

TRANSPORTATION AND INFRASTRUCTURAL FRAMEWORK

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TRANSPORTATION AND INFRASTRUCTURAL FRAMEWORK



SCHERZER BRIDGE

5.1 TRANSPORTATION FRAMEWORK

5.1.1 INTRODUCTION

The Dublin Docklands Area is continuing to experience a period of significant regeneration and development. This continued growth in residential population and economic activity has increased transport demand significantly both within and through the Docklands since the original 1997 Master Plan and during the 2003 Master Plan.

The primary objective of the Transportation Framework is to set out policies that will lead to the continued development of a comprehensive and sustainable transportation network that facilitates the movement requirements of those who live, work and visit within the Docklands both now and well into the future.

In light of the popularity of travelling by foot in the Docklands and the need for continued support for sustainable transport modes, the Transportation Framework policies have been restructured to impart greater emphasis on pedestrian, cyclist and public transport provision.

The Transportation Framework is presented under five key headings: Pedestrian and Cyclists; Public Transport; Environment and Sustainability; Strategic Road Network; and Water-Based Transport. The fundamental objectives for each heading underpin the rationale for the transportation requirements for the Docklands.

5.1.2 RECENTLY COMPLETED DEVELOPMENTS IN TRANSPORTATION

Since the publication of the previous Master Plan in 2003, there have been a number of major developments in the delivery of improved transportation within the Docklands.

Sean O'Casey Bridge was completed in 2005, providing the first additional Liffey bridge crossing within the Docklands since the East Link Bridge opened in October 1984. The Sean O'Casey Bridge provides an important link for pedestrians and cyclists and, due to the quality of its architectural and engineering design, has the added benefit of providing a landmark structure that improves the urban landscape of the Docklands. Since its opening, the bridge has attracted large numbers of pedestrians with recent observational surveys recording almost 2,300 pedestrians crossing the bridge during the evening peak hour. In addition, a significant number of cyclists also cross the bridge. Although it is prohibited to cycle on the bridge, cyclists are permitted to dismount and walk across with their bicycle. The success of the Sean O'Casey Bridge demonstrates the importance of providing for pedestrian and cyclist movement within the Docklands and the necessity to provide similar infrastructure catering for these modes of transport.

The **Luas Red Line** commenced operation in 2004 introducing light rail services from Connolly Station to Tallaght and serving the city centre, Heuston Station, a number of hospitals and residential areas in the south-west of Dublin. The Red Line has provided a new high-capacity public transport link directly serving the IFSC and has contributed to a significant increase in the proportion of people travelling to and from the Docklands by rail. The Luas is so well used that a programme to extend the Red Line trams by 10 metres was initiated to provide an additional 40% passenger capacity.

Pearse Street Bus Priority Scheme comprised additional bus and cycle lanes and the reduction of general traffic capacity by one lane along most of the scheme. To date the scheme has been implemented from Barrow Street to Westmoreland Street and has facilitated the extension of Dublin Bus Services to Ringsend Garage (eg, service group 77 from Tallaght) and the introduc-



SEAN O'CASEY BRIDGE

tion of new bus services into the area (eg, service group 74 from Ballycullen to Macken Street). The Pearse Street Bus Priority Scheme has enabled the expansion of bus services into the Docklands, strengthening public transport links and supporting development in and around Grand Canal Dock and Ringsend.

Docklands Station was opened in March 2007, providing direct rail links between the Docklands and west Dublin suburbs such as Clonsilla and Castleknock. A new bus service was introduced to the station providing integration between bus and rail transport. Dublin Bus route 151 operates every 10 minutes from Docklands Station to Adamstown via the city centre. The construction of Docklands Station has facilitated the expansion of suburban and outer-suburban rail services to the Docklands. New services are now operated between Clonsilla and Docklands, providing even greater benefit to the Area.

The **DART Upgrade project**, which was completed in September 2005, allowed the introduction of longer eight-carriage trains, significantly increasing capacity and passenger comfort. The project also ensured that each station is fully wheelchair accessible. The Docklands is served by a number of DART stations including Grand Canal Dock and Connolly. Prior to the lengthening of the DART trains, the majority of peak-hour services were overcrowded and it was difficult to board at many stations such as Blackrock. The upgrade has provided necessary additional rail capacity that will help to support the continued development of the Docklands.

Dublin Port Tunnel opened on 20 December 2006 and the associated HGV management strategy was implemented by Dublin City Council on 19 February 2007. This strategy currently provides for a ban on vehicles with five axles or more between 7am and 7pm seven days a week from a designated cordon area. Together, the Port Tunnel and the HGV management strategy have

brought about a 94% decrease in the level of five-axle HGV traffic on East Wall Road and North Wall Quay. In addition, there has been a 30% fall in the number of four-axle HGVs using North Wall Quay since the tunnel opened and an even greater decrease on East Wall Road of 53% during the day and 82% at night.

The **Liffey Ferry** takes passengers across the River Liffey from Sir John Rogerson's Quay to North Wall Quay. The Liffey Ferry runs Monday-Friday, 7am to 7pm and tickets are available on board. Passengers can board the boat at the diving bell on the south side of the river and at the Cill Airne pontoon on the north side. The ferry service aims to revitalise the river corridor, decrease commuting times between the north and south sides of the river, and create more cohesiveness throughout the Area.

5.1.3 TRANSPORTATION OBJECTIVES

Based on the Authority's remit and taking into account the policies and strategies for transport in the Greater Dublin Area and nationally, in particular, '*Transport 21*', the objectives of the transportation framework are:

- **Pedestrians and Cyclists:**
Create and support a network of pedestrian and cycle infrastructure to promote and facilitate walking and cycling; provide priority for pedestrians and cyclists along key desire lines, developing routes within the Docklands and linking with the surrounding walking and cycling networks in Dublin City.
- **Public Transport:**
Support the continued development of an integrated public transport system to serve the existing and future needs of the Docklands.
- **Sustainable Transport and Environmental Impact:**
Reduce the adverse environmental impact of traffic by supporting the use of sustainable modes of transport; promote the use of alternative modes of transport to the private car through the provision of traffic and demand-management measures whilst supporting the delivery of '*Transport 21*'.
- **Strategic Road Network:**
Support the function of the strategic road network through the Docklands and support the operation of primary routes for appropriate levels and types of traffic.
- **Water-Based Transport:**
Maximise the potential benefit of the water bodies within the Docklands for recreational and transport purposes; support and enhance the water-based transport amenities within the Docklands.

It is further suggested that a new approach be adopted to prepare a road and street hierarchy within the Docklands. It is envisaged that this hierarchy will enable the rationalisation of road space for each user group. The road and street hierarchy will be developed in conjunction with urban design and planning frameworks to form a cohesive foundation for the delivery of the Master Plan objectives.

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TRANSPORTATION AND INFRASTRUCTURAL FRAMEWORK



DUBLIN CITY CYCLE

5.1.4 PEDESTRIANS AND CYCLISTS

Many benefits can be derived from a pedestrian and cycle-friendly environment. The creation of a high-quality pedestrian and cycle transportation network can:

- Encourage 'mode shift' from mechanised modes, including private cars, to walking and cycling which are the most sustainable forms of transport available
- Increase the catchment area of public transport by providing better linkages to rail and Luas stations and bus stops
- Increase opportunities for residents of all ages to participate socially and economically in the community regardless of income or ability to drive and increase independence, especially among senior citizens and young people
- Improve the health and well being of the population by promoting an active lifestyle
- Enhance public safety and security by increasing the number of 'eyes on the street' and providing more options for movement in the event of emergencies and major public events
- Improve the environment by reducing traffic and its associated harmful impacts in terms of pollution and noise, thus limiting greenhouse gases and the carbon footprint of the area and improving the quality of public spaces.

The promotion and facilitation of walking and cycling is essential to the sustainable development of the Docklands. Direct and attractive cycle and pedestrians linkages are proposed along key routes within the Docklands. Major trip magnets, such as public transport nodes, locations of social and cultural infrastructure, open spaces and recreational areas should be interconnected by a comprehensive, permeable network of cycle and pedestrian routes that link these key nodes together.

The rivers and canals within the Docklands can present a barrier to pedestrian and cycle movement, especially for pedestrians for whom the diversion to river crossing points can lengthen the trip to more than comfortable walking distance. The success of the Sean O'Casey Bridge illustrates the potential benefit of providing additional river crossings. A number of additional bridges are proposed under the Docklands Master Plan. The Authority will seek the incorporation of suitable pedestrian and cycle infrastructure into all new bridges within the Docklands, including the Samuel Beckett Bridge, the Dodder Bridge and the new canal crossing on Mayor Street.

A comprehensive pedestrian and cycle network has been identified, which gives, priority to pedestrians, where possible. The Sutton-to-Sandycove (S2S) cycle/pedestrian route passes through the area and will serve both as a commuting and amenity corridor.

The pedestrian and cycle network of the wider Docklands Area should be integrated with the proposed S2S. In this way, access to the S2S route will be enhanced and greater benefit can be derived for the population of the Docklands. In particular, there is the potential to integrate the S2S route with the pedestrian and cycle network within the Poolbeg Planning Scheme Area which will be examined within the Planning Scheme.

Pedestrian Network

The 2006 Census confirms that the Docklands currently supports sustainable transport. Almost half (46%) of all Docklands residents now walk to work or education. Add to this the number of pedestrians generated by the public transport nodes within the Docklands, and the importance of a comprehensive permeable pedestrian network for the area cannot be underestimated. Walking is the most sustainable form of transport and the high level of walking activity in the Docklands is to be welcomed, encouraged and built upon further.

The proposed pedestrian network is shown in Figure 5.1 'Pedestrian Network'. Priority and main pedestrian links have been identified. It is proposed that priority pedestrian routes are provided either within areas of open space, or, where alongside development, that active ground-floor uses are promoted along the routes. The S2S will form an integral part of the pedestrian network within the Docklands Area as shown in Figure 5.1 'Pedestrian Network'. In particular, the S2S will form an integral part of the pedestrian and cycle routes within the Docklands Area as shown in Figure 5.2 'Cycle Network'.

In order to improve connectivity within the Docklands, the Authority will support the development of three new pedestrian bridges. Two new pedestrian bridges across the Liffey are proposed, the first to be located between Forbes Street and North Wall Quay and the second to link Benson Street with Castleforbes Road. The Docklands Master Plan also provides for a new pedestrian crossing over the Dodder River creating a link between Thorncastle Street and the Grand Canal Lock Gates to Hanover Quay.

For the inclusion of all persons with physical / intellectual impairments in Docklands and its activities, all environments should be accessible by everyone regardless of ability. The authority will follow the national standards set forth in the Disability Act 2005: *"Universal design refers to the design and composition of an environment so that it can be accessed, understood and used to the greatest extent possible by all people, regardless of their age, size, or disability."*

Mobility impaired people and people with disabilities have specific needs in relation to access to transport and movement and the design of public space. Universal accessibility will benefit all because people with disabilities, the elderly, parents with buggies, delivery persons and so forth will have greater access to the external environment and transport network.

Specific aspects to be considered include:

- a) Access to public transport services
- b) Design and layout of street furniture
- c) Design of pedestrian crossings
- d) Design of pedestrian pavements (e.g. provision of ramps and kerb dishing)
- e) Design of public spaces and play areas

In 2006, the Authority commissioned an independent health, safety and accessibility audit for specific areas. The Authority will continue to promote measures to ensure that the mobility-impaired can safely and fully participate in the transportation network. The Authority will, in conjunction with Dublin City Council, undertake a regular review of facilities and implement an action plan to address any deficiencies identified.

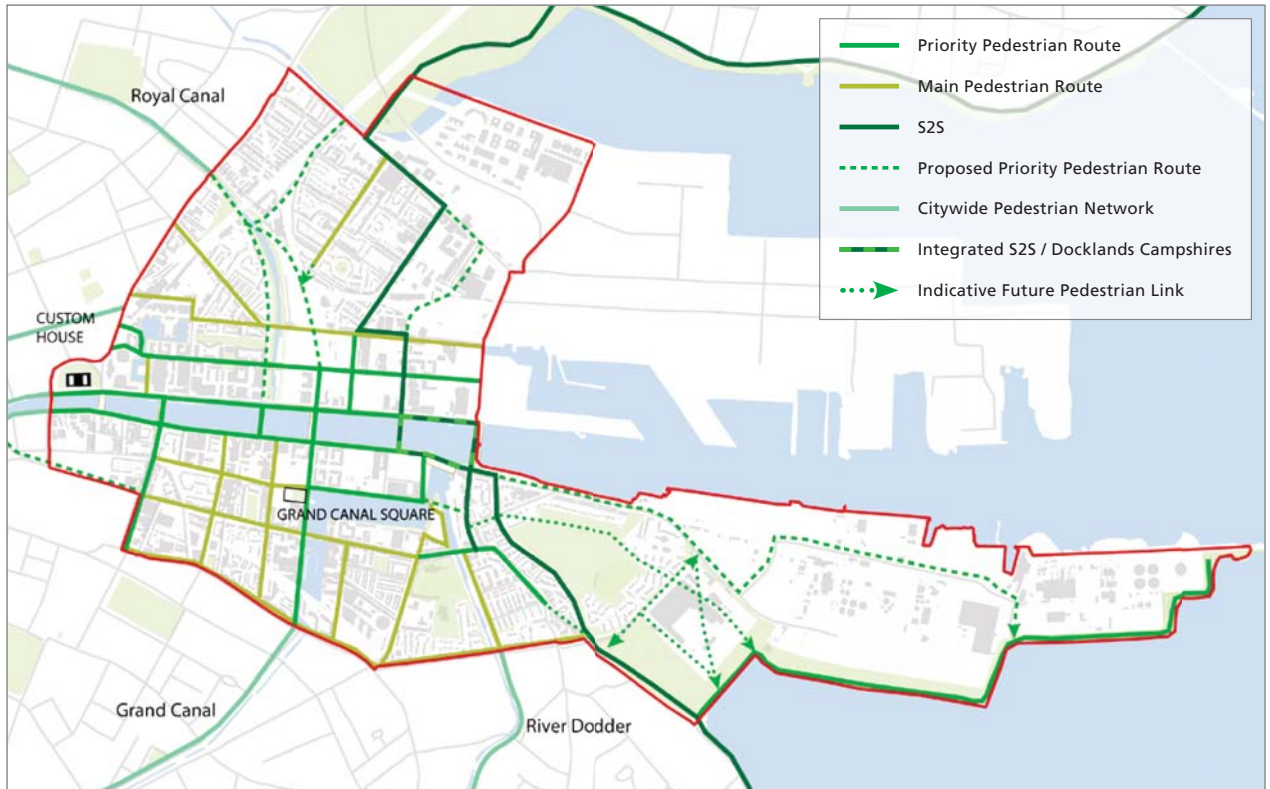


FIGURE 5.1 PEDESTRIAN NETWORK

Cycle Network

During all phases of the Docklands redevelopment, appropriate parking and storage facilities for bicycles should be provided at prominent locations throughout the area and at transport interchanges for public use. The Authority will seek to develop and implement cycle parking and facility standards for developments in the Docklands.

A comprehensive cycling network has been identified and is shown on the Cycle Network Map. The proposed priority and main routes integrate with the Dublin City Strategic Cycle Network and with the DTO proposals for cycleways.

In September 2006, the DTO published a Cycling Policy for the Greater Dublin Area, the primary aim of which is to increase the levels of cycling. As part of the strategy the GDA Cycle Working Group was established. The Authority will examine any initiatives put forward by the DTO to increase cycle usage with a view to implementing them in the Docklands.



FIGURE 5.2 CYCLE NETWORK

5.1.5 PUBLIC TRANSPORT AND TRANSPORT 21

The Docklands benefits from a significant level of public transport provision at present. The 2006 Census indicates that 44% of trips into the Docklands are by public transport (20% by bus and 22% by rail). The availability of public transport is not uniform throughout the Docklands and there are areas that require improved accessibility to public transport. Furthermore, there are areas designated for future development, such as Poolbeg, which will require significant public transport intervention, phased in over time, to deliver similar levels of public transport mode-share as the rest of the Docklands. The Authority will continue to seek improvements in the local public transport services and to ensure that sufficient links to public transport nodes are provided through the development of suitable pedestrian, cycle and feeder services.

Over the coming years, the Authority will support the implementation of Transport 21 and assist in facilitating the construction of major public transport infrastructure where necessary.

The Authority will support the continued development of an integrated public transport system to serve the existing and future needs of the Docklands Area. Figure 5.3 'Public Transportation' illustrates the proposed public transport network provided for within the Transportation Framework. The phased development of the Docklands should continue to be linked to the delivery of public transport in order to ensure that transport needs are met and that such infrastructure can act as a tool for regeneration.

It is proposed that public transport usage is promoted through the provision of accurate and accessible public transport information. The Authority will continue to provide public information display boards within the Docklands and seek to incorporate within them information on the pedestrian and cycle network and the public transport available.

Transport 21

'Transport 21' has been launched since the preparation of the previous Docklands Master Plan and provides the structure for the delivery of major public transport infrastructure up to 2016. A number of 'Transport 21' schemes will directly affect the Docklands, including the expansion of the Dublin Bus and Bus Éireann fleet, the extension of the Luas to the Point Village, the city centre re-signalling project and the Interconnector underground rail line from Heuston to a new Docklands Station in the North Lotts connecting the Kildare rail line and the northern rail line.

The Luas extension, C1, from Connolly to the Point Village is currently under construction. Once complete, Luas services will operate through the Docklands along Mayor Street with stops provided at George's Dock, Mayor Square, Spencer Dock and the Point Village. Line C1 will link with the Luas Red Line between the Busárus and Connolly Stops. The extension of Luas services will enhance the catchment of public transport and provide improved accessibility to the North Wall and Point Village areas. It is anticipated that Luas services to the Point Village will commence in 2009.

One of the most significant schemes within 'Transport 21' that will benefit the Docklands is the proposed Interconnector. The Interconnector scheme will include a new underground heavy rail station located within the western part of North Lotts with interchange facilities with Luas. Currently, the Interconnector is at design stage. The Authority will take provision of the Interconnector Station into consideration in relation to planning and development in the vicinity of the general alignment.

Over the coming years, the Authority will support the implementation of 'Transport 21' and assist in facilitating the construction of major public transport infrastructure where necessary.



CONNOLLY STATION



LUAS



LIFFEY VOYAGE

Bus

Studies undertaken in 2007 indicate that the road space vacated by HGVs within the City Centre has been taken up by other traffic including private vehicles. Subsequently, Dublin City Council accelerated the dedication of additional road space to the bus, cycle and/or pedestrian modes. Within the Docklands, it is proposed that the North Wall QBC be implemented as soon as possible to both offset any increase in the volume of private vehicles and to cater for the growing number of bus services that use the route to access the Port Tunnel.

A number of bus routes currently use the Port Tunnel, including airport express services (Dublin Bus Routes 747 and 748 and the Patton Flyer), Dublin Bus Route 142 to Portmarnock and the Swords Express. In addition, a large number of Bus Éireann services and private long distance coach services also use the Port Tunnel to access the City Centre from the national road network. Unfortunately, many of current bus services through the Port Tunnel are express services and do not directly benefit the Docklands. There is significant development taking place at the northern end of the Port Tunnel, in Fingal and the North Dublin City, such as the North Fringe area. Together with the continued development of the Docklands, it is highly likely that additional bus linkages through the Port Tunnel and serving the Docklands could be introduced to serve future demand.

Bus is a highly flexible mode of public transport and can respond to demand within a relatively short time period. The Docklands benefits from a large number of bus services, particularly those provided on the Malahide QBC, Blackrock QBC and Pearse Street Bus Priority links. However, there is potential to expand bus services in other areas, specifically East Wall, Ringsend and Poolbeg. Linking these areas with high-quality bus services should be explored and supported where appropriate.

The Authority will look at the feasibility of a Docklands Area Bus System (DABS): a local area bus shuttle service aimed at bringing residents and workers to facilities and public transport nodes within the Area. The service may offer frequent services as a means of quick public transit within the Area.

As well as connecting these areas to the city centre, the means by which they can be linked by public transport to the south (ie, Ballsbridge, Merrion etc) should be examined. It is likely that infrastructural improvements will be required to facilitate these new public transport links and further study should be undertaken to determine the most appropriate route and type of public transport.

Luas and Bus Rapid Transit

The western part of the Docklands is very well served by high capacity public transport. The challenge now is to unlock the development potential of other areas, such as the Point Village and Poolbeg, through the provision of an expanded integrated public transport network.

The Luas extension, to the Point Village, will provide a high-quality, high-capacity public transport corridor east to west through the Docklands. The Authority will seek to promote the future extension of Luas services to the Poolbeg Peninsula in order to stimulate the regeneration of the area. An indicative alignment of the Luas extension to Poolbeg is shown in Figure 5.3 'Public Transportation'. Alternative alignments may need to be considered and the future development of the Luas will be the subject of further evaluation and feasibility studies.

The potential for a Bus Rapid Transit (BRT) line, priority bus route, and a Luas line linking Poolbeg to the City Centre and the wider Docklands should be explored. BRT has the potential to deliver a level of public transport similar to the Luas and generally comprises high-quality bespoke buses, full route priority at traffic junctions, off-bus ticketing system, multi-door loading at level platforms, high frequency services and segregation from general traffic similar to that afforded to the Luas.

The Authority will seek to promote a BRT system for the Docklands. The Docklands Rapid Transit (DRT) scheme will provide a new high quality public transport system for the area. By its nature, the DRT will be flexible to respond to the needs of Docklands. It is likely that the DRT will evolve over time and that the level of service will increase in line with development.

In order to establish the most effective combination of public transport infrastructure for Docklands further studies will need to be undertaken.

The Dodder Bridge

The proposed Dodder Bridge is currently at design stage. Once complete, it will provide a critical piece of public transport infrastructure and the Authority will continue to support its construction as a reserved public transport, pedestrian and cycle bridge. Although the Dodder Bridge is likely to cater for bus services initially, the bridge should be designed so that it has the flexibility to carry BRT and/or Luas services in the future.

Integration and Public Transport Interchange

Consideration should be given to maximising the transport benefits associated with the delivery of public transport infrastructure. The Authority will seek to facilitate efficient interchange between modes and support the continued operation of Connolly Station and the development of Pearse and Docklands Stations as major interchanges.

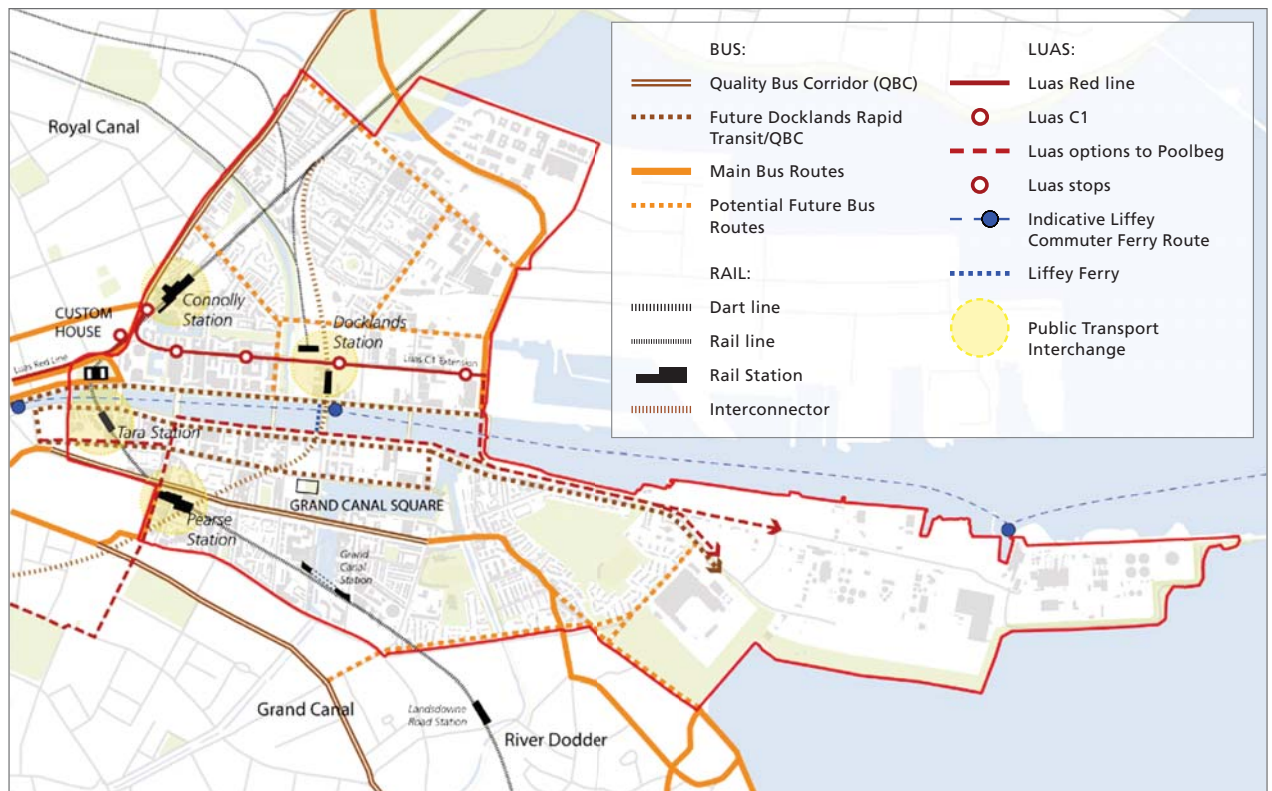


FIGURE 5.3 PUBLIC TRANSPORTATION

5.1.6 ENVIRONMENT AND SUSTAINABILITY

Increasingly, there is a greater understanding of the potential negative impact of transport on our environment, both in terms of local air and noise pollution and the wider effects of CO₂ emissions. The Authority supports the promotion of sustainable transport for the Docklands. The Department of Transport's '2020 Vision – Sustainable Travel and Transport' has this to say about the concept:

"Sustainable transport is about encouraging people to make informed choices about the way they travel and the consequences of those choices on their health and environment ... Sustainable transport is concerned with the movement of people and goods in a manner which improves quality of life and ease of access for all. It also aims to protect the environment for future generations and enhance economic competitiveness."

To achieve the vision for sustainable travel and transport the transportation framework should support a shift towards public transport, walking and cycling, bringing about significant reduction in congestion and in transport emissions. The Docklands already generates a very high proportion of person trips by sustainable modes of transport, particularly by walking and public transport. In conjunction with cycling, these sustainable modes now comprise 72% of all person trips from the Docklands to work or education and 62% of all person trips to the Docklands to work.

The promotion of alternative modes of transport to the private car through the provision of traffic and demand management measures is central to the objectives of the Transportation Framework. The Authority will examine the potential to implement new initiatives such as those contained in the abovementioned report. For instance, there may be merit in initiating car-sharing schemes, residential travel planning, school travel plans or personalised travel planning in order to further this goal. The Authority will continue to require the submission of mobility management plans for all commercial developments on sites likely to generate a significant number of vehicle trips.

By rationalising the use of road space by different modes and developing a hierarchical structure of road usage, more environmentally friendly patterns of activity can be encouraged. The introduction of enhanced public transport and greater bus priority on certain roads within the area and the provision of direct and attractive pedestrian and cycle linkages along key routes can achieve a shift towards more sustainable modes.

The Authority's River Liffey Regeneration Strategy advocates the enhancement of the pedestrian environment at the Quay in front of the Custom House. At present, Beresford Place continues to experience severe traffic congestion at peak periods and there is little opportunity to realise considerable pedestrian improvements. When the Samuel Beckett Bridge is open to traffic, an alternative route will be available for a portion of the traffic currently using Butt Bridge and Memorial Bridge. The additional public transport improvements both within the Docklands and the wider Dublin Area may also contribute to a fall in traffic which would support the re-allocation of road space. The Authority will continue to promote, in collaboration with Dublin City Council, the management of traffic and the environmental enhancement of the Custom House Quay.

The 2006 Census shows that just over half of all households within the Docklands do not own a car, while 37% have one, 10% have two and just 2% have three or more. Within areas of more recent development the rate of car ownership is lower, including the residential area around Custom House Dock where approximately 70% of households do not own a car. This indicates that the current car parking standards used within the Docklands are more than sufficient to cater for residential parking requirements. The Authority will review car parking standards in conjunction with Dublin City Council and the DTO.

Appropriate levels of public car parking should be provided at key strategic locations within the Docklands to facilitate short-term shopping, leisure and business use. Parking charges will need to be applied to deter commuter use. Two major developments are currently planned which are likely to

generate a significant number of short-term irregular trips. The retail facilities at the Point Village will generate car-based trips and approximately 1,000 car parking spaces will be provided. The Convention Centre Dublin (CCD) will also attract a number of trips and 200 reserved car-parking spaces are to be built for CCD use. The Authority will promote the provision of specifically required public car parks and the enforcement of suitable charges.

The Authority, in conjunction with Dublin City Council as the roads authority, will seek to ensure that on-street parking is managed within the Docklands. Parking charges should be applied, as required, to control the use of on-street parking.

For those who do not have access to a private car, taxi services can provide for trips that cannot be easily catered for by walking, cycling or public transport. In addition to residents who may not own a car, anyone entering the Docklands area by public transport, on foot or by bicycle is unlikely to have access to a car within the Docklands. In effect, taxi services are a long-established form of car sharing and their availability can decrease the need to have a private car. The Authority will promote the provision of appropriately sized taxi ranks at suitable locations throughout the Docklands.

The Dublin City HGV Management Strategy has been highly successful in removing five-axle vehicles from within the cordon area. This has greatly benefited the Docklands and the Authority will support Dublin City Council in their efforts to extend the ban to four-axle vehicles.

5.1.7 STRATEGIC ROAD INFRASTRUCTURE

Since its opening in December 2006, the Dublin Port Tunnel has had a major impact on the movement of traffic in the Docklands. In conjunction with the associated HGV ban on five-axle vehicles within the City Centre cordon area, the Port Tunnel has successfully brought about a significant decrease in the level of on-street HGV traffic.

Strategic Road Network

The strategic road network within the Docklands is limited to a small number of major roads. Although none of the roads within the Docklands are designated as national primary roads, the major roads carry significant volumes of traffic and provide highly important links in the local, regional and national road network. Figure 5.4 'Main Traffic Routes' illustrates the major roads within the Docklands. It is envisaged that through-traffic will largely be directed onto these major roads.

Pearse Street and Ringsend Road act as a major east-west link through the South Docklands and are busy pedestrian and traffic routes connecting the city centre, Ringsend and the south city suburbs. The recently completed bus priority scheme has resulted in a reduction in general traffic capacity by one lane in each direction and the provision of bus lanes. This route provides important pedestrian and cycle links to developing areas such as Grand Canal Dock. Pearse Street forms part of Dublin City's inner orbital traffic route.

East Wall Road and the East Link Bridge provide the principal north-south traffic link on the eastern edge of the Docklands. The East Link Bridge connects the North and South Docks and a significant volume of HGV traffic uses it to transport goods between the two ports. Under the HGV management strategy a toll-rebate scheme is operated on the East Link for HGVs.

Amiens Street has an important traffic-carrying function, providing north-south movement from areas such as Fairview, Howth and Malahide, through the city centre and linking to the Southside via Butt

Bridge and Talbot Bridge. The Malahide QBC runs along Amiens Street as far as Connolly Station. The Clontarf QBC and Howth QBC services also access the city centre along this link. Amiens Street is the most heavily used bus corridor in the QBC network, with over 8,100 bus passengers travelling on it during the morning peak period (07:00-10:00) on approximately 160 buses.

The traffic gyratory around Custom House Quay is complex and caters for a variety of movements. There are seven traffic flows entering the gyratory with vehicles coming from Eden Quay, Abbey Street, Gardiner Street, Store Street, Amiens Street, Custom House Quay and Butt Bridge. The range of traffic movements around the Custom House is considerable and it forms a key part of the inner orbital traffic route. The Red Luas Line also runs on Beresford Place from Amiens Street to Store Street. Busárus is accessed via Store Street and a large number of buses need to move around Beresford Place. There has been considerable growth in the number of Bus Éireann services and Busárus is currently operating at capacity.

North Wall Quay is an important strategic traffic corridor, given that it links Dublin City Centre and Docklands with Dublin Port and Dublin Port Tunnel.

The Dublin City outer orbital runs through the Docklands and extends along Seville Place, Guild Street, North Wall Quay, the East Link Bridge, Sean Moore Road and Londonbridge Road.

The major road network within the Docklands sustains important traffic movements and the Authority, in co-operation with Dublin City Council as roads authority, will support their continued function for appropriate levels and types of traffic.



FIGURE 5.4 MAIN TRAFFIC ROUTES

Special Speed Limit Areas

In 2006, Dublin City introduced bye-laws limiting the permitted vehicle speed to 30kph in particular areas, one of which is Ringsend. The lowering of speed limits to 30kph should be supported in appropriate locations, especially in areas where there is a high level of pedestrian and cycle activity.

Poolbeg Road Network

A revised road network will be needed to facilitate the development of Poolbeg. The roads and street network should be designed in line with the road-hierarchy proposed within the Docklands Master Plan. The network must integrate with the surrounding transportation network, particularly as regards citywide pedestrian and cycle routes, including the S2S (Sutton to Sandycove). The Authority will ensure that the design and construction of the road network is suitable for it to be taken in charge by Dublin City Council. The Authority will also ensure that the road network supports the development of Poolbeg within the detailed planning framework established by the proposed Section 25 Planning Scheme.

Eastern By-Pass

The Authority endorses the policy of the 'Dublin City Development Plan 2005-11' to support the provision of an Eastern By-Pass Route (i.e. "It is the policy of Dublin City Council to support provision of an Eastern By-Pass Route. This route shall link the northern port to the Southern Cross/South Eastern Motorway by way of a bored tunnel under Sandymount and Merrion Strand and Booters-town Marsh"). The policy also states that "the precise alignment and detailed design shall be the subject of an EIS, and that all statutory requirements, including the Habitats Directive, shall respect the amenity of the River Liffey and Dublin bay, and shall be the subject of a future plan variation" ('Dublin City Development Plan 2005-11', page 52).

Although the proposed Eastern By-Pass is not included in Transport 21, the Authority will continue to liaise with the Department of Transport, National Roads Authority, the Dublin Transportation Office, Dublin City Council and other relevant organisations and seek to ensure that progress on the scheme will have a positive impact on the Docklands.

5.1.8 WATER-BASED TRANSPORT

The waterways within the Docklands are a valuable resource and the Transportation Framework seeks to maximise the potential benefit of the waterways for recreation and transport purposes.

At present, a public ferry service operates across the Liffey between Sir John Rogerson's Quay and North Wall, providing a link for pedestrian between the north and south docks. From March to November, the Liffey Voyage provides sight-seeing tours of the river, departing from Custom House Quay. The Authority will continue to collaborate with Dublin Port and Waterways Ireland to promote the provision of adequate boating facilities. The potential of the Liffey to act as a commuting route within the Docklands has not been fully utilised to date. The Authority in association with relevant agencies, supports the investigation of the feasibility for allotted times for bridge-openings both on the River Liffey and the Dodder, and will examine the possibility of future expansion of waterbus services to cater for commuter trips within the Docklands.

The rivers and canals within the Docklands provide for high-quality recreational water-based activities. The Authority will continue to collaborate with Dublin Port and Waterways Ireland to promote the provision of adequate boating facilities.

5

TRANSPORTATION AND INFRASTRUCTURAL FRAMEWORK



DOCKLANDS STATION



CYCLE NETWORK, CITY QUAY



LIFFEY FERRY

Policies

The Authority will (or will require):

Policy T1

Prepare a Transportation Strategy for the Docklands Area to support the delivery of a comprehensive, integrated public transport network as envisaged in the Master Plan. Liaise with the Department of Transport, Dublin Transportation Office, Dublin City Council and other relevant agencies to promote the implementation of the transportation strategy.

Policy T2

Seek to provide a permeable pedestrian and cycling network throughout the Area. Provide priority and suitable infrastructure to cater for pedestrian and cycling movements and to enhance and promote non-vehicular movement including 'resting options' along pedestrian routes. Seek to create a safe environment for pedestrians and cyclists.

Policy T3

Support the provision of additional pedestrian bridges at strategic locations including new pedestrian bridges across the Liffey at Forbes Street and Castleforbes Street whilst ensuring the design of bridges enables the use of the river for navigation including river ferries, masted boats and taxis. Examine the potential to provide cycle facilities in conjunction with new pedestrian bridges. Seek to incorporate pedestrian and cycle infrastructure, subject to feasibility examination, into all new bridge crossings including Samuel Beckett Bridge and the Dodder Bridge.

Policy T4

Provide and strengthen pedestrian and cycling linkages to citywide networks, such as the Sandycove to Sutton scheme and the strategic routes along the full length of the Liffey Quays, to maximise the potential benefits.

Policy T5

Promote measures to ensure access for everybody to allow safe and full utilisation of the transportation network in the Docklands Area. Undertake a regular review of facilities and implement an action plan to address any deficiencies identified. Encourage relevant agencies, for example transport providers, to improve facilities for all.

Policy T6

Promote, in collaboration with Dublin City Council, a programme of traffic control measures in residential areas. Seek to restrict through traffic on the non-primary road network within the Docklands Area. Support the creation of a safe and pleasant street environment and the development of homezone areas.

Policy T7

Provide suitable parking and storage facilities for bicycles at regular intervals in prominent and accessible locations throughout the Docklands Area for public use. Provide cycle parking and storage facilities at transport in-

terchanges along rail lines and key bus corridors. Develop and implement cycle parking and facility standards for developments in the Area.

Policy T8

Promote and facilitate the implementation of the Sandycove to Sutton (S2S) proposal for a continuous pedestrian and cycle route along Dublin Bay as it passes through the Docklands Area. Ensure that the S2S scheme is integrated with the wider pedestrian and cycle network within the Docklands Area.

Policy T9

Secure the reinstatement of Mayor Street between New Wapping Street and Guild Street as a reserved route for public transport, pedestrians and, where possible, cyclists. Limit vehicular access over the new canal crossing whilst facilitating access to the proposed Convention Centre Dublin.

Public Transport

Policy T10

Ensure that public transport is well linked by pedestrian connections. Facilitate efficient interchange between modes, particularly between cycling, Dart, mainline rail, suburban rail, Luas, buses, taxis, and cars. Support the continued operation of Connolly Station and the development of Pearse Street Station as major interchanges.

Policy T11

Seek to ensure that the local community is connected to new high-capacity public transport infrastructure through the development of suitable pedestrian, cycle and bus feeder services to and from public transport nodes. Seek to improve the local public transport services within the Docklands Area, in particular in the East Wall and Ringsend areas.

Policy T12

Continue to link the timeframe for development within the Docklands Area with the delivery of public transport. Employ temporary arrangements, in the model of the IFSC business bus, in advance of full services where necessary to meet occupier needs.

Policy T13

Optimise the use of public transport within the Docklands Area through the provision of accurate and accessible public transport information. Provide public information display boards throughout the Docklands containing maps illustrating the public transport network and pedestrian and cycling routes with suitable levels of public transport timetable information and operator contact details.

Policy T14

Support and facilitate the delivery of the 'Transport 21' public transport infrastructure programme. Liaise with the implementation bodies, including ClÉ and the Railway Procurement Agency, to facilitate the plan-

ning and construction of major public transport schemes that affect the Docklands Area. Take cognisance of the emerging *'Transport Strategy for the Greater Dublin Area (2010-2030)'* being prepared by the Dublin Transportation Office / Dublin Transport Authority.

Policy T15

Seek the completion of the Interconnector by 2016, in accordance with the timescale outlined in *'Transport 21'*. Support the development of the Docklands Station as a major public transport interchange.

Policy T16

Support the expansion of bus services within the Docklands Area. Seek to ensure that local communities are served by high quality bus services. Seek measures to enhance the potential of the Port Tunnel as a route for bus services to and from the Docklands.

Policy T17

Promote the extension of Quality Bus Corridors (QBCs) to serve the Docklands Area within the timescale of the 2008 Docklands Master Plan. Support and facilitate the expansion of bus infrastructure and priority within the North Wall and South Quay areas including the construction of the Dodder Bridge.

Policy T18

Seek the introduction of high capacity public transport services linking Poolbeg to the remainder of the Docklands, the city centre and the wider transport network. Seek the introduction of Docklands Rapid Transit (DRT) as a high quality bus based public transport corridor between the City Centre and Poolbeg serving the wider South Docklands. Seek the extension of Luas services to Poolbeg to support the development potential of the Docklands Area.

Policy T19

Support and promote the construction of the Dodder Bridge as a reserved public transport, pedestrian and cycle bridge in consultation with impacted parties. Seek that the Dodder Bridge is designed and built to accommodate Bus Rapid Transit and that it does not preclude the possible future accommodation of Luas operations.

Policy T20

Require suitably dimensioned wayleaves to accommodate public transport.

Sustainable Transport and Environmental Impact

Policy T21

Support the provision of sustainable transport for the Docklands Area in keeping with the Department of Transport's upcoming *'Sustainable Travel and Transport Action Plan'*. Examine the potential to implement the initiatives that are likely to emerge such as car-sharing schemes, school travel plans, electric cars, and personalised travel planning.

Policy T22

Rationalise the use of road space by different modes by developing a hierarchical structure of road usage and transport movement management, with associated traffic control measures. Support and facilitate movement within the Docklands Area to maintain good permeability and connectivity, and in this regard the Authority will support Dublin City Council in the improvement of the road traffic management system within and surrounding the Docklands.

Policy T23

Promote, in collaboration with Dublin City Council, the management of traffic and the environmental enhancement of the Custom House Quay in front of the Custom House.

Policy T24

Continue to support the demand management of the Port Tunnel through adjustments to tolling to deter private car use during peak periods.

Policy T25

Review parking standards in conjunction with Dublin City Council and the DTO.

Policy T26

Promote the provision of cycle parking and public car parks at key strategic locations, including the Point Village, for short-term shopping, leisure and business use with a pricing structure for car parking to deter commuter use.

Policy T27

Examine the potential benefits of supporting access to the Docklands by electric car. Assess the feasibility of supporting the provision of electric car recharging stations within the Docklands Area.

Policy T28

Promote the provision of appropriately sized taxi ranks at suitable locations throughout the Docklands.

Policy T29

Support the extension of the HGV ban in the city centre to include all vehicles with four-axles or more. Support all appropriate measures, particularly those of Dublin City Council, as the Roads Authority, that will reduce the impact of heavy goods vehicles in the Docklands Area.

Policy T30

Require the submission of mobility management plans for all commercial developments on sites likely to generate 500 or more vehicle trip movements per day or more than 100 vehicle trip movements in peak periods or where the potential total employment in the development exceeds or will exceed 300 workers. Review and update the requirements for mobility management plans in conjunction with Dublin City Council and the Dublin Transportation Office.

Strategic Road Network

Policy T31

Promote the provision of height clearance to current standards, where practicable and appropriate, on rail-over bridges.

Policy T32

Promote the objective of achieving the highest visual, architectural and engineering design standards for all new bridge crossings. In collaboration with other agencies, promote the concept of achieving a signature urban design and architectural quality for such bridges to endow the Docklands with landmarks.

Policy T33

The Authority endorses the policy of the *'Dublin City Development Plan 2005-11'* to support the provision of an Eastern By-Pass Route. The Authority will continue to liaise with the Department of Transport, NRA, the DTO, the Dublin Port Company, Dublin City Council and other relevant agencies with respect to the provision of an Eastern By-Pass Route.

Water-Based Transport

Policy T34

Promote the provision of lifting sections or swinging sections for all future overwater bridge crossings and closed air drafts appropriate to permit small leisure craft.

Policy T35

Seek the future expansion of water taxi/bus services to cater for commuter trips within and beyond the Docklands Area and to serve development in Poolbeg.

Policy T36

Collaborate with Dublin Port to promote the provision of adequate boating facilities, on-shore facilities for cruise liners and water bus/taxi services.

Policy T37

Undertake a joint survey of the River Liffey within and beyond the Docklands Area, in cooperation with Dublin City Council, the Department of Transport, and other relevant agencies, to investigate and identify the conditions required (including the impact and design of bridges) to ensure the continued use of the River as an amenity, a recreational area and as a channel for masted boats, river taxis and ferries.

5.2 INFRASTRUCTURAL FRAMEWORK

5.2.1 INTRODUCTION

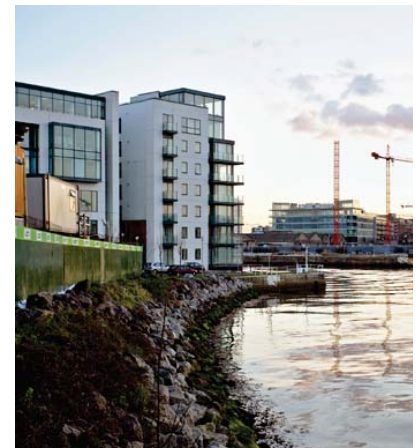
Provision of adequate general infrastructure is essential to the development of the Docklands. Dublin City Council, statutory telecommunications bodies, Bord Gáis and the ESB have progressively and incrementally improved infrastructure within the Area since the original 1997 Docklands Master Plan was produced. However, there are deficits in infrastructure, the resolution of some of which are external to the Docklands, and indeed the City. These deficiencies raise concerns in relation to the ability of this infrastructure to service the significantly increased level of development now envisaged. The proposed waste-to-energy facility on the Poolbeg Peninsula offers opportunities to provide district heating to a large part of the Docklands. There are existing wayleaves on the Poolbeg Peninsula which restrict development potential.

The objectives relating to the general infrastructure are as follows:

- Early investment in physical infrastructure is required to ensure adequate capacity to accommodate the quantum of development envisaged by the Docklands Master Plan, while protecting the environment
- Ensure, in as far as possible, a feasible security of supply
- The delivery of the required infrastructure will require a variety of different funding mechanisms and sources
- Current and future planning schemes will need to ensure space for the provision of utilities as existing utility corridors are highly congested



PROPOSED BRIDGE OVER ROYAL CANAL



THORNCASTLE STREET

5.2.2 WATER SUPPLY AND SEWAGE

The level of development now envisaged is at a much higher density than when the water network upgrades were designed. There are some concerns about the ability of both the trunk and local water mains to service the level of development now being proposed.

At a city-wide level, the potential demand for supply of potable water is likely to exceed both the current supply and distribution network capacity. Some additional supply capacity is expected to become available in 2011, but ultimately a new water source supply may be required to serve the Docklands and the City. Upgrades to the trunk and local water mains distribution networks will also be required to serve development requirements.

The Ringsend Wastewater Treatment Plant is currently operating above its capacity. Dublin City Council has commenced the process of upgrading treatment capacity at the Ringsend Water Treatment Plant to its ultimate capacity. At a city-wide level, the potential demand for treatment capacity may be such that the Ringsend Treatment Plant may only be able to cater for the needs of the Docklands should a second, regional, treatment plant be provided. The provision of this plant is outside the control of the authority.

It is possible that, in the event of there being restrictions on treatment capacity, temporary treatment facilities may be required to serve short-to-medium-term needs. Facilities are available which can provide very high quality effluents. Any such plants would be licenced by the Environmental Protection Agency who would set and monitor strict standards.

The local drainage network is inadequate in many areas and will need to be upgraded to serve new and existing development while protecting water quality. A joint working group between the Authority and Dublin City Council has been established. This will review issues of water supply and sewage and make recommendations about same. The Environmental Protection Agency will become



INNER HARBOUR, IFSC

the licensing authority for sewage treatment and a forthcoming report is anticipated to comprehensively control the discharge to sewers.

Dublin City Council has commenced remedial works at the Ringsend Treatment Plant to reduce the current level of odour associated with operations; this work is due to be completed towards the end of 2008, and is expected to enhance the local environment considerably.

The relocation of the Grand Canal Storm Water Outfall from the Grand Canal Dock basin to the River Liffey is expected to commence in 2008/ 2009.

The Authority will, where appropriate, through its levy contribution schemes assist in funding the necessary infrastructure for the Docklands. The authority will implement policies to ensure that new development only proceeds in tandem with the provision of adequate water and wastewater infrastructure. The authority will provide adequate infrastructure corridors for water and wastewater and identification of lands required for stormwater storage, potable water storage and pumping stations. These lands will be handed over free of charge to the Water Services Authority as part of the Planning Scheme process.

5.2.3 TELECOMMUNICATIONS

The Authority have been very successful at encouraging telecoms companies to the Area and facilitating new entrants. Docklands is a telecoms-rich environment, with high quality broadband/telecoms making this a highly attractive area for national and international companies to locate. There is more than adequate cable capacity for further rollout of broadband except on the Poolbeg Peninsula where new ducting/cables will be required. The telephone exchange capacity is also good, except in Poolbeg where a new exchange would be required, and the Grand Canal Dock area. This exchange is now under pressure and may need to be duplicated/upgraded to service further residential and commercial development in the area.

The Authority has invited tenders for the installation of WiFi (Wireless Internet) facilities. The tender document covers all the key aspects required of a Wi-Fi network for use by a range of subscribers, particularly on the points of services offered, service level availability and its ability for future expansion. The rollout will be in phases, initially covering the Grand Canal Dock, IFSC and North Lotts Area. Future provision will have to be made to expand this to the remainder of the Docklands.

5.2.4 ELECTRICITY

The Combined Cycle Gas Turbine (CCGT) power plant at Ringsend, combined with output from the gas/oil Poolbeg Generating Station, produces a total of 1,420MW, which is equivalent to 35% of the national output. The Docklands is well served by an extensive cable network, virtually all of which is underground. 110KV sub-stations have been provided on either side of the Liffey. A further sub-station and local distribution cables will be required on the Poolbeg Peninsula to serve development there. Further investment in the electricity network will be required if development densities increase significantly. The cost of this would be borne by capital charges to major users and connection charges to individual consumers. The recent deregulation should lead to a more competitive electricity market, particularly for larger users and the new CCGT station at Ringsend is the first in a new breed of post-deregulation power plants.

5.2.5 GAS

The natural gas network in the Docklands is extensive and gas usage is considerable. The current network, including recent upgrades, is adequate for anticipated developments. In any case, the proposed District Heating System may reduce the demand for gas in the Area.

5.2.6 ENVIRONMENTAL ISSUES AND SUSTAINABLE ENERGY POLICY

Energy Conservation

The maximisation of generation efficiency, sustainable design, energy conservation and the minimisation of greenhouse gases are seen as key elements of a sustainable energy policy. All development proposals should seek to achieve the highest levels of energy efficiency in their layout, orientation and façade treatment. The recently published '2007 Building Regulation Part L Guidance Document' describes the minimum design and construction guidelines required from July 2008. This includes requirements relating to Building Energy Ratings (BER) and renewable energy technologies. Dublin City Council recently adopted Variation 22 to the 'Dublin City Development Plan 2005-11'. This calls for all residential developments greater than 10 dwellings or 1000m² to have a collective average BER of A3 effective from 1 January 2009. This is an ambitious but achievable target which compares well with best practice internationally. The Docklands Master Plan will support this requirement.

The new City Council policy also encourages the increased use of renewable energy, which is a requirement of the building regulations. The Authority will encourage the use of renewable energy technologies wherever possible.

A combined heat and power (CHP) plant has been provided in IFSC II and another will be provided in association with the proposed waste-to-energy plant. The Authority will encourage their provision elsewhere in the Docklands.

District Heating Network

The potential for development of a District Heating Network for Dublin City is now under consideration by Dublin City Council. This District Heating Network would primarily utilise waste heat from a range of heat sources which could include the existing major electricity generation plant on the peninsula (which currently does not harness any of the waste heat generated from these processes on the peninsula) and other CHP installations in the city. The District Heating Network would also be able to harness the heat generated by the proposed Waste to Energy Facility on the Poolbeg Peninsula should this go ahead. A national requirement to reduce overall carbon emissions and a range of incentives and potential carbon penalties will increase the viability of district heating and the use of waste heat from existing installations. This, accompanied by connection to new, local development specifically designed to accommodate connection to a District Heating Network will ensure that Local and national energy and climate change targets can be met. The development of this network will be actively encouraged by the Authority.

Remediation

Much of the land within the Docklands has been created through reclamation by infilling over a period of time. There is a range of potentially polluting substances within the fill, ranging from builders' rubble to cinders, ash, organic and possibly hazardous wastes. An interpretive assessment of baseline conditions will be required for each site. This assessment may include site investigation and soil testing. This will determine whether or not remediation measures are required. Based on the findings of the assessment it may be necessary to remove material from the site. There is the potential for some of the material excavated to be classified as hazardous waste. All wastes removed from the site will be required to be collected by licensed waste contractors under suitable waste permits. All wastes will be disposed of/treated at sites licensed to accept such material. The development of some sites may require design against landfill gases.

Flood Defences

The floods of February 2002 illustrated that part of the Docklands is prone to flooding, owing to tidal effects and its location at the mouths of the Rivers Dodder, Liffey and Tolka. The impacts of climatic change are likely to result in increased sea levels and higher annual rainfall. Dublin City Council have commissioned the Dublin Coastal Flooding Protection Project, the aim of which is to assess and address the risk from tidal flooding around the coastline and within tidal reaches a number of rivers and canals. Dublin City Council has already carried out flood protection work in the worst-affected areas. More works are planned in the future. Recommendations have been made on design tide levels to be applied to allow for the effects of climate change. The Authority will liaise with Dublin City Council and the OPW and will take into account their recommendations when implementing the Docklands Master Plan objectives. Any works proposed under the Planning Schemes will be assessed in terms of their potential impact on the area's flood defences.

Sustainable urban Drainage Systems

Sustainable urban Drainage Systems (SuDS) reduce flood risk, enhance water quality and frequently provide amenity and biodiversity benefits. This includes the use of ponds, wetlands, permeable paving and local solutions such as green roofs and water butts. The use of SuDS is required under Dublin City Council's policies but will also be actively encouraged by the Authority, particularly the requirements relating to environmental sustainability.

Published by UCD Urban Design Institute in 2008, *'Green City Guidelines' Advice for the protection and enhancement of biodiversity in medium to high-density urban developments*, refers to Sustainable urban Drainage Systems as follows, *"(SUDS) provide an opportunity to combine effective water management and habitat creation. Sensitive planting of these systems can significantly enhance the biodiversity value of the site. Built-up areas are traditionally drained using underground pipe systems, which are designed to prevent flooding locally by conveying the water away as quickly as possible. This can alter the natural flow patterns and can lead to problems of flooding elsewhere in the catchment. Surface water drainage methods that take account of quantity, quality and amenity issues are collectively referred to as Sustainable Drainage Systems. These systems are more sustainable than conventional drainage methods. Design features can encourage wildlife by using permeable instead of hard surfaces; installing grassed swales to convey surface water run-off; and installing treatment basins, pond and reed beds that receive run-off from the development prior to discharge to a watercourse"* (London Development Agency 2000).

Water conservation and water-saving devices should also be promoted. The use of recycled rain-water/greywater should be encouraged where feasible. Sustainable design principles should be encouraged in all new buildings, this would include showers for cyclists in office blocks, secure bicycle parking and facilities in apartments for natural drying of clothes.

Waste Management

The Dublin Waste Management Plan 2005-2010 was prepared pursuant to the Waste Management Act 1996 and adopted by the four Dublin local authorities. It provides a framework for minimising the harmful effects of waste, encouraging recycling and ensuring that any remaining waste is disposed of without causing any environmental pollution. The waste-to-energy facility at Poolbeg is proposed as part of that plan. In addition, the Authority will co-operate with Dublin City Council in identifying suitable 'bring centre' sites required for the source-separated collection of waste for both domestic and commercial uses. New developments will be required to provide suitable facilities for separation of waste into appropriate streams for recycling and to implement waste management systems, including principles for international best practice, such as in Hammarby, Stockholm.



GRAND CANAL DOCK

Policies

The Authority will (or will require):

Policy IF1

Ensure a co-ordinated approach is taken by utility companies and contractors to the installation of infrastructure.

Policy IF2*

Actively promote, in conjunction with Dublin City Council, as a prerequisite for development, the provision of adequate potable and fire water supply, foul sewer and storm water drainage systems, while protecting the environment and also having regard to the Greater Dublin Regional water and drainage infrastructural constraints. Measures to include the full integration of Sustainable urban Drainage Systems (SuDS) into new development, as well as the separation of foul and storm water and retrofit of SuDS where practical.

Policy IF3

Support the elimination of the discharges from the outfall of the Greater Dublin drainage sewer (Grand Canal Tunnel) from its present location in the inner basin of the Grand Canal Dock.

Policy IF4

Infrastructure corridors will be designated, with adequate vertical and horizontal dimensions, to facilitate the provision of new infrastructure. Lands required for new essential infrastructure will be identified under the Planning Scheme and reserved for that purpose.

Policy IF5*

Actively support Dublin City Council in the upgrading of the wastewater treatment plant at Ringsend as part of the Greater Dublin Strategic Drainage Strategy.

Policy IF6*

As a prerequisite for development actively promote, in conjunction with Dublin City Council, the provision of adequate potable and fire water supply, foul sewer and storm water drainage systems to facilitate development. Additional wastewater infrastructure to facilitate intensification of development in the North Lotts Planning Scheme Area to be identified in the Amended North Lotts Planning Scheme and developed in tandem with the carrying out of development in the Docklands.

Policy IF7*

The rollout and phasing of development under the Poolbeg Planning Scheme, the Amended North Lotts Planning Scheme, and other amendments and extensions to Planning Scheme Areas within the Docklands Area to be subject to the provision of adequate wastewater and adequate potable water supply infrastructure, in consultation with Dublin City Council and other relevant authorities at regional and/or local level to serve that development.

Policy IF8

Secure the provision of an advanced telecommunications infrastructure, including WiFi and broadband internet, throughout the Docklands.

Policy IF9

In consultation with the ESB and Bord Gáis, seek to resolve any remaining supply and distribution difficulties which may be encountered in the Docklands and ensure that there is adequate capacity for future development.

Policy IF10

The Authority will encourage the use of renewable energy technologies wherever possible.

Policy IF11

Adopt higher standards for energy conservation in new and existing buildings, including measures for localised sustainable electricity generation. In particular, new buildings should comply with 2007 Building Regulation Part L Guidance Document and Variation 22 to the Dublin City Development Plan.

Policy IF12

Encourage the establishment of combined heat and power facilities, as part of an overall energy conservation programme for the Docklands.

Policy IF13

Support the proposal to provide a District Heating System in the Docklands and the wider city area, in co-operation with the ESB and Dublin City Council. Encourage major heat producers, including the existing power stations to contribute to this system.

Policy IF14

Carry out hazard identification, such as redundant installations and contaminated soil. Ensure that any contaminated soil or water encountered is appropriately remediated / capped or disposed of to ensure that there is no unacceptable risk to either people or the environment.

Policy IF15

Support Dublin City Council and the OPW in enhancing flood-protection measures in the Docklands. Ensure that any new proposals are subject to a full flood risk assessment to ensure that there is no increase in flood risk or interference with existing flood defences. All flood defences must meet national standards.

Policy IF16

Require developers, where practical, to set minimum floor levels above predicted high tide levels, taking into account the likely effects of climate change as recommended by Dublin City Council. Where this is not practical due to the requirement to provide active use at street level, then innovative designs, flood resistant materials and appropriate land uses will be required at ground level. Ensure design takes into account recovery from potential flooding and safe escape routes.

Policy IF17*

Require flood risk impact assessment for all Section 25 applications. Any flood defences proposed must meet national standards.

Policy IF18*

Ensure that, in their design, operation, and maintenance, canals, waterways, locks and other infrastructure do not compromise flood protection for the City.

Policy IF19*

Require the use of water-saving devices and measures in new buildings to support city-wide water conservation measures, in compliance with Dublin City Council's Bye Laws for the Management of Water Services and the Conservation of Drinking Water 2003.

Policy IF20

Promote the use of recycled greywater/rainwater where practical.

Policy IF21

Introduce a system of water husbandry that would facilitate the conservation of potable water.

Policy IF22*

Promote an awareness of water usage in the Docklands.

Policy IF23*

Require all new development to integrate Sustainable urban Drainage Systems (SuDS) to minimise flood risk and enhance the quality of storm water runoff. Encourage the retrofitting of SuDS where possible to remove storm water from the existing sewerage system and enhance water quality in the Liffey/Dublin Bay including cooperation with DCC in the maintenance of water quality that can safely facilitate recreation use.

Policy IF24

Have regard to the *'Dublin Waste Management Plan 2005-2010'* (and subsequent plans) and its objectives of preventing and minimising waste, maximising recovery through recycling and ensuring that such waste that cannot be prevented is disposed of without causing environmental pollution.