

11.0 EFFECT ON THE ENVIRONMENT: Odours.

11.1 Introduction.

11.1.1 This chapter has been prepared by Malone O'Regan and describes the existing receiving environment in terms of existing odours issues affecting the peninsula and surrounding area and addresses the potential impact of the proposed development in terms of odour nuisance generation. The potential impact on future users arising from existing odour sources is also addressed in the description of the receiving environment although this is a constraint which is largely outside of the control of the DDDA.

11.2 Assessment Methodology.

11.2.1 The receiving environment is characterised through literature review of all available information with regard to the current odour issue at Poolbeg and the surrounding area. No odour monitoring or modelling of existing sources has been undertaken as part of this EIS as there is sufficient evidence that there is an existing odour issue and, this would be premature prior to the installation of abatement. The WWTP is not subject to this EIS although it does form part of the receiving environment upon which the impact of the Draft Planning Scheme is assessed (Chapter 20.0 provides further detail on impact on utilities). Similarly, the Dublin Waste to Energy Project is not subject to this EIS; although any potential odours associated with its operation are identified as part of the receiving environment upon which the impact of the proposed Planning Scheme will be assessed.

11.3 The Receiving Environment.

11.3.1 Anthropogenic or "Man-made" Sources.

11.3.1.1 Currently odour from the Waste Water Treatment Plant is an on-going problem on the Poolbeg Peninsula and surrounding areas, with complaints lodged from residents located to the west in Ringsend and Sandymount. Most odour complaints occur when easterly winds prevail which can occur up to 20% of the time per annum.

11.3.1.2 The most common odours associated with sewerage treatment works are biogenic odours which are produced by the decomposition of organic matter in the absence of oxygen and typified by hydrogen sulphide (H₂S), ammonia, amines, mercaptans and volatile fatty acids.

- 11.3.1.3 H₂S is normally considered a good indicator of the presence of biogenic odours since it has an extremely low odour detection threshold (commonly 5ppb) below which human nose cannot detect its presence.
- 11.3.1.4 Worst case conditions for odour dispersion are low wind speed, high atmospheric stability and dry and warm weather conditions.
- 11.3.1.5 The European Communities (Waste Water Treatment)(Prevention of Odours and Noise) Regulations, 2005 require that local authorities prepare odour management plans for each treatment plant operated on its behalf. Dublin City Council (DCC) monitors odour emissions on site and off-site and maintains an odour complaints log. Significant works involving covering of channels, chambers, process changes and installation of odour control scrubbers were carried out in 2006 which reduced emissions from the WWTP. However, DCC is currently in the process of executing major additional works aimed at alleviating odour nuisance, although it is understood that these works are designed on the basis that there are no receptors within 500m of the plant. Current works include covering of all remaining tankage and provision of large odour control bio-scrubbers to deal with captured emissions. DCC is also carrying out major modifications to the three sludge dryers which will deal with emissions from this plant.
- 11.3.1.6 A potential exists for odour emissions from the proposed Dublin Waste to Energy Project considering the amount of waste expected to be handled and stored on site and the number of trucks required to supply the plant with waste. However, it can be ascertained from Chapter 1 of the Waste to Energy Plant EIS, 2006 that the waste reception hall has been designed to be maintained at a negative pressure relative to the outside air, thus preventing strong odour from leaving the waste reception area and creating odour nuisances in the surrounding areas. The Waste to Energy facility will not impact in terms of odour on future occupiers as Condition 3 of the EPA's waste license for that facility stipulates that 'Prior to the date of commencement of the waste activities at the facility, the licensee shall install and provide adequate measures for the control of odours and dust emissions.' Subsection 3.10.2 of Condition 3 specifically requires the implementation of an odour and fugitive dust management system.

11.3.2 *Natural Sources.*

- 11.3.2.1 The Draft Planning Scheme Area is also characterised by odours emanating from natural biological processes along the shoreline. It appears from site visits that the water discharging from the drain currently exiting from the northeastern corner of the Fabrizio site may be contaminated with sewage. Photos of the discharge are shown in Appendix 11.1. This may be contributing to localised odour along the shoreline by accelerating algae growth which then rots and produces the odour. It is interesting to note in Chapter 4 of the EPA's Water Quality Report 2004 – 2006 published in 2008, that mention is made of one potential negative impact on water quality in the Liffey Estuary arising from the reoccurrence of opportunistic macroalgae along the south Dublin seashore and the Tolka estuary during the autumn months. The EPA report notes that the abundance and distribution will be assessed as part of the Water Framework Directive monitoring programme.
- 11.3.2.2 The original EIS prepared for the WWTP in 1997 did not identify these odours as the peninsula was already being used for wastewater treatment and therefore the focus of the characterisation of the baseline study focused on odours associated with the original treatment works.
- 11.3.2.3 Monitoring and modelling specific to the natural processes has not been carried out, however it is likely that the odours associated with the natural processes are localised along the shoreline, are transient in nature, and are therefore not likely to cause significant nuisance to future occupiers.

11.4 **Relevant Characteristics of the Draft Planning Scheme.**

11.4.1 *Construction Phase.*

- 11.4.1.1 Poolbeg Peninsula was formed using waste material. Further detail on ground conditions is provided in Chapter 7.0. During construction, soil and made ground will be moved/disturbed and therefore there is potential for the short term release of odours, although this is likely to be localised at the construction site. Nevertheless, mitigation measures are set out below.

11.4.2 *Operational Phase.*

- 11.4.2.1 The Draft Planning Scheme comprises a mix of uses including residential, commercial, community and leisure / open space. During the operational phase, odours could arise from restaurant outlets etc. However these will be minor in nature and will not impact on existing off-site receptors.

11.5 **Likely Impact of the Draft Planning Scheme.**

- 11.5.1 The proposed Scheme will not aggravate or further impact on the existing odour nuisance experienced on the peninsula or the surrounding area.

'Do Nothing' Scenario.

- 11.5.2 The 'Do Nothing' scenario does not provide the impetus to reduce odours and remove potential odour sources in the area compared with the 'Do Something' scenario. However if odours do not reduce, the potential for impact will be significant as more people move into the area. Mitigation measures are provided below.

11.6 **Mitigation.**

11.6.1 *Construction Phase.*

- 11.6.1.1 General odour control measures will be required to be implemented by developers during the works where materials with potential to produce odours during excavation are likely to be encountered. The excavation of these areas will be required to be programmed such that the potential odorous material is exposed to the atmosphere for minimal time. This material will be stockpiled under tarpaulins. Odour suppression units may be required to be used on site, depending on the nature and volumes of odour generating material encountered.

11.6.2 *Operational Phase.*

- 11.6.2.1 The WWTP is outside the Draft Planning Scheme Area. As stated above, it is understood that the odour issue will be alleviated although this may only positively affect areas 500m beyond the boundary of the WWTP. The development of Areas 1 and 2 i.e. the former IGB and Fabrizioia sites and development along South Bank Road fall beyond the 500m limit and these areas will benefit from the alleviation works. Notwithstanding this, monitoring after the works have been completed but prior to

development in these areas will be required of developers to ensure that there will be no unacceptable impacts on future occupiers.

- 11.6.2.2 The proposed Pigeon House Dock area and parts of the Southern Shore may still be affected by odour as these areas fall within 500m of the WWTP. These are later phases in development on Poolbeg and before they occur it is possible that flows may be redirected from Ringsend WWTP to a new plant which may positively impact on odour nuisance.
- 11.6.2.3 Notwithstanding the above, the DDDA will liaise with DCC in relation to prevention of odour nuisance and developers will be required to ensure that odour levels are acceptable prior to permitting development of these areas.
- 11.6.2.4 The drain currently exiting the Fabrizia site will be required to be further investigated in terms of sources draining to it. If sewage (and other contaminants) is present, then the developer, under the Section 25 certification process, will be required to redirect it for appropriate treatment and/or remediation. Developers will be required to ensure that any discharges to the Bay do not cause further aggravation of the odour environment.
- 11.6.2.5 Restaurant air handling units and/or kitchen extracts will be fitted with filters by occupiers or developers to prevent localised odour impact.

11.7 References.

The Dublin Bay Project, Environmental Impact Statement No. 1, Ringsend Treatment Works, January 1997, McCarthy Acer Consultants Ltd.

Dublin Waste to Energy Project, Environmental Impact Statement, Volume 1 of 3, June 2006, Elsam Engineering A/S.

11.8 Appendices

Appendix 11.1 – Photos of discharge point from northeast corner of the Fabrizia site.

Appendix 11.1

Photographs of north east corner Fabrizia Site drain and adjoining area of the Strand.



