location of Natura 2000 site	Cork Harbour Special Protection Area
Description of the project or plan	<p>The plant at Ballygarvan is an Activated Sludge Treatment Plant. Influent initially gravitates into an underground inlet sump. From the inlet sump the effluent is pumped through an automatic screen to an Anox Tank which is fitted with a submersible mixer that operates on a continuous basis. The effluent then flows into two aeration tanks for further treatment via flexible membrane fine bubble diffusers. Settlement zones in the treatment tanks have a surface area of approx 9m<sup>2</sup> each. Ferric dosing to the aeration tanks is the method used for the removal of phosphorus. The effluent then passes through automatic sand filtration for tertiary treatment. The final effluent is discharged to the Owenboy River at a point approx 7km upstream of the Owenboy Estuary which is part of the Cork Harbour SPA. The Owenboy River first flows into the Cork Harbour Special Protection Area at Owenboy Estuary before entering the main harbour at Crosshaven.</p>
Is the project or plan directly connected with or necessary to the management of the site (provide details)?	No
<b>The assessment of significance of effects</b>	
Describe how the project or plan (alone or in combination) is likely to affect the Natura 2000 Site.	<p>Discharges from the Ballygarvan WWTP either alone or in combination with discharges from other sources could give rise to elevated nutrients entering the Owenboy Estuary. 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>It is considered that the discharge from Ballygarvan WWTP is not having a significant impact because of its distance from Cork Harbour SPA and because of the large dilution capacity of the Owenboy Estuary.</p>

<p>Explain why these effects are not considered significant.</p>	<p>Treated effluent discharges approx 7Km upstream of the SPA and the river discharges to a large well-exchanged body of water where dilution and dispersion potential is high. No significant impacts are evident or predicted on species for which the SPA is designated.</p>
<p>List of agencies consulted: provide contact name and telephone or email address</p>	<p>National Parks and Wildlife Service - Natureconservation@environ.ie, cyril.saich@environ.ie</p> <p>Birdwatch Ireland - Data request.</p>
<p>Response to consultation</p>	<p>Draft Conservation Objectives and a copy of Intention to Designate Cork Harbour as SPA was received previously from the NPWS.</p> <p>Bird count data was received previously from Birdwatch Ireland.</p>

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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
Tim O'Farrell, Madeleine Healy and Sharon Casey, Cork County Council	IWebs Bird Data supplied by BirdWatch Ireland; Water Quality Monitoring Data CCC;	Desktop review of cited data.	This report.

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# APPENDIX 1

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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, Owenboy and Owennacurra. The SPA site comprises most of the main intertidal areas of Cork Harbour, including all of the North Channel, the Douglas River Estuary, inner Lough Mahon, Monkstown Creek, Lough Beg, the Owenboy River Estuary, Whitegate Bay and the Rostellan and Poul nabibe inlets.

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.

The site is a Special Protection Area (SPA) under the E.U. Birds Directive, of special conservation interest for the following species: Little Grebe, Great Crested Grebe, Cormorant, Grey Heron, Shelduck, Wigeon, Teal, Pintail, Shoveler, Red-breasted Merganser, Oystercatcher, Golden Plover, Grey Plover, Lapwing, Dunlin, Blacktailed Godwit, Bar-tailed Godwit, Curlew, Redshank, Black-headed Gull, Common Gull, Lesser Black-backed Gull and Common Tern. The site is also of special conservation interest for holding an assemblage of over 20,000 wintering waterbirds. The E.U. Birds Directive pays particular attention to wetlands and, as these form part of this SPA, the site and its associated waterbirds are of special conservation interest for Wetland & Waterbirds.

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 two-year mean of summed annual peaks for the entire harbour complex was 55,401 for the period 1995/96 and 1996/97. Of particular note is that the site supports internationally important populations of Black-tailed Godwit (905) and Redshank (1,782) - all figures given are average winter means for the two winters 1995/96 and 1996/97. At least 18 other species have populations of national importance, as follows: Little Grebe (51), Great Crested Grebe (204), Cormorant (705), Grey Heron (63), Shelduck (2,093), Wigeon (1,852), Teal (922), Pintail (66), Shoveler (57), Red-breasted Merganser (88), Oystercatcher (1,404), Golden Plover (3,653), Grey Plover (84), Lapwing (7,688), Dunlin (10,373), Bartailed Godwit (417), Curlew (1,325) and Greenshank (26). The Shelduck

population is the largest in the country (over 10% of national total). The site has regionally or locally important populations of a range of other species, including Whooper Swan (10), Pochard (145) and Turnstone (79). Other species using the site include Gadwall (13), Mallard (456), Tufted Duck (113), Goldeneye (31), Coot (53), Mute Swan (38), Ringed Plover (34) and Knot (38). Cork Harbour is a nationally important site for gulls in winter and autumn, especially Black-headed Gull (4,704), Common Gull (3,180) and Lesser Black-backed Gull (1,440).

A range of passage waders occurs regularly in autumn, including such species as 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 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 populations of Black-tailed Godwit and Redshank. In addition, there are at least 18 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 2

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## Ballygarvan WWDL licence application

Ballygarvan WWTP Discharge Outlet				Mean value	UWW Reg Limits
Sample	Effluent	Effluent	Effluent		
Sample Code	GW281	GW382	GW526		
Sample Date	18/04/2012	17/05/2012	27/06/2012		
Sample Type	Grab	Grab	Grab		
Flow M <sup>3</sup> /Day	*	*	*		
BOD mg/L	93	84	60	79.0	25
COD mg/L	305	245	236	272	125
Suspended Solids mg/L	153	88	114	118	35
O-PO4-P mg/l	*	5.43	*	*	
TP-P mg/l	*	7.6	*	*	
Ammonia-N mg/l	*	42.7	*	*	
TN-N mg/l	*	47.23	*	*	
Nitrate-N mg/l	*	<0.50	*	*	
TON mg/l	*	<0.50	*	*	
Nitrite-N mg/l	*	<0.1	*	*	
Sulphate mg/l	*	76.7	*	*	
Chloride mg/l	*	53	*	*	

exceeds Urban Wastewater Regulations Limits  
half of LOD for statistical purposes

Ballygarvan River U/S	
Sample	River
Sample Code	GW368
Sample Date	17/05/2012
Sample Type	Grab
pH	7.4
BOD mg/L	1.2
Suspended Solids mg/L	<2.5
TP-P mg/l	<0.05
O-PO4-P mg/l	0.005
Ammonia-N mg/l	0.014
TN-N mg/l	4.93
Nitrate-N mg/l	4.9
TON mg/l	4.904
Nitrite-N mg/l	0.004
Conductivity at 20°C, uS/cm	207
Sulphate mg/l	<30
Chloride mg/l	<25
DO mg/l	11.37
Temperature °C	12.2

<b>Ballygarvan River D/S</b>	
Sample	River
Sample Code	GW367
Sample Date	17/05/2012
Sample Type	Grab
pH	7.5
BOD mg/L	<1.0
Suspended Solids mg/L	<2.5
Tp-P mg/l	<0.05
O-PO4-P mg/l	0.008
Ammonia-N mg/l	0.036
TN-N mg/l	4.91
Nitrate-N mg/l	4.68
TON mg/l	4.684
Nitrite-N mg/l	0.004
Sulphate mg/l	<30
Chloride mg/l	<25
Conductivity at 20°C uS/cm	209
DO mg/l	11.3
Temperature °C	11.4

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# APPENDIX 3

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Site code: IE0004030 NATURA 2000 Data Form

## NATURA 2000

### STANDARD DATA FORM

FOR SPECIAL PROTECTION AREAS (SPA)  
FOR SITES ELIGIBLE FOR IDENTIFICATION AS SITES OF  
COMMUNITY IMPORTANCE (SCI)  
AND FOR SPECIAL AREAS OF CONSERVATION (SAC)

1

Site code: IE0004030 NATURA 2000 Data Form

### 1. SITE IDENTIFICATION

*1.5. RELATION WITH OTHER NATURA 2000 SITES:*

*1.1. TYPE 1.2. SITE CODE 1.3. COMPILATION DATE 1.4. UPDATE*

J IE0004030 200311

NATURA 2000 SITE CODES

IE0001058

*1.6. RESPONDENT(S):*

National Parks & Wildlife Service of the Department of Arts, Heritage, Gaeltacht and the Islands. 51 St. Stephen's Green, Dublin 2, Ireland

*DATE SITE PROPOSED AS ELIGIBLE AS SCI: DATE CONFIRMED AS SCI:*

*DATE SITE CLASSIFIED AS SPA:*

199411

*DATE SITE DESIGNATED AS SAC:*

*1.7. SITE NAME:*

Cork Harbour SPA

*1.8. SITE INDICATION AND DESIGNATION/CLASSIFICATION DATE:*

2

Site code: IE0004030 NATURA 2000 Data Form

*2.1. SITE CENTRE LOCATION*

LONGITUDE LATITUDE

W

W/E (Greenwich)

8 19 0 51 53 0

*2.2. AREA (HA): 2.3. SITE LENGTH (KM):*

2587.25

*2.4. ALTITUDE (M):*

-5

MINIMUM MAXIMUM MEAN

5 -1

### 2. SITE LOCATION

*2.6. BIOGEOGRAPHIC REGION:*

Alpine Atlantic Boreal Continental Macaronesian Mediterranean

NUTS CODE REGION NAME % COVER

*2.5. ADMINISTRATIVE REGION:*

IE025 South-West (IRL) 2

Marine area not covered by a NUTS-region 98

3

Site code: IE0004030 NATURA 2000 Data Form

### 3. ECOLOGICAL INFORMATION

*3.1. HABITAT types present on the site and assessment for them:*

*ANNEX I HABITAT TYPES:*

CODE %COVER REPRESENTATIVITY RELATIVE SURFACE CONSERVATION

STATUS

GLOBAL

ASSESSMENT

4

Site code: IE0004030 NATURA 2000 Data Form

### 3.2. SPECIES

**covered by Article 4 of Directive 79/409/EEC and listed in Annex II of  
Directive 92/43/EEC site assessment for them**

5

Site code: IE0004030 NATURA 2000 Data Form

**3.2.a. BIRDS listed on Annex I of Council directive 79/409/EEC**

**3.2.b. Regularly occurring Migratory Birds not listed on Annex I of Council directive 79/409/EEC**

Population

SITE ASSESSMENT

Resident Migratory

CODE NAME POPULATION

Conservation Isolation

Breed Winter Stage

Pluvialis 805 i

apricaria

A140 C B C

A157 Limosa lapponica 45 i C B C

A038 Cygnus cygnus 10 i C C C

A151 Philomachus pugnax 1-5 i 5-10 i C B C

A193 Sterna hirundo 69 p B B C A

Population

SITE ASSESSMENT

Resident Migratory

CODE NAME POPULATION

Conservation Isolation

Breed Winter Stage

A005 Podiceps cristatus 218 i B A C A

Phalacrocorax 620 i

carbo

A017 B A C A

A048 Tadorna tadorna 1426 i B A C A

A050 Anas penelope 1750 i C A C

A052 Anas crecca 807 i C A C

A054 Anas acuta 84 i B A C A

A056 Anas clypeata 135 i B A C A

A069 Mergus serrator 90 i B A C

Haematopus 791 i

ostralegus

A130 C A C

Pluvialis 66 i

squatarola

A141 C A C

A142 Vanellus vanellus 3614 i C A C

A149 Calidris alpina 4936 i B A C A

A156 Limosa limosa 412 i B A C

A160 Numenius arquata 1345 i B A C

A162 Tringa totanus 1614 i B A C A

A164 Tringa nebularia 36 i C A C

A169 Arenaria interpres 99 i C A C

A179 Larus ridibundus 948 i C A C

A182 Larus canus 2630 i B A C A

A051 Anas strepera 15 i C B C

A053 Anas platyrhynchos 456 i C A C

A059 Aythya ferina 145 i C B C

A061 Aythya fuligula 97 i C B C

A067 Bucephala clangula 15 i C B C

A125 Fulica atra 77 i C B C

6

Site code: IE0004030 NATURA 2000 Data Form

**3.2.c. MAMMALS listed on Annex II of Council directive 92/43/EEC**

**3.2.d. AMPHIBIANS and REPTILES listed on Annex II of Council directive 92/43/EEC**

**3.2.e. FISHES listed on Annex II of Council directive 92/43/EEC**

**3.2.f. INVERTEBRATES listed on Annex II of Council directive 92/43/EEC**

**3.2.g. PLANTS listed on Annex II of Council directive 92/43/EEC**

Charadrius 51 i

hiaticula

A137 C B C

A143 Calidris canutus 31 i C B C

A183 Larus fuscus 261 i B A C A

A161 Tringa erythropus 1-3 i 1-5 i C B C

A165 Tringa ochropus 1-3 i 1-5 i C B C

7

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### 3.3. Other Important Species of Flora and Fauna

(B = Birds, M = Mammals, A = Amphibians, R = Reptiles, F = Fish, I = Invertebrates, P = Plants)

SCIENTIFIC NAME POPULATION MOTIVATION

B M A R F I P

GROUP

B Tachybaptus ruficollis 68 i c

B Ardea cinerea 47 i c

B Cygnus olor 39 i c

8

Site code: IE0004030 NATURA 2000 Data Form

## 4. SITE DESCRIPTION

### 4.1. GENERAL SITE CHARACTER:

#### Habitat classes % cover

Tidal rivers, Estuaries, Mud flats, Sand flats, Lagoons (including saltwork basins)

94

Salt marshes, Salt pastures, Salt steppes 1

Shingle, Sea cliffs, Islets 1

Inland water bodies (Standing water, Running water) 1

Bogs, Marshes, Water fringed vegetation, Fens 1

Humid grassland, Mesophile grassland 1

Other land (including Towns, Villages, Roads, Waste places, Mines, Industrial sites)

1

Total habitat cover 100 %

#### Other site characteristics

Cork Harbour is a large, sheltered bay system, with several river estuaries - principally those of the Rivers Lee, Douglas, Owenboy and Owenacurra. The site comprises the main intertidal areas of Cork Harbour, including all of the North Channel, the Douglas Estuary, inner Lough Mahon, Monkstown Creek, Lough Beg, the Owenboy Estuary, Whitegate Bay and the Rostellan inlet. Owing to the sheltered conditions, the intertidal flats are often muddy in character. Salt marshes are scattered through the site and these provide high tide roosts for the birds. Otherwise, birds roost on stony shorelines and in some areas fields adjacent to the shore. Some shallow bay water is included in the site. Cork Harbour is adjacent to a major urban centre and a major industrial centre.

### 4.2. QUALITY AND IMPORTANCE:

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. It supports an internationally important population of *Tringa totanus*. A further 15 species have populations of national importance, with particularly notable numbers of *Tadorna tadorna* (9.6% of national total), *Anas clypeata* (4.5% of total), *Anas acuta* (4.2% of total) and *Phalacrocorax carbo* (4.1% of total) occurring. It has regionally important populations of *Pluvialis apricaria* and *Limosa lapponica*. Passage waders are regular, including *Philomachus pugnax* and *Tringa erythropus*. It is an important site for gulls in winter and autumn, especially *Larus canus* and *Larus fuscus*. The site provides both feeding and roosting areas for the waterfowl species. The quality of most of the estuarine habitats is good. The wintering birds have been well-monitored since the 1970s. The site has a breeding colony of *Sterna hirundo* which is of national importance. The colony is monitored annually and the chicks ringed.

### 4.3. VULNERABILITY

There are no serious imminent threats to the wintering birds. Though the intertidal areas receive polluted water, there are no apparent significant impacts on the associated flora and fauna. Oil pollution from shipping in Cork Harbour is a general threat. Aquaculture occurs though it is not known if this has significant impacts on the birds. Recreational activities are high in some areas, including jet skiing which causes disturbance to roosting birds. Extensive areas of estuarine habitat has been reclaimed since about the 1950s for industrial, port-related and road projects, and further reclamation remains a threat.

9

Site code: IE0004030 NATURA 2000 Data Form

### 4.4. SITE DESIGNATION:

#### 4.5. OWNERSHIP

State: Department of Communications, Marine and Natural Resources

Private: multiple

#### 4.6. DOCUMENTATION

Colhoun, K. (2001). I-WeBS Report 1998-99. BirdWatch Ireland, Dublin.

Curtis, T.G.F. and Sheehy Skeffington, M.J. (1998). The salt marshes of Ireland: an inventory and account of their geographical variation. Biology and

Environment, Proceedings of the Royal Irish Academy 98B: 87-104.  
 Hannon, C. (1997). The 1995 All-Ireland Tern Survey. BirdWatch Ireland Conservation Report No. 97/1.  
 Hannon, C., Berrow, S.D. and Newton S.F. (1997). The status and distribution of breeding Sandwich Sterna sandvicensis, Roseate S. dougallii, Common S. hirundo, Arctic S. paradisaea and Little Terns S. albifrons in Ireland in 1995. Irish Birds 6: 1-22.  
 Hunt, J., Derwin, J., Coveney, J. and Newton, S. (2000). Republic of Ireland. Pp. 365-416 in Heath, M.F. and Evans, M.I. (eds). Important Bird Areas in Europe: Priority Sites for Conservation 1: Northern Europe. Cambridge, UK: BirdLife International (BirdLife Conservation Series No. 8).  
 Hutchinson, C.D. and O'Halloran, J. (1984). The waterfowl of Cork Harbour. Irish Birds 2: 445-456.  
 Irish Wetland Birds Survey (I-WeBS) Database, 1994/95-2000/01. BirdWatch Ireland, Dublin.  
 McGarrigle, M.L., Bowman, J.J., Clabby, K.J., Lucey, J., Cunningham, P., MacCarthaigh, M., Keegan, M., Cantrell, B., Lehane, M., Clenaghan, C. and Toner, P.F. (2002). Water Quality in Ireland 1998-2000. Environmental Protection Agency, Wexford.  
 Merne, O.J. (1989). Important bird areas in the Republic of Ireland. In: Grimmett, R.F.A. and Jones, T.A. (eds). Important Bird Areas in Europe. ICBP Technical Publication No. 9. Cambridge.  
 O'Donoghue, P.D. and O'Halloran, J. (1994). The behaviour of a wintering flock of whooper swans Cygnus cygnus at Rostellan Lake, Cork. Biology and Environment, Proceedings of the Royal Irish Academy 94B: 109-118.  
 Sheppard, R. (1993). Ireland's Wetland Wealth. IWC, Dublin.  
 Smiddy, P., O'Halloran, J., Coveney, J.A., Leonard, P.G. and Shorten, M. (1995). Winter waterfowl populations of Cork Harbour: an update. Irish Birds 5: 285-294.  
 Wilson, J., O'Mahony, B. and Smiddy, P. (2000). Common Terns Sterna hirundo breeding in Cork Harbour. Irish Birds 6: 597-599.

10

Site code: IE0004030 NATURA 2000 Data Form

## 5. SITE PROTECTION STATUS AND RELATION WITH CORINE BIOTOPES

**5.1. DESIGNATION TYPES at National and Regional level:**

**5.2. RELATION OF THE DESCRIBED SITE WITH OTHER SITES:**

**5.3. RELATION OF THE DESCRIBED SITE WITH CORINE BIOTOPE SITES:**

designated at National or Regional level:

designated at International level:

CODE % COVER

IE05 10

TYPE CODE SITE NAME OVERLAP TYPE % COVER

IE05 Douglas Estuary Wildfowl Sanctuary + 10

CORINE SITE CODE OVERLAP TYPE % COVER

800000079

11

Site code: IE0004030 NATURA 2000 Data Form

## 6. IMPACTS AND ACTIVITIES IN AND AROUND THE SITE

**6.1. GENERAL IMPACTS AND ACTIVITIES AND PROPORTION OF THE SURFACE OF THE SITE AFFECTED**

**6.2. SITE MANAGEMENT AND PLANS**

IMPACTS AND ACTIVITIES WITHIN the site

IMPACTS AND ACTIVITIES AROUND the site

CODE INTENSITY % OF SITE INFLUENCE

200 A B C 1 + 0 -

622 A B C 10 + 0 -

701 A B C 50 + 0 -

210 A B C 5 + 0 -

220 A B C 10 + 0 -

520 A B C 10 + 0 -

621 A B C 20 + 0 -

626 A B C 20 + 0 -

CODE INTENSITY INFLUENCE

400 A B C + 0 -

410 A B C + 0 -

403 A B C + 0 -

120 A B C + 0 -

502 A BC + 0 -

504 A BC + 0 -

**BODY RESPONSIBLE FOR THE SITE MANAGEMENT  
SITE MANAGEMENT AND PLANS**

The National Parks and Wildlife Service is responsible for managing the Douglas Estuary as a Wildfowl Sanctuary.

A Conservation Plan for the management of this site is in preparation.

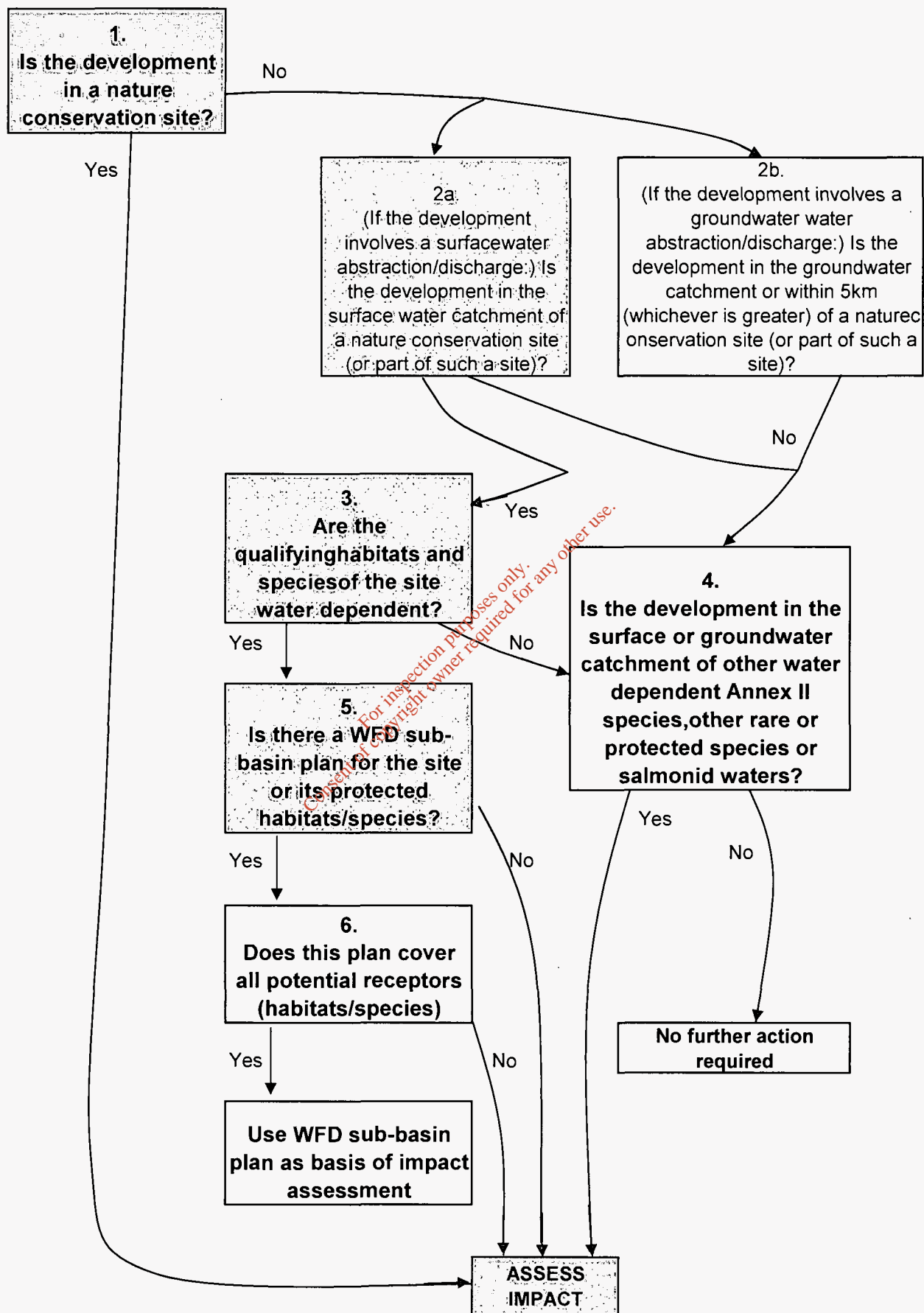
12

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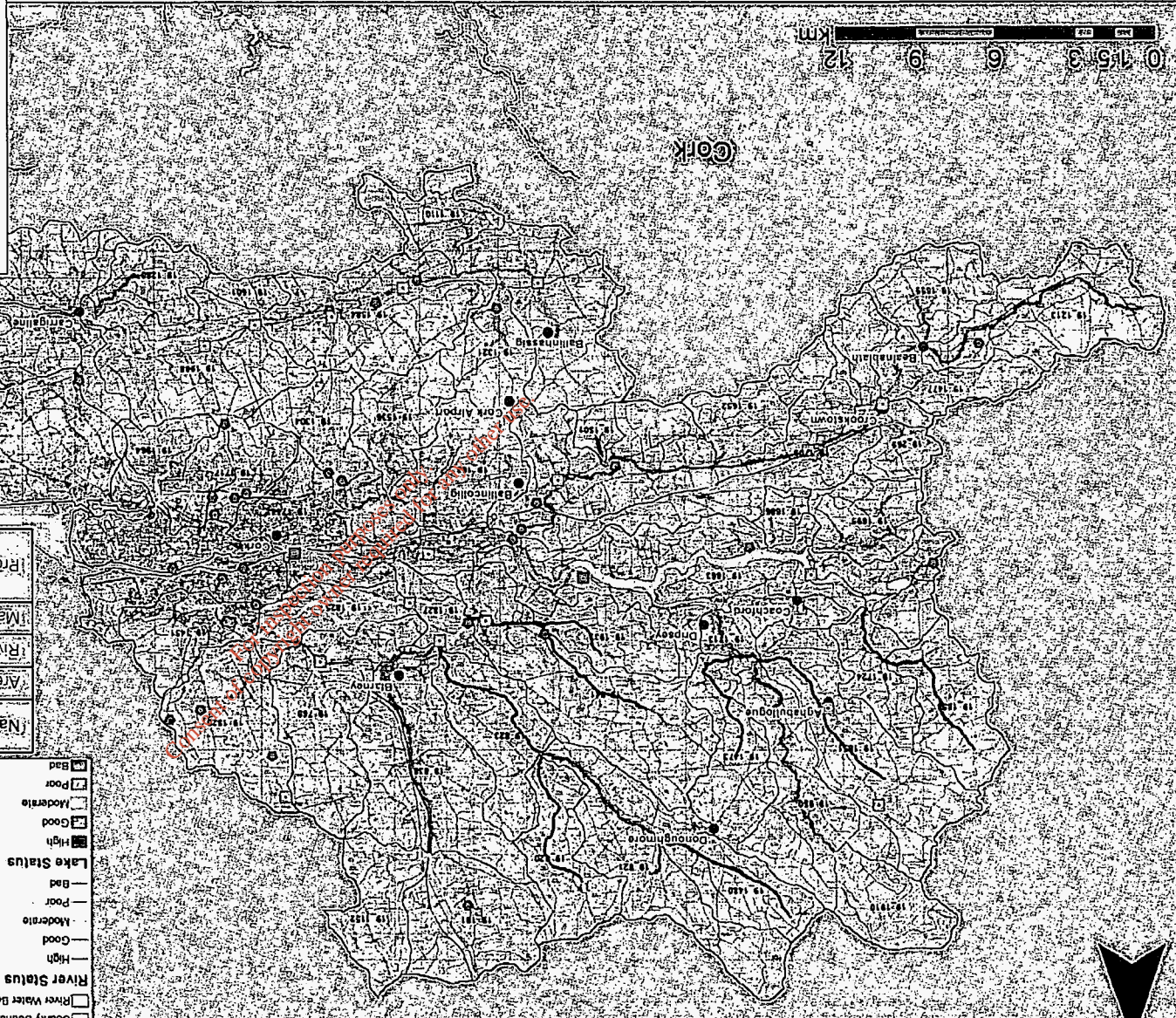
Flow Diagram - Route Highlighted Red & Shaded Grey



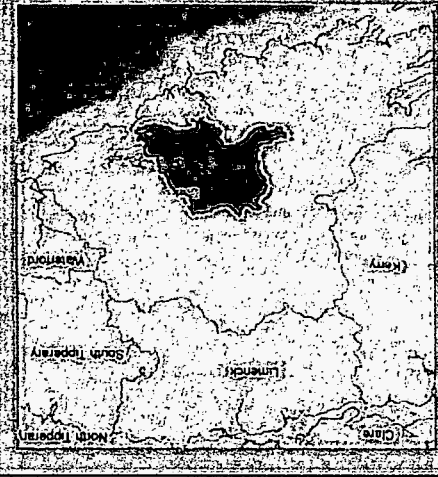
Conclusion: An appropriate assessment is required for Ballygarvan



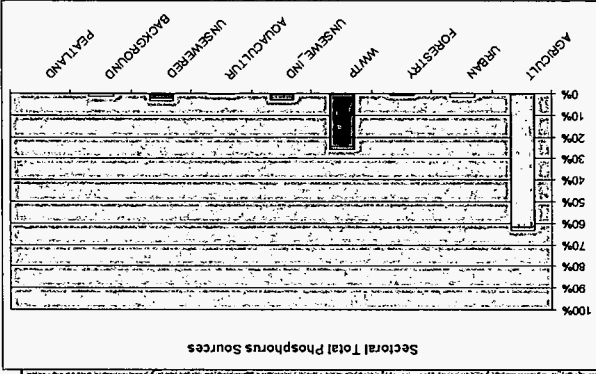
# Lower Lee - Owenboy WMU



- Legend**
- Towns and Villages
  - EPA Licensed Facility (IPPC)
  - Local Authority Licensed Discharge
  - Wastewater Treatment Plants
  - Water Treatment Plants
  - County Boundary
  - River Water Body Boundary
- River Status**
- High
  - Good
  - Moderate
  - Poor
  - Bad
- Lake Status**
- High
  - Good
  - Moderate
  - Poor
  - Bad



Name	Lower Lee Owenboy Water management Unit
Area	845km <sup>2</sup>
River Basin District	SWRBD
Main Counties	Cork
Projected Areas	2 surface drinking water: Iniscarra Reservoir and Lee River 1 UMWTD - Lower Lee Estuary





# Lower Lee Owenboy Water Management Unit Action Plan

STATUS/IMPACTS	
Overall status	There are 43 river water bodies in this WMU - 9 High, 9 Good, 11 Moderate, 14 Poor Status.
Status elements	2 Poor water bodies are dictated by Q Score, and 2 are dictated by Fish Status. 3 moderate water bodies are dictated by Q score and 3 are dictated by Physchem. Both Q and Physchem and Good / High for the good/high status water bodies that have been monitored. Lake status is dictated by macrophytes, chlorophyll and fish.
Possible Impacts - EPA Water Quality	<p><b>AUGHNABOY (CORK) – SW_19_1584</b>            2005 – With deterioration, to slightly polluted condition, recorded at the lowermost location (0300) in August 2005 the overall quality reverted to 1999 status.            2008 – Good ecological quality at the only scheduled sampling location. .            Status of WB 2009: Poor status dictated by Q score (physchem high).</p> <p><b>BLARNEY – SW_19_769</b>            2008 – Good quality recorded in successive surveys - prior to 2005 had been less than satisfactory. .            Status of WB 2009: Moderate status dictated by PHYSCHEM.</p> <p><b>BRIDE (LEE) – SW_19_1213; SW_19_1477; SW_19_1709</b>            2008 – Satisfactory throughout with high ecological quality at three of the sites. Significant improvement was recorded at Crookstown (0610) where high ecological quality was recorded but the hydromorphological condition of the site was only moderate. Some artificial siltation was recorded along right-hand margin of river at the final location (1600) but overall quality was satisfactory. .            SW_19_1213 Status of WB 2009: Good status dictated by Q score.            SW_19_1477 Status of WB 2009: Moderate status dictated by physchem status            SW_19_1709 Status of WB 2009: Good status dictated by Q score.</p> <p><b>SHOURNAGH – SW_19_821; SW_19_823; SW_19_1827</b>            2005 - No change. Continuing mostly satisfactory but again slightly polluted at Tower Bridge            2008 - Satisfactory throughout with high status at two of the locations.            SW_19_821 Status of WB 2009: Good status dictated by Q score.            SW_19_823 Status of WB 2009: High status dictated by Q score.            SW_19_1827 Status of WB 2009: Moderate status dictated by Q score.</p> <p><b>DRIPSEY – SW_19_1910; SW_19_850; SW_19_1713</b>            2001 - Satisfactory apart from uppermost location (0010) where large crops of filamentous algae were recorded downstream of forestry plantation.            2005- No change since previous survey. Satisfactory except at upper location (0010) where again slightly polluted.            2008 - No change with good quality at two of the three locations and the uppermost one continuing in high status.            SW_19_1910 Status of WB 2009: Moderate status dictated by Q score.            SW_19_850 Status of WB 2009: Good status dictated by Q score            SW_19_1713 Status of WB 2009: Good status dictated by Q score</p> <p><b>LEE (CORK) – SW_19_1663</b>            2001- No significant change. Satisfactory apart from Inishcarra Bridge (0600) where again highly eutrophic. The protected pearl mussel has apparently become scarce in the river in the past two decades.            2005- Major disruption to fauna at first location, upstream of Gouganebarra Lake (0010), where salmonid parr and other age classes had been killed. The pH of the water was 10.66 on the day, outside the limit of tolerance for these fish, which resulted from concreting work on a small bridge upstream of the sampling site. Further downstream the water quality status was the same as that of the previous survey with highly eutrophic conditions again recorded at Inishcarra Bridge (0600).            2008- Satisfactory apart from at Inishcarra Bridge where again poor ecological quality was recorded.            SW_19_1663 Status of WB 2009: Poor status dictated by Q score</p> <p><b>MARTIN – SW_19_838; SW_19_191</b>            2001 - No change since last survey with the first and final location (0100, 0600) again unsatisfactory due respectively to moderate and slight pollution effects. The sources of the pollution are suspected to be agricultural at the former and domestic (Blarney) at the latter.            2005- Satisfactory throughout, for only the second time since surveys began in 1971, following improvements in condition at the uppermost (0100) and lowermost(0600) locations.            2008 - Satisfactory apart from uppermost location where only moderate status. .            SW_19_838 Status of WB 2009: Good status dictated by Q score and physchem            SW_19_191 Status of WB 2009: Moderate status dictated by Q score</p> <p><b>OWENBOY (CORK) – SW_19_1321; SW_19_1584; SW_19_1968</b>            2005 - Deterioration, to moderately polluted conditions, at two locations (0200, 0600) since previous survey in 2003. Continuing slightly polluted at lowermost location (1400).            2008 - Continuing with only moderate ecological quality at final location but otherwise satisfactory with good status.            SW_19_1321 Status of WB 2009: Good status, dictated by Q score            SW_19_1584 Status of WB 2009: Poor status dictated by Q score            SW_19_1968 Status of WB 2009: Moderate status dictated by Q score</p>

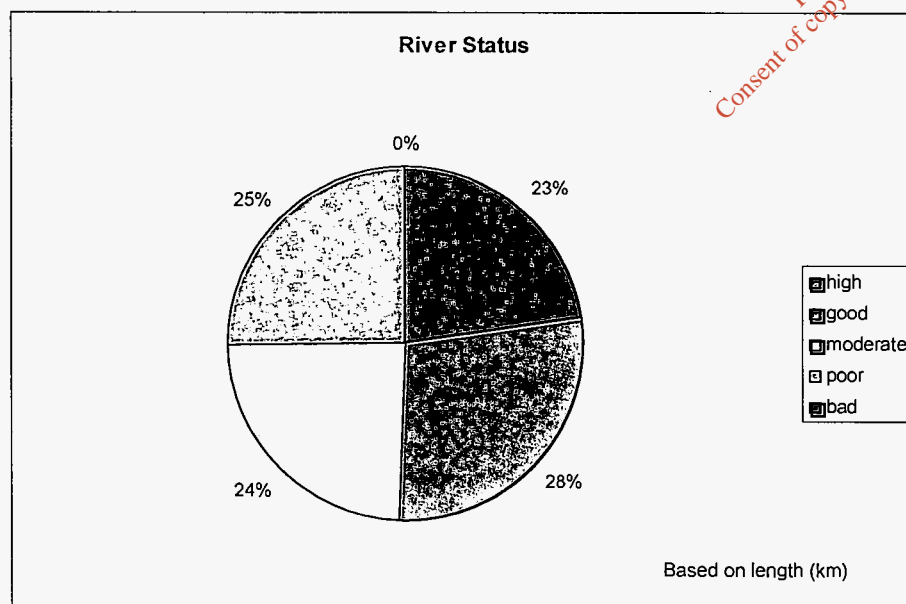
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# Lower Lee Ownboy Water Management Unit Action Plan

PRESSURES/RISKS	
Nutrient sources	Main source of TP is from unsewered industry (64%) and agriculture (26%).
Point pressures	24 WWTP - ghabullogue, Ballincollig New WWTP, Ballinhassig, Ballygarvan, Blarney/Tower WWTP, Cloghroe WWTP, Cloughduv, Coachford WWTP, Crookstown, Crossbarry, Dripsey WWTP, Five Mile Bridge, Grenagh, Half Way, Kerrypike, Killeens, Kilumney, Rylane, Whitechurch, Carrigrenan, Cobh, North Cobh, Passage/Monkstown, Ringaskiddy; 2 WTP (Inniscarra Pws, Lee Rd. Water Works); 21 Section 4s 26 IPPC's 1 contaminated site
WWTP risks	The following WWTPs are causign risk: Ballincollig New WWTP Ballygarvan Blarney/Tower WWTP Carrigrenan Cloghroe WWTP Coachford WWTP Cobh Crookstown Crossbarry Dripsey WWTP Killeens Passage/Monkstown Ringaskiddy Ringaskiddy Carrigaline Crosshaven Whitechurch

PRESSURES/RISKS	
Quarries, Mines & Landfills	14 quarries and 5 landfills. 3 WB at risk from quarries - SW_19_1663, SW_19_1584, SW_19_1968.
Agriculture	39 WBs at risk - SW_19_1520, SW_19_769, SW_19_1827, SW_19_1709, SW_19_1304, SW_19_1321, SW_19_1110, SW_19_1744, SW_19_1968, SW_19_1601, SW_19_163, SW_19_1451, SW_19_1964, SW_19_1825, SW_19_1717, SW_19_820, SW_19_191, SW_19_1652, SW_19_841, SW_19_1473, SW_19_838, SW_19_1480, SW_19_850, SW_19_823, SW_19_1713, SW_19_1663, SW_19_1213, SW_19_1477, SW_19_821, SW_19_1651, SW_19_1501, SW_19_1536, SW_19_1559, SW_19_269, SW_19_1686, SW_19_1280, SW_19_1584, SW_19_1695, SW_19_1937.
On-site systems	There are 15275 septic tanks in this WMU. 963 of these are located in areas of very high or extreme risk.
Forestry	Significant area of SW_19_1910 is under forestry
Dangerous substances	None at risk
Morphology	3 WBs at risk - SW_19_1663, SW_19_1744, SW_19_1825 - Water Regulation and Impoundments - Inniscarra Reservoir is a HMWB. (the local authority also note some drainage & channelisation of WB 19-1584 in the past particularly between Ballinhassig & Halfway when road was realigned, also some drainage upstream of Halfway in 2006)
Abstractions	1 WB at risk - SW_19_1663
Other	Local authority note possible impact of Bride confluence with Lee upstream of Inniscarra Bridge due to different chemistry of river waters (19-1663)



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## Future Pressures and Developments

Throughout the river basin management cycle future pressures and developments will need to be managed to ensure compliance with the objectives of the Water Framework Directive and the Programme of Measures will need to be developed to ensure issues associated with these new pressures are addressed.

# Lower Lee Oweiboy Water Management Unit Action Plan

SELECTED ACTION PROGRAMME	
NB All relevant basic measures and general supplementary measures/surveys apply	
Point Sources	Section 4 & IPPC licensed facilities – review licenses  See below for WWTP action programme.
Diffuse Sources	AGRICULTURE - Good Agricultural Practice Regulations and Enforcement FORESTRY – investigate impact of forestry on SW_19_1910 Septic Tanks: At Risk septic tanks are to be prioritised for inspections. Subsequent upgrade or connection to municipal systems depends on inspection and economic tests.
Other	Protection of drinking water, abstraction control and future licensing. Ensure licensing of quarries under Section 4 of Water Pollution Act 1977. MORPHOLOGY - Investigation into the impact of historical channelisation on morphological and fish status between Ballinhassig & Halfway. Carry out impassable barriers investigation at SW_19_1663, SW_19_1744, SW_19_1825.

Discharge		Measures						Waterbody		
Point Source Discharge	County	Plants Requiring Capital Works	Agglomerations Requiring Further Investigation Prior to Capital Works	Plants Requiring to Commence Implementation of Pollution Reduction Programmes for Shellfish Waters	Plants Requiring the Implementation of an Appropriate Performance Management System	Plants Requiring the Investigation of CSOs	Plants Requiring to Ensure Capacity of Treatment Plant is not Exceeded	Extended Timescale for Measure Implementation	Waterbody Code	Extended Deadline to Achieve Waterbody Objective
Ballincollig New WW	Cork South	Yes						No	SW_19_1663	Yes
Ballygarvan	Cork South						Yes	No	SW_19_1968	No
Blarney/Tower WW	Cork South					Yes	Yes	Yes	SW_19_1827	Yes
Carrigrenan	Cork City	Yes		Yes				Yes	SW_060_0750	Yes
Cloghroe WWTP	Cork South				Yes		Yes	No	SW_19_841	No
Coachford WWTP	Cork South		Yes				Yes	Yes	SW_19_1663	Yes
Cobh	Cork South	Yes	Yes	Yes				Yes	SW_060_0750	Yes
Crookstown	Cork South		Yes					No	SW_19_1477	No
Crossbarry	Cork South					Yes		No	SW_19_1584	No
Dripsey WWTP	Cork South				Yes			No	SW_19_1713	No
Killeens	Cork South	Yes						No	SW_19_769	No
Passage/Monkstown	Cork South	Yes	Yes	Yes				Yes	SW_060_0750	Yes
Ringaskiddy	Cork South		Yes					Yes	SW_060_0000	Yes
Ringaskiddy Carrigal	Cork South	Yes	Yes	Yes				Yes	SW_060_0000	Yes
Whitechurch	Cork South						Yes	No	SW_19_1520	No

OBJECTIVES	
Good status 2015	Protect 18 waterbodies.
Alternative Objectives	Restore 25 waterbodies by 2021 (SW_19_1110, SW_19_1152, SW_19_1304, SW_19_1321, SW_19_1451, SW_19_1477, SW_19_1520, SW_19_1536, SW_19_1559, SW_19_1584, SW_19_1601, SW_19_163, SW_19_1663, SW_19_1686, SW_19_1695, SW_19_1717, SW_19_1744, SW_19_1825, SW_19_1827, SW_19_191, SW_19_1910, SW_19_1964, SW_19_1968, SW_19_269, SW_19_769) – extended deadline for nitrogen losses to surface water via groundwater. (Two of which are also extended to allow wastewater infrastructure to be put in place (SW_19_1827 and SW_19_1663))

**Transitional Status** – Refer to separate transitional waters action programme  
**Groundwater Status** – Refer to separate groundwater action programme

# Lower Lee Owenboy Water Management Unit Action Plan - Rivers

Member State Code		Monitored Y- (Extrapolated/N)	Donor Waterbody	Biological Elements				Supporting Elements				Protected Areas				Objective	Data Objective to be achieved	
				Macroinvertebrates (Q)	Fresh Water Pearl Mussel	Fish	Rhytobanithos (Diatoms)	Morphology	Specific Pollutants	Physio-chemical	Ecological Status	Chemical Status	Special Area of Conservation	Special Protection Area	Nutrient Sensitive Waters	Drinking Water		
SW_19_1110		N	SW_19_1584							P							GES	2021
SW_19_1152		N	SW_18_2169							M							GES	2021
SW_19_1213		Y															GES	2009
SW_19_1280		N	SW_20_1209														GES	2009
SW_19_1304		N	SW_19_1536							P							GES	2021
SW_19_1321		Y															GES	2021
SW_19_1451		N	SW_19_755							M							GES	2021
SW_19_1473		N	SW_19_1480														HES	2009
SW_19_1477		Y															GES	2021
SW_19_1480		Y															HES	2009
SW_19_1501		N	SW_19_1709														GES	2009
SW_19_1520		N	SW_19_755														GES	2021
SW_19_1536		Y															GES	2021
SW_19_1559		N	SW_19_1875														GES	2021
SW_19_1584		Y															GES	2021
SW_19_1601		N	SW_19_1793														GES	2021
SW_19_163		N	SW_19_1744														GES	2021
SW_19_1651		N	SW_19_1480														HES	2009
SW_19_1652		N	SW_20_1209														GES	2009
SW_19_1663		Y													Y		GES	2021
SW_19_1686		N	SW_19_1875														GES	2021
SW_19_1695		N	SW_19_1875														GES	2021
SW_19_1709		Y															GES	2009
SW_19_1713		Y															GES	2009

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# Lower Lee Owenboy Water Management Unit Action Plan - Rivers

IE SW LowerLee/Owenboy																			
Member State Code	Nonharmful (Excluded)	Donor Waterbody	Biological Elements					Supporting Elements					Protected Areas						Date of Review
			Macroinvertebrates (Q)	Freshwater Pearl Mussel	Fish	Hydromorphos (Diatoms)	Morphology	Specific Pollutants	Physicochemical	Ecological Status	Chemical Status	Special Areas of Conservation	Special Protection Areas	Nature Sensitive Waters	Drinking Water	Other			
SW_19_1717	N	SW_19_1968									M							GES	2021
SW_19_1724	N	SW_19_1880									H							HES	2009
SW_19_1744	Y										P							GES	2021
SW_19_1825	N	SW_19_755										M						GES	2021
SW_19_1827	Y		G								M	M						GES	2021
SW_19_1854	N	SW_19_1880										H						HES	2009
SW_19_191	Y		M								G	M						GES	2021
SW_19_1910	Y		M								G	M						GES	2021
SW_19_1937	N	SW_19_1480										H						HES	2009
SW_19_1964	N	SW_19_1968										M						GES	2021
SW_19_1968	Y		M									H	M					GES	2021
SW_19_269	N	SW_19_1477										P						GES	2021
SW_19_769	Y		G								M	M						GES	2021
SW_19_820	N	SW_19_1480										H						HES	2009
SW_19_821	Y		G									G						GES	2009
SW_19_823	Y		H									H						HES	2009
SW_19_838	Y		G									G	G					GES	2009
SW_19_841	N	SW_19_1480										H						HES	2009
SW_19_850	Y		G									H	G					GES	2009

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# Lower Lee Owenboy Water Management Unit Action Plan - Lakes

Member State		IE: SW: Lower Lee / Owenboy																												
Member State Code	Name	Biological Elements			Supporting Elements			Protected Areas				Objective	Data Objective to be achieved																	
SW_19_138	Inniscarra Reservoir	Monitored/ Y (Extrapolated (N))	Macrophytes	M	Chlorophyll	M	Fish	Morphology	Nutrient: Enrichment	G	Physico Chemical	M	Biological Status	M	Chemical Status		Special Area of Conservation		Special Protection Area		Nutrient Sensitive Waters		Bathing Water		Bathing Water		Drinking Water	Y	GEP	2015

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