CHAPTER 12: OTHER INFRASTRUCTURE

This chapter sets out future demand and improvements required to infrastructure within the study area. A more detailed analysis of the issues, including background information, maps and current proposals, can be found in Appendix 8.

12.1 Water Supply

12.1.1 Future demand

The 1996 Greater Dublin Strategy Study and the 2000 Review make up the main strategic blueprint for all water-related projects in the Greater Dublin Area (GDA).

Regionally short term water supply needs are likely to be addressed by the proposed schemes which include the maximisation of the Liffey abstraction at Leixlip and continuing conservation efforts in the Greater Dublin Region. However, based on projections made in the GDWSSS Year 2000 Review, demand from the region supplied by the Leixlip Water Treatment Plant may exceed supply by approximately 2007. The Regional Report 2004 notes that a new major source for the DGA is required, for which studies are to be started; and that construction of the North Fringe Watermain has started, due for completion 2005.

Locally, demand predictions and design standards that are detailed in the North Fringe Water Supply (NFWS) 'Design Standards for Hydraulic Analysis', February 2001, generally adopt the design horizon and predicted leakage targets detailed in the GDWSSS review year 2000.

Demand figures in the NFWS analysis are based on development assumptions which, exceed those recommended in the report, as they make assumptions that much of the study area is developed with a Mixed Use ('MU1' zoning). This classification is now defunct, but is included as a guide to actual demand and in anticipation of a range of possible results of this planning study.

Although the Report on the North Fringe Water Supply Scheme took into account the water demands of the draft MU1 zoning in identifying required infrastructure for water supply, the North Fringe Watermain under construction is only sized to serve a portion of the MU1 zoning. Other infrastructure was identified to serve the full extent of the MU1 zoning but is not proceeding at this time. The sizing of the additional infrastructure will be revised following the clarification of the long term water supply needs of the area.

This planning study generally does not propose any significant additional development uses other than detailed in Fingal County Council's Development Plan 1999 and therefore less land is proposed to be developed than assumed in the NFWS design.

Table 1 in Appendix 8 provides an indicative illustration of the likely difference in demand from the zones in the NFWS and this planning study i.e. demand will be similar or less than the NFWS figure.

The demand requirements will require a more rigorous analysis and review to provide a quantitative illustration of the likely difference in demand resulting from the different zonings. It should be noted that the status and position of the Airport Public Safety Zones are under review.

12.1.2 Conclusions relating to water supply

The schemes and improvements to water supply underway are likely to ensure short term demand is satisfied. Over the longer term, it is anticipated that demand may exceed supply around 2007. This has identified the need for an additional major

source to supply the Dublin regional water network. Feasibility studies are to commence soon with the intention of fast tracking infrastructure development (after design approval).

The actual water demand likely to be generated by the proposals in this planning study (if adopted) is less than that allowed for in water supply demand models to date (see 12.1.5). However, supply will depend on demand elsewhere in the mains network trunk.

Planning should encourage local efforts at water conservation (the NFWS study considers estimated distribution losses about the study area at 30%), including methods highlighted by the GDWSSS (metering, etc.), to reduce the burden on supply.

12.2 Surface water drainage

12.2.1 Future demand and likely effect of development

Much of the study area is currently agricultural land. Any future development is likely to increase the amount of impermeable ground with hard standing/structures. Development will also reduce the already limited water retention capacity of soils and with the loss of vegetation further reduce the infiltration and water retention capacity of the soil. The cumulative effect of development is to increase the peak drainage flow.

Although comprehensive hydraulic models for the study area will not be available until the Greater Dublin Strategic Water Study is underway it is clear that the drainage capacity of the existing study area is limited. Combining this with the potentially hazardous downstream effects of unplanned development, on site drainage represents a significant consideration for any proposed development.

12.2.2 Conclusions

Areas of flooding risk and more specific implications of development in the study area will be better defined in the Greater Dublin Strategic Water Study. In the meantime each development proposal within the study area and its effect on surface water systems would be considered by Fingal County Council as part of the planning process.

Fingal County Council have suggested that development should aim to produce no net increase in run off based on an initial 'greenfield' use. Each development scheme within the study area should make provision for the cost implications of measures to attenuate flow.

Attenuation measures that may be appropriate may also impact on the amount of available land (if storage ponds are deemed an appropriate solution). The reduced discharge from the study area will be achieved by using standard sustainable urban drainage techniques, including on site storage/retention, as well as efforts to reduce production at source and grey water recycling if appropriate.

The type of attenuation measures to be adopted will depend on their locations, proximity to the airport flight paths, ground conditions and hydrology,

12.3 Foul water drainage

12.3.1 Future demand and effect of development

There is overall adequate drainage capacity in the area, which has been addressed by the North Fringe/ Northern Interceptor Sewer project (NF/NIS). However, the

recommendation in this report for a zone of high density employment intensive development may require local upgrading of the NF/NIS. This planning study proposes that significantly less land is likely to be developed than is assumed in the NF/NIS study, illustrated in Table 2 of Appendix 8.

Demand requirements may necessitate a more rigorous analysis and review to illustrate the likely difference in demand resulting from the change in land use.

12.3.2 Conclusions relating to foul drainage

This planning study does not propose any significant additional development uses than those detailed in Fingal County Council's Development Plan and consequently significantly less land is proposed for development as mixed use than assumed in the NF/NIS design criteria. Therefore it is likely that the foul water drainage capacity provided by the NF/NIS should be sufficient for the long term.

12.4 Gas

12.4.1 Future demand

The demand for natural gas is growing at a substantial rate and it is anticipated that this trend will continue, particularly considering the potential demand for natural gas for power generation. Bord Gais, in conjunction with the Department of Public Enterprise, initiated a project called "Gas 2025" in November 1997, so as to identify transmission pipeline capacity needs to the year 2025.

Gas demands in the study area will depend on:

- Rate of economic growth
- Demographic factors
- Environmental issues
- Technological factors
- Cost of gas and comparative cost with other fuels
- Development of alternative energy sources
- Energy market liberalisation

12.4.2 Conclusions

The Gas 2025 Study forecasts that demand for natural gas will continue to grow strongly. In recent discussions, Bord Gais have stated that there would be no constraints in supplying gas to proposed developments within Fingal County providing adequate planning and time is allowed for. Bord Gais have a 5 year demand forecast and a network analysis department which works closely with Local Authorities. This together with obtaining planning permission to install new infrastructure puts Bord Gais in a strong position to anticipate future supply needs highlighted in the planning study.

12.5 Electricity

12.5.1 Conclusions

Although ESB (the main infrastructure provider) has a planned implementation programme which addresses the strategic plans of each local authority, they consider each proposed development on an individual basis and are moving quickly to achieving a network supply which functions within current operating limits. Most of the spare capacity is being used to accommodate the rapid growth in commercial and residential developments but the network is still working efficiently. Currently ESB are running a tight network but do not foresee a problem supplying proposed new developments within the Fingal area as infrastructure is good in the area.

However, we noted earlier (Chapter 7, 7.4.2) that in Greater Dublin as a whole, there is evidence that supply problems may have affected investment decisions for certain high energy users. This will need review with ESB. Furthermore, with the arrival of an open market, more companies will be looking into developing new infrastructure networks to new customers and competition will be even greater to supply these new developments.

12.6 Telecommunications

12.6.1 Conclusions

Overall, most of the telecommunications companies are well established in the Fingal area and capacity is sufficient to supply any new proposed developments. The telecommunications companies work closely with the developers to ensure supply is provided. The decision to construct new fibre links and networks is based on commercial viability but more often than not, these links are constructed to ensure these developments are served. Most of the companies are catching up to the demand for services and do not foresee a problem in coverage around the Fingal area.