Canal & River Trust

Keeping people, nature & history connected

THE UNIVERSITY OF NORTHAMPTON

A review of the impact of waterway restoration

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Executive Summary

The Canal & River Trust recognises that there are many economic, social and environmental impacts of waterway restoration projects carried out over the previous two decades. These projects carried out by restoration groups and their partners as well as by the Trust contribute to the quality of life and the social and environmental aspects of communities.

The Trust saw the wide range of benefits that recent restoration projects had brought to communities, local economies and to the wider waterway network as a whole and was keen to reiterate that it's not just a case of restoring for restoring sake or through a sense of romantic nostalgia. The University of Northampton was commissioned to research and review the evidence base and evaluate and report on the impact that waterway restorations have had on communities. The research also aimed to provide an overview of the impact indicators that the Trust might utilise to evaluate future restoration programmes.

The research aims were:

1. To assess the economic impacts delivered by canal restorations in relation to:
    a. Employment.
    b. Leisure and tourism.
    c. Housing.
    d. Transport.
2. To assess the social impacts delivered by canal restorations in relation to:
    a. Poverty.
    b. Social Capital.
    c. Well-being.
    d. Health.
    e. Heritage.
3. To assess the environmental impacts delivered by canal restorations in relation to:
    a. Transport.
    b. Flooding and water quality.
    c. CO2 emissions and pollution.
    d. Biodiversity.
4. To develop a holistic matrix for capturing the future social impact of canal restorations that:
    a. Captures outputs, outcomes and impacts.
    b. Captures these in relation to the economic, social and environmental spheres.

The research was conducted over a period of five months and utilised a mixed-methods approach, combining both quantitative and qualitative methods. The qualitative data was collected through an analysis of seven case-study restoration projects and a series of telephone interviews with 9 stakeholders associated with seven canal restorations. The research plan was designed in partnership with the client, the Canal & River Trust, to enable the most effective data collection and also to ensure that the agreed project objectives were reached. This report is based on an evaluation of previous canal restoration reports and also references an overview of the literature, both academic and grey, on the evaluation of waterway restorations, social value creation and economic impacts. Case- study data on previous evaluations is presented in a comparable format, with fiscal data set at 2012 Sterling levels. Future evaluation measurements are suggested, these are based upon the empirical data collected from the case-study data and the interviews. The research identified that canal restorations have many interconnected benefits across the economic, social and environmental areas. Some of these benefits, like jobs created and amount of tourism attracted, are easy to measure and can be quantified. For example the Kennet & Avon restoration increased jobs in the leisure and tourism industry by 18%. In 2010 there were over 617,000 visitors, spending over £1.7.million to the Bridgwater & Taunton Canal. These benefits are easier to measure and recognise than some others and they bring tangible and prolonged benefits to local communities. However, the harder to measure impacts, such as those that effect well-being and community involvement are of equal significance and must be considered alongside the economic impacts to fully understand how a canal restoration impacts on a local area.

The data analysed showed a plethora of economic impacts from housing and land value increases, for example the Rochade canal restoration whistimulated significant development, from offices to residential, to a growth in jobs and business turnover from increased leisure and tourism. The restoration projects were seen as a catalyst for economic regeneration and in many cases led to new building projects and the rejuvenation of brownfield sites, such as the Staveley Town Basin. Tourism also had a considerable impact across all the restorations and development projects, with some canal restorations initiatives (i.e. the Falkirk Wheel), generating many direct jobs and a significant increase in tourist spending, with over £3 million generated in 2013.

As well as the economic impacts of canal restoration the data analysed showed that there was a significant impact in terms of social, health and well-being factors. For example, many

people used restored canal towpaths for exercise and recreation. This increase in physical activity had a positive impact not only in terms of physical well-being but also in terms of a reduction in absenteeism and traffic, as commuters were able to walk or cycle to work and people felt healthier after increasing their physical activity. There were also a wealth of environmental benefits identified by the data, such as an increase in biodiversity and wildlife as improvements along canal corridors created improved habitats (there are over 20 SSSIs along the Scottish Lowland canals alone). Air quality and drainage were improved in some areas and poor air quality was reduced, as both commuter and freight traffic were decreased in some parts of the country.

There have also been heritage benefits as historically important buildings and structures, such as aqueducts, have been restored and re-developed along restored canal corridors. Volunteering and community involvement have also benefited from restoration work as the data clearly shows that local volunteers have made considerable direct contributions to both the restoration and maintenance of many of the case-study restorations. Volunteers have raised money and provided some of the physical labour to carry out aspects of restoration work and some of the projects connected to the restored canals were undertaken by volunteers. Indeed, community buy-in was seen as essential for the success of any restoration. Educational and training programmes were also important aspects of many restorations, which has positively impacted on employability and confidence amongst young people.

In relation to funders, the data suggested that they were looking for different things (over and above economic returns). Indeed, in many cases issues like well-being, environmental improvements and healthy living were also key considerations (although clearly much depends on who the funder is and what their strategic aims are). The data gathered in this report suggests that the six key areas that funders want to see assessed are (in order of importance): jobs created; number and type of users; impacts on health and well-being; environmental benefits; community engagement/volunteers; and sustainability.

These six areas have been used to create a revised social impact matrix from the original matrix developed from the initial literature review report (see Section 9 for more information). The aim of the matrix is to provide a key selection of indicators that could be used by all those involved in restoration of canals and rivers to assess the impact of future waterway restoration schemes using a range of relevant and comparable indicators across each project.

1. Introduction

1.1 – Overview

Inland waterways can contribute to the quality of life and the social and environmental underpinnings of communities. They are both a long-standing facet of and important component of the rural and urban landscapes of England and Wales (Jacobs, 2009). Since the 1960's there has been an increasing focus on the restoration of inland waterways, as the declining use of canals for transporting industrial goods and raw materials in the first half of the twentieth century had led to rapid deteriorations in the inland waterway infrastructure in England and Wales. These restorations have generally focused on improving navigability and have utilised volunteers and charitable funds (Inland Waterways Association, 2013). Local government is also keen to support such restorations as they are seen to provide wider advantages to communities through enhanced property values, increased amenity values, the creation of business opportunities and jobs as well as ecological, recreational, educational and environmental benefits (Jacobs, 2009; Inland Waterways Association, 2013). These wider benefits can be argued to be the *social impact* of inland waterway restorations.

This literature review is based on a series of reports of canal restorations, commissioned by British Waterways and BWS, and a range of relevant academic literature. The following canal restoration reports were included: the Bridgwater & Taunton canal; the Cotswold Canal; the Forth & Clyde canals; the Huddersfield Narrow and Rochdale canals; the Kennet & Avon canals; and the Liverpool Canal Link. The British Waterways Scotland 'Social and Environmental Monitoring Report' was also included as part of the literature review. The academic literature was located using an online library search system (NELSON). The search terms included the following: inland waterways, canals, rivers, canal restoration, waterway restoration, river restoration, social impact, impact waterway restorations, impact river restoration, impact canal restoration and social value.

1.2 – Social impact measurement

Social impact has no single universally accepted definition (Sairinen and Kumpulainen, 2005); however for the purposes of this literature review it shall relate to the social and environmental benefits delivered by an organisation to society. There are many different types of social impact measurement tools available for use by social ventures in assessing the impact that they have. These include Social Return on Investment (SROI) (Hall and

Arvidson, 2013), the 'Balance Scorecard' (Bull, 2007), as well as 'practical toolkits' such as 'Prove and Improve' (New Economics Foundation, 2008) and 'Outcomes Star' (London Housing Foundation and Triangle Consulting, 2006). Although these can offer social enterprises useful tools for measuring their social impact, they are problematic as they are either 'focused on *outcome* from the perspective of the social enterprise or are targeted at specific populations such as the homeless' (Denny *et al.*, 2011: 152). This specific nature makes it difficult to use them as underlying frameworks in the development of new toolkits targeted at specific sectors (i.e. canal restorations). Indeed, prior research with the 'Wooden Canal Boat Society' identified that even when such toolkits (i.e. SROI) are used, they are complex and resource intensive for the social enterprise in question, which limits their use and effectiveness (even when the results are both informative and beneficial) (Wilson and Bull, 2013). Therefore a generic social impact framework is required that provides a theoretical underpinning for the development of sector specific social impact tools.

In providing a generic framework for the development of social impact matrices, McLoughlin *et al.* (2009) developed the SIMPLE methodology, which focused upon the measurement of *outputs*, *outcomes* and *impact*. An o*utput* can be defined as the direct and easily identifiable outputs of a waterway restoration (i.e. the number of miles of canal restored) (McLoughlin *et al.*, 2009). However, whilst considering *output* as a method of evaluation is useful for tracking the success of a restoration from this particular perspective, if it is employed as a singular measure, the evaluation will not include important longer-term participant benefits, i.e. *outcomes*. An o*utcome* represents positive changes to participants' states of mind that will enhance their lives, their future employability and their psychological well-being (McLoughlin *et al.*, 2009). An example of this could be the effect that a restored waterway had on the well-being of local residents. *Impact* is an even longer-term benefit and is the impact on society resulting from the restoration programme (e.g. the increased tourism revenue that a restoration brings) (McLoughlin *et al.*, 2009). *Impact* is the most difficult area to measure, as it is focused on the wider and less tangible aspects of a waterway restoration. However, it is important to measure this as otherwise the effectiveness of a restoration cannot be fully understood. In order to do this though, a standard framework of measuring the output, outcome and impact of waterway restorations needs to be developed. This is what this research project seeks to produce.

2. Waterway Restorations

2.1 - Defining a waterway restoration

What is waterway restoration? One definition, taken from the Princeton university website, explains it as: *Waterway restoration* is the activity of restoring a canal or river, including special features such as warehouse buildings, locks, boat lifts, and boats. In the United Kingdom, Canada and the United States, the focus of waterway restoration is on improving navigability, while in Australia the term may also include improvements to water quality (Princeton University, 2013). In the UK, most of our waterways (canals and rivers) were built during the 'Industrial Revolution' at a time when a reliable system of transporting large quantities of goods was needed. Nowadays, these waterways provide many of us with peace and tranquillity, a place to escape to and reconnect with our heritage and nature. Half the population lives within five miles of a Canal & River Trust waterway (Canal & River Trust, July 2013). The Inland Waterways Association (IWA), a charity which advocates for the restoration of inland waterways for public benefit, suggest that local and national government recognise the many benefits of waterway restoration including amenity value and enhanced property values which may promote investment. Indeed, UK canals are home to many listed buildings and include 5 UNESCO heritage sites.

2.2 – The benefits of waterway restorations

The importance of waterway restoration has become accepted worldwide and spending on waterway restorations by governments and charities has increased significantly. For example, Palmer and colleagues estimate that $14 billion dollars has been spent on the restoration of streams and rivers within the USA since 1900. However, what actually makes for a successful restoration is still in dispute (Palmer, 2005, Landers, 2005). Much has been written (Sairinen and Kumpulainen, 2005; Palmer, 2004; Jacobs, 2009; Lander, 2005; Zhao, 2013) about the benefits and costs of waterway restorations. In the British Waterways report *Waterways and Development Plans* (2003) the Inland Waterways Amenity Advisory Council (IWAAC) highlighted the value and importance of inland waterways. Their report covered a diverse range of policy objectives and the wider sustainable development and social inclusion agendas that benefit from waterways; these included regeneration, sport and recreation, tourism, heritage, culture and the natural environment and transport.

Postel and Richter (2003), in their book *Rivers for Life*, are very clear about the value of rivers and the need for restoration. Indeed, they state that "…*we squander the wealth of nature without tallying the loss of ecological services that human economies depend upon".* Waterway restoration has become a worldwide phenomenon and a booming enterprise (Palmer, 2005) and billions of dollars are being spent on restoration projects in countries across the world, from the USA to Japan. At the '8th International Forum on Waterfront and Watershed Restoration,' held in Tokyo in 2011, the opening speaker, Dr Koutarou Takemura, was very clear about the importance of waterway restoration, arguing that rivers were closely linked with the comfort and well-being of people and that greater international interaction was needed amongst those involved in their restoration.

The Canals & Rivers Trust (CRT, 2013) promotes the health benefits of walking besides the canals on its website stating that "*Plenty of evidence suggests that simply being near to water makes people more content and relaxed - so what better place to exercise and spend your leisure time than alongside a canal or river? With over 2000 miles of walking routes around the country, and links to thousands of miles of footpaths, the Canal & River Trust's towpaths provide peaceful havens in towns and cities across the UK. The network offers excellent walking routes for leisurely strolls or long-distance hikes.* In order for people to enjoy these health benefits, the cultural and heritage aspects of the canal system and the associated social and economic benefits, it is imperative that the waterways are maintained and restored. The CRT states that "…*an underperforming waterway is usually a symptom of the economic and social failure of the neighbourhood through which it passes"* (CRT, 2013).

It can be argued that it is only by monitoring the *outputs*, *outcomes* and *impacts* of waterway restorations that the most effective strategies can be identified. This is of even greater importance in the current financial crisis when financial resources are scarce and competition for them is high. Whilst it is not the purpose of this paper to discuss the merits of such resource scarcity and competition, the issue is salient for waterway restorations and hence the CRT. The reality is that fiscal resources are currently subject to competition, with the aim of providing better value for money and more efficient services (Stucke, 2013). This can also be seen in the UK; for instance, the public procurement process is concerned with achieving best value from tenders and the passing into law of the 'Public Services Social

Value Act' (SVA)[1] has meant that considerations of best value must now include social and environmental impacts (NAVCA, 2013).

The Marmot review into health inequalities in England titled 'Fair Society, Healthy Lives', made several recommendations for reducing health inequality. The main policy recommendation related to creating and developing healthy and sustainable places and communities. A secondary objective was centred upon the need for developing participatory decision-making at a local level in order to empower individuals and local communities to become healthier and lead more sustainable lives, (2010:9). The Canal and Rivers Trust could play a significant role in bringing about these recommendations with their work on restorations and through the existing waterway network.

2.3 – The Public Services (Social Value) Act

The SVA is a legislative attempt by the UK government to ensure that local government consider the wider impacts of their procurement processes on the communities that are impacted by the services being procured. Indeed, the SVA Act (2013: 2) states that the local body must assess *"…how what is proposed to be procured might improve the economic, social and environmental well-being of the relevant area…"* and that in doing so they must consider how *"…in conducting the process of procurement, it might act with a view to securing that improvement?"*. The SVA is applicable to any public body in England and Wales that engages in a public procurement process. This includes local authorities, government departments, NHS Trusts, Primary Care Trusts (PCTs), fire and rescue services and housing associations (CIPS, 2013).

The SVA has important implications for local authorities as it seeks to level the playing field for third sector organisations that are often competing with large, private sector organisations with significant experience of navigating the public procurement 'space'. This arose as it was recognised that third sector organisations (and especially social enterprises) were ill-equipped to tender for government contracts (Floyd, 2013). This was often because they did not have the capacity, the resources or the financial backing required to meet procurement criteria. Indeed, as Nick Hurd MP stated *"…This Act is an important step in*

[1] Please note that legislation referred to in this report may not necessarily apply in Scotland or Wales, as both of these countries have devolved legislatures. and therefore some of their laws may differ. For example, the Active Travel (Wales) Act 2013 may have some impact on future canal restorations in Wales.

encouraging public sector commissioners to think harder about maximising value to communities. It also supports our commitment to make it easier for charities and Social Enterprises to help deliver better public services…" (Cabinet Office, January 2013). However, through the consultation phase the bill was amended so that it is now only the procurement of services that is covered by the bill, and not the procurement of goods or works (Floyd, 2013). Nevertheless, the importance of the SVA to third sector organisations cannot be overstated. Indeed, in focusing upon the non-financial elements of service delivery at the commissioning and procurement phases, it provides a legislative framework that *requires* public bodies to consider the triple-bottom line (economic, social and environmental) of a contract that third sector organisations are so adept at delivering. This makes the demonstration (and hence measurement) of social and environmental impact increasingly crucial for third sector organisations as such reports could be as important as financial accounts in demonstrating the robustness of a tender.

3. Impact of restorations

The Jacobs report, *The Benefits of Inland Waterways*, published in 2009, highlighted many positive benefits of waterway restorations, including significant community improvements and cohesion benefits, which they argue can be sufficient justification for investment in such restoration (Jacobs, 2009: iv). Other benefits ranged from the creation of business opportunities (e.g. restaurants), to increased land/property prices and opportunities for carbon emission savings through renewable energy generation and transport. Jacobs (2009) also argued that drainage and flood protection were other possible benefits of such restorations, alongside improvements in water quality. Other benefits cited included recreational (e.g. water sports), heritage and cultural opportunities, as well as possibilities for education and volunteering. They also suggested that the regeneration of waterside areas could lead to a reduction in crime and vandalism (Jacobs, 2009).

However, the Jacobs (2009: 16) report also acknowledges that there might be some disadvantages too; for example, increased exposure to flooding for some properties or health and safety concerns such as potential increases in incidences of drowning, and even ecological damage. Finally, when restoring UK inland waterways (canals and rivers) it must be remembered that the implementation of the Water Framework Directive (WFD) has intensified the focus of such restoration by requiring all natural water bodies to be returned to at least a good ecological state, and modified and artificial water bodies, such as

reservoirs, to obtain at least a good ecological potential by 2015 (European Commission 2000). There are therefore three factors that need to be considered in relation to waterway restorations; economic, social and environmental impacts. In addition, within each of these areas are the three types of impact identified earlier; output, outcome and impact (McLoughlin *et al.,* 2013). Table 1 overleaf provides an overview of this with examples of the different types of social impact for waterway restorations.

Table 1 – Six-axis Impacts of Waterway Restorations

Social Impact Typology	Economic	Social	Environmental
Output (community)	Number of jobs created.	Number of miles of canal opened to anglers.	Improved water quality.
Outcome (individual)	Psychological benefits of employment.	Psychological benefits of increased leisure opportunities.	The psychological benefits from improved aesthetics.
Impact (wider society)	Wider savings to society of employment created i.e. reduced social security payments.	The wider impact i.e. increased rod licence income.	The wider impact of an improved environment i.e. increased tourism revenue.

Nb. The table above presents examples of potential impact in each area and is not meant to be exclusive.

3.1 – The economic impacts

When it comes to economic impacts there have been many evaluations of UK and international waterside restoration projects. The reports consider a number of different economic factors including: the impact on leisure and tourism, employment, housing and transport. A 2011 IWAC report, *Value of the Inland Waterways*, highlighted the significant benefits that navigable waterways can bring; it estimated that the baseline benefits of inland waterways ranged from £109,000 to £730,000 per kilometre. The measurement of the economic impact of restorations is a complicated process, as many factors need to be considered across the whole of the restoration area. Indeed, a restoration can be many miles long (e.g. the Wiltshire & Berkshire canal is over 51 miles long) and includes a variety of communities from both urban and rural settings. In addition, the economic impacts are often

dynamic and in flux, and so will develop and change over time. For funders and local communities economic benefits are of great significance when considering a restoration. Some projects, for example, the Liverpool Canal Link which improved the IMD of the local area, had a positive impact on property prices and leisure and tourism, and a considerable impact on the economy of the area. Another example of considerable impact would be the Falkirk Wheel where evaluations (MVA, 2103) put the economic impact of the attraction on the local economy at over £3million/annum and estimate that over 60 direct and indirect jobs have been created. Another benefit can be the development of economic opportunity spaces, such as the Hollingwood Hub, developed as part of the Chesterfield canal restoration. In this section we shall examine the economic impacts highlighted across a range of restorations in the UK.

3.1.1 – Leisure and tourism

One of the main impacts identified in the restoration of canals, was leisure and tourism. A forecast report for the Cotswold canal restoration stated that the restored canal had the potential to generate high levels of recreational use which would in time, contribute over £5 million to the local economy via pubs, accommodation and boat-related expenditure (Ecotec, 2003a). Additionally, an Ecotec (2004) study into the 'Huddersfield Narrow Canal' (HNC) and Rochdale canal found that it had led to over 3.5 million visits being made to the Rochdale canal, with visitors spending approximately £18 million in 2003 (£24.1 million at 2012 Sterling levels) (Bank of England, 2013). Over 2 million visits were made to the HNC with visitors spending just over £10 million (£13 million at 2012 Sterling levels) (Bank of England, 2013). This increase in tourism helped to support over 100 jobs in the local economy. Similar findings were made by research into the impact of the restoration of the Kennett and Avon Canal, which was restored across a number of years and finally completed in 2002. A 2010 report found that there were over 11 million visits made to the canal in 2009, a growth of 46% since 1995, and that these resulted in £42 million of direct expenditure (Ecotec, June 2010), which equates to £57.9 million at 2012 Sterling levels (Bank of England, 2013). This expenditure supported over 1300 leisure and tourism jobs in the canal corridor, which runs along 62 miles of canal (Ecotec, 2010). Leisure and tourism was also found to be a key economic impact in the restoration of the Bridgwater & Taunton Canal (British Waterways, 2010). This report found that that over 600,000 visits were made to the canal in 2010 and that these visits generated approximately £1.7 million of direct expenditure (£1.85 million at 2012 Sterling levels) (Bank of England, 2013). Finally, economic benefits related to leisure

and tourism were also identified in the evaluation of the Chesterfield canal (CCP, 2006). Visitor numbers to canals in Scotland, the Forth & Clyde and the Union, have increased steadily in the years since 2007, annual visitor numbers increased to 18.6m in 2008 and 19.6m in 2009, increases of 8% and 5% respectively. The Falkirk Wheel has also proved to be huge success in terms of attracting tourism to the area with ½ million visitors per annum.

The economic impact of increased leisure and tourism is not solely linked to visitor numbers; indeed, there are wider impacts of such development. A report by British Waterways Scotland (BWS, 2010) found that there was a decrease in poverty from canal regeneration and a significant part of this was related to the impact of tourism. The research identified that many planned tourist schemes including 'green' and educational projects, as well as increased use of the towpaths by leisure users, were significant factors in the alleviation of poverty. The restoration of the new Liverpool Canal Link was completed in 2009 and an evaluation of this project also found two key economic benefits. First, there was an increase in visitor numbers and second, there was an improved rate of business development. This improvement in business development had resulted in 10 out of 16 local leisure related businesses reporting an improved economic performance following the completion of the Canal Link (Ecotec, 2012). The research concluded that the increase in the number of visitors to the waterfront, which had led to over £4 million of direct expenditure, was largely related to the canal restoration (Ecotec, 2012). Nevertheless, much of the ambiguity in the evaluation was related to a lack of baseline data, which highlights the importance of securing such data *prior* to commencing restoration work.

3.1.2 – Employment

Another economic impact related to canal restorations was in the area of employment, albeit one that is supported in part by leisure and tourism with large numbers of jobs being supported by increased visitor numbers. One of the areas of employment affected by restoration work included construction and infrastructure, which can bring part time/full time and temporary/permanent jobs to a restoration area. The forecast report for the Cotswold canal restoration (Ecotec, 2003a) predicted that there would be a significant boost to temporary employment in the area, with the generation of over 800 person years of work, as well as the creation of over 200 permanent jobs. Indeed, jobs in the leisure and tourism industry increased between 1998 and 2001 and constituted approximately 8.6% of the total employment in the canal corridor (Ecotec, 2003a). The report commented that the restoration work would provide 820 person years of temporary employment in the area

(Ecotec, 2003a; 95). In addition, the Rochdale Canal and Huddersfield Narrow Canal (HNC), which was restored in 2001/2 following two decades of planning, fundraising and engineering, created over 3000 FTEs (full time equivalent) and over 300 temporary construction jobs whilst the work was underway (Ecotec, 2004). Employment creation was also a direct benefit of the restoration of the Liverpool Link with the evaluation report highlighting strong job growth between 1998 and 2005 (Ecotec, 2012). In addition to the direct employment creation that a canal restoration can bring, there are also indirect benefits related to business start-ups and growth. The BW report (2010) into the Bridgwater & Taunton canal found that the restoration had positively supported business start-ups and business development, and that canal related investments often acted as a catalyst for investment and regeneration, all of which impact positively on employment opportunities in an area. In assessing the employment contributions made by canal restorations it therefore seems clear that three key areas need to be assessed; leisure and tourism; construction and infrastructure; and business start-up and scaling.

3.1.3 – Housing

Housing is another key economic indicator affected by canal restoration, with restorations leading to residual increases in property values, as well as to improvements in housing provision through construction. The forecast report for the Cotswolds Canal restoration (Ecotec, 2003a) estimated that there would be an approximate 'one-off' upward impact on house prices in the immediate area of over £1 million (£1.34 million at 2012 Sterling levels) (Bank of England, 2013). An Ecotec study (2010) into the Kennett & Avon canal found that between 1995 and 2005 there had been between £375-£435 million of public and private sector investment in canal side properties in part due to the restoration project. In keeping with the findings on property prices from the Cotswold canal forecast report, the study estimated that a premium of up to 20% could be made on residential waterside properties following restoration; a not insignificant financial return for local residents. These findings were similar to those found in the evaluation of the Bridgwater & Taunton restoration which also found some enhancement in property values, with a premium increase of approximately 20% being estimated for new waterside properties. The report concluded that local people benefited from increased spending in the area and improved property prices as a result of the restoration of the canal (BW, 2010). In Scotland, housing construction, whilst slowed by the onset of the recession, had progressed slowly with new construction projects under at the time of the report (BWS, 2010). Just as other reports had found, British Waterways

Scotland (BWS, 2010) suggested that average house prices in canal areas were generally higher, although Glasgow (with its high levels of social deprivation) provided an exception to this rule.

3.1.4 – Transport

The final area that has been identified in restoration evaluations as an important economic benefit is related to transport. Indeed, improvements in transportation links provide both an economic and an environmental factor affected by canal restoration (the latter will be explored later in this paper). The British Waterways Scotland (BWS) report (2010) into the economic impact of Scottish canals, including the Glasgow Canal Regeneration Project and Edinburgh Quay, looked at the impact in terms of journeys and congestion and found that towpaths were used by many as a means to travel to and from work. This led to a decrease in congestion on the roads as more people travelled to and from work using the canal. Additionally, it also meant that local people had access to leisure facilities through the canal without needing to undertake a car journey to do so. The report comments on the fact that towpaths are widely used for walking and cycling but also form a valuable link between communities, visitors to towpaths had increased steadily between 2003 and 2009. The BWS (2010) report also suggested that waterways were playing some part in the movement of heavy goods for industry and commerce, and thus reducing traffic congestion in some areas. Other reports (e.g. Kennett and Avon Canal, Ecotec, 2010) commented on the use of towpaths by commuters, which would have an indirect impact on congestion and environmental factors. However, the reports did not consider the impact of canals on other journeys (e.g. leisure and industrial journeys). The impact of *improved transport links* for canal corridors is a crucial area that should be considered in future evaluations of canal restorations.

3.2 – Social impacts

The economic impact of canal restorations is not the only impact to be delivered by canal restorations. Indeed, there are numerous social impacts that can be delivered by waterway restorations. These include increased/enhanced leisure opportunities; increased volunteering opportunities; educational activities; improved housing provision; reduced social deprivation; reduced crime; improved quality of life/well-being; and improved community cohesion. As was outlined in the previous section, there are often links between different types of impact (i.e. improved housing also created jobs in the construction industry). The same can be

identified in the area of social impact; indeed, the links in this area of impact are more explicit than in the economic sphere.

3.2.1 – Reduced poverty

One significant impact reported by canal restoration evaluations was a decrease in poverty. In the UK today poverty relates to 'relative poverty' or as Professor Peter Townsend states when an individual's *"resources are so seriously below those commanded by the average individual or family that they are, in effect, excluded from ordinary living patterns, customs and activities"* (Seymour, 2009: 15). The significant investment in many canal side neighbourhoods in Scotland (and related secondary investment) have helped to develop 'Safer and Stronger' communities in areas of severe deprivation and raised the quality of life for residents (BWS, 2011). Indeed, some areas have witnessed a marked improvement in their Scottish Index of Multiple Deprivation ranking (SIMD), highlighting the impact that canal restorations can have on poverty.

Such evidence was also highlighted by the Bridgwater & Taunton Canal restoration evaluation, which concluded that there were many ways in which canal regeneration contributed to reducing poverty including: the provision of new housing; increased tourist numbers; local education initiatives; and the creation of new employment/training opportunities (BWS, 2010). These findings were similar to those identified in the Liverpool Canal evaluation, which recognised that the canal corridor had become significantly less deprived as new facilities had been developed (i.e. new housing and leisure facilities). The report also noted that the Index of Multiple Deprivation (IMD) for the area had fallen from 45.56 in 2004 to 35.81 in 2010 (Ecotec, 2012). This means that deprivation had fallen considerably along the corridor – in 2004 the IMD placed the corridor in the top 12% of most deprived areas in England; however, by 2010 this had fallen to 20%. This reduction in poverty is credited as being due to the more affluent population that was attracted to the area by the new residential units built during the restoration. This improvement occurred despite the City of Liverpool remaining one of the most deprived in the country. Indeed, its IMD rank has not changed over the period 2004-10, which suggests that canal restorations can only impact poverty in the *local* canal corridor that they occur in and do not have wider social impacts outside of this.

3.2.2 - Social capital and well-being

Canal restorations have also contributed to increased leisure opportunities, well-being, volunteering and educational benefits. In the area of social impact this can be characterised as contributing to the development of social capital and well-being. Social capital can be

regarded as the potential benefits of collaboration between individuals, groups and communities and consists of two aspects; 'bonding' and 'bridging' (Putnam, 2000). Bonding networks are constructed through close ties with friends and family who provide support. Bridging networks, although weaker than bonding networks, relate to contacts from diverse social backgrounds (Putnam, 2000) and are more relevant to the restoration of canals. Indeed, such networks can be established through volunteering, community groups and leisure activities. Psychological well-being can be defined as the sum of 'positive' and 'negative affects' in a person's life that contributes to their overall 'happiness' (Bradburn, 1969). This can be affected by the individual's environment, both externally (i.e. the quality of their local physical environment) and internally (i.e. the quality of their home and family life). There is also evidence that employment opportunity is linked to positive improvements in psychological well-being (Claussen, 1999; Ginexi, Howe and Caplan, 2000). All of these areas can be impacted by canal restorations.

The forecast report for the Cotswolds restoration project concluded that the restored canal had the potential to be used extensively by anglers, cyclists, canoeists and 'informal users' (Ecotec, 2003a). The social benefits of the Kennet & Avon restoration also included an increase in leisure use of the canal, for angling, cycling and canoeing and informal uses (Ecotec, June 2003). Another significant social benefit has been the amount of volunteering, with volunteers benefiting both physically and mentally from their work. This also has important benefits in community development and networks, through the development of *bridging* social capital (Putnam, 2000). Increases in volunteering and community participation were also identified by the BWS (2011) report into canal restorations in Scotland. Restorations were shown to have had a quality of life improvement for communities and to have provided safe and traffic free routes for walking and cycling. Community arts based initiatives in the area had also benefited and several mosaics and murals had been installed, improving the aesthetic of the local area. Indeed, resident surveys showed that the vast majority felt that the canal had a positive impact on their neighbourhood, made them more appreciative of the environment and encouraged them to take more exercise (BWS, 2011).

The Chesterfield Canal evaluation also found that the restoration helped change the image of the area and this impacted on the communities' self-perception, which led to reductions in anti-social behaviour in the area (CCP, 2006). A British Waterways (2012: 1) report *Waterways for People – Social Inclusion* laid out their commitment to using waterways to

improve social inclusion in society by stating that "…*we wish to work with others - whether from the voluntary, private or public sectors - to develop projects that will lead to real improvements in peoples' quality of life".* In the Cotswolds the restoration was also seen as a potentially important aspect of revitalising a declining town centre (i.e. Stroud) and improving access to services in rural areas, for example Frampton Mansell (Ecotec, 2003a). Finally, the HNC restoration highlighted the many improvements in services to local communities along the canal corridor that can occur due to a restoration, including better housing, healthcare and shopping facilities (Ecotec, 2004), all of which can contribute to well-being.

3.2.3 – Health and education

Canal restorations can also have important health benefits to local communities, as they provide recreational space for leisure activities and exercise. In Scotland the BWS (2011) evaluation demonstrated that there were almost 20 million visitors to Scottish canals in 2009, an increase of 67% on the 2004 figures and much of this increase occurred in areas with high levels of deprivation and poor health. The visits made by people included activities such as walking the dog, jogging, rambling and cycling. As well as the obvious physical and mental health benefits of such exercise (Cavill *et al.,* 2006), Dr Adrian Davis in his 2010 study supported the view that walking and cycling facilities have substantial economic benefits that have been typically undervalued. This study is backed up by the recent MIND report (*2013)* that focuses on the benefits of providing people with green spaces and opportunities to engage in outdoor activities. Research such as this highlights the intrinsic links between social and economic impact, particularly in relation to canal restorations. The Chesterfield Canal restoration evaluation also identified community health and well-being benefits to the population, with an increase in health related activities, the introduction of a 'Green Gym' scheme, and restored tow paths providing more opportunities for community groups and the elderly to partake in exercise (CPP, 2006).

There are also important educational benefits that can accrue from canal restorations. In Scotland a BWS report (2011) highlighted the considerable benefits of the restoration to educational opportunities. Indeed, new educational programmes and innovative initiatives, such as the Maryhill Aqueduct Lighting Project, had produced positive impacts on many young people and their families. The BWS had also worked to improve opportunities for graduates and training for people in the workplace, particularly through engagement with third sector organisations. New educational initiatives resulting from a restoration project

were also identified in the Bridgwater & Taunton Canal evaluation, which helped to alleviate disadvantage in local communities (BWS, 2010). These initiatives all provide an opportunity for canal restorations to positively impact and make a contribution to the local communities that live alongside canal corridors, and they are important impacts that should be captured in detail by future restoration project evaluations.

3.2.4 – Heritage

The Canal & River Trust is responsible for the third largest collection of listed buildings in the UK, it has a heritage strategic plan and their last report (State of the Waterways' Heritage 2012/13) in the area found that heritage volunteer activity was up over 70% on 2011/12. There is little doubt that heritage should be mentioned in any review of the social impact of restorations as investment in the historic environment can bring many benefits to an area, including both economic and social. English Heritage (Heritage Counts, 2011) suggest that the historic environment can provide the context to help turn local areas into communities and that the involvement in the historic environment can bring a range of benefits to local people by improving their confidence and skills. The Heritage Counts report (2010) predicted that the restoration of the Stourport Canal Basins would generate between £11.5 million and £7.4 million, (these figures refer to the additional economic impact). The CRT website proclaims how in 2009 the project received 'the ultimate accolade from the Lottery' as it won the 'Best Heritage Project' during a live BBC broadcast.

3.3 – Environmental impacts

This paper has so far explored the economic and social impacts produced by canal restorations. However, as was alluded to earlier in the paper, there are also numerous environmental benefits related to waterway restorations. These include increased bio-diversity; increased navigability (both canal and towpath); reduced flood-risk and better drainage; improved transport links; and reduced carbon emissions. Indeed, canals need to be maintained as a canal (or the habitats that surround it) will eventually succumb to serial succession and ultimately turn in to woodland if they are not maintained. If canals are not maintained then the consequence is a loss of open water habitats and species. In addition, operational canals handle flood water better as they have their entire infrastructure in working order and have a greater carrying capacity.

The forecast report into the Cotswold Canal restoration put the wider environmental benefits at over £3 million a year (Ecotec, 2003a). Environmental benefits were also seen as a result of the Kennet & Avon restoration, including the creation of a waterside promenade with two pedestrian footbridges over the river (Ecotec, June 2003). However, it is important to note that the report also comments on the issue of increased use of the canal possibly having a detrimental impact on the environment. Such positive and negative trade-offs are also important when considering the overall impact of a waterway restorations and again highlight the intrinsic links and trade-offs that are always present in evaluations of impact across economic, social and environmental spheres. Environmental impacts are often surprisingly overlooked in evaluations and so the data on the effect that canal restorations have upon their surrounding environments is limited. However, the data that does exist has been surmised below.

3.3.1 – Transportation

Improvements in transportation links, as was suggested earlier in the paper, do not have merely economic benefits. There are often also environmental benefits that can also accrue through such development. The Kennet & Avon Canal restoration has led to an increase in the use of towpaths for commuters, as well as leisure users, which has positively impacted on congestion and the environment (Ecotec, June 2003). In the evaluation of the HNC restoration, the environmental benefits identified as resulting from the restoration project included environmental sustainability, with increased opportunities for car free travel, cycling and walking, as well as the general aesthetic improvement to the local environment (Ecotec, 2004). The evaluation of restoration impacts on the Scottish canal network also identified that the canals were transporting over 200,000 tonnes of freight annually; thereby removing thousands of 'Heavy Goods Vehicles' (HGVs) from Scotland's roads, which contributed positively to both congestion and the pollutant impact on the environment (BWS, 2011). Finally, Jacobs (2009) also noted the impact that restorations had upon the ability to move freight traffic on the waterways.

3.3.2 – Flooding, sustainability and CO2 emissions

Canal restorations (and waterway restorations in general) can also positively impact the environment in relation to flooding and CO2 emissions. Indeed, canal restorations can provide improved flood defences, increase the drainage of the surrounding landscapeand lead to carbon reducing schemes such as solar, wind and hydro-electric power generation.

The evaluation of the Bridgwater & Taunton Canal restoration identified that the canal project provided improvements to drainage and the water supply (BWS, 2010). The report also highlighted the impact that the restoration had on CO2 emissions through the supporting of various green initiatives, such as the installation of renewable energy systems and the development of more sustainable procurement/sourcing procedures (BWS, 2010). The report also found that some work had been done to improve flood defences and improve water efficiency on the restored canal. The Jacobs report (2009) also identified that canal restorations help to improve water quality, drainage and the possibilities for a contribution to renewable energy. However, there is little other evidence presented of the environmental impacts of canal restorations and this is an area that should be extensively reviewed and researched in future restoration projects.

3.3.3 – Increased Biodiversity

The desire to improve biodiversity is a growing trend in waterway restoration, along with the conservation and maintenance of historic buildings and environments, as Palmer *et al* (2010: 3) comment "…*The desire to restore biodiversity in streams and rivers that have been degraded by land use change, agriculture or other environmental stressors has primarily emerged over the last decade"*. However, as with the impact of flooding, sustainability and O2 emissions outlined above, this is an under-researched area in relation to canal restorations. The environmental significance of the Chesterfield Canal is apparent, with much of the canal being designated a 'Site of Special Scientific Interest' (SSSI) for bio-diversity, and continued restoration will provide opportunities to create new and sustainable wetland habitats. Additionally, in Scotland there are 22 SSSI within 500m of canals and BWS (now the CRT) have a plan to both halt the loss of biodiversity around these canals and to restore and enhance biodiversity in areas that have seen degradation of such diversity over the last five decades (BWS, 2011). Nevertheless, the evaluation of the impact on biodiversity of canal restorations is an important aspect that future restorations should explore; particularly in rural restorations that may border on to wetlands and SSSIs.

3.3.4 – Measuring environmental impacts

As has been noted in this section, the evaluation of the environmental impacts of canal restorations over the last 15 years has been limited. It is therefore important to explore other literature that can provide frameworks and suggestions for key indicators that can be

measured in such evaluation. A study by Palmer-Bernhardt *et al.* (2005) identified 5 ecological criteria for measuring if a river restoration was a success:

1. *Design:* The design of an ecological river restoration project should be based on a specified guiding image of a more dynamic, healthy river that could exist at the site;
2. *Measurement:* Show measurable changes toward that image, such as larger fish populations or clearer water;
3. *Ecology:* Create ecological conditions that allow a river to be a more resilient, self-sustaining system. This means that continuing efforts to fix the system are not necessary;
4. *No harmno net loss:* Do no lasting harm; indeed, the efforts to restore the system should not do more damage than good;
5. *Transparency:* Make the results of the project accessible to others.

Most reports into the restoration of the canals in the UK do not consistently consider ecological criteria; rather, they concentrate on the community and economic benefits. This is perhaps because environmental impacts are seen as less significant to stakeholders than socio-economic aspects. However, this paper has highlighted how important each of the three areas (economic, social and environmental) is to restorations and the significant links that exist between each type of impact. This is an area that has been recognised by some evaluations. Indeed, the report into the 'Socio-Environmental Monitoring of Scotland's Canals', outlined several ways in which the Scottish government plans to improve the natural and built environment and the sustainable use of it (BWS, 2011). To this end BWS are taking action to reduce their carbon footprint and develop, on a small scale, their use of renewables. Canals are also seen as providing 'green' corridors that provide an important contribution to carbon sequestration and so can become part of the fight against man-made climate change. There are therefore important developments on the horizon and future canal restoration programmes *should* explore the environmental impacts in much more detail.

3.4 – Summary

The literature review presented above, along with the analysis of the potential benefits of canal restorations gleaned from the project impact reports, points to the fact that waterway restorations have economic, social and environmental benefits to local communities both in urban and rural restorations. Although it must be noted that there are significant difficulties in comparing a range of evaluations as many of them are based on different criteria and that

makes comparison complicated. However, what is needed to ensure that future restorations can be effectively evaluated is a common framework to assess their impact. Such a framework should evaluate the economic, social and environmental benefits of waterway restorations, but these benefits should be assessed within an underlying social impact framework. The SIMPLE methodology (McLoughlin *et al.,* 2009) provides this as it allows the capture of output, outcome and impact data across the three areas of economic, social and environmental benefits.

However, within these six areas of potential impact there needs to be defined criteria for what constitutes a benefit in each area (i.e. what are the key indicators of environmental outcome performance? The 'Palmer-Bernhardt' 5-point plan outlined above may provide a starting point for such indicators in the environmental sphere. Other tools such as the 'Waterways and Development Plans' (British Waterways, 2003) could also inform this debate. However, further research into the benefits that CRT, not just our restorations, have had over the last 20 years is also essential. This will allow for both the overall social impact to be calculated, as well as for the development of a robust matrix that can be used to homogenously assess the benefits derived by local communities in future restoration projects. This is what this research will seek to do over the coming months.

4 Research Aims

The prior literature and theoretical framework outlined above led to the development of the following specific research aims:

1. To assess the economic impacts delivered by canal restorations in relation to:
    a. Employment.
    b. Leisure and tourism.
    c. Housing.
    d. Transport.
2. To assess the social impacts delivered by canal restorations in relation to:
    a. Poverty.
    b. Social Capital.
    c. Well-being.
    d. Health.
    e. Heritage.
3. To assess the environmental impacts delivered by canal restorations in relation to:
    a. Transport.
    b. Flooding and water quality.
    c. CO2 emissions and pollution.
    d. Biodiversity.
4. To develop a holistic matrix for capturing the future social impact of canal restorations that:
    a. Captures outputs, outcomes and impacts.
    b. Captures these in relation to the economic, social and environmental spheres.

5. Methodology

5.1 – Design

The research utilised a mixed-methods approach, combining both quantitative and qualitative methods. The qualitative data was collected through an analysis of seven case study restoration projects and a series of telephone interviews with 9 stakeholders associated with seven canal restorations. This combination of methods provided the research with a robust dataset that could be validated through the process of triangulation (McLeod, 1994). The quantitative data was compiled through the analysis and transformation of available fiscal data into a comparable data set (set at 2012 Bank of England Sterling levels). The following canal restorations were considered for this evaluation, it is worth stating at the outset that the reports utilised varied greatly in both their structure and content:

1. **Bridgwater & Taunton Canal Restoration (2011):** Based upon the data compiled by the British Waterways.
2. **Chesterfield Canal Restoration (2006)**: Based upon data compiled by the Chesterfield Canal Partnership.
3. **Huddersfield Canal Restoration (2004):** Based upon the data compiled by 'Ecotec Research and Consulting'.
4. **Kennet & Avon Canal Restoration (2003):** Based upon the data compiled by 'Ecotec Research and Consulting'.
5. **Liverpool Canal Link Canal Restoration (2012):** Based upon the data compiled by the British Waterways.
6. **British Waterways Scotland (2011):** Based upon the data compiled by 'Natural Capital and PZA Consulting' around the 'Forth & Clyde' and 'Union' canals.
7. **Droitwich Canal Restoration (2013):** Based upon the data compiled in a report to be published by the Canal & River Trust in Q2 2014.[2] (Appendix E)

The case studies chosen for the analysis reflect a wide range of restoration projects, the following criteria were considered in the selection process:

[2] Please note, due to the timing of this report, this seventh case-study is not part of the full analysis, but is included as an additional brief addendum to highlight some of the most recent restoration work carried out by the (Canal & River Trust, see Appendix E)..

- **Type of restoration** – i.e. Full canal restoration; staged canal restoration; or waterside development.
- **Geography of location** – A balance will be sought of restorations from various areas of the country.
- **Location Type** – Urban, rural and semi-urban restorations[3].
- **Restoration Value –** A mix of high value and low value restorations.
- **Deprivation –** Was the restoration conducted in an area of high or low deprivation based upon the Index of Multiple Deprivation.

As well as the above reports the research also used a variety of other secondary data sources, detailed in the references section.

5.2 – Interviews

5.2.1 – Interview Sample

In consultation with CRT, 9 interviews were conducted with key stakeholders, for example the Managing Director of a District Council or a council officer in charge of regeneration. The sample was purposive in nature, with the stakeholders identified by the Canal & River Trust on behalf of the research team. This identification adopted a dual approach, seeking to both involve the most informed individuals in relation to canal restorations, as well as involving a diverse background of stakeholders. Interviews were carried out over the telephone, using an agreed interview schedule, (appendix 1), recorded and then transcribed for analysis.

5.2.2 – Interview Data Analysis

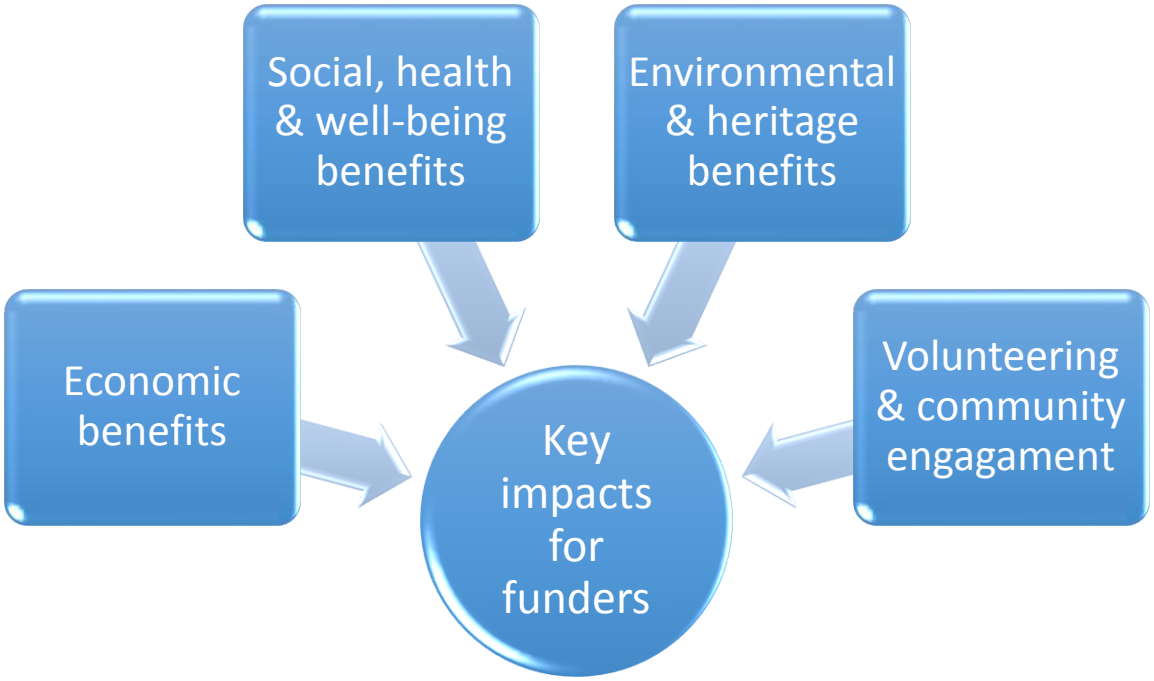
The method employed to analyse the interview and focus group transcripts was 'Constant Comparative Method' (Glaser and Strauss, 1967; Lincoln and Guba, 1985). Constant Comparative Method (CCM) is an iterative procedure designed for the qualitative analysis of text and is based on 'Grounded Theory' (Glaser and Strauss, 1967). This method of analysis focuses on a process where categories emerge from the data via inductive reasoning rather than coding the data according to predetermined categories (Maykut and Morehouse, 1994). Following analysis of the interviews transcripts six themes emerged.

[3] There are many differences between the impact of canal restorations within urban and rural areas. However, as the restoration reports (, bar the Liverpool Link), covered restorations that included both urban and rural areas and did not differentiate the impact across them, it has not been possible to differentiate the impact within this report.

6. Interview Results

Six themes were identified as a result of the interview analysis, these were: economic benefits of restorations; social, health and well-being benefits of restorations; environmental and heritage benefits of restorations; key impacts for funders; volunteering and community engagement; key impacts that should be assessed in any evaluation of the impact of restoration. Figure 1 below graphically represents these themes. The themes are also detailed below, with example participant quotes being used to support researcher interpretations. The participants have been assigned participant numbers so as to ensure the anonymity of their participation. The quotes used in the sections below were chosen as representative examples of the views of the interview participants that illustrate particular aspects of the discussion.

Figure 1 - Key interview themes:



6.1 – Theme A: Economic benefits

Economic benefits were identified in many of the restoration evaluation reports and also by every interviewee as being a significant feature of canal restoration and development work, as Graham Birch (Chair Huddersfield Canal Society) stated:

> *"Restoration is the catalyst for redevelopment and regeneration in the canal corridor, we've seen an investment of over £85 million across two Local Authorities, creating over 300 jobs and it's been the catalyst for two major district centre developments."*

Interviewees felt that house prices were boosted by canal restoration and that disused land around canal corridors was developed and made useful, for example the Staveley Town basin, site of a former gas works. One of those interviewed suggested that land values were boosted by 15-25% by the restoration. Many residential developments, both new builds and re-development of former historic buildings (e.g. mill buildings), were situated alongside restored canal corridors, improving the area as well as restoring and maintaining some of the heritage of the area. As Alan Stopher (Huddersfield Secretary) stated:

> *"I think it's fair to say that if it had continued to have been a derelict canal or just a filled in strip of green, it wouldn't have been such an attractive proposition to re-develop and re-use (the mill building)."*

Commercial developments went hand in hand with residential developments and again provided a boost to jobs (e.g. construction and retail jobs). As well as the impact on the local economy, restorations were seen as bringing increased vitality to town centres with the boost in the numbers of visitors and the attractiveness of areas. One interviewee, Ian Clarke (Landscape Lead Officer, Taunton Deane Borough Council), commented that:

> *"…having activity on the water has been beneficial, it adds life and vibrancy to the town centre".*

Another, Rob Burns (Urban Design Manager, Liverpool City Council), agreed:

> *"The canal link has changed the way that people use the pier head, the link has brought animation and dynamism to the whole place, the canal design means that you are right next to the water".*

Interviewees identified increased employment opportunities both direct, as part of leisure and tourism and of course construction aspects of the restoration; and indirect, for example as part of accommodation or retail, or as a key benefit to local areas, one interviewee, Mike Hayden, commented that:

> *"The regeneration of Chesterfield Canal is fundamentally important to the regeneration of Chesterfield waterside.""*

Some interviewees felt that the restoration had boosted the economy of the town during the recent recession, by stimulating regeneration and protecting/creating jobs through increases in leisure and tourism. One interviewee, Rob Burns, commented that although the economic benefits weren't yet that substantial, there was the potential for a lot more, they explained that:

> *"Economic benefits are not as great as they could be, but the potential is there, for example the Stanley Dock canal complex, one of the buildings there is being converted into a hotel which will be opening this year, and part of that development is because of the activity on the dock, there's something to look at."*

In Scotland the restoration of the Forth & Clyde and Union Canals and their joining through the creation of the Falkirk Wheel, and now the newly developed Helix project which is a £43 million development of urban green space, has had a major economic impact on the local areas. An interviewee (P6), describing the restorations in Scotland explained that:

> *"A lot of these benefits are in places where the communities have suffered from a similar decline to the canal, where the canal was closed and the industries around it went, and you find a whole lot of vacant and derelict land, and there's a whole lot of opportunity, once you drive that linear corridor and maintain it, regeneration seems to spring up around it".*

Restorations have created direct and indirect jobs in marinas, boat yards, restaurants/cafes, tourist attractions, pubs and community spaces/hubs. The economic impact of the canal restorations, whether in urban or rural areas, was undoubtedly one of the most significant impacts, one interviewee, Graham Birch, when asked about the benefits of the restoration, put it simply *"economy, economy, economy"*.

6.2 – Theme B: Social, health and well-being benefits

As well as the economic benefits reported above all of the interviewees also referred to the health benefits brought about by the canal restorations and this was also seen as an area that funders were interested in. Restorations open up walking and cycling routes through improvements in towpaths and the canal itself, many towpaths are now accessible for wheelchair users and the fact that canals are built through flat land means that they can be especially beneficial to those getting back into exercise. As well as being flat, interviewees commented on how restored canals provide a beautiful environment to get people out of the towns, lots of areas ran organised walks and provided leaflets of map routes, to encourage and support visitors, be they cyclists or walkers or joggers. As Cllr Fleur de Rhé-Philipe stated *"It's a spectacular facility for local people"*. Alongside the recreational users some restored canals also provide great commuter routes, one interviewee, Ian Clarke, explained that:

> *"…the canal is a fantastic commuter route into Taunton itself, from the surrounding villages, it is surprising how many walkers and cyclists use it".*

The health benefits of not driving into work are apparent for individuals, as well as the environment and communities. Additionally, improvements in well-being, in terms of physical and mental health can also not be underestimated as a benefit of restorations, albeit one that can be difficult to quantify. One of the interviewees Alan Stopher commented that:

> *"Everyone has a really strong empathy with water and the canal and its history and its current environment".*

This empathy, along with the green spaces created by canal restorations, were seen by the participants as clear tangible benefits. As well as increasing green spaces canals were also seen as a way of improving areas of deprivation, one interviewee commented that:

> *"If you look at Liverpool it has 3 out of the top 5 deprivation wards, the canal runs through those wards, it's not all doom and gloom, if we start to look at developments in housing and education, if you start to look at big area improvements, then you look at where the quality is and what you have to work with and the canal is there. It's in the top 2 or 3, part and parcel of a whole regeneration package."*

Clearly there are significant potential benefits generated along canal corridors that are developed/restored that can improve the lives of the people in the communities affected.

6.3 – Theme C: Environmental and heritage benefits

Another benefit referred to by many of those interviewed relates to the increased use of restored towpaths as an environmental benefit. This, alongside the aesthetic impact of restored canals, undoubtedly encourages many visitors to the restoration area. One interviewee, Ian Clarke, was very clear on the benefits:

> "*The impact on wildlife is good, there are water voles, kingfishers, it's a protected environment and it brings wildlife into the heart of Taunton.".*."

In Scotland the restored Forth & Clyde and Union Canals provide over 200km of diverse ecosystems, a wildlife corridor on each side of the canal and there are more than 20 SSSIs along the route (Scottish Executive, 2002:23). One interviewee, Cllr Fleur de Rhé-Philipe (Cabinet Member for Economy), explained how *"The canal is a water and wildlife corridor virtually from one side of England to the other"*. The environmental impacts that interviewees referred to included increased biodiversity and wildlife habitats, and they talked about reed beds and the animals on the canals, for example water voles, mink and kingfishers. As well as restoring and encouraging habitats canal restorations can also lead to the restoration and development of heritage structures, including aqueducts, industrial buildings and other structures. These developments can lead to economic benefits but also impact on civic pride and aesthetics, as one interviewee, Jack Hegarty (MD Wychavon DC), explained how:

> ""*Local people love it, they feel as if their town now has an active and functioning canal bringing visitors in.*""

Another example of this would be old mining towns which have lost local jobs, but which can be regenerated by canal restorations and have aspects of their heritage restored. This was a direct example provided by one interviewee, Mike Hayden (Head of Regeneration), who explained that:

> "*…there is a high degree of connection with the canal and the local community, because of its former history as a mining town, the connection is very strong".*

Another interviewee was concerned that funders were keen to emphasise the heritage links but not always so keen to fund physical restorations.

6.4 – Theme D: Volunteering and community engagement

One of the other benefits referred to by all of those interviewed was the impact of canal restoration on the local community in terms of volunteers and engaging local communities in the heritage of the canals. Of course, volunteers carry out a great deal of restoration and maintenance work, as one interviewee (P6) articulated:

> *"Volunteers worked hard to resurrect the canals and bring them back to life, they helped redeliver the navigation to the canal and now the boats have come back."*

Local community involvement in canal restoration was seen as the key to a successful sustainable restoration project and some interviewees commented on how important it was to have community buy-in to a project if it was to work. One comment (P6) was that:

> *"…engaged local communities were the engine for regeneration."*

However, whereas another interviewee, Jack Hegarty, explained how:

> *"… "the restoration has spawned an active volunteer community, which is a very positive side- effect".*

Some interviewees were concerned about volunteers and suggested that time and thought need to be given to ensure that there would be volunteers in the future. One interviewee, Robin Stonebridge (Chair Canal Trust), also commented on the demographic of the volunteers, stating that:

> *"It's about evolving and engagement and seeing new opportunities around canal restoration for younger people".*

6.5 – Theme E: Key impacts for funders

Another theme that emerged related to what funders were looking for in terms of investing in canal restorations. The answers were varied, as indeed are the funders. Many felt that the economic argument was the key one for funders, for instance how many jobs will be

created, but housing, land development values, bringing vacant land and buildings back into use were also seen as important. Others felt that funders were looking for more than just economic gains and that the healthy living agenda and environmental/heritage benefits were equally important to funder. As one interviewee (P6) stated:

> *"There's a huge push these days from government for healthy living these days and it's (the canal towpath) a very good place for walking and reasonably disabled friendly."*

6.6 – Theme F: Key impacts to evaluate

When asked what impacts of a restoration ought to be measured interviewees again had a range of views, with the majority mentioning jobs, tourism, the number of users, environmental impacts and health and well-being as the top areas to consider in any impact evaluation. For others though, the issue of sustainability was a key impact that needed to be measured, as they felt that restoration was a long term commitment and that sustainability needed to be built into any restoration and then evaluated. Some interviewees were interested in assessing community engagement and one mentioned the need to measure how restorations impact on supporting social enterprise. Robin Stonebridge, stated that:

> *"…we need to see how canal restorations can impact on social enterprise in its many forms and how restoration work can foster and support social enterprise".*

7. Case Study Results

7.1 – Overall Results

Following on from the interviews an analysis of the case study data on the individual canal restorations was undertaken. The analysis was conducted along similar themes to those that had emerged from the interview data (a table of comparison data is available in Appendix C). Table 2 below outlines the case-study restoration variables.

Table 2 – Case Study Canal Restoration Variables

Name of canal	*Cost of restoration/ development /m (million)*	*Length/km*	*Type of restoration*	*Location /geographical area*	*Average IMD score 2010*
Liverpool Link	£22m	2.3	Waterside development	Urban/NE	35.8181
Chesterfield	TBC	74	Restoration	Urban & rural/NW	24.99
K&A	£27.8m	140	Restoration	Urban & rural/S	13.56
B&T	N/K	23	Restoration	Largely rural/SW	20.3131
Forth & Clyde & Union	£33m	56 & 50	Restoration	Urban & rural/N	No data
Rochdale & Huddersfield Narrow	£45.6m & £39m	51 & 32	Restoration	Urban & rural/N	29 & 22.1414
Droitwich Canals	£13m	Approx. 11.5	Restoration	Urban & rural/SW	17.58

7.2 – Economic benefits

In the economic sphere, including jobs, property and land, the data from the evaluation reports shows that restorations have had a considerable impact on job growth and creation across the six case study examples. Jobs in the leisure and tourism, as well as the construction industries, have all been created and developed as a consequence of the restoration work; perhaps the most successful example of this would be the Falkirk Wheel. In some studies data suggested that local businesses reported increased turnover connected to restoration work, for example in the Kennett and Avon Canal restoration evaluation the majority of businesses said that turnover had increased. The evaluations of the Chesterfield and Rochdale and HNC Canals both found that there was increased confidence in developments along the canal corridors which led to a range of developments. For example,

along the Chesterfield Canal, two new marinas have been built and along the HNC there have been many developments, such as a pub and hotel near the Oldham Broadway Business Park. Huddersfield University has made the canal a key feature of its campus with many buildings referencing the canal. This positive impact was also found in evaluations of other areas; for instance, the Bridgwater & Taunton Canal evaluation suggested that there had been an uplift in property prices in the canal corridor and the Liverpool Link evaluation showed how the building of new residential properties in the canal-side area brought in a changing and more affluent population to the area.

Hand in hand with the economic impacts of the restorations has been the impact on the leisure and tourism in these areas, with increases in facilities and consequently visitor numbers and spending. In Liverpool, the new Link, albeit alongside other developments in the area, increased visitor numbers by over a quarter of a million, and these visitors spent an additional £1/2million and increased employment in the area. In Chesterfield the newly opened Hollingwood Hub, along with boat trips and leaflets on walks on the long distance towpath (the Cuckoo Way), have all helped increase visitors to the canal. The evaluation of the Kennett and Avon canal, estimated spending from visitors in 2002 at over £26 million (£35.8m at 2012 levels), with mooring licences and visits to the canal both on the rise. The evaluations of the Bridgwater & Taunton Canal, Rochdale Canal and the HNC estimated visitor numbers and spend and found a significant increase following the canal restorations. As was mentioned earlier, the Falkirk Wheel and the Forth & Clyde and Union Canals have transformed leisure and tourism in the area, the latest evaluation in 2013, estimated spending in the local economy at £3million.

7.3 – Social, health and well-being

Health and well-being was another area that was considered by some of the evaluations. One of the key consequences of economic benefits linked to canal restorations has been a decline in S/IMD scores in some areas, demonstrating how investing in canals can have a tangible impact on levels of deprivation. A 2012 analysis in Scotland showed marked improvement in the SMID ranking of data-zones in the south of the Glasgow canal corridor. This area has been the focus of sustained investment from Scottish canals. Although the data-zones in the northern portion of the Glasgow and Forth & Clyde and Union canal corridors have experienced worsening SMID scores between 2009 and 2012, this could be attributed to the economic downturn, as these northern areas are part of the 20% most

deprived in Scotland. Whilst SMID is not conclusive evidence that investment in canals leads to a reduction in levels of deprivation, it is still possible to conclude that large scale investment can have a positive change on S/IMD rankings. Many restorations have led to improvements in towpaths, including increased accessibility for wheelchair and mobility scooter users, as well as other users such as cyclists and walkers. Indeed, some towpaths, for example in Chesterfield, form part of the Sustrans and National Cycle routes. The latest report on Scottish canals puts a figure of £6.4 million on the health benefits of canal restorations in Scotland. Other health benefits of restorations include increased space for recreational activities and a positive impact on reducing absenteeism through increased physical activity.

7.4 – Environmental and heritage benefits

Another area mentioned by many of the evaluation reports relates to the impact on the environment, including the impact on traffic and conservation issues. Three of the evaluations referred to SINCs (Site of Importance for Nature Conservation), AONBs (Area of Outstanding Natural Beauty) and/or SSSIs within the canal corridors, clearly the canal restorations had a positive impact on biodiversity and wildlife habitats. The use of towpaths by commuters and the removal of some freight traffic from roads were shown to have led to decreases in traffic fumes, pollution and congestion. In Scotland evaluations show that the canals are providing green corridors, vital green space, particularly in urban areas and are also leading to a reduction in exposure to poor air quality. In Chesterfield, there have been significant environmental improvements at a former gasworks, which has now been transformed into a shallow water wetland habitat. Some of the evaluation reports mention a number of structures that have been redeveloped and cared for and many others that have been listed or given statutory protection.

7.5 – Volunteering and community engagement

The impact of restorations on community engagement was highlighted in the interviews and in some of the evaluation reports. The data suggests that canals can be an excellent focus for community activity and help develop civic pride. Many visitors to canals are from the local community, as was reported by the Liverpool Link evaluation; however, as well as visiting and utilising the facilities, local communities are also involved as volunteers in the restorations. This may lead to subsequent engagement with third sector organisations and

contribute to activities and events associated with the canal. For example, training and educational activities such as the Maryhill Aqueduct Lighting Project have engaged local young people by providing them with the opportunity to work with artists and architects. Indeed, the latest report on the social and economic impact of Scottish canals (MVA, 2013), reports that over 40,000 people are actively engaged with the Lowland canals. The Bridgwater & Taunton Canal evaluation estimated that local volunteer groups carried out nearly £2000 worth of work in 2010/11.

7.6 – Educational and skills development benefits

The final area of impact evaluated in many of the restoration reports relates to education, with some evaluations reporting that education packs for school visits and activities were developed. This is also supported by data from the interviews, which identified that there were several projects that were designed to promote employment or build skills amongst young people, the unemployed and those groups perhaps previously excluded from society. For instance, Scottish canals support a number of education initiatives through their Heritage Hunt boat trips and with the outdoor classroom at the Falkirk Wheel. They also run the Canal College, on the Lowland Canals, which is an emerging training programme designed to help vulnerable young people, aged 16-25, develop skills that will help them into employment. At the Chesterfield Canal they also run activities for children at their visitor centre.

8. Conclusions

Conclusions

It is clear from the data collected that the impact of canal restorations can be very far-reaching and beyond what is perhaps anticipated and planned for. The economic benefits of the restorations were considered in some depth by many of the case study evaluations as undoubtedly there are many and they have a significant impact on the areas where canals have been restored. Increases in land value, property prices and development, jobs, tourism spending, both direct and indirect, were all highlighted in the case study evaluations. A 2011 IWAC report estimated that the baseline benefits of inland waterways were between £109,000 and £730,000 per kilometre, although they suggest that these figures would be even higher for canals. This potential benefit explains why spending on waterway restoration has increased across the world (Palmer, 2005) and is linked to many benefits including

regeneration, community cohesion, environmental, heritage and recreation to name a few (IWAC, 2006, Jacobs, 2009).

The interview results also show that canal restorations can benefit local communities in many different ways, with both short and long-term consequences. Each person interviewed was able to comment on a range of benefits that canals, whether restored or newly developed, had bought to their local area and the lives of local people. At the heart of every interviewee's views on the benefits were the economic elements associated with restoration, from the short-term impacts of construction jobs in the local economy, to the more long term impacts such as increased leisure and tourism, as well as the re-development of disused land and buildings. The positive impact that canal restorations can have on jobs is also supported by the data, although not always easy to quantify. One interviewee stated that 300 jobs were created in their local area and others referred to the significant impact that these new jobs, whether construction or tourist related, could have on communities which had lost former industries (e.g. mining and textiles). The data from the quantitative evaluation supports the interview data, with figures being given to support increased jobs in tourism. For example, the Falkirk Wheel supports over 60 direct and indirect full-time jobs (MVA, 2013). The report on the Bridgwater & Taunton Canal restoration (2010) estimated that over 600,000 tourism, recreation and functional visits were made to the canal in 2010, generating some £1.7 million of direct expenditure in the local economy (£1.84m at 2012 Sterling levels). The British Marine Federation Tourism report (2013:3) highlights that canal boating, with its associated overnight trips, generates one of the highest levels of expenditure of all water-sports/recreation activities.

Interviewees and case study evaluations also referred to the impact on housing in the area, from uplift in values to new housing projects, such as those in Liverpool or the Royal George Mill residential development built near the Huddersfield Narrow Canal. As well as new residential developments, canal restorations have also benefited historic buildings, as the data shows that many of those in the canal corridor have been redeveloped following on from, or alongside, canal restoration projects. In Rochdale, the Victoria Mill (a former cotton mill originally built in the second half of the nineteenth century), has been converted and now houses, offices, businesses and residential premises are present.

However, as well as the more obvious impacts on the economic and leisure and tourism fronts, there are many social impacts (defined for this report as the social and environmental benefits delivered by an organisation to society) which must be considered in any

assessment of canal restoration. For example, a recent report by the mental health charity MIND (*Feel better outside, feel better inside, 2013)* highlights the benefits of eco-therapy, in which people are provided with green spaces and opportunities to engage in outdoor activities (such as canal restoration projects). MIND feels strongly that treatment like eco-therapy can deliver not only health benefits, but also wider social benefits and cost savings. Whilst some of these social impacts can be difficult to translate into monetary terms (IWAC, 2011), there value is significant in many non-monetary ways, such as creating 'Bridging Social Capital' through community engagement (Putnam, 2000).

Whilst economic benefits appear to be the key arbiter of success amongst funders, the impact on local communities in terms of walking/cycling routes, green space and increased community engagement through volunteering are equally important. Interviewees saw canal restoration as a catalyst for regeneration along the whole of the canal corridor, a catalyst bringing with it a range of benefits for local communities, which impacted on health and well-being, the environment, traffic and heritage and community cohesion and civic pride. Some of the most deprived communities in Scotland live near canals and research has identified that because of the restored canal, many individuals are more likely to take more exercise and appreciate their environment (BWS, 2011:318). Indeed, estimates suggest that for every £1 invested in the canal towpath network there is a return of £7 of health benefits (MVA, 2013:11).

Almost all of those interviewed commented on the role of local people in the canals, whether as volunteers, restoring or maintaining the canal, or as users. The data shows that local people were seen as the 'engine' behind regeneration and played a fundamental role in maintaining the heritage of the canal. These comments, which focus on local communities and people, clearly support two of the key recommendations of the 'Marmot Review': firstly, that of developing healthy and sustainable places and communities and second; the importance of empowering individuals and local communities to become healthier and lead more sustainable lives (2010:9). The case-study evaluation data also supported the idea of local involvement with canal restorations. Many local people were involved in volunteering work to help restore canals and many were involved after the restoration in a variety of projects. For example, in Scotland the 'Green Action' project gives unemployed young people the chance to volunteer doing conservation or gardening work on the banks of the Forth & Clyde and Union Canals and many of the volunteers go on to successfully find employment, (BWS, 2011:42). The government report on the 2011 riots '*After the Riots'* highlighted the

importance of developing more community involvement strategies with volunteering at their heart (2012:112). Such volunteering would develop 'Bridging Social Capital' (Putnam, 2000) and canal restoration could help provide such opportunities.

As well as leading healthier lives the positive impacts of canal restorations on aspects of the environment, such as improved air quality (MVA, 2013), were also highlighted by the data. Many of those interviewed commented upon the increase in wildlife along the restored canals, from voles to mink, and improved and increased green space. Improved biodiversity in the flora, fauna and habitats was reported (Ecotec, 2010), as well as reductions in traffic (as people use the improved towpaths for commuting). This highlights how the environmental benefits of canal restoration are important. Indeed, these benefits were mentioned by all but one of the interviewees as being very significant. The environmental benefits of diverse ecosystems along canal corridors, as highlighted by the Jacobs report (2009), were seen as providing both aesthetic and economic benefits to areas, as they encourage visitors to the area. However, it is perhaps the number of SSSIs along the Forth & Clyde and Union Canals that provide the strongest evidence of the environmental impact that canal restoration can have on an area.

What the data tells us about the impacts of canal restoration is that they are diverse and wide reaching and interconnected. If we are to truly understand what the social impact of any restoration is then a robust measure of this is required (simple economic data and the numbers of users fail to capture the bigger picture). It is also imperative that all the potential effects of restorations is considered (output, outcome and impact). The triple bottom-line, as outlined earlier in this report, needs to be considered alongside the output, outcome and impact data, as part of any canal evaluation. The key areas identified from this research that interviewees felt should be evaluated following restoration work were: jobs created; number and type of users; impacts on health and well-being; and environmental and community engagement/volunteers.

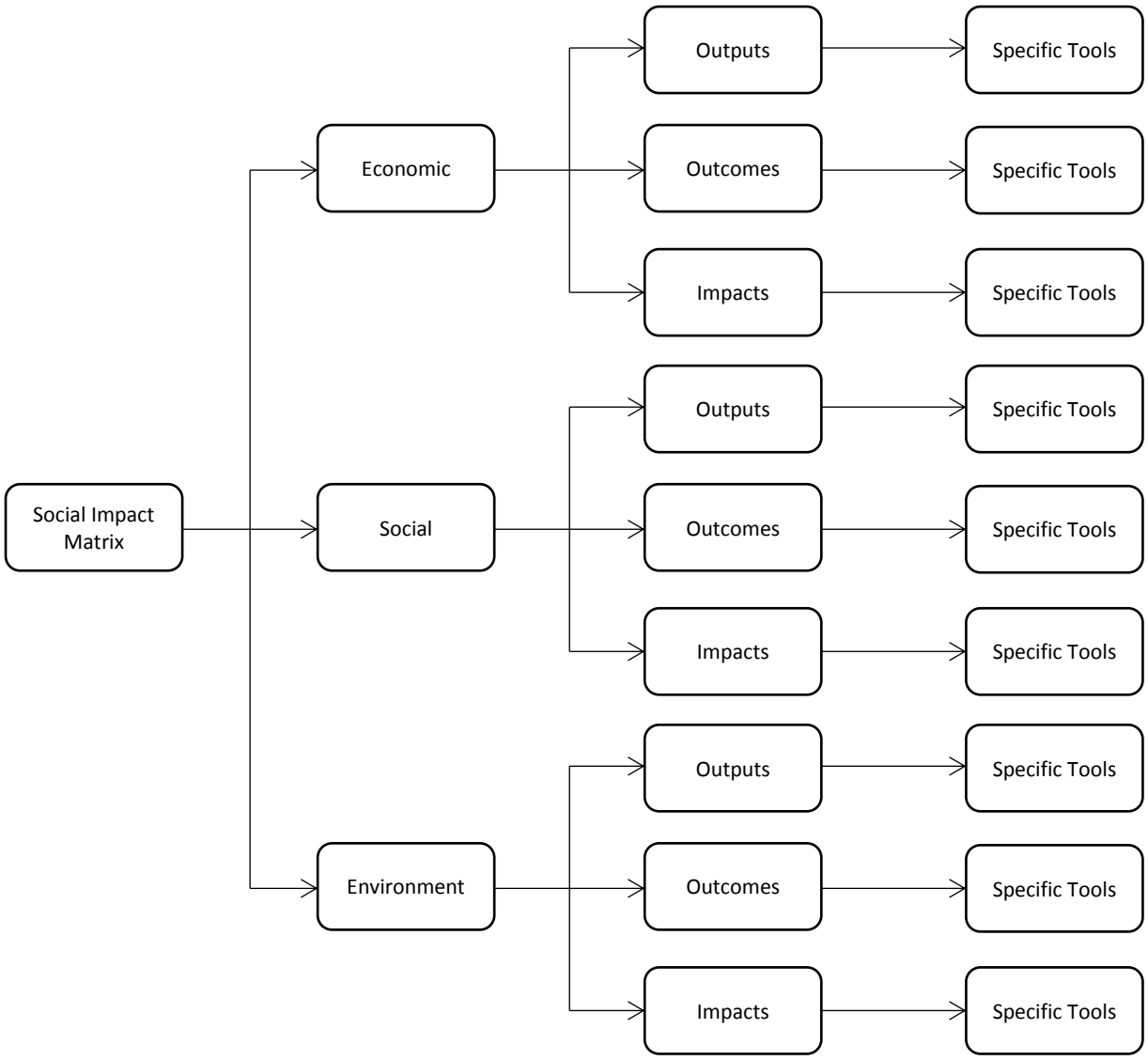
9. The Impact Matrix

9.1 – Developing the Impact Matrix

As was discussed earlier in the report, one of the ways in which social impact can be measured is through the use of the SIMPLE methodology, which focuses upon the

measurement of *outputs*, *outcomes* and *impact* (McLoughlin *et al.*, 2009). However, this only provides a theoretical guide of the types of measurements that can be made in relation to social impact; it does not specify the areas within which this impact should be measured. When assessing the areas that social enterprises (and other third sector organisations) operate in, prior research has identified that a double (economic and social) or triple (economic, social and environmental) bottom line exists (Gui, 1991; Campi et al., 2006). Therefore, in order to develop a holistic matrix that could provide a guide to measuring social impact in the restoration of canals, a theoretical design was developed that combined the triple-bottom line with the SIMPLE methodology. This combination meant that *outputs*, *outcomes* and *impacts* would be individually measured within the economic, social and environmental spheres. Figure 2 below outlines this approach.

Figure 2 – Theoretical Approach to Social Impact Measurement:



The approach outlined above was used to develop a social impact matrix for the measurement of social value/social impact in canal restorations. An extensive literature review was conducted (see Sections 2 and 3) that engaged with secondary sources relating to waterway restorations in order to identify the sub-areas to be measured within the economic, social and environmental spheres. This led to the identification of the following sub areas as outlined below in Table 3.

Table 3 – Sub-areas Identified for Impact Matrix	
Area	***Sub-area***
Economic	1. Leisure & tourism. 2. Employment. 3. Housing. 4. Transport.
Social	1. Poverty. 2. Bridging social capital. 3. Community well-being. 4. Health & education. 5. Historic buildings.
Environmental	1. Transport. 2. Flooding & water. 3. CO2 emissions. 4. Bio-diversity.

Once these sub-areas had been identified the prior academic literature was explored in order to identify relevant specific areas that could be measured, along with validated and rigorous tools that could be used in this measurement. For example, in relation to the *outcome* benefits related to employment, it was identified from prior research that general self-efficacy was a valid measure of the psychological benefits of employment and training that was directly linked to employability. Therefore, it was added to the matrix. This led to the development of an overall matrix for measuring the social impact of waterway restorations (see Appendix D for the full matrix).

9.2 – Refining the Impact Matrix

However, it was realised that the extensive and detailed nature of the impact matrix, whilst interesting, left a cumbersome and time-consuming tool that would be difficult for many restorations to implement (certainly in a cost-effective manner). Therefore, it was decided to refine the matrix by including those areas that are most important in the restorations of canals and waterways in general. This refinement was based upon the case-study and interview data that was collected and analysed as part of the research project (see Sections 6, 7 and 8). This data collection analysis clearly identified the many benefits of canal restorations (see Sections 6 and 7). However, utilising this data it was possible to reduce the original 13 sub-areas in the impact matrix down to the 5 most important areas for measurement. The matrix can be seen as a suite of indicators that can be used to utilise

future canal restoration programmes. It is anticipated that the matrix could be utilised by volunteers or researchers to gather relevant and measurable baseline data on the key indicators identified before a restoration, such data could help support the case for potential uplift following restoration. Following a completed restoration the matrix could then be used by the group to help them measure and demonstrate the social impact.

Impact Sector	Output			Outcome			Impact		
	Category	Sub-category (where applicable)	Data Input	Category	Sub-category (where applicable)	Data Input	Category	Sub-category (where applicable)	Data Input
Economic									
Leisure & Tourism (Urban & Rural)	Visitor Numbers	Towpaths		Leisure Induced Well-being	N/A		Local Economy	Improved area image	
		Boats							
	Visitor Spend	Towpaths						Local Economic Growth (%)	
		Boats							
	Local Business Growth	Average growth (%)						Reduced Poverty	
		Minus CPI Inflation Rate (%)							
	Direct Employment	FT Permanent		Psychological Benefits of Employment	General Self-efficacy		Welfare State	Reduced Job-seeker's Allowance	
		FT Temporary			Job-search Self-efficacy			Reduced Health Spending	
		PT Permanent			Well-being		Crime	Reduced Crime Levels	
		PT Temporary			Self-esteem			Reduced Drug/Alcohol Addiction	
Employment (Urban & Rural)	Construction	FT Permanent		Psychological Benefits of Employment (Construction)	General Self-efficacy		Welfare State	Reduced Job-seeker's Allowance	
		FT Temporary			Job-search Self-efficacy				
		PT Permanent			Well-being				

Impact Sector	Output			Outcome			Impact		
	Category	Sub-category (where applicable)	Data Input	Category	Sub-category (where applicable)	Data Input	Category	Sub-category (where applicable)	Data Input
Employment (Urban & Rural)		PT Temporary			Self-esteem				
	Infrastructure	FT Permanent		Psychological Benefits of Employment (Infrastructure)	General Self-efficacy				
		FT Temporary			Job-search Self-efficacy			Reduced Health Spending	
		PT Permanent			Well-being				
		PT Temporary			Self-esteem				
	Maintenance	FT Permanent		Psychological Benefits of Employment (Maintenance)	General Self-efficacy				
		FT Temporary			Job-search Self-efficacy				
		PT Permanent			Well-being		Crime	Reduced Crime Levels	
		PT Temporary			Self-esteem				
	Leisure & Tourism	FT Permanent		Psychological Benefits of Employment (Leisure & Tourism)	General Self-efficacy				
		FT Temporary			Job-search Self-efficacy				
		PT Permanent			Well-being				

Impact Sector	Output			Outcome			Impact		
	Category	Sub-category (where applicable)	Data Input	Category	Sub-category (where applicable)	Data Input	Category	Sub-category (where applicable)	Data Input
Employment (Urban & Rural)		PT Temporary			Self-esteem			Reduced Drug/Alcohol Addiction	
	Other	FT Permanent		Psychological Benefits of Employment (Other)	General Self-efficacy				
		FT Temporary			Job-search Self-efficacy				
	Other	PT Permanent			Well-being				
		PT Temporary			Self-esteem				
	Business Growth	No. Annual Start-ups Pre-restoration		Psychological Benefits of Entrepreneurship	Entrepreneurial Self-efficacy		Local Economy	Improved area image	
		No. Annual Start-ups Post-restoration						Local Economic Growth (%)	
		Average growth (%)			Attitude to Enterprise				
		Minus CPI Inflation Rate (%)						Reduced Poverty	
Transport (Urban & Rural)	Commercial Transport	Total Goods Tonnage Transported on the Canal		Commuting	Reduced Individual Stress Levels		Local Community	Reduced Congestion	

Impact Sector	Output			Outcome			Impact		
	Category	Sub-category (where applicable)	Data Input	Category	Sub-category (where applicable)	Data Input	Category	Sub-category (where applicable)	Data Input
Transport (Urban & Rural)		Increase in Goods Transported on the Canal Since Restoration (%)			Individual Financial Savings i.e. Reduced Petrol Consumption			Reduced Pollution (CO2/Tonnes)	
	Private Transport	Total No. Commuters Using the Canal						Local Economic Growth (%)	
	Private Transport	Increase in Commuter Numbers Since Restoration (%)			Individual Health Benefits		Welfare State	Reduced Health Spending	
Social									
Health & Education (Urban & Rural)		No. Cyclists Pre-Restoration		Individual Psychological Benefits of Exercise	Well-being		Welfare State	Reduced Health Spending	
		No. Cyclists Post-Restoration							
		No. Dog/ Walkers Pre-Restoration			Decreased Depression			Reduced Social Exclusion	
		No. Dog/ Walkers Post-Restoration							

Impact Sector	Output			Outcome			Impact		
	Category	Sub-category (where applicable)	Data Input	Category	Sub-category (where applicable)	Data Input	Category	Sub-category (where applicable)	Data Input
Health & Education (Urban & Rural)	Exercise	No. Joggers Pre-Restoration		Individual Health Benefits of Exercise	Reduced Body Mass Index (BMI)			Reduced Social Services Spending	
		No. Joggers Post-Restoration							
		No. Green Gyms Built			Improved Cardiovascular Fitness				
	Educational Activities	No. School Trips Pre-Restoration		Individual Psychological Benefits of Education & Work-based Learning	General Self-efficacy		Local Economy	Reduced Poverty	
		No. School Trips Post-Restoration			Job-search Self-efficacy			Increased Worker Skills Base	
		IT Resources Installed			Improved Individual Qualifications			Local Economic Growth (%)	
		No. Work-Based Learning Projects/Placements Established			Enhanced Work Experience				

Impact Sector	Output			Outcome			Impact		
	Category	Sub-category (where applicable)	Data Input	Category	Sub-category (where applicable)	Data Input	Category	Sub-category (where applicable)	Data Input
Environmental									
Biodiversity (Rural)	Species	Species Diversity per Mile Pre-Restoration (weighted for BAP species)		Psychological Benefits of an Improved Environment	Well-being		Ecological Impact	Enhanced Biodiversity	
		Species Diversity per Mile Post-Restoration (weighted for BAP species)						Reduced Pollution (CO2/Tonnes)	
		habitat diversity per Mile Pre-Restoration (Weighted for BAP habitats)			Decreased Depression		Local Community	Increased Educational Opportunities	
		habitat diversity per Mile Post-Restoration (Weighted for BAP habitats)						Raised Awareness of Area	
	SSSIs/SINCs	Investment in SSSIs/SINCs (£)		Individual Benefits	Increased Environmental Awareness		Heritage	Preservation of Biological Heritage	
					Increased Financial Security			Maintenance of Protected Wildlife Zones	

Impact Sector	Output			Outcome			Impact		
	Category	Sub-category (where applicable)	Data Input	Category	Sub-category (where applicable)	Data Input	Category	Sub-category (where applicable)	Data Input
		Impact on SSSIs			Individual Health Benefits		Local Economy	Local Economic Growth (%)	
Nb. The Urban/Rural designations are not exclusive, but merely suggest the most likely type of restoration for each impact area.									

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12. Appendices

12.1 Appendix A: Information Sheet for Interviewees

Invitation

We would like to invite you to share your views on the impact of canal restoration. This evaluation is being conducted by an independent team from the 'Directorate of Enterprise, Development and Social Impact' at the University of Northampton. It has been commissioned by the Canal & River Trust who would like to invite you to take part. It is important that you understand why this evaluation – and in particular this element of it - is being conducted and what your participation in it will involve. If, having read the following information, you are unclear about any aspect related to this study please feel free to speak directly with one of the university project team (contact details below).

Purpose of the evaluation

This study seeks to evaluate the economic, social and environmental impacts of canal restorations. Your participation via a short telephone interview will provide us with some important information to help inform the evaluation.

Evaluation process

The evaluation will be completed during the next 2 months. We welcome your views as someone who is/has been involved with canals and/or their restorations. We think that your reflections and experiences will give us a good indicator of the impact that the canal restoration has had. We have designed a series of interview questions to enable us to understand and collate your views and experiences.

Confidentiality

All information collected from you during the course of this evaluation will be kept confidential. The data will be securely stored on password protected University computers and servers. We will ask for your permission to use quotes from the interviews in the final evaluation prior to publishing the report. All quotes will be reported anonymously so you will not be identifiable in the report.

Do I have to take part?

It is up to you whether or not you decide to take part. You can also withdraw your response at any time prior to publication.

Thank you for taking time to read this information

Researcher contact details

meanu.bajwa-patel@northampton.ac.uk or richard.hazenberg@northampton.ac.uk

12.2 Appendix B: Telephone interview schedule

Date_____-14 Time_____ Interviewee_____ Interviewer :MBP/RH

Questions/prompts	Notes on responses
1. Check consent & recording permission	
2. Can you tell me about the canal or canal restoration that you were involved in?	
3. Can you explain your connection to the canal restoration and how this came about?	
4. What do you feel are the benefits that the canal restoration has brought to the area? Specifically in relation to economic, social and environmental impacts. Prompts if needed: in terms of employment, leisure & tourism, property, environmental, health, education, traffic, etc.	
5. What would you suggest is the most significant benefit? Please explain why.	
6. What do you think are the negatives (if any) associated with the restoration? Please explain.	
7. What in your opinion should be the most significant impact of restoration work such as that carried out on the canal? Please explain.	
8. What are the key impacts that you think funders/government look for in a restoration?	
9. What are the five key areas that you think should be captured in any evaluation of the impact of a restoration?	
10. Is there anything else that you think should be considered in this evaluation that I have not asked you about or that you would like to tell me?	
Thank you for your time today, if you need to contact me, my details are on the information sheet.	

12.3 Appendix C: Table of comparison

This shows a selection of the most up to date data available on each of the 6 case study restorations/developments.

Benefits Produced	Liverpool (2012)	Chesterfield (2006)	K&A (2005?)	B&T (2011)	Forth & Clyde & Union (2010-2013)	Rochdale & HNC
Economic benefits	Strong job growth in area, although fallen since 2008 due to the recession. Additional visitors, over **280k**, up by over 17% since 2005, spending additional **£0.5million.** Leisure and tourism businesses report improved eco performance. Fewer boats than forecast 30 leisure and tourism jobs (FTE)	Potential for new jobs (Gibb study, 2001, suggested over **1000FTE** + construction jobs) Restoration promoting developer & investor confidence Visitor centre – free exhibition & manage & encourage volunteers Boat trips Interpretive leaflets on walks Long distance path way, can be used by range of users	leisure and tourism jobs **965 FTE** (up by 18% from 1995) Majority of businesses said turnover increased since 1995 Some 23 canal side developments, many on brownfield sites, mainly residential, but also leisure, infrastructure, retail, offices, including over **2600 FTEs** & construction 292 temp person years. Total visitor spend 2002=**£26.7million** Mooring licences up by 33% to 1251 in 2002. **7.7** million visits to canal, up by 15% from 1995	**51** recreation & leisure and tourism jobs Property value enhancement-£**54 million.** **617k** visitors in 2010=£**1.7million spend** 61 boats (2008)	**Estimated FTEs 12,800, construction FTEs over 3500**. Encouraging business start-ups. Property developments, mainly residential. Attractions such as Falkirk wheel, Falkirk Wheel& local economy spending over **£3million** (2013)	HNC – **leisure and tourism jobs 100-160FTEs** Rochdale leisure and tourism jobs **150-160FTEs** Rochdale significant canal related development, residential, business, offices HNC some development canal dependent, mixed use, health, residential. HNC 2.3million visitors, net impact **£2.5-2.8million** Rochdale 3.8millionillion visitors, net impact **£2.5-4.1million**
Social & health & well-being benefits	IMD scores of LSOAs along canal corridor have fallen Most visitors are local to	Some sections of towpaths are high specification, allowing use by wheelchairs etc., cyclists also use route part of which		Accessible towpath, good access for disabled users. Number of volunteer orgs, their work	Provide local recreation facilities Monetised health benefits **£6.4 million** Value of casualties	

	the area.	is part of Sustrans (route 73), another part is part of National Cycle Route (6) In Retford, towpath upgrade provides all weather traffic free route through the town. Canal focus for range of events & recognised for community & volunteer activity		valued at **£1850 in 2010/11**	saved from RTAs **£219, 000** Reduction in absenteeism Reduction in exposure to poor air quality People visit outdoors more & take more exercise Evidence from the Scottish Index of Multiple Deprivation (SIMD) suggests that investment in canal-side communities, such as in North Glasgow, has led to a relative improvement in their SIMD ranking. The evidence does suggest that the activities of Scottish Canals are helping to reduce deprivation in some of Scotland's most disadvantaged communities. Making communities more attractive & engaging them & fostering civic pride. Positive impact on communities. Engagement with 3rd sector orgs & more than **40, 000** people actively engaged in Lowland canals.	

Environmental & heritage benefits	Canal – national strategic significance, 2001.	Sig environmental improvements at former gasworks, created new shallow water wetland habitat. Towpath improvements mean a traffic free route. Improved biodiversity in restored areas. 1 SSSI and several SINCs notified (Site of Importance for Nature Conservation). Range of structures, listed & have statutory protection. Archaeological studies	Canal included within 24 Conservation areas, 7 Schedules Ancient Monuments, listed structures, 2 AONBs & much of it is SSSI	Towpaths used for walking & cycling in & out of B &T, some are commuter journeys Drainage valued at **£395, 000**	Towpaths used by commuters. Some heavy freight removed from roads. Canals provide green corridors & new tree planting. 22 SSSI within 50m. Plans to develop flood control systems. Lots of historic buildings cared for.	Used by walkers, cyclists & boats
Education & skills development	N/A	Activities for children at visitor centre Canal restoration has potential to develop skills amongst excluded groups.	N/A	Information pack available for schools	Partnerships to promote employment amongst the young & unemployed. Education opportunities, training places. Schools outreach & teaching materials	N/A

12.4 Appendix D: Complete Impact Matrix

Impact Sector	Output			Outcome			Impact		
	Category	Sub-category (where applicable)	Data Input	Category	Sub-category (where applicable)	Data Input	Category	Sub-category (where applicable)	Data Input
Economic									
Leisure & Tourism (Urban & Rural)	Visitor Numbers			Leisure Induced Well-being	N/A		Local Economy	Improved area image	
	Visitor Spend							Local Economic Growth (%)	
	Local Business Growth	Average growth (%)						Reduced Poverty	
		Minus CPI Inflation Rate (%)							
	Direct Employment	FT Permanent		Psychological Benefits of Employment	General Self-efficacy		Welfare State	Reduced Job-seeker's Allowance	
		FT Temporary			Job-search Self-efficacy			Reduced Health Spending	
		PT Permanent			Well-being		Crime	Reduced Crime Levels	
		PT Temporary			Self-esteem			Reduced Drug/Alcohol Addiction	
Employment (Urban & Rural)	Construction	FT Permanent		Psychological Benefits of Employment (Construction)	General Self-efficacy		Welfare State	Reduced Job-seeker's Allowance	
		FT Temporary			Job-search Self-efficacy				

Employment (Urban & Rural)		PT Permanent			Well-being				
		PT Temporary			Self-esteem				
	Infrastructure	FT Permanent		Psychological Benefits of Employment (Infrastructure)	General Self-efficacy				
		FT Temporary			Job-search Self-efficacy			Reduced Health Spending	
		PT Permanent			Well-being				
		PT Temporary			Self-esteem				
	Maintenance	FT Permanent		Psychological Benefits of Employment (Maintenance)	General Self-efficacy				
		FT Temporary			Job-search Self-efficacy				
		PT Permanent			Well-being		Crime	Reduced Crime Levels	
		PT Temporary			Self-esteem				
	Leisure & Tourism	FT Permanent		Psychological Benefits of Employment (Leisure & Tourism)	General Self-efficacy				
		FT Temporary			Job-search Self-efficacy				
		PT Permanent			Well-being				
		PT Temporary			Self-esteem			Reduced Drug/Alcohol Addiction	
	Other	FT Permanent		Psychological Benefits of Employment (Other)	General Self-efficacy				
		FT Temporary			Job-search Self-efficacy				
		PT Permanent			Well-being				
		PT Temporary			Self-esteem				
	Business Growth	No. Annual Start-ups Pre-restoration		Psychological Benefits of Entrepreneurship	Entrepreneurial Self-efficacy		Local Economy	Improved area image	
		No. Annual Start-ups Post-						Local Economic	

		restoration						Growth (%)	
		Average growth (%)			Attitude to Enterprise				
		Minus CPI Inflation Rate (%)						Reduced Poverty	
Housing (Urban & Rural)	Housing	No. Social/Council Dwellings		Improved Access to/Quality of Housing Induced Well-being	N/A		Reduced Social Housing Waiting Lists	N/A	
		No. Private Dwellings					Stamp Duty Income Increase	N/A	
		Average Sales Price Growth (%)		Individual Financial Security	N/A				
		Average Growth minus ONS House Price Index (%)							
	Commercial Property	Average Sales Price Growth (%)					Local Economy	Raised Awareness of Area	
		Average Growth minus CBRE Commercial Property Sales Price Index (%)						Local Economic Growth (%)	
		Average Rental Price Growth						Reduced Poverty	
Transport (Urban &	Commercial Transport	Total Goods Tonnage		Commuting	Reduced Individual		Local Community	Reduced Congestion	

Rural)		Transported on the Canal			Stress Levels				
		Increase in Goods Transported on the Canal Since Restoration (%)			Individual Financial Savings i.e. Reduced Petrol Consumption			Reduced Pollution (CO2/Tonnes)	
	Private Transport	Total No. Commuters Using the Canal						Local Economic Growth (%)	
		Increase in Commuter Numbers Since Restoration (%)			Individual Health Benefits		Welfare State	Reduced Health Spending	
Social									
Poverty (Urban)	Index of Multiple Deprivation (IMD)	IMD *Before* Restoration		Psychological Benefits of Poverty Reduction	Well-being		Welfare State	Reduced Social Exclusion	
		IMD *After* Restoration			Increased Self-esteem			Reduced Benefits Payments	
	Housing	No. Social/Council Dwellings		Improved Access to/Quality of Housing Induced Well-being	N/A			Reduced Health Spending	
		No. Private Dwellings					Crime	Reduced Crime Levels	
		Average Sales Price Growth (%)		Individual Financial Security	N/A			Reduced Drug/Alcohol Addiction	
		Average Growth minus ONS House					Local Economy	Improved area image	

		Price Index (%)							
	Employment, Education & Training	FT Permanent		Psychological Benefits of Employment	General Self-efficacy			Reduced Poverty	
		FT Temporary			Job-search Self-efficacy				
		PT Permanent			Well-being				
		PT Temporary			Self-esteem			Increased Worker Skills Base	
		FT Education Placements		Psychological Benefits of Education & Training	General Self-efficacy				
		PT Education Placements			Job-search Self-efficacy			Local Economic Growth (%)	
		FT Training Placements							
		PT Training Placements			Well-being		Reduced Social Housing Waiting Lists	N/A	
		No. Apprenticeships Created			Self-esteem				
Bridging Social Capital (Urban & Rural)	Community	Community Organisations Established		Psychological Benefits of Social Capital	General Self-efficacy		Community Cohesion	Increased Social Capital	
		Increase in COs Since Restoration (%)						Reduced Crime Levels	
		Community Initiatives Established			Well-being			Improved Aesthetic of Local Area	
		Increase in CIs Since Restoration (%)							
	Volunteerin	Involved in			Self-esteem			Improved	

	g	Restoration						Perception of Community	
		Involved in Community							
Community Well-Being (Urban & Rural)	Community	Community Perception		Psychological Benefits of Increased Community Well-being	Well-being		Increased Community Well-being	Increased Cultural Engagement	
		Safety						Reduced Crime Levels	
		Improved Aesthetic			Increased Individual Cultural Awareness			Improved Aesthetic of Local Area	
		Cultural Improvement / Engagement						Improved Perception of Community	
Health & Education (Urban & Rural)	Exercise	No. Cyclists Pre-Restoration		Individual Psychological Benefits of Exercise	Well-being		Welfare State	Reduced Health Spending	
		No. Cyclists Post-Restoration							
		No. Dog/ Walkers Pre-Restoration			Decreased Depression			Reduced Social Exclusion	
		No. Dog/ Walkers Post-Restoration							
		No. Joggers Pre-Restoration		Individual Health Benefits of Exercise	Reduced Body Mass Index (BMI)			Reduced Social Services Spending	
		No. Joggers Post-Restoration							
		No. Green Gyms Built			Improved Cardiovascular Fitness				
	Educational Activities	No. School Trips Pre-Restoration		Individual Psychological	General Self-efficacy		Local Economy	Reduced Poverty	

		No. School Trips Post-Restoration		Benefits of Education & Work-based Learning	Job-search Self-efficacy			Increased Worker Skills Base	
		IT Resources Installed			Improved Individual Qualifications			Local Economic Growth (%)	
		No. Work-Based Learning Projects/Placements Established			Enhanced Work Experience				
Historic Buildings (Urban & Rural)	Visitor Numbers	Pre-Restoration		Individual Benefits	Increased Individual Cultural Awareness		Increased Community Well-being	Increased Cultural Engagement	
		Post-Restoration						Improved Aesthetic of Local Area	
	Property Values	Average Sales Price Growth (%)			Well-being			Improved Perception of Community	
		Average Growth minus CBRE Commercial Property Sales Price Index (%)		Individual Financial Security	Improved Housing Prices		Local Economy	Local Economic Growth (%)	
		Average Rental Price Growth			Increased Employment Opportunity		Stamp Duty Income Increase	N/A	
Environmental									
Transport (Urban & Rural)	Commercial Transport	Total Goods Tonnage Transported on the Canal		Commuting	Reduced Individual Stress Levels		Local Community	Reduced Congestion	

		Increase in Goods Transported on the Canal Since Restoration (%)			Individual Financial Savings i.e. Reduced Petrol Consumption			Reduced Pollution (CO2/Tonnes)	
	Private Transport	Total No. Commuters Using the Canal						Local Economic Growth (%)	
		Increase in Commuter Numbers Since Restoration (%)			Individual Health Benefits		Welfare State	Reduced Health Spending	
Flooding & Water (Rural)	Flooding	Flood Resilience / Defences Built (£)		Individual Psychological Benefits	Well-being		Local Economy	Expenditure on Flood Damage Repair	
		Drainage Levels Pre-Restoration (Litres per Square Mile)			Reduced Individual Stress Levels				
		Drainage Levels Post-Restoration (Litres per Square Mile)		Individual Financial Security	Increased Disposable Income (Lower Insurance)			Increased Use-value of Flood Plains	
		Annual Incidences of Flooding Pre-Restoration			Improved Housing Prices				
		Annual Incidences of Flooding Post-Restoration						Increased Access to Clean Water	
	Water	Water Supply Pre-Restoration		Individual Environmental Benefits	Reduced No. Hosepipe Bans				
		Water Supply Post-Restoration						Local Economic	

		Water Quality Pre-Restoration			Improved Quality of Drinking Water			Growth (%)	
		Water Quality Post-Restoration							
CO2 Emissions (Urban & Rural)	Sustainable Energy	Solar Energy Expenditure (£)		Individual Economic Benefits	Reliable Energy Supply		Environmental Improvements	Reduced Pollution (CO2/Tonnes)	
		Wind Energy Expenditure (£)			Reduced Energy Prices				
		Hydro-Electric Expenditure (£)		Individual Health Benefits	Reduction in Respiratory Illness			Reduced Congestion	
	Commercial Transport	Total Goods Tonnage Transported on the Canal			Improved Health			Improved Air Quality (Pollutant Parts per Million)	
		Increase in Goods Transported on the Canal Since Restoration (%)			Reduction in RTAs		Local Economy	Electricity Resold to the Grid (£)	
	Private Transport	Total No. Commuters Using the Canal		Individual Psychological Benefits	Well-being				
		Increase in Commuter Numbers Since Restoration (%)			Reduced Individual Stress Levels			Local Economic Growth (%)	
	No. Tress Planted During Restoration	N/A			Well-being				

Biodiversity (Rural)	Species	Species Diversity per Mile Pre-Restoration		Psychological Benefits of an Improved Environment	Well-being		Ecological Impact	Enhanced Biodiversity	
		Species Diversity per Mile Post-Restoration						Reduced Pollution (CO2/Tonnes)	
		Species Density per Mile Pre-Restoration			Decreased Depression		Local Community	Increased Educational Opportunities	
		Species Density per Mile Post-Restoration						Raised Awareness of Area	
	SSSIs/SINCs	Investment in SSSIs/SINCs (£)		Individual Benefits	Increased Environmental Awareness		Heritage	Preservation of Biological Heritage	
					Increased Financial Security			Maintenance of Protected Wildlife Zones	
		Impact on SSSIs			Individual Health Benefits		Local Economy	Local Economic Growth (%)	
Nb. The Urban/Rural designations are not exclusive, but merely suggest the most likely type of restoration for each impact area.									

12.5 Appendix E: A summary of the Ecorys Initial Evaluation of the Droitwich Canals Restoration, April 2014

Economic benefits – estimated gross additional effects of 98 person years of employment, and £4.8m in GVA estimate of 52 person years of employment and £2.6 million of GVA (net additional) in Worcestershire.

Based on the average boat movements for the two locks in 2013 (Lock 7-1867 and Lock 8 - 2006), along with the estimates of trip type, party size, expenditure and the revised estimate of trip length, results in an estimate of £1.1m of gross additional visitor spend from boaters in the local area (county). This level of spend would be expected to support 11 jobs. The average spend of respondents was £10.89. Towpath counters in some areas recorded an increase in the number of visitors, for example in Vines Park there was an increase over 36, 000 visitors in 2011 compared to 2010.

The current manager of a local pub specifically chose the site on account of its potential to attract tourist visitors and reported that just over 10% of total turnover is estimated to result from canal users. A local supermarket reported increased footfall from the canal on Bank holiday weekends. The town's Heritage and Information Centre also recorded an uplift in visitors since the canals were re-opened, there was an initial 31% increase in 2011 , 25% in 2012 and 21% in 2013 (all relative to 2010 levels). Between 2008 and 2010, visitors to the centre declined by almost 25% and the manager reports that this decline would have been expected to continue if the restoration had not taken place.

The construction of a new 238 berth marina was made possible by the restoration and the owner reports that it is currently 55% full with long-term occupants (rising to 65% if short-term occupants are included). This shows that there is demand from boaters to locate in the area and the number of visitors (i.e. those who stay overnight or just call in to use the facilities) is also increasing, with some repeat business having been recorded.

A number of festivals take place in Droitwich and since the restoration they increasingly make use of the canal-side setting and are becoming increasingly popular, although it is considered that a number of factors have contributed to this increase in footfall.

Restoration was expected to make a small but significant contribution to the regeneration of brownfield land and under-utilised sites in the town. The marina was developed as expected, along with a council-funded park and car park adjacent to the rugby club on Hanbury Road. In addition, the former Land Rover garage site on Hanbury Road has also been developed in line with the SPG. The canal-side site was split into two part and Bellway Homes has recently completed a successful development of two and three bedroom homes (of which almost all have been sold). The remainder of the site is being developed by McCarthy and Stone as an extra-care unit for older people. The site was previously an eye-sore and its redevelopment has been welcomed by local people. It is possible that some residential development would have gone ahead without the restoration but it is reported that the canal-side location has allowed the developers to achieve higher end values on the site.

Community, health & well-being benefits- Of those who had visited prior to the restoration, 41%

said they had visited more often since and for all those surveyed the most common primary motivation was walking/rambling for leisure. Survey evidence suggests that the majority of towpath users (67%) are from the Droitwich area. Local people are clearly making use of the area surrounding the canal, particularly Vines Park which provides a children's playground and a place to eat lunch. The towpath is also popular with dog walkers and runners.

The Droitwich Waterways (Pamela May) Trust has a role in promoting use of the canals and offers trips on the Pamela May to groups who would otherwise not have the opportunity to access this opportunity (including disabled people and older people). The Trust also supports local festivals, such as St Richard's Festival and Salt Fest which are focused on Vines Park, and offers short trips in the Pamela May which helps to increase the profile of the Trust and its work. There are also a number of current initiatives which use the canals and towpath as a setting to promote community participation in other activities.

Walking for Health – this walking group was established before completion of the restoration with the aim of encouraging people to be more physically active as a way to benefit their health; the group also offers an opportunity to socialise and is aimed at local people. The group meets at the leisure centre which is adjacent to the canal so the towpath became a natural place for the walks. The Walking for Health Leader also developed a canal-side walk to commemorate the Queen's Diamond Jubilee which has been publicised locally and also on the Ramblers website and there is anecdotal evidence that Ramblers groups have come to the area to walk this route. There are also plans to produce a variation of the route for cyclists. It is thought that establishing the towpath as a cycle route will improve access to the town for boaters at the marina.

Environmental & heritage benefits - The restoration of the canals included a number of features which were designed to protect and enhance waterway habitats and the broader natural environment of the area. This included the creation of a 5 hectare reed bed at Coney Meadow to provide a home for wildlife displaced by dredging of the canals, installation of bat boxes and otter holts to support these species to thrive and planting of trees and wild flowers.

The canals also support land drainage and may help to manage flood risks in an area which has previously suffered from severe flooding.

Education & skills development – the number of people who volunteered their time to some degree is estimated to run into the 100s (including those who perhaps attended a one-off community engagement event such as a tree planting day). The bulk of volunteer inputs came from attendees at the regular practical group which met two or three times a week. The number of attendees at the each practical group session ranged from around six to 30 people but averaged around 10. A further task which involved volunteer input was interpretation work which included an oral history project.

CRT has also set up a team of seven Rangers on the Droitwich canals, plus nine on the Worcester Birmingham Canal to keep an eye on sections of the canal. There are also volunteer lock keepers at two locations on the Worcestershire
Birmingham Canal. All volunteers are managed and provided with support by CRT. Around 130 individuals based on Worcestershire have been recorded by CRT as expressing an interest in volunteering in recent years and 59 are highlighted as being active volunteers, the canals continue to attract the support of local

people and provide an important source of volunteer opportunities.

A new group, the Droitwich Waterways (Pamela May) Trust was set up and also provides opportunities for volunteers, including a group of around 20 regular volunteers who operate trips on the Pamela May. Droitwich Arts Network – is a group of art clubs, societies, organisations and individuals with the objective is to bring people together and provide opportunities for engaging with the arts. The network has been responsible for the creation of a temporary mural each year (for the past two years) at Netherwich Basin. Students from a local school designed last year's mural and there are plans to repeat this activity in future years.