

Scoping Study

Lincoln - Waterway Corridors Opportunities Study





August 2015

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Lincoln's River Corridors **Opportunities Study**

On behalf of



Scoping Study August 2015

Prepared by





Landscape Institute Registered practice

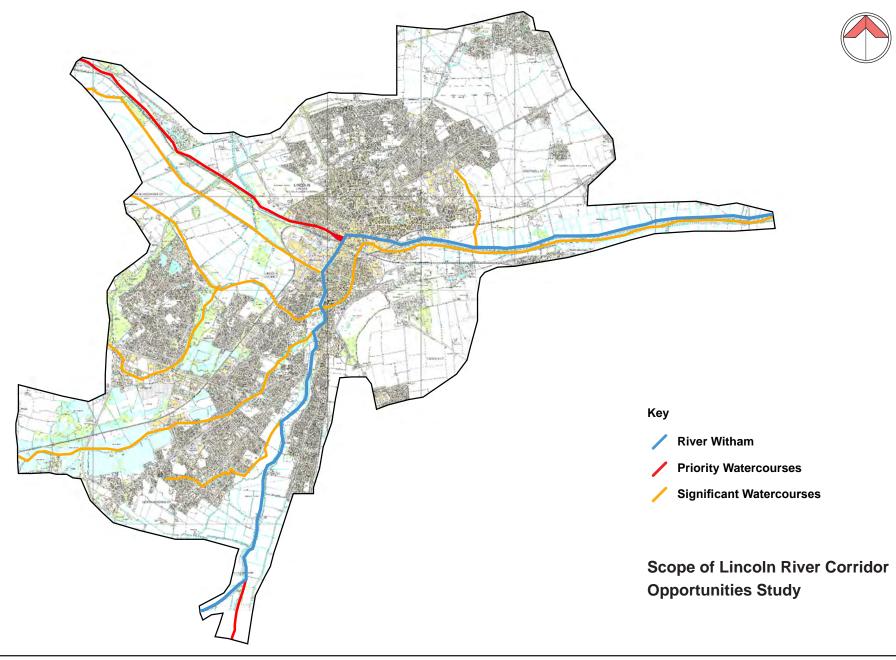
Lincoln Waterways Scoping Study

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Lincoln's Waterway Study Area



Partners to the Study

The Canal & River Trust (CRT) and the Environment Agency (EA) commissioned Hyder Consulting and Richard Glen Associates to prepare a scoping report to highlight the potential of preparing a waterspace strategy for the waterway corridors through Lincoln. This Scoping Study will assist the CRT and the EA who are working closely with the Witham Catchment Partnership to deliver Water Framework Directives (WFD) for Lincoln.

Study Area

The study area includes the navigable corridors of the Fossdyke Navigation, River Witham, and the un-navigable River Witham together with associated wetland habitats.

The study area has been defined to include:

- The Fossdyke Navigation from the confluence of the River Till to Brayford Pool.
- The non-navigable River Witham from Blackmore Bridge over the River Brant to Brayford Pool.
- The navigable River Witham from Brayford Pool to Five Mile Bridge east of Washingborough.

A full Waterspace Study will have regard to the other significant watercourses which influence the primary watercourses as listed above.

River Witham & Fossdyke Navigation

The Brayford Pool and waterway corridors of the River Witham and Fossdyke Navigation provide an intrinsic asset for Lincoln. They have the potential to deliver a wide range of new and exciting opportunities to spawn a renaissance of the City through new adjacent uses, cultural activities as well as leisure and ecological enhancements.

The client partnership recognises the waterways as catalysts for regeneration, vital for the City's future. The partnership wishes to encourage the development and delivery of a waterspace strategy and action plan for the benefit of the widest possible range of people, to improve the quality of life, the water environment and enhance Lincoln's status as the regional centre.

The scoping study is intended to provide the partner organisations and other interested parties with proposals for promoting waterway related projects, which will help stimulate appropriate regeneration of Lincoln's waterway corridors.

Making this happen will require the combined efforts of all those with an interest in the waterways, the unique environment, the growth of the City, its heritage, its communities and all waterway users.

Within East Anglia the Fens Waterways Link presents the opportunity for waterway regeneration. These proposed waterway connections will revitalise communities along their route, increase tourism to the region and provide a connection between the Fenland waterways and the main inland waterway network.

Aims & Objectives

The aim of the scoping report will be to influence decisionmaking and assist in the preparation of a brief for a more detailed Waterspace Study for the development of Lincoln as a waterway destination.

- To provide an overview of the river corridors, waterway typographies and their relationships between the waterspace, waterside development and water-based activities and facilities.
- To outline the potential of the river corridors as a linear tourism and recreation resource through learning and interpretation.
- To identify and present initial opportunities to enhance wetland habitat for wildlife and water quality benefit.

Report

The scoping study will help progress discussions with key stakeholders, partner organisations, developers, statutory authorities and external funding organisations. It is intended that this will be described by high level illustrative mapping supported by illustrative photography.

Study Context

The ambition of the Fens Waterways Link is to create a non-tidal navigation joining the cathedral cities of Lincoln, Peterborough and Ely. This will require the construction of new waterway connections between the existing river navigations and navigable drainage networks. The principal waterways which comprise the Fens Waterways Link include: The River Witham Navigation, Black Sluice Navigation (formerly known as the South Forty Foot Drain), River Glen, River Welland, River Nene, the Middle Level Navigations, the River Great Ouse and its tributaries.

Once these connections have been made, the Fens Waterways Link will create multiple circular routes, joining with the heartland of the waterway network via the Fossdyke Navigation and River Trent in the north and via the Northampton Arm to the Grand Union Canal in the south.

The Lincolnshire Waterway Partnership has secured funding from various sources to improve and provide the recreational facilities along the route through Lincolnshire. This has provided boating facilities and improved access for walkers, cyclists, horse riders and anglers in order to encourage a diverse use of the navigation's proposed route.

The first phase of the Link's major construction works was completed in 2009 with the opening of a new lock at Boston. This first phase allows navigation from The Haven onto the Black Sluice Navigation between Black Sluice Lock, Boston and Donington Bridge.

Lincoln's Waterway Development

The scoping study is the first stage in developing a full waterspace study which would aim to provide Lincoln's waterways with the following objectives:

- Provide a vision to inform future policy formulation.
- Inform the emerging Central Lincolnshire Local Plan.
- Highlight the potential of the waterway corridors by identifying and promoting opportunities in a coordinated approach to regeneration.
- Act as a discussion document to stimulate interest and promote consensus amongst stakeholders in the future of the waterways.
- Influence future development briefs and designs for waterside sites, the wider water environment and capitalise on the unique assets of the waterway corridors.
- Provide a sound evidence base to help maximise funding opportunities and potential benefits to the natural environment and society as a whole.
- Inspire local businesses, community groups and the wider public to take forward improvement projects to enhance the waterway corridors.

Methodology

Background research for the study was commenced in March & April 2015.

This research included:

- Site survey & appraisal of the waterway corridors within the study area.
- A listing of published strategies, research material and planning policy documents which would relate to the waterway corridors, supplied by the client partnership and other organisations.
- Consultation with key stakeholders and organisations.
- A desk study of information, which focused on:
 - An appraisal of the environmental assets, community use and proposed developments along the waterway corridors.
 - An exploration of the current role of the river corridor as a linear recreation and tourism resource; and consideration of how this resource could be enhanced by a variety of physical, environmental and recreational improvements.
 - · Identification of opportunities and constraints.

Production and development of the Lincoln Waterways Scoping Report.

THE CITY OF LINCOLN LOCAL PLAN

While the Central Lincolnshire Local Plan is being prepared, the City of Lincoln Local Plan 1996 will continue to be the main planning document for Lincoln. Once the new Central Lincolnshire Local Plan is adopted it will replace the City of Lincoln Local Plan. In preparing this Scoping Study a number of policies are relevent to the waterway corridors.

These include:

KEYS TO SUSTAINABLE DEVELOPMENT

ACCESS & TRANSPORT

Policy 5	Strategic Network of Cycleways,
	Footpaths & Bridleways
Policy 13	Western Link/Tritton Road 'Greenway'
Policy 14	Strategic & Major Road Proposals

URBAN REGENERATION

South High Street Revival Area

Brayford & the Glory Hole Revival Area		
Policy 19E	- Tentercroft St/Kesteven Street Area	
Policy 19D	- Anchor Street	
Policy 19C	- Wigford Yd/Baker St/Albion Yd	

- Policy 19F Brayford Wharf North/Newland Area

Rosemary Land & Monks Road Revival Area

Policy 19G

9G - Surface Car Parking Sites Waterside North

THE BUILT ENVIRONMENT

Policy 23	Schedule Ancient Monuments
Policy 28	Development within or adjoining
	Conservation Areas
Policy 32	Views Important to Conservation Areas
Policy 33	Waterside Development
Policy 38F	Flood Risk

THE NATURAL ENVIRONMENT & OPEN SPACE

Policy 43	Green Wedges & Other Major Open Spaces
Policy 44A	Sites of Special Scientific & other Critical Natural Assets
Policy 45A	Trees & other Ecological & Landscape Features on Development Sites
Policy 46A	Woodland & other Major Planting Initiatives
Policy 46B	Protecting the Water Environment
Policy 46C	Protecting Open Water Features
Policy 51	Allotments
Policy 52A	Major Areas of Informal Open Space
Policy 54	Existing Uses within Green Wedges
Policy 55	'Long' Views into & out of the City

MEETING DEVELOPMENT NEEDS

HOMES

Policy 61A Non-Permanent Accommodation

LEISURE & TOURISM

Policy 78	Tourism & Regeneration
Policy 80	Tourism in other parts of the Central Mixed-Use Area
Policy 81	Tourism Outside Central Lincoln
Policy 82	Art & Development
Policy 85	Boat Moorings
Policy 87	Major Leisure, Sporting & Cultural Developments

DRAFT CENTRAL LINCOLNSHIRE LOCAL PLAN

This Scoping Study will provide a useful evidence base to inform the emeging Central Lincolnshire Local Plan and support delivery of its policies. This includes: Draft Policy LP12: Managing Water Resources

& Flood Risk

References

References for the preparation of a full Waterspace Study for Lincoln's waterways would include, the following:

- Central Lincolnshire Core Strategy, 2013
- Greater Lincolnshire Nature Partnership
- Green Infrastructure Study for Central Lincolnshire
- Witham Valley Country Park
- Linking Lincoln, City Centre Masterplan
- Heritage Connect Lincoln
- Lincoln Urban Opportunities Study
- Biodiversity Opportunities Mapping for Lincoln
- The Brayford Pool's 'Blue Infrastructure Report'

Lincoln's Waterways: Swot Analysis

In undertaking this scoping study a high level SWOT analysis (Strengths, Weaknesses, Opportunities & Threats) was undertaken for Lincoln's waterways. This highlighted the following:

Strengths:

- Fossdyke Navigation is a Roman waterway and together with the River Witham developed Lincoln as an important inland port, upon which the City's prosperity was built.
- The Brayford Pool is a valuable 'urban lung' providing dramatic open space within the City.
- The Brayford Pool has an extensive south facing 'promenade,' and is in close proximity to the City Centre and Cultural Quarter.
- The waterways provide important habitats and wildlife corridors.
- The waterways provide important leisure and recreational role, eg. Canoeing, sea cadets, rowing, trip boats, marina and cruising.
- The University and student residencies have brought new life to the waterside areas.
- The Fossdyke Pathway and Water Rail Way provide a well defined access to the countryside to the west and east of the City.



The Brayford Pool is a valuable 'urban lung' providing dramatic open space within the City



The University has brought new life to the waterside



Waterways are important habitat & wildlife corridors



The south facing 'Promenade' of Brayford Wharf North should be capitalised on



Brayford Wharf North lacks coherence as a waterfront



Railings segregate the waterways from the adjacent public spaces



Modern student residencies do not positively address the waterway



Waterfront accessed via service yards



Previous river access proposals require reinvigorating



Pedestrian unfriendly road crossings



Improve the existing CRT moorings



Poor disabled access at the Glory Hole



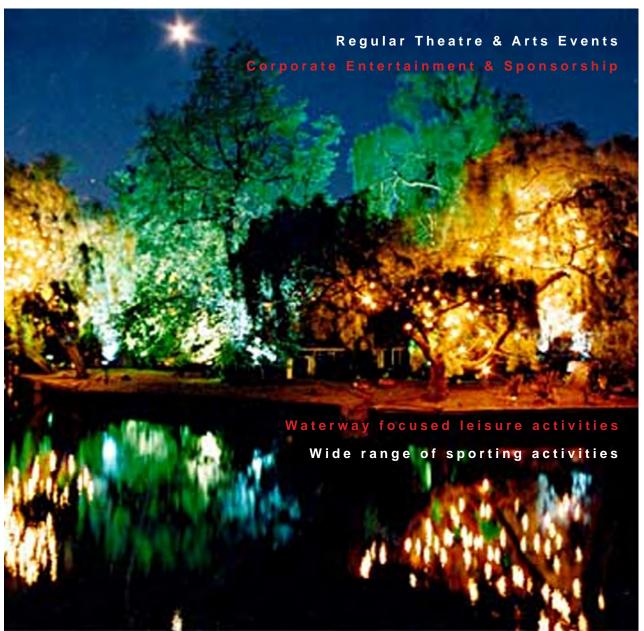
The railway runs along the southern bank of the Fossdyke Navigation

Weaknesses:

- The building frontage along Brayford Wharf North contains a mixture of styles, forms and function which lacks coherence.
- A number of more modern buildings bear little reference to their waterside and historical location.
- Lincoln's visitor moorings are insufficient with their connection to the city being poor and unattractive.
- The Wigford Way Bridge is a major pedestrian obstacle to the connectivity between Brayford Pool and Cultural Quarter of the City.
- The waterway corridors are fenced off from their adjacent public spaces creating a corridor effect for water users and pedestrians.
- Access to the waterside from the City Centre and Cultural Quarter is via service yards.
- Pedestrian and Disabled access is poor between the High Street, Brayford Pool, the City Square and east of Broadgate.
- The Stamp End area has a 'run down' feel to many of the buildings and spaces derelict.
- The railway runs along the southern bank of the Fossdyke Navigation which makes future connection to the western growth corridor difficult.
- The River Witham up stream of the Brayford Pool has a 'run down' feel, with derelict areas, industrial frontages, poorly maintained access and unfriendly pedestrian crossing points at road junctions.
- Lack of promotion of waterway opportunities within the City.

Opportunities:

- This Scoping Study will act as a catalyst to provide the framework for the stimulation of future waterside development, maximise WFD objectives and inform emerging local plan policies.
- Improve the coherence, legibility and connectivity of the recent development along Brayford Wharf North.
 Develop a waterside landscape which enhances the existing activities and the City's historic connections to its waterfront.
- Develop an Access for All and circulation strategy, to include waterborne transport, to link the City to the wider waterway landscape.
- Extend visual envelope outside the urban core to maintain and improve important historic vistas.
- Promote Stamp End as the principal eastern waterway gateway, develop EA's presence on site.
- Develop pocket parks on land adjacent to waterway corridors and improve boundary treatment, especially along industrial frontages.
- Investigate river restoration proposals with the creation of adjacent wetland habitat creation.
 Develop habitat enhancement and management throughout the waterway corridors.
- Potential to develop washlands at Washingborough and Willingham Fen.
- Encourage a wide range of water activities by developing visitor, residential and commercial moorings, which includes waterway facilities.
- Encourage Water Sensitive Urban Design principles as part the proposed urban extensions and developing waterway communities.



Little Venice, Regent's Canal, London



Watersport activities



Habitat creation & river restoration



Development of the waterway environment

Threats:

- The growth of the university campus and student residencies may have an adverse impact on the waterway environment by overshadowing the western end of the Brayford Pool.
- Potential loss of slipway and waterway access, this includes access for emergency services.
- Maintain important 'uncluttered' views towards the Cathedral and City Centre.
- Ensure new waterside development positively addresses the waterside. Future development may ignore its waterway location, history and tradition.
- An uncoordinated approach to the development of the waterways may result in a confusing array of historical references and therefore fail to produce a strong identity for Lincoln's waterways.
- Visual and pedestrian links to Brayford Pool and waterspace are not sufficiently strong, therefore the impact of the added value of waterside is lost from the wider City and its Cultural Quarter.



Lighting of the waterway environment

Lincoln Waterways Scoping Study

Study Approach

To develop economic, environmental and social benefits of water-related development requires a flexible approach. This section identifies the main high-level findings, describes the proposed six priority themes and the twelve waterway character areas.

Aims

The major issues and evolving opportunities, which the development of Lincoln's waterways would be addressed in a full Waterspace Study. Therefore the Scoping Study approach seeks:

- To promote activity and access to the waterways for boaters, rowers, canoeists, walkers and cyclists.
- To promote sustainable river related development which aids flood risk and water quality management by the improvement of adjacent riverine spaces, sustainable transport and climate change adaptation.
- To promote landscape and ecological enhancement by managing the relationship between increased water based activities, future development and the environment.
- To improve water quality to enhance biodiversity/ habitat creation and support the principles of the Water Framework Directive.
- To support and complement land based activities and create opportunities for greater diversity of mixed use, recreational activity and successful business.
- To create a well designed and stimulating environment to develop tourism opportunities with associated employment, contributing to an increase in the quality of life and the renaissance of Lincoln as 'the City by the River.'

The Witham Catchment

The River Witham is a predominantly rural catchment which includes Grantham, Lincoln and Boston. There are two ridges of relatively high ground; the Lincolnshire Limestone Ridge roughly in the centre of the catchment and the Lincolnshire Wolds in the north-east. These ridges apart, the remainder of the catchment is primarily made up of low lying land. In the low lying Fens (between Lincoln and Boston) the rivers and their tributaries are embanked and heavily modified with drainage influenced by a number of pumping stations and the tidal cycle. Internal Drainage Boards (IDBs) play a key role in draining these lower lying areas and maintaining high quality arable land.

The River Witham catchment includes the River Brant, River Till and Fossdyke Canal upstream of Lincoln. Significant urban growth areas have been identified around Lincoln and Grantham.

The Catchment Based Approach

The benefits of adopting a Catchment Based Approach (CaBA) is now widely recognised. This involves collaborative working at a whole river catchment scale to deliver improvements to our water environments. This requires a community-led approach which engages people and groups from across society to help improving our precious water environments. In England & Wales CaBA Partnerships are now actively working in 100+ catchments.

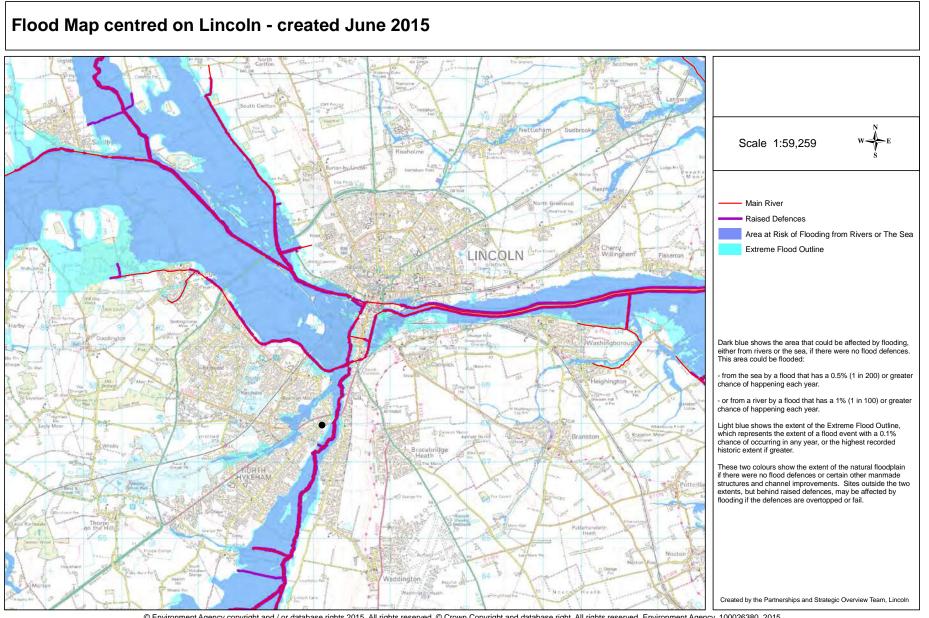
The Catchment Based Approach website http: (//www. catchmentbasedapproach.org) is also designed to showcase the work of catchment partnerships across England & Wales and to encourage the sharing and adoption of best practice in stakeholder-led catchment management planning, delivery and evaluation. In the River Witham Catchment, the local partnership is hosted by the Lincolnshire Rivers Trust (http://www. catchmentbasedapproach.org/anglian/witham) and supported by the Environment Agency and the Canal & River Trust. The Witham Partnership will deliver the principles of CaBA by identifying the issues in the Witham catchment; involve interested groups, organisations, business and local communities in decision making; and identify actions to address the catchment issues.

The partnership have currently expressed an interest in focusing on the key urban areas within the catchment, including Lincoln which has led to this current study. Similar studies are also currently being undertaken for Sleaford and Grantham. Once the current and future issues facing to people, wildlife and waterbodies are better understood in these urban areas, specific projects and initiatives should be implemented to address them. This will require a CaBA, including their interrelationship with the upstream and downstream rural catchments.

Water Framework Directive and Flood Risk Considerations

The requirement to meet the targets set by the Water Framework Directive (WFD) is a significant driver behind the Catchment Based Approach. The River Witham in Lincoln does not meet the current requirements of the WFD - in particular, in terms of excessive levels of phosphate which can cause eutrophic weed growth. For the River Witham, which is classified a heavily modified water body, there are also a number of high level WFD mitigation measures that have been identified as needing to be put in place – this is mainly to help improve both water quality and habitat and connectivity for fish and invertebrates. These range from larger schemes such as, to set back existing flood banks and reconnect floodplain in specific locations to smaller scale soft engineering options to improve in channel habitat.

Fluvial flooding is a particular risk for people, property and infrastructure in Lincoln (see figure 1 below). The impacts on Flood risk will be an overriding consideration when identifying appropriate projects along the river corridor in Lincoln. Particularly for projects that will aim to improve habitat, they should not increase flood risk in any way and we should ideally look for holistic ones which will help reduce the risk of flooding. Examples of this include appropriate areas where it may be possible to reconnect the river with its flood plain and the promotion of sustainable drainage systems.





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Priority Themes for Waterspace Development

Six priority themes, which capture an assessment of the key strengths, weaknesses and opportunities of Lincoln's waterways have been identified.

These six priority themes are:

- 1. 'The City by the River'
- 2. Waterside Communities
- 3. Access & Circulation
- 4. Lincoln 'Welcome Ashore'
- 5. The Waterspace for Everyone
- 6. River Restoration

The six themes are now elaborated on.

Theme 1: 'The City by the River'

Lincoln's waterway corridors could be transformed into a thriving, dynamic destination through enhancement of land-based attractions, water-based services, and waterbased recreation.

A. Land-Based Attractions

In developing 'The City by the River' theme, the Brayford Pool and wider city waterways need to attract visitors from the City Centre if the waterways are to be developed as a major visitor attraction. The access and circulation between the developing restaurant, café and entertainment quarter along Brayford Wharf North should be improved to connect with the City Centre, Cultural Quarter and City Square.

The enhancement of the Brayford Pool as a whole, its gateways and its connections to the wider City is critical in the development of Lincoln's waterways and their extension as an attractive public spaces.



Stourport-on-Seven - The regeneration of a Georgian waterside town

B. Water-Based Services

There is the potential for water based services to assist in providing connectivity between the Brayford Pool and City Square. This would include commercial moorings, encouraging visitors to spend time on the water. This could include trip boats, restaurant/café boats and a water taxi service.

C. Water-Based Recreation

Provision of visitor moorings within the Brayford Pool should be improved. Canoeing and sea scout activities should be maintained. Good communication amongst user groups and new navigation agreements will be required to minimise conflicts.

Stourport-on-Seven - Social Benefits of Waterways

The protection and enhancement of both the built and natural waterway environment is important in its own right and is integral to the use and enjoyment by local communities and visitors alike. The restoration programme provided substantial benefits by creating a variety of opportunities for leisure and recreation, breaking down the barriers of social exclusion, improving intellectual access, removing dereliction, improving the visual amenity, whilst improving physical access and connectivity between the town and the basins to enhance the quality of life for those who live and work in the area. Through community involvement and communication social benefits were targeted via an interpretation strategy, which fed into an arts-led Masterplan for the design of public spaces, landscape based interpretation and events programme.

The project doubled visitor numbers from 225k to 450k and increased visitor spend in the local economy of £1.7million per annum – leading to the creation of 70FTE jobs in the tourism sector. Total project cost £3.3m with £1.9m grants.

4 Waterway Themes

Theme 2: Waterside Communities

Riverside destinations and communities should be developed both upstream and downstream of the Brayford Pool and city centre. These riverside destinations should encourage their local communities to engage with the river, by building on the existing facilities and developing connections between footpaths, cycleways, canoe touring locations and potential visitor moorings.

Hatton Locks Café

Completed in 2005 by British Waterways at a cost of £98k. The café is leased to a business which has operated successfully since its opening.



Hatton Locks Café

As part of developing communities Water Sensitive Urban Design and Sustainable Drainage principles should be developed as part of the proposed urban extensions and infill development.

Sections of the river could be named after local areas to promote the identity of particular locations and riverside communities.

Theme 3: Access & Circulation

The waterway corridors should be supported as a multifunctional part of the Green Infrastructure Plan, improving land-based public access, particularly linear access along the waterway corridors. This could be achieved by:

- Improving connections with existing and proposed long distance footpaths, bridleways and cycleways.
- Developing access points, connections and signage between local communities and key destinations.
- Improving the waterway wildlife corridors.
- Investigating opportunities for offline habitat creation as public access to the waterway corridors increases.
- Develop intellectual and cultural access to the waterways, by interpretation of its people, history, wildlife and the environment.

Hatton Intepretation Plan

Interpretation proposals included an interpretive trail, educational materials, sculptures and interpretive leaflet. Funding of £84k was awarded through the HLF Your Heritage Programme.



Intepretation Station, Hatton Locks

Theme 4: Lincoln – 'Welcome Ashore'

The Brayford Pool and City Centre need to be made more accessible for visiting craft, with improved visitor, permanent and residential moorings along the Fossdyke Navigation.



Fradley Welcome Station, open 5 days per week

The welcome for visiting boaters could be improved by:

- Waterside Welcome Centre Tourist Information Centre to include boater and waterway information.
- Providing improved mooring facilities which are safe & secure, with good access to the city's facilities, shops, restaurants, cafés and pubs etc.
- Training for waterside business to offer facilities and services to visiting craft.
- Improve exising moorings at Washingborough and connections with the village.
- Develop moorings above Stamp End lock.
- Develop current marina proposals at Cherry Willingham.

Theme 5: Waterspace for Everyone

The development of a full waterspace study would look to create a successful waterway, bring together the broad knowledge and expertise of the Canal & River Trust, the Environment Agency and Lincoln City Council. Information can be drawn from a number of sources, including:

- The Boater's Handbook
- Better Towpaths for Everyone
- Enriching Nature Programme, the Sita Trust

The river corridor must be managed as a multi-functional space available for a wide variety of uses. Initial development of waterspace activities could widen Lincoln's waterway appeal by:

- Defining the Brayford Pool and waterways as one of Lincoln's primary tourist attractions.
- Developing land-based attractions and access.
- Developing new visitor moorings.
- Maintaining and developing trip/restaurant boats.
- Developing water taxi and park & glide services.
- Supporting existing rowing and canoeing activities.
- Support existing angling clubs.
- Developing canoe touring, negotiating navigation agreements with landowners and angling clubs to extend canoeing on the Upper River Witham.

Theme 6: River Restoration & Habitat Creation

Investigate the opportunities for reconnecting the River Witham with its flood plain, by creating washlands and the reinstatement of the old course of the river in its upper reaches, together with associated wetland habitats.



The River Brent Backwater Channel created in2003

The River Brent Park Project

The River Brent was restored as part of a joint initiative between the London Borough of Brent and the Environment Agency. The project provide environmental, flood risk and recreational benefits. Phase 1 was initiated in 1999 and completed in 2003, costing £1.5m.

River restoration and habitat creation for the Upper River Witham will provide a wide range of social & environmental benefits.

These include:

- Attractive, safe and accessible green spaces.
- A wide range of natural habitats and landscapes.
- A sense of community and environmental awareness.
- Diversification of agricultural land
- Improved walking, cycling and bridleway routes.
- A holistic approach to managing flood risk, improved water quality and biodiversity.

Waterway Character Areas

In developing the Study and the proposed themes we have divided Lincoln's waterway corridors up into twelve 'Waterway Character Areas.' Each of these areas represents a different type of waterway environment from the broad waterspace of the Brayford Pool, through the confined narrow corridor of the Commercial Core to the wider open landscapes of the Lower Witham Valley.

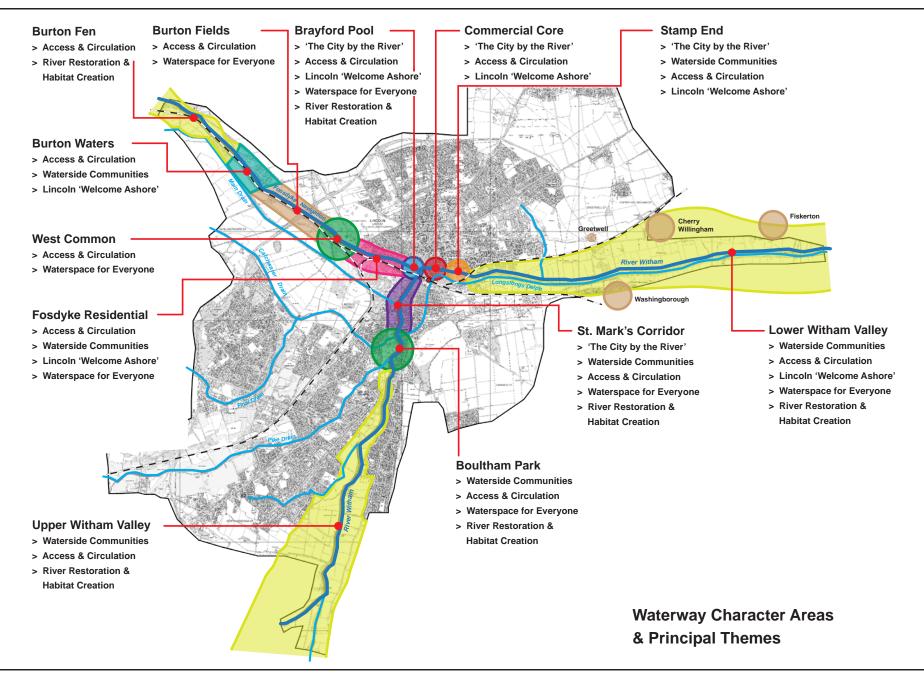
There are many aspects which contribute to the transition of the waterway character area, such as the type of waterspace, the relationship between landside development and water-based activities. By reviewing a waterway's historical development, whether it is natural or man-made, recording its fabric, its environmental qualities and understanding its current use, it is possible to define an area's intrinsic qualities.

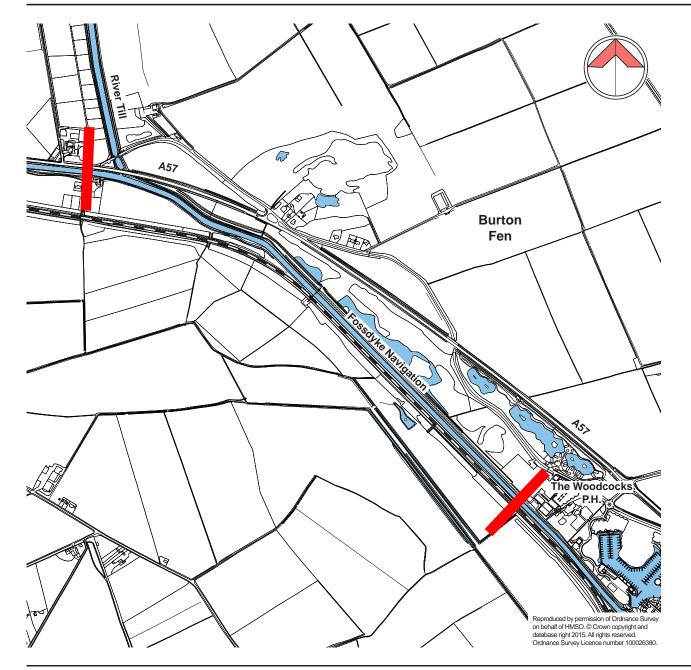
The Waterway Character Areas are:

- 1. Burton Fen
- 2. Burton Waters
- 3. Burton Fields
- 4. West Common
- 5. Fossdyke Residential
- 6. Brayford Pool
- 7. Commercial Core
- 8. Stamp End
- 9. Lower Witham Valley
- 10. St. Mark's Corridor
- 11. Boultham Park
- 12. Upper Witham Valley

The twelve waterway character areas are now elaborated overleaf:

Principal Themes





A tranquil section of the Fossdyke Navigation. Vegetation screens the busy A57 and old gravel workings to the north until the bridge crossing over the River Till.

The Fossdyke Canal Trail runs along the left bank of the Navigation. The right bank is tightly bounded by the railway.

Principal Themes

- > Access & Circulation
 - Protect long distant waterway views of the Cathedral and the approaches to the City.
 - Create gateways and a sense of place along the Fossdyke Canal Trail and waterway corridor.
- > River Restoration & Habitat Creation
 - Improve access to nature Opportunity to develop wetland habitats as a waterway destination and educational resource.



Extend visual envelope outside the urban core to maintain & improve important historic vistas of the City.



The Burton Waters Marina, boatyard and development



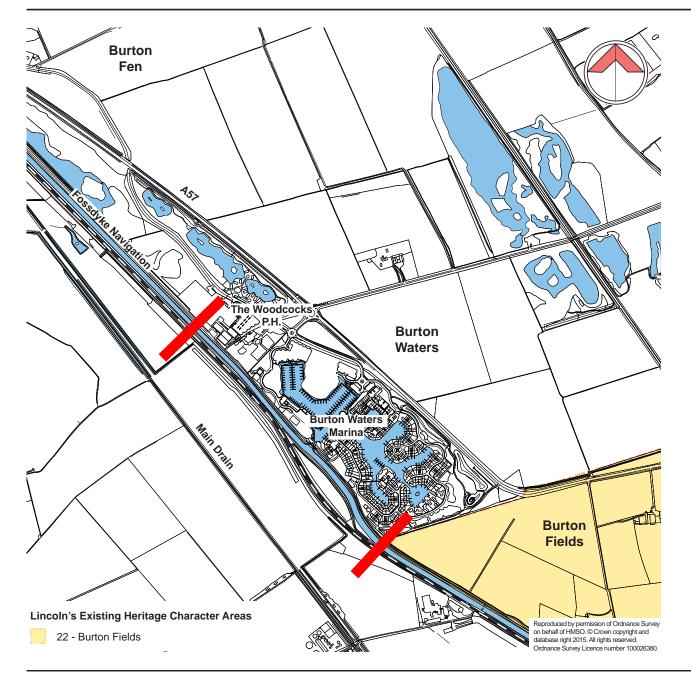
Galarea



The Woodcock PH

The Woodcock visitor moorings

Entrance lock into Burton Waters Marina



Burton Waters Marina Village is a primary waterway destination on the left bank of this section of the Fossdyke Navigation. The Marina is entered via a lock with a footbridge carrying the towpath over the entrance. The development provides full waterway services and a range of leisure activities. Online moorings are provided at The Woodcocks PH.

The Water Rail Way runs along the left bank of the Navigation with connections to Burton Waters Marina. The right bank is tightly bounded by the railway.

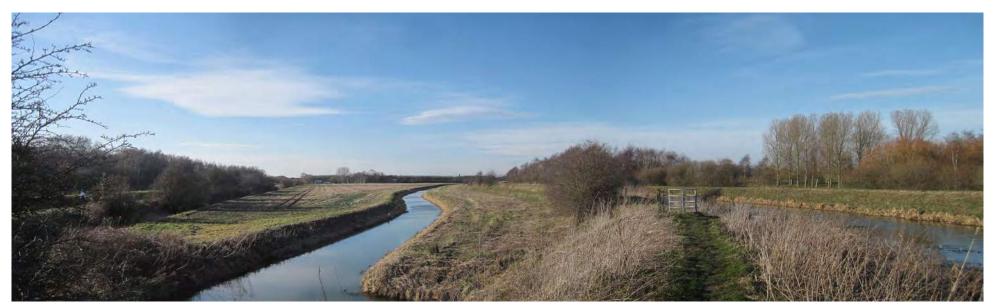
Principal Themes

- > Access & Circulation
 - Create gateways and a sense of place on the waterway corridor, improve access to the Burton Waters development and associated services from the Fossdyke Canal Trail.

> Waterside Communities

- Develop as a Waterway Destination for both cyclists, walkers, canoeists, boaters and Lincoln trip boats.
- Encourage connections between the marina and the Fossdyke Canal Trail.
- > Lincoln 'Welcome Ashore'
 - Encourage Visitor Moorings and the provision visitor information on Lincoln, the surrounding area and local attractions.

Burton Fields



Develop circular multi-user routes along the Catchwater Drain



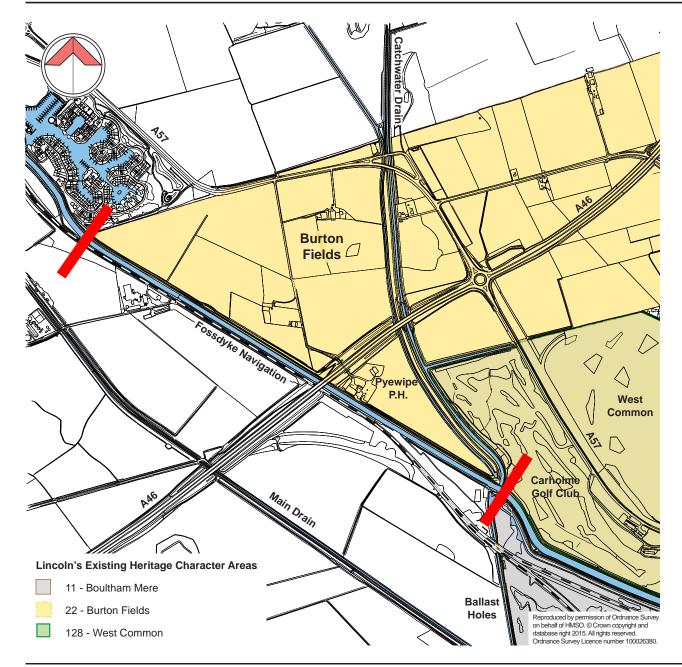
Extend multi-user surfacing westwards to the A46



The Pyewipe PH



Potential to develop a footpath along the flood banks with the cycleway below



This is a busy section of the Navigation, being a short walk from the centre of Lincoln. The section includes the popular Pyewipe PH which has its own online visitor moorings. The National Cycle Network (NCN) Route 64 from Skellingthorpe merges with the Fossdyke Canal Trail in this location.

The landscape is predominately low lying and agricultural on the left bank, with the A46 flyover crossing the Navigation at the Pyewipe PH and a historic packhorse bridge crossing at the confluence with the Catchwater Drain.

The right bank is tightly bounded by the railway.

Principal Themes

> Access & Circulation

- Create gateways and sense of place on the waterway corridor. Complete section of cycle path beneath the A46 Flyover and improve access and signage along the Catchwater Drain.
- Define walkers routes along the top of the flood bank with the cycle route below.

> Lincoln 'Welcome Ashore'

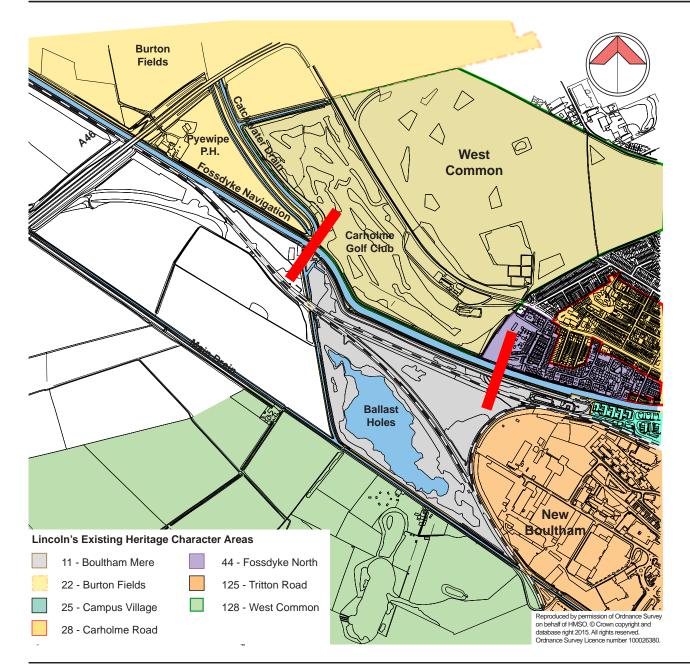
• Improve Visitor Moorings and the provision of visitor information on Lincoln, the surrounding area and local attractions.

> Waterspace for Everyone

- Promote the Pyewipe PH as a Waterway Destination for both walkers, cyclists, canoeists, and boaters.
- Promote Angling Opportunities on the right bank.



The well used & maintained multi-user path along the north bank of the Fossdyke Navigation



This short section is defined by the flood wall running along the boundary of the Caholme Golf Club and the broad multi-user path of the Fossdyke Canal Trail combined with NCN Route 64. Bankside vegetation partially screens the waterway along the left bank of the Navigation.

On the right bank of the Navigation are located predominately residential moorings with associated sheds and car parking on the narrow strip of land between the waterway and railway.

Principal Themes

- > Access & Circulation
 - Create gateways and sense of place on the waterway corridor, improve footpaths and signage leading to residential areas.

> Waterspace for Everyone

 Promote Angling Opportunities which are Accessible for All.



Potential to create gateways onto the waterway and improve footpaths leading to residential areas



Recent residential development opposite CRT depot and permanent moorings



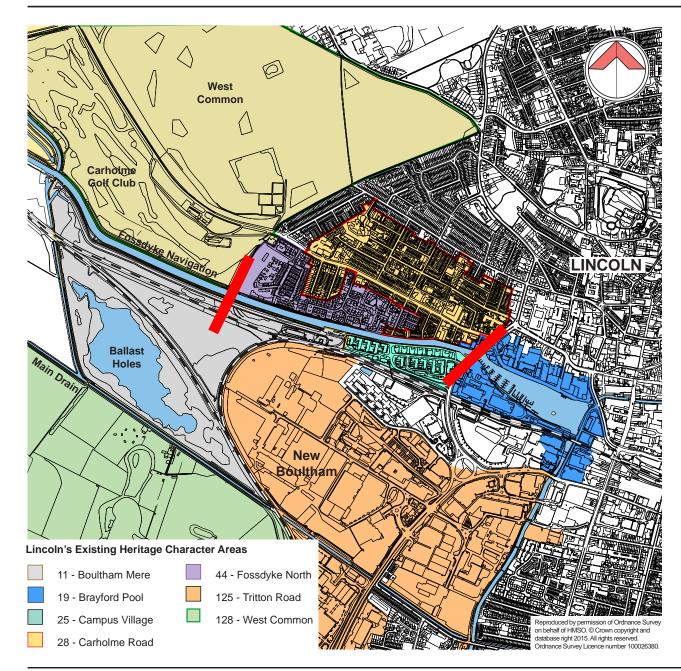
Unversity student accommodation & CRT moorings



Approach to residential area along the Fossdyke Navigation



CRT residential moorings



On the left bank of this section, the Navigation is enclosed by recent residential development in the western portion, leading to older more established dwellings at the eastern end.

The Fossdyke Canal Trail & NCN Route 64 is a busy route connecting the City to the wider waterway landscape. On the right bank are the CRT moorings for residential, permanent and visitor craft, which includes the CRT Depot. The recently constructed student accommodation buildings do not take full advantage of this waterside location.

Principal Themes

- > Waterside Communities
 - Develop Greenspace/Bluespace corridors and Sustainable Drainage Schemes to connect residential areas to the wider urban fabric.
 - Encourage the university student accommodation to take advantage of their waterside location and promote access along the waterway.
 - Develop Water Sensitive Urban Design.
- > Access & Circulation
 - Protect Views & Avenues into the City.
 - Create gateways onto the waterway corridor and improve signage to residential areas.
 - Improve connections with university campus.
- > Lincoln 'Welcome Ashore'
 - Improve existing moorings and access to the City for residential, permanent and visiting craft.
- > Waterspace for Everyone
 - Promote Angling Opportunities which are Accessible for All.

Brayford Pool



Protect important view of the Cathedral from the Brayford Pool



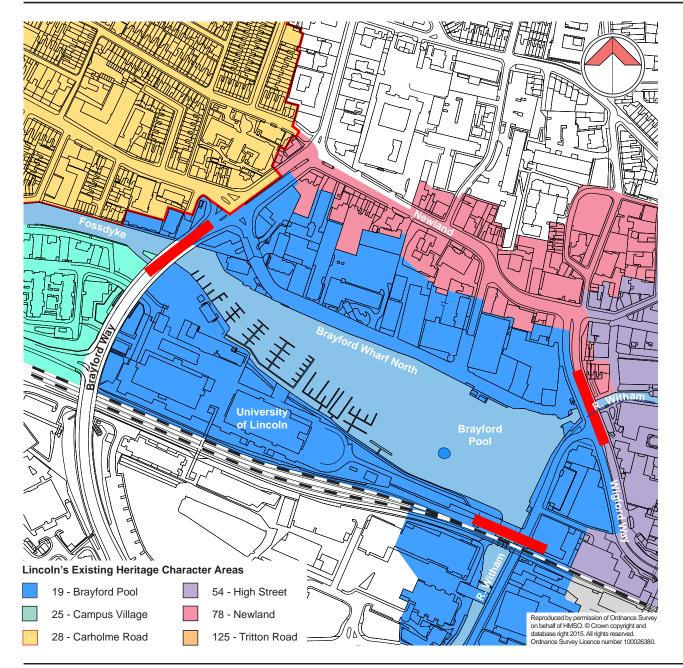
Existing Brayford Pool visitor moorings



Brayford Pool island wetland habitat creation



Railings and underutilised spaces define the pedestrian connect between the Brayford pool & the Glory Hole



The Brayford Pool is a triangular shaped water body created by the confluence of the Fossdyke Navigation and the River Witham. Since Roman times the Pool has served Lincoln, as part of the City's defences and for commerce, becoming the country's largest inland port during the medieval period.

Brayford Pool North acts as Lincoln's principal waterfront location and consists of a broad esplanade fronted by hotels, restraunts and cafés. On the southern bank is the University Campus and includes the access to Lincoln Marina. At the eastern end is Brayford Wharf East which is a busy road. The three waterway entrances are bridged by the Brayford Way, Wigford Way and mainline railway.

Principal Themes

> 'The City by The River'

• Develop land-based attractions, water-based services and water-based recreation.

> Access & Circulation

- Develop connections with wider city.
- Create gateways onto The Pool.
- Improve circulation around The Pool.
- Improve connections with the university.

> Lincoln 'Welcome Ashore'

- Develop commercial & visitor moorings.
- Create a 'Volunteer Welcome Centre' & TIC
- > Waterspace for Everyone
 - Develop a broad range of waterspace activities.

> River Restoration & Habitat Creation

• Habitat creation to include floating islands and the mitigation of engineered banks and walls.

Commercial Core



The City Square waterfront



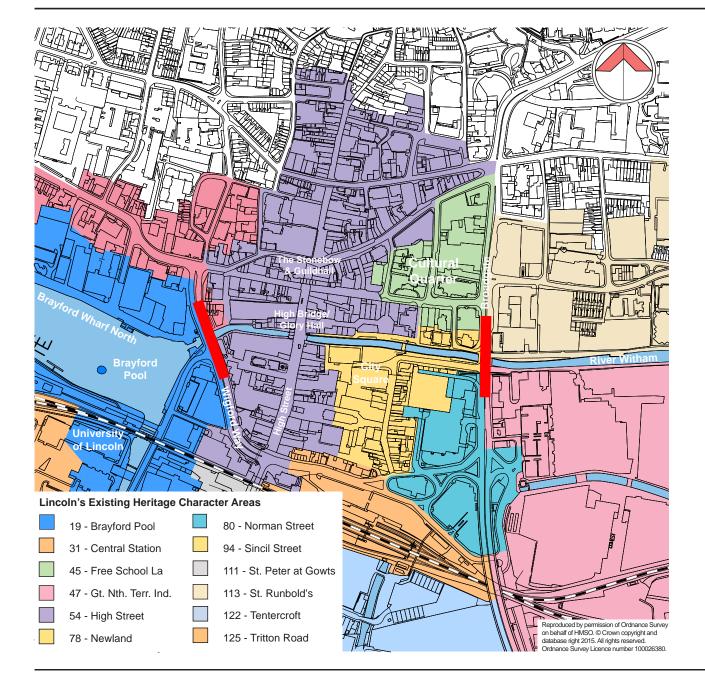
Railings separates the river corridor from its adjacent land uses



The High Street looking north towards the Stonebow & Guildhall



The access to the river from the Cultural Quarter via service yards



The River Witham has been constraint and canalised over the centuries through the main commercial and retail core of the city. The River is crossed at High Bridge (the Glory Hole) by the High Street which follows the alignment of the Roman 'Ermine Street.'

The City Square on the right bank is the principal waterfront public space within this section, however, railings throught the river corridor sever the linkage between the commercial quaysides and the river.

Access to the river from the Cultural Quater is via service yards and loading bays with no defined route linking the commercial waterfront to the wider City.

Principal Themes

- > 'The City by The River'
 - Develop land-based attractions, water-based services and water-based recreation. Encourage the City's Cultural Quarter's activities to be extended to the waterfront.

> Access & Circulation

- Develop connections with wider city. To include the High Street and Railway Station. Promote the two long distant walk of the Viking Way and Spires & Steeples Trail.
- Create gateways onto the waterway corridor by improving the connections with the High Street and the Cultural Quarter.
- Improve connections with The Brayford Pool via Wigford Way, Newlands and Guildhall Street.

> Lincoln 'Welcome Ashore'

• Develop commercial mooring opportunities. This could include trip and retaurant boats.



Stamp End is the transition zone between the City and the wider Lower Witham Valley



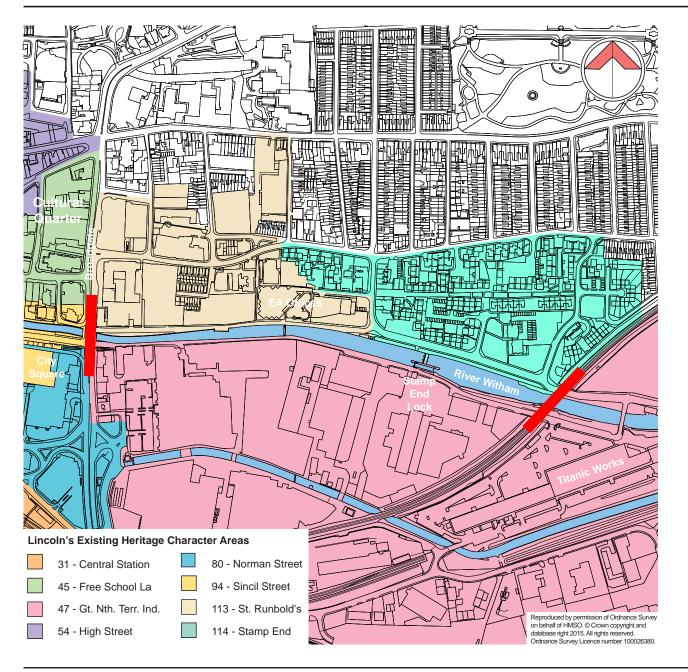
Regeneration of industrial buildings at Stamp End Lock



Stamp End Lock, the City's eastern gateway of the River Witham



Imposing facades of industrial buildings along Waterside South



To the east of Broadgate and Thorn Bridge the City's river landscape changes to a mixture of large postindustrial Victorian buildings, small scale residential buildings and surface car parks. The area also includes the Environment Agency's Area Office at Waterside House, on the left bank leading to area of predominately 1960's urban housing.

The river corridor includes CRT's Stamp End Lock and the quayside used by the steam packet service.

To the east on the right bank are the Titanic Works, which have now been converted into offices.

Principal Themes

- > 'The City by The River'
 - Opportunity to define Stamp End as the City's eastern river gateway.

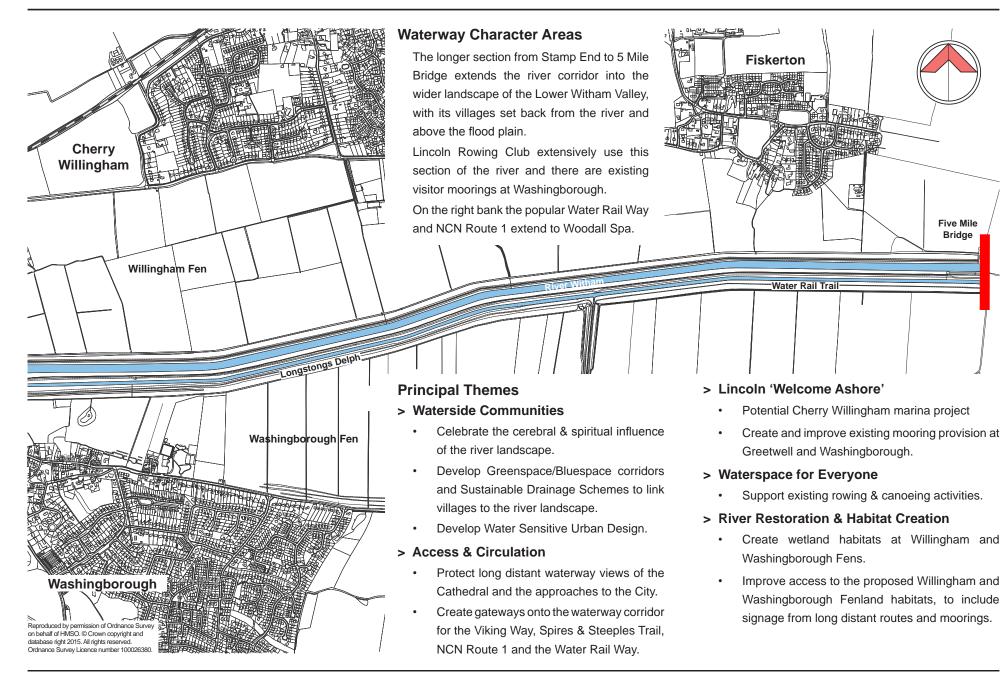
> Waterside Communities

- Encourage new developments to positively address the river corridor.
- Develop Greenspace/Bluespace corridors and Sustainable Drainage Schemes to connect residential areas.
- Develop Water Sensitive Urban Design.

> Access & Circulation

- Improve connections to the 'Spires & Steeple
 and Water Rail Way.'
- Create gateways onto the waterway corridor.
- > Lincoln 'Welcome Ashore'
 - Extend & improve visitor moorings & facilities.
- > River Restoration & Habitat Creation
 - In-channel habitat improvements.
 - Fish & eel pass for Stamp End Lock/Weir.







The River corridor passes through an urban landscape of residential, industrial, post-industrial and commercial uses



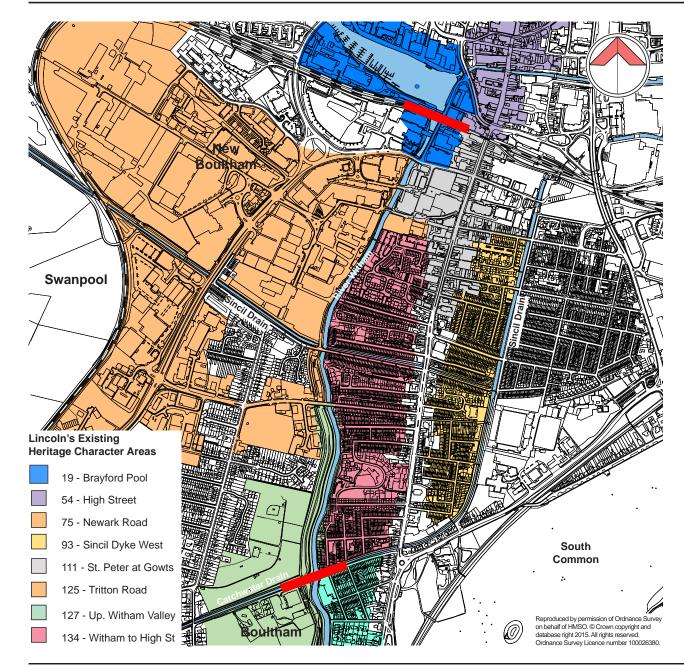
River corridor cut off from adjacent landscape



Previous river access proposals require reinvigorating



Protect distant views to the Cathedral



Waterway Character Areas

The River Witham to the south of the Brayford Pool has well defined boundaries. The river corridor passes through an mixed landscape of residential, industrial, post-industrial and commercial uses, together with the St. Mark's Retail area.

The river channel is navigable for canoes, but not for cruisers as the mainline railway bridge has been permanently closed. The river is crossed by serveral bridges and the Sincil and Catchwater Drainswhich provide opportunities to develop connections between the river corridor and the wider urban areas.

Principal Themes

- > 'The City by The River'
 - 'Lincoln Green Initiative' Opportunity to create pocket parks and connect wildlife corridors, especially at access points and bridge crossings.
- > Waterside Communities
 - Develop Greenspace/Bluespace corridors and Sustainable Drainage Schemes to connect residential areas.
 - Develop Water Sensitive Urban Design.

> Access & Circulation

- Create gateways onto the waterway corridor
- Develop connections with the wider city.
- Renovate waterside walkways & cycleways.
- > Waterspace for Everyone
 - Develop waterspace activities e.g. canoeing.
- > River Restoration & Habitat Creation
 - In-channel habitat improvements to extend wildlife corridors and mitigate the impact of engineered structures, river banks and walls.



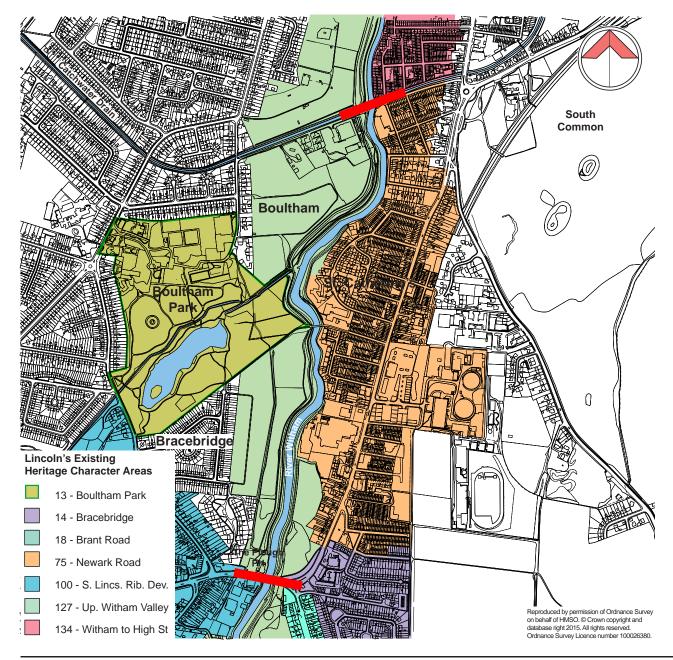
Opportunity for the restoration programme of Boultham Park to connect to the wider corridor of the River Witham



Boultham Allotments

River Witham looking north from Bracebridge

The Plough PH at Bracebridge



Waterway Character Areas

To the south of the Catchwater Drain the river corridor has a mosaic of open spaces, horse paddocks, woodlands and allotments. Along the River Witham there are fine views to the Cathedral to the north. The river and associated drainage channels interweave with multi-user routes creating a leisure transport corridor into the City.

Principal Themes

> Waterside Communities

- Connect with allotments as part of a wider 'Linclon Green' initiative.
- Develop Greenspace/Bluespace corridors and Sustainable Drainage Schemes to connect residential areas.
- Develop Water Sensitive Urban Design.

> Access & Circulation

- Create gateways onto the waterway corridor.
- Improve access with Boultham Park.
- Connect with urban areas.
- Improve signage for walks & cycleways.
- > Waterspace for Everyone
 - Develop waterspace activities e.g. canoeing.
- > River Restoration & Habitat Creation
 - Re-connect the river with the flood plain.
 - Create backwater wetland creation.
 - In-channel habitat improvements to extend wildlife corridors and mitigate the impact of engineered structures, river banks and walls.



Opportunity to reconnect the Upper River Witham with its flood plain



Existing access to Bracebridge residential areas



Remove redundant signage



Waterway Character Areas

On moving south the river corridor is characterised by the river's containment within embankments and the flood plain broadening out into open farmland, extending to Lincolnshire Fen in the south.

Residential areas are set back from the river on high ground creating a continious green corridor leading into the City.

Principal Themes

> Waterside Communities

• Develop Greenspace/Bluespace corridors and the integration of Sustainable Drainage Schemes to connect residential areas.

> Access & Circulation

- Protect views & avenues into the City.
- Create gateways onto the waterway corridor .
- Connect with urban areas Access LN6.
- Improve signage for walks, cycleways & bridleways.
- Improve intepretation and access to nature.
- Small car parks at bridging points for anglers and walkers.

> River Restoration & Habitat Creation

- Set back flood embankments to provide increase flood storage, water quality and ecology enhancements through floodplain reconnection and channel morphology alterations.
- Backwater wetland creation to include improvements in offline fish and wildlife habitats.
- In-channel habitat improvements to extend wildlife corridors and mitigate the impact of engineered structures, river banks and walls.

Upper Witham Valley



Opportunity to improve the water quality of the River Brant



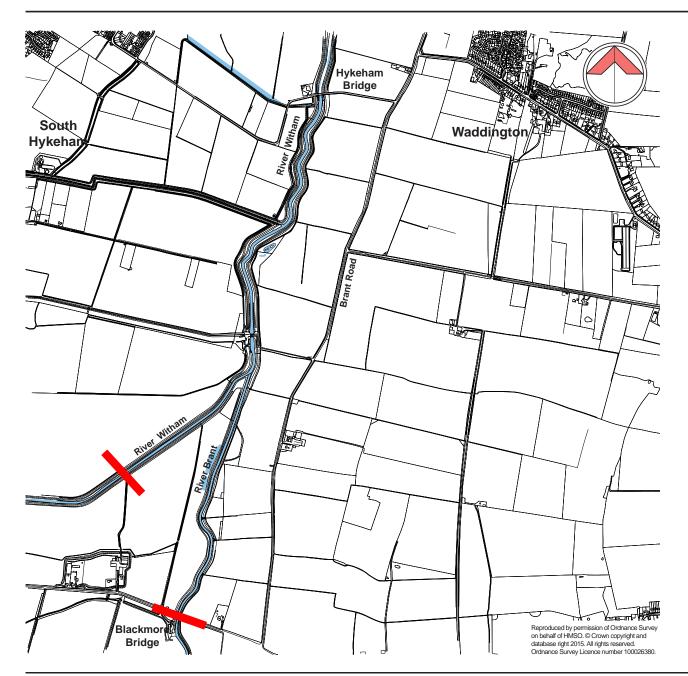
Develop pedestrian links along the River Brant



Backwater wetland habitat creation along old course of the River Witham and North Hykeham Pump Drain



Create parking area at bridges along the river corridors



Upper Witham Valley

Waterway Character Areas



The River Witham constrained by embankments within a broad open flood plain which extends into the Lincolnshire Fen

Principal Themes

- > Access & Circulation
 - Create gateways onto the waterway corridor.
 - Improve signage for walks, cycleways & bridleways.
 - Improve interpretation and access to nature.
 - Small car parks at bridging points for anglers and walkers.

> River Restoration & Habitat Creation

- Set back flood embankments to provide increase flood storage, and water quality and ecology enhancements through floodplain reconnection and channel morphology alterations.
- Backwater wetland creation to include improvements in offline fish and wildlife habitats.
- In-channel habitat improvements in both the Rivers Brent & Witham, to extend wildlife corridors and mitigate the impact of engineered structures, river banks and walls.

6 Conclusion

Conclusion

Lincoln's waterways contribute to the local distinctiveness of the city and form part of the region's environmental and cultural inheritance. Water-based development and recreation can act as a catalyst for regeneration, stimulating leisure and tourism development.

By establishing a clear vision for Lincoln's waterways, and by adopting a corridor wide approach to its planning and development, real benefits can be achieved for the local inhabitants, visitors and wildlife communities.

As a next step a full Waterspace Study should be undertaken, which would:

- This Scoping Study will act as a catalyst to provide the framework for the stimulation of future waterside development, maximise WFD objectives and inform emerging local plan policies.
- Provide the client partnership and other interested organisations with a framework and action plan for promoting sustainable waterway related proposals to develop Lincoln as a 'waterway destination.'
- Capitalise on the river corridor as a linear recreation, tourism and transport resource and identify specific opportunities for the development of new or enhanced recreational activities.
- Promote the waterway corridors as an integral part of the surrounding area in order to support bids for external funding and encourage private sector partnership.
- Identify opportunities to promote access to the waterway corridors and integrate existing and proposed land uses with water based activities.

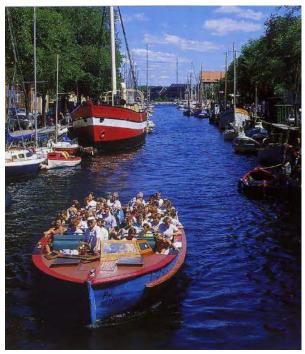


'Greening' the River Nene, Peterborough

- Improve the provision for rowing, canoeing, boaters' facilities, slipways and visitor moorings.
- Create a series of destinations and focal points along the waterway corridors, including the assessment of potential mooring sites within the City centre and those serving local communities.
- Recognise 'Access for All,' including access to the water, and the importance of open space in enhancing the waterway corridor by the promotion of sport, healthy outdoor recreation and visual amenity.
- Protect and, where possible, enhance the river and adjoining watercourses and green spaces as wildlife corridors. Manage the implications of increased recreational pressure and protect sensitive areas.
- Support the Lincolnshire's wider environmental aspirations linked with climate change adaptation and mitigation, flood risk management and improving water quality.
- Explore a phased approach to the development of a full Waterspace Study, subject to client priorities and funding constraints.



Pedestrians are drawn to the water's edge at King's Staith, York



Trip boat & extensive waterspace activity, Nyhavn, Copenhagen

Key Issues

As an introduction to the consultation process, six key issues and opportunities have been expressed in the stakeholder meetings currently undertaken. These are:

- There is a recognition that Lincoln does not make the most of its river corridor, waterways or urban waterfronts and is missing out in the development of leisure, recreation and creation of wildlife habitats.
- 2. There is an acute lack of visitor mooring provision within easy reach of the City Centre and a lack of welcome for visiting craft.
- 3. Access to and around the Brayford Pool needs to be improved together with the river frontages adjacent to the City's Cultural Quarter.
- Collaboration and partnership is required with organisations and land owners to develop mooring and access opportunities along the Lower River Witham.
- Investigate the opportunity to set back the flood defences along the Upper River Witham. This will improve flood risk capacity, river management, habitat creation and the softening of hard engineering structures,
- As part of Lincoln's overall development and expansion, the waterway corridors and drainage systems need to play their part in providing access to nature and a sense of place for wider communities.



Investigate opportunities to develop visitor moorings within Brayford Pool.



Develop connections between the High Street and Brayford Pool by enhancing access to nature.

Next Steps

In developing this Scoping Study the client partnership would wish to undertake the following next steps:

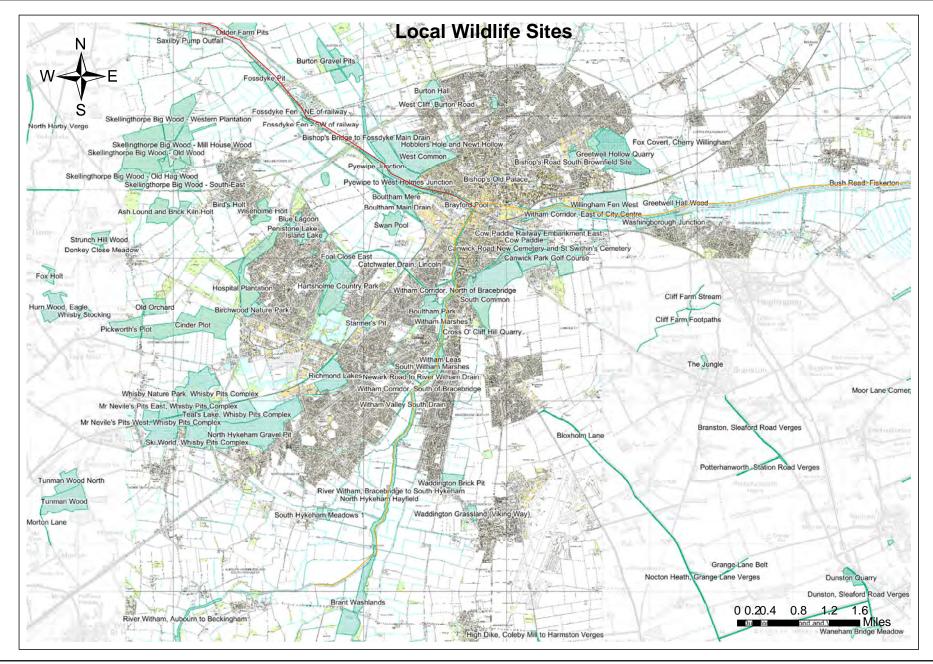
- In collaboration with the local authorities, develop the strategic waterway benefits and their compatibility with core business objectives.
- Identify key specific outcomes and outpiuts in the preparation of the waterspace strategy and accompanying action plan.
- Share outline ideas of character areas and themes with key stakeholders.
- Widen current stakeholder consultation.
- Work with stakeholders to prioritise key projects.
 For each key project understand:
 - Key issues & opportunities
 - Budget costs
 - Resource requirements
 - Specific funding opportunities
 - Key risks (include risk register)
 - Assessment of cost/benefit
 - Identification of how the project will help to deliver key objectives in other organisations plans
- As study outputs are completed and key projects are developed integrate findings into planning process.
- Develop method to evaluate the overall success of the study.

Consultations

Consultations with the following parties have taken place during the development of this scoping study:

Organisation	Person	Interest	Email	Date of Meeting
Brayford Trust	Philip Davidson Keith van Bergan	Principal Contact Harbourmaster	johndavidson@madasafish.com info@brayfordharbour-lincoln.co.uk	31st March 10.00 - 11.00
CRT IWA Regional Chair	Danny Brennan David Pullen	Chair of Waterway Partnership Waterway Partnership member	danniebrennan@hotmail.com david.pullen9@btinternet.com	5th March 14.00-15.00 CRT - Newark
CRT	Sean McGinley Lucie Hoelmer	Waterway Manager Enterprise Manager	sean.mcginley@canalrivertrust.org.uk lucie.Hoelmer@canalrivertrust.org.uk	6th March 11.30-13.00 CRT - Newark
English Heritage	Tim Allen	Heritage Inspector	tim.allen@english-heritage.org.uk	Sent Brief
Lincoln Boat Club	Adi Pailthorpe	User	hobgoblin23@hotmail.com	Message Left
Lincoln City Council	Gill Wilson Sarah Harrison	Senior Planner Conservation Officer	gill.Wilson@lincoln.gov.uk sarah.harrison@lincoln.gov.uk	10th March 13.30-15.00 City Hall, Lincoln
Lincolnshire Rivers	Fiona Mckenna	Witham Catchment Partnership Project Officer Catchment/Management Planning	lincsrivers@gmail.com	10th March 15.30 Lincoln
LWT	Caroline Steel	Head of Conservation	csteel@lincstrust.co.uk	Sent Brief
Northern Canals Association	Chris Hayes	User, Member and part of Witham Partnership	chris.hayes-kyme@ntlworld.com	17th March 14.00-15.00
University of Lincoln	Dan Clayton	Environment & Sustainability Manager	dclayton@lincoln.ac.uk	17th March 14.00-15.00 Lincoln University
Upper Witham IDB	Martin Shilling Samantha Ireland	External Partnerships	samanthaireland@witham-3rd-idb.gov.uk	10th March 11.00 Witham House, Lincoln

Appendix





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