The Dublin Bay Project

Environmental Impact Statement No. 1

Ringsend Treatment Works

Volume 1

Main Report

McCARTHY ACER
CONSULTANTS LTD
CONSULTING ENGINEERS

ESB INTERNATIONAL

January 1997

Dublin
Corporation

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Dublin Bay Project

ENVIRONMENTAL IMPACT STATEMENT

No. 1
RINGSEND TREATMENT WORKS

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MAIN REPORT

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1. INTRODUCTION.

1.1 THE DUBLIN BAY PROJECT EIS.

This volume comprises the first in a series which comprise the Environmental Impact Statements (EIS) for the totality of the works encompassed by the **Dublin Bay Project**. The Project comprises the *Collection* of North Dublin Sewage flows intercepting the present discharge off the Nose of Howth, the *Transfer* of these flows for *Treatment* at Ringsend and the construction of an *Expanded Treatment Works* on the site of the existing works at Ringsend. Here the combined flows of all Dublin's catchments will be treated.

The Environmental Impact Statements in relation to the Dublin Bay Project are:

EIS No. 1 Ringsend Treatment Works
EIS No. 2 Sutton Pumping Station and Ancillary Works
EIS No. 3 Dublin Bay Submarine Pipeline
EIS No. 4 Sludge Transport and Disposal.

1.2 PROCEDURAL CONTEXT.

Under the provisions of the European Communities (Environmental Impact Assessment) Regulations, SI 349 of 1989, and more specifically Article 24 Sub-Section 11(d) of Part II of the First Schedule thereof, 'Waste water treatment plants with a capacity greater than 10,000 population equivalent' are specified as development requiring Environmental Impact Assessment (EIA).

1.3 ENVIRONMENTAL IMPACT STATEMENT.

The objective of the EC Directive on Environmental Impact Assessment (EIA) 85/337/EEC as embodied in the 1989 Regulations is to ensure that the effects of a project on the environment are taken into account at the earliest possible stage in all preparatory, planning and decision making processes. An EIA involves a systematic examination of all the *likely and significant* effects on the environment of a proposed development and the incorporation into the decision making process of the results of that examination.

The EIS is an essential element of the EIA required under EC Directive 85/337/EC. It should be noted that it is just one of three constituent parts of the process, the three being as follows:

* The Environmental Impact Statement (EIS)
* The Comments of the Public, Local or State Authority or EC Member State
* The Assessment by the Competent Authority

The Competent Authority in relation to the redevelopment of Ringsend STW is the Minister for the Environment as described in Part IX 'Environmental Impact Assessment of certain development by or on behalf of Local Authorities', SI No. 86 of 1994, Local Government (Planning and Development) Regulations 1994.

1.4 EIS TEAM.

This EIS has been prepared for Dublin Corporation **by McCarthy Acer Consultants Ltd./ESBI Atkins International**.

Contributions have been received from the following specialist sub-consultants:

* Brady Shipman Martin	- Visual
* Neil O'Flanagan, Archaeological and Historical Consultant	- Heritage
* Environmental Consultancy Services	- Land Flora and Fauna, Birds in the Intertidal Area
* Hyder Environmental	- Air, Noise
* Centre for Water Resources Research	- Water Quality

1.5 STATEMENT STRUCTURE.

The Statement is presented in the Grouped Format Structure as presented in the EPA's draft guidelines.(1)

Impacts are considered under the following chapters which describe baseline, impact and mitigation:

Chapter 6	Water Quality
Chapter 7	Air Quality
Chapter 8	Visual

FIGURE 1.1

Chapter 9	Land Flora and Fauna
Chapter 10	Marine Flora and Fauna
Chapter 11	Birds in the Intertidal Area
Chapter 12	Amenity
Chapter 13	Noise
Chapter 14	Socio-Economic
Chapter 15	Transport
Chapter 16	Climate
Chapter 17	Heritage
Chapter 18	Construction

In relation to the headings described in paragraph 2(c) of the Second Schedule to the European Communities (Environmental Impact Assessment) Regulations (349 of 1989) it is envisaged that the likely and significant impacts will be described in these chapters as follows:

Headings in SI 349 of 1989	**Relevant Chapters in EIS**
Human Beings	4, 6, 8, 12, 13, 14, 15, 16, 18
Flora	9, 18
Fauna	9, 11, 18
Soil	18
Water	6, 10, 11
Air	7, 18, 13
Climate	16
The Landscape	8, 9, 12
The Interaction between the Foregoing	3, 8
Material Assets	14
The Cultural Heritage	17

The Statement is published in three Volumes:

Volume 1 - Main Report.
Volume 2 - Appendices.
Volume 3 - Mathematical Water Quality Modelling Data and Results.

2. BACKGROUND.

2.1 HISTORICAL DEVELOPMENT.

Since the late 19th century, Dublin's drainage facility has developed in response to the expansion of the City and changes in public health requirements. The Pigeon House Treatment Works, Ringsend Pumping Station and the principal sewers in the City, which formed the Dublin Main Drainage Scheme, were notably the predominant development that took place during the early period. This scheme which was designed to serve a population of 254,700 within the City and some 69,000 persons in the suburbs, took some 10 years to develop and was commissioned in 1906. More recent drainage projects include North Dublin Drainage Scheme (1958), the Dodder Valley Drainage Scheme (1975), the Grand Canal Scheme (1982), extensions to Ringsend Sewage Treatment Works (STW) (1963-1989) and the Dun Laoghaire Pumping Station and Rising Main (1991). At present there are three main locations where sewage from the Greater Dublin Area is collected and discharged to the sea: Ringsend STW which provides primary treatment (1986), Howth Outfall which discharges screened raw sewage (1958) and Shanganagh Outfall which also discharges screened raw sewage via a long sea outfall (1984). The approximate catchments contributing to each of these outfalls is shown on Figure 2.1.

2.2 EXISTING RINGSEND TREATMENT WORKS.

The existing treatment works at Ringsend receives pumped sewage from the Ringsend Main Lift Pumping Station, Dun Laoghaire West Pier Pumping Station and sewage under gravity by Siphon from the Dodder Valley Scheme. Sewage flows delivered to Ringsend STW are screened, passed through detritors for grit removal and passed through large rectangular mechanically scraped sedimentation tanks. Settled effluent is discharged to the Liffey Estuary together with cooling water from the Poolbeg ESB Generating Station. The level of treatment provided by Ringsend STW may be classified as **'Primary'**. Excess storm sewage received, but not treated, at Ringsend STW is discharged to the River Liffey approximately 1km upstream of this combined discharge point. Figure 2.2 shows the layout of the existing Treatment Works.

Sludge removed from the primary sedimentation tanks is pumped to consolidation tanks for thickening prior to loading onto a sludge vessel for disposal at sea approximately 13km east of Dalkey Island at a site approved by the Department of the Marine.

2.3 NATIONAL ENVIRONMENT ACTION PROGRAMME.

In February 1990 the Government launched its '**Environmental Action Programme**' (EAP) aimed at the protection and enhancement of the natural environment. The EAP outlined actions considered necessary over a wide range of environmental areas.

The EAP involved significant further development of existing environmental measures and initiatives, and took particular account of the following considerations.

* The concept of sustainable development which envisages a reasonable balance in man's interest between development and nature.

* The principle of precautionary action even where there is no definitive scientific evidence to link emissions or discharges with detrimental environmental effects.

* The integration of environmental considerations in all policy areas.

The EAP adopted a policy of eliminating discharges of untreated sewage from all coastal towns with a population equivalent in excess of 10,000 and required the provision of full secondary treatment facilities.

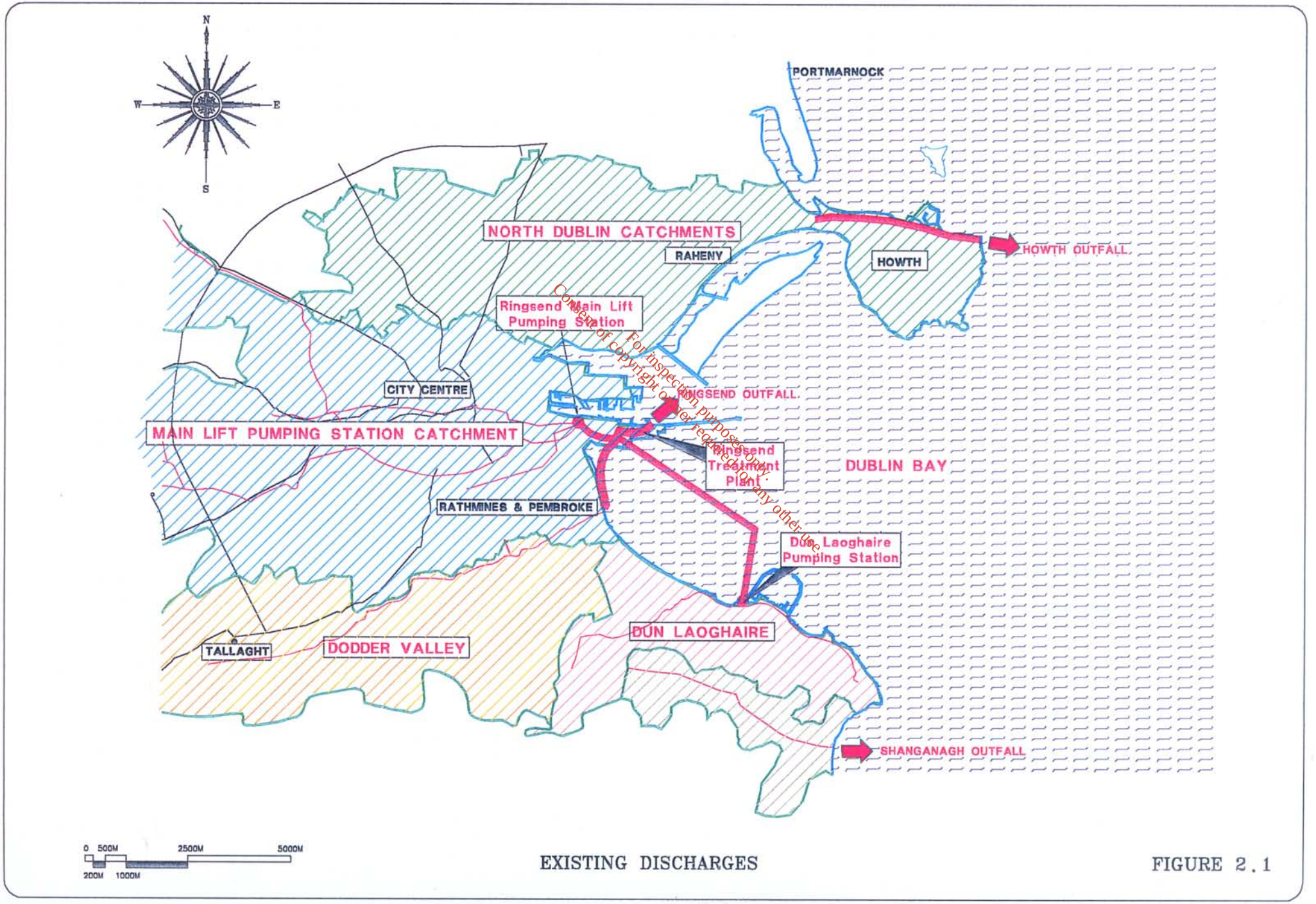
2.4 COUNCIL DIRECTIVE OF 21 MAY 1991 CONCERNING URBAN WASTE WATER TREATMENT (91/271/EEC).

The urban waste water treatment directive (UWWT) is concerned with the collection, treatment and disposal of urban waste waters and the treatment and discharge of industrial waste waters.

The principal elements of the Directive are summarised as requiring:

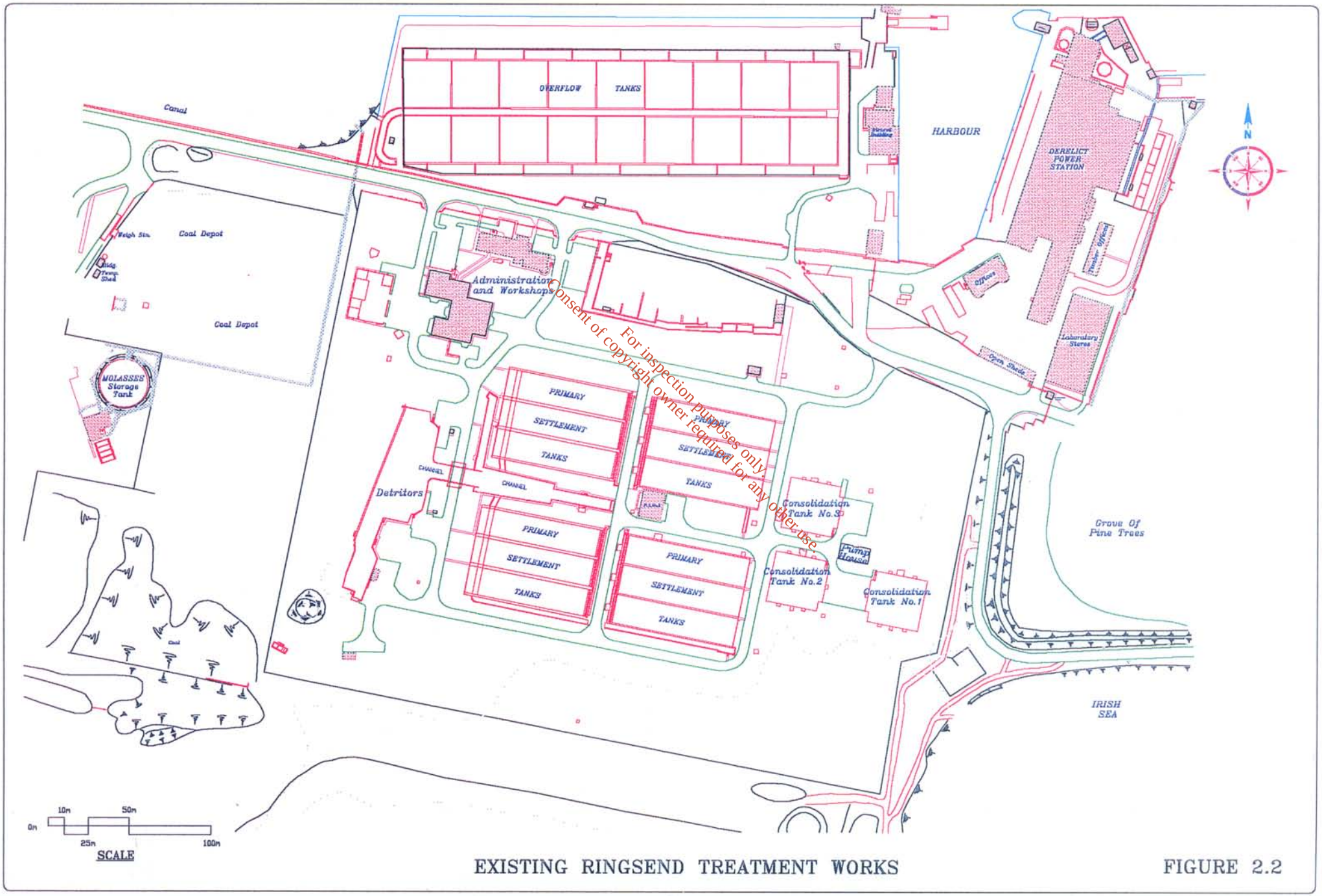
- Collection systems (sewerage) in urban agglomerations designed and constructed in accordance *with Best Available Technology Not Entailing Excessive Cost* (**BATNEEC**) having regard to:

  * Volume and characteristics of urban waste water.
  * Prevention of leaks.
  * Limitation of pollution of receiving waters due to stormwater overflows.



EXISTING DISCHARGES

FIGURE 2.1



EXISTING RINGSEND TREATMENT WORKS

FIGURE 2.2

- Collection systems to be in place by 31 December 1998, 2000 and 2005 for discharges to sensitive waters, populations of more than 15,000 and populations between 2,000 and 15,000 respectively.

- Waste water to be subjected to Secondary Treatment or equivalent prior to discharge.

- Treatment to be in place by 31 December 2000 and 2005 depending on size and location.

- A higher level of treatment where discharge is to 'sensitive' waters.

- The disposal of waste water be the subject of regulation.

- The discharge of industrial waste water into urban collection systems and treatment plants be the subject of regulation.

- The elimination of the disposal of sludge to surface waters by 31 December 1998.

- Sludge arising from waste water be reused whenever appropriate.

- Discharges from treatment plants be monitored and reported.

A concession in relation to the classification of waters as *'less-sensitive'* and allowing treatment of a lower order than Secondary Treatment is included in the Directive.

The UWWT Directive was transposed into Irish Law by the Environmental Protection Agency Act, 1992 (Urban Waste Water Treatment) Regulations 1994 (SI 419 of 1994).

No waters around Ireland are classified as 'less-sensitive'. A list of 'sensitive' receiving waters is included in the Regulations. All these waters are inland. Consequently the receiving water for the discharge of treated effluent from Ringsend STW at Ringsend is to neither *'less-sensitive'* nor *'sensitive'* waters. While not defined as such in the Directive this is presumed to be a *'normal'* water.

2.5 DUBLIN BAY WATER QUALITY MANAGEMENT PLAN.

The Dublin Bay Water Quality Management Plan[2] (DBWQMP) was prepared under the Local Government Water Pollution Acts 1977 and 1990 and was first presented in Draft Form by Dublin Corporation, Dublin County Council and Dun Laoghaire Corporation in May 1991 and has since been adopted by the above bodies.

The eastern boundary of the bay is described by a line from Baily to the North Burford Light to South Burford Light to Sorrento Point as shown on Figure 2.3.

In relation to the requirements pertaining to the discharge of treated effluent from the treatment works at Ringsend DBWQMP adopts a strategy requiring:

* Secondary Treatment initially based on a non-nitrifying process.
* Monitoring and review of the effectiveness of this works.
* Provision of nitrogen removal if the monitoring and review indicates a requirement.

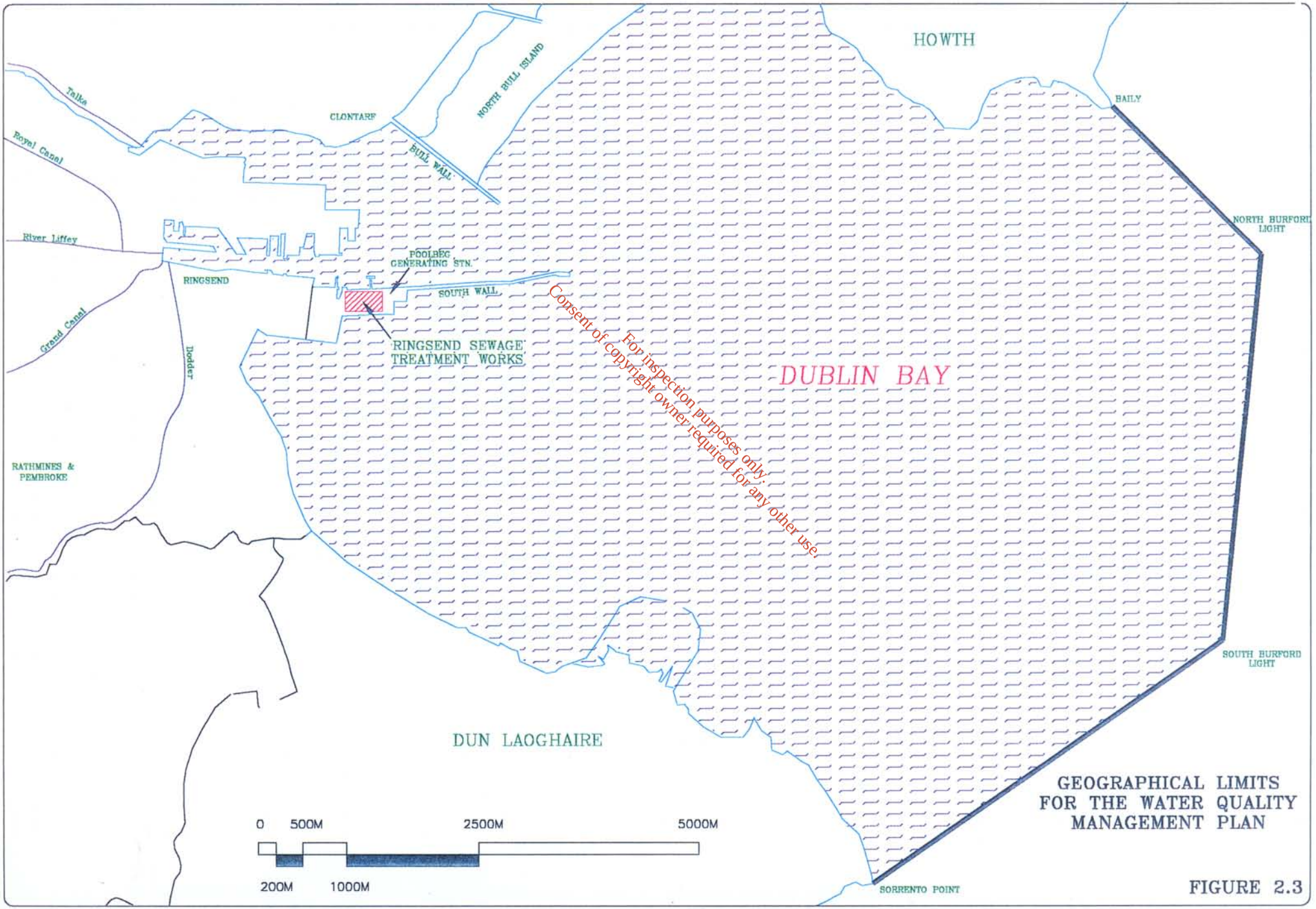
Appendix B to the Main Report: **Part 1: The Plan** provides a list of Water Quality Standards for Dublin Bay. This is included as Appendix A in Volume 2 of this Statement.

2.6 BATHING WATERS.

Quality of Bathing Waters Regulations, 1992 SI 155 of 1992 gives effect to Council Directive concerning the quality of bathing waters 76/160/EEC.

As described in the First Schedule to the Regulations there are only two designated bathing areas within the areas described as Dublin Bay; Dollymount under the jurisdiction of Dublin Corporation and Seapoint under Dun Laoghaire Corporation now Dun Laoghaire-Rathdown County Council.

Water quality standards required for bathing waters are described in the Second Schedule to the Regulations. The list of standards for Dublin Bay described in 2.5 above is in conformance with the regulations.



2.7 PUBLIC CONSULTATION.

In the spring of 1996 Dublin Corporation undertook an extensive Public Consultation and Information process with a view to informing the public of its intention in relation to the Dublin Bay Project and seeking responses to its proposals. The principal elements of the process were:

- Presentations to elected representatives.

- Press releases and radio and television interviews.

- Project Information Leaflet distributed to homes in Dublin 1, 2, 3, 4, 13 and County Dublin including details of public exhibitions.

- Public Exhibition of proposals including a video presentation at Ringsend, Sutton, Civic Offices Wood Quay, Town Hall Dun Laoghaire and County Hall Tallaght.

The Public Information Leaflet contained a comment card which invited comment to the project team.

Dublin Bay Project received extensive media coverage including details of the times and locations for the public exhibitions. Details and extracts from this coverage are included in Volume 2, Appendix B.

In excess of 300 comments were received by Dublin Corporation in respect of the project. A great many were supportive of the aims of the scheme i.e. to improve water quality in Dublin Bay. Most of the comments related to the Pumping Station and Transfer Pipeline which are considered under the respective EIS Volumes of the Dublin Bay Project. Many others related to the status of the Causeway to Bull Island which are outside the scope of the Dublin Bay Project but which are the subject of separate studies by Dublin Corporation.

Topics directly related to the proposed treatment works at Ringsend are detailed hereafter. (figures in brackets indicate the chapter of the EIS which covers this matter).

Q(i) Assurances that treated sludge (particularly dried) posed no health risk from pathogens.

The proposed sludge treatment processes are to be carried out within the Ringsend Treatment Works site. Chapter 7.2 examines the potential impacts within the works. EIS No. 4 considers the disposal impacts of the sludge.

Q(ii) Who will be accountable for the running of the plant and achieving the desired discharges?

Dublin Corporation will be accountable for achieving the required level of treatment

Q(iii) What would be the effect of traffic carrying treated sludge and what will be the road routes used? **(15)**.

Q(iv) Why was Sandymount Strand not included with Dollymount Strand in setting out desired bathing water quality?

As Sandymount Strand is not a designated bathing beach there is no obligation on Dublin Corporation to achieve bathing water quality there. While the existing discharge does not significantly affect Sandymount Strand the improvement of water quality subsequent to the development will result in general improvements to the quality of water in Dublin Bay.

Q(v) Option 4 (Incineration) of the presented options not considered appropriate **(3).**

Q(vi) Impact on feeding birds should be minimised **(9)**.

Q(vii) Sludges from the treatment works should be re-used **(3).**

Q(viii) The proposed re-use of the existing works site should be adhered to and no incursion carried onto the Nature Park.

It remains Dublin Corporation's intention to stay within the curtilage of the existing works.

Q(ix) Treated effluent should be discharged on the ebb tides as was the case up to the 1980's and consequently ensure water suitable for bathing in the River Liffey upstream of the discharge.

Prior to the 1980's redevelopment discharge of the Rathmines and Pembroke Catchment within the city system was regulated to allow untreated discharge during the ebbing tide. All other flows (forming the greater part of the total discharge) were discharged on a continuous basis following primary treatment. The new development proposes to discharge into the cooling water channel of the adjacent power station as is the current practice. The extent of improvement in the water quality of the Liffey Estuary is discussed in Chapter 6.

Q(x) Gas from sludges should be piped to the nearby power stations for electricity generation.

Biogas from anaerobic digestion of sludges in Ringsend STW could be used to fuel a sludge drying process. Biogas produced on the site is unlikely to satisfy the energy demand for the drying process and natural gas piped to the site would be required to augment the biogas supply.