

An Chomhairle Oidhreachta  
The Heritage Council



# Recreational use of Towpaths

A Study Commissioned  
by the  
Inland Waterways Committee  
of the Heritage Council

By  
Roger Butler  
Inland Waterways Consultant

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Telephone: +353 (0)56 7770777  
Fax: +353 (0)56 7770788  
E-Mail: [mail@heritagecouncil.com](mailto:mail@heritagecouncil.com)  
[www.heritagecouncil.ie](http://www.heritagecouncil.ie)

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# Table of Contents

Foreword	5
Executive Summary	6
Achoimre Fheidhmeach	7
<b>1 Introduction</b>	<b>9</b>
1.1 Why were towpaths built?	9
1.2 Contemporary role of towpaths	9
1.3 Towpaths in Ireland	9
1.4 Funding for towpath work	9
1.5 The need for this guide	9
<b>2 Towpath improvements: benefits, opportunities and issues</b>	<b>10</b>
2.1 Why improve towpaths?	10
2.2 Heritage and Environment	10
2.3 Regeneration	10
2.4 Transport	10
2.5 Sport and Recreation	11
2.6 Tourism	11
2.7 Issues to consider when planning a towpath project	11
2.8 Maintenance	12
<b>3 Policy context</b>	<b>12</b>
3.1 Waterways Ireland	12
3.2 Heritage and Environment Legislation	12
<b>4 Built heritage</b>	<b>13</b>
4.1 Unique and varied heritage	13
4.2 Locks	13
4.3 Steps and ramps	13
4.4 Bridges	13
4.5 Tunnels	14
4.6 Water control features	14
4.7 Small scale details	14
4.8 Ancillary features	15
4.9 Repair and maintenance	15
<b>5 Natural environment</b>	<b>15</b>
5.1 Why are towpath habitats important?	15
5.2 Survey and consultation work	15
5.3 Planting and towpaths	15
5.4 Creative solutions	16

<b>6</b>	<b>Specific issues</b>	<b>16</b>
6.1	Surfacings	16
6.2	Cycling	18
6.3	Angling	19
6.4	Access for all	20
6.5	Horses	21
6.6	Crime prevention	22
6.7	Overcoming user conflict	22
<b>7</b>	<b>Checklist</b>	<b>23</b>
<b>8</b>	<b>Case Studies</b>	<b>24</b>
8.1	Selby Canal, North Yorkshire	24
8.2	Nottingham Canal	26
8.3	Grantham Canal, Lincolnshire	27
8.4	Caledonian Canal, Scotland	28
8.5	Ratho, Union Canal, Scotland	30
8.6	Market Harborough, Leicestershire	31
8.7	RAVeL, Belgium	32
8.8	Leipzig, Germany	33
8.9	Horses on Towpaths: a Scottish approach	35
<b>9</b>	<b>Innovation</b>	<b>37</b>
9.1	Limehouse Cut, London: floating towpath	37
9.2	River Welland, Spalding: electric stairlift	37
<b>10</b>	<b>Irish towpaths</b>	<b>38</b>
10.1	Kilcock, Royal Canal: towpath improvements and water polo facilities	38
10.2	Bagenalstown, Barrow Navigation: disabled angling facilities	38
10.3	Ashtown, Royal Canal: housing development and towpath improvements	39
<b>11</b>	<b>Kennet and Avon Canal: a strategic approach to canal restoration and towpath improvement</b>	<b>40</b>
11.1	Towpath Character	41
11.2	Built heritage	43
11.3	Bank treatments	43
11.4	Canal hedgerows	43
11.5	Canal cycleway	44
11.6	Innovation	44
11.7	Rural Transport Project	45
11.8	Monitoring	45
	<b>Appendices</b>	<b>46</b>
a.	Waterways Ireland	46
b.	National, Regional and Local Policies	46
c.	Useful organisations and websites	47
d.	Useful references	47

## Foreword

Ireland has a vast network of river and canal towpaths. No longer used for their original purpose, they nevertheless provide a range of opportunities for city and rural dwellers, for locals and visitors alike to enjoy the natural and built heritage of our waterways for recreation and exercise. But like the waterways themselves, these features must be carefully managed and maintained if they are to continue being enjoyed by succeeding generations.

This report is published by the Heritage Council in response to a need that was identified by the Council's Standing Committee on Inland Waterways.

The purpose is to provide guidance and hopefully inspiration on best practice to those who are involved in the development of waterway towpaths for recreation.

The Heritage Council would like to acknowledge the contribution of the following people: Roger Butler who prepared the text, Caro-Lynne Ferris, Martin Denny, Colin Becker and Beatrice Kelly who formed the project steering committee and all those who donated photographs to illustrate the text.

**Michael Starrett**

Chief Executive  
The Heritage Council

## Executive Summary

Towpaths were originally built so that horses could pull boats and barges carrying people and goods along the waterways. Horse powered transport has long ceased but the towpaths survive on many of our canals and rivers; in some cases even where navigation is no longer possible. Nowadays, the towpaths are finding alternative uses for amenity and recreational purposes. Over the years the towpaths themselves have changed. Vegetation encroachment, bank erosion, building development and other factors mean that some of the towpaths need work to make them more accessible and useable by the public.

Many of Ireland's towpaths come under the control of Waterways Ireland, the cross-border body set up under the Good Friday agreement. Others come under the control of local authorities and NGOs and still others are in private hands. In addition, a number of government departments and a range of other agencies have responsibilities which impact towpaths. Recent surveys have revealed strong public support for the waterways and the opportunities they offer for amenity and recreation and there is growing recognition of their natural and cultural heritage value.

Towpaths have the potential to provide benefits to society on a number of dimensions including heritage and the environment, regeneration, sport, recreation and tourism. This report was commissioned by the Heritage Council to be a resource for those who manage towpaths or are involved in projects to develop towpaths for public use. Development or improvement of a towpath requires careful planning on a range of dimensions including site suitability, appropriate usage, health and safety, user conflicts and legal constraints. As part of the overall planning of the project, provision must also be made for long term care and maintenance.

Canal and river navigations include a combination of man-made and natural features. Locks, bridges, weirs, overflows, cranes, wharves and a host of smaller features can provide points of interest and should be conserved in as sympathetic a manner as possible. Towpaths and their associated banks are extremely valuable waterway habitats. In many cases, they have developed since the waterway was built having been colonised from habitats that existed prior to construction. They contribute much to the biodiversity of an area and their careful management is essential. Any proposals to develop or improve a towpath for public access must take into account the conservation and management of these habitats.

The report addresses a number of specific areas in more detail. These include the selection of suitable surface materials for the towpaths and issues relating to the use of towpaths for cycling, horse-riding and angling.

Towpaths are generally flat, with few steep gradients. With a little thought and care they can readily be accessed by wheelchair users, those with restricted mobility and parents with child buggies. The report considers some of the issues that should be addressed to make towpaths accessible to the widest number of users. The report also considers a range of measures that can be taken to improve the safety and security of visitors and the amenity itself and reduce anti-social behaviour in the area.

A number of case studies are considered which explore and amplify some of the general points raised. The case studies are drawn from Ireland, England, Scotland, Germany and Belgium and cover a range of situations which are intended to provide guidance and inspiration for those considering towpath improvement projects in the future.

## Achoimre Fheidhmeach

Tógadh cosáin tharraingthe sa chéad áit chun go bhféadfadh capaill báid agus báirsí a bhí ag iompar daoine agus earraí ar feadh na n-uiscebhealaí. Tá iompar capallchumhachta imithe i léig fadó riamh ach maireann na cosáin tharraingthe ar mhórán dár gcanálacha agus dár n-aibhneacha; i gcásanna áirithe fiú nach bhfuil loingseoireacht indéanta níos mó. Sa lá atá inniu ann, tá malairt úsáidí á mbaint as na cosáin tharraingthe chun críocha taitneamhachta agus áineasa. Le himeacht na mblianta tá na cosáin tharraingthe féin athraithe. Ciallaíonn cúngracht fásra, creimeadh bruacha, forbairt thógála agus fachtóirí eile gur ghá obair a dhéanamh ar chosáin tharraingthe áirithe len iad a dhéanamh inrochtana agus inúsáidte ag an bpobal.

Tá mórán de chosáin tharraingthe na hÉireann faoi i rialú Uiscebhealaí Éireann, an comhlacht trasteorann a bunaíodh faoi chomhaontú Aoine an Chéasta. Tá cinn eile dá rialú ag údaráis áitiúla agus ENRanna agus tá a thuilleadh fós in úinéireacht phríobháideach. Ina theannta sin, tá freagrachtaí ar a bhfuil tionchar ar chosáin tharraingthe ag an áirithe sin de ranna rialtais agus raon de ghníomhaireachtaí eile.

Tá tacaíocht láidir an phobail do na huiscebhealaí agus do na deiseanna a thairgíonn siad do thaitneamhacht agus d'áineas léirithe ag suirbhéireachtaí a rinneadh le déanaí agus tá tuiscint ag fás ar a luach oidhreachta nádúrtha agus cultúrtha.

Tá an acmhainn ag cosáin tharraingthe leas a sholáthar don sochaí ar roinnt slí ar a n-áirítear an oidhrecht agus an comhshaol, athghiniúint, spórt, áineas agus turasóireacht.

Rinne an Chomhairle Oidhreachta coimisiúnú ar an tuarascáil seo le bheith ina acmhainn dóibh sin a dhéanann bainistíocht ar chosáin tharraingthe nó atá rannpháirteach i dtionscadail le cosáin tharraingthe a fhorbairt d'úsáid phoiblí.

Agus forbairt nó feabhsúchán á dhéanamh ar chosáin tharraingthe ní mór pleanáil cháiréiseach a dhéanamh ar raon de ghnéithe mar oiriúnacht láithreáin, úsáid chuí, sláinte agus sábháilteacht, easaontacht úsáideoirí agus srianta dlí. Mar chuid den ollphleanáil ar an tionscadal, ní mór soláthar a dhéanamh chomh maith do chothabháil agus cúram fadtéarmach.

Cuimsíonn loingseoireachtaí canálacha agus aibhneacha comhghnéithe de dhéantús an duine agus gnéithe nádúrtha. Tig le loic, droichid, coraí, sceithí, craenacha, céanna agus iliomad gnéithe beaga eile bheith ina n-ábhar spéise agus ba chóir iad a chaomhnadh ar bhealach chomh báúil agus is féidir.

Tá cosáin tharraingthe agus na bruacha a ghabhann leo ina ngnáthóga uiscebhealaigh fíorluachmhara. Go minic, tá forbairt déanta orthu, ó tógadh an t-uiscebhealach, ó ghnáthóga a bhí ann sular déanadh an tógáil. Cuidíonn siad go mór leis an mbithéagsúlacht sa cheantar agus is riachtanas é go ndéanfaí bainistíocht chúramach orthu. Ní mór d'aon mholtaí maidir le forbairt nó feabhas a chur ar chosáin tharraingthe ceann a thógáil de chaomhnú agus de bhainistíú na ngnáthóga seo.

Tugann an tuarascáil aghaidh níos grinne ar shaincheantair áirithe. Orthu seo tá roghnú ábhar oiriúnacha dromchlacha do na cosáin tharraingthe agus ceisteanna maidir le húsáid na gcosáin tharraingthe do rothaíocht, marcaíocht ar chapall agus slatiascaireacht.

De ghnáth bíonn cosáin tharraingthe réileánach, gan mórán grádán géara. Ach beagán machnaimh agus cúraim a chaitheamh leo is féidir rochtain éasca a bheith orthu ag úsáideoirí cathaoireacha rotha, daoine le soghluaiseacht teoranta agus tuismitheoirí le bugaithe do leanaí. Déanann an tuarascáil plé ar chuid de na ceisteanna gur chóir aghaidh a thabhairt orthu d'fhonn cosáin tharraingthe a dhéanamh inrochtain don líon is leithne úsáideoirí. Pléann an tuarascáil chomh maith raon de bheartais a fhéadfaí a chur i bhfeidhm le feabhas a chur ar shábháilteacht agus ar shlándáil chuariteoirí ar an taitneamhacht féin agus ar laghdú a dhéanamh ar iompar frith-shóisialta sa cheantar.

Pléitear an áirithe sin cás-staidéar a dhéanann cíoradh agus méadú ar chuid de na pointí ginearálta a thógtar. Fuarthas na cás-staidéir ó Éirinn, Sasana, Albain, an Ghearmáin agus an Bheilg agus clúdaíonn siad raon de chúinsí atá ceaptha le treoir agus inspioráid a sholáthar dóibh sin atá ag machnamh ar thionscadail feabhsaithe cosáin tharraingthe amach anseo.

# Ireland's Waterways





# 1. Introduction

## 1.1 Why were towpaths built?

Towpaths were originally built so that horses could pull boats and barges with goods and passengers. Although activity on inland waterways has changed, they now offer many other potential uses with renewed interest in their restoration and development for recreational purposes. Most towpaths provide safe and level paths, often in highly scenic areas, with access to a unique mix of built and natural heritage.

Towpaths were usually wide enough to allow two horses to pass each other with a boundary or fence on the land side often forming the limit of landownership by the canal company. This resulted in a strip of land typically between two and four metres wide, but over time many have narrowed through a combination of bank erosion, encroachment from vegetation or, in some cases, construction of buildings and development. Some have suffered as a result of the decline in navigation and now require work to restore them as accessible routes.

## 1.2 Contemporary role of towpaths

Today, towpaths function as important car-free routes which help to reduce road traffic and related emissions, and improved towpaths can therefore play a role in addressing climate change and promoting wider sustainability. The ways in which they can promote and support healthy living and outdoor activity, whilst providing important links between town and country, has also been recognised. Well designed and maintained towpaths can also help to address social inclusion and anti-social behaviour issues.



*Irish Wheelchair Association Anglers on Grand Canal.*  
© (John Mc Keown)



*Horse drawn barge on the Royal Canal c1930.*  
© (Michael O'Reardon)

## 1.3 Towpaths in Ireland

In total Waterways Ireland owns and manages more than 1000 kilometres of navigations. Around 500 kilometres of these are waymarked as towpath walking trails, with the majority along the Grand and Royal Canals and the Barrow Navigation. In addition, Ireland's waterway network includes more than thirty other canals and navigations, either open or currently disused. Many of these retain their towpaths and whilst restoration may be a long term possibility, improvements can be planned as the first step towards upgrading and promoting a waterway corridor for new leisure uses. Others may be deemed impossible to restore, but their potential as heritage attractions, walking routes and recreational areas should be explored.

## 1.4 Funding for towpath work

In addition to statutory annual budgets, partnership work between Waterways Ireland, other agencies, local authorities and the private sector can help to raise funds for towpath and associated amenity works. Private sector developments which meet sustainable development and design criteria can also contribute via planning agreements or through work in kind.

## 1.5 The need for this guide

Recent surveys have revealed strong public support for Ireland's waterways and the opportunities they offer for a range of activities in both urban and rural areas. Research has also shown that a high percentage of total visits to three key Irish waterways are currently either for walking or angling. In addition, there is growing public

recognition of their important built and natural heritage, and a desire to both conserve and improve this for future generations to appreciate and enjoy. Towpaths also form important parts of wider national networks, such as long distance walks, and, though they are not all officially accessible, as cycle routes. The renewed focus on waterway conservation, restoration and development by the Heritage Council, Waterways Ireland and local authorities means there is now a need to consider and learn from established towpath best practice carried out elsewhere. The range and scope of such work is varied and multi-disciplinary and can frequently encompass surface treatments, access improvements, recreational facilities and interpretation, as well as activities traditionally associated with boating. It is essential that towpaths are properly managed to help avoid conflict between different users. Some may be unsuitable for unrestricted multi-use access for safety reasons, whilst others may need to be sensitively managed to avoid the risk of damaging important heritage or wildlife sites.

## 2. Towpath improvements: benefits, opportunities and issues

### 2.1 Why improve towpaths?

Improved, more accessible towpaths help to deliver a range of wider benefits and contribute to the quality of life in both urban and rural areas. Enhancement schemes can help them to maximise and fulfil their potential in a number of important policy areas, including environment, regeneration, transport and health. These are summarised below.



### 2.2 Heritage and Environment

- Managing a unique asset: heritage, culture, landscape, environment
- Conserving and reusing valuable buildings, landmarks and structures
- Managing and enhancing important habitats and varied biodiversity
- Developing links with other open spaces and parks



### 2.3 Regeneration

- Acting as a catalyst for economic and social renewal
- Helping to increase opportunities for investment
- Linking and connecting redevelopment and regeneration sites
- Promoting social inclusion and healthy living



### 2.4 Transport

- Contributing to integrated transport objectives
- Promoting sustainable travel both locally and nationally
- Improving important walking, cycling and access routes
- Creating links and fills gaps in wider networks



## 2.5 Sport and Recreation

- Enhancing an accessible resource for healthy living and active leisure
- Supporting a range of formal and informal activities
- Connecting urban areas with the wider countryside
- Promoting accessibility to all types of people



## 2.6 Tourism

- An established and well recognised tourism asset
- Linking both existing and new attractions
- Supporting leisure and holiday sectors via a range of activities
- Promoting green tourism and sustainable living

In addition, towpath work supports living and working heritage, helps to protect memories and oral history and can encourage active interest in the waterways through direct public involvement via voluntary work or similar. Another positive outcome is likely to be an increased sense of ownership or local pride, with new opportunities for raising awareness, promoting local clean-ups or developing interpretation schemes.



## 2.7 Issues to consider when planning a towpath project

Towpath improvement work needs to take account of a number of issues and constraints, some of which are the result of a historic network with limited access. These include:

- an understanding of specific waterway issues and sensitivities
- current heritage designations and the need to meet or exceed requirements
- legal constraints, such as access agreements or way-leaves for utilities and others
- possible damage to unique sites – either built or natural - by inappropriate work
- increased vulnerability due to higher visitor numbers
- increased accessibility for unsuitable uses, e.g. motorcycles
- inappropriate or excessive signage and interpretation
- differing opportunities and issues on urban and rural waterways
- limited space leading to potential conflicts between users
- restricted access and working space for contractors and others

Some towpath projects are likely to be carried out as part of a waterway restoration scheme and may even be built before the canal or river is once again open to navigation. A new and well used towpath can act as driver to encourage further work or additional funding and it is therefore worth considering the factors which will make a successful towpath in such circumstances. These include:

- Suitable widths and appropriate surfacing
- Well designed access points and signage
- Work to encourage access for all
- Careful vegetation management
- Protection of important heritage features
- Linkages to other footpaths or routes
- Information to promote longer term aims

## 2.8 Maintenance

The requirement for long term maintenance should always be identified at the outset since revenue funds will be needed to ensure the subsequent upkeep and management of any improved towpath. Budgets should be established as part of project planning and funding contributions from a range of partners may be possible. The role of contractors or an in-house workforce should be considered and there may also be opportunities to work with volunteers in order to obtain buy-in from the local community. Maintenance agreements can be a useful way of ensuring necessary work is carried out. These represent a shared and legal commitment over an agreed period of time between, for example, agencies and local authorities to provide revenue funding or in-kind support.

Photos in Section 2 Folder

## 3. Policy context

### 3.1 Waterways Ireland

Waterways Ireland was established as one of six North/South Implementation Bodies under the terms of the British–Irish Agreement of 1999, with a remit to manage, maintain, develop and restore the inland waterways principally for recreational purposes. Waterways Ireland is sponsored by the Department of Community, Rural and Gaeltacht Affairs in the Republic and by the Department of Culture, Arts and Leisure in Northern Ireland. It recognises the primary navigational function of the waterways, whether operational or currently disused, but also aims to improve its towpaths to cater for as many users and activities as possible.

Other relevant government departments include Agriculture, Food and Fisheries; Transport; Environment, Heritage and Local Government; and Arts, Sports and Tourism. In addition a wide range of organisations, including state sponsored bodies, local authorities and NGOs have responsibilities which influence elements of the inland waterway network.

### 3.2 Heritage and Environment Legislation

The Planning Act (2000) introduced a range of new measures for the protection of Ireland's architectural heritage. These included the provision of a Record of Protected Structures which replaced the system of listing of buildings. Under the Act, County Councils must seek the preservation of items listed in the Record, and no building or structure listed may be demolished or materially altered without permission. Those listed include waterway buildings, bridges and structures.

A range of habitats and protected species are found across the Irish waterway network, and these are protected through designation of conservation areas under national and European legislation. Three main types of designation may apply to the towpath environment and must be borne in mind when planning work:

- Natural Heritage Area (NHA) is the basic designation for wildlife in Ireland and is applied to areas considered important for their habitats or the plants and animals whose habitat needs protection. 630 proposed NHA were declared in 1995, and designation will proceed on a phased basis over the coming years.
- Special Areas of Conservation (SAC) are prime wildlife conservation areas, considered to be important at both European and Irish levels and selected and designated under the EU Habitats Directive. Most are designated in rural areas, and they include, for example, the River Barrow as far north as the Slieve Bloom mountains as well as tidal stretches to the south. Conservation management plans to help guide works on site are available for many SACs.
- Special Protection Areas (SPAs) are designated to safeguard certain sites pursuant to the EU Birds Directive. Many existing and future SPAs overlap with SACs. Waterway examples include Loughs Derg and Ree, together with the linking Middle Shannon Callows.

Promoters of towpath projects should aim to discuss their proposals with relevant legislative organisations, including, for example, the National Monuments Service, the National Parks and Wildlife Service, local authorities, and the appropriate Fisheries Board.

## 4. Built heritage

### 4.1 Unique and varied heritage

The unique and varied heritage of Ireland's waterways means that towpath improvement schemes need to be carefully planned in order to both conserve and promote their distinctive features. Whilst most navigations share common features such as locks, bridges and cottages, each still retains individual characteristics which add to their charm and appeal. Examples include details such as cranes or ancillary equipment, traditional bollards and water control features, and all offer opportunities to enhance the towpath environment. Issues associated with distinctive towpath heritage are outlined below.



*7th Lock, Grand Canal Circular Line, Portobello.*  
© (Roger Butler)

### 4.2 Locks

Locks are the most instantly recognisable aspect of the inland waterways, and often feature as well known landmarks. Where easily accessible, lock flights can become visitor destinations in their own right but, despite their appeal, working locks are potentially dangerous places, with deep chambers, narrow bridges and tripping hazards. Towpath improvements need to retain their functional heritage and surroundings, whilst introducing surfaces and treatments which help to signify working areas, changes of level, and pedestrian through routes. Simple paving can delineate towpaths from locksides, steps and slopes where boating activity will be expected.



*12th Lock, Royal Canal, Blanchardstown.*  
© (Colin Becker)

### 4.3 Steps and ramps

Steps and ramps form distinctive aspects of towpaths, particularly where original pavings have remained in situ. Original ramps are often much steeper than current recommended gradients, and alternative routes can sometimes be arranged, where possible, without compromising the historic fabric. This may take the form of a new ramp or series of steps set back to the rear of the towpath. Original (and usually unprotected) steps often rise sheer up the height of a lock gate, and an alternative well constructed graded ramp is therefore an essential requirement to facilitate public use. Stepped ramps can be used to reduce apparent steepness where it is impossible to provide an acceptable gradient of less than 1:12.



*Horse Bridge over River Barrow at Athy.*  
© (Roger Butler)

### 4.4 Bridges

Bridges appear in many different forms and most original structures have strong heritage value. Bridges were mainly built for functional reasons, e.g., to carry roadways, to link farmland, to cross lock chambers, or to

carry horses from one side of the waterway to another, and materials chosen often depended upon function. A lift bridge, for instance, would normally be built from timber. Towpath work around bridges tends to focus upon any narrowing, and hard surfacings are usually provided around and under bridge crossings. Early iron bridges will require sympathetic treatment and paintwork and original colour schemes may need to be researched. Often a bridge will be in close proximity to a lock and there are opportunities to improve the towpath environment in an integrated way. Modern day bridge crossings generally allow more width and headroom.



*Tow Path Bridge near O'Briensbridge, Co. Clare. © (B.J.Goggin)*

**4.5 Tunnels**

Tunnels can present a challenge to towpath works, though the only examples on the Irish waterway network are located on the Boyne Navigation and on the Ulster Canal at Monaghan. Issues may include reduced headroom, health and safety and lighting. Tunnel portals can themselves be of heritage interest, whilst sufficient space for moorings adjacent to tunnel entrances normally needs to be considered.



*The Four Pots. A disused overflow system, near Digby Bridge, Grand Canal, Co. Kildare. © (Colin Becker)*

**4.6 Water control features**

Water control features include weirs, sluices and spillways. All contribute to towpath heritage, not least because of the noise of running water and the different ways in which these were built. Though junctions between towpath and water control works are often marked by low walls or cast iron railings, any works need to consider health and safety implications of improved access.

**4.7 Small scale details**

Small scale details are an equally important part of towpath heritage, and improvement work should always take account of original bollards, mileposts, signposts, railings, walls and gates. A survey of such features is required, since often many are unobtrusive and may be taken for granted. Mileposts, for example, may have become hidden or overgrown in bankside vegetation, and railings may have lost their original purpose. Historic mooring bollards and rings also survive and need to be included in refurbishment work.



*Crane at Shannon Harbour, Grand Canal. © (Colin Becker)*



*Milestone on Park Canal, Limerick. © (B.J.Goggin)*



*Mooring Bollard, Shannon Harbour. © (Helen Kelly)*



*Dry Dock, Royal Canal, Mullingar. © (Roger Butler)*

#### 4.8 Ancillary features

Ancillary features and equipment needs to be respected. Items may include cranes, winding gear, wharves and dry docks, and all form part of the towpath environment. Many are capable of restoration as working heritage or as interesting features to interpret. Some may require special consideration or risk assessments, but with imagination and management there is no reason why a derelict dry dock, for example, cannot be safely used for its original purpose.

#### 4.9 Repair and maintenance

Repair and maintenance must be carried out with appropriate advice and care. The right choice of stonework or paint can both blend in the new and reveal the essential qualities of the old. Time invested in research, traditional techniques and careful specification will ensure the longer term conservation of towpath heritage.

## 5. Natural environment

### 5.1 Why are towpath habitats important?

Towpaths and their banks are possibly the most valuable of all waterway habitats. They have developed since the waterways were built or channelled, and were often colonised from ponds and wetlands that have since disappeared. The towpath forms an important habitat and corridor for wildlife which needs to be conserved and managed as part of any improvement work. The most obvious features are hedges, woodland or scrub vegetation on embankments, grass and herbaceous vegetation bordering the towpath, and

aquatic and emergent vegetation along the water's edge. Even narrow verges can support a range of animals and plants and they act as important refuges for local wildlife in urban areas. Towpath buildings and structures also play an important, but often overlooked, role in supporting biodiversity. Bridges, locks and weirs all provide habitat for wildlife, and in general older structures with stone and lime mortar are of greatest value.



### 5.2 Survey and consultation work

Ecological surveys should be carried out at an early stage in project development to identify any potential impacts on flora and fauna, and an Environmental Impact Statement may be required where the waterway is classified as a SAC or SPA. Whilst this may sometimes be necessary as part of formal planning procedures, such work should be considered best practice no matter what the scale or complexity of the work. In addition there is a need to discuss proposals with relevant local authority heritage and biodiversity officers and the National Parks and Wildlife Service before starting work.



### 5.3 Planting and towpaths

Native species of local provenance are generally most appropriate. New planting should aim to contribute to habitat creation whilst also conserving and enhancing the character of the waterway and its wider

context. Non native varieties of trees and shrubs can be attractive additions in urban areas, but the wider context should always be considered. Although canal hedgerows were never planted as distinctive features in Ireland, there may be scope, where appropriate to landscape character, to establish these as new boundaries and habitats. A double row of planting can quickly form a stock proof barrier.



Marginal planting not only supports biodiversity but helps to stabilise towpath banks and prevent erosion by boat wash. A range of techniques are available to support aquatic planting in both urban and rural areas. Pre-planted coir rolls or pallets can be successfully used to establish marginal plants in the most unlikely locations, and have the additional benefit of being wildlife friendly. Innovative techniques also include construction of underwater shelves and buffers to protect new planting, and transfer or relocation of existing material. Often maintenance work will result in supplies of marginal plants which, subject to approval, can be used at new sites on the same canal or waterway.

#### 5.4 Creative solutions

Management of towpath habitat must be balanced with engineering and recreational needs, but there are opportunities to provide specific enhancements for wildlife, often by planning creatively around other improvements. Repair work to an aqueduct, for example, may need to take account of roosting bats in stone crevices or breeding birds under the arches. Such work may require consents from relevant authorities, but whenever possible towpath verges should be retained and protected throughout.

Canal corridors are prime habitats and feeding

grounds for bat species, and some bridges are important roosting sites. Improvement works need to consider legislative constraints and take all necessary measures as required. A range of man made habitat solutions are available as bricks and boxes, though a simple option is to drill small holes through ordinary bricks and roughen the inner surfaces with cement mix. Bat boxes have been used with some success as towpath roosting sites and provide a substitute for hollow trees and the like.



## 6. Specific issues

### 6.1 Surfacing

Traditionally towpath surfaces were “improved” to provide a hard wearing surface using locally available materials. Materials such as stone and gravel are associated with Ireland’s inland waterways, and their continued use helps to conserve local heritage and vernacular. Towpath surfacing should relate to the individual character of each waterway as well as likely levels of use, though, if registered, some locations may be protected under archaeological legislation.

Subtle interventions are required to preserve original surfacings, though new pavings along traditional lines can be successfully introduced, e.g., in enclosed urban areas. Whenever appropriate, work should adopt traditional bonding patterns and mortar mixes, and care should be taken to select materials which complement originals in both colour and texture. However, complex patterns or elaborate pavings should be avoided, and traditional materials used where they will not compromise access for all.



Intensity of use will often determine the type of towpath treatment, with busier areas requiring a more durable surface. Sealed surfaces, such as bound gravel (sometimes with resin), are often appropriate as a more hard wearing option than crushed stone, and the even surface allows the easier passage of bicycles, buggies and wheelchairs on shared use paths. Sealed surfaces can increase impermeability which may lead to increased run off during heavy rain, though a range of products are now available which allow infiltration. All materials should be chosen to have good slip resistance.

Choice of materials is dependant upon:

- precedence, locality and historic context
- aesthetic appearance
- local availability
- durability, strength and resistance to wear



*Different surface treatments separate walking and mooring areas. © (Colin Becker)*

Shared use towpaths can use a range of different surfacing materials as follows:

- **bound gravel is a preferred surface as it can withstand heavier use, including cycle traffic, with limited deterioration**
- **loose gravel should generally be avoided for large lengths with anticipated heavy use since this can disperse easily, resulting in increased maintenance**
- **concrete block paving may be useful and cost effective for areas where use of original materials is less critical, but large areas can become visually dominant unless a range of sizes can be applied**
- **paving can be used to differentiate areas of use, e.g., functional lockside from main towpath route**
- **setts or similar can be used at bridge approaches and access points to indicate the**

**need to exercise due care and attention**

- **special surfacing for the blind or partially sighted, such as tactile blister paving can be used to denote junctions and access points, e.g., rumble strips**
- **in appropriate locations, such as rural settings, less formal grassy towpaths may be encouraged where possible, though successful shared use is likely to be more limited**
- **unless urban characteristics dictate otherwise, towpath improvements should seek to retain and enhance a vegetated water's edge where possible, in order to preserve the value of the waterway as a green corridor**



*Grassy towpaths in rural area. © (Colin Becker)*



*Traditional brick towpath, Stalybridge, Huddersfield Narrow Canal. © (Colin Becker)*

Stone pavings or similar were sometimes used for areas of more intensive use, such as bridge ramps, and heritage considerations may mean that second hand materials should be sourced. Wherever possible historic surfacings should be retained and repaired using correct lime mortar mixes. It should be noted that the dimensions of modern paviers are generally not suitable where an original appearance is important. Bonding patterns should reflect the simple utilitarian character of the historic canal environment, with stretcher bond usually being most appropriate.



Grass surfacing at lockside incorporating mooring bollards. © (Colin Becker)

Surfacings around locksides require attention to detail and could include:

- restoration of hard surfaced areas under balance beams, including heel grips
- in urban areas, or where appropriate, a strip of paving to extend the lock wall coping either side of the lock, with additional paving to operate ground racks
- in rural areas mown grass surfacing can suffice, except where heavy wear and tear are anticipated
- installation of bollards and, where feasible, safety lock ladders



Hard surfacing for heel grips in arc of balance beam. © (Colin Becker)

## 6.2 Cycling

Though Waterways Ireland do not promote cycling, several of its towpaths appear to have long term potential to be managed and promoted as safe traffic free routes for people of all abilities. Other sections are clearly unsuitable for overriding safety reasons, including long steep slopes to water and hazardous tree roots along well wooded lengths.



If feasible, exact layout and alignment will always need to be determined by local circumstances, such as a fixed narrow towpath or important ecological considerations. Sustrans, the organisation responsible for successfully developing the UK National Cycle Network, suggest a minimum width of 2 metres for comfortable shared use paths and preferably 2.5 metres along busy lengths. The dimensions and line of an improved towpath should preferably allow for the retention of a vegetated verge along both the bank and boundary. Sustrans also recommend a minimum width of 0.5 metre (1 metre preferred) for the bank verge in order to distance both cyclists and other users from the water's edge.

In some circumstances creation of an improved towpath suitable for cycle use may not be feasible unless bank repair or protection work is carried out. Erosion over many years may have reduced the original width, but reinstatement can be achieved through bank protection work.

Where possible, this should be built using original materials, such as stone copings, or designed using green bio-engineering solutions which offer habitat benefits. It is important to retain boundary vegetation during such work.

User conflicts may arise at bridge points, and to a lesser degree, by lock flights. Towpaths tend to narrow at many bridges, height is often reduced, and



sight lines, particularly for cyclists, are not clear. For safety reasons, where appropriate and not detrimental to heritage, railings alongside the towpath edge could be considered either side of bridge holes. Rumble strips can also be installed to encourage cyclists to dismount or slow down, and signage should be used to encourage responsible behaviour, particularly where pedestrian activity is high.

The need for access ramps, sufficient widths, and environmental and safety considerations often means that a towpath cycleway should be the subject of a full feasibility and design study. Sustrans have adopted this approach in developing and extending their National Cycle Network onto parts of the UK towpath system. In Ireland it will sometimes be possible to examine the feasibility of parallel or off-side routes so that different users do not share the same path, e.g., large lengths of the Barrow Line carry both a towpath and a road or track. Alternatively cycle routes could be developed and promoted which combine suitable lengths of waterway with other suitable routes, though new alternative off-road routes are not always straightforward.

### 6.3 Angling



*Angling Competition, Pike Bridge, Royal Canal.*  
© Waterways Ireland

Ireland's inland waterways offer some of the finest coarse angling in Europe, and they are used for both leisure and match fishing. Waterways Ireland promotes angling on each of their navigations, though towpath improvements need to consider possible conflicts between users.

Anglers require a reasonable amount of space to sit and lay out equipment, and if space is

confined encroachment onto the towpath may result. A wider verge provides space and, where there is room, dedicated angling pegs or bays can be created. Access to these can require a lengthy walk, with equipment, from limited parking places and their location therefore needs consideration.



*Disabled Fishing Stands, Bagenalstown, Barrow Navigation.* © Waterways Ireland

Other issues to consider include location of overhead power lines, which can be dangerous to anglers using long rods, locally significant wildlife areas which may need a stand off zone or blanket ban, and proximity to locks and moorings.

Where feasible, timber platforms which project from the towpath can be installed to help formalise angling, but can generally only be built where navigation allows. Platforms provide a solid base and a degree of privacy, so reducing potential conflict with other users. Level access should be provided between towpath and platform.

Facilities for disabled anglers can be incorporated and need to be designed to accommodate minimum towpath travel. They will probably include carefully located accessible platforms which safely border or overhang the water. Disabled anglers can also fish from towpaths with hard surfaces and solid bank protection, but traditional informal locations amongst grass and marginal vegetation are unsuitable.

Some facilities for disabled anglers have already been installed in Ireland. On the Barrow Navigation at Bagenalstown, Waterways Ireland has developed a length accessible to wheelchair use with five bays and adjacent parking (see case study 8.11.2).

## 6.4 Access for all



Riverside w/c access  
© (Anne-katrin Purkiss, the Countryside Agency)

Canals and navigations provide an ideal way for everyone to enjoy the outdoor environment. They are often close to where people live and most waterways have wide flat towpaths with few steep gradients. Although programmes to encourage access for all are usually designed to benefit those with disabilities, such work also increases the opportunities for everyone of all ages and ability to make full or better use of the towpath network, including, for example, parents with child buggies or those temporarily less mobile.

The National Disability Authority in Ireland estimates that 8.3% of the population has some form of disability. The Disability Act (2005) states that public bodies should "as far as practicable, ensure that the whole or a part of a heritage site is accessible to persons with disabilities and can be visited with ease and dignity". However, access should not always be considered in terms of physical access and the provision of information and interpretation (sometimes called programme access) are equally important.

Towpath access can benefit many people, but valuable habitats or heritage features should not be removed. Careful consideration must result in minimum impact on the waterway environment. For example, traditional grassed towpaths can be difficult to make accessible to everyone, and the principle of maximum appropriate access may need to be applied.

Changes of level are often associated with towpath structures such as bridges and locks, which were designed as functional rather than aesthetic features. Original detailing was

built to accommodate the needs of horses and resulted in slopes, steps or grips built to working dimensions. Such features should be conserved, and provision for new access improvements should seek retain the original detailing.

A number of issues need to be considered in relation to towpath improvements for people with disabilities:

- **Barriers:** ideally these should be removed, or alternative routes or programme access improvements considered. Where motorcycle barriers or gates in connection with operational requirements are deemed necessary a thorough review of options should be undertaken. Solutions can range from the use of radar keys to the full elimination of barriers by installing these at access points rather than along the towpath itself
- **Widths:** towpath and access points should be a minimum 1.2 metres wide in urban areas, and 1m wide in rural areas, though 2 metres is usually accepted as the basic norm. There should also be a clear airspace 2 metres in height. Whilst restricted widths may be unavoidable, e.g. at bridges, information to explain such constraints, and directions and distances involved, should be provided at the first available opportunity
- **Steps:** steps are regarded as a barrier to disabled access if risers are greater than 15mm, in which case it would normally be reasonable to consider improvements if heritage permits
- **Ramps:** any gradient steeper than 1:12 is normally considered to be an access restriction. Ideally regrading should be considered, but this is usually difficult given space constraints on or beside a towpath. Where possible, landings, resting places and handrails should therefore be used to develop any necessary improvements
- **Crossfall slopes across the towpath:** although important in helping to shed water from the towpath into the waterway, if such slopes are greater than 1:35 these can become a problem to wheelchair users. A review of options to balance requirements may be required

Specialist advice is available in relation to access for all, and relevant details and organisations are listed in the appendix.

## 6.5 Horses



Horses are currently not allowed on many towpaths in Ireland. At one time all boats and barges were towed in this way and canal buildings and features were designed with horse-power in mind. Some horse turnover bridges, for example, at Athy, and smaller less obvious fittings are still in place, but very few are now used for their original purpose. The waterways have changed or adapted to an extent that it is now difficult for horses to travel on towpaths, and there are accompanying access and safety issues. The installation of motorcycle barriers, incorrectly located signage and uncontrolled tree growth can easily prevent the free passage of horses and horse-drawn boats.

If lengths of towpath are identified as being sufficiently wide, Waterways Ireland may, in the future, be minded to permit riding on certain sections under special licence or permit, since it is recognised that horse use is not easily compatible with other users. If horses are accommodated, and if the original gravel, ash or stone surface has been lost, replacements (other than grass) need to be non-slip. Appropriate materials will vary according to the location, but asphalt and similar are potentially slippery and hard on horses' legs.



Impassable barriers impede any potential use of the towpath by horses, as well as wheelchairs and buggies, and could result in dangerous detours on roads with motor traffic. Measures to prevent motorcycles and others should ideally be installed at access points rather than along the towpath itself. Where some form of physical barrier is unavoidable different options should be considered, e.g., low stumps with relatively narrow gaps through which a horse's legs can pass. Gateways need to be as wide as local circumstances allow, and narrow openings can frighten some horses - the British Horse Society advises a 1.5 metre minimum clearance to accommodate horses and riders.

Other issues to consider include:

- **The decks of bridges should be stable and non-slip, preferably with no gaps through which the water can be seen. Any decking boards should not run parallel to the direction of travel, and smooth bricks, stone or asphalt require a shallower approach angle than rough surfaces. Cross-struts can be installed to support hooves on bridge slopes, and have been successfully reconstructed as elements of traditional working heritage on several canal towpaths in England**
- **Horses can suffer severe injury if they are taken around sharp bends, e.g., chicane barriers, and the British Horse Society recommends that the space required to turn (egg, in order to close a gate) is a minimum diameter of 2.7 metres. Headroom under bridges needs to be retained as per original construction, and new bridges should be built to take into account the future needs of horses as well as walkers**
- **Mooring rings and bollards should be located at the water's edge in order to avoid trip hazards from ropes and cables across the towpath**
- **Any signs, posts and poles should be located on the landward side of the towpath so they do not form unnecessary obstructions**
- **Where a horse-drawn trip boat operates, casual towpath moorings should be restricted, any swing-bridges should be designed to avoid catching towing lines on railings, and gates across the towpath should open away from the water to avoid catching towing lines**

- **Softer bank protection is preferable since should an accident occur it is almost impossible to get a horse out of the water across retaining walls or piling. In London stepped horse ramps were traditionally installed at intervals in the water alongside the towpath**

See also case study 8.9.

## 6.6 Crime prevention

Safety and security issues should be considered at an early stage. Work to help ensure personal security and reduced anti-social behaviour should aim to create user friendly waterside spaces in which visitors feel confident and comfortable. This can be achieved by providing clear views along the waterway, with sufficient numbers of clearly marked or visible access points. In addition, careful selection of site furniture and materials, as well as increased liaison with adjacent landowners, developers and businesses, can help to substantially reduce incidences of vandalism and damage. Part of the appeal of the waterway environment is its relative seclusion combined with the promise of unexpected views, and a balance is often needed between safety and preservation of local character. However, planning and design work, particularly in urban areas, should aim to avoid creating:

- blind spots where offenders can hide unnoticed, e.g., vegetation, dark corners, recesses and shaded areas
- confined or restricted spaces where there are few options for escape
- isolated areas which lack informal surveillance

Planting may be effectively used to deter criminal activities, and the use of dense masses of prickly plants can discourage illegal or unwanted access onto or from towpaths. Native species should be specified when possible and can be used in association with buildings to deter access, e.g., under windows, and to supplement and screen security fencing adjacent to towpaths.

Lighting can both encourage use of the waterside after dark and discourage anti-social behaviour, though towpath schemes need to be carefully considered, not least because of maintenance requirements. Column lighting will rarely be suitable on towpaths, but

may be appropriate on larger scale public quaysides. Care should be taken in selecting a sympathetic design, height and quality of light. Wall mounted lighting is recommended wherever possible, and recessed lights are usually best suited to withstand vandalism. In urban areas, bollard lighting is often vulnerable to damage.

Specification and design of towpath surfaces should bear in mind crime prevention. Rigid materials are more easily dismantled than flexible surfaces and can be subject to theft or abuse. In areas of risk, where heritage demands the use of traditional materials, specifications should provide extra strength and cohesion to surface treatments, e.g., brick paving on a concrete foundation with a mortar bed. Where vandalism levels are high, there may be no alternative other than to substitute traditional paving for a flexible surface material.

Problems such as vandalism, graffiti and anti-social behaviour often result from a lack of interest and respect. Community action groups which actively work towards improving the waterway environment can help create a sense of local ownership and pride which can make towpaths safer and more secure. Volunteer towpath wardens have been successfully engaged at some locations in England to support crime prevention measures, and in one conurbation a partnership project with local police enabled a dedicated project officer to successfully address anti-social behaviour on and around the towpath. Similarly canal rangers can act as eyes and ears and can work with local groups, schools and communities to encourage greater use and appreciation of the towpath environment.

## 6.7 Overcoming user conflict

Work carried out for the former Countryside Agency in England found that conflict on shared routes such as towpaths is relatively infrequent, and that some users change and adapt their pattern and speed to accommodate others. Further research showed that route width and maintenance were important factors, and that policing or wardening helps when users know that they are actively managed.

Consultation work can help overcome towpath conflict between different users, and British

Waterways, for example, holds regular forums at which concerns and issues can be discussed in public. These are held at both national and local levels, and representatives from various organisations and user groups are invited, including anglers, cyclists, walkers and boaters.

In addition, codes of conduct can help to detail the rights and responsibilities of users in order to reduce ambiguities around issues such as simple courtesy, speed and right of way. British Waterways has produced an overarching waterway code aimed at all users, with more specific guides written to encourage sensible towpath behaviour by cyclists and anglers.

Key messages in the cycling code include:

- give way to others on the towpath and warn them of your approach – equip your bike with a bell or equivalent - pedestrians have priority
- dismount under low and blind bridges, or where the towpath is narrow – get off and push
- watch out for anglers' tackle and give them time to move it before trying to cycle past
- never race one another or perform speed trials
- third party liability insurance is recommended
- take special care if cycling at night, and use front and rear lights
- access paths can be steep and slippery - join or leave the towpath with care
- avoid cycling where tyres would damage the towpath, e.g., when wet or soft

Key messages in the angling code include:

- make sure the towpath is easily passable by keeping your fishing tackle tidy
- don't obstruct locks, bridges, designated moorings, water points or turning points
- boat crews need access to the bank within 25 metres of locks or moveable bridges
- discarded hooks and lines, bottles and tins can kill or injure wildlife
- respect the privacy of people on occupied moored boats, including those on the opposite bank - try to fish at least 15 metres away
- don't fish within 30 metres of overhead power lines

Information panels located at access points onto shared use towpaths can be a useful way of promoting good behaviour, as well as offering contacts to report comments, complaints or conflicts.

## 7. Checklist

Despite the increasing use and popularity of Ireland's towpaths, any improvements should seek to retain traditions and identity. It is important to keep the differences between one waterway and another as distinctive as possible and, given the historic environment, successful canalside schemes often need to be subtle and unobtrusive.

The approaches outlined in sections 1-6 can be supplemented by using the following checklist which encourages a broad view of the towpath environment and its surroundings. The ways and means of dealing with many of these issues are described in the subsequent case studies.

- Does the work involve any scheduled sites where specialist work may be required?
- Do planning controls affect the proposed work?
- Do hard surfaces need to be introduced or renewed?
- Are soft surfaces suitable or is investment needed?
- Can appropriate local materials be used?
- Would different kinds of design treatment help to exploit or interpret the canalside?
- How can towpath work be designed to benefit boaters?
- Do walls, fences or other boundaries need to be constructed?
- Have habitats and wildlife been fully assessed and opportunities identified?
- Do eyesores or visually intrusive features need to be screened or treated?
- Can canalside areas of derelict or unmanaged land be improved too?
- What lengths are particularly suitable for specific activities?
- How can access for all be designed and encouraged?
- Can the towpath link to other footpaths, routes and attractions?
- Are signs, bridge numbers, bollards, etc consistently designed and maintained?
- Are railings really required or can they be limited or eliminated?
- If appropriate, is there scope for interpretation and artwork?
- Can canalside landowners and businesses be encouraged to play their part too?
- Has maintenance funding been secured?

## 8. Case Studies

The following case studies, mostly from the UK, have been selected to illustrate the range of issues and solutions in relation to towpath improvement. These cover approaches to, and scenarios for, urban and rural waterways and show how different projects have been developed in relation to local circumstances. All have been chosen as examples of best practice to help guide further change whilst also conserving Ireland's waterway heritage. Three Irish examples are included, together with two examples showing how innovation can be successfully applied to towpath developments. The final case study describes the strategic and wide-ranging approach undertaken during and after the restoration of the 140 kilometre Kennet and Avon Canal in Southern England.

Each case study includes a pair of bullet points which, at the start, summarise key aspects and, at the end, list best practice or lessons learnt.

### 8.1 Selby Canal, North Yorkshire

- Towpath used as part of the Trans Pennine Trail
- New canalside park links to the town centre
- Significant environmental improvements, incorporating facilities for anglers and boaters
- Potential towpath conflicts reduced

The broad 20 kilometre Selby Canal in North Yorkshire links the River Ouse with the Aire and Calder Navigation, and the three kilometre section of towpath between Burn Bridge and Selby Lock (where the canal meets the Ouse) now forms part of the multi-user Trans Pennine Trail.

A programme of improvements were carried out in the late 1990s to encourage better links between the canal and the historic town centre. The works were initially identified in a detailed canal corridor study, funding for which was arranged via a range of interested partners.

Proposals were developed to create a linear canalside park, approximately one kilometre in length, linking with pedestrian routes to the

town centre and the regenerated River Ouse waterfront. The scheme included improved towpath surfacing, significant landscape work, better access and signage, seating and public art, car parking, and new provision for anglers.

Issues to be addressed included measures to reduce user conflict, provision for disabled access, refurbishment of an original swing bridge, liaison with neighbouring industrial premises, and positive involvement of local people and schoolchildren. Local schools were invited to contribute ideas for a sculpture to celebrate the history of the canal, and a mosaic was also developed with their input. Industrial premises were asked to consider the ways in which their towpath boundaries could be visually improved, and funds were provided to assist.

An innovative part of the work included the development of a dedicated off-side walkway which caters for anglers without potential conflicts from other users. This also included a series of timber platforms specially built to cater for the needs of disabled anglers. Car parking for anglers was also provided.

Towpath surfacing was a combination of limestone with dust and spray and chip, with timber boards or stone setts used as edging. All were chosen to cater for multi-use including cycling. The needs of boaters were built into the work, with new towpath mooring bollards and improved facilities in the small basin above Selby Lock.

A second phase of work allowed towpath improvements to continue further south and included an additional fifty angling pegs, with five designed for disabled use. Costs for this two kilometre project were around £150,000 including interpretation and two additional public art projects.

The improvements have been successfully maintained and the promotion of the Trans Pennine Trail has led to increased use by visitors. Initial funding came largely from a government Single Regeneration Budget grant, with support from British Waterways and Selby District Council, but subsequent work was funded by Landfill Tax credits with input from the newly created Selby Groundwork Trust and Selby District Angling Amalgamation.



- Initial corridor study identified opportunities and helped create new partnerships
- Involvement of local schools and communities ensured their support
- Working with users helped identify their requirements
- Where possible, always consider the wider potential - including both sides of the waterway and adjacent properties



Selby Canal – improved towpath connecting town centre with rural fringe, including landscaped linear park, seating, small car park and public art. The towpath forms part of the Trans Pennine Trail multi-user route and is surfaced with low maintenance spray and chip. © (Roger Butler)



View north towards swing bridge and Selby Basin. The linear park includes semi-mature trees and shrub planting between the towpath and adjacent road. A trip rail defines the public towpath from the hard standing used for boat moorings. © (Roger Butler)



An offside path enabled easily accessible fishing platforms to be installed on the opposite side to the towpath, helping to prevent conflict between different towpath users. © (Roger Butler)



View along towpath with seating, litter bins and maintained planting. This section of canal now forms an attractive pedestrian gateway into Selby. © (Roger Butler)



The Trans Pennine Trail continues south from the town centre, where a limestone surface has been provided. © (Roger Butler)



A sculptural marker provides a focal point, with references to the canal's history and its relationship to the town © (Roger Butler)

## 8.2 Nottingham Canal

- Towpath runs through the heart of the city centre
- Connects to train and bus stations and major employment sites
- Worn and unsuitable towpath replaced with high specification surfacing
- Long term maintenance costs and responsibilities shared between agencies

A seven kilometre length of towpath in Nottingham is now being used by increasing numbers of cyclists and pedestrians following major reconstruction work. The towpath was underused because of its poor surface condition and encroaching vegetation. The improvements have provided better links from the east and the west into the city centre, where there are a number of major employers as well as the bus and train stations and the new tram terminus.

The unbound surface of the towpath had worn away, resulting in potholes and the ponding of water. The two metre width had been reduced to half a metre in some places due to encroaching vegetation from the towpath edgings and across the canal coping stones. In addition, many of the twenty access points along the route were stepped, restricting access by cycles, wheelchair users and parents with pushchairs.

Improvement works anticipated high pedestrian use of the central section of the route and this was surfaced using block paving, selected to replicate the appearance of traditional stone setts. The suburban less intensively used areas were laid with an asphalt base and a crushed stone chip surfacing. The towpath was widened to three metres and access for wheelchairs, cyclists and pushchairs was provided where feasible. A footbridge carrying the towpath over the entrance to a marina was reconstructed in order to meet disability standards. Motorcycle barriers were not installed since abuse is quickly reported by local people and relevant action taken.

Heritage considerations included listed building consent to carry out work on and around an original horse turnover bridge, and habitat improvements to an adjacent stream course which is supplemented by water flow from the canal.

The programme of improvements cost almost £1 million and were funded by a partnership

comprising the East Midlands Development Agency, the Greater Nottingham Partnership, Nottingham City Council's Local Transport Plan, British Waterways, the Inland Waterways Association and grants from Wren Recycling. The phased programme of works was successfully completed between 2002 and 2005. Pedestrian counters show that more than 30,000 people per month are now using the city centre towpath for both leisure and journeys to work.

British Waterways and Nottingham City Council plan to renegotiate a twenty one year access and maintenance agreement, based on the anticipated costs of looking after the new towpath and its expected life before renewal work may be required. This will form a legal agreement which also confirms a licence to cycle without need for a permit, and indemnifies British Waterways for any non-normal activities taking place on the towpath. Such agreements are a positive way of recognising and sharing the costs of high quality long term guaranteed maintenance, which may be undertaken by different parties depending upon local circumstances. For example a local authority may opt to carry out the scheduled maintenance via their own direct workforce, or could alternatively provide and direct funds to help meet any costs incurred by British Waterways. A third option would entail shared funding to pay for contract labour.

- **Transport funding can help fund towpath improvements for sustainable travel**  
Aim to improve access points as well as the towpath
- **Secure legal agreements to help guarantee maintenance**
- **Improved towpath can lead to significant increase in use**



*City centre towpath in Nottingham, paved with concrete setts to cater for heavy use by commuters, shoppers and visitors © (Roger Butler)*



*Narrow rutted towpath at Beeston, west of Nottingham city centre, prior to improvement  
© (Roger Butler)*



*Crushed stone chip surfacing, following towpath improvements at Beeston © (Roger Butler)*

### 8.3 Grantham Canal, Lincolnshire

- **Semi-derelict waterway with strong voluntary involvement**
- **Cul-de-sac canal promoted as a leisure corridor**
- **Different surfacings used to suit different locations**
- **Site of Special Scientific Interest**

The Grantham Canal was built to transport goods and materials between Grantham and Nottingham, and continued to carry commercial traffic up to the 1930s. A lengthy period of decay and neglect followed and large sections of the 52 kilometre cul-de-sac waterway either dried out or were reclaimed by nature, and the link with the River Trent was lost and built over. However, in the late 1960s volunteers recognised the need to both preserve the line of the canal and conserve its built and natural heritage. Since then much work has been achieved. Locks have been repaired to working order,

bridges rebuilt and large sections dredged in order that boats could return. Groups of volunteers have tackled the encroaching vegetation, felling overhanging trees, cutting back overgrown banks and clearing out excessive weed growth. Their efforts have led to wider support and over several the local authorities and others have funded restoration works to help develop and promote the wider benefits of canal related tourism. In 2007 the East Midlands Development Agency provided £400,000 to dredge and improve a two mile length south of Grantham in order that it could play host to the National Trailboat Rally. Key organisations and keen volunteers now work together to continue restoration work, with the aim of creating a continuous leisure corridor through the rural Vale of Belvoir. The canal crosses and passes through three counties and three local authorities, and the sections of towpath in Nottinghamshire and Lincolnshire have now been improved to provide access for all, particularly from the urban centres at each end. The section in Leicestershire is designated as a Site of Special Scientific Interest and the towpath has been therefore left as a green sward. Each length has been improved using limestone with dust on a hardcore base to provide a hard wearing two metre towpath. Environmental surveys were carried out prior to the work, and liaison with local communities and landowners took place at specially convened meetings. Concerns were expressed about the visual impact of the new surfacing, particularly since the majority of the towpath had been grassed for many decades. However efforts were made to retain vegetation, manage hedgerows, and conserve areas of wildlife interest, and the new surfacings are now accepted as part of a popular multi-use path.

Part of the Sustrans National Cycle Network uses the towpath for six and a half kilometres between the A1 at Grantham and Woolsthorpe, and a maintenance agreement is in place between British Waterways and the local authority to ensure funds are available for regular upkeep. At the Nottingham end, a spray and chip surfacing was specified along a kilometre length which provides popular local access to a major supermarket, funded via Landfill Tax credits from Wren Recycling. The remaining 23 kilometres at the Nottingham end were similarly improved using limestone with dust.

Although several sections of the canal still await restoration, the improved towpath has helped bring new life to the waterway and has increased its potential for active and passive recreation by both locals and visitors. It is anticipated that the renewed use of the canal corridor, together with opportunities for boating, will help generate further funding to ultimately once again link the canal with the River Trent.

- Towpath improvements have led to additional funding
- Canal has become a focus for partnership working between local authorities
- Consultation with landowners and local communities important
- Maintenance agreement needed to secure future standard of towpath cycleway



*Rural towpath on the Grantham Canal, improved with limestone surfacing to provide access along a popular length of the waterway © (Roger Butler)*



*Whilst this section of the Grantham Canal awaits restoration and remains closed to boats, the towpath has been improved to provide a link from Grantham town centre to the countryside © (Roger Butler)*

## 8.4 Caledonian Canal, Scotland

- Unique canal linking four Scottish lochs
- Linear trail established along Great Glen
- Major works to improve a scheduled ancient monument and visitor attraction
- Use of high quality hard wearing materials to cater for high levels of use

The broad Caledonian Canal, opened in 1822, links four freshwater lochs in Scotland's Great Glen via a series of artificial cuttings, totalling 34 kilometres, connecting Fort William on the west coast with Inverness on the north east coast. At its highest point the canal is 35 metres above sea level and 29 locks, including three well known flights, help boats, including sea-going fishing boats and holiday craft, navigate through mountainous Highland scenery. Since lochs form sections of the canal, a continuous towpath has never been fully established, but a series of initiatives have promoted new linear linked routes through the Great Glen.

The Great Glen Way is now established as a long distance walking and cycling route covering the full 117 kilometres between Fort William and Inverness. A series of mountain bike trails have also been established and whilst it is possible to link these by cycle, work is also underway to plan a new high quality route for touring bikes.

With the exception of the towns at each end of the canal, and the parallel main road through the Glen, the waterway passes through wild and unspoilt countryside and connects only to small villages or settlements. Apart from views across Loch Ness, Fort Augustus forms the main visitor focus on the canal, with an impressive flight of five locks, shops and restaurants. The lock flight is a scheduled ancient monument and visited by many thousands of tourists each year. As part of plans to improve facilities in the village, the local community supported plans to fully upgrade the site and remove poor quality surfacing and awkward changes of level. The locks were lined by grass banks and wide footways, with local roads running parallel along each side. A contemporary but sensitive scheme was prepared by British Waterways which respected the grassy slopes and the famous view up the flight, and this won approval from Historic Scotland.

The scheme included:

- new Caithness stone paving
- stone steps adjacent to the lock chambers and roads
- grass banks incorporating recessed and hidden stone seats
- new trip rails, furniture and signage
- lighting columns
- towpath improvements in crushed stone at either end of the flight

The works were carried out in tandem with major engineering work which repaired lock chambers and adjacent masonry. Careful attention was paid to original coping stones, and a number of historic features such as capstans, bollards and a crane were conserved and restored.

The flight is now recognised as the central showpiece at the heart of the village and a small visitor centre has opened on the north side of the locks. The choice of robust and largely maintenance free materials has meant that the increasing numbers of tourists can enjoy the canalside setting whilst boaters benefit from dedicated operational areas delineated by paving layout and changes of level. Within the constraints of a well known and nationally recognised historic site, the relatively wide banks on either side have been designed and constructed to safely accommodate as many different users as possible.

Funding in the region of £350,000 was obtained from the EU European Agricultural Guidance and Guarantee Fund, which aims to support rural development expenditure.

- Pavings and grass banks designed to cater for different users
- Beneficial to integrate engineering work with towpath refurbishment
- Sensitive scheme used landscape architects to help gain support of Historic Scotland
- Successful case made for rural development funding to support canal works



*Fort Augustus lock flight before renovation and improvement work, with wide grassy verges and a mixture of surface treatments. © Roger Butler*



*Fort Augustus lock flight after major landscape improvements, including new Caithness flagstone paving, new access points, seating and lighting. © Roger Butler*



*New steps at Fort Augustus lock flight, incorporating high quality stone work, paving and reprofiled grass banks. © Roger Butler*

## 8.5 Ratho, Union Canal, Scotland

- Newly restored canals linking Glasgow and Edinburgh
- Links to a charity proving boat trips for people of all abilities
- Range of access and related projects
- Community and volunteer involvement

The Forth & Clyde Canal and the Union Canal, which together link Glasgow and Edinburgh, were restored as part of a Millennium project – the Millennium Link - and reopened in 2001. An improved towpath formed a key part of the project, which also involved major bridge, lock and motorway engineering work. Work included new surfacings, dry stone walling and hedgerow planting, and seating, signposting and elements of public art. Both canals are scheduled ancient monuments.



*The Bridge Inn at Ratho. © British Waterways Scotland*

Access for all measures were also included and at Ratho, a canalside village to the west of Edinburgh, a number of small scale initiatives have helped add value to the new towpath. These have been designed to make it easier for people of all abilities to visit and enjoy the canal. In addition they have been designed in the context of the canal's heritage value. Ratho is a well known canalside centre with a popular pub and the long established base for the Seagull Trust, which operates specially adapted craft enabling people of all abilities to take to the waterways.

Projects at Ratho have included:

- new local whinstone towpath surface
- retention of original towpath stone setts
- easily accessible car parks
- ramps and access points to cater for wheelchair use

- specially designed picnic areas and seats
- tree and shrub planting
- a sensory hedge

Partners have included British Waterways, Edinburgh Green Belt Trust, Paths for All, Edinburgh Canal Society, and the local volunteers from Ratho Environment Group and the University of Edinburgh. Budgets have been relatively low, e.g., shrub planting cost £2000, and where possible local businesses, such as a blacksmith, were involved.

Interest in the canal at Ratho is strong, and the planning brief for a proposed new housing and marina development east of the pub and Seagull Trust includes references to pedestrian, cycle and wheelchair use of the towpath and plans for a footbridge which will have low visual impact on the setting of the canal. Innovative and high quality designs are requested. The brief also refers to the canal as a Site of Importance for Nature Conservation which needs to be taken into account.



*Union Canal Towpath at Ratho. © British Waterways Scotland*

Along the Millennium Link other such towpath projects are progressing too. These include a full audit, with action plan, of towpath accessibility, and a programme of hedgerow planting, and a series of public walks called "Feet First" which are arranged to encourage local people to see their towpath as a local facility for healthy activity. The towpath audit includes a number of recommendations for future work, including passing points for two wheelchairs and discussions with Historic Scotland to determine the best ways of sympathetically improving access to aqueducts, tunnels and bridges.

- Local groups can add value to major canal projects

- Development briefs should take account of canal character and towpath issues
- Projects at established locations can generate enthusiasm and support
- Access improvements can act as a catalyst for a range of new initiatives



*Trip Boats at Ratho. © British Waterways Scotland*

## 8.6 Market Harborough, Leicestershire

- Regeneration of a market town canal basin
- New public realm created around parts of the waters edge
- High quality specification and materials
- Towpath improved as a link to the nearby main canal



*Towpath treatments at the restored Market Harborough Basin, with granite setts providing a trim to the water's edge and stone flagstones marking the main pedestrian walkway around this part of the basin © Roger Butler*

The tightly enclosed canal basin at Market Harborough in Leicestershire forms the terminus of an 8 kilometre branch of the Grand Union Canal. Originally built for transporting coal and timber, the basin is located a short distance from the town centre

but is largely hidden from nearby roads. By the 1970s the basin was redundant and the surrounding warehouses, offices, workshops, stables and mill were in need of renovation.

In the 1990s work was undertaken to comprehensively regenerate the basin and its surroundings. The water was extended on two sides in order to accommodate more boats, and two new residential buildings were constructed. The original historic buildings have now found new uses as offices, housing and a restaurant. The single storey stables were converted into four small business starter units, and a canal boat hire business has been established. Funding was largely commercially driven, though a local charitable trust contributed funds for landscape works.

Significant investment was made to improve access to and around the basin whilst retaining the heritage character of the site. Works included new high quality paved towpaths, seating and artwork, attractive soft landscaping, and facilities for visitors and boaters. Details include stone copings, granite setts, brick paviers and timber footbridge. Materials were chosen to help guide visitors around the site and the use of waterside railings is limited. Landscape work with new walls and enclosures has helped screen car parking and operational areas.

The towpath connecting the basin with the main line canal was also improved, and now forms part of the National Cycle Network. A partnership between British Waterways, Sustrans, Leicestershire County Council and Harborough District Council raised the necessary funding to provide a fully accessible all weather limestone path. This was designed to be suitable for walkers, cyclists, wheelchairs and buggies, and links the popular tourist and heritage site at Foxton Locks with Market Harborough. At popular mooring points, and in order to prevent wear and erosion, the towpath incorporates a strip of precast concrete setts approximately a metre wide. Elsewhere, where space permits, a grassy sward has largely been retained between the path and the water and this allows for safer use by cyclists and other users. This also helps to reduce possible conflict with anglers.

- Contemporary features can be successfully integrated with traditional canalscape
- Commercial investment and regeneration can fund high quality work

- High quality scheme with local businesses and residents creates respect – no damage or vandalism reported
- Work led to enhancements to the towpath beyond the basin



Canal and towpath at the entrance to Market Harborough Basin. Concrete paving has been used to help indicate boat moorings with an adjacent limestone path as the main towpath. © Roger Butler



Towpath detail at Market Harborough Basin, with waterway copings, granite setts and stone flagstones © Roger Butler

## 8.7 RAVeL, Belgium

- Strategic network across Wallonia
- Large scale waterways still used for freight
- Wide towpaths originally built for vehicles
- Separate lanes constructed where appropriate

RAVeL stands for "réseau autonome de voies lentes" - an autonomous network of canal towpaths and disused railway lines now made available for non motorised multi-use in the Wallonia region of Belgium. The RAVeL project aims to convert 600 kilometres of towpaths and 1200 kilometres of disused railroads into safe and accessible greenways, and 60% of the towpaths and 20% of the disused railroads

are already available. Initially a budget of 1.25 million euros was made available to support initial projects, and the first section opened in 1998. Four strategic routes are now established, and a fifth is planned, and though other routes connect to RAVeL these are managed by local councils. Belgian waterways were built to a large scale and still operate with significant freight movement. Consequently their towpaths were often the equivalent of roadways and this has provided opportunities to create wide safe routes often set back some distance from the water's edge.



Cycling on the RAVeL towpath network at Pommeroeul, Belgium © Public Service Wallonia

The RAVeL project is orientated towards recreation and tourism, and initially no plans were made for trails in urban areas. However, the success of the scheme has seen it extended into towns and cities and urban green spaces. 50% of the former rail network is now available for greenway projects, and the towpaths of the Brussels Canal and the Sambre and Charleroi Rivers have been fully upgraded for public use. Problems along the Sambre included the lack of towpath in places, and the number of factories and industrial premises using it for loading and unloading goods. Liaison with landowners and businesses has been essential, but in some locations users are advised to be aware of waterway based operations.

Feasibility studies are undertaken to determine which new sections can be progressed. Key factors include continuity and linkages, connections to urban centres, and access to tourist destinations. Site surveys are carried out, e.g., if a proposed route crosses a protected area an ecological study is required. Technical studies are prepared to assess dimensions and layouts, and arrangements made for construction and maintenance. Surface treatments have generally been low



key, such as limestone or gravel, to cater or pedestrians, cyclists and riders. Where the towpath or track had become a roadway and needs to remain so, separate lanes or paths are sometimes being built for cyclists and others. Waterways heritage is conserved and promoted whenever possible, and the RAVeL network links to the hydraulic lifts on the Canal du Centre, now scheduled as a UNESCO World Heritage Site. Local features are recognised too, including bridges and industrial archaeological sites such as water mills, and efforts have been made to encourage residents to use the network in order to visit their local heritage.



RAVeL towpath at Antoing, Belgium © Public Service Wallonia

Motor vehicles are prohibited on the towpaths, and the only authorised users of motorised vehicles are operational and emergency staff, contractors and employees of the Transport Ministry. Disabled persons are also allowed to use motorised mobility equipment, and in places anglers may take their vehicles.

The RAVeL routes are now classified as a public network, though prior to the mid 1990s the towpaths and waterside access routes were managed specifically for waterway maintenance and public access was only tolerated. This has meant the Ministry of Transport are now obliged to maintain towpaths for public access and, if interrupted, find an alternative route.

The success of RAVeL has led to political pressure to further develop the network and dedicated budgets have increased year on year, together with funds to promote the routes to both locals and visitors.

- **Busy operational waterways can successfully accommodate towpath recreation**

- **Important to link multi-use networks into towns and cities**
- **Alternative routes should be provided if towpath access is not possible**
- **Political support leads to further funding**



Interpretive signage on RAVeL towpath at Tournai, Belgium © Public Service Wallonia

## 8.8 Leipzig, Germany

- **Water used as catalyst for change in the Leipzig region**
- **Culverted waterways now being restored to encourage regeneration**
- **Towpaths link to green spaces and city centre attractions**
- **Unrestored lengths promoted as local pedestrian routes**

The German city of Leipzig has made major investment in its canals and rivers and work to complete what is called “a new water landscape” will continue through to 2015. The schemes include twenty three new lakes created from former open cast coal mines, with a total water area of 175 square kilometres surrounding Leipzig and its near neighbour Halle.

A network of canals, navigations and millstreams were constructed as the population of Leipzig grew from the middle ages onwards. During the 20<sup>th</sup> century many of these were abandoned, culverted or altered by flood prevention work but the city authority is now reopening these and encouraging new public access along towpaths or new waterside routes. These will link into the city’s developing “Green Ring” of open spaces and traffic free routes and aim to make the waterways more relevant to local people.



Formerly culverted waterway opened up for public use. New footpaths and pedestrian bridges link offices, apartments and open spaces © Roger Butler

Work has included:

- reopening waterways with new towpaths and walkways
- new footbridges to link residential and business areas
- new waterway routes connecting city centre tourist attractions
- provision of public open spaces and play areas adjacent to the towpath
- attractive landscape work, lighting and public art

It has not yet been possible to create continuous navigation through the city centre and a number of weirs and culverts are still in place. Nevertheless a public path runs the full length, in places using and connecting to existing footpaths or pavements. Cycling is encouraged, and on a couple of occasions, where the original pedestrian access was no longer feasible, a cantilevered walkway has been installed in conjunction with waterside buildings. Owners of offices and warehouses next to the water have been encouraged to participate in access and environmental improvements, and these have been designed to allow small tourist boats to operate on the navigable lengths. Railings are frequently used since some of the waterway walls are two metres in height. Contemporary details have been introduced, and where possible design work has created stepped access directly to the water's edge.

The mix of land uses and buildings in the city centre means that towpath surfaces vary and include limestone in parkland or open space areas, concrete or brick paving in civic areas, and timber decking in some enclosed areas. Dual towpaths are provided in certain

places, and any steep slopes between the path and the water are planted with dense groundcover to discourage unsafe access and prevent erosion. Unrestored lengths are being promoted as green walkways and some of these pass directly through residential areas, where low key lighting has been provided.



Attractive new open spaces and stepped access to the water's edge © Roger Butler

Costs have been equally shared by the Free State of Saxony, the city of Leipzig, commercial investors, sponsors and environmental foundations. The work will ultimately connect Leipzig to the wider European waterway network.

- Navigation not always necessary to encourage new towpath activity
- Access can be encouraged even where there are high walls or steep slopes
- Cantilevered walkways can complete "missing links"
- Adjacent commercial properties can contribute to access improvements



*Cantilevered walkways installed to enable continuous public access in confined areas. Ecological works encourage aquatic planting and artistic work in the form of wording which reflects in the water.*  
© Roger Butler



*New footbridges link waterside walkways with new or redeveloped property.* © Roger Butler



*Newly rebuilt navigation close to some of Leipzig's historic landmarks. Works include access to pontoons, footbridges, artwork, lighting and improved civic spaces linking to the main canalside routes.*  
© Roger Butler

## 8.9 Horses on Towpaths: a Scottish approach

- A new approach to horse riding on canal towpaths
- Promoting responsible behaviour
- Considering the requirements of other users
- Personal risk assessments

Horses are not officially allowed along the majority of Ireland's waterways, but an initiative in Scotland shows how partnership working and dialogue can lead to new approaches to help overcome perceived conflicts and safety issues. Following the launch of the new Scottish Outdoor Access Code, the British Horse Society has taken steps to identify and promote the ways in which horse riders can safely use canal towpaths in Scotland. The Code gives horse riders and carriage drivers a right of responsible access to most land in Scotland, including watersides, river and canal banks.



*"I could've pulled barges along this tow path"*  
© British Horse Society

The British Horse Society have developed a dialogue with British Waterways (who do not traditionally welcome horse riders onto their towpaths) whilst at the same time promoting responsible behaviour by riders wishing to make use of their new rights. The Society accepts that riding, driving or leading a horse along towpaths creates challenges, but at the same time offers the potential to benefit all who wish to access canalsides. When properly managed and maintained, towpaths can provide safe areas for a range of activities, but the Society particularly stress that horse riders should adopt and apply three key principles:

- Take responsibility for your own actions
- Respect the interests of other people
- Care for the environment



Riders are reminded that canal towpaths are, by nature, a distinct environment with their own special characteristics. Each canal presents different issues and constraints, and riders should understand these before venturing out. Personal risk assessments and individual judgement are recommended, considering factors such as towpath width, bridge heights, and the activities of others. Where possible, the Society will always try to inform riders where it is advisable not to go.

The Society accepts that not all towpaths are suitable for horse riding and, for example, the limited bridge headroom on the Union Canal between Falkirk and Edinburgh means that, despite access legislation, riding would not be supported. Similarly, although the Society campaigns for the removal of barriers, towpath gates and stiles limit access. The Society would prefer grassed over tracks for horse riding on towpaths, but is supportive of recently constructed stone to dust surfacing on the newly restored Forth and Clyde Canal between Glasgow and Grangemouth.

The Society recommends the following advice and checks, with the onus placed largely upon individual riders to take responsibility for their actions:

- Quite simply, is your horse suitable for a towpath journey? Although heights may vary, most canals have sheer sides and if a horse did fall in, the chances of safely getting out of the water are limited.
- And is the towpath suitable for your horse? Riders should always be aware of restrictions, obstacles or constraints before setting out.
- Follow local signage and guidance, and take note of any special circumstances
- Think about riding speeds, and remember that towpath surfaces are often unsuitable for faster riding.

- Always give way to walkers and more vulnerable users, and be courteous to all - just as others should be courteous to riders. If moving over to allow someone past, always try to halt away from the waterside, since vegetation frequently overgrows the banks and can give a false impression of safe footing.
- Canal towpaths are popular for angling, and there is a need to be wary of fishing equipment, which can be spread across paths and into undergrowth. Riders should take note when anglers are casting their lines, but should equally remember that they also have similar access rights too.
- There may be occasions when towpath riders would prefer to lead their horse, but remember to always lead with a bridle on - never lead with only a headcollar and rope.
- If you are riding in groups, please take extra care.
- Horse dung can be an issue on any multi-use path. Act responsibly and kick dung to the side of the towpath, but never into the canal.
- If you are a carriage driver, you must satisfy yourself that you will be able to turn, reverse or unhitch if you meet an obstacle, operational works, etc.
- If you take your dog with you keep it under close control at all times. (Responsible dog walking and ownership are also included in the access legislation).
- If you have transported your horse by trailer or lorry, park carefully and safely without blocking gateways or car parks.

In addition, riders are encouraged to refer to the Society's "Are YOU Riding Responsibly leaflet".

- The pro-active approach taken by the British Horse Society will encourage both riders and other waterway users to act with due diligence and care
- Any lessons learnt as a result of their suggested advice could be applied on Irish waterways in due course



## 9 Innovation

These two case studies illustrate the ways in which innovative solutions can help to maximise the benefits of towpath improvement work.

### 9.1 Limehouse Cut, London: floating towpath

The Limehouse Cut is a 2½ kilometre long canal which connects the River Thames and Limehouse Basin with the River Lee Navigation at Bow Locks. Its towpath links to the Thames Path, the Docklands and the rest of London's waterway network.

However, prior to innovative work in 2002, there was no pedestrian or cycle link under the busy A12 road bridge where it crosses the Limehouse Cut, which meant that towpath users had to negotiate the road via an unpleasant subway to get from one side of the canal to the other. This also created a significant physical divide between communities living to the west of the road and their local amenities and recreational facilities to the east.



*"The innovative floating towpath now provides a popular local link under the busy A12 dual carriageway in East London and provides direct pedestrian and cycle access between the Limehouse Cut and the River Lee"*

© Roger Butler

In order to create a continuous linear canal path, British Waterways installed a new floating towpath. This comprised 21 pre-cast concrete floatation units with a width of two metres and a total length of 242. These have created a very stable surface and colourful lighting in the pontoons and under the bridge help to create a safe and attractive environment. At either end of the walkway a platform has been built over the water's edge to connect the new structure to the existing towpath. The new facility has been well received by regular users of the Limehouse Cut.

Funding came from Leaside Regeneration Ltd through its Government sponsored Single Regeneration Budget 'Communities in Business' programme. It was also supported by the London Development Agency and the London Borough of Tower Hamlets. The total cost of the scheme was approximately £312,000, and it has since won the 'Best New Cycle Facility in London' award from the London Cycling Campaign.



*Electronically driven stairlift by the River Welland water taxi pontoon. © Spalding Water Taxi Co.Ltd*

### 9.2 River Welland, Spalding: electric stairlift

A privately run water taxi service operates on the River Welland and the adjacent Coronation Channel in Spalding, Lincolnshire. The 30 minute journey links the town centre to a large retail and garden centre and encourages visitors to use a sustainable means of transport. Boats leave every thirty minutes from two points, one of which has been specifically designed to cater for the needs of disabled people. Here, the pontoon and gate for boarding lies approximately four metres below the footpath at the top of the river

embankment. Next to the new flight of steps, an innovative and electronically driven stair lift chair has been installed to help carry the less able up and down the slope.

The scheme has helped generate additional visitor spend in Spalding and has helped to demonstrate how relatively unused waterways with difficult access problems can be given a new lease of life as tourist attractions.

## 10 Irish towpaths

A range of towpath improvements have already been undertaken in Ireland, often funded through agreements or partnership working with local authorities. The following short case studies show the variety of work and the ways in which towpath schemes have been designed to cater for a range of different users.

### 10.1 Kilcock, Royal Canal: towpath improvements and water polo facilities



*View east in Kilcock, with paved public towpath on the left and new facilities for water polo on the right.*  
© Roger Butler

Close to the centre of Kilcock, the Royal Canal has been improved by Waterways Ireland both as a venue for water polo and as an important focal point by one of the main road junctions in the town. Improvements were initially carried out to enable Kilcock to host the European Water Polo Championships in 2003, and further work has subsequently been carried out as interest and participation in the sport continues to grow.

Work has included:

- Concrete block paving to the wide pavement alongside the canal in the town centre to create a “quayside” area with seating, lighting and floral displays
- Ramps and steps from the reconstructed road bridge over the canal to provide access to the water polo facilities on the south bank
- 100 metre timber pontoon, with access ramps, installed below the original stone retaining walls to enable safe launching of canoes

The popularity of water polo led to a successful funding package (including a grant from the Irish Sports Council) for a new contemporary clubhouse on land leased from Waterways Ireland at the eastern end of the pontoon. This opened in 2005, and participants now travel long distances to make use of the safe and improved facilities at Kilcock.



*Timber pontoon and access ramps for water polo and canoe launching, © Roger Butler*

The pontoon was constructed by the Waterways Ireland direct labour force, and cost approximately €120,000. The new clubhouse was constructed by contract and the paving works on the north bank were carried out by Kildare County Council.

### 10.2 Bagenalstown, Barrow Navigation: disabled angling facilities

Just north of Bagenalstown, Waterways Ireland has installed a series of specially designed stations to enable disabled anglers to safely enjoy full access to the waterside. These are accessed by driving a short distance along the gravelled towpath, and each bay provides :

- A concrete base with more than sufficient space for car parking and unloading

- Steel trip rail between the car park and the water's edge
- Steel barrier (approx 900mm high) against which to safely park a wheelchair and lean rods over the water
- Simple low concrete bench providing alternative seating



One of five angling stations at Bagenelstown specially built to cater for disabled visitors. © Roger Butler

Construction costs were €1495.00 per bay and the contractor worked on site for approximately eight days. Waterways Ireland carried out all preparations, together with finishing works including construction of the gravel roadway alongside the stations. The cost of this work, including all labour, plant and materials, was around €6000. Concrete seats and planters for were supplied by the Bagenelstown Floral Festival Committee, and cost €3500. The whole project took five weeks to complete, and general upkeep is now carried out when required. This includes grass and reed cutting, plus weed spraying around each of the bays.

### 10.3 Ashtown, Royal Canal: housing development and towpath improvements

Major new development, west of Dublin city centre and to the north of the Royal Canal at Ashtown and Pelletstown, has enabled the towpath and its surroundings to be improved through significant new investment during 2007-08. Residential development and associated open space has been created alongside approximately one kilometre of the towpath, with new surfacings, safe access points, dedicated cycleways, and significant landscape work.

Key elements include:

- Retention of an attractive soft edge between the towpath and the canal
- Three metre wide spray and chip towpath surface
- Railings between the rear of towpath and the new parkland beyond
- Marked cycleway located to the rear of the railings, so avoiding towpath conflict
- Standard trees planted as avenues parallel to the towpath, accompanied by attractive shrub planting
- Gated access points, with distinct paving, between the development and the towpath



New spray and chip towpath on the Royal Canal at Ashtown, with substantial soft edge. © Roger Butler

At Lock 10, at the western end of the development, apartments with retail units have been built closer to the towpath and the opportunity has been taken to create a small mooring lay-by. This features attractive detailing including ramps and steps down to the canalside, stone tiered seating, railings and retaining walls. The lay-by provides mooring space for two or three boats and has been designed to compliment the adjacent development. Landscape work includes tree and shrub planting, brick paving to the upper level towpath, bicycle racks and sculpture. The moorings are also visible from the railway station on the south side of the canal.

The combination of a high quality towpath, new moorings and landscaped parkland now provide an attractive setting to the development, and are being increasingly well used by the new residents.

All works were funded as part of planning gain linked to the development, and were constructed by a contractor working for the developer. Waterways Ireland will take over future maintenance.



*Behind railings, a cycleway has been created on land to the rear of the towpath, with a series of gated access points linking the new housing development to the towpath, © Roger Butler*



*A new mooring lay-by with public access from the towpath has been created as part of the Ashtown development at Lock 10 on the Royal Canal. © Roger Butler*

## 11 Kennet and Avon Canal: a strategic approach to canal restoration and towpath improvement

- **140 kilometre major canal restoration programme**
- **High heritage, landscape and wildlife interest**
- **Innovative solutions and bank treatments adopted**
- **A range of related projects have followed completion of towpath improvements**

The Kennet and Avon Canal links Bath with Reading, and with river connections at each end effectively links Bristol with London. After falling into dereliction during the 1950s, the 140 kilometre canal was once again fully opened to boat traffic in 1990, and major works, grant aided by the Heritage Lottery Fund, enabled full restoration to take place between 1998 and 2003. A partnership between British Waterways, the Kennet and Avon Canal Trust, and the riparian local authorities developed the following vision to help guide the Heritage Lottery project:

*“To secure the structure, operation and environment of the 140km working waterway heritage of the Kennet and Avon Canal, to make it operational, sustainable and accessible for the enjoyment of future generations”*

The partnership was a crucial step in developing the full potential of the canal, since it brought the key players together and allowed them, for the first time, to focus on the strategic linear qualities of both the navigation and its towpath. Issues relevant across more than one local authority could be aired and agreed, and long term proposals for revenue funding were discussed. In addition, the partnership drove the Heritage Lottery project forward and sought from the outset that long term benefits would include an enhanced towpath and recreational facilities as well as an improved navigation.

The canal is highly significant as a heritage asset, particularly in view of its population catchment across southern England, and the extent of the canal’s accessible heritage has long been recognised. As a result restoration



was undertaken with a strategic approach which considered not just the waterway infrastructure but also its built and natural environment, future recreational use, and its wider setting in the landscape. A detailed conservation plan and a complimentary visitor management and public transport strategy were produced to guide restoration, and management plans were written to influence detailed work on the ground, including towpath enhancements, access and vegetation management.

Attracted by the history, wildlife and increasing use, more than 10 million visits are now made each year to the waterway, by both locals and visitors. As a freely accessible amenity the canal towpath provides:

- a linear open space, supporting a wide range of towpath activity including walking, angling, sightseeing, jogging, cycling, nature study, industrial archaeology, etc
- a designated National Waterway Walk which links to other long distance routes
- a top quality coarse fishery
- a “green route” for leisure, commuting and local uses
- an attractive route for people with disabilities
- a facility for educational and community involvement

Heritage interest includes:

- a very complete range of historic techniques and features
- unique classically designed stone aqueducts and tunnel portals
- one of the longest and visually dramatic lock flights in the UK
- cumulative history, e.g., wartime defence structures

Landscape quality is high and includes:

- Bath, a World Heritage Site
- two Areas of Outstanding Natural Beauty

- 24 Conservation Areas
- lengthy tranquil sections with limited traffic and secluded countryside

The canal corridor is also ecologically significant for a variety of reasons:

- good quality water crossing important chalklands.
- a diversity of species rich habitats, some continuous for 140 kilometres
- adjacent wetlands and water meadows
- as a habitat for a number of protected species

Against this background, investment via the Heritage Lottery Fund (and all subsequent work) has been carried out in sustainable ways which aim to improve both the navigation and the quality and accessibility of the canal towpath.

## 11.1 Towpath Character



*The Kennet and Avon towpath at Bradford on Avon lock where the lockside, with café and other facilities, has been paved with concrete setts in order to cater for higher visitor numbers, © Roger Butler*

The character of the towpath varies considerably and contributes greatly to local distinctiveness, and key issues to be considered as part of the restoration were width, surfacing and management. The different requirements of different users were recognised, with a presumption in favour of maintaining existing character, and a number of strategic policies were adopted:

- new areas of surfacing may be appropriate around main access points or areas of high visitor use where towpath erosion is a problem
- where new surfacing is acceptable design and detailing will be in keeping with local character and anticipated level of use
- if significant areas of new surfacing are proposed a strategic assessment of towpath quality will be undertaken
- subject to specific operational or recreational needs, towpath width will in most cases be limited to 1.5 metres (though it was recognised that in some cases even this might not be feasible)
- where surfacing is appropriate, local crushed stone will generally be used in rural areas, with a more formal treatment where suitable in urban areas
- key views and vistas from or to the towpath will be conserved or reinforced/created by working in partnership with adjacent landowners



*Limited space along one section in the centre of Bath means that the towpath remains relatively narrow and informal, contributing to the distinctive local character of the canal. © Roger Butler*

Surveys highlighted the importance of the unsurfaced character of the relatively remote section known as the Long Pound. Here, a formal surfaced path would be out of keeping with the rural setting, whilst also greatly diminishing its ecological interest through loss of continuous grassland habitat. Policies stated that this length would be retained as a priority, with surfacing only considered at main access points where high use may cause erosion.

Historically the river navigation sections, towards the eastern end of the canal, did not have a towpath. The lack of boundaries and the unsurfaced and often undefined nature of the towpath now forms part of the waterway character. In these locations it was agreed that a formal surfaced path would be inappropriate.

It was also recognised that when adjacent works resulted in unavoidable disruption, opportunities would be taken to reconsider towpath status relative to that location, and a number of procedures were followed:

- reinstatement would be as before or would seek to enhance the towpath environment
- grassland character would be retained by the use of seeding mixes appropriate to the location
- opportunities would be explored to extend and link possible areas of existing unsurfaced path for habitat gain and continuity
- opportunities would be taken to replace poor design and detailing



*The Kennet and Avon Canal towpath at Bathampton. © Roger Butler*



*Well maintained towpath close to Bath city centre. © Roger Butler*

## 11.2 Built heritage



*Built heritage includes original towpath surfacings, such as this stone paved ramp in Bath. The restoration work ensured such features were retained and conserved. © Roger Butler*

The Heritage Lottery project had a high profile and it was therefore important that work was carried out to a high standard. The principle of least possible physical intervention was followed, and archival and historic research was undertaken to help guide and inform the design and planning of towpath works. Wherever possible repair or replacement work was carried out on a "like for like" basis, except where replacing damaging or highly inappropriate past works.

Specific policies included:

- special attention given to the repair and consolidation of traditional Bath stone and in the conservation of historic brickwork
- method statements and detailed designs for masonry repairs were prepared by specialist advisors
- only contractors with a sound track record in heritage works were to be employed
- historic metalwork was to be retained or repaired in situ
- vulnerable minor items were surveyed and recorded, and secured against damage or theft

## 11.3 Bank treatments

One of the most significant features of the Kennet and Avon Canal towpath is the nature of the canal edge, particularly since it makes a key contribution to wildlife habitat. Soft and well-vegetated banks with marginal plants and diverse flora provide shelter for a range of species, and efforts were made to include habitat benefits as part of towpath or engineering improvements. These were guided by a range of policies, including:

- a presumption in favour of maintaining current character, or the use of mitigation or compensatory measures
- the use of soft bank protection measures, including timber and geotextiles
- the use of hard bank protection measures only for moorings, lock landings, etc, where a high level of future use is unavoidable
- marginal vegetation was retained in situ and protected from disturbance – a fringe width of at least one metre on the towpath side was to be maintained
- where necessary to remove marginal vegetation prior to restoration work it was stored for replanting
- the retention of common reed as an important towpath habitat at intervals adjacent to the towpath

## 11.4 Canal hedgerows

Hedgerows are an integral part of the towpath environment, and some date back to the time of original canal construction. Landscape and ecological surveys emphasised their importance, and a number of declining bird species breed in them. Strategic policies included:

- the impact of all works were minimised and compensated for, with hedgerow gain sought where appropriate to local character
- all hedgerows were to be adequately protected from damage during restoration work

- opportunities were taken to enhance and extend hedgerows by planting or management
- existing management regimes were reviewed and a long term plan prepared
- significant lengths were to be conserved and enhanced by traditional management techniques, e.g., laying, phased cutting, etc
- where appropriate, the growth of hedgerow trees was to be encouraged

### 11.5 Canal cycleway



*A section of the popular Kennet and Avon towpath cycleway at Bradford on Avon. © Roger Butler*

The Kennet and Avon towpath has long been popular for cycling, and sections now form part of Sustrans National Cycle Network. Current use is estimated at more than half a million visits per annum. However, it was recognised that where levels of use were high, or upgrading of the towpath required, this could have a significant impact on local landscape character and canalside habitats. It was also recognised that cycling can bring concerns for other users, and this was particularly the case between Bath and Bradford-on-Avon where cycle hire facilities have developed in response to public demand. Trade offs to accommodate this have included wider towpaths, substantial stone surfacing and increased signage.

Sustrans guidance normally recommends a minimum 2 metre wide surfaced path, but this was not feasible on some parts of the towpath or was deemed to result in an unacceptable visual or environmental impact. As a result,

proposals were looked at on a site by site or length by length basis, and this led to sections of towpath in the more quiet or ecologically sensitive areas being left as unsurfaced routes, largely grassed or traversed by a narrow well worn route.

For one summer season British Waterways employed a temporary ranger to monitor and guide cycle use, including promotion of a code of conduct, provision of information, etc. Following completion of the restoration, the local authorities have signed up to annually fund a strategic agreement which enables British Waterways to maintain the towpath to a suitable standard for cycle use.

### 11.6 Innovation

In order to benefit built and natural heritage, a number of innovative towpath improvements were undertaken as part of the Heritage Lottery project:

- Martinslade embankment: the towpath runs across the top of an embankment where leakage under the path ran into the adjacent field. An agreement was reached with the farmer which accepted that this was likely to continue despite new bank protection work. Water has been consequently been allowed to continue run under towpath piling into a newly created wetland habitat with pond, scrape and meadow, and survey work shows this has now been successfully colonised by wildlife.
- Soft bank protection: a range of techniques were tested and applied to the newly restored towpath banks. These included willow walls, faggots and marginal planting to add value to existing towpath habitats. Faggots provided a flexible solution below water level, and used in conjunction with coir rolls, now support healthy invertebrate and crayfish populations.
- Bath stone edgings: local Bath stone was used to line bank protection work and establish a new towpath coping throughout the World Heritage city. Original stone quarries were sourced and specialist stonemasons employed.

## 11.7 Rural Transport Project

Following restoration, a three year project was established to promote the towpath and its linkages as a catalyst for leisure and recreation along the canal corridor. External funding was obtained to support research, publications and a budget for small projects. Detailed information on walking, cycling and rail and bus options were published and made available on dedicated website. Signage was improved, further access improvements carried out, and a subsidy provided to run a weekend demand responsive minibus linking the towpath with villages, rail stations and car parks. In addition, the project was able to fund a series of access for all audits were undertaken to assess suitability of the towpath for use by disabled people. The project proved that it is possible to publicise an improved towpath for wider social and economic benefits. It was concluded that the project would have been less successful had the careful conservation and management of the built and natural environment not taken place.

## 11.8 Monitoring

A sustainability monitoring programme has been established to help assess and understand changes and emerging trends on the canal since the major works were completed. This has been developed using a series of pilot lengths and covers a range of issues relevant to towpath use and development, including landscape quality, heritage, biodiversity, visitor pressure/ towpath use and wider community benefits. Monitoring programmes have been set for each topic, and timescales vary depending upon levels of anticipated change, e.g., heritage monitoring is set on a five year timescale whereas visitor pressure is set for annual review. The work allows managers to understand the changes taking place and, where necessary, make plans to address them via work programmes or future budgets. For instance, as visitor numbers to the towpath increase the impacts they bring with them can be understood, and priority lengths identified for further maintenance or new more robust surfacings.

- Detailed heritage and wildlife surveys can be used to influence work
- Landscape character should play an important role in guiding towpath improvements
- Specific policies and specifications ensured high quality work
- Sustainable solutions can be successfully applied to canal projects

# Appendices

## A. Waterways Ireland

Waterways Ireland operates under the overall policy direction of the North/South Ministerial Council. Their National Development Plan 2007-2013 makes provision of 75 million for the improvement of the infrastructure and environs of the waterways and, where possible, individual local authorities also support waterways projects from their own annual budgets. Waterways Ireland is currently developing environment and heritage policy and codes of practice to protect their canals and navigations and to ensure they are developed and managed in an environmentally sustainable fashion.

## B. National, Regional and Local Policies

National, regional and local policies are in place to help guide and protect the waterways. Wider policy includes national plans produced by Government departments, whilst planning policies include County Development and Local Areas Plans. Each helps create the context within which waterway and towpath improvements can take place, and most make reference to the need to consider linkages and relationships in the wider waterway corridor. These are summarised below.

In the Heritage Act (1995), the term 'inland waterways' means canals, canalised sections of rivers and lakes, navigation channels in rivers and lakes, and their associated navigational features. Tidal waterways, feeder tributaries and streams are also an important part of Ireland's navigation system.

The National Heritage Plan (2002) prepared by the Heritage Service of the Department of Environment, Heritage and Local Government recognises that the conservation of heritage is an integral part of the development of the waterways system. It also states that the development of a programme for the conservation and enhancement of the inland waterways requires the creation of a record of all its heritage elements, including architecture, wildlife, and archaeology, in order that plans for their future management

can be established. Such a record would positively help and influence the planning of towpath improvements

In 2005, the Heritage Council published a policy paper entitled "Integrating Policies for Ireland's Inland Waterways". The overall aim of the paper was as follows:

"The inland waterways and their corridors should be managed in an integrated broad-based way, conserving their built and archaeological heritage features, and protecting their landscape and biodiversity. Recognising that the inland waterways are a unique part of our heritage, but which today are fulfilling a new role not envisaged for them originally, we aim to enhance the enjoyment and appreciation of them as living heritage for both this generation and for future generations."

Protection and enjoyment of our waterways heritage through imaginative reuse and interpretation are key themes, and the Heritage Council stress that inland waterways and their towpaths should enhance the quality of life of all those who use or visit them. The Heritage Council also suggest that disused and derelict waterways should be protected through the Record of Monuments and Places and/or the Record of Protected Structures, as well as by finding alternative uses for them, such as walking routes or as traffic free greenways.

Ireland's National Biodiversity Plan (2002) aims to ensure that all sectors and organisations take responsibility to promote biological diversity. At Government level, this is being achieved by all departments taking a proactive role in enhancing biodiversity and having in place relevant policies and actions. Waterways Ireland is therefore obliged to prepare its own Biodiversity Action Plan in consultation with stakeholders and partners.

The National Spatial Strategy seeks to strengthen rural communities through diversification of the local economy, including development of tourism, enterprise and local services. The potential of the waterways for tourism and recreational activity is specifically referred to, citing opportunities to develop tourism possibilities by linking waterways and creating tourism circuits linking urban settlements and waterways.

Land use and development in the waterway corridor is regulated by a complex hierarchy of authorities. Regional Planning Guidelines, the objectives of which are to provide a long-term strategic planning framework for the development of the regions. Under the Planning and Development Act (2000), local authorities are required to prepare County Development Plans and, where appropriate, Local Area Plans. The Act specifies mandatory objectives and these include conservation and protection of the environment; preservation of the character of the landscape; the preservation, improvement and extension of amenities and recreational amenities; and integration of the planning and sustainable development of the area with relevant social, community and cultural expectations.

Local authorities may also include objectives to support the preservation of existing public rights of way, including those along lakeshores and riverbanks. Policies vary, but Galway, for example, includes policies to protect and conserve its inland waterways from inappropriate development and to provide access to them, particularly through the development of walking and cycling routes. Other local authorities include plans to ensure that access to good fishing is available to locals and visitors, and policies to protect ecological integrity. Local authorities may have varying approaches to their respective waterways, but cross-boundary coordination can help to unify and improve linear towpaths and associated heritage. In addition it is the responsibility of local authorities to ensure that the line of disused and derelict waterways not under the remit of Waterways Ireland are protected so that towpath trails, or even full restoration, may be developed in the future.

As well as carrying out their planning functions, local authorities have full or partial responsibility for the implementation of various national and European policy instruments, including, for example, the National Heritage and Biodiversity Plans, and aspects of the EU Water Framework Directive.

## C. Useful organisations and websites

Heritage Council [www.heritagecouncil.ie](http://www.heritagecouncil.ie)

Waterways Ireland [www.waterwaysireland.org](http://www.waterwaysireland.org)

Department of Environment, Heritage and Local Government [www.environ.ie](http://www.environ.ie)

Irish Sports Council [www.irishsportsCouncil.ie](http://www.irishsportsCouncil.ie)

Waymarked Ways of Ireland [www.walkireland.ie](http://www.walkireland.ie)

Inland Waterways Association of Ireland  
[www.iwai.ie](http://www.iwai.ie)

Royal Canal Amenity Group [www.royalcanal.net](http://www.royalcanal.net)

British Waterways [www.britishwaterways.co.uk](http://www.britishwaterways.co.uk)

Natural England [www.naturalengland.org.uk](http://www.naturalengland.org.uk)

Association of Inland Navigation Authorities  
[www.aina.org.uk](http://www.aina.org.uk)

Inland Waterways Association (UK)  
[www.waterways.org.uk](http://www.waterways.org.uk)

Sustrans [www.sustrans.org.uk](http://www.sustrans.org.uk)

British Horse Society [www.bhs.org.uk](http://www.bhs.org.uk)

## D. Useful references

Guidelines for the Developing & Marking of Waymarked Ways

*The Heritage Council & The Irish Sports Council, 2002*

On the right track: surface requirements for shared use routes

A good practice guide (CA213), Countryside Agency (now Natural England), 2005.

Water Ways: Inland Waterways and Sustainable Rural Transport

A best practice guide, British Waterways and others, 2005

Multi-use towpaths: A good practice guide for navigation authorities

*Association of Inland Navigation Authorities, 2007*

By all reasonable means: ways to encourage access for all

A good practice guide (CA215), Countryside Agency (now Natural England), 2004

**Towpaths for the Future**

Seminar proceedings, *Heritage Council, June 2007*

**Waterways for People**

*British Waterways, 2002*

***The National Cycle Network: Guidelines and Practical Details***

*Sustrans*

**How people interact on off-road routes**

Research Notes 32 and 69, *Countryside Agency 2002 and 2003*

**Ireland's Waterways – Map and Directory,**

3<sup>rd</sup> edition, *Euromapping & Waterways Ireland, 2006*

**Guide to the Grand Canal of Ireland**

6<sup>th</sup> edition *Duchas the Heritage Service, 1999*

**Guide to the Royal Canal of Ireland**

4<sup>th</sup> edition *Waterways Service, 1997*

**Guide to the Barrow Navigation of Ireland**

*Duchas the Heritage Service, 1999*

**Guide to the Ulster Canal**

*IWAI & ERA-Maptec, 2007*