

Movement and Infrastructure

Chapter 7

CHAPTER 7 MOVEMENT AND INFRASTRUCTURE



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CHAPTER 7

MOVEMENT AND INFRASTRUCTURE

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7.1 Transportation

Background – The Need to Travel

It is the function of the transport system to cater for the travel needs of people and businesses, consistent with the broader policies of the Plan. A safe, efficient, effective and sustainable transportation system is essential to the future economic, social and physical development of Fingal. While it is clear that walking, cycling and public transport are the most sustainable modes of transport, it is also clear that some essential travel will continue to be made by cars and goods vehicles.

Statement of Policy

- Promote and facilitate movement to, from, and within the County of Fingal, by integrating land use with a high quality, sustainable transport system that prioritises walking, cycling and public transport.
- Provide an appropriate level of road infrastructure and traffic management, in particular to support commercial and industrial activity and new development.

Policy Context

There are a number of National and Regional Policies and Plans which provide a context for the Council's transportation strategy and policies as follows.

- *Building on Recovery: Infrastructure and Capital Investment 2016-2021,*
- *The National Spatial Strategy 2002-2020,*
- *The Regional Planning Guidelines for the Greater Dublin Area 2010-2022.*

Building on Recovery: Infrastructure and Capital Investment 2016-2021

The recently published government capital programme includes a number of transport investments that are of critical importance to Fingal. In particular, the programme includes a proposed new Metro North which will start construction in 2021 and will be in operation by 2026/2027. It also includes the first phase of the DART Expansion Programme with the extension of DART to Balbriggan and with design and planning to progress for expansion of DART services to Maynooth. The DART underground project, which remains a key element of integrated transport for the Greater Dublin Area, will be redesigned to provide a lower cost technical solution, whilst retaining the required rail connectivity. There will be funding for further upgrading of Quality Bus Corridors and completion of the Dublin City Centre Resignalling Programme.



Fingal North Dublin Transportation Study

The National Transport Authority (NTA) commissioned consultants to conduct the *Fingal / North Dublin Transportation Study* which examined the medium-long term needs of the Dublin City – Dublin Airport – Swords corridor. The results of this have fed into the Draft Transport Strategy for the Greater Dublin Area which the NTA has submitted to the Minister for Transport.

Draft Transport Strategy for the Greater Dublin Area 2016-2035

This Strategy provides a framework for the planning and delivery of transport infrastructure and services in the Greater Dublin Area up to 2035. The Strategy presents the transport requirements for the GDA based on principles of effective, efficient and sustainable travel.

2009-2020 Smarter Travel – A Sustainable Transport Future

This document aims to deliver a sustainable transport system as an important dimension of the climate change agenda. The Government reaffirms its vision for sustainability in transport and sets out five key goals: (i) to reduce overall travel demand, (ii) to maximise the efficiency of the transport network, (iii) to reduce reliance on fossil fuels, (iv) to reduce transport emissions and (v) to improve accessibility to transport and improve our quality of life.

National Cycle Policy Framework 2009-2020

This document sets out actions to deliver a new culture of cycling in Ireland by 2020, with 10% of all trips to work being made by bicycle within the next twelve years. It has 19 clear objectives based on interventions in planning, infrastructure, communication, and education.

NTA Greater Dublin Area Cycle Network Plan

This plan sets out a ten year cycling strategy for Dublin, Kildare, Meath and Wicklow and was published by the NTA in 2014. The plan is to increase the region's cycle network fivefold in length to 2,840 kilometres. It includes a trebling of the existing network in urban areas from 500 kilometres to 1485 kilometres in length and over 1300 kilometres of new connections between towns in rural areas. The routes will include greenways, cycle paths, cycle lanes and roads with low levels of traffic and will inform the next decade of investment in cycling.

Design Manual for Urban Roads and Streets

The *Design Manual for Urban Roads and Streets (DMURS)* sets out design standards for urban roads and streets which balance the “place function” (i.e. the needs of residents and visitors) with the “transport function” (i.e. the needs of pedestrians, cyclists, public transport, cars and goods vehicles). The manual gives guidance on the layout of new developments (with a view to maximising permeability for sustainable modes), and on the design of individual roads and streets taking into account streetscape, and urban design as well as engineering. The focus is on providing streets that are good places to live, work and play in, while providing appropriate capacity for pedestrians, cyclists, public transport and cars. The use of the Manual is mandatory for all Local Authorities.



Objective MT01

Support National and Regional transport policies as they apply to Fingal. In particular, the Council supports the Government's commitment to the proposed new Metro North and DART expansion included in *Building on Recovery: Infrastructure and Capital Investment 2016-2021*. The Council also supports the implementation of sustainable transport solutions.

Objective MT02

Support the recommendations of the National Transport Authority's Draft Transport Strategy for the Greater Dublin Area 2016-2035 to facilitate the future sustainable growth of Fingal.

Integrated Land Use and Transportation

The integration of land-use and transport involves the location of trip intensive land uses (such as high-density housing, offices, and comparison retail) near high capacity public transport (such as DART, Metro, Luas, and Bus Rapid Transit). It benefits the land uses by providing high quality public transport for the greatest number of residents and employees. It benefits public transport by providing sufficient numbers of customers within its catchment to sustain the high cost of public transport infrastructure and services.

It also involves ensuring that the places where people live are either close to, or are connected by public transport to, their places of work or education, thereby allowing people to use the most sustainable modes of transport, namely walking, cycling, and public transport. The private car is an inefficient use of scarce and valuable road space, especially single occupancy cars during congested peak periods in urban areas. Allowing higher density development to occur along public transport corridors increases the number of people within the walking catchment of the public transport service, which in turn increases the patronage of the service, and leads to an increase in its financial and economic viability and positive environmental impact. The provision of an integrated approach with a well designed public realm will help secure the modal shift to more sustainable modes of transport, i.e. walking and cycling.

In developing an integrated land use and transportation policy it should be noted that land uses that generate large numbers of cars and/or Heavy Goods Vehicles (e.g. retail warehousing, industry and distribution centres) should be situated adjacent to good road networks and not where traffic would need to travel through town centres or residential areas.

Objective MT03

Integrate land use with transportation by allowing higher density development along higher capacity public transport corridors.

Demand Management

The transportation system comprises a supply side (road and public transport networks and services) and a demand side (the need or want of people and goods to travel). In an urban area, it is inevitable that unmanaged demand will outstrip supply, leading to congestion, which is economically inefficient and environmentally damaging. It is essential, therefore, to manage the demand for transport so that congestion is minimised. There are a number of methods of managing demand.



Parking Control

No-one will travel by car if they know that there are no car parking spaces available at their destination. In particular, commuters will use more sustainable modes of transport if they do not have car parking at their place of work or education, this is the most effective and most widely used form of demand management. The Development Plans for each of the four Dublin Local Authorities currently include standards which limit the amount of car parking at new developments, especially places of work and education. Employment-based developments that are close to public transport need fewer car parking spaces. Consequently, the car parking standards are split into Zone 1 which allows fewer car parking spaces and Zone 2 which allows a higher number of car parking spaces.

Zone 1 applies to areas which are:

- within 1600m of DART, Metro, Luas or BRT, (existing or proposed),
- within 800m of a Quality Bus Corridor,
- zoned MC Major Town Centre,
- subject to a Section 49 scheme.

Zone 2 applies to all other areas.

In the case of retail developments, demand can be managed by pricing. The pricing regime should favour shoppers, who generally stay for shorter times, over employees, who generally stay for longer times. The viability of commercial centres depends on having sufficient car parking spaces to facilitate both customers, who are predominantly short-stay parkers and employees, who are predominantly long-stay parkers. To achieve this, long-stay parking will be provided within a reasonable walking distance of the commercial centres and short-stay parking (up to three hours) will be provided at the commercial centres.

Objective MT04

Control on-street parking in the interests of the viability, vitality and amenity of commercial centres by maximising the supply of short stay parking for shoppers, while providing long-term parking within a reasonable distance for employees.

In town and village centres where plot sizes are small, it is often challenging to provide car parking for new developments. When considering applications for developments in towns and village centres, the availability of car parking space should be considered. Where appropriate, proposed residential units should have a car parking space per unit. Where Pay and Display systems are in operation, the parking demand can be accommodated on-street. As the use of on-street parking, especially permit-parking, saves developers the cost of providing their own car parking spaces and reduces Council revenue from Pay and Display, a contribution in lieu of parking is appropriate.

Objective MT05

Consider the implementation of Parking Demand Management Strategies in housing estates in close proximity to public transport facilities experiencing parking and congestion issues, where deemed appropriate and practicable.



Electric Vehicles

Electric Vehicles (EV) refer to both Battery Electric Vehicles (BEV) and Plug-in Hybrid Vehicles (PHEV). Ireland's target is to achieve 10% electric vehicle usage by 2020. There are a number of charging points around the County and this Draft Plan promotes the further installation and expansion of charging points for these vehicles.

Objective MT06

Facilitate the provision of electricity charging infrastructure for electric vehicles both on street and in new developments in accordance with car parking standards.

Objective MT07

Support the growth of Electric Vehicles and EBikes, with support facilities, through a roll-out of additional electric charging points in collaboration with relevant agencies at appropriate locations.

M50 Demand Management Study

The NRA, in conjunction with the four Dublin Local Authorities, recently completed a study of demand management measures for the M50. The study identified an indicative scheme of demand management measures including:

- Fiscal measures such as distance-based tolling
- Intelligent transport systems such as variable speed limits and incident detection
- Information by variable message signs, web-pages and radio
- Smarter Travel such as area-based Mobility Management Plans
- Network Control from a national motorway control centre

Objective MT08

Facilitate the implementation of the demand management measures in the M50 Demand Management Study, as required.

Mobility Management Plans

Mobility Management Plans set out measures which promote sustainable transport for particular places of work or education. The measures normally include:

- The appointment of a Mobility Manager at senior level within the organisation who is responsible for implementing the Plan
- Conducting a survey of travel patterns of workers and/or students
- Setting targets for the share of trips made by sustainable modes
- Making available showers and locker rooms for cyclists and walkers
- Provide adequate bicycle parking
- Enabling staff to avail of governments tax-saver schemes for the purchase of bicycles and public transport tickets
- Providing information on walking routes, cycle routes and public transport services
- Flexible working hours
- Promotion of car sharing (e.g. by assigning priority car parking spaces)
- Promotion of cycle trains and walking buses, especially for schools



Sustainable Transport

Walking and Cycling

Walking and cycling are the most efficient modes of travel in terms of use of road-space, and the most sustainable in terms of environmental impacts. They also contribute to national health policies by promoting day-to-day physical activity. To promote the development of cycling in the County, a comprehensive network of cycle routes will be established throughout the County with the emphasis on promoting direct, comfortable, convenient, and safe routes. The NTA has published a *Greater Dublin Area Cycle Network Plan* which identified:

- The Urban Cycle Network (including primary, secondary and feeder routes)
- The Inter-urban Cycle Network
- The Green Route Network

The NTA Network has been prepared at a strategic level. Implementation of the network will require more detailed engineering design on a route by route basis.

Objective MT09

Promote walking and cycling as efficient, healthy, and environmentally-friendly modes of transport by securing the development of a network of direct, comfortable, convenient and safe cycle routes and footpaths, particularly in urban areas. The Council will work in cooperation with the NTA to implement the *Greater Dublin Area Cycle Network Plan* subject to detailed engineering design and the mitigation measures presented in the SEA and Natura Impact Statement accompanying the NTA Plan.

The promotion of cycling as a sustainable mode of transport depends on providing sufficient parking at places of employment and education. Bicycle parking standards, which are norms, are set out in Chapter 12 Development Management Standards.

Objective MT10

Promote the provision of adequate, secure and dry bicycle parking facilities and a bike rental scheme at appropriate locations, including stations and other public transport interchanges.

Objective MT11

Improve pedestrian and cycle connectivity to schools and identify and minimise barriers to children walking and cycling to primary and secondary schools throughout the County.

Public Transport

For high volumes of travellers and for medium- to long-distance trips, the various modes of public transport are the most efficient modes of travel in terms of use of road-space, and the most sustainable in terms of environmental impacts. The National Transport Authority (NTA) and Transport Infrastructure Ireland (TII), are primarily responsible for the funding, planning and implementation of public transport infrastructure in the Greater Dublin Area. However, the Council has an important role to play in promoting and facilitating public transport. In particular, the Council advises the NTA and TII on the locations of public transport routes and stops, reserves planned routes free from development, and allows high-density development along existing and planned public transport corridors. The NTA and TII have strategic responsibilities, for the Greater Dublin Area and nationally. The Council shall ensure that the policies, objectives and requirements of the County are fully understood and appreciated by NTA and TII. The



Council shall continue to promote public transport connectivity between key urban settlements within the County.

Objective MT12

Support and advise the NTA and TII on the planning and implementation of public transport infrastructure, in particular by providing an understanding of Fingal's policies, objectives and requirements, including environmental sensitivities.

Proposed New Metro North

A proposed new Metro North has been included in the Government's capital programme. It will link Swords via the Airport, to Dublin City Centre with a journey time of approximately 25 minutes. The revised scheme will require a new permission from An Bord Pleanála. A number of stops were permitted within Swords.

The provision of the proposed new Metro North is critical to the continued, sustainable growth of the County Town, Swords. It is essential that the metro stops are easily accessible to trip-intensive developments.

Objective MT13

Support TII in developing a revised design of the proposed new Metro North that addresses the needs of the Swords-Airport-City Centre corridor, environmental sensitivities and securing permission from An Bord Pleanála.

Objective MT14

Support TII in a possible future extension of the proposed new Metro North finishing point to connect with the Northern Line in Donabate, with a view to securing permission from An Bord Pleanála.

Metro West

While Metro West has not been included in the Government's capital programme 2016 -2021, a significant amount of preliminary design work has already been carried out. This 25km route has been designed to operate from Tallaght through Clondalkin, Liffey Valley and Blanchardstown linking with the proposed new Metro North at Dardistown, south of Dublin Airport. Although the exact route has not been approved, it is prudent to maintain a corridor free from development to allow Metro West to be built in the future.

Objective MT15

Support TII in progressing the design of Metro West that addresses the needs of Fingal, in particular the Blanchardstown area, with a view to securing permission from An Bord Pleanála.

Public Transport Interchanges

It is not feasible to provide public transport services that provide direct routes from all origins to all destinations. Consequently, there are instances where passengers must change from one service to another to reach their final destinations. An interchange is where the change occurs. Such interchanges should be clear, safe, direct, convenient and comfortable.

The Council will facilitate measures and schemes to ensure ease when interchanging through the promotion and development of several initiatives such as the building of infrastructure and



the provision of better travel/passenger information. Facilities shall include adequate shelter, seating, accurate information on all local bus and train/Metro/DART services, bin provision, and facilities to cater for persons with special need requirements e.g. provision of large print, braille or audio versions of all timetables.

Objective MT16

Facilitate, encourage and promote high quality interchange facilities at public transport nodes throughout the County.

Public Transport in Rural Areas

The provision of conventional public transport (e.g. buses) is not always financially viable in rural areas. However, there remains a need to provide public transport in rural areas for people who do not own cars, especially older people, school children, and people with mobility, sensory or cognitive impairments. The availability of rural public transport plays a major role in combating rural isolation. The NIFTI provides a valuable bus service to rural areas within Fingal.

Objective MT17

Promote rural public transport which provides improved access to economic, educational and social activity by promoting frequent, accessible, reliable and a safe rural public transport system.

Rail

Heavy rail provides high-quality, high-capacity, and environmentally-friendly public transport services. However, it is high-cost both in terms of capital cost and operating costs. It therefore requires high-density development within the catchment of its stations in order to obtain the high passenger numbers required to make it viable and sustainable. Sections of the County are serviced by a heavy rail service, namely, those areas along the Northern Rail line (including the spur to Howth), and those along the Maynooth Rail line.

Iarnród Éireann has permission to construct the DART Underground, from north of Connolly Station, via Spencer Dock, Pearse Station, St Stephen's Green, and Christchurch to Heuston Station. It will dramatically increase the frequency of train services on the Northern and Maynooth lines. Construction of DART Underground has not been included in the Government's capital programme 2016-2021. The project, which remains a key element of integrated transport for the Greater Dublin Area, will be redesigned to provide a lower cost technical solution, whilst retaining the required rail connectivity.

The first phase of a multi-phase DART expansion programme will begin before 2021, with the extension of the DART line to Balbriggan and with the design and planning to progress for expansion of DART services to Maynooth. Also, the current City Centre Resignalling programme will be completed. This will allow for a significant increase in the number of trains serving Howth-Malahide and/or the Maynooth Line. Increasing the



frequency of trains on the Maynooth line will result in more frequent closures of the existing level crossings which in turn will cause an increase in traffic congestion on the local road network. The Council will design and implement measures to mitigate against this congestion.

Objective MT18

Support Iarnród Éireann in implementing the DART Expansion Programme, including the extension of the DART line to Balbriggan, the design and planning for the expansion of DART services to Maynooth, and the redesign of the DART Underground.

Objective MT19

Design and implement measures, having regard to potential environmental impacts, to mitigate the increased congestion on the local road network caused by more frequent closures of the existing level crossings on the Maynooth Line. Ensure that well in advance of any such measures being taken, extensive direct consultation is undertaken with local communities and residents who would be directly impacted by any such measures.

Objective MT20

Promote the provision of platform shelters and the covering of platforms at railway stations where there is currently no cover for commuters, in order to encourage more commuters to use the train to travel to work.

Bus, Quality Bus Corridors (QBC) and Bus Rapid Transit (BRT)

The bus is the most flexible form of public transport and currently has the highest modal share. Two Quality Bus Corridors have been constructed in the County, namely Swords and Blanchardstown. The National Transport Authority, in conjunction with the relevant Dublin Local Authorities is progressing the design of three Bus Rapid Transit (BRT) routes. Two BRT routes run through Fingal, namely Blanchardstown to Belfield and Swords to Merrion Square. As part of the NTA's draft Transport Strategy for the Greater Dublin Area, it is intended to develop a number of BRT schemes with two cross city BRT schemes being proposed, Blanchardstown to UCD and Clongriffin to Tallaght.

In relation to the Swords/Airport to City Centre corridor, it will be necessary to provide a higher level of public transport than the existing provision in advance of the proposed new Metro North's delivery. This additional capacity will take the form of a BRT service or a BRT type service or a conventional bus corridor upgrade along this route. It will be designed to be complementary to the proposed new Metro North proposal. As such a BRT scheme is included in the Transport Strategy for the Swords/Airport City Centre route but its scale may be reduced or modified in conjunction with the proposed new Metro North.



Objective MT21

Facilitate and promote the enhancement of bus services through bus priority measures including bus lanes and bus gates. Support the NTA in the Implementation of Bus Rapid Transit from Blanchardstown to Belfield and from Swords to Merrion Square, subject to detailed design.



Objective MT22

Work with public transport providers and State agencies to create bus connectivity between Dublin 15 and Dublin Airport/Swords.

Park and Ride

The purpose of a 'Park and Ride' facility is to encourage car commuters to transfer to public transport, thereby reducing congestion and promoting public transport. However, Park and Ride sites often use valuable land adjacent to high-capacity public transport stations/stops which might be better used to provide trip intensive development.

Objective MT23

Promote and support the provision of Park and Ride facilities at suitable locations near high-capacity public transport stations/stops.

Taxi and Hackney Services

Accessible taxi and hackney services are an important element in the public transport mix providing a demand-responsive 24 hour door-to-door service. Accessible taxis are often the only means of public transport available for people who use wheelchairs or those with mobility impairment. An accessible integrated public transport service is an essential prerequisite to enable people with disabilities to participate in the normal activities of daily living i.e. work, education, leisure and social activities. An accessible and affordable taxi and hackney service is often the most efficient and economic means of meeting this need.

Roads

Fingal is well served by the national road network with the M1 Dublin to Belfast, the N2/M2 Dublin to Derry, the N3/M3 Dublin to Ballyshannon, and the M50 all traversing the County. Virtually all the National road network in the County is either motorway or high-grade dual carriageway. The development of the national road network is primarily for national inter-urban traffic, i.e. to provide access between the state's largest cities and towns. It is the policy of TII not to allow direct access onto motorways or high grade dual carriageways. Fingal is also serviced by a number of regional routes and local roads. These serve an important economic role and also have valuable social and community functions, often being the sole means of access for local economic activity. The County is very reliant on its road infrastructure for intra- and inter-county movement and access.

For new developments, access onto the road network is a key issue, particularly in rural areas. The intensification of use of an existing access is normally preferable to the creation of a new access onto a rural road. New accesses should not remove on-street car parking.

Where new entrances are necessary, the relevant road design standards will be applied (DMRB in rural situations i.e. the *NRA Design Manual for Roads and Bridges* - and DMURS in urban situations - *Design Manual for Urban Roads and Streets*). Such road standards are required to guarantee the safety of the general public in the County and protect the carrying capacity of the road network.

Large new developments, especially commercial developments, generate additional car and



HGV traffic. It is important to ensure that development does not cause significant additional congestion on the County's road network.

Road Safety

In the design and/or improvement of roads and in the assessment of planning applications for new development, the safety of all road users, including public transport, pedestrians, cyclists and motorists will be a primary consideration. Particular consideration will be given along school routes.

Traffic Calming

New residential developments should be designed to create low-speed environments by the use of engineering design and urban design in accordance with DMURS. In existing residential developments, motorised traffic often travels at inappropriately high speeds, causing an increased risk of collisions and intimidating pedestrians and residents.

Objective MT24

Implement traffic calming on particular roads and in appropriate areas of the County, especially residential areas, to reduce vehicle speeds in the interests of road safety and residential amenity.

Ensure that where appropriate, traffic calming is included as a pre-condition as part of the development of all new estates or extensions to existing estates.

Traffic Management

In urban areas, congestion is primarily caused by junctions being over-capacity. There are a number of traffic management measures which can increase junction capacities and reduce congestion with no significant negative environmental impact. The measures include signalisation, signal linking, and kerb realignments.

Objective MT25

Maximise capacities of junctions by using traffic management measures thereby reducing congestion.

Objective MT26

Review the results of the 30km/h Residential Speed Limit Pilot Study, with a view to rolling out a 30km/h speed limit in all residential estates.

Road Construction and Improvement Measures

Whilst Fingal is committed to the promotion of sustainable means of travel, and the encouragement of modal change from the private car, it is recognised that the roads infrastructure maintains a central position in the overall transportation network, catering for the movement of buses, goods vehicles, pedestrians, cyclists, as well as the private car. In undertaking transport policies, the Council will strive to provide an adequate road infrastructure to ensure the sustainable, economic development of the County.

A number of key road improvements are required to facilitate the movement of goods and people throughout the County and to ensure ease of access, especially for major areas of new development.



Any works undertaken will include as an aim enhanced provision for public transportation, cyclists and pedestrians, as appropriate, and will be subject to environmental considerations.

Objective MT27

Implement a programme of road construction and improvement works closely integrated with existing and planned land uses, taking into account both car and non-car modes of transport whilst promoting road safety as a high priority. Major road construction and improvement works will include an appraisal of environmental impacts.

Objective MT28

Seek to implement the road improvement schemes indicated in Table 7.1 within the Plan period where resources permit. Reserve the corridors of the proposed road improvements free of development.

Table 7.1 Road Schemes

Balbriggan Ring Road R122 to R132 via Flemington
 R122 Naul Road Upgrade
 Stephenstown Link Road
 Castlelands Link to R127
 R127 Upgrade at Barnageeragh
 Barnageeragh Link
 Skerries Southern Relief Road
 Rush Relief Road
 R128 Rush Lusk Upgrade
 Ministers Road Upgrade
 R126 Donabate Relief Road: R132 to Portrane Demesne
 R125 Rathbeale Road Improvements
 Swords Western Relief Road
 Swords Western Distributor Road
 Swords Industrial Estate Link
 Swords-Brackenstown Link
 Completion of Airside to Feltrim Road Link
 Forest Road
 Fostertown Link
 R106 Malahide-Swords Road Upgrade
 R123 Moyne Road realignment
 R105 Sutton Cross Improvements
 R107 Malahide Road Realignment, Balgriffin Bypass
 East-West Distributor Road: Malahide Road to Stockhole Lane
 East West Distributor Road: Stockhole Lane to Cherryhound
 North Parallel Road
 St Margaret's Bypass to Northern Parallel Road
 Sillogue Bridge Link
 Cappagh Road – North Road Link
 Cappagh Road – River Road Link
 N3 Upgrade Littlepace to M50
 N3 Snugborough Interchange Upgrade
 N3 Castaheany Interchange Upgrade
 Kellystown Road
 N3-N4 Link Ongar to Barnhill
 N3-N4 Barnhill to Leixlip Interchange



Section 48 and 49 Levies

Financial contributions will be sought as part of the development management process for certain development under the provisions of Section 48 and Section 49 of the Planning and Development Act 2000 (as amended). Section 48 (general) schemes relate to proposed provision of public infrastructure and facilities which benefit development within the area of the Planning Authority, and are applied as a general levy on development. A 'special' contribution under Section 48(2) (c) may be required where specific exceptional costs not covered by the general scheme are incurred by a Local Authority due to a specific development.

Section 49 (supplementary) schemes relate to the separately specified infrastructural service or projects – such as Metro North, Metro West, Luas extensions, rail or roads infrastructure, which benefit a specific area (normally a corridor). Where schemes overlap with another Local Authority, the Section 49 Scheme will be developed in conjunction with that local authority.

Objective MT29

Utilise, where appropriate, the provisions of Section 48 and 49 of the Planning and Development Act, 2000 (as amended) to generate financial contributions towards the capital costs of providing local and strategic transport infrastructure, services or projects in the County. This will be done in conjunction with adjoining local authorities where appropriate.

Dublin Airport

Dublin Airport is the principle gateway to Ireland and the most significant economic entity and largest provider of employment in the County and the region. It is of major national, regional and local importance because of its employment base, passenger throughput and airfreight services. In 2015 it accommodated some 25 million passengers, which was an increase of 15% on 2014. The Dublin Airport Authority (DAA) currently has approximately 24,320 car parking spaces at the airport. (See also *Chapter 6 Economic Development - Section 6.7 Dublin Airport*)

Objective DA01

Facilitate the operation and future development of Dublin Airport recognising its role in the provision of air transport, both passenger and freight.

The new Dublin Airport Local Area Plan when prepared and adopted will provide the principal development management tool for the airport area and will specify the long-term disposition and mix of uses within the designated area together with infrastructural development necessary to support these uses.

Objective DA02

Prepare and implement a new Local Area Plan for Dublin Airport which will accommodate the future sustainable growth and development of the airport lands while also facilitating the efficient and effective operation of Dublin Airport in accordance with the requirements of the LAP and proper planning and sustainable development.

Objective DA03

Safeguard the current and future operational, safety, technical and developmental requirements of Dublin Airport and provide for its ongoing development within a sustainable development framework, having regard to both the environmental impact on local communities and the economic impact on businesses within the area.



Objective DA04

Facilitate the on-going augmentation and improvement of terminal facilities at Dublin Airport.

Objective DA05

Facilitate the development of a second major east-west runway at Dublin Airport and the extension of the existing east-west runway 10/28.

Objective DA06

Continue to participate in the Dublin Airport Stakeholders Forum which includes representatives from local authorities, airport operators, community and other stakeholders, providing a forum for discussion of environmental and other issues.

Noise

There is a need to minimise the adverse impact of noise without placing unreasonable restrictions on development and to avoid future conflicts between the community and the operation of the airport. Two noise zones are shown in the Development Plan maps, an Outer Zone within which the Council will continue to restrict inappropriate development, and an Inner Zone within which new provisions for residential development and other noise sensitive uses will be actively resisted.

Objective DA07

Strictly control inappropriate development and require noise insulation where appropriate within the Outer Noise Zone, and actively resist new provision for residential development and other noise sensitive uses within the Inner Noise Zone, as shown on the Development Plan maps, while recognising the housing needs of established families farming in the zone. To accept that time based operational restrictions on usage of a second runway are not unreasonable to minimize the adverse impact of noise on existing housing within the inner and outer noise zone.

Objective DA08

Notwithstanding Objective DA07, apply the provisions with regard to New Housing for Farming Families only, as set out in Chapter 5 Rural Fingal, within the Inner Noise Zone subject to the following restrictions:

- Under no circumstances shall any dwelling be permitted within the predicted 69 dB LAeq 16 hours noise contour
- Comprehensive noise insulation shall be required for any house permitted under this objective
- Any planning application shall be accompanied by a noise assessment report produced by a specialist in noise assessment which shall specify all proposed noise mitigation measures together with a declaration of acceptance of the applicant with regard to the result of the noise assessment report.

Objective DA09

Ensure that aircraft-related development and operation procedures proposed and existing at the Airport takes account and uses all measures necessary to mitigate against the possible negative impact of noise from aircraft operations such as taxiing, taking off and landing, on existing established residential communities, whilst not placing unreasonable restrictions on airport development and taking into account EU regulation 598/2014 to involve communities in ensuring a collaborative approach to mitigating against noise pollution.



Objective DA10

Restrict development which would give rise to conflicts with aircraft movements on environmental or safety grounds on lands in the vicinity of the Airport and on the main flight paths serving the Airport, and in particular restrict residential development in areas likely to be affected by levels of noise inappropriate to residential use.

Objective DA11

Review the operation of the Noise Zones on an ongoing basis in light of the EU Directive on Environmental Noise, the ongoing programme of noise monitoring in the vicinity of the Airport flight paths, and the availability of improved noise forecasts.

Objective DA12

Restrict the Crosswind Runway to essential occasional use on completion of the second east-west runway.

Safety

The Council will continue to follow the advice of the Irish Aviation Authority regarding the effects of proposed development on the safety of aircraft and the safe and efficient navigation thereof.

Objective DA13

Promote appropriate land use patterns in the vicinity of the flight paths serving the Airport, having regard to the precautionary principle, based on existing and anticipated environmental and safety impacts of aircraft movements.

Objective DA14

Implement the policies to be determined by the Government in relation to Public Safety Zones for Dublin Airport.

Objective DA15

Take into account relevant publications issued by the Irish Aviation Authority in respect of the operations of and development in and around Dublin Airport.

Objective DA16

Continue to take account of the advice of the Irish Aviation Authority with regard to the effects of any development proposals on the safety of aircraft or the safe and efficient navigation thereof.

Objective DA17

Have regard to the safety and environmental impacts of aircraft movements associated with Weston Aerodrome in the assessment of any relevant development proposal.

Air and Water Quality Management

Long term monitoring of air quality at the Airport and along major roads should continue through the Dublin Regional Air Quality Management Unit. As the Airport expands, the objectives of the *Dublin Regional Air Quality Management Plan (DRAQMP)* and its monitoring network should be revised to ensure appropriate coverage. The DAA carries out ambient air monitoring at Dublin Airport and operate an air monitoring station on site. The results of this monitoring is published on their website, www.daa.ie



Objective DA18

Ensure that every development proposal in the environs of the Airport takes account of the current and predicted changes in air quality, greenhouse emissions and local environmental conditions.

Objective DA19

Ensure that every development proposal in the environs of the Airport takes into account the impact on water quality, water based-habitats and flooding of local streams and rivers and to provide mitigation of any negative impacts through avoidance or design and ensure compliance with the Eastern River Basin District Management Plan.

Objective DA20

Take account of the global and local impacts of aviation as well as the likelihood of international action to limit greenhouse gas emissions from aviation through action at ICAO as mandated in the Kyoto Protocol when evaluating any proposals to significantly increase the use of Dublin Airport.

Design Quality

Dublin Airport is a National Gateway and should provide through exemplar design a visual coherence which will provide an attractive high quality environment which enriches visitor experiences.

Objective DA21

Ensure that all development within the Dublin Airport Local Area Plan lands will be of a high standard of design, to reflect the prestigious nature of an international gateway airport, and its location adjacent to Dublin City.

Accessibility

It is important that accessibility to and from the Airport is protected and enhanced. The delivery of the proposed new Metro North will further improve transportation links between the Airport, Swords and Dublin City enhancing the role of the Airport within Fingal.

Objective DA22

Control the supply of car parking at the Airport so as to maximize as far as is practical the use of public transport by workers and passengers and to secure the efficient use of land.

Objective DA23

Encourage and facilitate the provision of an integrated public transport network to serve Dublin Airport.

Objective DA24

Protect and enhance the transportation capacity required to provide for the surface access needs of the Airport.

Objective DA25

Maintain and protect accessibility to the Airport as a priority.



Surrounding Land Uses

St. Margaret's and Other Residential Communities

Change is inevitable for existing residential communities around the Airport. Thus it is necessary to work together with residents to achieve significant incremental change, an approach which could ultimately completely alter the settlement's character.

Objective DA26

Restrict housing development in order to minimize the potential for future conflict between Airport operations and the environmental conditions for residents.

Objective DA27

Permit improvement and extensions to existing properties in the area where it can be demonstrated that such works do not represent significant intensification of development, and that appropriate consideration of potential noise impacts are incorporated within the proposals.

Objective DA28

Prepare a strategy for 'St. Margaret's Special Policy Area' involving consultation between the existing community, Fingal County Council and the Dublin Airport Authority.

7.2 Water Services

Background

The sustainable growth of the County is dependent on the provision of services and infrastructure. A Plan led approach, in accordance with the County's Core Strategy and Settlement Strategy is required for the delivery of such services in order to ensure there is adequate capacity to support the future development of the County.

There have been significant changes in responsibilities for water supply and waste water treatment. Irish Water was formed in July 2013 as a semi-state company under the *Water Services Act 2013*. As of January 2014 Irish Water replaced local authorities as a single provider of water and wastewater services. It is responsible for the operation of public water and waste water services including management of national water assets, maintenance of the system, investment and planning, and managing capital projects. Irish Water is regulated by the Environmental Protection Agency (EPA) as the environmental regulator and the Commission for Energy Regulation (CER) as the economic regulator.

Fingal will work closely with Irish Water to inform and influence the timely provision of infrastructure within the county in line with Fingal's Settlement Strategy. The Council remains the designated Water Authority for the assessment and approval of on-site waste water treatment systems in the County and is responsible for surface water drainage, flooding, monitoring of water pollution and is an agent of Irish Water for operations.

Potential challenges of climate change include impacts related to flooding, drinking water, water quality, foul drainage and wastewater. Studies conclude that the expected change in rainfall and sea levels would have a significant impact on future flood risk. Current thinking is that the average



annual rainfall quantity and intensity will increase, with predicted drier summers and wetter winters. This would see a decrease in river base flows and a rise in flood flows. Sea levels are expected to rise gradually due to global warming, which will have an impact on low lying coastal areas.

Sustainable resource management of our land and water resources is critical in the consideration of all development. The Green Infrastructure approach taken in this Development Plan allows for a co-ordinated, sustainable and strategic approach to development and is an important element of policy consideration and the formulation of objectives for water services.

Statement of Policy

- Liaise and cooperate with Irish Water to ensure the delivery of the Proposed Capital Investment Plan 2014 -2016 (or any updated plan) or any other relevant investment works programme of Irish Water that will provide infrastructure to increase capacity to service settlements and to jointly investigate proposals for future upgrades of treatment plants and participate in the provision of a long term solution for waste water treatment for the Greater Dublin Area
- Liaise and cooperate with Irish Water to ensure that an adequate supply of water fit for human consumption is provided
- Control and manage surface water, mitigate against flooding and to protect and improve water quality in the County while allowing for sustainable development and improve water quality in line with the Water Framework Directive and Eastern River Basin Management Plan
- Facilitate industrial and other forms of development, including residential by ensuring that optimum use is made of existing drainage and wastewater treatment infrastructure in the first instance and that further strengthening of infrastructure is focused on priority locations as identified in the urban settlement hierarchy in accordance with Irish Water, the Regional Planning Guidelines and the Development Plan.

Water Services Strategic Plan – A Plan for the Future of Water Services

Irish Water have prepared the *Water Services Strategic Plan, A Plan for the Future of Water Services* and it provides for the first time at national level an opportunity to consider the way water services are delivered in Ireland. The WSSP sets out strategic objectives for the delivery of water services over the next 25 years up to 2040. It details current and future challenges affecting the provision of water services and identifies priorities to be dealt with over the short to medium term. The Plan is to be reviewed on a five year basis.

Irish Water Proposed Capital Investment Plan 2014-2016

The Capital Investment Programme (CIP) of Irish Water outlines the indicative priorities and investments in water services infrastructure over the next three years. This CIP aims to deliver improvements in drinking water quality, leakage, wastewater compliance, business efficiencies and customer service.

Drinking Water Supply

Irish Water is now responsible for managing the provision and supply of water.



The Liffey is the source for the major public water supply abstraction point at Leixlip. This source supplies most of the water to Fingal and to substantial proportions of Dublin City and parts of South Dublin, Kildare and Meath. Following the expansion of the Leixlip Water Treatment Plant production of water increased to 215ML per day which is approximately 30% of the Dublin Regions drinking water requirements. A second treatment plant at Bog of the Ring produces on average 3.15 mega litres a day. This plant extracts groundwater from wells and supplements the water supply of the northern part of the County. Information from the 2011 Census indicates that the majority of private households (84,972) within the County are served by public mains.

There are a number of regional studies which outline the current and future situation of water supply and security of supply. The *Greater Dublin Water Supply Strategic Study*, commissioned by the Department of the Environment in 1996, was reviewed in 2001 and updated in 2006. This estimated that a new source of water will be required by 2016 to meet increased demand. Irish Water has also taken over the management of the Water Supply Project Eastern and Midlands Region (WSP) from Dublin City Council and the Department of the Environment, Community and Local Government.

Irish Water published the *Project Need Report* in early March 2015 which sets out the pressing need for a new water supply source for the Eastern and Midlands Region of the country. The identified a total requirement of 330 million litres per day (Mld) by 2050; 215Mld for the Dublin Water Supply Area.

The requirement for water in the region will ultimately constrain development within Fingal. Finding a sustainable new source of drinking water to cater for population and economic growth in this region is a key priority that will ensure security of supply making Ireland viable for water intensive industries such as ICT and Bio-Pharma.

Private Wells

The use of private wells to provide water to single houses remains the responsibility of the householder. Private wells are not regulated under the European Communities (Drinking Water) Regulations 2014 and Irish Water has no role in relation to private water supplies. The Local Authority is responsible for providing advice and guidance in relation to the protection of the supply.

Objective DW01

Liaise with and work in conjunction with Irish Water during the lifetime of the Plan to develop and identify an additional sustainable water source serving the Eastern and Midlands Region and the existing population of Fingal while also facilitating the sustainable development of the County, in accordance with the requirements of the Settlement Strategy and associated Core Strategy.

Objective DW02

Liaise with Irish Water to ensure that an adequate supply of drinking water for domestic, commercial, industrial and other uses is available for the sustainable development of the County.



Objective DW03

Protect both ground and surface water resources and work with Irish Water to develop and implement Water Safety Plans to protect sources of public water supply and their contributing catchment.

Objective DW04

Support the development of a new sustainable Water Source for the Greater Dublin Area.

Objective DW05

Provide guidance and advice regarding the protection of water supply to private wells with the overall responsibility remaining with the householder.

Objective DW06

Promote the sustainable use of water and water conservation in existing and new development within the County and encourage demand management measures among all water users.

Foul Drainage and Wastewater Treatment

The provision of well maintained quality waste water treatment infrastructure is essential to facilitate sustainable development of the County in line with the Settlement and Core Strategy while also protecting the environment and public health. Irish Water is now responsible for the treatment and disposal of waste water where public waste water facilities exist in towns and villages.

In unserviced areas and outside the main towns and villages, the main method of sewage disposal is by means of individual septic tanks and proprietary systems. The requirements are set out in the EPA *Code of Practice for Wastewater Treatment Systems and Disposal Systems Serving Single Houses (2009)* or for larger developments, the EPA *Wastewater Treatment Manuals – Treatment Systems for Small Communities, Business, Leisure Centres and Hotels (1999)*

Further details on the requirements for new individual systems are to be found in Chapter 12 Development Management Standards.

In Fingal, the majority of the sewer network is a separate system. This means that there are two separate networks, one for surface water and the other for foul effluent. Surface water would consist mainly of runoff from roads, roofs, hard standing areas, driveways and gardens. These sewers normally outfall to the sea, the nearest river or ditch. Foul water typically consists of flows from baths, toilets, dishwashers and trade effluent. These drain to the nearest treatment plant and then discharge to a watercourse or directly to the sea.

Wastewater from the south of the County including Howth, Baldoyle, Sutton, Portmarnock, Santry, Meakstown and Blanchardstown discharges to the Regional Waste Water Treatment Plant at Ringsend operated by Dublin City Council. Ringsend was designed for a capacity of 1.64 million population equivalent (PE) but is now operating slightly above this. It is necessary to upgrade and expand the treatment plant to its maximum capacity which is estimated to be 2.1 million PE (subject to obtaining relevant permits).

The Greater Dublin Strategic Drainage Study (GDSDS) involving the seven local authorities of the GDA was completed in 2005 and has an associated Strategic Environmental Assessment (SEA).



The Study carried out an in depth assessment of Dublin’s drainage system. Key recommendations of the GSDSDS Final Strategy, was the expansion of Ringsend Wastewater Treatment Plant to its ultimate capacity and the development of a new Regional Wastewater Treatment Plant, Orbital Drainage Network and Marine Outfall in the northern part of the GDA, are being pursued. Irish Water is developing the Greater Dublin Drainage (GDD) Project (previously led by Fingal County Council). The GDD is a regional wastewater project designed to serve the Greater Dublin Area by augmenting the Ringsend Wastewater Treatment Plant. It implements the recommendations of the Greater Dublin Strategic Drainage Study (GSDSDS) Final Strategy and the SEA of the GSDSDS.

The project includes:

- A planned treatment plant at Clonsbaugh in Fingal;
- A marine outfall discharging approximately 1km north east of Irelands Eye; and
- An orbital sewer with two pumping stations – at Abbotstown, Blanchardstown and Grange, Baldoyle – which will divert wastewater from the southern areas of Fingal and the north of Dublin City to the new treatment plant.

The use of constructed wetlands to deal with a range of effluent types – farmyard runoff, industrial waste and sewage as well as urban pollution have been used. Categorised as surface-flow type wetlands they are similar to natural free surface water wetlands. The concept is based upon the free surface-flow of water through a series of sequentially linked shallow ponds vegetated with a range of emergent plant species. The first Irish municipal application of a hybrid reed bed treatment system was designed and constructed at Colecot in Fingal and was commissioned in 1998. This system has effectively reduced flow into the adjacent watercourse while treating the effluent to a suitable standard. The use of these systems will be encouraged within the County.

Objective WT01

Liaise with and work in conjunction with Irish Water during the lifetime of the plan for the provision, extension and upgrading of waste water collection and treatment systems in all towns and villages of the County to serve existing populations and facilitate sustainable development of the County, in accordance with the requirements of the Settlement Strategy and associated Core Strategy.

Objective WT02

Liaise with Irish Water to ensure the provision of wastewater treatment systems in order to ensure compliance with existing licences, *EU Water Framework Directive, River Basin Management Plans, the Urban Waste Water Directive and the EU Habitats Directive.*

Objective WT03

Facilitate the provision of appropriately sized and located waste water treatment plants, including a new Regional Wastewater Treatment Plant and the implementation of other recommendations of the Greater Dublin Strategic Drainage Study, in conjunction with relevant stakeholders and services providers, to facilitate development in the County and Region and to protect the water quality of Fingal’s coastal and inland waters through the provision of adequate treatment of wastewater.



Objective WT04

Investigate the potential for the provision of temporary wastewater treatment facilities for new developments where a permanent solution has been identified but not yet implemented and where the provision of such a facility is environmentally sustainable, meets the requirements of the Habitats Directive, and is in accordance with the recommendations of the EPA and where adequate provision has been made for its maintenance.

Objective WT05

Seek the best available technology in all Waste Water Treatment Plants proposed for the County.

Objective WT06

Facilitate development in unserved areas only where it is demonstrated to the satisfaction of the Planning Authority that the proposed waste water treatment system is in accordance with the relevant EPA Codes of Practice.

Objective WT07

Require all new developments to provide separate foul and surface water drainage systems and to incorporate sustainable urban drainage systems.

Objective WT08

Prohibit the discharge of additional surface water to combined (foul and surface water) sewers in order to maximise the capacity of existing collection systems.

Objective WT09

Promote the appropriate development and use of Integrated Constructed Wetlands within the County.

Objective WT10

Protect natural resources which are a basis for growth and competitive advantage in the tourism, food and aquaculture sectors.

Objective WT11

Establish a buffer zone around all Wastewater Treatment Plants suitable to the size and operation of each plant. The buffer zone should not be less than 100m from the odour producing units.

Objective WT12

Establish a buffer zone around all pumping stations suitable to the size and operation of each station. The buffer zone should be minimum 35 metres – 50 metres to avoid nuisance from odour and noise.

Surface Water and Flood Risk Management

Surface Water

The GSDSDS produced five policy documents including an Environmental Policy, Drainage of New Developments and Climate Change Policy. These three documents focused on the design approach and criteria for new drainage with the objective of ensuring that any future development did not continue the trend towards increasing flooding in the city and the pollution of rivers.

This approach using Sustainable Drainage Systems (SuDS) can best be summarised as offering



a “total” solution to rainwater management and is applicable in both urban and rural situations. By using SuDS techniques, water is either infiltrated or conveyed more slowly to the drainage system and ultimately to water courses via permeable paving, swales, green roofs, rain water harvesting, detention basins, ponds and wetlands. These facilities are designed to prevent pollution of streams and rivers and to slow down runoff from sites, therefore helping to prevent downstream flooding and improve water quality. This closely mimics natural catchment behaviour where rainfall either infiltrates through the soil or runs off slowly over the ground surface to the nearest watercourse. This is known as the ‘Treatment Train’ approach. SuDS devices should be placed at source, site and regional levels. SuDS can also provide amenity benefits to local communities and benefits for biodiversity simultaneously. In this way SuDS features are not just part of the County’s drainage infrastructure but a vital part of the County’s Green Infrastructure (See Chapter 8).

Flood Risk Management

See also Chapter 9, Natural Heritage, The Coast

Over the past number of years there have been instances where flooding has occurred in areas of the County causing damage to homes and businesses. Relative to other counties in the region the extent of flooding in Fingal is low. However, there are areas which are at risk of coastal, river or pluvial flooding. As a result of Climate Change, there is a likelihood of increased rainfall and rising sea levels. This, in combination with the ongoing urbanisation of catchments, means that the flood risk to property is likely to increase in the future. In order to minimise the impact of an increased future flood risk, there are various steps that Local Authorities can take. These include flood protection works, stormwater attenuation and more significantly, avoidance of development in floodplains and coastal areas subject to flooding except in very limited circumstances.

A major function performed by floodplains, wetlands and coastal areas subject to flooding is to hold excess water until it can be released slowly back into a river system or the sea, or seep into the ground as a storm or tidal surge subsides. Floodplains, wetlands and coastal areas subject to flooding should, therefore, be recognised and preserved to the maximum extent possible, in both urban and rural areas, as Green Infrastructure which provides a natural defence against flood risk.

The EU Floods Directive was introduced in 2007 and sets out how member states must have a plan for the management of flood risk. The aims of the Directive will be achieved through a series of requirements which will be carried out at river catchment level and also in coastal zones.

In response to the Floods Directive, Fingal County Council, along with Meath County Council and the Office of Public Works (OPW) completed a catchment based flood risk assessment and management study of 19 rivers and streams in the Fingal East Meath area, the *Fingal East Meath Flood Risk Assessment and Management Study* (FEM-FRAMS). The core objectives of the Study include:

- The development of maps for the existing and potential flood hazard and risk areas within the study catchment.
- The development of an economically, socially and environmentally appropriate long-term strategy (a Flood Risk Management Plan) for the Fingal and East Meath study area and associated SEA.



FEM-FRAMS covered most of the County with the exception of the southern area around the Santry River, Tolka Valley and the Liffey. The Office of Public Works began a national programme of river catchment based Flood Risk Assessment and Management with the Eastern Catchment Flood Risk Assessment and Management (ECFRAM) Study which commenced in June 2011. This study includes a review of the FEMFRAMS Study and Tolka Flood Study and will include the Liffey and Santry Rivers and review of Turvey and Ballyboghil Rivers. This Study will provide flood maps and flood risk management plans for the eastern region.

The Planning System and Flood Risk Management Guidelines

The Department of the Environment, Community and Local Government and the OPW have jointly published a comprehensive guidance document for the management of flood risk entitled *"The Planning System and Flood Risk Management Guidelines"* (November 2009) that are aimed at ensuring a consistent, rigorous and systematic approach to fully incorporate flood risk assessment and management into the planning system. The Guidelines require the incorporation of flood risk management in the plan-making and development management processes. The Planning Authority must have regard to the planning and development principles outlined in the national flood risk management guidelines when considering development proposals.

Strategic Flood Risk Assessment

In accordance with the above guidelines, a Strategic Flood Risk Assessment [SFRA] was commissioned by the Planning Authority as part of this plan to assess flood risk within the plan area. (See the Strategic Flood Risk Assessment appended to this plan.)

In achieving the aims and objectives of the Guidelines, Planning Authorities must:

Adopt a sequential approach to flood risk management which aims to avoid flood risk, where possible, substitute less vulnerable uses where avoidance is not possible, and mitigate and manage the risk where avoidance and substitution are not possible. A justification test will be required for development in flood risk areas. Lands identified in the SFRA where a Detailed Flood Risk Assessment is required are located in the following areas: Courtlough; Ballymadun; Rowlestown; Ballyboghil; Coolatrath; Milverton, Skerries; Channel Road, Rush; Blakescross; Lanestown/Turvey; Lissenhall, Swords; Balheary, Swords; Village/Marina Area, Malahide; Streamstown, Malahide; Balgriffin; Damastown, Macetown and Clonee, Blanchardstown; and Mulhuddart, Blanchardstown; Portrane, Sutton and Howth.

A precautionary approach should also be applied to flood risk management to reflect uncertainties in flooding datasets and risk assessment techniques and the ability to predict the future climate, the performance of existing flood defences and the extent of future coastal erosion.

Pluvial Flooding

Pluvial flooding occurs as a result of high intensity rainfall where the volume of run off exceeds the capacity of the existing surface water network. It is usually associated with high intensity extreme rainfall events (typically >30mm/h) resulting in overland flow and ponding in depressions in the topography. In urban situations surface water drainage systems and surface watercourses may be completely overwhelmed.

Sustainable urban Drainage Systems (SuDS) can alleviate and mitigate against such flooding. An example is a constructed swale. A swale is a depressed land form, a gradual depression



typically located in open spaces. The use of a swale is to carry or hold flood waters. Swales can allow infiltration of water and nutrients down slope into the ground. A swale is characterised by gentle slopes to enable its use as a public amenity.

Coastal Flooding

The *Irish Coastal Protection Strategy Study* (ICPSS) identifies locations along the east coast at risk of coastal flooding and coastal erosion. In addition the ICPSS provides a strategic assessment of coastal erosion around the Irish coastline using aerial photographic records of the coastline from 1973-75, 2000 and 2006 as the primary basis for the erosion assessment. This Study was completed in 2013 and provides strategic current scenario and future scenario (up to 2100) coastal flood hazard maps and strategic coastal erosion maps for the national coastline. This Study provides information required to inform policy in this area especially for Local Authorities in relation to the proper planning and sustainable development of coastal areas.

Coastal flooding and erosion is dealt with within Chapter 9 Natural Heritage. Coastal erosion is intrinsically linked with coastal flooding as the loss of natural coastal defences such as sand dunes due to erosion can increase the risk of flooding in coastal areas. Flood Risk areas for both fluvial and coastal flooding are shown on the Green Infrastructure Maps.

Objective SW01

Protect and enhance the County's floodplains, wetlands and coastal areas subject to flooding as vital green infrastructure which provides space for storage and conveyance of floodwater, enabling flood risk to be more effectively managed and reducing the need to provide flood defences in the future.

Objective SW02

Allow no new development within floodplains other than development which satisfies the justification test, as outlined in the *Planning System and Flood Risk Management Guidelines 2009* for Planning Authorities (or any updated guidelines).

Objective SW03

Identify existing surface water drainage systems vulnerable to flooding and develop proposals to alleviate flooding in the areas served by these systems.

Objective SW04

Require the use of sustainable drainage systems (SuDS) to minimise and limit the extent of hard surfacing and paving and require the use of sustainable drainage techniques for new development or for extensions to existing developments.

Objective SW05

Discourage the use of hard non-porous surfacing and pavements within the boundaries of rural housing sites.

Objective SW06

Encourage the use of Green Roofs particularly on apartment, commercial, leisure and educational buildings.



Objective SW07

Implement the *Planning System and Flood Risk Management-Guidelines for Planning Authorities (DoEHLG/OPW 2009)* or any updated version of these guidelines. For lands identified in the SFRA, located in the following areas: Courtlough; Ballymadun; Rowlestown; Ballyboghil; Coolatrath; Milverton, Skerries; Channell Road, Rush; Blakescross; Lanestown/Turvey; Lissenhall, Swords; Balheary, Swords; Village/Marina Area, Malahide; Streamstown, Malahide; Balgriffin; Damastown, Macetown and Clonee, Blanchardstown; Mulhuddart, Blanchardstown; Portrane; Sutton; and Howth a site-specific Flood Risk Assessment to an appropriate level of detail, addressing all potential sources of flood risk, is required, demonstrating compliance with the aforementioned Guidelines or any updated version of these guidelines, paying particular attention to residual flood risks and any proposed site specific flood management measures.

Objective SW08

Implement the recommendations of the *Fingal East Meath Flood Risk Assessment and Management Study (FEMFRAMS)*.

Objective SW09

Assess and implement the recommendations of the Eastern CFRAMS when complete.

Objective SW10

Require the provision of regional stormwater control facilities for all Local Area Plan lands and Strategic Development Zones with a view to also incorporating these control facilities in currently developed catchments prone to flooding.

Objective SW11

Ensure that where flood protection or alleviation works takes place that the natural and cultural heritage of rivers, streams and watercourses are protected and enhanced to the greatest extent possible.

Objective SW12

Require an environmental assessment of all proposed flood protection or alleviation works.

Objective SW13

Provide for the schemes listed in Table SW01:

TABLE SW01: SURFACE WATER SCHEMES

1. Implementation of Fingal East Meath Flood Risk Assessment and Management Study (FEM-FRAMS), Measures – Flood Mitigation
2. Implementation of CFRAMS : Eastern CFRAMS Measures
3. Early Flood Warning System
4. Donabate Surface Water System
5. Garristown Surface Water System

Water Quality

Fingal is fortunate to have an extensive network of rivers and streams. The most important rivers are the Delvin, Matt, Corduff, Ballyboughal, Broadmeadow, Ward, Tolka, Liffey, Santry, Sluice and the Mayne River. Many of these rivers hold Brown Trout while some act as spawning sites for Atlantic Salmon. The Council is responsible for maintaining, improving and enhancing the environmental and ecological quality of our waters by implementing pollution control measures, licensing of effluent discharges, implementing and monitoring compliance with environmental



legislation and drawing up pollution contingency measures on a local and regional level. This is going to become even more critical as the changes in water availability predicted on the basis of climate change will pose a potential problem for the dilution of water-borne effluent. Greater consideration of groundwater protection is also recommended, as aquifers assume increasing importance as sources of water supply due to increased competition for reduced surface water.

The *Water Framework Directive (WFD)*, 'establishing a framework for community action in the field of water policy', became effective in 2000. The overall objective of the Directive is to prevent deterioration in the status of any waters and achieve at least 'good status' by 2015. Further information is available at www.wfdireland.ie.

The WFD requires that all Member States adopt a comprehensive integrated river-basin based approach to water management. Its aims include expanding the scope of protection to include surface waters, ground waters, transitional and coastal waters, achieving 'good status' for all waters by 2015, basing water management on river-basin districts and getting the public involved in water management. Implementation of the WFD is achieved through the adoption of river basin management plans.

During the first Cycle, the *Eastern River Basin District Management Plan 2009-2015* outlined a programme of measures to facilitate the delivery of surface and groundwater quality targets in the County.

Following a review of governance arrangements at national level a new three tier governance structure has been established under the *European Union (Water Policy) Regulations 2014* reassigning functional responsibility for the WFD as follows,

- **Tier 1 (National & Management Oversight):** Key national actors, led by the Minister will deal with policy and resource matters and will adopt river basin management plans.
- **Tier 2 (National Technical Implementation and Reporting):** The EPA will lead on the underpinning science carrying out monitoring, assessment and reporting and will provide the template for river basin management plans.
- **Tier 3 (Regional Implementation via Water Networks):** This will be led by the lead coordinating Local Authority. Each individual local authority will monitor, licence and enforce actions and will prepare detailed river basin management plans for their area. Each Local Authority will also be responsible for the implementation of Programmes of Measures in conjunction with relevant public bodies, tracking and reporting in consultation with the EPA.

The second Cycle of River Basin Management Plans are scheduled for adoption in 2017 and will run until 2021. There will be a single national approach for the development of river basin management plans and the Eastern, South Eastern, South Western, Western and Shannon River Basin Districts will be merged to form one national River Basin District.

Surface Water

Since the early 1970's the extent of water pollution in rivers and lakes has been assessed on a continuing basis by the Environmental Research Unit and the EPA. The status of the County's surface waters as of 2013 are indicated on the Green Infrastructure maps.



The greatest risk to water quality in Fingal comes from:

- The quality of river water entering Fingal from outside catchments
- Agricultural runoff
- Outfalls from municipal wastewater treatment works
- On-site treatment systems (including septic tanks)
- Urban storm water overflows
- Urban storm water runoff
- Misconnections to surface water sewers in urban areas
- Licensed discharges
- Unlicensed discharges

The *Local Government (Water Pollution) Acts 1977 – 1990* provides the principal legal framework in relation to water pollution.

Groundwater

Geological Survey of Ireland (GSI) indicates that groundwater is a major natural resource in Ireland providing between 20%-25% of drinking water supplies. In rural areas that are not served by public or group water schemes, ground water is usually the only source of supply. For these reasons, it is essential that this natural resource be protected.

In conjunction with the Geological Survey of Ireland (GSI) a Groundwater Protection Scheme has been prepared for Fingal. This provides guidelines for the planning and licensing authorities in carrying out their functions, and a framework to assist in decision-making on the location, nature and control of developments and activities in order to protect groundwater. Use of the scheme will help to ensure that within the planning and licensing processes due regard is taken of the need to maintain the beneficial use of groundwater. The Scheme aims to maintain the quantity and quality of groundwater and in some cases improve it, by applying a risk assessment based approach to groundwater protection and sustainable development. This information will inform decisions on planning applications and zoning of certain lands.

Groundwater protection responses for the different areas have been developed for potential hazards such as landfills, on-site wastewater treatment systems and septic tanks for single houses. The Groundwater Protection Scheme is available at www.gsi.ie.

A Register of Abstractions of groundwater, as required under Irish legislation, is kept by the Council.

Objective WQ01

Strive to achieve 'good status' in all waterbodies in compliance with the *Water Framework Directive, the Eastern River Basin District Management Plan 2009-2015* and the associated Programme of Measures (first cycle) and to cooperate with the development and implementation of the second cycle national *River Basin Management Plan 2017-2021*.

Objective WQ02

Protect and develop, in a sustainable manner, the existing groundwater sources and aquifers in the County and control development in a manner consistent with the proper management of these resources in conformity with the *Eastern River Basin Management Plan 2009-2015* and the second cycle national *River Basin Management Plan 2017-2021* and any subsequent plan and the Groundwater Protection Scheme.



Objective WQ03

Implement the recommendations of the Groundwater Protection Scheme.

Objective WQ04

Protect existing riverine wetland and coastal habitats and where possible create new habitats to maintain naturally functioning ecosystems whilst ensuring they do not impact negatively on the conservation objectives of any European Sites.

Objective WQ05

Establish riparian corridors free from new development along all significant watercourses and streams in the County. Ensure a 10 to 15 metre wide riparian buffer strip measured from the top of the bank either side of all watercourses, except in respect of the Liffey, Tolka, Pinkeen, Mayne, Sluice, Ward, Broadmeadow, Corduff, Matt and Delvin where a 30m wide riparian buffer strip from top of bank to either side of all watercourses outside urban centres is required as a minimum.

Objective WQ06

Minimise the impact on surface water of discharges from septic tanks, proprietary effluent treatment systems and percolation areas by ensuring that they are located and constructed in accordance with the recommendations and guidelines of the EPA and Fingal County Council.

Climate Change

In December 2015 the *Climate Action and Low Carbon Development Act 2015* was enacted. The Act establishes the national objective of transitioning to a low carbon, climate resilient and environmentally sustainable economy in the period up to and including the year 2050.

Ireland is taking measures to mitigate the causes of climate change, the County will however, inevitably experience the changed conditions being forecast for increasing global temperatures and possible significant changes in rainfall over the next 100 years. The forecast for Ireland is for drier summers, wetter winters and warmer average temperatures throughout the year. These changes require consideration by all involved in development and its management and appropriate actions must be taken now to ensure satisfactory management of water supply and drainage systems in the future. Addressing the risks posed by climate change will require both adaptation and mitigation. Adaptation describes actions that are designed to cope with the consequences of climate change including warmer temperatures, more extreme precipitation events and sea level rise. Mitigation measures are designed to offset or stop the human caused drivers of climate change, namely emissions of greenhouse gas and land-use change. Urban areas in particular need to consider both adaptation and mitigation measures in tandem particularly because many settlements are located in low lying areas in proximity to rivers and coasts.

The *Greater Dublin Strategic Drainage Study (GDSDS)* developed a Climate Change Policy to assist in the future provision and management of drainage services in the region. This is to facilitate a uniform and consistent approach to urban drainage infrastructure planning, design, construction and operation.



Objective CC01

Comply with the recommendations of the GDSDS Climate Change Policy with regard to the provision and management of drainage services in the County and recognise that climate mitigation and adaption measures are evolving and comply with new national measures as presented in National Plans and Frameworks.

Objective CC02

Implement the specific recommendations of Table CC1 of the GDSDS Regional Policy Volume 5 Climate Change Policy for all housing, commercial and industrial developments within the County.

Objective CC03

Continue to reduce energy and chemical consumption within the Council's treatment plants and pumping stations.

Objective CC04

Mitigate the causes of climate change as per COP21 also known as the 2015 Paris Climate Conference.

7.3 Energy

Background

Modern societies consume huge amounts of energy to heat homes and cool homes and offices, fuel transport systems, power industry and generate electricity. Ireland's island location on the edge of Europe accentuates the need for secure and continuous energy supplies. Despite a reduction in energy consumption in recent times, Ireland still spends a significant amount of money on energy imports. Therefore, consideration and commitment to policies which create energy efficiencies and further the development of indigenous resources is crucial over the lifetime of the Plan.

The Plan has an important role to play in progressing a sustainable energy policy in the County, recognising the role of land use planning in helping Ireland realise its potential to be a low carbon society and mitigating the impacts of climate change.

Statement of Policy

- Ensure adequate power capacity for the future needs of the County by cooperating and liaising with statutory and other energy providers, facilitating the development of enhanced sustainable energy supplies, encouraging in particular renewable energy sources and energy efficiency.

Energy Efficiency

The challenge of global climate change and its consequences are now widely acknowledged. A reduction in greenhouse gas emissions is seen as a global priority that requires committed action and co-operation.



Fingal will support the Government Programme for the development of Energy Policy and Legislation through the implementation of supporting policies in the Plan. Ireland is committed to a range of renewable energy and efficiency targets. At European Level the '20/20/20' commitments agreed under the EU 'Climate Change and Energy Package' set three targets for 2020:

- A minimum 20% reduction in greenhouse gas emissions based on 1990 levels.
- 20% reduction in primary energy use compared with projected levels, to be achieved by improving energy efficiency.
- 20% of final energy consumption to be produced by renewable energy resources.

The Europe 2020 Strategy was adopted in 2010 and aims to enable Europe to emerge from the economic crisis in a stronger position, setting out five headline targets one of which includes climate change.

Ireland's National Targets are:

- Reduce emissions in the non-traded sector by 20% compared to 2005 levels,
- Increase the share of renewables in final energy consumption to 16% and to move towards a 20% increase in energy efficiency.

In addition EU countries have agreed on a new 2030 Framework for climate and energy as outlined by the European Commission. The targets aim to help the EU achieve a more competitive, secure and sustainable energy system. The targets include;

- 40% cut in greenhouse gas emissions compared to 1990 levels
- At least 27% share of renewable energy consumption
- At least 27% energy savings compared with the business as usual scenario.

Ireland's third *National Energy Efficiency Action Plan (NEEAP)* which was published in 2014 reaffirms the country's commitment to delivering a 20% reduction in energy demand across the economy by 2020 along with a 33% reduction in public sector energy use. The NEEAP outlines energy efficient measures that will be implemented to reach the national energy saving targets.

Energy Efficient Design

Two Directives that will inform National Energy Policy for the immediate future include:

- *EU Energy Performance of Buildings Directive (2010/31/EU)*: This directive aims to promote the energy performance of buildings and aims to strengthen the provisions of Directive 2009/91/EC which it revokes. Its provisions include energy needs for the heating of premises, the production of hot water, cooling, ventilation and lighting for new and existing buildings. This Directive also contains an objective that by 31st December 2020, all new buildings shall be nearly zero energy consumption buildings.
- *EU Energy Efficiency Directive (2012/27/EU)*: This directive was transposed into Irish Law as S.I. 426 of 2014 and sets out the policy roadmap up to 2020 and identifies measures that are required to be introduced by Member States in order for the EU to meet its binding energy efficiency and emissions targets.

The national policy document *Delivering Homes Sustaining Communities 2007* supports the adoption of new technology and innovative approaches to design and construction of dwellings leading to enhancing their quality and energy performance over their lifetime in addition to the



publication *Quality Housing for Sustainable Communities* which promotes high standards in design and environmental performance. Fingal has been to the forefront on this issue and has incorporated energy saving measures into all its recently adopted Local Area Plans.

Since the publication of the *2007 Energy Policy Framework, Delivering A Sustainable Energy Future for Ireland*, global, EU and Irish energy landscape have undergone huge change as new technologies provide cleaner fuels as outlined in the *Green Paper on Energy Policy in Ireland published by the Department of Communications, Energy and Natural Resources* which looks at Irish energy policies priorities towards 2030. Increasing renewable energy supplies have helped decarbonise the Irish economy.

A key area for consideration in sustainable construction and building design specification is in the area of CO₂ and energy with particular reference to embodied CO₂ and embedded energy. The focus should be directed towards the use of green construction materials.

Arising from the *Recast of the European Performance of Buildings Directive 2010/30/EU*, from 1 January 2019, every new public building will have to be designed to nearly zero energy building standards. Also, all other new buildings will have to comply with the new nearly zero energy buildings standards from 1 January 2021. The Council will have regard to the DoEHLG publication *Towards Nearly Zero Energy Buildings in Ireland Planning for 2020 and Beyond* and the *EU Energy Performance of Buildings Directive (2010/31/EU)* which promote the increase in nearly Zero Energy Buildings (nZEB). The Council promotes the development of low carbon buildings. Fingal aspires to becoming carbon neutral and make every effort to increase energy efficiency.

Energy efficiency and the renewable requirements for new buildings including new residential development are addressed in the Building Regulations Part L. The aim of Part L is to limit the use of fossil fuel energy and related CO₂ emissions arising from the operation of the building. The introduction of the BER label, Building Energy Rating, allows for dwellings to be assessed on their energy performance. The provision of this label system allows individuals to make informed decisions regarding the energy efficiency of a building. There are exemptions for Protected Structures, proposed Protected Structures and buildings protected under National Monuments Legislation.

Objective EN01

Support international, national and county initiatives for limiting emissions of greenhouse gases through energy efficiency and the development of renewable energy sources using the natural resources of the County in an environmentally sustainable manner where such development does not have a negative impact on the surrounding environment, landscape or local amenities.

Objective EN02

Undertake a Local Authority Renewable Energy Strategy (LARES).

Objective EN03

Encourage and facilitate the development of renewable energy sources, optimising opportunities for the incorporation of renewable energy in large scale commercial and residential development.

Objective EN04

Support and encourage pilot schemes which promote innovative ways to incorporate energy efficiency.



Objective EN05

Encourage development proposals that are low carbon, well adapted to the impacts of Climate change and which include energy saving measures and which maximise energy efficiency through siting, layout and design.

Renewable Energy

Renewable sources of energy offer sustainable alternatives to our dependency on fossil fuels. They are a means of reducing harmful greenhouse emissions and offer opportunities to reduce our reliance on imported fuels. Under *EU Directive 2001/77/EC Renewable Energy* the promotion of electricity from renewable energy sources are defined as renewable non-fossil energy sources such as, but not limited to wind, solar, geothermal, wave, tidal, hydropower, biomass, landfill gas, sewage treatment plant gas, bio-gases and bio-char [i.e. the thermal treatment of natural organic materials in an oxygen-limited environment].

Ireland is richly endowed with renewable energy resources, e.g. wind and water. These offer a real alternative for meeting our energy needs. It is important that Ireland does not limit itself to certain types of renewable energy technologies and seeks to explore other less exploited options such as solar PV. Several renewable energy technologies are now commercially viable and capable of supplying clean, economical heat and power.

Fingal County Council seeks to ensure that all new developments contribute positively towards reducing energy consumption and the associated carbon footprint. The Council will promote and facilitate new and innovative technologies seeking to provide renewable energies. The Council will also ensure a balance is achieved between the development of renewable energy sources and the protection of the natural heritage, visual amenity, biodiversity and food producing lands.

The Council supports the application of the national level *Strategy for Renewable Energy 2012-2020* which sets out five strategic goals for renewable energy and how challenges are to be dealt with. Additionally *Directive 2009/28/EC* requires Member States to adopt a National Renewable Energy Action Plan (NREAP) which sets out national targets for the share of energy from renewable sources consumed in transport, electricity and heating and cooling in 2020. Ireland's energy efficiency ambitions as set out in the *National Energy Efficiency Action Plan (NEEAP)* are reflected in the NREAP.

The Council will endeavour to work with the relevant stakeholders to carry out a Spatial Energy Demand Analysis (SEDA) of the County which would facilitate an integrated approach to spatial planning and energy resulting in a better spatial understanding of energy needs.

New development proposals will be required to demonstrate reduced energy consumption in their design and construction. Developments should incorporate where possible alternative energy technologies such as bio-energy, solar energy, heat pumps, heat recovery and wind energy. Similarly care should be taken to consider the adaptability of buildings over time in order to enable building stock to be refurbished and retrofitted to meet future energy efficiency standards.

From 2013 the Energy Performance of Buildings Directive was superseded by the Recast EPBD and SI 666 of 2006 was superseded by SI 243 of 2012. New building design will reflect the



need to ensure that development occurs in a sustainable and sensitive manner giving due recognition to the necessity to produce a design which accords with national sustainability and energy conservation policies, and contributes to the creation of appropriate urban form.

Objective EN06

Support the implementation of the 'Strategy for Renewable Energy 2012-2020' Department of Communications, Energy and Natural Resources and the related National Renewable Energy Action Plan (NREAP) and National Energy Efficiency Action Plan (NEEAP).

Objective EN07

Work with relevant stakeholders to carry out a Spatial Energy Demand Analysis (SEDA) of the County within the Plan period as resources permit.

Objective EN08

Consider the adaptability of buildings over time and seek to improve the efficiency of existing building stock and promote energy efficiency and conservation in the design and development of all new buildings in the County.

Objective EN09

Require details of the requirements for alternative renewable energy systems, for buildings greater than 1000sq m or residential schemes above 30 units, under SI 243 of 2012 European Communities (Energy Performance of Buildings) to be submitted at pre planning stage for consideration. These should take the form of an Energy Statement or Feasibility Study carried out by qualified and accredited experts.

Wind Energy

Wind energy is a clean and sustainable form of energy. It is envisaged that wind power will make the most significant contribution to the achievement of national and international targets for green electricity.

Wind farms are comprised of a group of wind turbines located in proximity to each other and are interconnected with a medium voltage power collection system. A substation is also provided on site where the medium voltage electrical current is increased in voltage with a transformer for connection to the higher voltage transmission system.

The *Wind Energy Development Guidelines for Planning Authorities*, DoEHLG, (2006) sets out a detailed methodology to assist in identifying optimum locations for the development of commercial wind generating facilities. These Guidelines are currently under review.

The Council has produced a *draft Wind Energy Strategy* combined with maps to indicate appropriate locations for such development. Site suitability is an important consideration in determining the location of wind farms, i.e. turbines, due mainly to possible adverse impacts associated with, visual impacts, noise and shadow flicker. The draft Strategy supports a plan led approach to wind energy development in Fingal and provides direction as to the suitability of areas within the County for wind energy development. It is noted that the whole of Fingal is an area with wind speed potential which can facilitate the productive location of wind energy development. A significant portion of lands within the County could be developed for wind farms with the lands designated as acceptable in principle amounting to 13,357 hectares and lands that are designated as open for consideration amounting to 20,615 hectares. As of May 2015 there are 224 wind farms online and operational in 27 counties of



Ireland. It is predicted that if all the proposed wind farms are operational by 2020 that Ireland could comfortably achieve its Kyoto carbon emissions targets.

Objective EN10

Support Ireland's renewable energy commitments outlined in national policy by facilitating the exploitation of wind power where such development does not have a negative impact on the surrounding environment, landscape or local amenities including offshore sites that may be designated under the Birds and Habitats Directive in the lifetime of this Plan.

Objective EN11

Require that all new wind energy developments in the County comply with the *Wind Energy Development Guidelines for Planning Authorities*, DoEHLG (2006) and guidelines contained within draft *Fingal County Council Wind Energy Strategy* or any subsequent strategy or associated guidelines applicable within the lifetime of the Plan.

Solar

The sun is a reliable source of heat and light. There are three basic approaches used today to harness and gain maximum benefit of solar energy in buildings. These are Passive Solar; Active Solar Heating and; Solar Photovoltaic (PV) Systems.

There are a range of technologies available to exploit the benefits of the sun, including solar panels, solar farms, solar energy storage facilities all of which contribute to a reduction in energy demand. Solar technologies can be designed into buildings or retro fitted. Larger solar farms have potential to be considered on suitable sites within the County.

In the publication *Adding Solar Power to Irelands Energy Mix*, *Lightsource Renewable Energy Limited* it is estimated that by 2020 over 20% of Irelands energy could be generated by solar photovoltaic (solar PV). Solar PV provides energy consistently and by adding solar PV to Irelands energy mix, it will complement existing infrastructure as well as drive further renewable energy production. It is considered that solar PV farms are generally inconspicuous at ground level and are hidden by hedgerows. Additionally such farms can facilitate the regeneration of natural habitats in the rural areas.

Objective EN12

Support Ireland's renewable energy commitments outlined in national policy by facilitating the exploitation of solar power where such development does not have a negative impact on the surrounding environment, landscape, historic buildings or local amenities.

Objective EN13

Encourage and support the development of solar energy infrastructure, including solar PV, solar thermal and seasonal storage facilities.

Objective EN14

Promote and encourage the development of suitable sites within the County for use as Solar PV farms where such development does not have a negative impact on the surrounding environment, landscape, historic buildings, biodiversity or local amenities.



Geothermal

Geothermal energy refers to heat energy stored in the ground. Heat is supplied to the ground from two sources, namely the hot core of the planet and the sun. It can be classified as either 'deep' or 'shallow' depending on the depths from which it is sourced. The deep geothermal energy can only be accessed through geological processes or by drilling through the surface. The second source of heat in the ground is from radiation from the sun. This energy can be regarded as stored energy which stays relatively warm throughout the year. This heat can then be extracted by using a ground source heat pump.

Objective EN15

Support Ireland's renewable energy commitments outlined in national policy by facilitating the exploitation of geothermal energy where such development does not have a negative impact on the surrounding environment, landscape, biodiversity or local amenities.

Objective EN16

To ensure any proposal for geothermal technologies or any other subsurface exploration does not impact on groundwater quality.

Hydro Energy

Hydro energy is the name given to the production of power through use of the gravitational force of falling or flowing water. Ocean energy contained in the world's waves and marine tidal currents provides an untapped source of renewable energy. Given Fingal's coastal location, both wave and tide could have a role to play in meeting the longer term targets for energy consumption from renewable sources.

Objective EN17

Support Ireland's renewable energy commitments outlined in national policy by facilitating the exploitation of hydro energy where such development does not have a negative impact on the surrounding environment, landscape, biodiversity or local amenities.

Bioenergy

Bioenergy is energy derived from biomass. In essence bioenergy is the utilisation of solar energy that has been bound up in biomass during the process of photosynthesis. The photosynthesis process uses solar energy to combine carbon dioxide from the atmosphere with water and various nutrients from the soil to produce plant matter – biomass. According to the *Bioenergy Action Plan for Ireland, Department of Communications, Marine and Natural Resources*, Ireland has significant potential to develop its bioenergy resources to generate electricity for use as transport fuels, heating and cooling buildings and for conversion into bio-chemicals as industrial raw materials. The Council will encourage the production of bio-crops for biomass in the generation of renewable energy.

Objective EN18

Support Ireland's renewable energy commitments outlined in national policy by facilitating the exploitation of biomass technology energy while ensuring that a balance is met that such development does not have a negative impact on the surrounding environment, landscape, biodiversity or local amenities, nor on the environment nor food production elsewhere either directly or through indirect land use change.



Objective EN19

Encourage the production of bio-crops for biomass in the generation of renewable energy

Objective EN20

Support and facilitate the integration of local bioenergy into gas and electricity networks and its use as a transport fuel.

Low Carbon District Heating

District heating is one of the most efficient and cost effective ways to heat apartments, homes and mixed use developments. As the system is centralised there will be a 90% reduction in fossil fuel use and significantly reduces the carbon footprint of the development. District heating networks can be based on a variety of technologies and renewable energy sources, such as combined heat and power (CHP), biomass energy, geothermal or energy from waste.

Such schemes work particularly well in built up urban areas where there is a near constant demand. For the system to work water is heated using a boiler located in a central heating plant. The heat is distributed to the individual houses via an underground network of insulated pipes. The water in the network is continually circulating and always available to the householder. Emersion heaters are not required in addition to boilers and hot water storage tanks which frees up space for other purposes. Systems are powered with biomass (such as woodchip or willow) and gas. The use of a renewable energy solution to provide heating and hot water to houses and businesses contributes to sustainability as it reduces demand for and consumption of energy while using a renewable form of fuel.

Objective EN21

Support Irelands renewable energy commitments outlined in national policy by promoting the use of district heating systems in new residential and commercial developments where such development does not have a negative impact on the surrounding environment, landscape, biodiversity or local amenities.

Energy Networks

The two main energy networks serving Fingal are electricity and gas. With Fingal's proximate location within the Greater Dublin Area and the potential for significant development of a residential and commercial nature likely to take place within the Plan period it is important to ensure that the existing networks can be upgraded to provide appropriate capacity to facilitate the development of the County in line with the Settlement Strategy. The Council will work in partnership with existing service providers, particularly Eirgrid, ESB Networks, and Gas Networks Ireland to facilitate required enhancement and upgrading of existing infrastructure and networks. It will be the policy of the Council to support and protect strategic energy corridors.



Objective EN22

Facilitate energy infrastructure provision at suitable locations, so as to provide for the further physical and economic development of Fingal.

Energy Strategy for Fingal

To implement national policy on a local basis, Fingal County Council will prepare a Local Authority Renewable Energy Strategy (LARES). The aims of the strategy is to develop policies and actions which can realistically and coherently make the maximum contribution to the national effort to address climate change and maximise the harvesting of renewable energy resources most appropriate to the County and in a manner which is consistent with proper planning and sustainable development.

To advance the Strategy, a Sustainable Energy Forum is proposed with Fingal County Council as the lead agency with relevant stakeholders and various interest groups. The Strategy shall include a Spatial Energy Demand Analysis (SEDA) of the County which would facilitate an integrated approach to spatial planning and energy resulting in a better spatial understanding of energy needs.

Objective EN23

Establish a Sustainable Energy Forum within Fingal County Council to prepare a Local Authority Renewable Energy Strategy with relevant stakeholders and various interest groups within the County.

7.4 Information and Communication Technologies**Background**

Information and Communication Technologies is an umbrella term that is used to cover the technical means for processing and communicating information, primarily involving digital technology. The main thrust for the Council with respect to Telecommunication Technologies is to promote and facilitate a widespread telecommunication infrastructure throughout the County in order to achieve balanced social and economic development.

ICT contribute to quality of life in two ways. Firstly, access to fast, reliable and cost-effective communications counteracts the effects of geographic remoteness and can increase social inclusion, economic competitiveness and employment opportunities. This is particularly significant in the rural area of Fingal. Secondly, modern telecommunications can also contribute to sustainability goals by reducing the need to travel, for example by home-working, teleconferencing, distance learning and e-commerce. Information Society developments are transforming the way we interact and do business. The phrase Information Society refers to the increasing contemporary significance of ICTs and the unfolding influence of these technologies across all areas of economic and social activity in the twenty-first century.

Statement of Policy

- Promote the development of additional ICT infrastructure, including broadband, telecommunication facilities, mobile phone coverage and the concept of wifi availability in



public places, so as to provide for the further physical and economic development of rural and urban Fingal, and having regard to design policies and visual amenity in the County.

Objective IT01

Promote and facilitate the sustainable delivery of a high quality ICT infrastructure network throughout the County taking account of the need to protect the countryside and the urban environment together with seeking to achieve balanced social and economic development.

Objective IT02

Require appropriate modern information technology, including a carrier neutral, multi-duct infrastructure servicing every unit, to be incorporated into the overall design and layout of all new developments in Fingal, where feasible.

Broadband Infrastructure

Broadband is largely provided on a private basis, however, the Government have committed to provide the services in areas not covered by existing private providers.

Fingal has reasonably good access to the broadband network with figures from Census 2011 indicating that 79.5% of households within Fingal had broadband connectivity compared with 63.8% nationally. However it is acknowledged that within the County there are many urban and rural locations where service is deficient.

Ensuring access to fast, reliable and cost-effective communications is seen as a critical piece of infrastructure and is vital for the economic development of the County. Advances in technology have increased the importance of access to the internet in economic development as broadband connects businesses, both large and small to the global market place. As outlined in the *National Digital Strategy, Department of Communications, Energy and Natural Resources, July 2013*, the digital sector in Ireland is growing at a rate of 16% per year and digital already supports almost 95,000 jobs both directly and indirectly. The NDS is a foundation step in helping Ireland to reap the full rewards of a digitally enabled society. It aims to halve the numbers of ‘non-liners’ by 2016.

Metropolitan Area Networks (MANs)

The MANs consists of a network of ducting and fibre optic cable laid within a metropolitan area which is publicly owned and can be used by a variety of businesses to provide services including (but not limited to) telecoms, internet access and television. As these networks are fibre based they will ensure adequate capacity for generations. The delivery of MANs has been separated into two phases with 28 MANs being completed under Phase 1 and 60 MANs being delivered in a second phase. Phase 2 includes the towns of Donabate, Lusk and Portrane.

Objective IT03

Promote the rollout of broadband throughout the County with a special regard for families and businesses in rural Fingal.

Objective IT04

Promote digital inclusion in Fingal by supporting strategies that encourage wider availability of broadband infrastructure.



Telecommunications Antennae and Support Structures

The Council recognises the essential need for high quality communications and information technology networks in assuring the competitiveness of the County's economy and its role in supporting regional and national development. The document *Telecommunications Antennae and Support Structures, Guidelines for Planning Authorities, DOE, 1996* gives considerable guidance on this matter. The National Broadband Plan identified a number of potential barriers in the planning area to efficient Next Generation Broadband (NGB) rollout and the necessary actions required to address these barriers. Such issues are due to be addressed by way of the update of elements of the *Telecommunications Antennae and Support Structure Guidelines*. It is anticipated that the update to the Guidelines will support the planning system in facilitating the objectives set out under the *National Broadband Plan, Department of Communications, Energy and Natural Resources, August 2012*. The advantages of a high quality ICT infrastructure must however be balanced against the need to safeguard the rural and urban environment. Visual impact must therefore be kept to a minimum with detailed consideration given to the siting and external appearance of the apparatus and to the scope for utilizing landscaping measures effectively. The Council will consider proposals for such infrastructure in the light of the recommendations of the guidelines issued.

Objective IT05

Provide the necessary telecommunications infrastructure throughout the County in accordance with the requirements of the *Telecommunications Antennae and Support Structures Guidelines for Planning Authorities July 1996* except where they conflict with Circular Letter PL07/12 which shall take precedence, and any subsequent revisions or additional guidelines in this area.

Objective IT06

Promote and encourage service providers to engage in pre-planning discussions with the Planning Authority prior to the submission of planning applications.

Objective IT07

Require best practice in siting and design in relation to the erection of communication antennae.

Objective IT08

Secure a high quality of design of masts, towers and antennae and other such infrastructure in the interests of visual amenity and the protection of sensitive landscapes, subject to radio and engineering parameters.

7.5 Waste Management

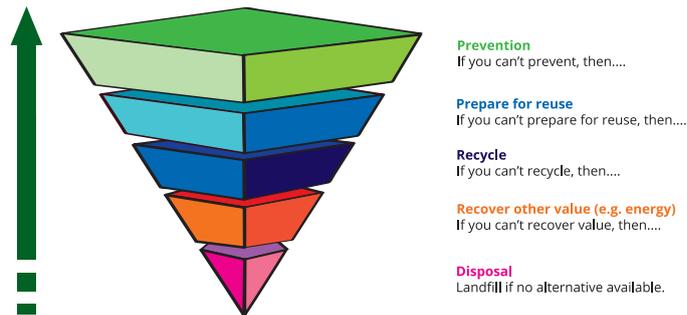
Background

Waste management in Ireland is regulated by the *Waste Management Acts, 1996 to 2011*, which require local authorities to prepare detailed plans for the management of waste. Under the Waste Management Acts, a Development Plan is deemed to include the objectives of the Waste Management Plan for its area.



In 2012, the Government adopted a new approach to waste management and published a policy document entitled 'A Resource Opportunity Waste Management Policy in Ireland', Department of the Environment, Community and Local Government. This document sets out the measures through which Ireland will make further progress to become a recycling society, placing a focus on resource efficiency and seeking the elimination of landfilling of municipal waste. It is based on five key principles, prevention, preparing for reuse, recycling, recovery and disposal. These are illustrated in Figure WM01 below.

Figure WM01: Waste Hierarchy



Since the adoption of the last Development Plan, there have been significant changes in how waste is dealt with. Fingal now lies within the Eastern Midlands Region.

The *Eastern Midlands Region Waste Management Plan 2015 -2021* was adopted in May 2015. The overall vision of the Regional Waste Management Plan is to rethink the approach taken towards managing waste and that waste should be seen as a valuable material resource. The Plan also supports a move towards achieving a circular economy which is essential if the region is to make better use of resources and become more resource efficient. In the global economy, the demand and competition for finite and sometimes scarce resources will continue to increase, and pressure on resources is causing greater environmental degradation and fragility. Making better uses of these resources, reducing the leakage of materials from our economies, will deliver benefits economically and environmentally. The move to a circular economy replacing outdated industrial take-make-consume and dispose models, is essential to deliver the resource efficiency ambition of the Europe 2020 Strategy. The Plan contains three targets:

- 1% reduction per annum in the quantity of household waste generated per capita over the period of the Plan.
- Achieve a recycling rate of 50% of Managed Municipal Waste by 2020.
- Reduce to 0% the direct disposal of unprocessed residual municipal waste to landfill (from 2016 onwards) in favour of higher value pre-treatment processes and indigenous recovery practices.

Source : *Eastern Midlands Region Waste Management Plan 2015-2021*

Previously local authorities were involved in the delivery of waste collection and treatment infrastructure but this is no longer the case. The local authorities' role is now focused on education, awareness, prevention and resource efficiency activities as well as regulating businesses and waste operators and enforcing waste legislation.

Relevant policies and objectives in the Development Plan can assist in underpinning the objectives of the Regional Waste Management Plan. In particular, the Development Plan can



also assist in ensuring that the design of new developments accommodate segregated waste collection systems and that during the construction of new developments waste, including demolition waste, is well managed. Fingal will remain cognisant of the principles and objectives outlined in the above named documents and will continue to work in conjunction with the Eastern Midlands Region Waste Management Office and the Environmental Protection Agency in the implementation of waste management policies.

By virtue of the *Waste Management Act*, as amended the objectives of the Waste Management Plan are deemed to be included in the Development Plan. Where the objectives of the Development Plan and the Waste Management Plan are in conflict the objectives in the Waste Management Plan shall prevail. The adoption of the Waste Management Plan is an executive function.

The Eastern Midlands Region Waste Management Plan 2015-2021 recognises that the European Union (End of Life Vehicles) Regulations 2014 help facilitate the achievement of a rate of reuse and recovery of a minimum of 95% by an average weight per vehicle and year and the re-use and recycling of a minimum of 85% by an average weight per vehicle and year from January 2015.

Objective WM01

Facilitate the sustainable expansion of existing Authorised Treatment Facilities for end of life vehicles complying with European Union (End of Life Vehicles) Regulations 2014, other relevant legislation and the Eastern Midlands Regional Waste Management Plan 2015-2021.

Statement of Policy

- Conform to the European, National and Regional policy in all matters relating to the production, handling, treatment and disposal of waste.

Objective WM02

Facilitate the implementation of national legislation and national and regional waste management policy having regard to the waste hierarchy.

Objective WM03

Implement the provisions of the *Eastern Midlands Region Waste Management Plan 2015 -2021* or any subsequent Waste Management Plan applicable within the lifetime of the Development Plan. All prospective developments in the county will be expected to take account of the provisions of the Regional Waste Management Plan and adhere to the requirements of that Plan.

Objective WM04

Facilitate the transition from a waste management economy to a green circular economy to enhance employment and increase the value recovery and recirculation of resources.

Prevention and Minimisation

In line with the principles of sustainable development, the Council will continue to promote a waste prevention and minimisation programme to target all aspects of waste in the County, focusing on both commercial and domestic waste producers. It is considered that raising the awareness of citizens and businesses with regard to their responsibilities as producers of waste is essential.



Objective WM05

Prevent and minimise the generation of waste in accordance with the *Eastern Midlands Region Waste Management Plan 2015 -2021* (or any subsequent plans).

Objective WM06

Raise environmental awareness of waste prevention and minimisation through the continuation of the Council based initiatives. Particular emphasis should be placed on the involvement of local schools, community organisations, individual households and businesses.

Preparing for Reuse

The Council will promote an increase in the amount of waste reused and recycled consistent with the *Eastern Midlands Region Waste Management Plan 2015 -2021* and the waste hierarchy. Reuse, preparing for reuse and repair activities can contribute to the community and local economy. Reuse of materials is key to preventing them from becoming waste.

Objective WM07

Promote the increased re-use of waste in accordance with the *Eastern Midlands Region Waste Management Plan 2015 -2021* (or any subsequent plan).

Objective WM08

Promote and encourage the establishment of reuse, preparing for reuse and repair activities in accordance with the *Eastern Midlands Region Waste Management Plan 2015 -2021* (or any subsequent plan).

Recycling

The policy document entitled ‘*A Resource Opportunity Waste Management Policy in Ireland*’ sets out the measures through which Ireland will make further progress to become a recycling society. Ireland has made considerable progress in recent times in its recycling performance which ultimately is a reflection of growing awareness among the public. One area identified as requiring immediate attention is that of organic waste. The Environmental Protection Agency estimates that significant quantities of organic waste are available for diversion from household bins. This material could be recycled into products such as composts and recovered using energy technologies such as anaerobic digestion.

Fingal operates two recycling centres, one at Estuary Road in Swords and one at Coolmine in Blanchardstown. These centres accept household waste only and among the items accepted free of charge include paper, glass bottles / jars, car and household batteries and Waste Electrical & Electronic Equipment (WEEE). There are a number of bring banks throughout the County, catering for bottles, cans and textiles. Fingal will continue to promote awareness and an increase in the amount of waste that is reused and recycled to reflect the objectives of the waste hierarchy.

Objective WM09

Promote increased recycling of waste in accordance with the *Eastern Midlands Region Waste Management Plan 2015 -2021* (or any subsequent plan).



Objective WM10

Continue to promote home composting and explore the potential for composting in rural areas.

Objective WM11

Promote the development of composting (digester) plants for organic solid waste at appropriate locations within the County subject to the protection of the amenities of the surrounding environment.

Objective WM12

Promote developments to manage food waste in accordance with the requirements of the Waste Management (Food Waste) Regulations.

Objective WM13

Seek to identify suitable sites for bring banks to ensure that developing settlements have ease of access to such facilities over the Plan period, subject to funding and resources available.

Recovery

Gas is being collected at both the Balleally and Dunsink landfills and is being used to generate electricity which is fed into the national grid. The Dublin Waste to Energy Project at Poolbeg when operational in late 2017, will have the capacity to generate energy from up to 600,000 tonnes of waste per year that would otherwise go to landfill and will generate electricity for up to 80,000 homes annually. Provision is also being made to facilitate district heating for up to a further 50,000 homes. It is estimated that every tonne of waste treated at the plant would provide as much energy as one 200 litre barrel of oil. In relation to the management of sludge, the Regional Waste Management Plan recommends that local authorities liaise with Irish Water regarding water and waste water sludges and with other relevant stakeholders to ensure that sludges are managed in a safe manner.

Objective WM14

Promote the recovery (including recovery of energy) from waste in accordance with the *Eastern Midlands Region Waste Management Plan 2015 -2021* (or any subsequent plan).

Objective WM15

Implement the adopted Sludge Management Plan for the County and update the plan as required.

Work with Irish Water and other relevant stakeholders to ensure the provision of facilities for the safe and sustainable management of sludges (sewage, waterworks, agricultural, industrial and septic tank) that are generated within the County having regard to the Fingal Sludge Management Plan and relevant environmental legislation.

Disposal

In recent years there has been a move away from the disposal of waste to landfill. In Fingal, Balleally landfill has closed for the acceptance of waste with soil being accepted for restoration / capping purposes only. Dunsink landfill has been closed since the late 1990's.



Objective WM16

Ensure the full restoration of the Balleally landfill site and the development of both it and the former Dunsink landfill into amenities for recreation and nature conservation. Undertake this process in co-operation with all relevant stakeholders and in compliance with all legislative and regulatory requirements.

Objective WM17

Promote and encourage the objectives of *Eastern Midlands Region Waste Management Plan 2015 -2021* (or any subsequent plan) regarding the remediating of historic closed landfills prioritising actions to those sites which are the highest risk to the environment and human health. Any future development of lands incorporating historic closed landfills shall take full consideration of the environmental sensitivities of the local site and follow the national code of practice for assessment and remediation of such sites. This may include obtaining an appropriate authorisation from the EPA to regulate the proposed mediation.

Construction and Demolition Waste

The *Eastern Midlands Region Waste Management Plan 2015-2021* states that Construction and Demolition Waste (C&D) consists of all wastes that arises from C&D activities which includes excavated soil from contaminated sites. This type of waste is generally collected by authorised collectors and its recovery is managed by placing it in a variety of land uses such as backfilling. Sites chosen for backfilling are generally considered to be of marginal agricultural land but these can include wetlands and associated habitats. The Regional Waste Management Plan recognises that at many of these sites it is deposition rather than improvement that is the primary activity and this can have complications for habitats. Also given the move away from landfill which is a significant outlet for C&D waste, alternative recovery options will be required to facilitate C&D Waste in the future years.

The EC (Waste Directive) Regulations 2011, sets a 70% target for the re-use, recycling and recovery of man-made C&D waste in Ireland by 2020.

Objective WM18

Ensure that construction and demolition waste management plans meet the relevant recycling / recovery targets for such waste in accordance with the national legislation and regional waste management policy.

Objective WM19

Protect floodplains and biodiversity where construction and demolition waste is to be recovered by land reclamation.

Hazardous Waste

Hazardous waste is generated by every sector of society and is for the most part managed by authorised operators. The Environmental Protection Agency has prepared a revised *National Hazardous Waste Management Plan 2014-2020*. It takes into account progress that has been made since the previous plan and the waste policy and legislative changes that have also occurred.



Objective WM20

Implement the provisions of the National Hazardous Waste Management Plan 2014-2020 or any subsequent plan within the lifetime of the development plan.

Objective WM21

Promote public awareness of the dangers associated with the incorrect disposal of hazardous waste.

Objective WM22

Promote the use of clean technology and minimisation of hazardous waste production in industry, including Small and Medium Enterprises (SMEs)

Objective WM23

Continue to provide at each of the Waste Recycling Centres, facilities for the disposal of hazardous wastes such as batteries, waste oil and waste paint.

Litter

Litter is an environmental problem that significantly detracts from the visual appearance of both urban and rural areas. The Council recognises the importance of protecting urban areas and countryside from indiscriminate dumping and bill posting and of keeping the environment free from litter. Like other authorities, the County is obliged to prepare a Litter Management Plan for its area. A new Litter Management Plan covering the period from 2016-2018 will be prepared. This Plan will set out objectives to raise public awareness and prevent and control litter.

Objective WM24

Implement the objectives of the adopted Litter Management Plan.

Objective WM25

Seek the effective engagement of local communities in Fingal in recycling waste and tackling the issues associated with illegal dumping within the County.

Objective WM26

Continue to develop the Council's partnership approach with the Tidy Towns Associations, community groups, farming organisations, trade unions, the business community, the local media, sporting organisations, tourism bodies and Gardaí in the support and fostering of anti-litter initiatives within the County.

7.6 Air, Light and Noise**Background**

Issues concerning poor air quality, light pollution and noise pollution, both in the urban and rural environment can lead to major environmental problems and be detrimental to the health of citizens of the County. The need to ensure the highest standards of air quality is recognised, whilst also ensuring that noise pollution and light pollution are maintained at acceptable levels. Air Quality, Light Pollution and Noise Pollution are primarily addressed within legislation associated with each.



Statement of Policy

- Have regard to European Union, National and Regional policy in all matters relating to air quality, light pollution and noise pollution and where appropriate take steps to reduce effects of air, noise and light pollution on environmental quality and surrounding residential amenity.

Objective AQ01

Implement the provisions of EU and National legislation on air, light and noise and other relevant legislative requirements, as appropriate and in conjunction with all relevant stakeholders.

Air Quality

Over the years the quality of the air we breathe is getting worse, resulting largely from human activities. The four local authorities of the Dublin Region carry out ambient air quality monitoring under the direction of the Environmental Protection Agency (EPA). The EPA manages the national air quality monitoring network. Pollutants that are of most concern are those derived from traffic including Particulate Matter and Nitrogen Dioxide.

The Council adopted the *Dublin Regional Air Quality Management Plan 2009-2012* and has regard to this Management Plan, in conjunction with other relevant legislation when considering planning applications.

The Council supports the Polluter Pays Principle and will have regard to the *EU Framework Directive on Air Quality Assessment and Management* and the *Local Government (Planning and Development) General Policy Directive 1988* (or as may be amended from time to time) issued by the Minister for the Environment relating to air quality standards nationally.

Objective AQ02

Implement the recommendations of the *Dublin Regional Air Quality Management Plan* (or any subsequent plan) and any other relevant policy documents and legislation in order to preserve good air quality where it exists or aim to improve air quality where it is unsatisfactory.

Light Pollution

While adequate lighting is essential for a safe and secure environment, light spillage from excessive or poorly designed lighting is increasingly recognised as a potential nuisance to surrounding properties and a threat to wildlife. Insensitive lighting can cause what is termed “light pollution”. Light pollution is essentially wasted light. Fingal as a predominantly rural County is sensitive to light pollution through sky glow which can affect the tranquillity of the countryside. Light pollution can have a negative impact upon biodiversity by affecting the normal diurnal patterns of plants and animals.

Urban and rural locations can suffer equally from this problem. Lighting columns and other fixtures can have a significant effect on the appearance of buildings and the environment.

Where proposals for new lighting require planning consent, the Council will ensure that they are carefully and sensitively designed. Lighting fixtures should provide only the amount of light



necessary for the task in hand and shield the light given out so as to avoid creating glare or emitting light above a horizontal plane. Development proposals which include external lighting should ensure that the proposed lighting scheme is the minimum required for reasons of public safety and security; there is no light spillage above the horizontal, there is no unacceptable adverse impact on neighbouring or nearby properties or on the surrounding countryside, there is no dazzling or distraction to road users including cyclists, equestrians and pedestrians; and road and footway lighting meets the Council’s standards.

For lands that form part of Local Area Plans (LAPs) and Masterplans or in the case of comprehensive developments occurring on larger tracts of land it is important to establish a hierarchy of light intensities to ensure that environmental impacts are minimised as far as possible. The establishment of such hierarchies will ensure that subtly lit and unlit areas and features are not compromised in terms of their character and visibility after dark. The success of lighting design will rely heavily on striking the right balance between light and dark over the various areas of lands concerned and their immediate contexts.

This approach can be taken by means of determining appropriate light intensities for such lands and the designation of ‘Environmental Zones’ (as defined by the Institute of Lighting Engineers publication, *Guidance Notes for the Reduction of Light Pollution* published in the UK) should be considered. The designations are as follows;

Zone	Surrounding	Lighting Environment	Examples
E1	Natural	Intrinsically Dark	Natural parks
E2	Rural	Low District Brightness	Rural, small village, relatively dark urban locations
E3	Suburban	Medium District Brightness	Small town centres or urban locations
E4	Urban	High District Brightness	Town/ city centres with high levels of night-time activity

Objective LP01

Require that the design of lighting schemes minimises the incidence of light spillage or pollution into the surrounding environment. New schemes shall ensure that there is no unacceptable adverse impact on neighbouring residential or nearby properties; visual amenity and biodiversity in the surrounding areas.

Objective LP02

Establish a hierarchy of light intensities on lands that are subject to Local Area Plans, Masterplans and larger tracts of lands subject to comprehensive developments in order to ensure that environmental impacts are minimised as far as possible through the designation of Environmental Zones.

Noise Pollution

Fingal County Council together with the other Dublin local authorities prepared the *Dublin Agglomeration Environmental Noise Action Plan 2013-2018*, in accordance with the requirements



of the Environmental Noise Regulations 2006, S.I. 140 of 2006 which give effect to the EU Directive 2002/49/EC relating to the assessment of noise. The key objective of this Noise Action Plan is to avoid, prevent and reduce where necessary on a prioritised basis the harmful effects including annoyance due to long term exposure to environmental noise.

Noise can be characterised as ‘unwanted sound’ or ‘sound that is loud, unpleasant or unexpected’ and that can eventually cause disturbance, impairment or damage to health.

Road and air based transport modes are the dominant noise sources in the County, other forms of noise such as impulsive or tonal noise can potentially be more of a nuisance. The planning system can help minimise the adverse effects of noise pollution through the use of planning conditions or by guiding development so that significant noise sources are located away from noise sensitive locations to areas where noise will not be such an important consideration. When considering applications for new developments or uses likely to increase noise levels and cause an unacceptable degree of disturbance, the Council will seek to contain and minimise noise. This is of particular concern in the urban areas where night-time activities such as public houses, clubs and restaurants and day-time uses such as factories have a significant impact on residential amenity. Additionally the Council will continue to promote appropriate land use patterns in the vicinity of the airport and flight paths and strive in so far as is appropriate to minimise housing developments in order to limit the exposure of residents to excessive noise levels. Design aspects such as façade construction/orientation, room usage, window construction, use of active or passive air vents and site boundary noise mitigation measures reduce exposure to noise.

Objective NP01
Implement the relevant spatial planning recommendations and actions of the *Dublin Agglomeration Environmental Noise Action Plan 2013-2018* (or any subsequent plan), working in conjunction with relevant statutory agencies.

Objective NP02
Continue to promote appropriate land use patterns in the vicinity of Dublin Airport to minimise the amount of residents exposed to undesirable noise levels.

Objective NP03
Require all developments to be designed and operated in a manner that will minimise and contain noise levels.

Objective NP04
Ensure that future developments are designed and constructed to minimise noise disturbance and take into account the multi-functional uses of streets including movement and recreation as detailed in the *Urban Design Manual (2009)* and the *Design Manual for Urban Roads and Streets (2013)*

Objective NP05
Ensure that development complies with the NRA's design goal for sensitive receptors exposed to road traffic noise or as updated by any subsequent guidelines published by Transport Infrastructure Ireland.



