



# River Dodder Greenway From the Sea to the Mountains

## Feasibility Study Report



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## 1. Introduction

Roughan & O'Donovan and AECOM, together with Copenhagenize Consulting and Cunnane Stratton Reynolds, were commissioned in August 2012 to undertake a study into the feasibility of developing a high quality Walking and Cycling Route along the River Dodder Corridor. The Study is being co-ordinated by South Dublin County Council but also includes parts of the respective jurisdictions of Dublin City Council and Dún Laoghaire - Rathdown County Council. The study is being funded by the National Transport Authority.

The Study covers the entire length of the River Dodder between the mouth at the River Liffey at Grand Canal Dock to its source at Bohernabreena in the Dublin Mountains. The purpose of this report is to document the findings of the Study and to identify (a) feasible route(s) to complete a high quality amenity and commuter route between the city centre and the mountains.

This Feasibility Study Report has been prepared addressing the route in Sections, defined by geography and / or land use character. The route starts at Grand Canal Square at the confluence of the Canals Premium Cycle Route and the proposed River Liffey Cycleway scheme and follows the course of the River Dodder in a south-westerly direction to the Dublin Mountains at the Glenasmole Reservoirs in Bohernabreena.

## 2. Background / Planning Context

### 2.1 Background

This Feasibility Study Report has been prepared with reference to the following documents:

- Dublin City Development Plan 2011-2017;
- Bushy Park Landscape Masterplan and Management & Development Plan;
- Dublin Docklands Development Masterplan 2008;
- River Dodder Catchment Flood Risk Management Plan;
- Ringsend/Irishtown and the River Dodder Area Action Plan;
- South Dublin County Council Development Plan 2010 - 2016;
- The Dodder Valley Linear Park Draft Plan June 1996;
- Dún Laoghaire-Rathdown County Development Plan 2010-2016;
- GDA Cycle Network Plan;
- Smarter Travel: A Sustainable Transport Future 2009 – 2020; and
- National Cycle Policy Framework 2009.

### 2.2 Dublin City Development Plan 2011-2017

#### 2.2.1 *Connecting and Sustaining the City's Infrastructure*

The vision for cycling is to make Dublin a city where people of all ages and abilities have the confidence, incentive and facilities to cycle so that by 2017, 25-30% of all new commutes within the city will be by bike. Infrastructure works will concentrate on improving cycle safety, access, parking and developing and improving the Dublin Cycle Network.

*It is an objective of Dublin City Council to develop new cycle links including: Sandymount to Clontarf using Dodder Bridge and Macken Street Bridge*

Figure 2.1 below illustrates the Green Cycle Corridors proposed as part of the plan, of which the River Dodder is one.



**Figure 2.1 Dublin City Green Cycle Network**

## 2.2.2 Greening the City

*It is an objective of Dublin City Council to continue to develop the Dodder Linear Parks between Lansdowne Road and Londonbridge, Ballsbridge and Donnybrook, and Donnybrook and Milltown and also to promote and actively pursue the development of a park in the area known as 'Scully's Field'.*

*For the river Dodder, it is an objective of Dublin City Council to take into public ownership/ create Rights of Way along and across the Dodder at key points and to maintain existing bridges for pedestrians and cycle traffic.*

## 2.2.3 Strategic Cycle Network

Dublin City's Strategic Cycle Network has been subdivided into an indicative list under some of the following subdivisions:

- Inner city cycle routes  
*Primary Priority: Essex Quay to a bridge over the Dodder mouth to York Road.*
- Recreational routes  
*River Dodder*

## 2.3 Bushy Park Landscape Masterplan and Management & Development Plan

The sections below outline the key interventions as described in the Plan.

### 2.3.1 New bridge & Universal Access Route

- New car park proposed for southern bank of River Dodder;
- New bridge proposed over River Dodder into the park; and
- 4m wide, wheel chair accessible, pedestrian and cycle path from the southern to northern boundary of the park.

### 2.3.2 Punctuation of Dodder Wall

- Sections of the existing Dodder wall punctuated and replaced by ornamental railing to improve passive surveillance and biodiversity in woodland & river corridor; and
- New access gate into park at the northern end of the existing footbridge.

## 2.4 Dublin Docklands Development Masterplan 2008

The Dublin Docklands Masterplan 2008 includes strategies for the continued development of the Docklands, including the Point Village and North Lotts to the north of the Liffey together with Grand Canal Harbour and the Poolbeg Peninsula on the south side. The challenge here is to knit this new distinctive character area back in to the fabric of the city through public transport links, for example the DART Underground at Spencer Dock, new bridges and the proposed bridge at the river Dodder and by the regeneration of Pearse Street.

## 2.5 River Dodder Catchment Flood Risk Management Plan (CFRMP)

The methodology adopted for the Dodder Catchment Flood Risk Assessment and Management Study (CFRAMS) has been thorough and to a level of detail appropriate for the development of a CFRMP and associated flood mapping. It has included the collection of survey data and the assembly and analysis of meteorological, hydrological and tidal data. This data has been used to develop a suite of hydraulic computer models of the River Dodder, its tributaries and Dublin Bay. Flood maps are one of the main outputs of the study and are the way in which the model results are communicated to each of the end users. The flood maps allow identification of likely locations within the Dodder Catchment at risk of flooding. The impacts of flooding have been considered under three categories:

- Economic: loss or damage to buildings or infrastructure, and the disruption of activities that have economic value;
- Social: loss or damage to human life, health, community and social amenity; and
- Environmental and Heritage: consideration of the sensitivity of the river environment, habitats and species, plus the cultural and historical environment, to flooding.

A damage assessment has been undertaken to determine the direct economic damages to properties and infrastructure in the Dodder catchment as a result of current levels of flood risk. As expected, the greatest economic property damages occur in the lower Dodder area, which has the highest density of properties and a significant flood risk due to both fluvial and tidal flooding. The Whitechurch Stream and Dundrum Slang are at moderate economic flood risk and the majority of the remaining urban areas have a lower economic risk of flooding. The most significant number of properties at social risk is again located in lower Dodder (Donnybrook area) which is at risk from fluvial and tidal flooding.

The SEA process has assessed the impacts of flooding on the environment and heritage, at a strategic level, in terms of the loss, damage or benefit to the environment. Where flood risks are significant, the study has identified a range of potential flood risk management options to manage these risks, including structural options (e.g. flood walls and embankments) and non-structural options (e.g. flood forecasting and development control).

## 2.6 Ringsend/Irishtown and the River Dodder Area Action Plan

The main objective of the study is to set out proposals for the improvement of the River Dodder and its banks to provide a better amenity for the local population. The plan sets out specific policies as follows:

- The Authority will improve the riverside walkways along the Dodder to form a (continuous) route from the Grand Canal Basin to Herbert Park, including the provision of a cycle path.

Most of the works involved will be physical in nature and this study sets out particular proposals for the following:

- Landscaping and improvements including the provision of a cycleway to the Dodder Riverside.

## 2.7 South Dublin County Council Development Plan 2010 - 2016

In order to protect, strengthen and improve the biodiversity linkages within the County, as required by Article 10 of the Habitats Directive, the Council shall formulate a Green Network Plan or as part of the Biodiversity Plan indicating linkages between open space, sensitive habitats, river systems which shall incorporate walking routes and greenways.

It is the policy of the Council to provide for the continued development of the Dodder Valley Linear Park, including:

- Continued development of a walkway along the River Dodder and extension of the network of pedestrian footpaths;
- Enhancement of the waterfall and bridge at Oldbawn;
- Development and expansion of the Dodder Valley Linear Park in association with the development of the adjoining convent lands; and
- Development and extension of the Dodder Valley Linear Park by securing public access along the river bank from Oldbawn to Bohernabreena and development of lands at Tymon South in the Dodder Valley for active and passive recreation;

## 2.8 The Dodder Valley Linear Park Draft Plan, June 1996

The draft plan, covering the Dodder within the SDCC area between Oldbawn and Tallaght, contains a range of proposals including:

- Improved access and circulation particularly along the river bank, footpaths, footbridges and trails, improved and attractive pedestrian access points, car-parking and improved access for elderly and those with impaired mobility;
- Visitor Facilities, Attractions and Activities – seating and picnic areas, viewing areas, facilities for nature study, interpretative material – signs and information boards; and
- Community Involvement.

Section 6.3.2 of the plan recognises the potential of the park to be enjoyed by cyclists but also proposes that cycle tracks should be in peripheral areas of the park where conflict with other uses/users would be avoided and that bicycles on walking routes or within conservation zones would be discouraged

## 2.9 Dún Laoghaire-Rathdown County Development Plan 2010-2016

### 2.9.1 Open Space and Recreation

It is the vision of Dun Laoghaire Rathdown County Council to protect and enhance the established network of open spaces in Dún Laoghaire-Rathdown and to ensure that a range of high quality, relevant and easily accessible recreational and leisure facilities and public spaces are readily available to meet the needs of all residents of, and visitors to, the County. The Council will encourage the linkage of parks and greenways throughout the County.

*It is Council policy to develop a comprehensive network of County greenways linking parks and public open spaces and to work with adjoining local authorities and other stakeholders to achieve and improve external linkages.*

The Dodder River Valley has been identified as a greenway route.

## 2.10 Cycle Network Strategy for the Greater Dublin Area

AECOM and ROD are separately preparing a Cycle Network Strategy for the Greater Dublin Area. The emerging strategy has identified the River Dodder corridor as a key commuting and amenity route. As it is likely to be one of the first routes to be delivered, it should be a showcase route to set a standard for others to achieve as the wider network is developed over the coming decade.

## 2.11 Smarter Travel: A Sustainable Transport Future 2009 - 2020

This policy document sets its key targets as:

- Nationally, 500,000 more people will take alternative means to commute to work to the extent that the total share of car commuting will drop from 65% to 45%;
- Alternatives such as walking, cycling and public transport will be supported and provided to the extent that these will rise to 55% of total commuter journeys to work; and
- A reduction will be achieved on the 2005 figure for greenhouse gas emissions from the transport sector.

## 2.12 National Cycle Policy Framework 2009

The Government is committed to developing cycling as one of the most desirable modes of travel, it being good for your health, the economy and the environment. This National Cycle Policy Framework (NCPF) sets out objectives to the year 2020 to achieve its vision. The vision is that all cities, towns, villages and rural areas will be bicycle friendly. Cycling will be a normal

way to get about, especially for short trips. Next to walking, cycling will be the most popular means of getting to school, university, college and work. The bicycle will be the transport mode of choice for all ages. We will have a healthier and happier population with consequent benefits on the health service. We will all gain economically as cycling helps in easing congestion and providing us with a fitter and more alert work force. A culture of cycling will have developed in Ireland to the extent that by 2020, 10% of all trips will be by bike.

The objectives presented in this framework cover the interventions relating to our physical environment that need to be made in order to encourage cycling. The objectives are presented moving, broadly, from the largest scale (urban / regional planning) to a detailed level (provision of cycling parking etc.) and are not necessarily related to their priority. In promoting cycling, we need to have cycling-friendly urban planning and cycling-friendly road design / traffic management measures and integration with public transport and plentiful cycling parking and the other measures described in this document. It is a very broad package of measures that is required, not just single, specific interventions.

Objective 3 is to provide designated rural signed cycle networks providing especially for visitors and recreational cycling. The network identified will mainly use a mix of minor roads, and some greenways. The greenways are especially important for, typically, the first 10km along the routes emanating from busy town centres which are heavily trafficked and particularly unattractive for inexperienced or very young cyclists. While the overall framework of the tourism network has been identified, there is more work to be carried out to identify further routes, particularly in the Midlands and particularly to use existing traffic free routes such as the canal and river tow paths. There is also further work to be carried out in identifying which sections of the extensive network of disused rail-lines would be most suitable to be converted to high quality, traffic-free routes suitable for cyclists of all ages and abilities.

### 3. Objectives for the Route

The function of the route will be manifold. The following is a non-exhaustive list of objectives for the route taken into account by the consultancy team in undertaking the study:

- (i) To cater for commuting - the route will have to be sufficiently attractive to compete time-wise with the alternative on-road routes along the N81 and R114 into Dublin City from the greater Tallaght area.
- (ii) To cater for tourist amenity - it is envisaged that the route will attract cycle tourists undertaking circuits through the Dublin and Wicklow Mountains.
- (iii) To cater for local amenity - the route should benefit local communities through enhancing existing amenity paths and providing new linkages to adjacent communities and village centres.
- (iv) To connect areas of parkland - the route should provide clear and coherent connectivity between existing parks along the river corridor - such as Bushy Park and Herbert Park.
- (v) To enhance the ecological corridor - the scheme should have a neutral to positive impact on local ecology. This can be achieved by inclusion of complementary planting and features for flora and fauna.
- (vi) To benefit local business - the scheme will increase accessibility to local businesses and village centres along the river corridor.
- (vii) To be a Greenway of international renown - the scheme must avoid compromises and be on a par with the best greenways in the world.

#### European Greenways definition

*“Greenways are communication routes reserved exclusively for non-motorised journeys, developed in an integrated manner which enhances both the environment and quality of life of the surrounding area. These routes should meet satisfactory standards of width, gradient and surface condition to ensure that they are both user-friendly and low-risk for users of all abilities. (Lille Declaration, European Greenways Association, 12th September 2000).”*



*In common with the project objectives above The European Greenways Association (EGA) describes the Functions of Greenways:*

*“In principle, Greenways - natural and cultural heritage trails have four basic functions:*

1. Sustainable transport and safety

*Greenways promote non-motorized forms of transport and mass transit, encourage mobility and tourism related to walking, cycling, horse-riding, boating etc. Greenways contribute to increasing road safety and sustainable transport in urban and rural areas for many different user groups, including disabled, elderly and children.*

2. Promoting healthy lifestyles

*Greenways contribute to promoting healthy life-styles and improving the quality of life of local residents and visitors by encouraging active tourism, recreation and sports in the open air and in natural environments.*

3. Development of eco-tourism and natural and cultural heritage conservation

*Greenways contribute to the development of different types of environmentally-friendly tourism, including creation and promotion of environmental tourist products. All tourist products promoted along Greenways share the common principle of using local potential and supporting local communities – they are created with local resources: tourist services, cultural opportunities, local products and point of sale, as well as other community initiatives. Greenways serve to support grassroots and regional initiatives aimed at cultural, natural and landscape heritage conservation.*

4. Supporting economic and social development of communities, including enterprise development

*Greenways contribute to the development of local economies and encourage enterprise among local populations. Establishment of Greenways serves to initiate development of accommodation, food and guiding services. Trails promote establishment of galleries and points of sale for local products, tourism information services, sport and tourism equipment hire services etc.”*

This study addresses the feasibility of creating a Greenway in terms of its route alignment and deliverability, however such a route is a resource or means to developing the Greenway concept which will be an ongoing process throughout the lifetime of the route. These concepts are further explored in Section 6.

## 4. General Requirements

The following requirements have been identified for the Greenway Route in order to achieve the objectives set out above:

- **Coherence and Directness**  
The route will have to be legible and coherent and easy for tourists and locals to follow. Even independent of any signage proposed, it should be possible to logically follow the route along the river.
- **Width**  
One of the principal considerations to be determined early on is the required width for the route. The National Cycle Manual suggests a minimum width of 2.5m for two cyclists cycling abreast with another overtaking. Given the need to also accommodate pedestrians on the route, a general width requirement of 4m is proposed. This will cater for two-way cycling and pedestrian activity. Where particular pinchpoints exist, an absolute minimum width of 3.0m should be provided to allow two cyclists to pass or one cyclist to pass a pedestrian.
- **Priority**  
Where at-grade public road crossings are required, and compromises in terms of traffic capacity are necessary, these should generally favour the greenway route. Advance sensors, be they radar or detection loops should be included on the greenway on approach to the road crossings so as to enable the cycle signals to switch to green promptly and minimise delay and disruption for cyclists. These might include intelligent sensors that would apportion priority based on the number of cyclists approaching, or which might give greater priority to the greenway in inclement weather conditions.  
  
All road crossings should be toucan crossings, a minimum of 4m wide, and with push button units on each side of the Greenway. Raised bars for cyclists to rest their foot on when stopped should also be provided on each side. Where the route is shared with traffic and crosses as busy road, the junction layout should generally be tightened to provide an increased area for pedestrians and cyclists.
- **Lighting**  
High quality public lighting should be installed along the route (where not already present) along the entire length of the scheme from the River Liffey to the gates of the Bohernabreena Reservoirs complex. While the route's commuter function will be minor west of Old Bawn Road, the continuation south-westward will be largely off-road and lighting will reduce the risk of anti-social behaviour. Uplighters rather than conventional lamp post lighting might be considered at the extreme eastern end of the route.
- **Paving**  
The route should provide a high quality and smooth riding surface, generally free from service chamber covers, bumps around tree roots, etc. Newer sections should be surfaced with fine cold asphalt or equivalent. There may be merit in the provision of a high quality aesthetic finish atop the asphalt along certain sections, similar to the surface treatment on the Grand Canal Route between Blackhorse and Adamstown. Such materials are costly and it would likely be unjustified to provide such surfacing continuously along the route.

- **CCTV**  
Certain sections of the route will may CCTV coverage for security reasons where it is remote from the main road corridors that provide passive surveillance. It will likely be impractical to monitor the entire length of the route. The preliminary design should consider locations where CCTV is most necessary.
- **Environment**  
The River Dodder provides an important ecological corridor through the length of the scheme from the Dublin Mountains to the River Liffey. The site links a number of parks from Glenasmole, Kiltipper Park, the Dodder Valley Park, Bushy Park, Orwell Park, Dartry Park and Herbert Park, allowing for the connection of existing nature areas and maintains a healthy ecosystem. The linking of nature areas allows for species to move, migrate, disperse and exchange populations between these areas in order to secure their long term survival. The site is an important habitat for a range of species including otter, kingfisher, badger and bats along with a numerous avian fauna. Habitats include wet grassland riparian woodlands, dry and calcareous meadows and tufa forming calcareous springs. The river support an excellent supply of fish and salmon are present in its lower reaches. Invasive species, in particular Himalayan Balsam and Japanese knotweed are found throughout the river corridor.  
  
In parallel with the scheme there is opportunity to include features to enhance the existing ecological corridor.. Such features might include:
  - Assessment of the weirs along the route for potential provision of salmon passage.
  - Artificial otter holts.
  - Dipper and Bat boxes.
  - Vortex weirs for outfalls to improve water quality
  - Landscaping consideration for the enhancement of the aquatic environment
- **Maintenance**  
The scheme should require minimal maintenance to reduce the whole life cost. This should be considered in the design of any complementary planting along the route and in the design of bridges and other structures (which should all be fully integral).
- **Access and Permeability**  
All kissing gates along the route should be removed. These are an intolerable barrier to cycling and other means of controlling anti-social behaviour should be identified, including CCTV. A bollard or two at the entry to a 4m wide track would prevent vehicular access but can accommodate cyclists. Occasional abuse of the greenway by motorbikes may be a problem but the solution to this should not be to render the proposed cycleway unusable by the vast majority of responsible pedal cyclists.  
  
Links to the surrounding areas should be provided all along the route to maximise the usage of the greenway.
- **Tourism**  
The greenway should emphasise features of interest to tourists along the route. Signage boards and sheltered stops should be included in the design. Local businesses should be encouraged to engage with the scheme, which could deliver additional custom to their premises.