CALDON CANAL – LEEK ARM

Canal Corridor Study to investigate the potential to restore, extend and develop the canal in Leek

July 2006

Mott MacDonald

British Waterways

Front Cover: Current Caldon Canal Terminus at Leek
(Photo supplied by Caldon & Uttoxeter Canals Trust)

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Produced by:

Mott MacDonald

British Waterways

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Market Towns Initiative
Leek and Cheadle
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IWA The Inland Waterways Association

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CONTENTS

CONTENTS

CONTENTS

CONTENTS

Figures

Appendices

1.0 Introduction

1.1 Aims

This Study has been commissioned to investigate ways of improving and developing the terminus of the Caldon Canal Leek Arm and to explore the opportunity for the creation of a new positive canal destination at Leek to renew the connection between the town and its canal.

Funding for the study has been secured from the following organisations: Leek Market Towns Initiative, Inland Waterways Association Restoration Grants Fund, Caldon & Uttoxeter Canals Trust, British Waterways and Staffordshire County Council Local Member Initiative Scheme. A project steering group has been established comprising representatives of British Waterways, the Caldon & Uttoxeter Canals Trust and The Inland Waterways Association. This is a joint report prepared by Mott MacDonald and British Waterways.

1.2 Background

The Leek Arm currently is an attractive cruising cul-de-sac off the main line of the Caldon Canal, but it has very low levels of use.

It carries the water supply from Rudyard Reservoir to the main line which then feeds the Trent & Mersey Canal summit in Stoke on Trent. Historically, the Leek Arm crossed the River Churnet and terminated in a basin half a mile closer to Leek town centre. However, in 1957 this section was filled in and the area has now been developed as an industrial estate. Elements of the former canal still remain including the Barnfields Canal Aqueduct (known locally as the Churnet Aqueduct), now de-watered. Nothing remains of the original canal north of the aqueduct itself. The canal in context with the surrounding area is shown in Figure 1 (page 3).

Several thousand boats visit the Caldon Canal each year. However, very few make the trip to Leek. Access between Leek and the canal at its current terminus is poor and the canal is not visible from the surrounding roads. The stretch of canal leading to the current terminus has no safe mooring facilities. Boats longer than 50 feet can not currently turn at this point and instead must end their journey to Leek and turn further south near Wall Grange Farm Bridge.

Leek currently does not capitalise on the fact that the town has a canal that links to a nation-wide waterway network. This contrasts with the popularity of the terminus of the main line at Froghall where restoration work has taken place and new facilities have been developed.

The existing terminus of the Leek Arm is in close proximity to other proposed visitor attractions and redevelopment in the area. Other proposals include re-opening the Churnet Valley Railway and redevelopment of the Cornhill area of the town.

The Study has considered the following :

- A range of route options devised by the Steering Group and the Consultant, for navigation extension and basin construction and an assessment of the options' viability in terms of design, vertical alignment, ease of construction and potential impact on adjacent land and property.
- The water requirements of the extended length of canal and basin construction and the best means of providing the necessary water resources.
- An estimate of cost for each of the route options (including land acquisition) as well as an indication of future maintenance and operational costs.
- The environmental impacts of each of the route options and suggested mitigating measures where an adverse impact is likely.
- Current land ownership associated with each of the route options.
- Ways of conserving and enhancing the built heritage, environment and biodiversity of the canal.
- The best means of providing canal access for visitors and Leek residents.
- The social and economic impact of each option, expected benefits and potential for improved access to Leek Town Centre.

A copy of the project brief is included in Appendix 1.

1.3 Report Format

British Waterways specified the report format taking into account the requirements of the Steering Group.

Chapter 2 introduces the five routes and variations being considered.

Chapter 3 provides general information regarding the site and its locality which may affect all the options described.

Chapter 4 presents each of the routes in detail and provides a summary of the outline cost for each of the route options.

Chapter 5 contains a general discussion of the potential benefits of a new terminus facility based on the Association of Inland Waterways Authorities (AINA) guidance *"Demonstrating the Value of Waterways"*. This section also provides information on the value and benefits of waterways in general at a national level, economic benefits and expected levels of usage and levels of investment required to justify development of a canal terminus facility at Leek.

Chapter 6 provides information of potential sources of funding for a new canal terminus at Leek and suggested next steps.

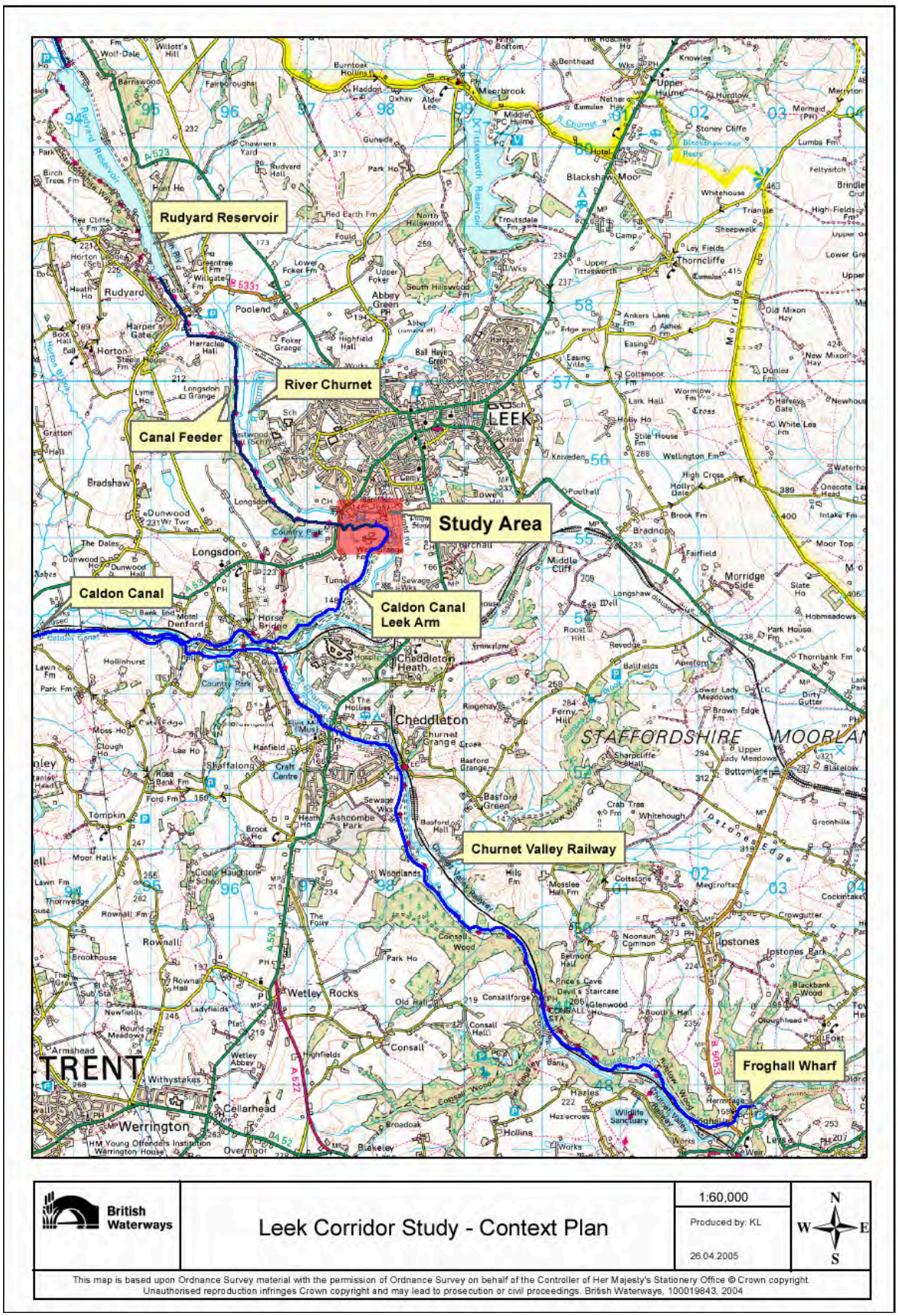


Figure 1 – Context Plan

2.0 Route Options Introduced

2.1 Route Options

Five routes, based on outline information provided by the Steering Group, are shown in Figure 2 (page 7) and are identified as follows:

Route 1
Crossing the Barnfields Canal Aqueduct then west towards Ladderedge Country Park, including creation of a mooring basin with space for up to 15 boats, electricity, water point and sanitary station.

Route 2
Crossing the Barnfields Canal Aqueduct then east towards the disused railway line (now a concessionary footpath route with access to Leek town centre) including the creation of a mooring basin with space for up to 15 boats, electricity, water point and sanitary station.

Route 3
Developing the line of the existing canal feeder towards Ladderedge Country Park to create a mooring basin near the A53, with space for up to 15 boats, electricity, water point and sanitary station. The basin layout to allow for further extension of the canal westward to connect with the Macclesfield Canal.

Route 4
Re-instating the original line of the canal towards Leek town centre and creating a basin with moorings provision. The line of the former canal ran north from Barnfields Canal Aqueduct towards the town and terminated in a basin near to what is now Morrisons supermarket.

Routes 1, 2 & 4 require enlargement of the southern approaches to the aqueduct to allow boats to turn to cross the River Churnet.

Route 5 explores the possibility of not extending the canal but simply re-commissioning the aqueduct and enlarging the southern approaches to create a winding hole.

2.2 Route 1

Requires:

- Widening of the Canal south of Barnfields Canal Aqueduct to allow boats to make the turn.
- Reinstatement of the aqueduct.
- Construction of a new canal channel on the north side of the river to an area of land for the basin next to the service road leading to the Ladderedge Country Park car park.

Other Key Features:

- Connects to existing visitor car park/access.
- Connects to existing footpath in Ladderedge Country Park leading to bus routes on A53 into Leek town centre
- Impacts on Hughes Concrete

2.3 Route 2

Requires:

- Widening of the canal south of Barnfields Canal Aqueduct to allow boats to make the turn.
- Reinstatement of the aqueduct.
- Construction of a new canal channel along the northern bank of the River Churnet towards the disused railway line (now a concessionary footpath route with access to Leek town centre).

Other Key Features:

- Connects to existing footpaths and road links to Leek centre
- Potential for connection directly to the Churnet Valley Railway station proposal and the proposed Cornhill regeneration area.
- Impacts on Hughes Concrete and Bestwick scrapyard.

A variant to route 2 has also been considered. Route 2a involves construction of a new aqueduct across the River Churnet taking a direct line from the Canal to the east of the existing terminus.

Advantages and reasons for variant:

- No need for repair to existing aqueduct or canal winding hole
- More direct route reduces land-take issues
- Creation of a landmark structure to mark the gateway to Leek

2.4 Route 3

Requires:

- Creation of a new channel roughly following the existing line of the canal feeder and construction of a new basin near the A53.
- Access to adjacent landowner's property via existing access road.

Other Key Features:

- Single agricultural landowner affected
- Facility for further extension of the canal in the future
- Adjacent to A53 and bus routes into Leek

2.5 Route 4

Requires:

- Widening of the Canal south of Barnfields Canal Aqueduct to allow boats to make the turn.
- Reinstatement of the aqueduct.
- Construction of new channel / re-instatement of the old canal through Barnfields Industrial Estate to the site of the historic canal basin

Other Key Features:

- Numerous existing uses particularly at Barnfields Industrial Estate
- Creates basin as close to Leek town centre as possible

2.6 Route 5

Requires:

- Widening of the Canal south of Barnfields Canal Aqueduct to allow boats to turn.
- Upgrading the limited vehicle access along the corridor between Hughes Concrete yard and Bestwick scrap yard to allow access to potential moorings and visitor facilities.

Other Key Features:

- Provides potential to develop Routes 1, 2, 3 or 4 at a later date.
- Impacts on Hughes Concrete and Bestwick scrapyard.

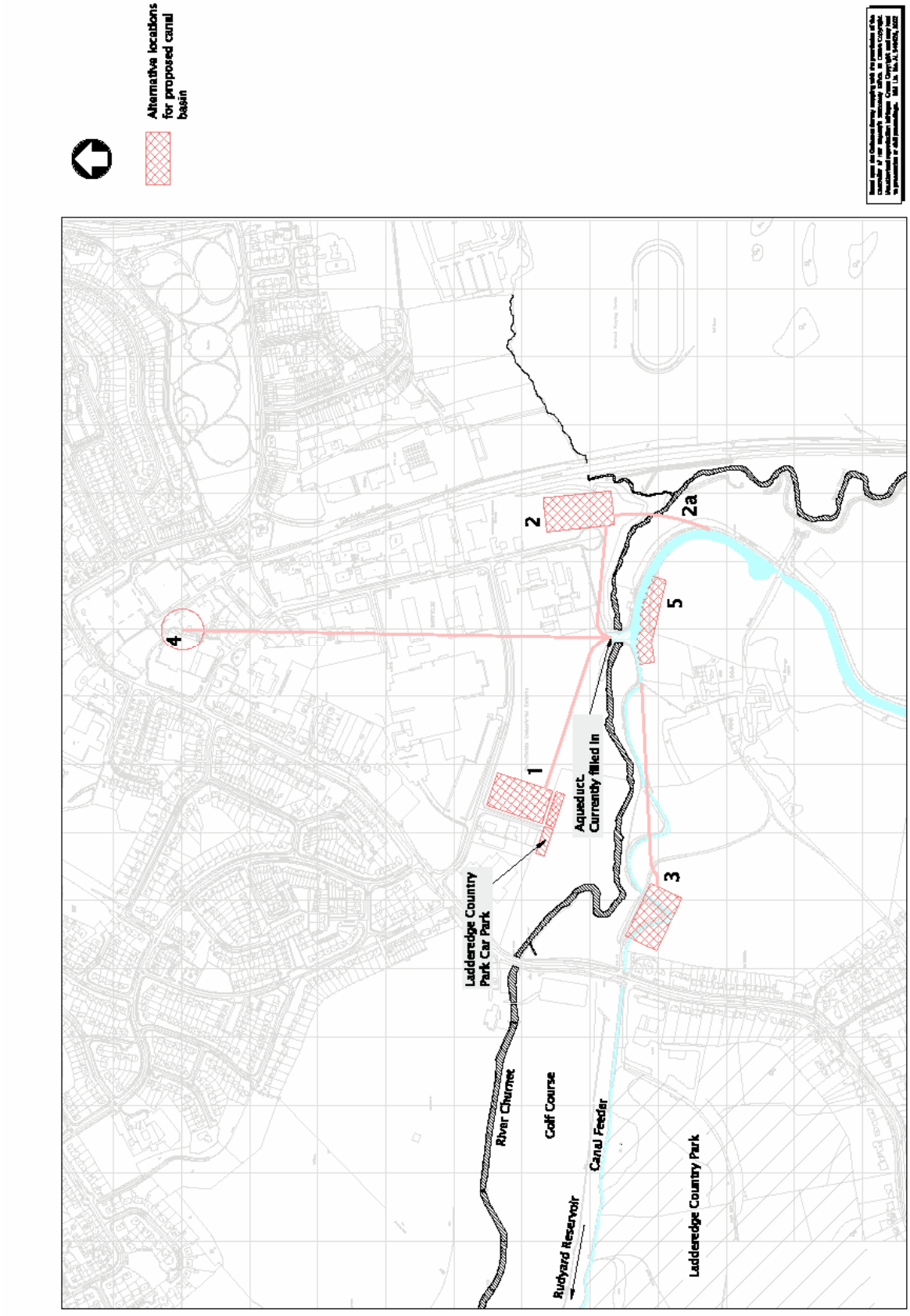


Figure 2 – Route Options Plan

3.0 Site Context

3.1 Landscape Character

The Caldon Canal runs from Stoke on Trent via Endon and Cheddleton to Froghall in the heart of the Churnet Valley. The canal lies within the Stoke on Trent City Council and Staffordshire Moorlands District Council areas. The attractive and diverse landscape within the Staffordshire Moorlands District Council area is typified by enclosed broadleaf woodlands and rolling pasture land interspersed with small villages. The short 3.25 mile Leek Arm of the Caldon Canal runs from Hazelhurst Junction just west of Denford and terminates to the south of Leek.

The study area covers land to the southern edge of Leek and runs between Ladderedge to the west and a disused section of railway line to the east. Barnfields Industrial Estate forms the north boundary of the Country Park. The study area is bounded to the south by grazing land. The length of the Leek Arm discussed within the study is approximately 290 metres in length and runs from Barnfields Aqueduct to Wall Grange Farm Bridge.

A Landscape Evaluation Survey of the Caldon Canal between Longbutts Drawbridge to Leek and Froghall was undertaken by British Waterways in 1987 and provides an appraisal of the canal resource. It provides an assessment of the landscape character of the canal and highlights a range of priority landscape improvements which should be undertaken to retain and enhance the character of the waterway as well as more general improvements including maintenance to structures and towpath improvements.

Figure 3 (page 10) highlights the varying landscape character within the study area.

3.1.1 General Impressions

- Slightly elevated, sinuous length of canal offers attractive views across the Churnet Valley to the south and south east.
- Mature broadleaf trees line the banks of the River Churnet running west to east across the area.
- Attractive open aspect to the west of the site across riverside meadows.
- Short views extend north as far as the southern fringe of Barnfields Industrial Estate.
- Views rise south across undulating grazing land to the canal feeder in middle distance and to Wall Grange Farm on the brow.
- The canal feeder runs parallel to the River Churnet, winding its way across grazing land to meet the canal at the Barnfields Canal Aqueduct.
- The canal feeder sits in elevated position, overlooking the River Churnet towards Barnfields industrial estate in the middle distance and towards Leek town centre in the far distance with its historic buildings punctuating the skyline.
- Towards the west of the study area, the canal feeder meets a surfaced access road leading towards Wall Grange Farm and to Ladderedge. Factory and road noise from units on Barnfields industrial estate is audible.

3.1.2 Key Elements in the Study Area and Surrounding Landscape

- Caldon Canal – Leek Arm
- Canal feeder
- Historic aqueduct
- River Churnet
- Barnfields Industrial Estate – Hughes Concrete and neighbouring units

- Ladderedge Country Park
- Bestwick Private Waste Disposal Site (Scrap Yard)
- Wall Grange Farm and surrounding grazing land
- Disused railway embankment
- A53

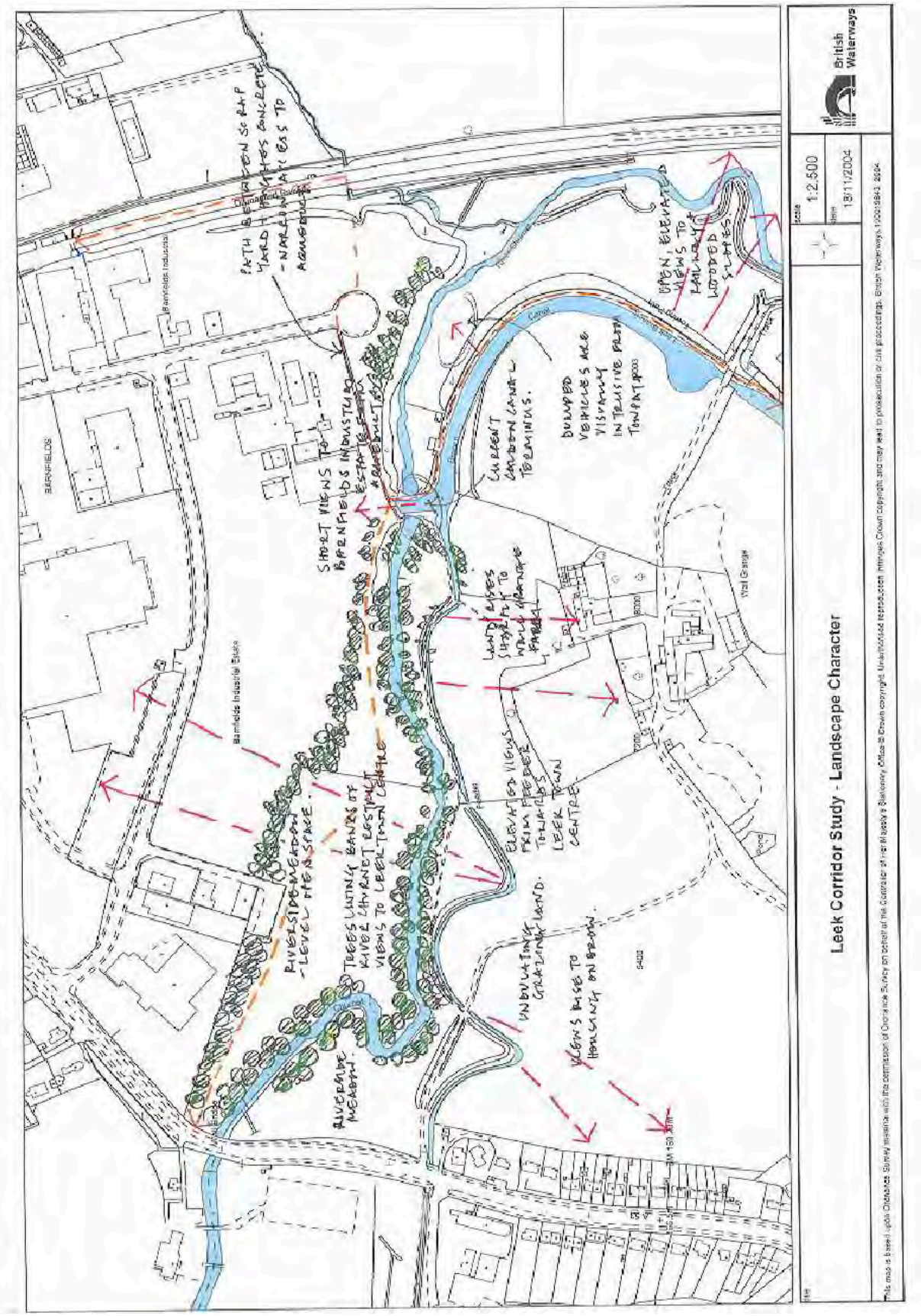


Figure 3 – Landscape Character

3.2 Current Known Land Ownership and Land Uses

A land registry search was undertaken in May 2004 to determine land ownership across the study area. The land registry search identified ownership details for only one parcel of land to the south east of the study area and this is marked in Figure 4 (page 13). Land ownership and land use are also shown but based on local knowledge and exact boundaries will require further research. The Land Registry search is included in Appendix 2.

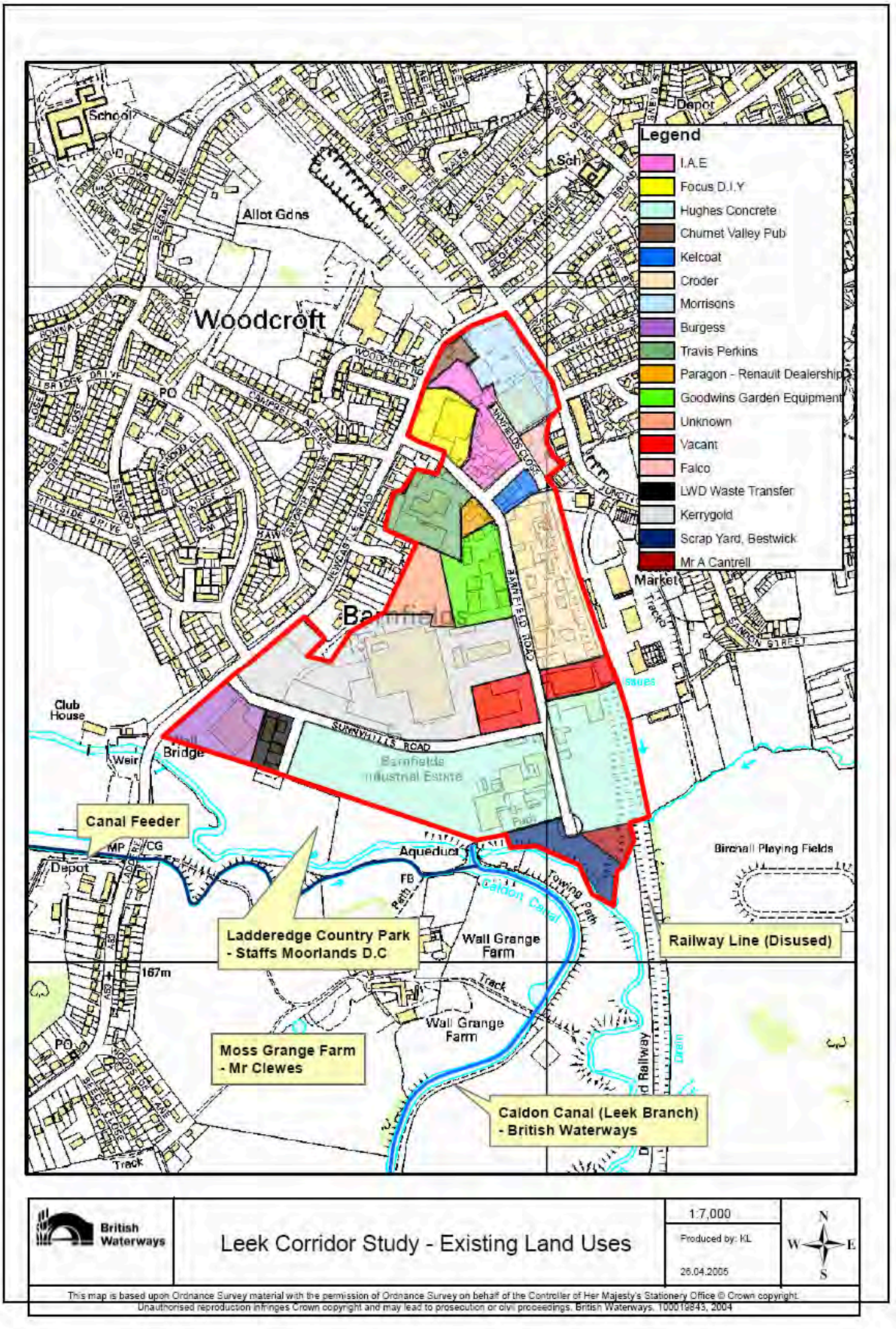
Ownerships are as follows:

- Wall Grange Farm and farmland south of River Churnet – Mr Clewes, Wall Grange Farm, Leek
- Canal and canal feeder – British Waterways
- Scrap Yard – Bestwick
- Barnfields Industrial Estate – It is Leek's largest industrial estate and is in mixed ownership. Companies operating within the estate range from light to heavy industrial land uses. Activities include agricultural and machinery manufacturing, food processing and concrete tube manufacture. The estate is of post-war construction and is built across the former line of the Caldon Canal.
- Ladderedge Country Park – Staffordshire Moorlands District Council. Local Nature Reserve.
- Land at southern end of Barnfield Road, adjacent to Bestwick Scrap Yard – Mr Cantrell, Rocks Bar Farm, Upper Hulme, Leek.

The table below highlights land owners that may be affected at each of the route options:

Route Options	Businesses/ landowners affected by route option
Route 1	• Hughes Concrete • Staffordshire Moorlands District Council • British Waterways • Mr Clewes, Wall Grange Farm, Leek
Route 2	• Hughes Concrete • Staffordshire Moorlands District Council • British Waterways • Mr Cantrell, Rocks Bar Farm, Leek • Bestwick Scrap Yard • Mr Clewes, Wall Grange Farm
Route 2a	• Hughes Concrete • Staffordshire Moorlands District Council • British Waterways • Mr Cantrell, Rocks Bar Farm, Leek • Mr Clewes, Wall Grange Farm, Leek • Bestwick Scrap Yard
Route 3	• Staffordshire Moorlands District Council • British Waterways • Mr Clewes, Wall Grange Farm, Leek

Route 4	• Hughes Concrete • Kerrygold • Goodwins • Paragon Renault dealer • Travis Perkins Builders Merchants • IAE • Focus • Churnet Valley Pub site • Staffordshire Moorlands District Council • British Waterways • Mr Clewes Wall Grange Farm
Route 5	• British Waterways • Mr Clewes, Wall Grange Farm, Leek • Staffordshire Moorlands District Council


Legend
I.A.E
Focus D.I.Y
Hughes Concrete
Churnet Valley Pub
Kelcoat
Croder
Morrisons
Burgess
Travis Perkins
Paragon - Renault Dealership
Goodwins Garden Equipment
Unknown
Vacant
Falco
LWD Waste Transfer
Kerrygold
Scrap Yard, Bestwick
Mr A Cantrell
Woodcroft
Allot Gdns
School
Depot
Market
Club House
Weir
Bridge
Canal Feeder
Aqueduct
Ladderedge Country Park
- Staffs Moorlands D.C
Wall Grange Farm
Railway Line (Disused)
Moss Grange Farm
- Mr Clewes
Caldon Canal (Leek Branch)
- British Waterways
Birchall Playing Fields
167m
British Waterways
Leek Corridor Study - Existing Land Uses
1:7,000
Produced by: KL
26.04.2005
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This map is based upon Ordnance Survey material with the permission of Ordnance Survey on behalf of the Controller of Her Majesty's Stationery Office © Crown copyright.
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Figure 4

3.3 Planning Context

3.3.1 Staffordshire Moorlands Local Plan

The development framework for the study area is set primarily by the current Staffordshire Moorlands Local Plan (SMLP), adopted in September 1998. Figure 5 (page 20) shows the land use designations in the Plan for the study area.

The general objective of the Plan is to balance the needs for development with conservation of the existing value of the area. It contains proposals for development of specific sites and policies on a range of relevant issues to guide development across the district.

3.3.2 Leek General

The SMLP gives specific attention to a number of localities and centres as well as general issues. One such centre is Leek and below extracts from the plan:

QUOTE:

11.26 **Leek**

i) Leek is an historic town which stands on a promontory just below the open moorland of the Peak District National Park. A large proportion of the town's buildings date from the 19th Century when the industrial revolution resulted in a major expansion of the town. The historic core of the town contains a number of significant listed buildings and is designated as a Conservation Area. The town has grown so that it now occupies all of the flat land on the promontory and the more easily developed parts of the valley which surrounds it. This has resulted in a compact town set in attractive surrounding countryside with only a small number of formal open spaces preserved within it. This means that any future expansion of the town will probably result in an intrusive extension of the built up area into the surrounding countryside.

ii) The town's population has remained largely static at almost twenty thousand since the 1960's and the town has retained an independent economic identity with the majority of the town's residents finding work in the town. Leek has a broad spread of employment opportunities and serves as a service centre for a large rural hinterland. Therefore it has a significant retailing sector and a good range of public services.

iii) There is a high number of housing commitments in the town therefore only two new sites have been allocated for housing.

iv) There is already a significant level of committed employment land in the town so only one site is allocated as follows:

a) Cornhill**,** 3.7 ha., located to the rear of the Britannia Building Society offices below the Cattle Market and above Birchall Playing Fields. The site comprises gently sloping land partially screened by the new office development and will be an extension of one of the town's existing industrial areas. Access will probably be gained from the new road which serves the new office development, although alternatives including access from the existing Barnfields industrial area will be evaluated. A traffic impact assessment will be required in connection with any detailed application to develop the site. The site can be economically provided with all services through limited upgrading. There should be no building within 6m of the watercourse on the southern boundary. Power lines will need to be relocated at the developer's expense.

v) The Town Centre is in need of revitalisation including environmental improvement, new shopping provision and improved car parking. See also Section 7 'Town Centres & Shopping - Policy S6).

vi) An area of land adjacent to All Saints Church is designated as Visual Open Space to protect an important view of the church (see also Section 8 'Recreation & Tourism' - Policy R5).

vii) Leek lies on the outer edge of the North Staffordshire Green Belt and the boundary has been drawn around the western side of the town. No new development is proposed in the Green Belt. A Town Development Boundary has been drawn to coincide with the Green Belt boundary and also forming the edge of the Special Landscape Area on the west side of the town and continues around the remainder of the town to the east. This will allow for suitable small-scale development within the town, in keeping with its character, whilst preventing further expansion into open countryside. The industrial estates at Leekbrook have also been excluded from the Special Landscape Area.

UNQUOTE

The Plan also focuses on employment provision, which is especially relevant to the Study as the Barnfields Industrial Estate is zoned for employment use, with the only proposed new employment area being Cornhill just east of the disused railway.

The Plan indicates that:

QUOTE

Leek has a high level of 'self-sufficiency' with about 65% of local people finding jobs in the town. Nevertheless over 2000 people still travel out of the town to work. The town is also a significant source of employment for people living elsewhere in the District as befits its role as the District town and main service centre for a large rural hinterland. It is important that the town should continue to perform this important role.

The existing Plan shows that Leek has about 13.4ha. of land for industrial development at White's Bridge (10ha.), Cornhill (1ha.) and Basford Lane, Leekbrook (2.4ha.). There is a small area of redevelopment land at the Station Yard. The site at White's Bridge has been allocated on the Leek Local Plan since 1981. It is well located alongside the A523 and is not intrusive. A number of problems afflicted the site, particularly site access and site assembly, but these appear to have been overcome and planning permission has been granted. An extension to the Cornhill site is proposed which will help to increase the range of sites available for employment development in Leek.

UNQUOTE

The Plan also indicates that the loss of suitably located industrial land is not desirable as replacement may not be possible and so includes the following policy:

QUOTE

Policy E7 Existing Employment Sites
Development involving the loss of existing employment sites will not be permitted except where it can be shown that the location is undesirable in environmental or traffic terms and where an alternative site is available.

UNQUOTE

3.3.3 Policies Specifically Relating to the Caldon Canal and its Associated Area

Specifically Staffordshire Moorlands District Council identifies the Caldon Canal as an important recreational facility as identified below:

QUOTE

The Caldon Canal
8.22 The Caldon Canal runs from Stoke-on-Trent, via Endon and Cheddleton to Froghall in the heart of the Churnet Valley. A short branch runs from Hazelhurst Locks, just west of Denford, via a length of tunnel, to Leek. The canal was improved during the 1980 to 'Touring' standard.

8.23 Boating as a recreational past-time has become increasingly popular on the Caldon Canal. However, this trend is constrained due to a lack of moorings and associated facilities such as sanitation blocks, water supply points and accessible shops.

8.24 Securing the provision of extra facilities along the canal may result in problems. The canal lies within the North Staffordshire Green Belt; limiting the scale and use of any recreational development (a permitted Green Belt use). The conflict between increasing visitor facilities and nature conservation will need to be given due consideration, especially as the natural environment is one of the most appealing aspects of the canal. Access to the canal is limited with suitable access points generally only being available where the canal passes through villages. Endon and Froghall have some form of facility provision and Cheddleton seems the logical place for the location of suitable facilities.

8.25 The Leek arm of the canal suffers similar problems and the search for a suitable site should be concentrated on the Leek end, giving a destination to the branch and a place to moor and visit Leek.

Policy R12 Caldon Canal
Along the Caldon Canal the development of visitor moorings and associated facilities including parking provision, sanitation blocks, interpretation facilities and provision of food and fuel will be given sympathetic consideration provided that they are located within village development boundaries or within existing groups of buildings and are in keeping with their surroundings in design and scale.

UNQUOTE

Within the study area, The Staffordshire Moorlands Local Plan recognises a number of general issues that will directly affect the canal and its surrounding area as identified below:

The site is located within a Special Landscape Area.

QUOTE

Policy N8 Special Landscape Area
In the special landscape area permission will not be given for development which would materially detract from the high quality of the landscape because of its siting, scale, design and materials, and associated traffic generation. In areas where the special landscape overlaps the green belt there will be a presumption against most development in accordance with policy N2.

Policy N9 Special Landscape Area
Within the special landscape area the local planning authority will promote and require especially high standards of design for development

UNQUOTE

The study area includes a natural watercourse (the River Churnet) and the artificial canal:

QUOTE

Policy F4 Drainage
Planning permission will not be granted for development proposals which would inhibit or damage the drainage function of the natural watercourse system, or cause or aggravate flooding problems at the site or further downstream unless adequate mitigating measures are carried out prior to the development coming into use. This will include development:
A. in areas which form part of the floodplain and areas at risk from flooding.
B. Preventing access to watercourses for maintenance.
C. Giving rise to substantial changes in the characteristics of surface water run-off.
D. Causing adverse effects upon the integrity of fluvial defences.

UNQUOTE

The canal is covered by a Conservation Area designation:

QUOTE

Policy B10 Conservation Areas
Conservation area consent will not be granted for the demolition of unlisted buildings and important walls where they make a positive contribution to the character or appearance of the conservation area and where planning permission for new development has not been granted unless the local planning authority is satisfied that adequate efforts have been made to retain the building in use, or the building is wholly beyond repair, or is incapable of reasonably beneficial use or where its replacement by alternative proposals or its removal would produce substantial planning benefits for the community which would outweigh the loss of the building.

Policy B11 Conservation Areas
In a conservation area the local planning authority will seek to ensure that development preserves or enhances the appearance or character of the area and is in sympathy with it in terms of scale, siting, alignment, mass, design, colour and materials.

Policy B12 Conservation Areas
Where there are proposals to remove or cut back trees of amenity value in or around conservation areas, the council will create tree preservation orders or will implement conditions of planning permission for their protection or replacement, except where the proposed operations are in the interests of safety or tree management or an enhancement scheme.

UNQUOTE

Part of the Study area is within the North Staffordshire Green Belt:

QUOTE
Policy N2 Green Belt

Except in very special circumstances, there will be a presumption against inappropriate development in the green belt, including the construction of new buildings for purposes other than:-
A) agriculture and forestry.
B) essential facilities for outdoor sport and outdoor recreation provided that the associated built development is of a scale appropriate to the green belt; cemeteries and other uses of land which preserve the openness of the green belt and which do not conflict with the purposes of including land in it.
C) the conversion of rural buildings of permanent and substantial construction to suitable alternative uses in accordance with policy B21.
D) limited extension, alteration or replacement of existing dwellings in accordance with policies H11, H12 & H13.
E) limited infilling in villages listed in policy N3.
F) limited infilling or redevelopment of the major existing developed site listed in policy N5 and in accordance with policy N4.
G) limited affordable housing in accordance with policy H15.

Policy N7 Green Belt
Development which would injure the visual amenity of the green belt by virtue of its siting, materials or design will not be permitted in locations which are within or visually conspicuous from the green belt.

UNQUOTE

3.3.4 Other Initiatives

The main current initiative underway in Leek which could have a potential link with a new canal terminus for Leek is discussed as follows:

a) Cornhill, Leek – Area Action Plan

An Area Action Plan was prepared by Staffordshire Moorlands District Council to guide the future development of the Cornhill area of Leek in Spring/ Summer 2005. The area is located to the south side of Leek, adjacent to the area covered by the canal study. It covers an area of around 20.4 hectares. The Action Plan explored future development opportunities and constraints within the Cornhill area.

During the course of this study, this Action Plan was withdrawn by Staffordshire Moorlands District Council in December 2005 pending further work on options for south Leek to be investigated via the Council's Core Strategy. During the course of the Action Plan public consultation process, there was considerable local support for the integration of a enhanced canal terminus as part of future plans for the south side of Leek. (Refer to Appendix 3).

Key elements discussed within the Cornhill area action plan included Leek Cattle Market, Churnet Valley Railway, housing, employment and access. A plan showing the Cornhill Action Plan area is attached in Appendix 3 together with a copy of the Action Plan.

Leek Cattle Market
Long established key land use within the Cornhill area. The market is owned by the Council and managed by Leek Auctions. It is considered preferable to retain the market at its current location.

Churnet Valley Railway
Churnet Valley Railway run trips from Cheddleton to Leekbrook Junction, Consall and Froghall and would now like to extend to Leek and create a new terminus. The action plan highlights advantages of a new rail terminus both for the Churnet Valley Railway and for

Leek including increased tourism in Leek and the Churnet Valley and the creation of a sustainable alternative access to the town centre with a possible park and ride facility. This has the potential to have a close link to the canal with the opportunity for a joint terminus at this location. Options 2 and 2a within this study provide more detail of a possible basin location and link with the railway.

Employment
Part of the site is allocated for employment uses within the current local plan on land to the south of the cattle market although this has yet to be developed. The action plan indicates that if local access issues can be resolved as part of comprehensive redevelopment of the Cornhill area, then this area may come forward for development.

Housing
A recent housing needs survey undertaken by the council has highlighted that more affordable housing is needed in Leek and indicates that the Cornhill area may be a suitable location.

Access
The action plan advises that the Highways Authority have provided comments on the potential for redevelopment within the Cornhill area and welcome the idea of a rail link into Leek. The County Council would wish to see traffic movements reduced where possible. The County Council's suggestion in the plan, of a possible vehicular link to Newcastle Road via Barnfields/ Sunnyhills Road to relieve pressure on Junction Road but several third party constraints, would need to be overcome. The County Council suggests that any development brief prepared for the site should incorporate public transport, walking and cycling initiatives.

Possible impact on a canal terminus at Leek
The common objectives of providing a new terminus for visitors to Leek and a sustainable new access to the town centre are reflected in the proposals for a new canal destination at Leek and the possible reopening of the Churnet Valley Railway. Consideration should be given to incorporating the canal into ideas for this area in any masterplan or development brief prepared for Cornhill by Staffordshire Moorlands District Council.

Non-specific initiatives are:

b) Moorlands Town Partnership
Moorlands Town Partnership currently comprises the Staffordshire Moorlands District Council, English Heritage and Leek Town Council. The Partnership is currently concerned with Leek and its remit is to tackle its environmental and economic problems concentrating on those in the town centre. The Partnership will work towards the implementation of the Leek Action Plan prepared by the Civic Trust Regeneration Unit. Grant aid, administered by the Town Partnership, is available for a variety of environmental schemes that aim to be a catalyst for economic regeneration in the historic town core.

c) Leek Town Centre
Environmental improvement in and around the town centre is being achieved by the Moorlands Town Partnership. The District Council is also keen to see the economic and social regeneration of the town centre that will be achieved by a combination of refurbishment and improvement.

The District Council in conjunction with other bodies is preparing a Transport Strategy for Leek. The objectives of the Strategy are to utilise existing highway space in imaginative ways to continue to meet the needs of the community for movement and mobility in ways that respect environmental constraints.

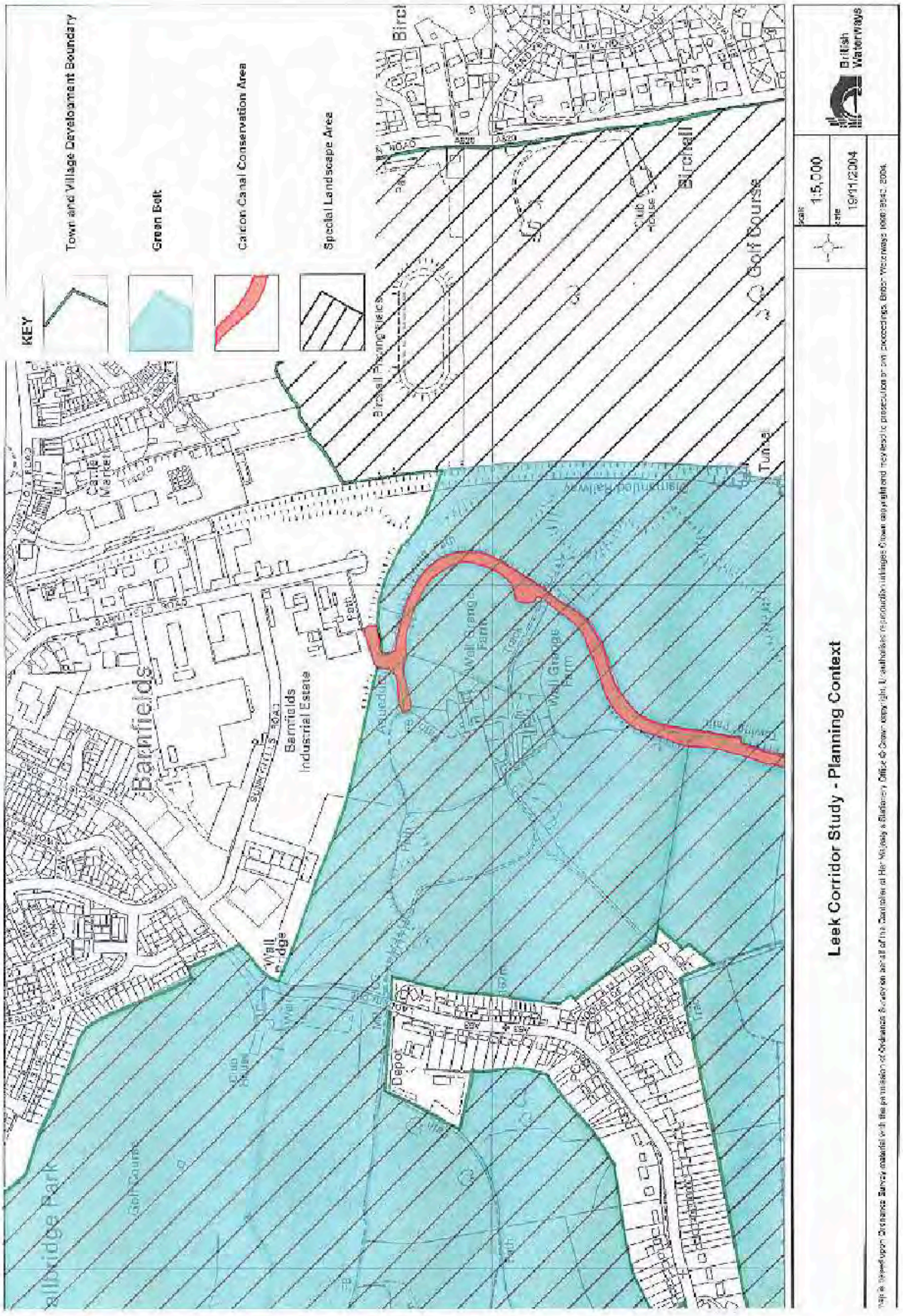

Figure 5 – Planning Context

3.4 Natural Heritage

3.4.1 Strategic Context

The following documents are key to providing the strategic context from which to review the ecology of the study area:

a) Staffordshire County Biodiversity Action Plan (BAP)

The Staffordshire BAP includes a wildlife audit that places this section of the Caldon Canal within the Churnet Valley and Potteries Natural Area.

The BAP includes a number of habitat and species action plans that will be of relevance to the site. These include:

Species Action Plans (SAPs) for:

- Otter
- Water vole
- Barn owl
- Grass snake
- Great creasted newt
- White-clawed crayfish

Habitat Action Plans (HAPs) for:

- Ponds, lakes and canals
- Rivers and streams.

Actions referring directly to canals are included in the water vole plan. Other plans contain actions that will be relevant to the site.

When detailed surveys have been undertaken of the site and adjacent areas it may become apparent that other habitats and species referred to within the BAP are present.

b) Relevant Nature Conservation Policies extracted from Staffordshire Moorlands District Council Local Plan

QUOTE
Nature Conservation
2.24 In recent years awareness has grown of how much pressure wildlife and habitats are under from development. There is a need to safeguard nature conservation interest throughout the countryside and not just on specific sites. Apart from identifiable sites of nature conservation interest, PPG 9 'Nature Conservation' requires that the value of areas which provide links or corridors for wildlife between one habitat and another need to be given proper consideration. Such links and corridors may include woods, ponds, rivers, canals and hedgerows.
2.25 In its capacity as Local Planning Authority the District Council has an obligation to consider how development will affect both the wildlife and the habitats upon which wildlife depends, and the varied geology of the District. The protection and conservation of a species rich countryside is a prime consideration of this Local Plan. Very little of the English landscape we see today has not hedgerows, flower-rich meadows, heathlands and wetlands and an increase in river and air pollution.
UNQUOTE

c) Designated Nature Conservation Sites

There are currently no internationally protected sites or National Nature Reserves within the study area. However Ladderedge Country Park is identified as a Local Nature Reserve.

QUOTE
Local Nature Reserves
2.27 The National Parks and Access to the Countryside Act, 1949, gives Local Authorities the power to acquire, declare and manage Local Nature Reserves. Such reserves are important not only for conserving wildlife and natural features but can also be outdoor classrooms for schools and places where the public can experience and enjoy nature. To qualify as a Local Nature Reserve the Local Authority must be satisfied that the site is of special interest and is capable of being managed as a reserve. Once a site is identified English Nature has to be consulted over the proposal. Where appropriate the District Council will consider the designation of Local Nature Reserves to protect wildlife and natural features which are of special value. Other sites of significant local nature conservation value will be safeguarded wherever possible.

Unimproved Grasslands
2.28 Grasslands in this country arose because of livestock husbandry and the traditional management of meadows and pastures produced habitats which supported a rich variety of plants and animals. Intensification of agricultural practises, such as increased use of fertilisers pesticides and land drainage, along with other agricultural operations outside planning control, have resulted in the disappearance of the majority of species rich, unimproved grasslands. There is a continuing threat to unimproved grasslands in the District and they require specific protection. Policy N17

Wetlands
2.31 Water areas are important both as wildlife habitats and as amenity and recreation features. River corridors may form important wildlife links between one habitat and another, and often form important habitat areas themselves. Access to watercourses, canals and areas of standing water may be encouraged to allow for appropriate forms of recreation. Areas of open water may be flowing (rivers, streams and canals) or standing (reservoirs, lakes, ponds). Wetlands occur wherever the water table is sufficiently high to support specialised plant communities such as reeds, sedges or mosses. There are many such water areas in the Staffordshire Moorlands ranging from the large reservoirs at Tittesworth and Rudyard to a large number of small ponds and areas of wetland throughout the District. The demand placed on these water areas from the needs for water supply, nature conservation, amenity/recreation and development (including drainage of land for agricultural improvement) can lead to conflicts. In particular they may lead to damage or loss of significant habitats. Policy N19
UNQUOTE.

Other policies relating to the protection of water courses are contained in Section 9 'Facilities and Utilities' - Policies F4 & F5. In appropriate cases the Council will seek contributions from developers towards the provision of environmental schemes in accordance with Policy A1 in Section 10 'Achieving the Plan'.

d) British Waterways and Biodiversity – A framework for Waterway Wildlife Strategies, published by British Waterways, (2000)

British Waterways corporate guidance for the the production of Biodiversity Action Plans for individual waterways includes generic HAPs for canal and river channels, waterway banks, towpath verges, hedgerows, cuttings and embankments, built structures, reservoirs, lakes and ponds, tips, feeders and streams, reedbeds, adjoining land, field margins and woodland and scrub. A number of these habitats occur on or adjoining the Caldon Canal within the study length. British Waterways' BAP framework also includes generic SAP's for water vole, otter, amphibians, reptiles, fish, freshwater sponges, molluscs, butterflies and moths, bats, white clawed crayfish, water plants, birds, dragonflies and damselflies and trees and a number of these are known to be important features of the Caldon Canal and its feeder.

3.4.2 Site Inspection

The area was visited on 18 March 2004 by British Waterways staff for a scoping survey to highlight any potential ecological issues for the restoration, extension and development of the canal in Leek. Five sites were surveyed for the potential for a mooring basin, as outlined in the Consultant's Brief. The ecological implications of each of these options are discussed in chapter 4 of the study.

The canal runs alongside the River Churnet, on the higher ground of the river valley. The study area covers the extent of the navigable section of canal and includes the canal supply feeder that comes from Rudyard Reservoir located to the north west of the area. The immediate adjacent land use is predominantly sheep and cattle grazed pasture. Within Ladderedge Country Park, the River Churnet is lined with a mix of mature broad-leaved trees with occasional scrub. There is an area of rough grassland to the north of the river of county wildlife site standards and is used by dog walkers.

The canal has soft bank with an emergent fringe dominated by reed sweet-grass, on both towpath and offside. The offside also has occasional mature alder and in places, has been poached by sheep gaining access to the canal water. The towpath embankment is a typical mix of rough grassland and ruderals such as thistles, dock and nettles, sloping towards the river flood-plain.

The feeder section to the canal is also soft bank. There is in places a hawthorn/alder fringe. Part of the section runs through a buried pipe due to the surrounding topography.

As part of the design process, the following activities will need to be carried out:

- Further surveys for protected species (water vole, white-clawed crayfish, amphibians and aquatic macrophytes)
- Further vegetation surveys
- All survey results to be fed back for national biological recording scheme and Caldon Canal Biodiversity Action Plan.
- Determine mitigation measures.
- Determine measures for habitat enhancement.

3.5 Built Heritage and Archaeology

3.5.1 Historical Development of the Leek Canal

The following text is taken from a note prepared by the Caldon Canal Society;

QUOTE

The Act for the Leek Canal, 37 Geo III Cap 36 received Royal Assent on 24 March 1797. It was described as "An Act to enable the Company of Proprietors of the Navigation from the Trent to the Mersey, to make a Navigable Canal from and out of a certain Branch of their said Navigation, called The Caldon Canal, at or near Endon, to or near the Town of Leek, in the County of Stafford; and also a Reservoir for the supplying the several Canals of the said Company in water."

The Trent & Mersey Company originally planned simply for a canal feeder from the proposed Reservoir in Rudyard Vale to the Caldon Canal, but the landowners in the Leek area objected to this until the Company agreed to make the feeder navigable as far as their Town.

Since the water was needed to feed the summit pound of the Canal (and from thence to the Trent & Mersey Main Line), it had to connect at the nearest point which was Park Lane, Endon. The original summit pound ended at Park Lane Lock where the canal descended through two further locks and pounds to Denford. The Town of Leek and the proposed reservoir at Rudyard were to the north of the valley of the Endon Brook and the summit pound of the Caldon was on the south side, so an embankment was required to cross the valley. The narrowest part of the valley was in the vicinity of Hazlehurst Wood and this is where the embankment was to be built. But first, the summit of the Caldon Canal was extended along the south bank to Hazlehurst Wood, and a triple staircase lock was built near the end of the proposed embankment down to the original level of the Caldon Canal at Denford. When the staircase was completed and opened, the canal from Park Lane Lock to Denford was closed and an embankment constructed with an aqueduct for Endon Brook to pass through. The land where the original line from Park Lane to Denford used to go was sold back to the adjacent landowners.

The work took over four years and the boats were able to use first the original canal and later the new canal to Hazlehurst Wood in order to transport the materials for canal building and later for the construction of the embankment. Work would have progressed on the dam and reservoir at Rudyard, and on the feeder to the Leek Canal, at the same time.

Stone was quarried as close as possible to where it was needed. There was a quarry in Hazlehurst Wood which supplied the stone for the triple staircase and the Endon Brook Aqueduct.

When the embankment was completed boats could transport stone to the end of the feeder where an aqueduct was constructed over the River Churnet and another embankment made to enable the canal to reach the canal basin in Leek. John Rennie, the Canal's engineer, made his final inspection in March 1801 and the Canal would have opened shortly afterwards. When another Act was put before Parliament, 42 Geo.III Cap.25, regarding the alteration of the course of the Froghall Railway, the Leek canal was open. In the preamble to this Act , which quotes all the previous Acts, and gives a progress report on them, it says of the 1797 Act:

"And whereas, by another Act, passed in the Thirty-seventh Year of the Reign of His present Majesty, the said Company have made and completed a navigable Cut from the last mentioned Canal, which is now called The Caldon Canal, to Leek, and also a reservoir for supplying the said Canals with Water". This 42 Geo III Act received Royal Assent on 15 April 1802 but it had been written and printed months beforehand in order to be read and reread before Parliament finally passed it.

The Leek Canal continued in use, without any alteration for forty years, until it became necessary to address the problem of the bottleneck caused by the triple staircase locks at Hazlehurst. At the suggestion of John Rennie the younger, the embankment was pierced and a grand aqueduct built to re-open part of the old canal route. Three separate locks and pounds, with water saving side pounds, were built to by-pass the triple staircase. At what was called Hazlehurst New Junction, about half a mile west of the original junction, a new connection was made. A lock keepers house was built at this new junction and a cast iron towpath bridge erected for the horses. The iron bridge and the Hazlehurst Aqueduct both carry the dates of their construction, 1841 and 1842. The water wasting triple-staircase locks eventually became disused.

A third aqueduct was constructed in the Denford embankment when the North Staffordshire Railway Company, the then owners of the canal, built a railway line from Milton Junction to Leekbrook Junction to join Stoke to the Churnet Valley Railway. This cast iron trough, similar to the one used at Pontsycyllte Aqueduct on the Llangollen Canal, was built shortly after 1863, the N.S.R. Leek Branch being officially opened on 1 November 1867.

The Leek Canal continued to be used though with less and less traffic, due to railway competition. Coal traffic stopped in 1934 but tar was carried until 1939 when all commercial use of the canal ceased. In 1944, by Act of Parliament, London Midland Scottish Railways who took over the NSR Company, officially abandoned the Leek Canal. The canal gradually became silted up and could only be used by shallow draught pleasure cruisers.

In 1957, Leek Urban District Council bought the embankment section from the Churnet Aqueduct to Leek Basin and filled in the canal with rubble. The land was later used to form part of Barnfields Industrial Estate.

The Caldon Canal Committee, the fore runner of the Caldon Canal Society, was formed in 1963 following a National Rally of Boats organised by Stoke-on-Trent Boat Club and the Inland Waterways Association on the Trent and Mersey Canal at Stoke. They campaigned for the restoration of both the Caldon and Leek canals. The combined efforts and financing of the Staffordshire County Council, Stoke-on-Trent City Council, the British Waterways Board and the Caldon Canal Society volunteers, made this possible.

Although the Leek Canal remained a 'Remainder Waterway', the Caldon Canal was restored and reopened on 28 September 1974. The Leek Canal was restored shortly afterwards and they were both granted 'Cruiseway' status in 1983.

UNQUOTE

Leek Basin c. 1940. (Photo supplied by Caldon & Uttoxeter Canals Trust).

3.5.2 Caldon Canal Conservation Area

The entire length of the Caldon Canal including the Leek Arm is located within a Conservation Area. The boundary closely follows the line of the canal and widens at various points to include buildings and spaces that contribute to the canal's character and appearance. Within the study area the Conservation Area extends to the point where the Leek Arm meets the canal feeder to the north of Wall Grange Farm and incorporates Barnfields Canal Aqueduct and a short stretch of the River Churnet. The location of the Conservation Area is shown in Figure 5 (page 20).

The canal has been designated a Conservation Area as an example of the technical innovation in engineering and as a major linear transport route which influenced the industrial history in the surrounding area.

Staffordshire Moorlands District Council publication "Caldon Canal Conservation Area (1998)" explains the reasons for and the effects of the designation of the Caldon Canal as a Conservation Area. Its acts as a supporting document in determining planning applications. Its content includes:

- A character appraisal of the Canal, identifying the special character of the Conservation Area.

- Enhancement, highlighting key areas for improvement within the Conservation Area. Land at Barnfields Industrial Estate, Leek has been identified as requiring improvement 'through appropriate planting and hard landscaping'.

- Design and Development Strategy providing design guidance for those considering submitting a planning application within the Conservation Area. Generally it advises that development within the Conservation Area should 'preserve or enhance the appearance or character of the area and be in sympathy with it in terms of scale, siting, alignment, mass, design, colour and materials.'

Relevant Extracts from 'Caldon Canal Conservation Area', Staffordshire Moorlands District Council are included in Appendix 6.

3.5.3 Listed Structures

Within the study area there is one listed structure:

- Statutory Name: Barnfields Canal Aqueduct at NGR SJ 979 551
- Statutory Description: Aqueduct. 1801. John Rennie, engineer. Coursed and squared stone. Retaining walls and arch structure curved in both planes, with stepped parapet, plain string course and rusticated voussoirs to arch. The aqueduct formerly carried the Caldon Canal over the River Churnet into the Leek canal basin.

The aqueduct is generally in good condition and is not at risk. Its condition is monitored on a regular basis by Staffordshire Moorlands District Council. A copy of the most recently available inspection report undertaken by Staffordshire County Council for Staffordshire Moorlands District Council is included in Appendix 4.

A further listed structure is located on the canal just to the south of the study area:

- Statutory Name: Bridge over canal known as West Bridge (no.9) near Wall Grange Farm at NGR SJ 980 549)

- Statutory Description: Bridge over canal. 1801. John Rennie, engineer. Coursed and squared red sandstone. Elliptical arch with string course below plain parapet with terminal piers.

It is important that the historic character of the canal and aqueduct are retained as part of any proposals in this area. Planning permission, listed building consent and conservation area consent will be required for the majority of the route options and this is discussed further in chapter 4.

3.6 Recreation & Access

The demand for recreation and leisure facilities has expanded greatly following a general increase in leisure time, mobility and incomes. Within Staffordshire's urban areas, there is demand for more formal and outdoor facilities for a wide range of activities. There is also a need to provide green spaces between built up areas to create variety and interest and allow people to undertake informal recreation. The varied and attractive countryside of the Staffordshire Moorlands is very popular for many traditional countryside leisure activities such as rambling, climbing, cycling and bird watching. Part of the study area encompasses Ladderedge Country Park to the south of Leek.

3.6.1 Ladderedge Country Park

Ladderedge Country Park comprises of 30 hectares (70 acres) of fields and woodland, with ponds, marshland and streams, lying in two contrasting sections. The Barnfields section of the park lies alongside the River Churnet. The main section of the park lies to the west where there are commanding views over Leek and towards the Peak District. The park is well used by local people for short circular walks. Recent footpath improvements within the park have allowed part of Barnfields section to be accessible to disabled visitors via the park's car park off Sunnyhills Road. An access to the park has also been created at Wall Bridge on Ladderedge (A53). The country park provides a gateway to the wider countryside via a network of local routes and trails.

3.6.2 Local Routes and Trails

Both Staffordshire Moorlands District Council and Staffordshire County Council play an active part in encouraging countryside access across the area and have produced a series of leaflets to promote a number of local routes and trails. A number of sign-posted routes extend from the Country Park following either the canal or its feeder channel from Rudyard. Local walks include:

- **Staffordshire Moorlands Walk, 'Leek Landscapes'.** The moderately long Staffordshire Moorlands Walk, 'Leek Landscapes' – 16 kilometres / 3 to 5 hours, allows a circlular route through the countryside surrounding Leek. The walk starts and finishes at the Country Park car park off Sunnyhills Road.

- **Deep Hayes Walk.** Three circular walks follow routes through the countryside around Deep Hayes Country Park, 3 kilometres from Leek. One of the walks follows the canal feeder and part of the Leek Arm of the Caldon Canal through Ladderedge Country Park. Within the study area, the route is accessed from a surfaced access road leading to Wall Grange Farm. The local walk leads to Deep Hayes Country Park, managed by Staffordshire County Council.

- **Staffordshire Way.** The Staffordshire Way is a long distance walking route, spanning the length of the County for 148 kilometres from Mow Cop in the north to Kinver Edge

in the south. Part of the route passes through the southern section of Ladderedge Country Park following the canal feeder close to the study area. The Staffordshire Way forms part of Britain's length of a 3030 mile long distance European Footpath Route running from Galway to Nice.

The various routes and trails passing through the study area are shown in Figure 6(page 29).

3.6.3 Boating

Boating as a recreational pastime has become increasingly popular on the Caldon Canal. However, no boating facilities currently exist on the Leek Arm of the Caldon Canal. The nearest existing boating facilities are located at Park Lane Wharf, adjacent to Park Lane Bridge (no.31), Endon, within an hour's boat trip of the northern end of the Leek Arm. Facilities include water, pump out, laundrette, showers and wc. Linear moorings at Park Lane Wharf are currently full and there is a waiting list. Linear moorings near the junction of Leek Arm and the Caldon Canal are in a rural location with no facilities. Currently many boaters make the trip south to the Caldon's terminus at Froghall, where new facilities are being developed. Few venture along the Leek Arm due to no facilities or winding hole being available; boats turn before Leek at West Bridge (no.9).

Staffordshire Moorlands Local Plan states:
QUOTE
'the need to search for a suitable site… concentrated on the Leek end giving a destination to the branch and a place to moor and visit Leek'.
UNQUOTE.

Policy R12 specifically states :
QUOTE
'Along the Caldon Canal the development of visitor moorings and associated facilities including parking provision, sanitation blocks, interpretation facilities and provision of food and fuel will be given sympathetic consideration provided that they are located within village development boundaries or within existing groups of buildings and are in keeping with their surroundings in design and scale'.
UNQUOTE.

3.6.4 Trip and Hire Boats

Canal boat trips afford great potential in attracting visitors to the canal. They can provide an appealing way of experiencing the canal and provide a valuable means of access for the disabled and elderly. Canal trips can also provide a stimulating experience for educational purposes and for interpretation of both rural and urban landscapes.

A trip boat 'Birdswood' operates on the Caldon Canal and is based at Froghall Wharf. The only trip boat that currently comes close to Leek is The Beatrice Charity. This trip boat is specially adapted for wheelchair users and operates from Cheddleton. The boat uses the Leek Arm but turns before it reaches Leek as it is not currently possible for passengers to reach the canal or board the boat at Leek. The approximately hour long trip from the northern end of the Leek Arm to its junction with the main line of the Caldon Canal at Hazlehurst aqueduct would form a suitable length for a trip boat passing through attractive scenery providing a suitable mooring area and operational base could be established. A new terminus at Leek could provide an opportunity to link to the town centre and its services.

There is currently one small hire boat company (single boat) operating from 'Fine Feathers' near Post Lane, Endon on the Caldon Canal. Black Prince Holidays in Stoke-on-Trent on the Trent & Mersey Canal is the nearest major hire boat base to the Caldon Canal.

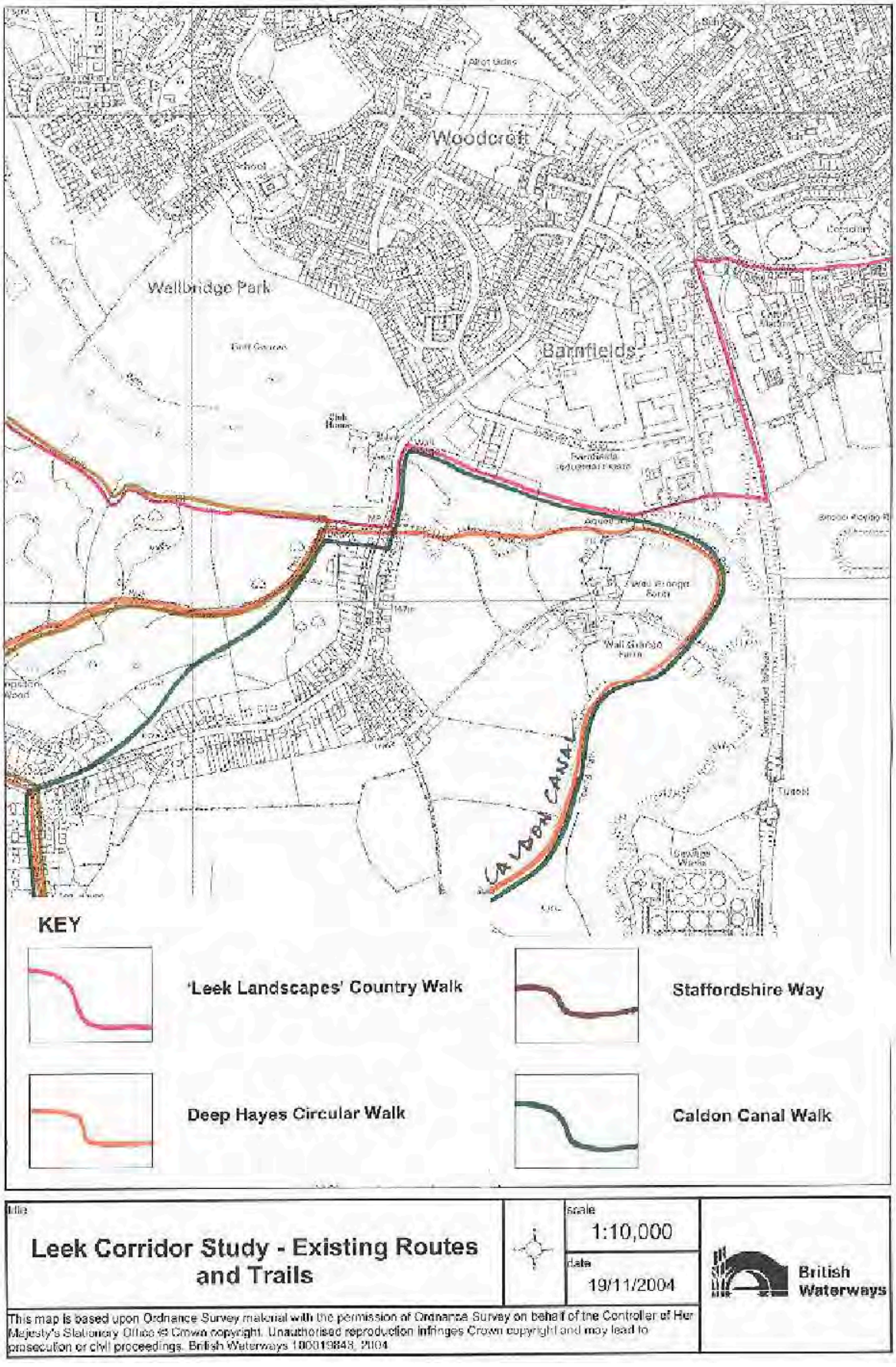

Figure 6 – Existing Routes & Trails

3.7 Water: Flooding, Quality and Resources

3.7.1 Overview

The study area includes two major watercourses: the River Churnet and the Caldon Canal Leek Arm / Rudyard canal feeder.

The River Churnet's flows are maintained by compensation outflows from Tittesworth Reservoir (north of Leek) owned and operated by Severn Trent Water plc.

The river does flood, and the study area includes areas of designated washland, where works raising ground levels require Environment Agency (EA) consent and are unlikely to be permitted without appropriate compensation works. A copy of the indicative flood plan obtained from the Agency is included in Appendix 5. Any option involving works in the washland, affecting the river banks or in / over the river itself, will require EA consent. The EA will consider implications for the river flow regime as well as environmental issues

The canal feeder from Rudyard Reservoir, owned and operated by British Waterways, joins the Leek Arm at the current terminus in the vicinity of the infilled Barnfields Canal Aqueduct. This feeder provides a supply under gravity to the Leek Arm and via the Arm to the summit pound of the Caldon Canal at Hazlehurst. From this summit pound, water feeds eastwards down Hazlehurst Locks towards Froghall and westwards down Stockton Brook flight of locks to the Trent & Mersey Canal (T&M) at Stoke-on-Trent. This western feed contributes to the commercial water supply down the T&M to industrial abstractors in Middlewich and Northwich.

Any option affecting the feeder or the canal will need to consider implications for the canal water supply.

3.7.2 Water Quality

The Environment Agency monitor water quality in the River.Churnet below Tittesworth and report the water quality to be GQA "A" (Very Good) compliant with its River Quality Objective.

There are no reported pollution issues on this section of the River.

The Environment Agency do not monitor Rudyard Reservoir, the feeder or the Leek Arm, so no direct water quality data is available. However they monitor the water quality in the main line of the Caldon Canal, which of course is fed from the Leek Arm. This is given as currently GQA B ("Good"), compliant with its River Quality Objective of RE3 (water of fair quality, suitable for high class coarse fish populations).

Rudyard Reservoir has suffered from Blue Green Algae blooms in the past and there are records of these problems extending to the Caldon Canal at Cheddleton.

3.7.3 Groundwater

The site is underlain by an aquifer subject to a series of small-scale groundwater abstractions as shown in an Environment Agency plan included in Appendix 5. The study area does not include any protected Inner/Outer catchment zones.

3.7.4 Canal Water Supply

Water supply for the Caldon Canal is from two sources; Reservoirs and groundwater bore holes. Two of the three Reservoirs and one of the two bore holes feed the summit pound, whilst one reservoir and bore hole enter the canal at a lower level due west of Stockton Brook lock flight. Water from this system is not just used for the Caldon navigation, but also cascades down to the Trent & Mersey Canal where it is utilised for navigation and commercial abstractors.

On any canal network, the summit is the most vulnerable length. Being at the top of the system it is entirely dependent on its feeds to maintain water levels as every boat movement, up or down, passes a lock full of water down the canal.

At the present rate of lockage (2002 to 2004) – approximately 2,800 lockages on average per year through Hazlehurst locks, and 3,200 lockages per year through the Stockton Brook flight (based on readings at Engine Lock) – a total of 6,000 lockages of water from the summit pound each year – there is sufficient water resource availability for the present level of service.

To ensure that the present level of service is maintained and does not deteriorate in years of low rainfall, it is necessary to consider what impact a new basin may have on lockage demand – and hence on the 'fixed' level of supply from the reservoirs and groundwater bore holes. It is unlikely, for example, that any option requiring diversion of flows off the summit (ie. down through a new lock) would be acceptable without the provision of additional new water supply. This could also be achieved by the re-circulating of existing water via a back pumping arrangement from a lower pound level so as to return water to the summit.

In addition, given the importance of this summit feed to the rest of the Caldon Canal and other users downstream, any new development on the Leek Arm must protect the feeder supply to the rest of the canal. This can be ensured by designing new basins etc such that they can be 'closed off' such that in the event of a failure of any new basin, the feed can continue to the canal network.

3.7.5 Potential Impact of Increased Boat Movements

As stated above, the current rate of lockage from the summit pound is around 6000 every year.

So what impact would developments at Leek, drawing more boats onto the summit, have?

1) Boats currently crossing the summit to Froghall would divert to Leek possibly instead or as well as going to Froghall.
2) Permanent moorings would create additional lockage as boats moored at Leek move on and off the summit during the year.
3) Hire boat operation at Leek would generate additional trips.
4) Additional boats could be attracted to the Caldon to visit Leek.

What would be the impact on water usage?

1) Boats diverting to Leek instead of or as well as Froghall will NOT generate additional water use because the Arm is part of the summit pound – there are no extra locks to pass through.

2) & 3) British Waterways' Boat Movement Model can predict how many boat movements would be generated by permanent moored boats and hire boats (bearing in mind that the Arm is a "dead-end").

Predicted calculations for this are 12 movements/year per permanently moored boat and 60 movements / year per hire boat based at Leek.

Assuming 15 moored boats and 3 hire craft gives a total of 360 extra boat movements/ year

4) Extra visitors to the Caldon Canal are difficult to estimate, but assuming 500 extra lockages (700 additional boats) is considered reasonable.

This gives a total of 860 additional boat movements per year – an increase of approximately 14.3%.

This level of increased demand is acceptable in 'wet' years, but in prolonged periods of dry weather the additional resource may be such that the present level of service cannot be maintained. To prevent this situation from occurring it would be beneficial for an alternative water supply to be found, or a back-pumping arrangement be implemented at Hazlehurst Lock flight.

3.7.6 Impact of Boats on Water Quality

Boats can impact on water quality through two main routes –

- direct disturbance of sediments which creates turbidity (suspended solids in the water) and can release historic contaminants from the silt and
- "greywater" or other discharges to the watercourse.

Turbidity – the waterway is already navigated. Expected increases in boat movements (up to 860 movements from above) may increase turbidity levels.

Greywater – British Waterways principal water quality scientist can confirm that research to date does not show significant water quality problems arising from moored boats (research carried out on large marinas / mooring sites).

There is an increased risk of oil or other accidental pollution from the increased use / permanently moored boats but this cannot be quantified and so is not considered significant. There may be advantage to route options that allow for closing off the new channel / basin from the rest of the system to allow containment of pollution.

4.0 Route Options

This section gives a description of each route and proposal. The route options are shown in Figure 2 (page 7). Aspects considered include physical constraints, regulation, environmental issues, facilities, benefits, any variations on route and outline cost. More detailed cost breakdowns for each option are included in Appendix 7.

The civil engineering works assumed for the routes can only be considered indicative at this stage. Detailed site investigation and design studies would be necessary to progress the design and determine the appropriate solution in each case.

4.1 ROUTE 1

Route 1 involves the restoration of the historic Barnfields Canal Aqueduct and construction of a new canal channel westwards through the southern edge of Hughes Concrete towards the existing service road off Sunnyhills Road leading to Ladderedge Country Park. The basin is located to the east of the service road on land currently occupied by Hughes Concrete

An alternative line using country park land closer to the river was considered but later discounted as the site is designated as protected flood plain and as a Special Landscape Area and has significant wildlife value as a Local Nature Reserve. Staffordshire Moorlands District Council has also expressed concerns that a basin at this location would occupy a significant part of the country park north of the river.

4.1.1 Physical Constraints

Physical constraints include: current land ownership and land uses, engineering and utilities.

The basin would be located to the east of the service road to the car park on land currently occupied by Hughes Concrete, the manufacturer of pre-cast concrete components, which are stored in the large yard. At the existing aqueduct, located within Ladderedge Country Park, the proposed canal extension would be Staffordshire Moorlands District Council land ownership for a short distance then into Hughes yard. There appears to be vacant space next to the north east corner of the yard which might take the displaced stockpiled elements.

It is understood that the land was raised by backfilling when the Barnfield Industrial Estate was built in the 1960's. The nature of the infill is not known, but it may contain contaminants. Dealing with contaminants is a risky task. A new Landfill Directive has just come into effect and it is untested. Hazardous waste must be treated in a different manner to other waste. Testing will be necessary to determine appropriate action.

The Park is at a lower level than the canal. The route through the concrete works may not be as low as the Park but it would be prudent to make some allowance for embankments or locks until topographical data is available. An overflow would be required to deal with the volume of water should locks be necessary.

It has been assumed that generally the canal and basin construction will be anchored trench sheet piles for the walls and a 600mm thick clay invert on a firm sub-base. Any soft areas will have to be removed and replaced by granular material or the ground treated. It is possible that the ground will be contaminated and treatment/replacement may be necessary. Borehole information from the British Geological Survey suggests that at Barnfield Industrial Estate the soil profile could be 2 to 3 metres of fill, over peat and clay above medium dense

hard sandstone at 5 to 10 metres below existing ground level. Rock may be found at higher levels, since an outcrop is visible near the existing aqueduct.

The existing aqueduct will need to be re-commissioned and this is not without risk. The bridge inspection report prepared by Staffordshire County Council dated November 1995 does not mention any significant adverse structural conditions but reports that the original waterproofing is defective. Work on the aqueduct will have to be carried out in a carefully controlled manner. Comprehensive desk and site surveys should be carried out to determine the current condition. The infill may be contaminated and require special handling.

There does not appear to be any significant physical difficulties with construction access. Working at and near to the existing aqueduct will be more difficult because of the steep slopes.

Severn Trent Water records issued in May 2004 indicate a 750mm diameter public combined gravity sewer and a 600mm diameter public surface water gravity sewer in the area. It is likely that the canal could bridge over these pipes on concrete aprons so as not to surcharge the pipes. Details will depend on more detailed investigation including ground type and levels.

Severn Trent Water has recently undertaken sewer improvements in the vicinity of the Leek Arm of the Caldon Canal which may have an impact on route 1. As part of Severn Trent's works a pump station has been located at Sunnyhills Road close to the possible location of the canal basin. If this route option is to be considered, detailed topographical and site investigation will be required to determine the exact position of services.

A copy of known services information is included in Appendix 8.

Note: Drawings issued in January 2005 by Severn Trent Water (included in appendix 8) show location of new water main and pumping station.

4.1.2 Regulation

The local plan shows this area adjacent to "Protected Floodplain & Special Landscape Area". The text mentions that development within existing groups of buildings will be given sympathetic consideration.

Planning permission would be required. Conservation area consent and listed building consent would be required for works associated with the historic aqueduct and parts of the site within the Caldon Canal Conservation Area . Environment Agency consent would be required for any additional discharges into the River Churnet. A commercial agreement or Compulsory Purchase Order (CPO) would be required for the Hughes Concrete land. Connection and maintenance agreements would be required by British Waterways.

4.1.3 Environmental Considerations

Aspects considered include the built heritage, nature conservation/biodiversity, landscape impact, water quality and resources and flood management.

Restoration of the listed grade II Barnfields Canal Aqueduct would make a positive contribution to the built environment.

The use of Hughes Concrete land offers opportunities for enhancements and connections to Ladderedge Country Park, designated as a Local Nature Reserve.

There are thought to be no major nature conservation issues associated with having the basin within the hard surfaced storage yard. Existing planting to the southern edge of the industrial estate located within the country park should be retained where possible.

Environment Agency records indicate sightings of water vole in the Caldon Canal and signal crayfish in the River Churnet and further detailed ecological survey work will be required. Any works to the aqueduct should look to retain wall flora, removing only woody vegetation which maybe causing damage to the structure. Areas of invasive Japanese Knotweed adjacent to the aqueduct will require removal to prevent further growth. Extensive emergent fringe vegetation has developed at the canal edges near the aqueduct and will require further assessment and monitoring before and during any dredging works.

A basin at this location should aim to maximise views south towards Ladderedge Country Park and the wider rural setting to the southern edge of Leek. Increased land take may be required to ensure space for adequate landscape treatment and screening of the industrial estate and particularly Hughes Concrete Works. Native plant species should be used to link with Country Park and existing planting should be retained wherever possible.

This proposal does not affect the Rudyard feed, providing that no locks are required. British Waterways would require provision of stop planks at the Aqueduct for emergency protection of the existing network.

The Hughes Concrete land is outside the protected floodplain. Restoration of the aqueduct presents the opportunity to carry out flood defence engineering at this “bottleneck” if required.

4.1.4 Facilities

There is good vehicle access for visitors and for maintenance from Sunnyhills Road which links to Newcastle Road (A53). A bus route into Leek town centre operates along the A53 and there is a bus stop near Wall Bridge. Car parking could be created for visitors to the canal basin and for canal users. This parking could be shared with country park users as there are currently only 8 spaces available.

The route is bounded to the north by industrial sites where significant boundary treatments will be required. Secure areas can therefore be created on this side of the basin. If public access is kept to the southern edge, a footbridge will be required, possibly at the aqueduct to connect to the existing towpath.

It is estimated that a basin and facilities area of 6400 m2 could be accommodated in this area using land owned by Hughes Concrete

4.1.5 Benefits

This route creates good connections with Ladderedge Country Park and existing local routes and trails that pass through the park. It also restores and safeguards the listed aqueduct.

4.1.6 Outline Cost

The cost for the construction of option 1 is estimated to be **£5.3 million**. A more detailed breakdown of the outline costing is included in Appendix 7.

View north from Ladderedge Country Park car park towards Barnfields Road. Possible location for basin to right of access road.

View south west from Ladderedge Country Park car park across Country Park

View south west from Ladderedge Country Park towards A53

View north from Country Park towards Hughes Concrete

View towards Hughes Concrete from aqueduct

View towards aqueduct and current terminus of the Leek Arm

Figure 7 - Route Option 1 – Existing Images

4.2 ROUTE 2

Route Option 2 involves the restoration of the Barnfields Canal Aqueduct as per route 1, but then to construct a new channel eastwards, probably through the existing scrapyard and across the end of Barnfield Road to a new basin constructed alongside the disused railway. This new basin could utilise part of the concrete works' land or may possibly be contained within a smaller area of currently vacant land in separate ownership.

Variant 2a proposes access to this basin via a new aqueduct directly across the river from the existing canal.

4.2.1 Physical Constraints

Physical constraints include, current land ownership and land uses, engineering and utilities.

The basin is located just to the west of the dismantled railway. The current land use is mixed as the basin is in three sites, namely Hughes Concrete east storage yard, Bestwick's scrap yard and a vacant plot owned by Mr A. J Cantrell.

At the existing aqueduct, the canal would be in Staffordshire Moorlands District Council land ownership for a short distance then into Hughes' yard. The turning area would need to be arranged such that the canal route would clear Hughes' building. The alignment would probably straddle Hughes' yard and the scrap yard. Ideally it should be kept back from the valley edge to reduce the need for retaining structures and to avoid possible bank erosion and undercutting by the River Churnet.

The existing ground level seems to be at canal level and away from the valley edge. The canal construction is assumed to be anchored trench sheet piles for the walls and a 600mm thick clay invert on a firm sub-base. Any soft areas will have to be removed and replaced by granular material or the ground treated. It is possible that the ground will be contaminated and treatment/replacement may be necessary. Borehole information from the British Geological Survey suggests that in the Barnfields Industrial Estate the soil profile could be 2 to 3 metres of fill, over peat and clay above medium dense hard sandstone at 5 to 10 metres below existing ground level. Rock may be found at higher levels, since an outcrop is visible near the existing aqueduct.

The proximity of the east side of the basin to the railway embankment will influence the form of basin construction. If the edge of the basin could affect the stability of the embankment, sheet piles or another form of retaining structure will be necessary. This structure may also have to resist surcharge forces from trains, if the railway line is re-opened.

The existing aqueduct will need to be re-commissioned and is not without risk. The bridge inspection report prepared by Staffordshire County Council dated November 1995 does not mention any significant adverse structural conditions but reports that the original waterproofing is defective. Work on the aqueduct will have to be carried out in a carefully controlled manner. Comprehensive desk and site surveys should be carried out to determine the current condition. The infill may be contaminated and require special handling.

There does not appear to be any significant physical difficulties with construction access. Working at and near to the existing aqueduct will be more difficult because of the steep slopes.

Severn Trent records indicate a 750mm diameter east/west public combined gravity sewer and two 300mm diameter north/south 600mm diameter public foul sewers in the area of the

proposed canal route. It is likely that the canal could bridge over these pipes on concrete aprons so as not to surcharge the pipes. Details will depend on ground type and levels. Where the canal is running almost parallel with the 750mm diameter sewer, a separation of 5 metres is required to minimize any affect the proposed Works may have on the sewer.

There is also a 450mm diameter public foul sewer on the west side of the railway embankment. Again the east edge of the basin should be kept 5 metres away from the sewer to minimize any adverse affects.

Severn Trent Water has recently undertaken sewer improvements in the vicinity of the Leek Arm of the Caldon Canal which may have an impact on route 2 and 2a. If this route option is to be considered detailed topographical and site investigation will be required to determine the exact position of services.

A copy of known services information is included in Appendix 8.

Central Networks records show 240/415 volt underground cables going west from the Barnfield turning circle. This equipment may need to be diverted. Extra high voltage equipment is indicated next to the railway embankment. The basin layout must keep clear of this equipment.

Note: Drawings issued in January 2005 by Severn Trent Water (included in appendix 8) show location of new water main and pumping station. New main water impacts on canal route option 2 and 2a and basin location.

4.2.2 Regulation

The proposals are likely to satisfy the requirements of the Staffordshire Moorlands District Council Local Plan. The Works would need to be compatible with any proposal for the reopening of the disused Churnet Valley Railway and planning permission will be required.

Conservation area consent and listed building consent will be required for works associated with the historic aqueduct and parts of the site within the Caldon Canal Conservation Area. Environment Agency consent will be required for any additional discharges into the River Churnet. A commercial agreement or CPO will be required for the entire route. Connection and maintenance agreements will be required by British Waterways.

The area of Barnfields Industrial Estate is allocated to Employment Uses within the Council's Local Plan. Route 2 would result in the relocation of at least one business (Bestwicks Scrap Yard) and impacts on others including Hughes Concrete.

4.2.3 Environmental Considerations

Aspects considered include the built heritage, nature conservation/biodiversity, landscape impact, water quality and resources and flood management.

Restoration of the listed grade II Barnfields Canal Aqueduct would make a positive contribution to the built environment.

Environment Agency records indicate sightings of water vole in the Caldon Canal and signal crayfish in the River Churnet and further detailed ecological survey work will be required. Any works to the aqueduct should look to retain wall flora, but removing any which maybe causing damage to the structure. Areas of invasive Japanese Knotweed adjacent to the aqueduct will require removal to prevent further growth. Extensive emergent fringe

vegetation has developed at the canal edges near the aqueduct and will require further assessment and monitoring before and during any dredging works.

Checks should be made with Staffordshire Moorlands District Council regarding trees affected by Tree Preservation Orders in this area during the detailed design stage.
There appears to be no significant ecological impact if a mooring basin is sited to the north of the footpath and within Hughes' yard. To the south of their yard is a patch of scrubby woodland that falls away steeply into the river valley and bounds the disused Churnet Valley Railway embankment. These types of habitat usually have high wildlife potential.

The landscape has an enclosed character. There are limited views to the outlying rural area to the south and views are screened by mature broadleaf trees lining the river banks. Only a narrow belt of land exists between Hughes Concrete and the river to accommodate an extension to the canal and sufficient boat turning east from the aqueduct. The land available needs to be wide enough to ensure space for boat manoeuvring, sufficient screening and improved boundary treatment to Hughes Concrete. Current vehicular access approach is visually poor along Barnfield Road and landscape treatment including boundary enhancements to existing industrial units will be required.

The basin location would sit in an enclosed position and needs to be set back far enough from the river bank to avoid possible bank erosion and undercutting.

This proposal does not affect the Rudyard feed. British Waterways would require provision of stop planks at the Aqueduct for emergency protection of the existing network.

There is not thought to be any impact on the floodplain unless the basin infills the small "inlet" off the River Churnet. Restoration of the Aqueduct presents the opportunity to carry out flood defence engineering at this "bottleneck" if required.

4.2.4 Facilities

Without using Hughes Concrete land, the basin and facilities area will be constrained to a maximum of 1600m^2. Using Hughes Concrete yard, the area could be extended to 4480m^2.
If public access across the Park is kept to the southern edge, a footbridge will be required, possibly at the aqueduct to connect to the existing canal towpath.

4.2.5 Benefits

This route would provide links into the existing footpath towards the town centre and the proposed restoration of the railway and regeneration of the Cornhill area of Leek encompassing the cattle market. Other benefits would be the restoration and the safeguarding of the historic aqueduct and an improvement to the view from the existing canal towards the southern edge of Barnfields Industrial Estate.

4.2.6 ROUTE 2a - Variant route

Constructing a new aqueduct straight across the river flood plain to the basin site would:

- create a landmark structure with potentially attractive, elevated views across the Churnet Valley. The suspended towpath could be 6 metres above the ground and screening around the sewage works may be necessary.
- avoid restoration of the old aqueduct (this avoids some costs and engineering difficulties but also loses the opportunity to restore the structure as a "wetted" feature)
- avoid disruption to Hughes Concrete and reduce impact on the existing scrapyard.
- require commercial agreement or CPO with the agricultural landowner – Mr Clewes of Wall Grange Farm.

- require EA consent for the new aqueduct, which may need to be designed to have no footprint in the floodplain.
- minimise the number of landowners affected and hence reduce the complications associated with dealing with developed sites.
- facilitate a smaller terminus basin as additional permanent moorings would be installed on the “arm” of the Canal which would be left between the new and historic aqueducts.

There are fewer constraints due to services. Severn Trent records indicate a 750mm diameter public combined sewer. It is likely that the canal could bridge over this pipe but details will depend on more detailed investigation including ground type and levels.

The Works would be in the “Protected floodplain and Special Landscape Area” and hence early approval in principle from Staffordshire Moorlands District Council Planning Department would be essential. In this regard an architecturally pleasing structure should be considered. The new aqueduct would reduce the cross section of the flood plain locally. A flood analysis will therefore be necessary to check that the impact of the proposal is acceptable.

Borehole information from the British Geological Survey suggests that in the Barnfields Industrial Estate the soil profile could be 2 to 3 metres of fill, over peat and clay above medium dense hard sandstone at 5 to 10 metres below existing ground level. In the flood plain, a borehole just south east of West Bridge (no.9) indicates soil, peat and clay to 1.5 metres below ground, then sand over red sandstone at a depth of 4 metres. Rock may be found at higher levels, since an outcrop is visible near the existing aqueduct.

4.2.7 Outline cost

The cost for the construction of option 2 is estimated to be **£4.2 million**. Construction of route option 2a is estimated at **£4.0 million**. A more detailed breakdown of the outline costings is included in Appendix 7.

View west towards aqueduct. Narrow track between River Churnet and boundary with Hughes Concrete.

View east towards Barnfield Road. Narrow track between Hughes Concrete and Scrap Yard.

View east from southern end of Barnfield Road towards disused railway line and possible location for basin.

View showing possible location for canal basin. Hughes Concrete and scrap yard existing boundary fences are visible.

Existing terminus of Leek Arm at aqueduct.

View south towards River Churnet at top of slope. Scrap yard is visible in distance.

Figure 8 - Route Option 2 – Existing Images

4.3 ROUTE 3

Route 3 involves the construction of a navigable channel following the line of the existing canal feeder westwards from the aqueduct to a new basin near the A53. The basin layout would need to allow for possible future westward extension of the canal.

4.3.1 Physical Constraints

Physical constraints include, current land ownership and land uses, engineering and utilities. The route is across open and sloping, grazing land owned by Mr S. Clewes of Wall Grange Farm. The existing Caldon canal feeder channel, owned by British Waterways runs from the A53 in the west to the existing aqueduct, with a crossing point for the farm access road.

The basin is proposed to be sited below the row of houses next to the A53, with improved road and car parking access off this main artery. It is suggested that any parking provided would be shared by visitors to Ladderedge Country Park. However, Staffordshire County Council Highways Department has indicated that any increase in vehicle use at this junction would be resisted by the Department. Furthermore the council is unlikely to approve a road crossing at grade, to enable the canal to be extended at some future date westward across the A53. There are also many services in this road which would make any form of crossing a significant undertaking.

The constructed form of any scheme east of the A53 would need to have the canal cut into the hillside in places. The feeder canal is currently piped over the middle section of its route. The downhill side of the canal could be embankment of imported granular fill. A reinforced earth element should be considered to provide permanent track access. Appropriate selection of facing material should give a sustainable and aesthetically pleasing engineering solution.

In the flood plain, a borehole just south east of West Bridge (no.9), indicates soil, peat and clay to 1.5 metres below ground, then sand over red sandstone at a depth of 4 metres. Rock may be found at higher levels, since an outcrop is visible near the existing aqueduct.

A swing or lifting bridge would be required to enable the canal to cross the farm access road near the proposed basin. There appears to be telephone equipment in this area which will probably have to be re-located.

As the works will interfere with flow in the feeder channel, temporary over-pumping or a diversion will be necessary.

4.3.2 Regulation

The proposed Works are in the ’Special Landscape Area’ and in the Green Belt and therefore early consultation with the planners will be essential.

Planning permission will be required. A commercial agreement or Compulsory purchase order will be required with Mr Clewes. Connection and maintenance agreements will be required by British Waterways.

4.3.3 Environmental Considerations

Aspects considered include the built heritage, nature conservation/biodiversity, landscape impact, water quality and resources and flood management.

Restoration of the Barnfields Canal Aqueduct would not be necessary. Although the feeder has some non-designated heritage interest, the proposal affects only 400m of its 4km length and part of that is already in culvert.

The mooring basin is likely to occupy an area of sheep grazed pasture with low ecological value. The widening of the feeder would need further survey and investigation particularly for aquatic macrophytes, freshwater invertebrates and white-clawed crayfish. Environment Agency records indicate sightings of water vole in the Caldon Canal and signal crayfish in the River Churnet and further detailed ecological survey work will be required. There would inevitably be some loss of habitat value in the feeder channel which would need to be compensated for in the design of the enlarged, navigable, channel.

The proposed basin is located in a 'Special Landscape Area' so careful consideration is required regarding its siting. Views from the site extend south to housing along Newcastle Road. A basin at this location would be overlooked by the housing. Mature broadleaf woodland lines banks of River Churnet and obscures views to Leek town centre. Vehicular access at this location would need to be shared with owner of Wall Grange Farm. Robust screen planting may be required to help screen the basin from the nearby housing.

As long as the works do not extend north of the existing canal and feeder line, they will not impinge on the protected floodplain.

4.3.4 Facilities

There is already a vehicle access from the A53 at this location, serving Wall Grange Farm. Staffordshire County Council Highways department, however, has indicated that any proposal to increase vehicle use would be resisted.

The existing Deep Hayes Walk right of way would need to be incorporated into a scheme at this location. The local walk runs from Newcastle Road and follows the access road to Wall Grange Farm for a short distance and then follows the canal feeder towards the aqueduct.

A newly contained site of a maximum size of 4200 m2 would be created with public access on the northern edge and secure areas on the southern and western edges.

4.3.5 Benefits

This route would provide a canal terminus close to the A53 with bus routes into Leek close at hand. The route and terminus would have no impact on Barnfields Industrial Estate. The canal extended towards the A53 would mean that it would improve canal accessibility and make it visible from the main road for the first time. The golf course and local and regional walking routes are easily accessible from this location. The site would be easy to secure as it would be located on private offside land.

4.3.6 Outline Cost

The cost for the construction of option 3 is estimated to be **£4.8 million**. A more detailed breakdown of the outline costing is included in Appendix 7.

A53 towards Leek town centre. Area for proposed basin is located to right.

View west along existing access road to Wall Grange Farm towards A53. Views extend south west towards housing on

Canal feeder and culvert

Canal feeder.

View east along canal feeder towards aqueduct

River Churnet viewed from aqueduct.

Figure 9 - Route Option 3 – Existing Images

4.4 ROUTE 4

Route 4 involves the widening of the canal south of Barnfields Canal Aqueduct to allow boats to turn , reinstatement of the historic aqueduct and construction of a new channel through Barnfields Industrial Estate following the historic line of the canal terminating in a basin close to the basin's original location (now Focus DIY).

4.4.1 Physical Constraints

Physical constraints include current land ownership and land uses, engineering and utilities. Barnfields industrial estate is in multiple ownership with most operators owning their own sites. The estate is a major employer in Leek. Hughes Concrete and Kerrygold are the two largest operators on the estate and both would be affected by proposals listed under this option. Significant changes to current land uses would be required. As a corridor through operational plots, there may need to be diversions of private services, modifications to process lines and plant and vehicle crossings provided. The exact requirements would have to be determined based on detailed discussions with the individual site owners/operators.

Borehole information received from the British Geological Society suggests that in the Barnfields Industrial Estate the soil profile could be 2 to 3 metres of fill over peat and clay above medium dense hard sandstone at 5 to 10 metres below existing ground level. Excavation is anticipated and the spoil may be contaminated.

Barnfields Industrial Estate has been built on fill material and it is probable that more material will need to be imported, because the towpath could be about 1 metre above existing ground level. A reinforced concrete trough has been considered for this stretch. It is essential that such construction is on a firm sub-base and any soft areas or layers will need to be removed and replaced by well compacted granular material or the ground treated. The alignment should avoid being too close to existing building foundations. Longitudinal drains and transverse drains will be necessary to drain the hard surfaces each side of the canal.

The existing aqueduct will need to be re-commissioned and this is not without risk. The bridge inspection report prepared by Staffordshire County Council dated November 1995 does not mention any significant adverse structural conditions but reports that the original waterproofing is defective. Work on the bridge will have to be carried out in a carefully controlled manner. Comprehensive desk and site surveys should be carried out to determine the current condition. The infill may be contaminated and require special handling.

There are numerous services in the area. The 750mm diameter east/west public combined gravity sewer immediately on the north side of the river should be able to be crossed The line of the canal should be offset at least 5 metres from the line of the existing 300mm diameter north/south public foul sewer. The canal should also keep clear of the public surface water gravity sewer on the north side of Sunnyhills Road. There is a highway drain in this road which will need to be diverted, possibly into the canal.

Severn Trent Water has recently undertaken sewer improvements in the vicinity of the Leek Arm of the Caldon Canal which may have an impact on route 4. As part of Severn Trent's works a rising main has been installed. Preliminary level information provided by Severn Trent Water indicated that there may be sufficient clearance to bridge across the rising main. If this route option is to be considered detailed topographical and site investigation will be required to determine the exact position of services.

Note: Drawings issued in January 2005 by Severn Trent Water (included in appendix 8) show location of new water main and pumping station. Route 4 would be unlikely to be affected by the new main.

There is extensive buried electrical equipment and some is Extra High Voltage. The canal alignment should minimize the number of crossing points, but diversions are likely to be necessary.
There is gas equipment, water mains and telephone equipment in Sunnyhills Road and Barnfield Road. This plant will need to be diverted.

A copy of known services information is included in Appendix 8.

4.4.2 Regulation

Planning permission, Environment Agency consent and listed building consent and conservation area consent will all be required. British Waterways maintenance and connection agreements will be needed. Significant commercial or CPO arrangements would be required with land owners.

4.4.3 Environmental Considerations

Aspects considered include the built heritage, nature conservation/biodiversity, landscape impact, water quality and resources and flood management.

Restoration of the listed grade II Barnfields Canal Aqueduct would make a positive contribution to the built environment as part of this route.

Environment Agency records indicate sightings of water vole in the Caldon Canal and signal crayfish in the River Churnet and further detailed ecological survey work will be required. Any works to the aqueduct should look to retain wall flora, removing only vegetation which maybe causing damage to the structure. Areas of invasive Japanese Knotweed adjacent to the aqueduct will require removal to prevent further growth. Extensive emergent fringe vegetation has developed at the canal edges near the aqueduct and will require further assessment and monitoring before and during any dredging works.

There is the opportunity to create a “green corridor” through the existing industrial estate.

This route would have a significant landscape impact. A number of units within the industrial estate would be affected if the historic line of the canal was to be restored. Sufficient land take would be required to create an attractive edge treatment to the new channel including a landscape buffer to partially screen existing industrial units.

This proposal does not affect the Rudyard feed. British Waterways would require provision of stop planks at the Aqueduct for emergency protection of the existing network. If new locks were required to raise the new channel then backpumping would be necessary.

Route 4 does not impact on the protected washland. Restoration of the existing aqueduct provides an opportunity to re-engineer the “bottleneck” at this location if required.

4.4.4 Facilities

The estimated area available for the basin and related development opportunities is 5400m2. There would be good vehicle access to the basin as it would be close to the A53 and good “all ability” pedestrian access to the canal. If public access across the Park is kept to the southern edge, a footbridge will be required, possibly at the aqueduct to connect to the existing canal towpath.

The basin location offers the opportunity for mixed-use development with on-site security.

4.4.5 Benefits

This option would bring the canal closest to Leek town centre and would provide opportunities for high-value mixed-use redevelopment around the basin and in the new canal corridor.

4.4.6 Outline Costs

The cost for the construction of option 4 is estimated to be **£8.6 million**. A more detailed breakdown of the outline costing is included in Appendix 7. Estimated land acquisition costs have not been included within the outline cost provided due to the complexities of the route through Barnfields Industrial Estate and potential impact on the various industrial units. Without detailed site investigation works, it is also difficult to ascertain whether excavation of the former line of the canal would be possible.

Barnfields Industrial Estate. View south.
Croder to left of picture.

Barnfields Industrial Estate. View north.
Croder to right of picture.

Barnfields Industrial Estate.
View west towards Focus.

Barnfields Industrial Estate.
View north towards Morrisons.

Former Churnet Valley Public House.
Viewed across IAE's yard.

Former Churnet Valley Public House.
Possible location for canal basin close to location of the original basin.

Figure 10 Route Option 4 – Existing Images

4.5 ROUTE 5

Route 5 involves the widening of the approaches to the aqueduct partially as an essential component of most of the options but for option 5 as a possible terminus and turning area.

4.5.1 Physical Constraints

Physical constraints include, current land ownership and land uses, engineering and utilities. British Waterways owns the current line of the canal. Mr S Clewes of Wall Grange Farm owns adjacent farmland which is used as grazing land. Staffordshire Moorlands District Council owns the aqueduct. The proposed widening to the south of the canal is in open and sloping farm land. There is no existing public vehicle access to the site.

It is proposed to cut into the sloping ground on the south side of the canal. Permanent retaining structures will be necessary and should be made aesthetically acceptable and access for construction plant will have to be provided.

Borehole information from the British Geological Survey undertaken just south of West Bridge (no.9) indicates soil, peat and clay to 1.5 metres below ground then sand over red sandstone at a depth of 4 metres. Rock may be found at higher levels since an outcrop is visible near the aqueduct. Further investigation of the rock head at this location would be needed as rock excavation is expensive.

The existing aqueduct will need to be recommissioned to provide space for boat turning and this is not without risk. The bridge inspection report prepared by Staffordshire County Council dated November 1995 does not mention any significant adverse structural conditions but reports that the original waterproofing is defective. Work on the aqueduct will have to be carried out in a carefully controlled manner. Comprehensive desk and site surveys should be carried out to determine the current condition. The infill may be contaminated and require special handling.

There are no known services in this area.

4.5.2 Regulation

The Staffordshire Moorlands District Council Local Plan shows this area adjacent to the aqueduct as Protected Floodplain and as a ‘Special Landscape Area’ and, therefore, planning permission will be required.

Conservation area consent and listed building consent will be required for works associated with the historic aqueduct and parts of the site within the Caldon Canal Conservation Area. A commercial agreement or CPO will be required for land owned by Mr Clewes of Wall Grange Farm. Maintenance agreements will be required by British Waterways.

4.5.3 Environmental Considerations

Restoration of the listed grade II Barnfields Canal Aqueduct would make a positive contribution to the built environment.

The widening of this section of the canal would need further investigation particularly for aquatic macrophytes, white clawed crayfish, water voles and amphibians. Environment Agency records indicate sightings of water vole in the Caldon Canal and signal crayfish in the River Churnet. Signal crayfish have also been identified further upstream on the Dane feeder. Widening could cause some loss of bank side habitat and this should be replaced with appropriate new retaining structures.

There is limited opportunity for a new basin at this location due to the constraints of the existing landform. Land rises steeply south of the canal across existing grazing land. Widening the existing access between the scrap yard and Hughes Concrete would provide vehicular access to a new facilities block. The enhanced access track should incorporate boundary improvements to soften the visual impact of neighbouring businesses.

This proposal would be for online moorings linked to the existing feeder and canal network. As long as the works do not extend north of the existing canal/ feeder line, they will not impinge on the protected floodplain.

4.5.4 Facilities

Existing vehicle access is by a narrow track (signposted public footpath) from Barnfields Road to the north side of the aqueduct. This is not ideal and would need to be upgraded. The main public access from the Country Park car park would remain, but has 'All Ability' access along only part of its length.

This is a more isolated location than any of the others considered and it may be difficult to have secure moorings, unless these were linear along the south side of the canal. Access to the moorings would need to be created via land owned by Mr Clewes.

A sanitary station may be possible near the aqueduct, including at the site of former canal buildings on the towpath just east of the aqueduct. However the feasibility of connecting into existing sewers and mains would need to be investigated.

A historic photograph provided by the Caldon and Uttoxeter Canals Trust shows where the canal buildings would have been.

Figure 11 Former canal buildings near aqueduct – Date unknown (photo supplied by Caldon & Uttoxeter Canal Trust).

4.5.5 Benefits

This option would provide an enhanced turning and mooring area for approximately 8 boaters wishing to visit Leek. As space and access is limited any space provided for car parking will be kept to a minimum.

4.5.6 Outline Cost

The cost for the construction of option 5 is estimated to be **£2.4 million**. A more detailed breakdown of the outline costing is included in Appendix 7.

Current terminus of Leek Arm at Barnfields Aqueduct.

View east along canal from aqueduct.

View from feeder to Barnfields Aqueduct.

View west along canal to Barnfields Aqueduct and feeder.

View from canal feeder towards aqueduct and existing canal terminus

Barnfields Aqueduct

Figure 12 - Route Option 5 – Existing Images

4.6 Route Options Cost Summary

Route 1	Over existing aqueduct and west towards Wall Bridge	£5.3 million
Route 2	Over existing aqueduct and east towards disused Churnet Valley Railway	£4.2 million
Route 2a	Creation of new aqueduct from canal across River Churnet towards disused Churnet Valley Railway	£4.0 million
Route 3	Enlarge feeder channel to terminus at A53	£4.8 million
Route 4	Restoration of original line of the canal with creation of terminus closer to town centre	£8.6 million
Route 5	Widening approaches of aqueduct to provide enhanced turning and mooring area near Barnfields Aqueduct. (Note: this option does not include the provision of service facilities).	£2.4 million

5.0 Demonstrating the Value of Benefits

5.1 Introduction

This appraisal of benefits is based on the five route options proposed. The appraisal concentrates on economic impacts, taking a demand-side approach i.e. it estimates the number of visitors that each option might be expected to bring into the local area, and the potential economic benefits – in terms of expenditure and employment – they will provide. Only limited account has been taken at this stage of the supply side ie. the capacity of local tourism and leisure businesses to capture the estimated increase in recreational expenditure. However since Leek already has a well-developed economy, with a broad spectrum of services catering for the rural hinterland, it is assumed that the capacity will be available to meet any increase in demand.

The appraisal forecasts demand and compiles visitor estimates for different activities on and close to the canal. Visitor predictions are then combined with spending patterns associated with each activity to give an estimate of *gross* expenditure associated with tourism and leisure use of the route. Multipliers are then used to convert expenditure to employment.

In order to forecast economic impact at the local level, this gross expenditure estimate needs to be interpreted carefully. It needs to take into account: -

- **The extent of the study area**. Economic impacts are assessed at the level of the town of Leek and its immediate hinterland.

- **Displacement**. This is to account for the fact that a proportion of economic expenditure is not "new" but simply involves a switch from one activity or location within the study area to another. We have defined displacement as the proportion of expenditure that would have occurred within the local tourism and leisure economy, irrespective of the development of the canal.

- **Leakages**. Not all the new visitor expenditure created will be retained within the area and lead to employment locally. For example a pub or restaurant may source supply and support facilities from a regional distributor located outside the area; non-local contractors may be employed to undertake construction or maintenance works; or income received by businesses is spent elsewhere. We have used published research into the way that tourism expenditure 'leaks from' or is 'retained by' rural economies as the basis for our calculation of local jobs. The most thorough study in this area remains the Scottish Tourism multiplier study[1]. Of course as part of project design, it is possible to introduce measures to minimise leakage and thus increase local employment eg. through measures to encourage local sourcing. This is something that should be reviewed as the project progresses.

- **Multiplier impacts**. The 'retained' income will have knock-on economic impacts as it is re-spent within the local economy – either by businesses on local supplies or by local people through their wages. The consequence is that jobs are created by the initial, *direct* expenditure within tourism and leisure businesses, and then through these *indirect* and *induced* effects. Again evidence provided through the Scottish Tourism study has been used to quantify this effect.

[1] Scottish Tourist Board, 1993: *Scottish Tourism Multiplier Study*

Tourism and recreation through visitors to the canal is one type of economic activity that the scheme will support. The extension of the canal to a new terminal basin will open up opportunities for developments alongside the basin – pub/restaurant, residential, retail, office etc. The development opportunities will vary between options. At this stage, it is difficult to determine the types and scale of activity that could be generated. This will require further work. Studies elsewhere have shown that canal-side sites are attractive to developers and act as a "positive" factor in locational decisions. In the case of residential developments, this is reflected in enhanced values for waterside properties. The canal provides a market (through generating visitors and hence footfall) for retail and leisure activities. For office schemes, there is evidence to show that properties can be sold on quicker, due to environmental and aesthetic factors.

5.2 Recreation & Tourism Impacts of the Options

Canals are used for a wide range of recreational activities:-

- All types of boating. Nationally the British Waterways network is host to around 25,000 powered boats, many of which are based on traditional narrowboat designs. Most boats are privately-owned, but over 1,000 boats are available for holiday hire and around 150 boats are available for public trips or operate as floating restaurants. Unpowered craft, such as canoes and rowing boats also make extensive use of the network;
- Fishing (mainly coarse angling);
- Recreational walking & cycling on the towpaths alongside the waterways;
- General sightseeing – visits to heritage and other sites along the network. It is estimated that over 400 million visits are made to British Waterways' canals and rivers each year; and
- Special events and waterway festivals.

These activities have given rise to a range of economic enterprises that are dependent upon the waterways – marinas, pubs & restaurants, canalside shops etc – which generate employment and help maintain local services.

Estimates of the baseline position (i.e. existing volume of use) and forecasts of changes arising from each option are set out in this section.

5.2.1 Boating

Boating activity on inland waterways relates to the use of powered vessels, such as cabin cruisers and narrowboats and to unpowered craft – mainly canoes.

The majority of powered craft are privately-owned vessels, owned by individuals or groups of people. Overall the number of such craft has been growing consistently for many years. During the 1990s, this growth averaged 1% - 2% per annum. The growth rate is forecast to increase to perhaps 3% - 4% per annum over the next 10 years or so (provided there are no major external shocks, such as an economic recession).

Other types of powered craft are operated by businesses or charities. Business craft include holiday hire boats, day hire boats, timeshare craft, hotel boats, trip & restaurant boats and floating shops and offices. Craft operated by charities include canal society boats, which are often used for public trips, and vessels providing activities for particular groups of disadvantaged people eg. people with disabilities; young offenders etc.

The number of boats based throughout the Caldon Canal is at present quite small – in total there are about 120 privately-owned boats and two business boats on the canal. Boat traffic generated is moderate. Using lock counter data available from counters at three locks along

the canal, it is possible to estimate levels of traffic, using standard boat-lockage ratios to convert the number of lockages per year recorded by the counters to boat movements per year[2]. This gives the following estimates of annual boat traffic through the 3 locks, based on mean traffic levels for the years 2002 to 2004 inclusive.

Lock	Boat movements per annum
Planet	4,256
Engine	4,569
Hazlehurst	3,980

Traffic levels throughout the main line of the Caldon Canal are therefore reasonably consistent. No figures are available for traffic levels on the Leek Arm, since there are no locks on the branch. In view of the consistency of figures on the main line, together with anecdotal evidence, traffic levels on the branch are likely to be low – possibly no more than 500 boat movements per year.

Boat traffic on the canal is mainly by privately-owned powered vessels (70% estimate) and hire boats (30% estimate). A commercially operated trip boat currently operates on the canal, based at Froghall Wharf on the main line. A further passenger carrying boat is based at Cheddleton and is operated by The Beatrice Charity for disabled and special needs children.

Under Options 1 – 4, it is assumed that permanent moorings for 15 privately owned craft are accommodated at the terminal basin.

Currently there is only one small hire boat company (single boat) based on the Caldon Canal near Post Lane, Endon. However, it is possible that an operator might be attracted to base holiday hire vessels at the terminus. For the purposes of this analysis, moorings for both privately-owned craft and a boat operator have been included.

Visitor moorings will also be available to allow craft from elsewhere to moor up for short periods to visit the town. In the case of Option 5, it is assumed that only visitor moorings are provided, due to limitations on space.

The extension of the Leek Arm to a more accessible terminus and the development of a basin attraction will increase the number of visiting craft using the Arm. Traffic levels on the adjacent stretch of the Caldon main line are close to 4,000 boat movements per year. A proportion of vessels cruising on the main line will divert to visit Leek. Also the development of an attractive destination will encourage boats to visit the Caldon Canal from elsewhere. Options 1, 2, 2a and 4 would probably be most attractive for visiting boaters, as they are closest to walking routes to the town centre and other attractions in the area. Option 3 is located close to the A53 near to a bus route to town but furthest from Leek town centre. Accordingly it is assumed that the following additional levels of traffic would be generated by the extension (over and above current traffic levels on the arm of approximately 500 boat movements per year):

[2] The Standard boat-lockage ratio for narrow canals is assumed at 1.4.

Route Option	Anticipated boat movements on Leek Arm per annum
Route Option 1	2,500
Route Options 2 and 2a	2,500
Route Option 3	1,000
Route Option 4	3,000
Route Option 5	1,000

A terminus at Leek would also be likely to attract a trip boat operator to the basin. Again the scale of operation would probably be greater for Options 1, 2, 2a & 4. In association with the trip boat operation, it is assumed that two further powered boats would be available for hire.

Use of the Caldon Canal by canoeists is currently limited. An extension of the Leek Arm would encourage additional canoeing activity and a small allowance for additional canoe visits has been made for each Option.

5.2.2 Angling

Canals are widely used for coarse angling. It is estimated that around 4,000 angling visits are made each year to the section of the Caldon Canal between Stockton Brook and the Leek terminus[3].

Nationally, it is difficult to determine trends in coarse angling over time, but data suggests the market is – at best – static. Data from membership of the National Federation of Anglers shows a reduction in the number of affiliated clubs and the number of individual members within clubs since 1975. This suggests there may have been a decline in angling participation over the same period, at least in terms of organised activity. Trend data shows that, over the last 20 years, carp fishing has increased in popularity through the development of intensively managed still water fisheries that often specialise in carp. This type of fishery has been a major growth area in recent years, probably corresponding with a decline at the expense of perch and pike, especially amongst young anglers. Canal fishing is technically more difficult, particularly for novices.

Although the extension of the canal will open up additional lengths of waterway for fishing, because of the market situation we have assumed only a minimal growth in angling activity for each option, related to the length of new waterway opened up.

5.2.3 Other Visitors to Canal Towpaths and Canal-side Sites

The majority of visits to waterways involve informal activities on the towpath - walking for pleasure, general sightseeing, cycling, jogging etc. Canal visitor sites are also often used for special events, such as boat rallies and festivals.

Visitor monitoring programmes, using pedestrian counters, have been undertaken at a number of canalside sites in association with restoration works and towpath improvements on the Lowlands Canals in Scotland and in the West Midlands. These programmes demonstrate that increases in visitor numbers can be substantial following investment in the canal infrastructure.

[3] British Waterways, National Count, 1995

Lowlands Canals, Scotland

1 Site	Visits p.a Before	Visits p.a. After	% Change
Ratho	56,000 (1998)	111,000 (2003)	+100%
Linlithgow	20,000 (1997)	144,000 (2003)	+343%
Edinburgh (Viewforth)	89,000 (1998)	112,000 (2003)	+26%
Maryhill	60,000 (1997)	71,000 (2003)	+21%
Cadder	48,000 (1997)	76,000 (2003)	+37%
Craigmarloch	29,000 (1997)	67,000 (2003)	+90%
Bonnybridge	59,000 (1997)	57,000 (2003)	-3%

West Midlands

2 Site	Visits p.a Before	Visits p.a. After	% Change
Walsall (W.Midlands)	71,500 (1999)	154,500 (2001)	+110%
Stourbridge (W.Midlands)	41,500 (1999)	87,500 (2001)	+111%

This demonstrates that improvements to existing waterways and the restoration or creation of new waterway links can generate substantial volumes of visitors to towpaths and canalside sites.

Current use of the towpath of the Leek Arm was estimated through the British Waterways National Count in 1995. This suggested there are some 260,000 visits per year by walkers, cyclists and joggers to the 9 kilometre stretch of canal between Stockton Brook and Leek. Around half these visits (c130,000) would be to the Leek Arm itself.

Development of a visitor destination at the canal terminus would attract substantial levels of activity. Option 4 would be likely to attract the highest number of visitors, given its easy access to the town centre, proximity to housing and established businesses on the edge of the town such as Morrison and Focus DIY together with the length of new canal towpath created. It is assumed that this could attract up to 200,000 visits per year – slightly more than towns such as Walsall (West Midlands) and Linlithgow (Scotland), but less than some of the key canal honeypot sites, such as Bingley 5-Rise (West Yorkshire) or Foxton (Leicestershire). The other Options would be expected to generate lower visit levels. Assumed visitor levels and justifications are as follows:-

Route Option	Visits p.a.	Note
1	100,000	Link to Ladderedge Country Park; Possible associated development at the basin; Some access to town centre
2 and 2a	130,000	Link to Cornhill redevelopment; Link to proposed Churnet Valley Railway extension; Possible associated development at the basin; Some access to town centre

3	50,000	Link to Ladderedge Country Park; More remote from town centre; Limited development opportunities; Possible access problems
4	200,000	Proximity to town centre; Associated development at the basin
5	25,000	More remote from town centre; Limited development opportunities;

Such volumes of visits appear large. However many visits will be made by local people, often for functional rather than recreational reasons (e.g. commuting or walking the dog). In terms of economic impact, a high proportion of visits will be displaced from elsewhere in the town and its vicinity.

5.2.4 Development Impacts

As mentioned earlier, it is likely some of the options would lead to further developments being implemented in association with the terminal basin. Particular opportunities exist in the case of Options 1, 2, 2a and 4. At this stage it is difficult to determine the exact nature of such developments – various mixes of residential, leisure, retail and office / industrial uses are possible. Obviously leisure and retail schemes would be in a position to capture some of the visitor spend generated by the recreation and tourism activity on the canal. However other types of development will create additional economic outputs e.g. residential units in the case of housing; employment in the case of office / industrial schemes. Options 2 and 2a particularly have the potential to link to regeneration of the Cornhill area and to the extension of the Churnet Valley Railway.

5.3 Economic Impacts

The calculation of the economic impact of the various options is set out in Appendix 9, based on the assumptions regarding future recreation and tourism use outlined in Section 2. Summary outputs for each option are as follows:-

Route Option 1

Additional powered boats permanently based on the canal	18
Additional visits per year (000s)	125
Additional visitor spend per year (£000s)	£587
Annual income retained within local economy (£000s)	£235
Total employment generated (FTEs)	17

Route Options 2 and 2a

Additional powered boats permanently based on the canal	18
Additional visits per year (000s)	155
Additional visitor spend per year (£000s)	£666
Annual income retained within local economy (£000s)	£267
Total employment generated (FTEs)	20

Route Option 3

Additional powered boats permanently based on the canal	18
Additional visits per year (000s)	62
Additional visitor spend per year (£000s)	£351
Annual income retained within local economy (£000s)	£140
Total employment generated (FTEs)	10

Route Option 4

Additional powered boats permanently based on the canal	18
Additional visits per year (000s)	226
Additional visitor spend per year (£000s)	£878
Annual income retained within local economy (£000s)	£351
Total employment generated (FTEs)	26

Route Option 5

Additional powered boats permanently based on the canal	3
Additional visits per year (000s)	37
Additional visitor spend per year (£000s)	£170
Annual income retained within local economy (£000s)	£68
Total employment generated (FTEs)	5

In addition to the permanent jobs created by the Options, temporary employment will be generated during the construction phase of the scheme. An estimate of this temporary employment can be made, using standard indicators related to the capital cost of the work to be carried out. Employment is expressed in terms of FTE person-years[4].

[4] 1 person year FTE construction job per £70,000 capital spend is assumed. This is consistent with English Partnership guidelines.

6.0 The Way Forward

6.1 Potential Funding

A key feature of canal restoration schemes, such as the Leek Arm proposal, is that they deliver multiple benefits in sustainability terms. Economic, social and environmental / cultural objectives can all be achieved within one project. Of course care must be taken in the detailed design of projects to ensure that potential conflicts between objectives are resolved.

Restoration schemes are generally funded through a mix of funding sources, each of which has its own objectives. There are however a number of common themes that need to be taken into account in submitting projects. These issues are particularly important considerations for project development and implementation where multiple objectives and funding sources are concerned:

- Partnership
- Inclusion
- Consultation

The following review of funding sources sets out those with potential to fund key components of the restoration scheme. There are numerous smaller grant sources that could be brought into play for detailed parts of the scheme. For example, voluntary sector grants could be used to fund social, educational or environmental actions associated with the restoration. However in this review we have concentrated on those sources that are key to the restoration itself.

Obviously funding sources and conditions of grant change over time. It is difficult to predict what funding regimes will be like in a few years time. In this analysis we have tried to take account of potential changes and opportunities where relevant.

Funding sources are grouped as follows:

- National Lottery
- European sources
- Regional sources
- Other sources

6.2 National Lottery

6.2.1 Heritage Lottery Fund

Substantial funds have been obtained from Heritage Lottery Fund (HLF) in the past for canal restoration – particularly a grant of £25 million for the Kennet & Avon Canal. Since then it has become more difficult to get large grants from this source, given the overall reduction in availability of Lottery money and introduction of more restrictive funding criteria.

Large grants are still possible. For applications of £5 million or greater a two-stage application procedure applies, with grants being assessed in competitive batches twice a year. Such projects need to demonstrate clear regional or national benefits. There also needs to be a clear heritage focus on the works to be carried out, so it is likely that only certain elements of a canal restoration project would be funded through HLF eg. historic infrastructure and access to the heritage. In the case of the Leek Arm, reinstatement of the Churnet Aqueduct would be an obvious candidate for HLF funding. However it is doubtful if much of the channel works required would be funded through this source, except possibly in the case of Route 4, if the historic line of the canal could be followed.

6.2.2 Sports Lottery

Sports Lottery schemes are administered by the Sport England. Community investment grants are available for capital works, equipment and certain types of revenue support. However such funding must contribute directly to increasing participation in a eligible sport. (These include angling, canoeing and cycling.) Grant applications are assessed against priorities set out in the Sport England West Midlands regional sports plan.

6.2.3 Big Lottery Fund

With the recent merger of two Lottery funding streams – the New Opportunities Fund and the Communities Fund (to form the Big Lottery Fund) - an announcement was made regarding a new stream of funding. This is the ***Transformational Fund***, which will provide substantial funding for 1 or 2 flagship projects each year. Basically it is a successor to the Millennium Fund, which supported major canal schemes such as the Lowland Canals (Scotland), Huddersfield Narrow and Rochdale restorations and the Ribble Link project. It is likely that this scheme will involve much greater public participation than was the case with the Millennium Fund. Detailed proposals for the scheme are not yet available and the first applications are likely in 2005 or later.

The ex-New Opportunities Fund elements of the Big Lottery Fund supports education, health and environment schemes through a range of different initiatives. The Fund has a number of programmes open for application at any one time. For example the Green Spaces and Sustainable Communities initiative helps communities understand, improve or care for the natural and living environment (although much of the funding from this source has now been allocated.)

6.3 European Sources

6.3.1 ERDF Objectives 1 & 2

A new European funding regime will come into effect post-2006. The Leek area will not qualify for Objective 1 funding and any opportunities through the Objective 2 programme will be limited at best.

6.3.2 Interreg

The European Community Initiative Interreg III is designed to strengthen economic and social cohesion in the European Union by promoting transnational co-operation in spatial planning. The initiative currently runs from 2000 to 2006. It consists of three strands. The most relevant strand for the Leek Arm is Interreg IIIB, which is aimed at developing transnational co-operation between national, regional and local authorities and a wide range of non-governmental organisations. Under Interreg IIIB, the European Union has been split into a number of transnational programme areas, which have common problems and issues. Staffordshire falls within two of those programme areas – North West Europe and Atlantic Area.

A key issue for Interreg IIIB projects is the establishment of the transnational partnership, which would develop projects based on the priorities set out in the Interreg region programming documentation. Most of the funding available under both the North West Europe and Atlantic Area programmes has now been allocated. However a successor programme to Interreg will be implemented post-2006 (which is likely to be a new structural fund Objective 3 instrument) and the budget for this could be significantly higher than at present.

6.3.3 Life Environment

The EU Life III programme has two strands that could be relevant to the Leek Arm – Life Environment and Life Nature. Both programmes aim fund innovative projects.

Life Nature is concerned with the conservation of habitats and fauna & flora. Life Environment relates to the protection and enhancement of the environment, including water management and land use development and planning. The programme has been extended to the end of 2006.

Life is a highly competitive programme. It could be appropriate if issues are identified that require innovative approaches.

6.3.4 Agri-environment schemes

Under the emerging proposals for Common Agricultural Policy (CAP) reform for the period 2007-13, a new European Agricultural Fund for Rural Development (EAFRD) will be set up to support agricultural restructuring, diversification and environmental management (under the so-called Pillar 2 of the Common Agricultural Policy). This will be implemented through rural development plans in the member states. In future therefore more funds may become available to fund agricultural diversification, access and nature conservation measures.

6.4 Regional Sources

6.4.1 Advantage West Midlands

Most grant funding from AWM is driven through the West Midlands economic strategy – *Delivering Advantage: West Midlands Economic Strategy & Action Plan 2004-10*. Projects must help deliver this strategy, which is based on four pillars:

- Develop a diverse and dynamic business base;
- Promote a leaning & skillful region;
- Create the conditions for growth;
- Regenerate communities.

Canal projects can help deliver all four of these objectives, through, for example:

- Waterside redevelopment and regeneration;
- Tourism development;
- Skills training;
- Environmental enhancement.

6.5 Other Sources

6.5.1 Landfill Tax

The Landfill Tax Credit Scheme (LTCS) is intended to mitigate the effects of landfill operations upon local communities by distributing funds to support environmental projects in lieu of tax. Sometimes grants are made available direct by the landfill operator. However much of the funding is now distributed through Distributive Environmental Bodies, which effectively act as agents for the allocation of funds. LTCS can fund activities that directly soften the effect of landfill operations. It can also support biodiversity conservation schemes and projects that provide or maintain public amenities, so long as they take place within 16 kilometres of a landfill site.

Distributive Environmental Bodies active in Staffordshire include:

- Biffaward, administered by the Royal Society for Nature Conservation (RSNC). Their large grant scheme for flagship community-led regeneration projects, can make awards up to £500k.
- Staffordshire Environmental Fund, which normally makes awards of up to £100k.

6.5.2 Aggregates Levy

The Aggregates Levy Sustainability Fund can, amongst other things, support projects, which will deliver amenity and environmental benefits to communities, which are either currently or historically affected by aggregates extraction. Amenity and environmental projects should take place within 8 kilometres of an aggregates extraction site. The scheme is administered through a number of distributing bodies, which fund projects according to priorities agreed with the Department of the Environment, Farming & Rural Affairs (Defra).

The scheme was initially implemented for a 2-year period from 2002, but it has now been announced that it wil be extended to 2007.

6.5.3 Other Trusts & Foundations

There are a range of charitable trusts that fund environmental and heritage projects. Most of these provide funds to the voluntary sector only. Therefore they would have to be accessed through organisations such as the local canal trusts. Some of the larger trusts include:

- Esme Fairburn, which funds environmental schemes; and
- Pilgrim Trust, which can contribute to projects conserving historic structures.

The Waterways Trust is a national organisation established to promote public awareness and enjoyment of inland waterways. Although it administers a small grants programme, its main role in relation to the Leek Arm restoration could be as a facilitator by acting as a conduit for grants from other charitable trusts.

6.6 Next Steps

The current canal terminus at Leek offers little in the way of facilities for boaters wishing to moor up and visit the town. This feasibility study has provided the opportunity to explore a range of options for the creation of a new destination at the end of the Leek Arm of the Caldon Canal with the potential to bring vitality to the canal and to the town. Each option has been outline costed and discussed in terms of environmental impact and physical constraints and analysed in terms of potential economic benefit.

For any of the route options and locations to be considered further, more detailed site investigations will be required to fully assess the area's topography and to investigate underlying ground conditions.

A number of key organisations such as Staffordshire Moorlands District Council and Churnet Valley Railway will also need to be involved and consulted to ensure there is a link up with wider regeneration and development plans for the area. A new canal terminus teamed with Churnet Valley Railway's aspirations to reopen the railway offer an exciting opportunity to re-establish two lost transport connections to the town and increase tourism in Leek and and the Churnet Valley.

APPENDIX 1

Project Brief

British Waterways
Wales & Border Counties

CONSULTANT'S BRIEF FOR A CANAL CORRIDOR STUDY TO TO INVESTIGATE THE POTENTIAL TO RESTORE, EXTEND AND DEVELOP THE CANAL IN LEEK

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Consultants	Mott Macdonald – British Waterways' Professional Services Contract Consultant British Waterways – Peter Birch, Environment & Heritage Manager – contributing on Environment, Heritage and Landscape matters and social and economic benefits

Note: This brief should be read in conjunction with the Leek Canal Corridor Study project works Schedule describing key data and tasks to be undertaken.

1.0. Background

1.1 Funding has been received to undertake a canal corridor study to look at ways of improving and developing the terminus of the Caldon Canal in Leek. The aim of the study will be to address how to extend and develop the canal from its current terminus at Leek based on various route options, and to explore the opportunity for the creation of a new positive canal destination at Leek to renew the connection between the town and its canal. Funding for the study has been secured from the following organisations: Leek Market Towns Initiative, Inland Waterways Association Restoration Grants Fund, Caldon Canal Society, British Waterways and Staffordshire County Council Local Member Initiative Scheme. A project steering group has been established comprising representatives of British Waterways, Caldon Canal Society and the Inland Waterways Association.

1.2 The Leek Arm is an attractive cruising cul-de-sac off the main line of the Caldon Canal. It carries the water supply from Rudyard Lake via the Caldon to the Trent & Mersey Canal summit in Stoke on Trent. Historically, the Caldon Canal crossed the River Churnet and terminated in a basin half a mile closer to Leek town centre.

However, in 1957 this section was filled in and the area has now been developed as an industrial estate. Elements of the former canal still remain including Rennie's aqueduct, now dewatered. Nothing remains of the original canal north of the aqueduct itself.

1.3 Several thousand boats visit the Caldon Canal each year. However, many visitors do not stop to visit the historic market town of Leek or surrounding attractions such as Rudyard Lake canal reservoir. Access between Leek and the canal at its current terminus is poor and the canal is not visible from the surrounding roads. The stretch of canal leading to the current terminus has no safe mooring facilities. Leek currently does not capitalise on the fact that the town has a canal that links to a nation-wide waterway network.

2.0. Objectives of the Feasibility Study

2.1 The study will be expected to:

a) investigate a range of route options for navigation extension and basin construction and assess their viability in terms of design, vertical alignment, ease of construction and potential impact on adjacent land and property. A map showing possible route options is attached as Appendix A to this brief. The consultant should consider and recommend any other options they believe may be feasible.

b) review the water requirements of the extended length of canal and basin construction and the best means of providing the necessary water resources;

c) provide an estimate of cost for each of the route options (including land acquisition) as well as an indication of future maintenance and operational costs;

d) investigate the environmental impacts of each of the route options assessing the environmental enhancements achievable and suggesting mitigating measures where an adverse impact is likely;

e) investigate current land ownership associated with each of the route options using local contacts and Land Registry search if required;

f) suggest ways of conserving and enhancing the built heritage, environment and biodiversity of the canal;

g) assess the best means of providing canal access and facilities (such as moorings, sanitary station including water point and electricity) for visitors and Leek residents;

h) assess social and economic impact of each option, expected benefits and potential for connectivity to Leek.

3.0. Scope of the Study

3.1. The study is to investigate the feasibility and potential to restore extend and develop the arm of the Caldon Canal at Leek beyond the current terminus in order to renew and enhance access for all between the town and the canal providing moorings and facilities for boaters and provide amenities and opportunities for other visitors and residents.

3.2 The Consultant shall review a range of route options. The route options are summarised as follows:

i. from north of aqueduct west towards Wall Bridge, including moorings provision for upto 15 boats, electricity, water point and sanitary station
ii. from north of aqueduct east towards disused railway line (now a concessionary footpath route with access to Leek town centre) including moorings provision for up to 15 boats, electricity, water point and sanitary station
iii. roughly follow the line of the existing canal feeder towards Ladderedge to create a terminus near the A53 including moorings provision for up to 15 boats, electricity, water point and sanitary station. (There is a possibility that a future project might create a link with the Macclesfield Canal; this route should refer to the potential future need to cross the A53, and basin location and facilities should show how they could link in with a further extension of the canal).

iv. Construction of Barnfields Industrial Estate has resulted in the loss of the original line of the canal towards Leek town centre. The line of the former canal ran north from Rennie's aqueduct towards the town and would have terminated in a basin near to Safeways supermarket. The line of the former canal should be investigated as a option. The current land use means this option is more complex; this option should not be investigated in any greater detail than those listed in 3.2 i –iii.

The consultant should also consider and recommend any other options he/she believes that may be feasible.

3.3 Some of the above route options shall require enlargement of the approaches to the aqueduct to allow boats to turn to cross the river. This enlargement and enlargement of the canal feeder for a short stretch to accommodate a full winding hole at this point shall be costed and presented as a separate item, distinct from the route options.

3.4 The Consultant shall provide an outline design and an assessment of the cost for each route option. These proposals should also include the provision of a terminal basin for the canal (with adequate turning and mooring area), the provision of an amenity block and access for emergency vehicles, in liaison with British Waterways, the Environment Agency and the relevant highway authority. The proposals should also investigate the need for site security measures as the area is currently well known for break ins and vandalism of boats as at least two of the options are located away from the town centre.

3.5 Details of land ownership, where known to the Client, will be made available to the Consultant. Geotechnical and other data as described in the Schedule will be made available to the Consultant; detailed site investigation work will not be required. The Consultant should avoid direct engagement with land owners during the study.

3.6 Water resources shall be reviewed in consultation with BW Water Resources and the Environment Agency. The impact of restoration on water quality, land drainage and flood management are to be included.

3.7 The assessment of the environment impacts of restoration shall be based upon an initial outline baseline survey of the canal route and its environs. The magnitude and significance of the impacts of each of the options shall be ascertained by the Consultant in consultation with British Waterways Environment & Heritage team.

3.8 The Consultant shall liaise with British Waterways to ensure that the outline costings associated with each of the possible route options works are realistic.

3.9 Subject of discussion with the Consultant, the standards to be adopted in the study are as follows:

a) Craft - Maximum size Length 22m (72 feet)
Beam 2.15m(7 feet 1 inch)
Draught 1.3m (4 feet 4 inches)
Air Draught 2.2m (7 feet 3 inches)

b) Channel - Bed width as existing canal channel (dimensions to be confirmed)

Minimum width of Bridges -	2.5m + 1.5m towpath (8 feet + 5 feet) (Height above water level: 2.5m min)
Towpath width -	3m (10 feet)
Depth -	1.37m (4 feet 6 inches)
Freeboard -	0.30m (12 inches)
Minimum width of Locks -	2.25m (7 feet 4 inches)

Note: Lock dimensions are included for completeness though design options should preferably avoid the need for a lock due to the need to maintain the canal's existing water supply function and not to reduce its existing capacity.

c) Level of use – Estimated demand and social and economic benefits to the proposals should be undertaken as part of the study in consultation with British Waterways

d) The Consultant shall obtain information on all utilities crossing, or passing near to, the canal and shall estimate the costs of rerouting them where necessary.

e) Water supplies should be adequate to cope with the effect of a 1 in 10 year drought.

f) During the course of the study the Consultant shall consult the following bodies:

For local and expert knowledge of the area: Leek Arm Canal Corridor Study Steering Group comprising:

British Waterways Wales & Border Counties
Navigation Road, Northwich, Cheshire CW8 1BH

Ms Julie Arnold
Caldon Canal Society
01538 361138

Mr Peter Bolt
The Inland Waterways Association
Western Region Chairman
0151 678 9300

Other organisations to be consulted:

Staffordshire Moorlands District Council
Leisure and Recreation, Planning, Regeneration and Engineering Departments, Countryside Services

Staffordshire County Council
Planning and Transportation Departments

Churnet Valley Railway
Cheddleton Station
Common interests to be explored in terms of potential reopening of disused railway line and extension of canal

Leek Town Council

The Environment Agency
Water Resources and Land Drainage department and Fisheries, Recreation, Conservation and Navigation department

Utility companies including gas, electricity, telephone, cable and water regarding location of existing services

Others to be consulted as necessary for information and if any relevant issues are encountered:
Staffordshire Wildlife Trust, English Nature, English Heritage

Wider consultation will take place at Interim Report stage to be lead by the project steering group.

g) A list of relevant material, which will be available to the Consultant is given in Appendix B.

4.0. Contract Conditions

4.1. The contract shall be carried out in accordance with British Waterways Professional Services Contract for Consultancy Services 2002 – 2005.

4.2. The Consultant shall work within statutory obligations and shall inform the Client's Representative of any statutory obligations, which may for any reason be infringed as a result of the work, or any works that it might lead to.

4.3. The Consultant shall report to, and only accept instructions from, the Client's Representative. The Client's Representative will advise the Consultant on the extent to which interim work and related documents can be revealed to other bodies and persons.

4.4. The Consultant shall collate the reports and supply 6 copies of interim report and 20 copies of the final report, plus a master copy supplied in pdf format compatible with Windows 98 (all illustrations accompanying these reports should be "linked" to and not "embedded" in the document). All reports shall be produced such that text and drawings can be legibly copied in monochrome.

4.5 The Consultant should prepare design work in a format that can be copied and enlarged by the Client at a later date to form part of a public consultation event.

4.6. There shall be an embargo on publicity by either Consultant or members of the Steering Group, except with the full agreement of all the parties concerned.

4.7. All references made by the Consultant to publications or to the work of other bodies or individuals should be clearly identified and briefly described in the Consultant's report.

4.8. The Consultant shall comply with the Working Time Directive at all times throughout the term of the contract.

4.9 Ownership of all work shall be vested jointly in the Client, funders and steering group; the Client, funders and steering group will have access to this property if held by the Consultant or others during and after the term of the contract. The consultant may not reproduce this work in any form or make direct use of its contents in any other commission except for marketing purposes without prior permission of the Client.

5.0. Contract Period

5.1. It is envisaged that the likely start date for the commission will be week commencing 10 March 2004.

5.2. A project steering group has been established comprising representatives of British Waterways, Caldon Canal Society and the Inland Waterways Association. During the course of the study the Consultants will be expected to report to the study steering group as follows:

- Allowance for two site visits with relevant parties including steering group
- At least two further progress report meetings throughout the period of the contract (unless revised by the Steering Group)
- Review meeting with the Steering Group by 19 March 2004
- Production of interim report by end of April 2004 including copy produced for proof reading by steering group
- A presentation of the Final Report to the Steering Group by end of June 2004. (Proof reading copy to be produced).

6.0. Terms of Payment

6.1 It is proposed that the fee for this commission will be paid as follows upon the receipt of invoices from the consultant:

- 25% upon review meeting by steering group by 19 March 2004
- 50% upon receipt of the interim report
- 25% upon production of satisfactory Final Report

Appendix A Map shows possible route options and location of site

Appendix B

Relevant material which will be available to the Consultant:

- Photographs of the area (CD and paper copies) and accompanying map showing location of photos
- Land ownership details where known
- *The Leek Canal* – Background on the Canal's history by David Salt, Archivist, Caldon Canal Society

- *Special Bridge Inspection – The Aqueduct* Staffordshire County Council, for Staffordshire Moorlands District Council (November 1995)
- *Caldon Canal Conservation Area* - Staffordshire Moorlands District Council
- *Caldon Canal, Staffordshire – Longbutts Drawbridge to Leek and Froghall Termini – Landscape Evaluation Survey* – British Waterways

APPENDIX 2

Land Registry Search

OFFICIAL COPY OF REGISTER ENTRIES

This official copy shows the entries subsisting on the register on **6 May 2004** at **10:18:51.**
This date must be quoted as the 'search from date' in any official search application based on this copy.
Under s.67 of the Land Registration Act 2002, this copy is admissible in evidence to the same extent as the original.
Issued on 6 May 2004.
This title is dealt with by **Birkenhead (Old Market) District Land Registry.**

Land Registry

Title Number : **SF336461**

Edition Date : 22 November 1999

A: Property Register

This register describes the land and estate comprised in the title.

STAFFORDSHIRE : STAFFORDSHIRE MOORLANDS

1. (5 April 1994) The **Freehold** land shown edged with red on the plan of the above Title filed at the Registry and being land lying to the South East of Barnfield Road, Leek.

2. (5 April 1994) The land has the benefit of the rights granted by but is subject to the rights reserved by the Transfer dated 31 March 1994 referred to in the Charges Register.

3. (5 April 1994) The Transfer dated 31 March 1994 referred to in the Charges Register contains a provision as to light or air.

B: Proprietorship Register

This register specifies the class of title and identifies the owner. It contains any entries that affect the right of disposal.

Title Absolute

1. (22 November 1999) **PROPRIETOR:** ANTHONY JOSEPH CANTRELL of Rocks Bar Farm, Upper Hulme, Leek, Staffs.

2. (22 November 1999) The Transfer to the proprietor contains a covenant to observe and perform the covenants referred to in the Charges Register and of indemnity in respect thereof.

Continued overleaf

C: Charges Register

This register contains any charges and other matters that affect the land.

1. (5 April 1994) A Transfer of the land in this title dated 31 March 1994 made between (1) Staffordshire Moorlands District Council and (2) Anthony Joseph Cantrell contains restrictive covenants.

   NOTE 1: The matters contained the Conveyance dated 25 March 1898 do not affect the land in this title.

   NOTE 2: Copy in Certificate.

END OF REGISTER

NOTE: The date at the beginning of an entry is the date on which the entry was made in the Register.

H.M. LAND REGISTRY

		TITLE NUMBER	
		SF336461	
ORDNANCE SURVEY PLAN REFERENCE	SJ9855	SECTION	Scale 1/2500
COUNTY STAFFORDSHIRE	DISTRICT STAFFORDSHIRE MOORLANDS		© Crown copyright

The boundaries shown by dotted lines have been plotted from the plans on the deeds. The title plan may be updated from later survey information

NOTE: AREAS ON THIS PLAN ARE EXPRESSED IN ACRES

This title plan shows the general position of the boundaries: it does not show the exact line of the boundaries. Measurements scaled from this plan may not match measurements between the same points on the ground.

For more information see Land Registry Public Guide 7 - Title Plans

This official copy shows the state of the title plan on **6 May 2004 at 14:40:31**. It may be subject to distortions in scale.

Under s.67 of the Land Registration Act 2002, this copy is admissible in evidence to the same extent as the original.

Issued on 6 May 2004.

This title is dealt with by the **Birkenhead (Old Market) District Land Registry.**

APPENDIX 3

Cornhill, Leek
Area Action Plan

STAFFORDSHIRE
moorlands
DISTRICT COUNCIL

AIMING · FOR · EXCELLENCE

Simon W. Baker B.Ed MBA MILAM
Chief Executive

Dealt with by: Claire Sansom
Direct Dial: 01538 - 483574
Fax: 01538 - 483753
E-mail forward.plans@staffsmoorlands.gov.uk

Our Ref. 7608/CS
Your Ref.

Date: 2 February 2006

Dear Sir / Madam,

CORNHILL, LEEK, AREA ACTION PLAN

Following my letter of 27th October 2005, explaining the latest position regarding the Cornhill Area Action Plan, I'm writing to confirm that on the 3rd December 2005 the Council decided to withdraw this document. The reason for this is to allow further work on options for south Leek to be investigated.

Work is currently taking place on the Council's 'Core Strategy' as part of the Local Development Framework. This Core Strategy will set out the broad planning principles for the Staffordshire Moorlands. The Strategy will include consideration of the future of the south Leek area. When options for the south Leek area are put together we will take into consideration the views expressed when we consulted you on the Area Action Plan. I will inform you about any future public consultation opportunities concerning south Leek.

In the meantime may I thank you for your interest so far and hope to continue working with you in this area.

Yours sincerely

Perry Wardle
HEAD OF REGENERATION

STAFFORDSHIRE moorlands DISTRICT COUNCIL

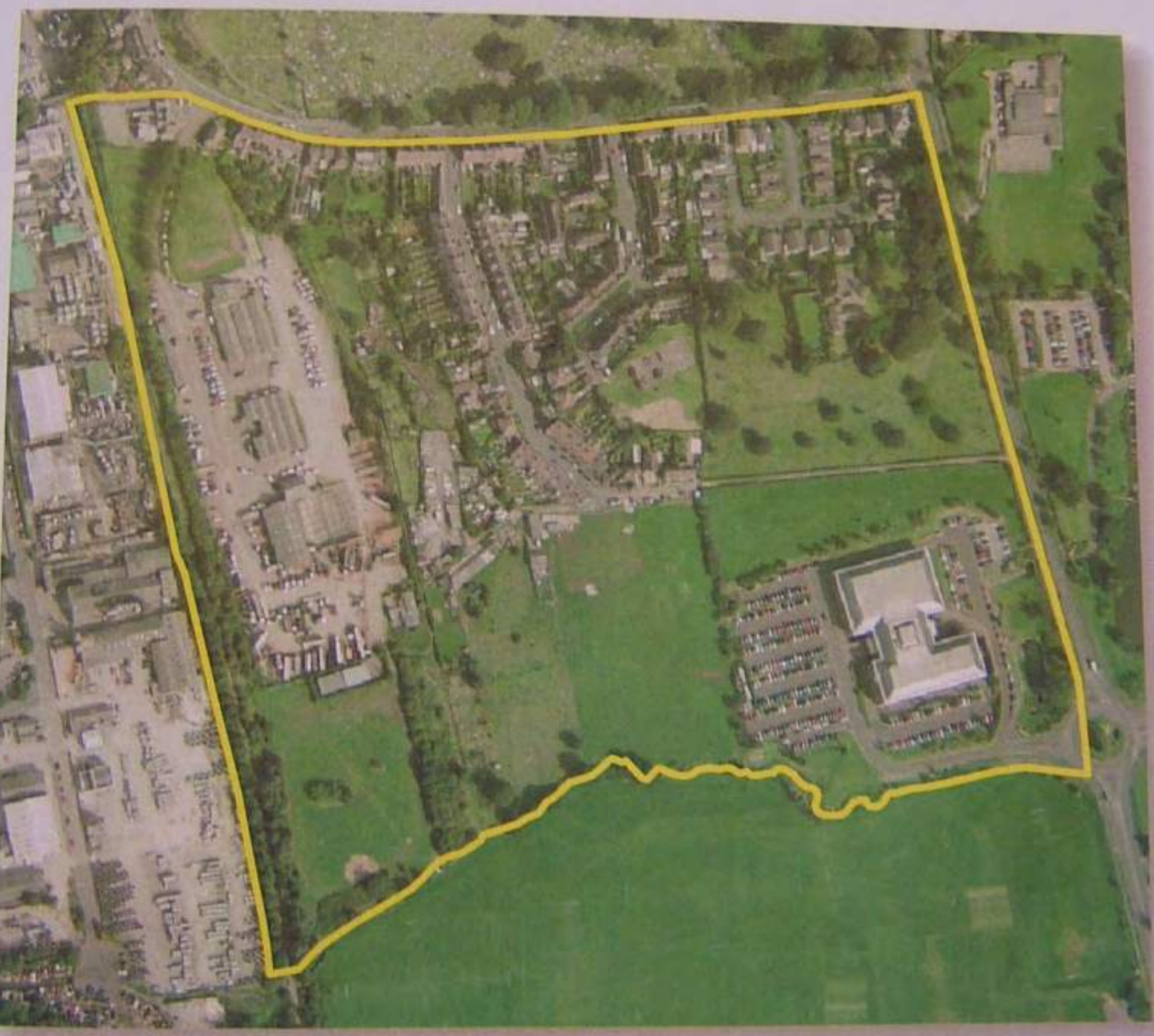
AIMING·FOR·EXCELLENCE

BDP

Donaldsons

Cornhill, Leek Area Action Plan

Draft Options



What is an Area Action Plan?

A plan is being prepared to guide the future development of the Cornhill area over the next 10-15 years. The plan will set out a vision of the kind of area which we would like Cornhill to become and will provide guidance about the development of sites and buildings within the area.

The Area Action Plan will be a statutory planning document that Staffordshire Moorlands District Council can use to help achieve this vision. As it is developed, the Area Action Plan will replace the Staffordshire Moorlands Local Plan.

This is a very important stage in the preparation of the plan - providing the opportunity for you to help shape the future of the Cornhill area.

What does an Area Action Plan Cover?

The area known as Cornhill is situated on the south side of Leek and is bounded by Junction Road and Birchall Playing Fields north to south and the disused railway line and Cheddleton Road west to east, covering a total area of around 20.4 hectares. A map of the area is shown on the front cover of this leaflet.

How Can I get Involved?

We want to get your views on what you think Cornhill should be like in the future. Would you like to see the area change or grow? If so, in what way?

A range of draft initial options for the future of the Cornhill area is illustrated along with a summary of the main components of each option. These are simply ideas on how to address the issues that the area faces. We would like to hear your views on these options as well as other ideas you might have.

A comments form is available to accompany this leaflet for you to let us know your views or visit our website at www.staffsmoorlands.gov.uk,
e-mail us on forward.plans@staffsmoorlands.gov.uk or phone (01538) 483574 or 483575 before Friday 29th July

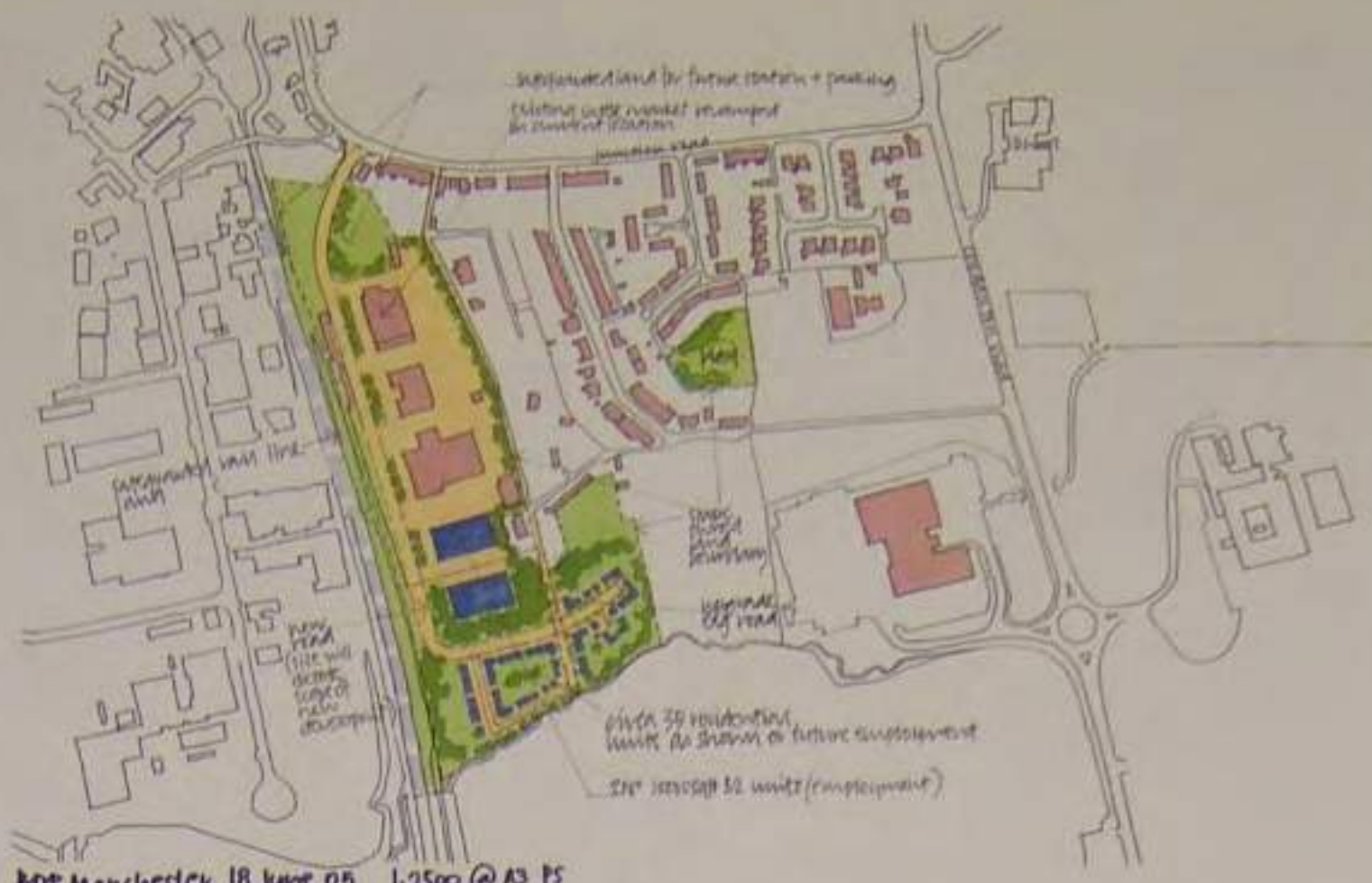
We would like your views on the three options.

- *Is there a particular option you prefer?*
- *Are there parts of one option and parts of another option you like?*
- *Do you have any suggestions for alternative options which haven't been considered in this leaflet?*

Further information about this consultation can

Option 1: Limited Development

- Development concentrated on SMDC owned land.
- Development is limited by existing highway capacity.
- Redevelopment of existing Cattle Market in current location.
- 2 medium sized employment units.
- In addition to this, a small residential development or further employment units.
- Safeguarded land for future station & parking for Churnet Valley Rail.
- Safeguarded railway line.
- Improved highway.
- High quality landscaping to act as screening.



Option 2: Residential / Employment Mix

- Existing cattle market refurbished and reconfigured.
- New railway station and platforms to serve Churnet Valley Rail along with parking for around 150 cars.
- New railway line.
- Residential development.
- 2 medium sized employment units.
- New road alignment off Britannia roundabout through to Junction Road.
- Alternative route for new road, dependent on highway issues.
- Possible future canal basin depending on British Waterways' aspirations.
- High quality landscaping to act as screening.

be found by visiting www.staffsmoorlands.gov.uk

Option 3: Employment Led

- Existing cattle market refurbished and reconfigured.
- New railway station and platforms to serve Churnet Valley Rail along with parking for around 150 cars.
- New railway line.
- Several employment units.
- New road alignment off Britannia roundabout through to Junction Road.
- Alternative route for new road, dependent on highway issues.
- Possible future canal basin depending on British Waterways' aspirations.
- High quality landscaping to act as screening.

Further information about the Cornhill Area Action Plan including the Baseline Report and the Issues and Options Report can be found on **www.staffsmoorlands.gov.uk** or copies are available for inspection at:

Regeneration Services,
Staffordshire Moorlands District Council, Moorlands House, Stockwell Street,
Leek, Staffordshire Moorlands ST13 6HQ

Telephone: 01538 483574/5
Fax: 01538 483586

e-mail: forward.plans@staffsmoorlands.gov.uk

APPENDIX 4

Canal Aqueduct Survey

Staffordshire Moorlands District Council
1995

3200

HIGHWAYS DEPARTMENT

BRIDGES SECTION

SPECIAL BRIDGE INSPECTION

FOR

STAFFORDSHIRE MOORLANDS
DISTRICT COUNCIL

THE AQUEDUCT

Staffordshire
County Council

STAFFORDSHIRE MOORLANDS DISTRICT COUNCIL

CONSULTANT - STAFFORDSHIRE COUNTY COUNCIL

SPECIAL BRIDGE INSPECTION REPORT

Bridge Name :-	AQUEDUCT
Staffordshire Moorlands Bridge No :-	.....
Staffordshire County Council Bridge No :-	.....
Map Reference :-	SJ 979 552
Date of Inspection :-	November 09 1995
Portion of Structure Inspected :-	Whole
Report Status :-	Special Inspection for Moorlands District Council

Ref: AQULEEK.AZJ

CONTENTS

APPROACH EMBANKMENTS (Refer to photos nos. 7, 12, 13, 14, 31, 32, and 39)

They are in good condition with no sign of any soil slips. The South West embankment is showing signs of erosion possibly caused by animals but it is not significant (Photo 7)

ARCH RING / CORRUGATED METAL (Refer to photos nos. 18, 19, 21, 22, 23, 24, 25, 26, 27, 28, 29 and 30)

The arch is made of sandstone blocks which are in good condition and show no signs of any distortion. There are a number of blocks that show minor damage but this is not detrimental to the structure (Photos 16, 24 and 30)

Water is penetrating the joints in various places but is unlikely to be a problem immediately. There is some moss and plant growth in the joints particularly near to the water line and in areas of water seepage.

SPANDRELS (Refer to photos nos. 11, 39, and 40)

The spandrel walls are made of sandstone blocks which are in good condition. There is a lot of plant growth through the block joints which has reached a condition where urgent removal is required . One small tree has already been cut back and currently the growth does not appear to have displaced any of the blocks (Photo 11)

DRAINAGE SYSTEM

There does not appear to be any drainage system constructed at the back of the arch.

WATERPROOFING

Originally the canal bed over this structure would have been lined with puddled clay which would probably have been left when the canal was filled in. However this would not serve as an effective waterproofing medium under current conditions, therefore the structure is effectively without waterproofing. Some water is seeping through the arch blocks, though the seepage is slight and probably does not emanate from the severed canal to the south.

SURFACING (Refer to photos nos. 1, 2, 3, 4 and 8)

The section of canal over this structure has been filled in and the surface topsoiled and grass allowed to grow. There are several footpaths radiating away from the Barnfield Road access leading along the canal and river. There is some exposed concrete on the surface possibly being fill material used when the canal was abandoned (Photo 8).

There are no details of how or when the canal was filled in so it is not known how extensive any concrete fill to the arch is, or if it acts compositely with the arch construction.

PARAPETS / HANDRAILS (Refer to photos nos. 5, 6, 7 and 9)

There are masonry parapets present which are in good condition though they show signs of their age. Some of the coping stones are chipped (Photo 7) and on the West side one block has been replaced by brickwork (Photo 5).

There is an oak paling fence in the south west corner that appears to cover the area from the end of the parapet to the bottom of the wingwall where a 3 to 4 metre drop exists (Photo 7). This fence should be replaced with something more substantial and the end fence and style should be treated in a similar manner with the fence extended to cover the open end of the canal.

SUMMARY OF CONDITIONS FOUND

1. Vegetation growing out of the masonry on both elevations some of which has been there for some time. It is not a problem at the moment but methods of removal should be investigated and implemented quickly.

2. Water seeping through the arch is unsightly but not detrimental and as the cost of preventing it would be prohibitive no further action need be taken.

3. Damaged and missing stones from the arch do not seem to be a problem and are not adversely affecting the structure but they should be replaced as soon as possible to prevent any deterioration.

4. The fences in the south west corner require improving and extending to cover the end of the canal.

PROPOSED REMEDIAL WORKS AND COST ESTIMATES

INVERTS OR APRONS (Item 9)

Repairs : Protect south end abutment from scour. Remove rubbish.

Priority: Low.

Approx Cost: £2000

WINGWALLS AND SPANDRELS (Item 6 and 9)

Repairs : Remove vegetation.

Priority: Medium.

Approx Cost: £2000

ARCH RING (Item 16)

Repairs : Replace missing masonry

Priority: Medium.

Approx Cost: £2500

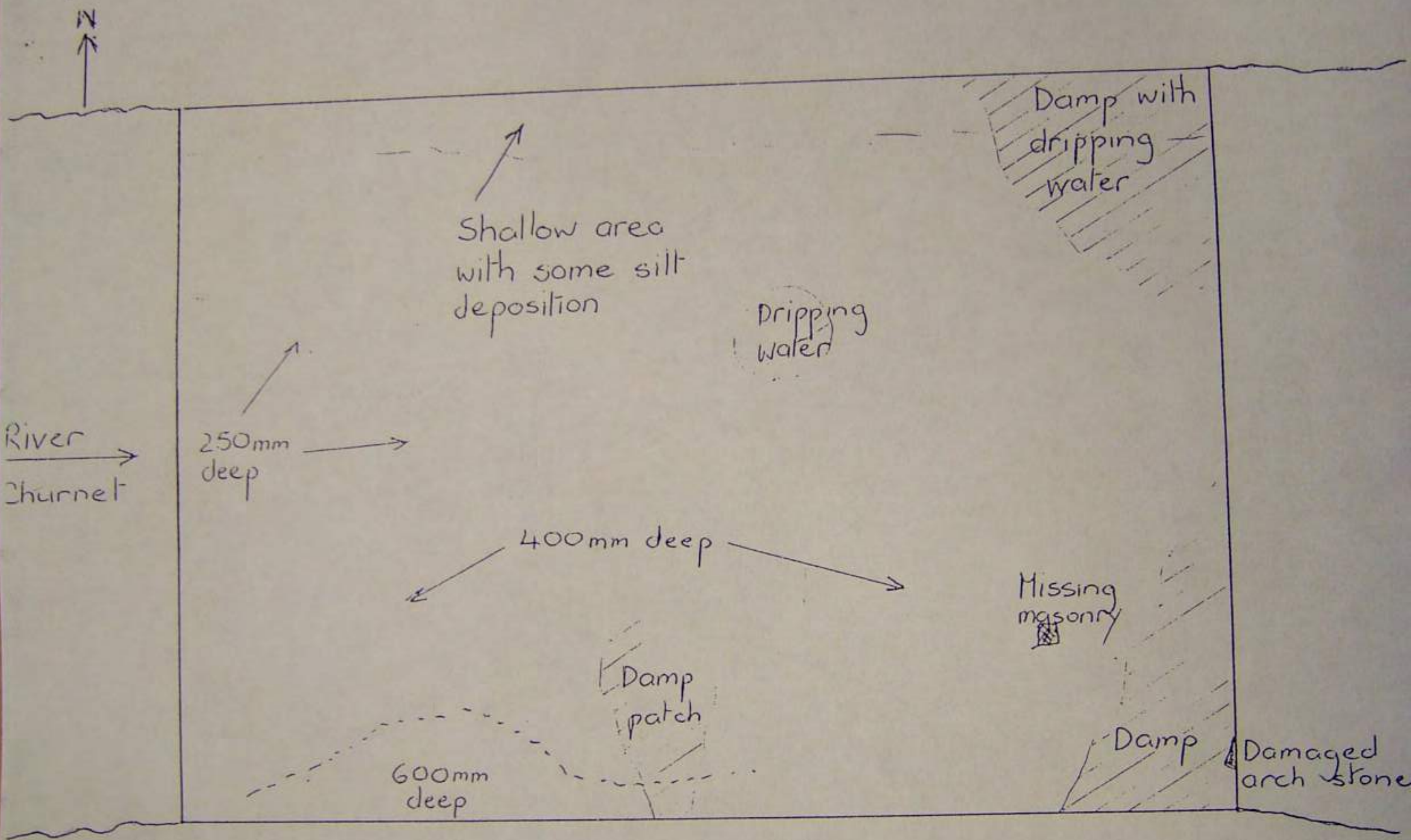
PARAPETS (Item 24)

Repairs : Remove existing fence and style, south west end and replace with a pedestrian proof fence and style and extend the fence to cover the end of the canal.

Priority: Medium.

Approx Cost: £1000

9/1/97



Plan of Arch and River Bed N.T.S.

STAFFORDSHIRE COUNTY COUNCIL
HIGHWAYS DEPARTMENT
BRIDGE INSPECTION REPORT

BRIDGE NAME THE AQUEDUCT, LEEK

County Bridge No: NOT APPLICABLE
Road No: NOT APPLICABLE
Area: MOORLANDS
Grid Ref: SJ 979 552

Date of Inspection 14/11/95 Type of Inspection SPECIAL Inspected By A. JAWORSKI

	Estimated Cost (£K)	Extent	Severity	Work Reqd & Priority	
1. Foundations		A	1		
2. Inverts or Aprons	2	B	2	R	L
3. Fenders					
4. Piers or Columns					
5. Abutments					
6. Wing walls	2	B	3	R	M
7. Retaining Walls or Revetments					
8. Approach Embankments		A	1		
9. Bearings					
10. Main Beams					
11. Transverse Beams					
12. Diaphragms or Bracings					
13. Concrete Slab					

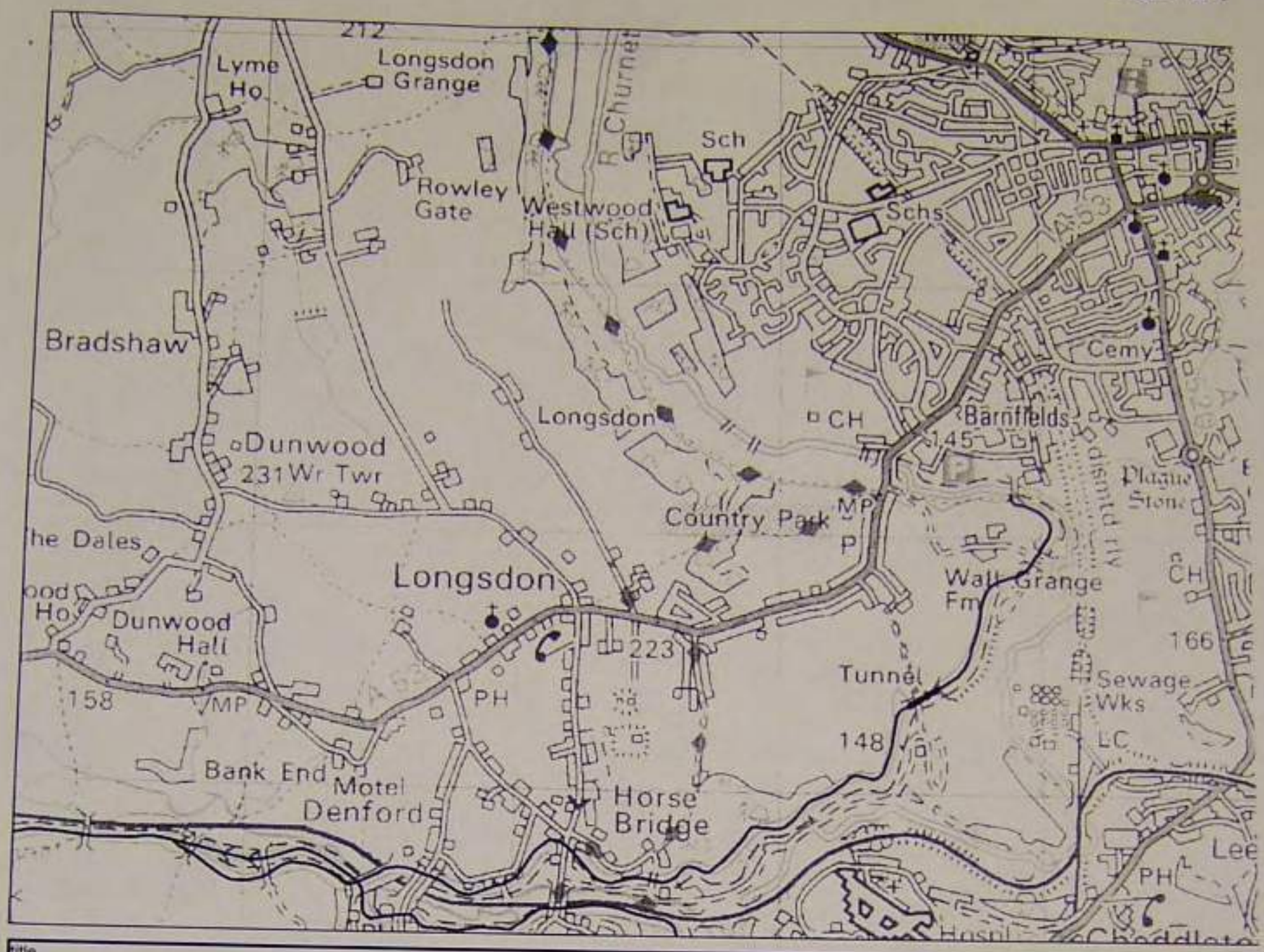
	Estimated Cost (£K)	Extent	Severity	Work Reqd & Priority	
14. Metal Deck Plates					
15. Jack Arches					
16. Arch Ring	2·5	B	2	R	L
17. Spandrels	0	B	3	R	M
18. Tie Rods					
19. Drainage Systems		B	2	N	
20. Waterproofing		B	2	N	
21. Surfacing		A	1		
22. Service Ducts					
23. Expansion Joints					
24. Parapets	2	B	2	R	L
25. Access Gantries or Walkways					
26. Machinery					

Report Dated 14/11/95 Structure No N/A Structure Name THE AQUEDUCT.

Explanatory Notes	Remedial Work Required
2.) Scour on the south side and rubbish in the river.	2) Prevent further scour and remove rubbish.
6. &17) Vegetation and small trees growing out of the masonry joints.	6 & 17) Remove vegetation
16) Missing masonry and water seepage.	16) Replace masonry
24) Improved fencing required south west end.	24) Replace and extend fencing.

Maintenance Summary

H	
M	6, 17,
L	2, 16, 24



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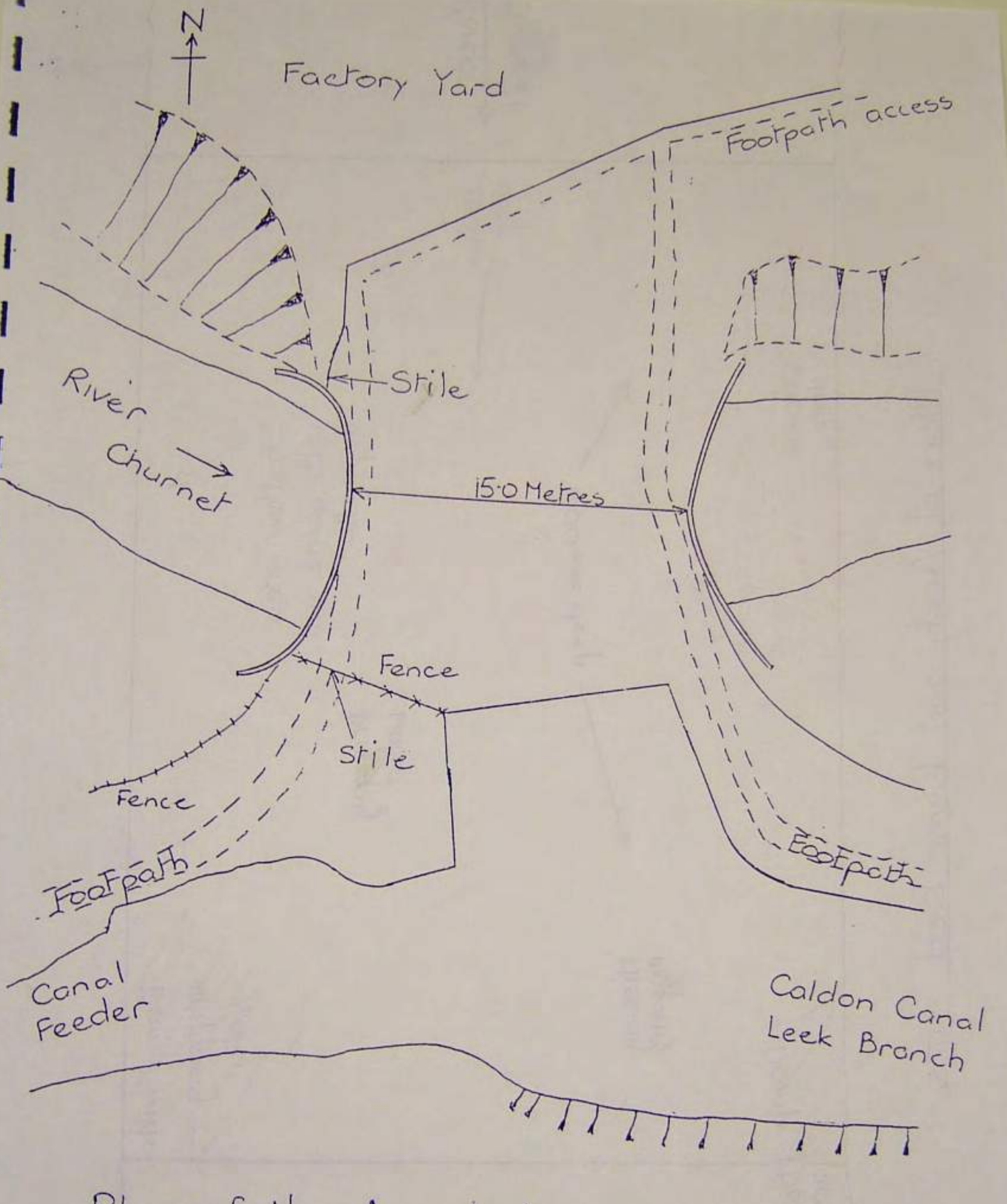


Plan of the Aqueduct

Scale 1/250

Diagram 1

involving an annual payment, usually allow free access over the land, but may carry restrictions to protect the interests of the owner if necessary.

8.20 Management agreements under the Wildlife and Countryside Act (1981) provide another mechanism for securing access or other countryside provisions such as nature conservation. They allow payments towards the cost of managing land, either for nature conservation, enhancing its natural beauty or promoting its enjoyment by the public. Recreational provision may also arise from development proposals. Legal agreements under the Town and Country Planning Act, 1990, can be made between developers and the Local Authority to secure the best use of land for public recreation or amenity.

R10 THE DISTRICT COUNCIL WILL ENCOURAGE, PROVIDE AND MANAGE APPROPRIATE ACCESS TO WIDER AREAS OF COUNTRYSIDE.

8.21 Sites for intensive countryside recreation uses, such as Country Parks, play an important part in rural recreation. They can act as a focus for means of transport, provide related facilities, and be a starting point for walks into the wider countryside and other activities. They form part of a hierarchy of rural recreation spaces and can channel demand from more sensitive sites. They can also act as 'gateways' giving people more confidence to venture into the wider countryside. Management is often crucial to minimise conflict between differing objectives and interests such as nature conservation, environmental education and provision of recreational facilities.

R11 THE DISTRICT COUNCIL WILL ENCOURAGE AND, SUBJECT TO RESOURCES, HELP PROVIDE RECREATION SITES, DEVELOPED AND MANAGED TO ACT AS "GATEWAYS" TO THE WIDER COUNTRYSIDE.

The Caldon Canal

8.22 The Caldon Canal runs from Stoke-on-Trent, via Endon and Cheddleton to Froghall in the heart of the Churnet Valley. A short branch runs from Hazelhurst Locks, just west of Denford, via a length of tunnel, to Leek. The canal was improved during the 1980 to 'Touring' standard.

8.23 Boating as a recreational past-time has become increasingly popular on the Caldon Canal. However, this trend is constrained due to a lack of moorings and associated facilities such as sanitation blocks, water supply points and accessible shops.

8.24 Securing the provision of extra facilities along the canal may result in problems. The canal lies within the North Staffordshire Green Belt; limiting the scale and use of any recreational development (a permitted Green Belt use). The conflict between increasing visitor facilities and nature conservation will need to be given due consideration, especially as the natural environment is one of the most appealing aspects of the canal. Access to the canal is limited with suitable access points generally only being available where the canal passes through villages. Endon and Froghall have some form of facility provision and Cheddleton seems the logical place for the location of suitable facilities.

8.25 The Leek arm of the canal suffers similar problems and the search for a suitable site should be concentrated on the Leek end, giving a destination to the branch and a place to moor and visit Leek.

R12 ALONG THE CALDON CANAL THE DEVELOPMENT OF VISITOR MOORINGS AND ASSOCIATED FACILITIES INCLUDING PARKING PROVISION, SANITATION BLOCKS INTERPRETATION FACILITIES AND PROVISION OF FOOD AND FUEL WILL BE GIVEN SYMPATHETIC CONSIDERATION PROVIDED THAT THEY ARE LOCATED WITHIN VILLAGE DEVELOPMENT BOUNDARIES OR WITHIN EXISTING GROUPS OF BUILDINGS AND ARE IN KEEPING WITH THEIR SURROUNDINGS IN DESIGN AND SCALE.

APPENDIX 5

Indicative Flood Plan

Environment Agency

ENVIRONMENT AGENCY

Date: 29/06/04

Ms Kate Lynch
British Waterways
Operations
Wales and Border Counties,
Navigation Road
Northwich
Cheshire
CW8 1BH

British Waterways
Dyfrffyrdd Prydain
- 2 JUL 2004
Wales & Border
Cymru a'r

FAO Kate Lynch

Dear Ms Lynch

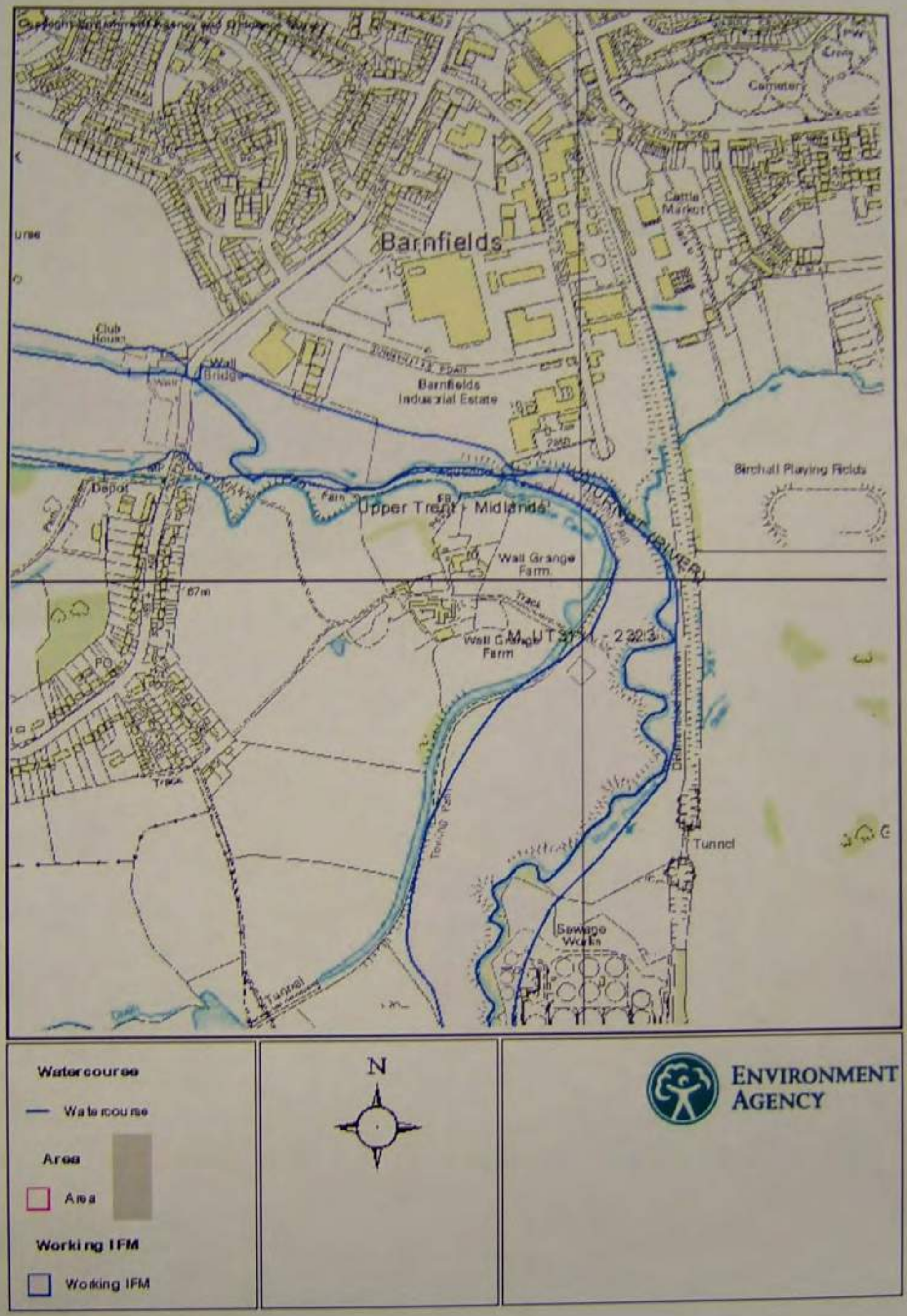
RE: Caldon Canal Study, Leek, Staffordshire

Please find enclosed the requested flood map information for the area at Barnfields, Leek, Staffordshire.
I hope this helps, please do not hesitate to contact us if you require further information.

Yours Faithfully

Nikki Shepherd
Development Control Officer
Direct Dial: 01543 404898

Environment Agency
Sentinel House, 9 Wellington Crescent, Fradley Park, Lichfield WS13 8RR
Tel: 08708 506 506 Fax: 01543 444161


Barnfields
Cemetery
Cattle Market
Club House
Wall Bridge
Barnfields Industrial Estate
Depot
Upper Trent - Midlands
Wall Grange Farm
Birchall Playing Fields
67m
Tunnel
Sewage Works
Watercourse
Watercourse
Area
Area
Working IFM
Working IFM
N
ENVIRONMENT AGENCY

APPENDIX 6

Extracts from ‘Caldon Canal Conservation Area’
Staffordshire Moorlands District Council


CALDON CANAL
STOKE-ON-TRENT
STAFFORDSHIRE
BOUNDARY
DISTRICT
Longsdon
Dunwood
Endon
Endon Bank
Stanley
Stockton Brook
Bagnall
Rownall
Wetley Rocks
Cheddleton
Cheddleton Heath
Leekbrook
Basford Green
Basford Grange
Ashcombe Park
Churnet Grange
Flint Mill (Mus)
Werrington
Cellarhead
Wetley Abbey
Consall
Consall Wood
Consall Hall
Ipstones
Hazlescross
Bradnop
Birchall
Middle Cliff
Morridge Side
Dowe Hill
Ballington Grange Fm
Sheephouse Fm
Laddedge
Horse Bridge
Denford
Shaffalong
Tompkin
Westwood Manor (Sch)
Rownall Fm
Wetley Moor
Withystakes
Overmoor
Blakeley Lane
Broadoak
Hollins
Kingsley Moor
Railway Museum
Ipstones Edge
Staffordshire Moorlands Walks
Staffordshire Way
CALDON CANAL CONSERVATION AREA
Not to scale

Caldon Canal Conservation Area

Introduction

Purpose of this document

This document aims to explain the reasons for and effects of the designation of the Caldon Canal as a Conservation Area. Its main purpose is as a supporting document in determining planning applications. The document will primarily be of interest to those involved in the development process, i.e. officers and members of Staffordshire Moorlands District Council and those who live, work or have land or property interests in the area and their agents. It is not intended to present a detailed historical account of the area nor to present a tourist's guide to the area in this document.

Why the Caldon Canal is a Conservation Area

The Canal is of special importance as an example of technical innovation in engineering and as a major linear transport route which influenced the industrial history of the surrounding area. The area alongside the Canal still contains many reminders of its industrial history and retains a strong sense of character.

As well as being of historic interest, the Canal is also an attractive feature in its own right and passes through scenic countryside of rolling hills and wooded valleys and past attractive groups of buildings.

It is this special historic character and appearance which the designation as a Conservation Area seeks to preserve and enhance.

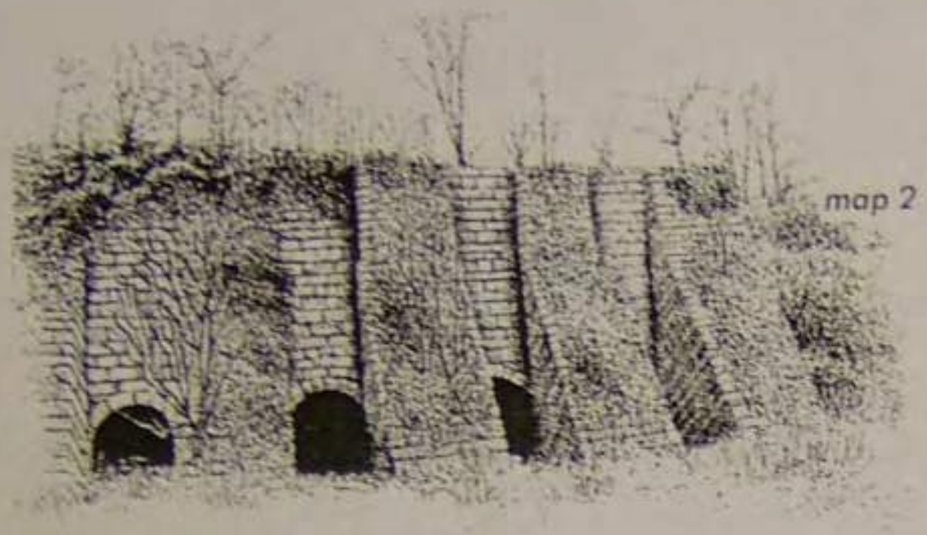
Area of designation

Within the Staffordshire Moorlands, the Canal extends from Stockton Brook to Froghall. The Leek branch of the Canal extends from Hazelhurst to Leek. The entire length of both sections is included in the Conservation Area (see Location Map at the front of this document). The boundary closely follows the line of the Canal itself and the towpath (for further details see Boundary Maps at the back of this document).Where there are buildings or spaces which contribute to its character or appearance, these have been included together with their curtilage. English Heritage's guidance on the inclusion of unlisted buildings in Conservation Areas advises that if any one of the following criteria are met, a building may be included. The building:-

1) is characteristic of the Conservation Area in terms of use or appearance,
2) is within the setting of a listed building,
3) illustrates the development of the settlement or an earlier phase of growth,
4) has an historic connection,
5) has a landmark quality,
6) has a publicly accessible interior of merit.

Each property is justified accordingly in the Character Appraisal on pages 2 to 10.

flint grinding for the pottery industry. Lime burning for building and fertilisers became larger in scale and numerous kilns appeared alongside the Canal. In the mid nineteenth century the Canal was also used for the transportation of ironstone and coal.



map 2

The idea for a canal link to Leek to take cheaper coal was first discussed in 1773 but the scheme did not materialise. Some twenty years later, following the canal company's decision to build a reservoir at Rudyard, local land owners demanded that as a condition for allowing the feeder channel to pass across their land, a navigable branch to Leek be built. The consultant engineer was John Rennie and in 1802 the Leek branch opened. Traffic was light, mainly coal, and ended in the late 1930's. The route was then abandoned under a London, Midland and Scottish Railways Act of 1944.

On the main branch, following the decline of traffic in the inter war years, commercial use of the Canal ceased in the early 1950's and it fell into disuse. In the 1960's efforts began by the Caldon Canal Society, Staffordshire County Council and Stoke on Trent Council to restore both branches of the Canal. In the early 1970's restoration by the British Waterways Board and aided by volunteers was completed and it is used today by pleasure boats and walkers.

Main Branch:

map 1 **Stockton Brook to Hazelhurst**

The Caldon Canal enters Staffordshire Moorlands from the boundary with the City of Stoke-on-Trent to the west of Stockton Brook. The landscape here is open with fields rising away from the north bank of the Canal. Passing an attractive red brick pumping station (included for its historic connection and landmark quality), the route passes under the railway and under a bridge of dark brown brick with stone copings which carries the A53. Adjoining pieces of land are overgrown and unkempt. The Canal ascends 12 metres through a flight of locks at Stockton Brook up to its summit level of 148 metres above sea level. Beyond the A53, the route narrows with trees overhanging the water.

The Canal then enters a green open space, bordered on the north by a small area of land backed by rear gardens and to the south by a golf course rising gently away from the Canal. The stone built Stanley Road bridge and the adjacent lock flanked by stone setts forms a focal point in the landscape, surrounded by an attractive grouping of buildings (included for their historic connection) - the red brick stables and the white painted Lock Keepers Cottage. The towpath runs alongside the southern edge of the Canal.

Mayfield, a red brick house which has an imposing frontage to the Canal, is currently vacant and boarded up. From the bridge, it is prominent and detracts from the otherwise tidy environment but has been included for its landmark value and probable historic connection. From the east of Stanley Road bridge, the Canal becomes wooded and enclosed. From this viewpoint, Mayfield is well-screened by high trees and can only be glimpsed. A cast iron milepost stands on the north bank of the Canal.

Heading north-east, the Canal straightens; Its towpath is now along the northern edge and views of the landscape widen. The Canal is bordered by open fields. Views to the hills to the north-east are obtained. On the east bank and excluded from the Conservation Area are some modernised and altered cottages and a new dwelling in suburban style. On the west bank is another cottage which has been altered and is also excluded.

map 3 The white painted bridge further on is in need of repainting, particularly on its underside. Beyond this, near Post Lane, Endon, are the well-used moorings of Stoke Boat Club, the site of former trans-shipment sidings. The presence of brightly painted narrowboats adds colour to the scene

At this point, the Canal heads eastwards and presents open views across the rooftops of Endon to the hills to the north-east. The character here is a mixture of suburban and rural scenery. To the south a wooded hillside rises away from the Canal behind the garden of a suburban-style bungalow.

Walking - the Council will consider the publication of a canal walk.

Cycling - the Council will consider the creation of a cycle route along the Canal so long as this can be provided safely and without prejudice to walkers and other users of the Canal.

Boating facilities - the Council will encourage the provision of facilities for boat users, subject to the policies of the Staffordshire Moorlands Local Plan. These facilities might include visitor moorings, parking provision, sanitation blocks, interpretation facilities and the provision of food and fuel. The Staffordshire Moorlands Local Plan suggests Cheddleton as the most suitable location for such facilities.

Public art - the potential for introducing public art either in its own right or as an element in the visitor facilities listed above will be investigated.

Design and Development Strategy

Policy
The Staffordshire Moorlands Local Plan sets out the planning policies by which planning applications will be determined throughout the district. Those considering submitting a planning application are urged to consult this document first.

The whole of the Caldon Canal (other than a short length in Cheddleton) lies within open countryside where there is a presumption against development unless it is essential to agriculture, forestry or other uses appropriate to a rural setting.

Most of its length also lies within the Green Belt where there is a presumption against inappropriate development.

The Special Landscape Area covers the Canal from Endon to Froghall. This designation requires that development does not adversely affect the high quality of the landscape and that development permitted there is of a high standard of design.

Furthermore, a number of Nature Conservation sites also impose restrictions on development.

Notwithstanding these restrictions on the principle of development, there will be circumstances in which development is allowed. The aim of this strategy is to provide design guidance for anyone considering submitting a planning application in the Conservation Area. The general principles of good design are set out in the Council's 'Design Principles for Development in the Staffordshire Moorlands' which applicants are also advised to consult. Applicants are urged to contact:-
The Directorate of Development Services at Staffordshire Moorlands District Council before submitting an application.

New development
Development in the Conservation Area should:-

'Preserve or enhance the appearance or character of the area and be in sympathy with it in terms of scale, siting, alignment, mass, design, colour and materials.'

- the proposed use, including any activity generated by it, should not harm the character or appearance of the Conservation Area.
- buildings should be capable of conversion without significant alteration, extension or rebuilding.
- buildings should be capable of conversion without the need for intrusive service provision, including access, or curtilage.
- their form, bulk and general design should be in keeping with their surroundings.
- maximum use should be made of existing openings and their character retained and the number of new ones should be minimised.
- provision should be made for the retention of protected species which could otherwise be displaced.

Demolition

The demolition of most buildings/structures in a Conservation Area requires consent. Applicants should take into account the requirements of the Staffordshire Moorlands Local Plan. This states that consent will only be granted for demolition where all reasonable efforts have been made to sustain existing uses or find viable new uses and these efforts have failed. The Council will require proof that these criteria have been met. Consent is also required for the demolition of certain gates, walls, fences and railings in a Conservation Area.

References

P.Lead 'The Caldon Canal and Tramroads', Oakwood Press (1990).

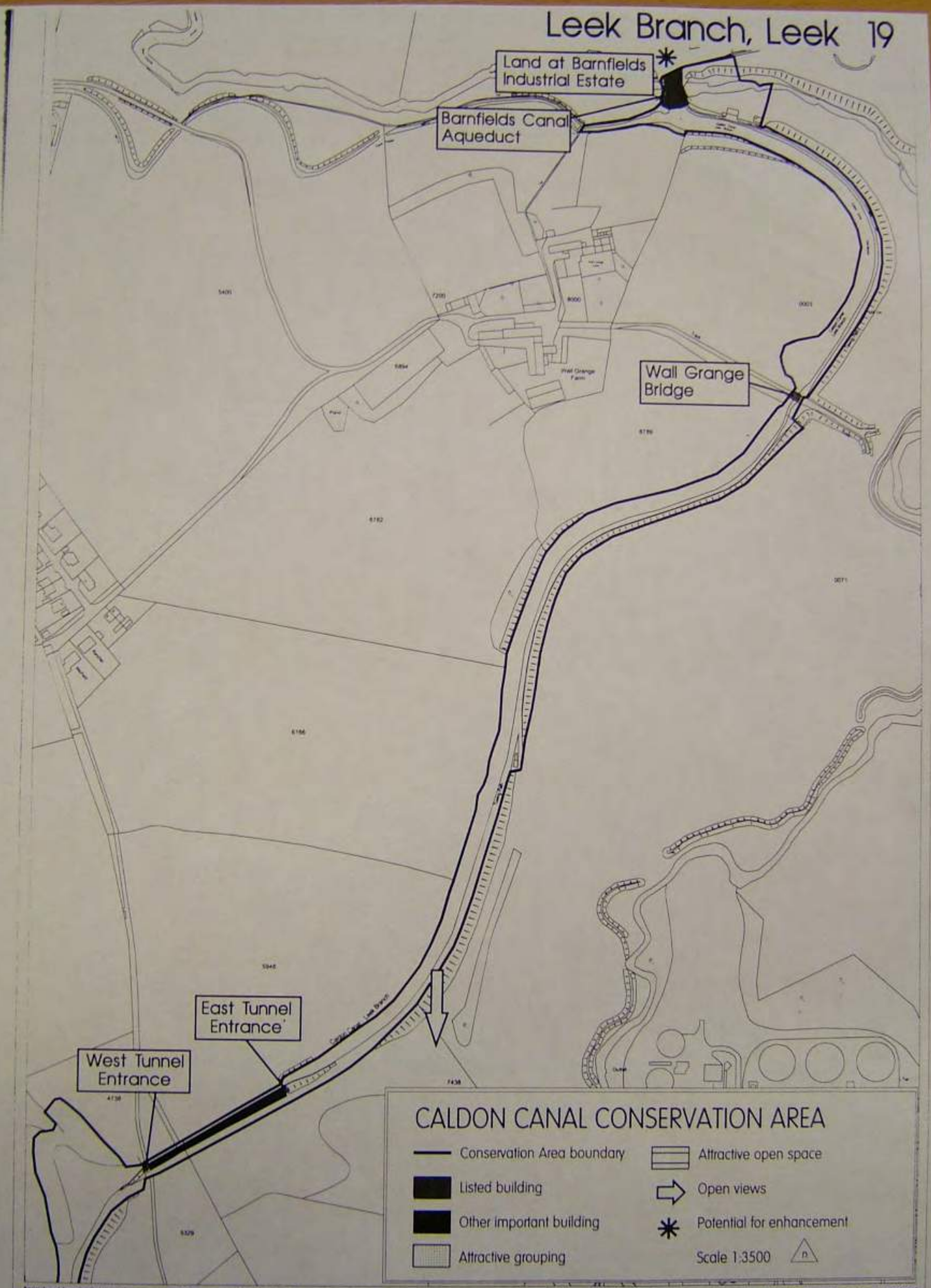
Staffordshire Moorlands District Council and Staffordshire County Council 'The Industrial Archaeology of the Churnet Valley' (1993).

Staffordshire Moorlands Local Plan (Deposit) November 1994.

Staffordshire Moorlands District Council 'Design Principles for Development in the Staffordshire Moorlands'. Supplementary Planning Guidance 1996.

C.Hadfield 'The Canals of the West Midlands'.

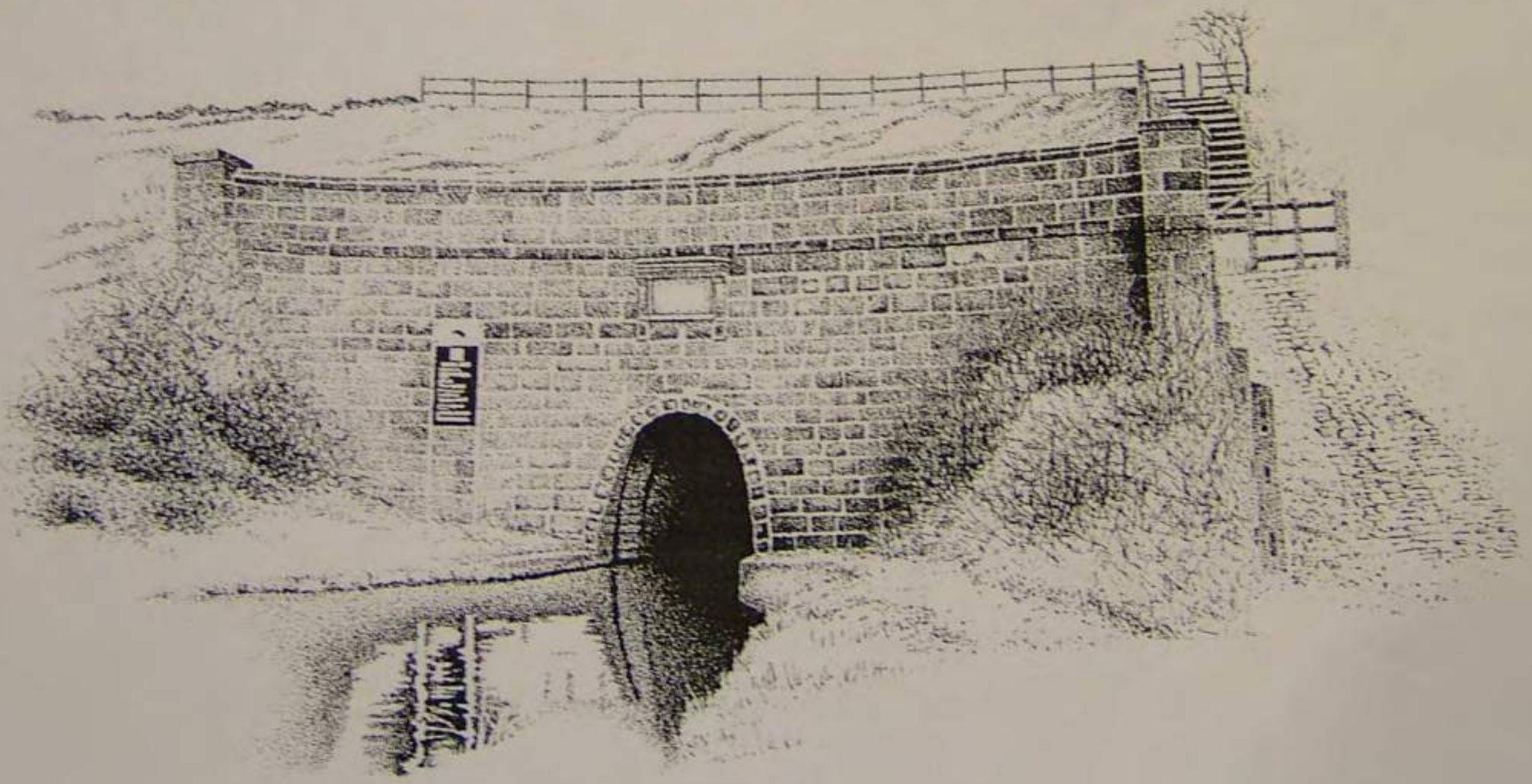
R. Hamilton 'The long lost line to Uttoxeter' in Waterways World (April, 1995).



STAFFORDSHIRE
moorlands
DISTRICT COUNCIL

Directorate of Development Services

Caldon Canal Conservation Area



What it means

Control over development

The designation of a Conservation Area introduces additional controls over:-

1) the location and design of new development
2) the size of extensions for which planning permission is needed
3) certain minor works (e.g. curtilage buildings, roof alterations, cladding, satellite dishes)
4) demolition of buildings, gates, walls, fences and railings
5) work to trees
6) advertisements

For further details, see 'Design and Development Strategy' on page 12.

In addition, the Council may, if it so wishes, place an Article 4(2) Direction on selected properties within the Conservation Area requiring that certain external alterations to a building will also need planning permission, such as new doors or windows, painting or rendering of the exterior and the erection of boundaries.

Most importantly, the Council may grant planning permission only for development which preserves or enhances the special character of the Conservation Area, in accordance with the policies in the Staffordshire Moorlands Local Plan. This special character is described later in the Character Appraisal.

Before carrying out any works to a building, land or trees in the Conservation Area, it is essential that the Directorate of Development Services at Staffordshire Moorlands District Council is consulted. The Directorate can provide further information on any of these matters and can offer advice on the principle and design of proposed development and the repair of old buildings and historic features.

Enhancement

Conservation Area status also means that the Council can offer grant aid for the repair of certain threatened buildings in the area. The improvement of unsightly areas within the Conservation Area can also attract grant aid. As funds become available, the Council will prepare enhancement schemes for those areas where this is considered necessary. Such schemes will be subject to public consultation. For further details see 'Enhancement' section on page 10.

Who to contact

For further advice contact the Building Conservation Section on 01538 483575.

Character Appraisal

Introduction

The following character appraisal aims to identify the special character of the Conservation Area, to provide a basis for:-

a) The implementation of the policies in the Staffordshire Moorlands Local Plan which influence the determination of planning applications.
b) The preparation of enhancement schemes.

The appraisal follows the route of the Conservation Area from north-west to south-east, dividing it into areas of different character. It combines a landscape analysis, i.e. the elements which give the Canal its unique character or detract from it and a brief analysis of its historical development.

Development

The main branch of the Canal was originally built to serve the quarries at Cauldon Low and provide a water supply to the Trent and Mersey Canal. It was promoted by John and Thomas Gilbert, the quarry operators, and was initially surveyed by the engineer James Brindley, responsible for the Trent and Mersey Canal, but he died shortly afterwards. The survey and planning is thought to have been completed by John Rennie and the Canal is believed to have opened in 1778. It had a dramatic influence on the character of the Churnet Valley, acting firstly as a catalyst for the new industries and subsequently for recreational use.

The new transport link to the Potteries meant that many of the existing textile mills in the Churnet Valley were able to convert to

Note

Froghall to Uttoxeter Canal

In 1811 the construction of a canal from Froghall to Uttoxeter was completed, to serve the collieries at Kingsley and transport copper and brass from the works at Oakamoor and Alton. Use of this canal was short lived and ended in 1847 following the building of the railway which, for some of its length, covers the canal. Within the Staffordshire Moorlands, the Canal runs from Froghall Wharf to Crumpwood, near Alton. A recognisable linear route still exists although for most of its length water is no longer present. Fragments of water and features associated with the canal, some of which are archaeological sites, still remain. These include:-

Weirs at Crumpwood, Alton and Oakamoor (bridge at Oakamoor is listed)
Mill at Alton
Railway Station, bridge and steps at Alton (listed)
Lord's Bridge, Alton (listed)
Remains of bridge, Cricketer's Arms, Oakamoor
Disused lock on section between Froghall and Oakamoor

However these are dispersed and the route is not characterised by any notable groups of buildings. For this reason it is considered that this stretch no longer displays the degree of special architectural and historic character which would justify its inclusion in the Caldon Canal Conservation Area and it has therefore been omitted.

Leek Branch

map 5 The Leek branch leaves the main canal at Hazelhurst Junction, just above the series of three locks, departing in a southeasterly direction. The Leek branch crosses over the main canal at *map 6* Hazelhurst Aqueduct and then passes over the railway on a lesser aqueduct. On its south bank is a property known as Meadowcroft (included as characteristic of the Conservation Area). The Canal then passes under a stone road bridge at Denford and past a red brick Victorian villa known as 'Waterside', included for its landmark quality.

map 7 Heading past a number of large waterside dwellings and private moorings, the Canal turns northwards to the stone Horse Bridge and on to the stone road bridge at Sutherland Road. It then meanders through a belt of attractive mixed woodland and over another stone accommodation bridge before the view opens out *map 17* across the valley towards the 1300 foot high plateau of Morridge in the distance to the east. On the west bank, a steep slope adjoins the Canal and the towpath now becomes much wider.

map 18 Suddenly, the Canal enters a remote pool, enclosed by gentle hillsides. The only means of continuing the route to Leek was the construction of a 130 yard long, single bore tunnel. The pool is a waiting and turning area for boats queuing to use the tunnel. The listed tunnel is fronted at either end by an ornate portal of red sandstone. The route for pedestrians crosses over the top of the tunnel and the towpath then narrows again. The water tower rising above the steep, wooded grounds of St. Edward's Hospital at Cheddleton forms a focal point in the scene looking south.

Shortly after passing under a listed bridge of red sandstone which leads to Wall Grange Farm, the Canal passes the final turning point for boats. The Canal once finished its route at a terminal wharf in Leek itself, now the site of Barnfields Industrial Estate. The aqueduct which carried it over the River Churnet remains and is now listed.

A narrow feeder from Rudyard Lake enters the Canal at this point. The final stretch of the Canal was later abandoned under changes to the canal system in 1944 and the route now ends abruptly at the Barnfields Industrial Estate, the noise and activity in stark contrast to its quiet, scenic route.

Enhancement

The Council has a duty to prepare schemes of environmental enhancement for its Conservation Areas. The Caldon Canal is characterised by its overall high quality of both the built environment and the natural environment. However, there are small sites along its length which could be improved. In addition to preserving and enhancing the Canal and its setting, this would also improve the recreational and tourism potential of the Canal in line with other Council objectives. Some suggestions for future schemes are given below. Detailed schemes may be prepared at a later date subject to committee approval and public consultation.

The improvements suggested will require action by several different organisations as well as by individuals. Grant aid from a variety of sources and co-ordinated by the Council may be made available to help secure some of the improvements.

Vacant and under-used buildings

The continued use of buildings helps keep them in good repair a adds to the vitality of an area. The Council may make available present or new owners grant aid for the structural repair of su buildings and will encourage their re-use.

The following buildings are currently noted vacant or under-us and have been identified as important to the character of t Conservation Area:-

Mayfield, Stanley Road, Stockton Brook.
Consall Flint Mill, Consall New Locks.

Poor quality buildings and land

Some buildings and areas adjacent to or within the Conservatio Area detract from its character or appearance. Areas of poor quali buildings and land can be screened or softened through appropria planting and hard landscaping. The Council will encourage th landscaping and tidying of such areas which are visible from the Canal. Those sites which have been identified as suitable for such treatment are:-

Land between Cheadle Road and Basford Bridge, Cheddleton.
Land in the vicinity of Froghall Tunnel, Froghall.
Land at Barnfields Industrial Estate, Leek.
Parking area at Consall Forge.
Car park at Post Lane, Endon.
Land adjoining A53, Stockton Brook.
Former Flintlock Restaurant, Cheddleton.

Maintenance and repair

The appearance of a Conservation Area depends on regular maintenance and repair of buildings, structures and other features within it. Those buildings and structures which are listed by the Department of Culture, Media and Sport as being of special architectural or historic interest may be eligible for grants for structural repair. These are shown on the attached maps. Other buildings or features, such as dry stone walls, which make a contribution to the character or appearance of the Conservation Area may be eligible for grants for structural repair at the discretion of the Council.

Siting or location of new buildings:-

- should form part of a group of buildings rather than stand in isolation.
- should maximise views of and from the Canal.
- existing landscape features such as trees, hedges and walls should be retained for screening.
- should provide direct access to the towpath.
- car parking areas should not be sited adjacent to the Canal or to road frontages.

Alignment or positioning of new buildings:-

- should create a strong sense of enclosure.
- should relate to that of existing buildings where in a group.
- should be parallel to the Canal with elevations either directly onto, or close to, the water or the towpath.
- the plan of the building should reflect the simple plan of existing buildings.

Mass or form of new buildings:-

- should reflect the mass or form of those buildings in the immediate locality, whether these are the larger wharf or mill buildings or the smaller canalside cottages. This applies to the volume of the building and roof pitch.
- a minimum of two storeys or the equivalent height is required; single storey buildings will be resisted.
- roof pitches should reflect those of existing buildings.

Scale of new buildings:-

- should also reflect the scale or proportions of those buildings in the immediate locality.
- door and window openings should be in proportion to the form of the building; in general small openings are most appropriate.

Materials/colour of new buildings:-

- red brick or natural stone walls, depending on immediate locality.
- Staffordshire blue clay tile roofs.
- timber windows; a white or light coloured paint finish is the most appropriate for domestic buildings, a stained finish may be appropriate for agricultural or commercial buildings.
- new cladding, rendering or painting of existing brick or stone will be resisted.
- surfacing should be in traditional natural materials such as stone setts or blue clay paviours.

Architectural style of new buildings:-

This guidance does not intend to prescribe a particular architectural style, but rather to show the main considerations for each element of the design. The Canal bears many styles, from the simple, squat, low stone farmhouses such as Denford Farmhouse to the industrial red brick mill buildings such as Consall Flint Mill to the ornate Victorian architecture of 'Mayfield'. Two design approaches are possible - the design may either replicate past styles or may be contemporary. If replicating past styles it is essential that the design is true to the original in every detail and constructed using traditional materials and techniques. A contemporary style should introduce innovative concepts whilst taking into account the considerations listed above. Whichever approach is taken, it is essential that the design is one of quality which adds to the existing quality of the Canal.

Re-use of old buildings

The best way of preserving historic buildings is to find active and viable uses for them. The scale of buildings along the canal and their attractive location make them suitable for a variety of uses. Applications will, however, be examined very carefully to ensure that the building is suitable for the proposed use and that it will not cause any harm to the character or appearance of the Conservation Area. This applies particularly to proposals for residential use where the creation of a residential curtilage may have a harmful effect on the Conservation Area or the wider landscape. Applicants should consult the section on the 'Conservation of Rural Buildings' in the Staffordshire Moorlands Local Plan. The following criteria should be taken into account:-

APPENDIX 7

Route Options - Outline Costs
Mott Macdonald

British Waterways
Caldon Canal Leek Arm
Feasibility Study Budget Costs

ROUTE OPTION 1
Over existing aqueduct and West towards Wall Bridge

Item	Description	Qty	Unit	Rate	Total	Section Total
	Preliminaries					
A	Establishment, Maintenance & Reinstatement	26	wks	20,000	520,000	
B	Over pumping	26	wks	5,000	130,000	
C	Traffic management	26	wks	1,000	26,000	
D	Add Method related works (Contaminated land)		wks		0	
E	Add Method related works (Back pumping for locks)		wks		0	676,000
	Page 1				676,000	676,000

British Waterways
Caldon Canal Leek Arm
Feasibility Study Budget Costs

ROUTE OPTION 1
Over existing aqueduct and West towards Wall Bridge

Item	Description	Qty	Unit	Rate	Total	Section Total
	Canal					
	Earthworks					
A	Stanking	1	item	15,000	15,000	
B	Excavation & disposal	3,000	m3	50	150,000	
C	Puddle clay lining, 600mm thick	1,500	m3	30	45,000	
D	Tie in to existing canal	1	item	15,000	15,000	
E	Widening prior to and after existing aqueduct	2	item	15,000	30,000	255,000
	Drainage					
F	Longitudinal drain	250	m	35	8,750	
G	Transverse drain, 100m c/c	60	m	35	2,100	10,850
	Pavement					
H	Towpath to 1 side of canal	250	m	120	30,000	30,000
	Structures					
J	Trench sheet piling, 4m long	2,000	m2	150	300,000	
K	Tie rods	168	nr	40	6,720	
L	Re-opening existing aqueduct	240	m2	750	180,000	
M	Locks	2	nr	450,000	900,000	
N	Sewer crossings	1	nr	30,000	30,000	
P	Rubbing strips	500	m	30	15,000	
Q	Bascule footbridge	1	nr	350,000	350,000	1,781,720
	Page 2				2,077,570	2,077,570

British Waterways
Caldon Canal Leek Arm
Feasibility Study Budget Costs

ROUTE OPTION 1
Over existing aqueduct and West towards Wall Bridge

Item	Description	Qty	Unit	Rate	Total	Section Total
	Basin					
	Earthworks					
A	Excavation & disposal	8,000	m3	50	400,000	
B	Puddle clay lining	2,400	m3	30	72,000	472,000
	Pavement					
C	Towpath around perimeter	260	m	120	31,200	
D	Car park	500	m2	75	37,500	68,700
	Structures					
E	Trench sheet piling, 4m long	1,040	m2	150	156,000	
F	Tie rods	87	nr	40	3,480	
G	Rubbing strips	260	m	30	7,800	
H	Mooring points, basin spines	15	nr	3,000	45,000	
J	Service facilities, 15 boats	1	item	310,000	310,000	522,280
	Landscaping					
G	Increased Landscaping costs	2	acres	10%	309,555	309,555
	Page 3				1,372,535	1,372,535

British Waterways
Caldon Canal Leek Arm
Feasibility Study Budget Costs

ROUTE OPTION 1
Over existing aqueduct and West towards Wall Bridge

Item	Description	Qty	Unit	Rate	Total	Section Total
	Page 1 Total - Preliminaries				676,000	676,000
	Page 2 Total - Canal				2,077,570	2,077,570
	Page 3 Total - Basin				1,372,535	1,372,535
	Risk Allowance 10%	4,126,105		10%	412,611	412,611
	Design Development 10%	4,538,716		10%	453,872	453,872
	Land	2	acre	183,750	367,500	367,500
	Capital Cost-landscaping	3,095,550				
	Page 4				5,360,087	**5,360,087**

British Waterways
Caldon Canal Leek Arm
Feasibility Study Budget Costs

ROUTE OPTION 2
Over existing aqueduct and East towards disused railway

Item	Description	Qty	Unit	Rate	Total	Section Total
	Preliminaries					
A	Establishment, Maintenance & Reinstatement	26	wks	20,000	520,000	
B	Over pumping	26	wks	5,000	130,000	
C	Traffic management	26	wks	1,000	26,000	
D	Add Method related works (Contaminated land)		item		0	676,000
	Page 1				676,000	676,000

British Waterways
Caldon Canal Leek Arm
Feasibility Study Budget Costs

ROUTE OPTION 2
Over existing aqueduct and East towards disused railway

Item	Description	Qty	Unit	Rate	Total	Section Total
	Canal					
	Earthworks					
A	Stanking	1	item	15,000	15,000	
B	Excavation & disposal	2,100	m3	50	105,000	
C	Puddle clay lining, 600mm thick	900	m3	30	27,000	
D	Tie in to existing canal	1	item	15,000	15,000	
E	Widening prior to and after existing aqueduct	2	item	15,000	30,000	192,000
	Pavement					
F	Towpath to 1 side of canal	175	m	120	21,000	21,000
	Structures					
G	Trench sheet piling, 4m long	1,400	m2	150	210,000	
H	Tie rods	118	nr	40	4,720	
J	Re-opening existing aqueduct	240	m2	750	180,000	
K	Sewer crossings	3	nr	75,000	225,000	
L	Rubbing strips	350	m	30	10,500	
M	Bascule footbridge	1	nr	350,000	350,000	980,220
	Page 2				1,193,220	1,193,220

British Waterways
Caldon Canal Leek Arm
Feasibility Study Budget Costs

ROUTE OPTION 2
Over existing aqueduct and East towards disused railway

Item	Description	Qty	Unit	Rate	Total	Section Total
	Basin					
	Earthworks					
A	Excavation & disposal	7,500	m3	50	375,000	
B	Puddle clay lining	2,250	m3	30	67,500	442,500
	Pavement					
C	Towpath around perimeter	250	m	120	30,000	30,000
	Structures					
D	Trench sheet piling, 4m long	1,500	m2	150	225,000	
E	Frodingham sheet piling, 7.5m long	375	m2	200	75,000	
F	Tie rods	83	nr	40	3,320	
G	Rubbing strips	250	m	30	7,500	
H	Mooring points, basin spines	15	nr	3,000	45,000	
J	Service facilities, 15 boats	1	item	310,000	310,000	
K	Capping beam	9	m3	200	1,800	667,620
	Landscaping					
L	Increased Landscaping costs	2	acres	10%	202,524	227,524
M	Car-parking	1	item	25,000	25,000	
	Page 3				1,367,644	1,367,644

British Waterways
Caldon Canal Leek Arm
Feasibility Study Budget Costs

ROUTE OPTION 2
Over existing aqueduct and East towards disused railway

Item	Description	Qty	Unit	Rate	Total	Section Total
	Page 1 Total - Preliminaries				676,000	676,000
	Page 2 Total - Canal				1,193,220	1,193,220
	Page 3 Total - Basin				1,367,644	1,367,644
	Risk Allowance 10%	3,236,864		10%	323,686	323,686
	Design Development 10%	3,560,550		10%	356,055	356,055
	Land	2	acre	183,750	367,500	367,500
	Capital Cost-landscaping	2,025,240				
	Page 4				4,284,105	**4,284,105**

British Waterways
Caldon Canal Leek Arm
Feasibility Study Budget Costs

ROUTE OPTION VARIANT 2a
Over new aqueduct towards disused railway

Item	Description	Qty	Unit	Rate	Total	Section Total
	Preliminaries					
A	Establishment, Maintenance & Reinstatement	26	wks	20,000	520,000	
B	Over pumping	26	wks	5,000	130,000	
C	Traffic management	26	wks	1,000	26,000	
D	Add Method related works (Contaminated land)		item		0	
E	Add Method related works (Temp crossing of River Churnet)	26	wks	2,500	65,000	741,000
	Page 1				741,000	741,000

British Waterways
Caldon Canal Leek Arm
Feasibility Study Budget Costs

ROUTE OPTION VARIANT 2a
Over new aqueduct towards disused railway

Item	Description	Qty	Unit	Rate	Total	Section Total
	Canal					
	Earthworks					
A	Stanking	1	item	15,000	15,000	
B	Tie in to existing canal	1	item	15,000	15,000	30,000
	Pavement					
C	Towpath to 1 side of canal	125	m	120	15,000	15,000
	Structures					
D	Aqueduct	550	m2	1,650	907,500	
E	Sewer crossings	1	nr	30,000	30,000	
F	Rubbing strips	250	m	30	7,500	1,045,000
G	Embankment works	1	nr	100,000	100,000	
	Page 2				1,045,000	1,045,000

British Waterways
Caldon Canal Leek Arm
Feasibility Study Budget Costs

ROUTE OPTION VARIANT 2a
Over new aqueduct towards disused railway

Item	Description	Qty	Unit	Rate	Total	Section Total
	Basin					
	Earthworks					
A	Excavation & disposal	7,500	m3	50	375,000	
B	Puddle clay lining	2,250	m3	30	67,500	442,500
	Pavement					
C	Towpath around perimeter	250	m	120	30,000	30,000
	Structures					
D	Trench sheet piling, 4m long	1,500	m2	150	225,000	
E	Frodingham sheet piling, 7.5m long	375	m2	200	75,000	
F	Tie rods	83	nr	40	3,320	
G	Rubbing strips	250	m	30	7,500	
H	Mooring points, basin spines	15	nr	3,000	45,000	
J	Service facilities, 15 boats	1	item	310,000	310,000	
K	Capping beam	9	m3	200	1,800	667,620
	Landscaping					
L	Increased Landscaping costs	2	acres	10%	245,569	270,569
M	Car-parking	1	item	25,000	25,000	
	Page 3				1,410,689	1,410,689

British Waterways
Caldon Canal Leek Arm
Feasibility Study Budget Costs

ROUTE OPTION VARIANT 2a
Over new aqueduct towards disused railway

Item	Description	Qty	Unit	Rate	Total	Section Total
	Page 1 Total - Preliminaries				741,000	741,000
	Page 3 Total - Canal				1,045,000	1,045,000
	Page 4 Total - Basin				1,410,689	1,410,689
	Risk Allowance 10%	3,196,689		10%	319,669	319,669
	Design Development 10%	3,516,358		10%	351,636	351,636
	Land	1	acre	183,750	183,750	183,750
	Capital Cost-landscaping	2,455,689				
	Page 4				4,051,744	**4,051,744**

British Waterways
Caldon Canal Leek Arm
Feasibility Study Budget Costs

ROUTE OPTION 3
Enlarge feeder channel to terminus at A53

Item	Description	Qty	Unit	Rate	Total	Section Total
	Preliminaries					
A	Establishment, Maintenance & Reinstatement	30	wks	20,000	600,000	
B	Over pumping	30	wks	5,000	150,000	
C	Traffic management	30	wks	1,000	30,000	
D	Add Method related works (Contaminated land)		item		0	
E	Add Method related works establish haul route	1	Item	5,000	5,000	785,000
	Page 1				785,000	785,000

British Waterways
Caldon Canal Leek Arm
Feasibility Study Budget Costs

ROUTE OPTION 3
Enlarge feeder channel to terminus at A53

Item	Description	Qty	Unit	Rate	Total	Section Total
	Canal					
	Earthworks					
A	Stanking	1	item	15,000	15,000	
B	Excavation & disposal	6,847	m3	50	342,350	
C	Imported fill	1,283	m3	25	32,075	
D	Puddle clay lining, 600mm thick	1,900	m3	30	57,000	
E	Clay lining, 350mm thick	276	m3	30	8,280	
F	Geotextile lining	1,485	m2	8	11,880	
G	Gabions	1,500	m3	95	142,500	
H	Reinforced earth	4,739	m2	8	37,912	
J	Tie in to existing canal	1	item	15,000	15,000	
K	Re-grading	1	item	15,000	15,000	676,997
	Drainage					
L	Fin drain, 2.5-3.0m deep	150	m	50	7,500	
M	Longitudinal drain	225	m	35	7,875	
N	Transverse drain, 100m c/c	178	m	35	6,230	21,605
	Pavement					
P	Towpath to 1 side of canal	375	m	120	45,000	
Q	Access track	1,875	m2	50	93,750	138,750
	Page 2				837,352	837,352

British Waterways
Caldon Canal Leek Arm
Feasibility Study Budget Costs

ROUTE OPTION 3
Enlarge feeder channel to terminus at A53

Item	Description	Qty	Unit	Rate	Total	Section Total
	Canal (Cont'd)					
	Landscaping					
A	Landscaping	11,250	m2		0	0
	Structures					
B	Trench sheet piling, 4m long	1,500	m2	300	450,000	
C	Tie rods	127	nr	40	5,080	
D	Rubbing strips	375	m	30	11,250	
E	Swing bridge	1	nr	350,000	350,000	816,330
	Page 3				816,330	816,330

British Waterways
Caldon Canal Leek Arm
Feasibility Study Budget Costs

ROUTE OPTION 3
Enlarge feeder channel to terminus at A53

Item	Description	Qty	Unit	Rate	Total	Section Total
	Basin					
	Earthworks					
A	Excavation & disposal	9,000	m3	50	450,000	
B	Puddle clay lining	2,700	m3	30	81,000	531,000
	Pavement					
C	Towpath around perimeter	280	m	120	33,600	33,600
	Structures					
D	Trench sheet piling, 4m long	1,120	m2	300	336,000	
E	Tie rods	93	nr	40	3,720	
F	Rubbing strips	280	m	30	8,400	
G	Mooring points, basin spines	15	nr	3,000	45,000	
H	Service facilities, 15 boats	1	item	310,000	310,000	703,120
	Landscaping					
L	Increased Landscaping costs	2	acres	10%	290,140	315,140
M	Car-parking	1	item	25,000	25,000	
	Page 4				1,582,860	1,582,860

British Waterways
Caldon Canal Leek Arm
Feasibility Study Budget Costs

ROUTE OPTION 3
Enlarge feeder channel to terminus at A53

Item	Description	Qty	Unit	Rate	Total	Section Total
	Page 1 Total - Preliminaries				785,000	785,000
	Page 2 Total - Canal				837,352	
	Page 3 Total - Canal				816,330	1,653,682
	Page 4 Total - Basin				1,582,860	1,582,860
	Risk Allowance 10%	4,021,542		10%	402,154	402,154
	Design Development 10%	4,423,696		10%	442,370	442,370
	Land	2	acre	5,250	10,500	10,500
	Capital Cost-landscaping	2,901,402				
	Page 5				4,876,566	**4,876,566**

British Waterways
Caldon Canal Leek Arm
Feasibility Study Budget Costs

ROUTE OPTION 4
Restore original line into town centre

Item	Description	Qty	Unit	Rate	Total	Section Total
	Preliminaries					
A	Establishment, Maintenance & Reinstatement	52	wks	20,000	1,040,000	
B	Over pumping	52	wks	5,000	260,000	
C	Traffic management	52	wks	1,000	52,000	
D	Add Method related works (Contaminated land)		item		0	1,352,000
	Site Clearance					
E	Demolition of Buildings	1	item	202,000	202,000	
F	Disposal of asbestos	1	item	10,000	10,000	212,000
	Page 1				1,564,000	1,564,000

British Waterways
Caldon Canal Leek Arm
Feasibility Study Budget Costs

ROUTE OPTION 4
Restore original line into town centre

Item	Description	Qty	Unit	Rate	Total	Section Total
	Canal					
	Earthworks					
A	Stanking	1	item	15,000	15,000	
B	Excavation & disposal	6,123	m3	50	306,150	
C	Imported fill	2,291	m3	25	57,275	
D	Puddle clay lining, 600mm thick	585	m3	30	17,550	
E	Geotextile lining	1,073	m2	8	8,584	
F	Tie in to existing canal	1	item	15,000	15,000	
G	Widening prior to and after existing aqueduct	2	item	15,000	30,000	449,559
	Drainage					
H	Fin drain, 2.5-3.0m deep	650	m	50	32,500	
J	Longitudinal drain	650	m	35	22,750	
K	Transverse drain, 100m c/c	140	m	35	4,900	60,150
	Pavement					
L	Towpath to 1 side of canal	650	m	120	78,000	78,000
	Page 2				587,709	587,709

British Waterways
Caldon Canal Leek Arm
Feasibility Study Budget Costs

ROUTE OPTION 4
Restore original line into town centre

Item	Description	Qty	Unit	Rate	Total	Section Total
	Canal (Cont'd)					
	Structures					
A	Trench sheet piling, 4m long	1,300	m2	150	195,000	
B	Tie rods	68	nr	40	2,700	
C	Re-opening existing aqueduct	240	m2	750	180,000	
D	Sewer crossings	4	nr	30,000	120,000	
E	Rubbing strips	975	m	30	29,250	
F	Lifting bridge	2	nr	350,000	700,000	
G	Reinforced concrete canal structure	488	m	3,000	1,464,000	
H	Bascule footbridge	1	nr	350,000	350,000	3,040,950
	Page 3				3,040,950	3,040,950

British Waterways
Caldon Canal Leek Arm
Feasibility Study Budget Costs

ROUTE OPTION 4
Restore original line into town centre

Item	Description	Qty	Unit	Rate	Total	Section Total
	Basin (assumed as option 2 basin)					
	Earthworks					
A	Excavation & disposal	7,500	m3	50	375,000	
B	Puddle clay lining	2,250	m3	30	67,500	442,500
	Pavement					
C	Towpath around perimeter	250	m	120	30,000	30,000
	Structures					
D	Frodingham sheet piling, 7.5m long	1,875	m2	200	375,000	
E	Tie rods	83	nr	40	3,320	
F	Rubbing strips	250	m	30	7,500	
G	Mooring points, basin spines	15	nr	3,000	45,000	
H	Service facilities, 15 boats	1	item	310,000	310,000	
j	Capping beam	45	m3	80	3,600	744,420
	Landscaping					
K	Increased Landscaping costs	2	acres	15%	723,837	748,837
L	Car-parking	1	item	25,000	25,000	
	Page 4				1,965,757	1,965,757

British Waterways
Caldon Canal Leek Arm
Feasibility Study Budget Costs

ROUTE OPTION 4
Restore original line into town centre

Item	Description	Qty	Unit	Rate	Total	Section Total
	Page 1 Total - Preliminaries				1,564,000	1,564,000
	Page 2 Total - Canal				587,709	
	Page 3 Total - Canal				3,040,950	3,628,659
	Page 4 Total - Basin				1,965,757	1,965,757
	Risk Allowance 10%	7,158,416		10%	715,842	715,842
	Design Development 10%	7,874,257		10%	787,426	787,426
	Land	2	acre		cost unknown*	0
	Capital Cost-landscaping	4,825,579				
	*Estimated land costs have not been included for option 4. Land is in multiple ownership within Barnfields Industrial Estate and would be subject to further analysis at detailed design stage.					
		Page 5			8,661,683	**8,661,683**

British Waterways
Caldon Canal Leek Arm
Feasibility Study Budget Costs

ROUTE OPTION 5
Widening of the feeder channel near the existing aqueduct

Item	Description	Qty	Unit	Rate	Total	Section Total
	Preliminaries					
A	Establishment, Maintenance & Reinstatement	18	wks	20,000	360,000	
B	Over pumping	18	wks	5,000	90,000	
C	Traffic management	18	wks	1,000	18,000	
D	Add Method related works (Contaminated land)		wks		0	
E	Add Method related works (Construction access)	1	item	5,000	5,000	473,000
	Page 1				473,000	473,000

British Waterways
Caldon Canal Leek Arm
Feasibility Study Budget Costs

ROUTE OPTION 5
Widening of the feeder channel near the existing aqueduct

Item	Description	Qty	Unit	Rate	Total	Section Total
	Canal					
	Earthworks					
A	Stanking	1	item	15,000	15,000	
B	Tie in to existing canal	1	item	15,000	15,000	30,000
	Structures					
C	Re-opening existing aqueduct	240	m2	750	180,000	180,000
	Page 2				210,000	210,000

British Waterways
Caldon Canal Leek Arm
Feasibility Study Budget Costs

ROUTE OPTION 5
Widening of the feeder channel near the existing aqueduct

Item	Description	Qty	Unit	Rate	Total	Section Total
	Basin					
	Earthworks					
A	Excavation & disposal	4,545	m3	75	340,875	
B	Puddle clay lining	1,350	m3	30	40,500	381,375
	Pavement					
C	Towpath around perimeter	330	m	120	39,600	39,600
	Structures					
D	Frodingham sheet piling, 7.5m long	1,320	m2	300	396,000	
E	Rubbing strips	330	m	30	9,900	
F	Mooring points, basin spines	8	nr	3,000	24,000	
G	Capping beam	30	m3	200	5,940	435,840
H	Service facilities, 8 boats	1	item	310,000	310,000	
	Landscaping					
I	Increased Landscaping costs	2	acres	10%	155,757	180,757
J	Car-parking	1	item	25,000	25,000	
	Page 3				1,347,572	1,037,572

British Waterways
Caldon Canal Leek Arm
Feasibility Study Budget Costs

ROUTE OPTION 5
Widening of the feeder channel near the existing aqueduct

Item	Description	Qty	Unit	Rate	Total	Section Total
	Page 1 Total - Preliminaries				473,000	473,000
	Page 2 Total - Canal				210,000	210,000
	Page 3 Total - Basin				1,347,572	1,347,572
	Risk Allowance 10%	2,030,572		10%	203,057	203,057
	Design Development 10%	2,233,629		10%	223,363	223,363
	Land	1	acre	5,250	5,250	5,250
	Capital Cost-landscaping	1,557,572				
	Page 4				2,462,242	**2,462,242**

Summary

Item	Description	Qty	Unit	Rate	Total	Section Total
	Summary					
A	**ROUTE OPTION 1** Over existing aqueduct and West towards Wall Bridge				5,360,087	**5,360,087**
B	**ROUTE OPTION 2** Over existing aqueduct and East towards disused railway				4,284,105	**4,284,105**
C	**ROUTE OPTION VARIANT 2a** Over new aqueduct towards disused railway				4,051,744	**4,051,744**
D	**ROUTE OPTION 3** Enlarge feeder channel to terminus at A53				4,876,566	**4,876,566**
E	**ROUTE OPTION 4** Restore original line into town centre				8,661,683	**8,661,683**
F	**ROUTE OPTION 5** Widening of the feeder channel near the existing aqueduct				2,462,242	**2,462,242**
	Note:					
	Exclusions Items in bill not priced Contaminated land and ground water Back pumping for locks Land costs, route 4 Items not in bill Allowance for: - Aesthetic work in park, route 1 Vole holes Fencing Treatment of soft spots Diversion of existing services Upgrading of vehicle access to existing aqueduct Service facilities, route 5					

British Waterways
Caldon Canal Leek Arm
Feasibility Study Budget Costs

Summary

Item	Description	Qty	Unit	Rate	Total	Section Total
	Assumptions Land take only measured to canal, basin and car park areas with 5% allowance for licences to other land requirements Size of service facilities assumed to be 30m2 Route 2 - No allowance for slope stabilisation where River Churnet abuts bottom of slope to scrap works Qualifications Quantities and design solutions subject to detailed desk studies and site investigations Basin costs subject to final layout designs					
	Page 2					

FRANKLIN ANDREWS

ESTIMATE SUBMISSION

Job No

212682

Project Title

Caldon Canal Leek Arm

Client

British Waterways

Prepared By

R Inman

Brief Description of Works

Option study for 6 options in total for works to the Caldon Canal in Leek

Special Difficulties of Site

Adjacent services
Adjacent River Churnet
Topography of surrounding land
Current land uses of surrounding land
Established developments, option 4

Basis of Estimate

Measurement of approximate quants and rates from previous projects and price books etc

Current Price - including Summary of Sections

	Works costs	Land costs	
Route 1	4,992,600	367,500	
Route 2	3,916,700	367,500	
Route 2a	3,868,000	183,800	
Route 3	4,866,100	10,500	
Route 4	#VALUE!	#VALUE!	Assessment not made on land costs due to complexities of route. Probably into £+millions
Route 5	2,457,000	5,300	

Level of Estimating

+/- 20%

Exclusions/Qualifications/Assumptions

V.A.T
Professional Fees
Treatment of contaminated land and ground water
Diversion of existing services
Land (Option 4) and Compensation costs
Accommodation Works
Possession Charges
Contingency
Aesthetic work in park (Option 1)
Vole holes
Treatment of soft spots
Back pumping for locks
Upgrading of vehicle access to existing aqueduct

Quantities and design solutions subject to detailed desk studies and site investigations
Basin costs subject to final layouts

Assumed excavation rate will include for disposal of Japanese Knot Weed
Bridge costs as Gloucester and Sharpeness Canal, Fretherne Bridge, Qualter Hall

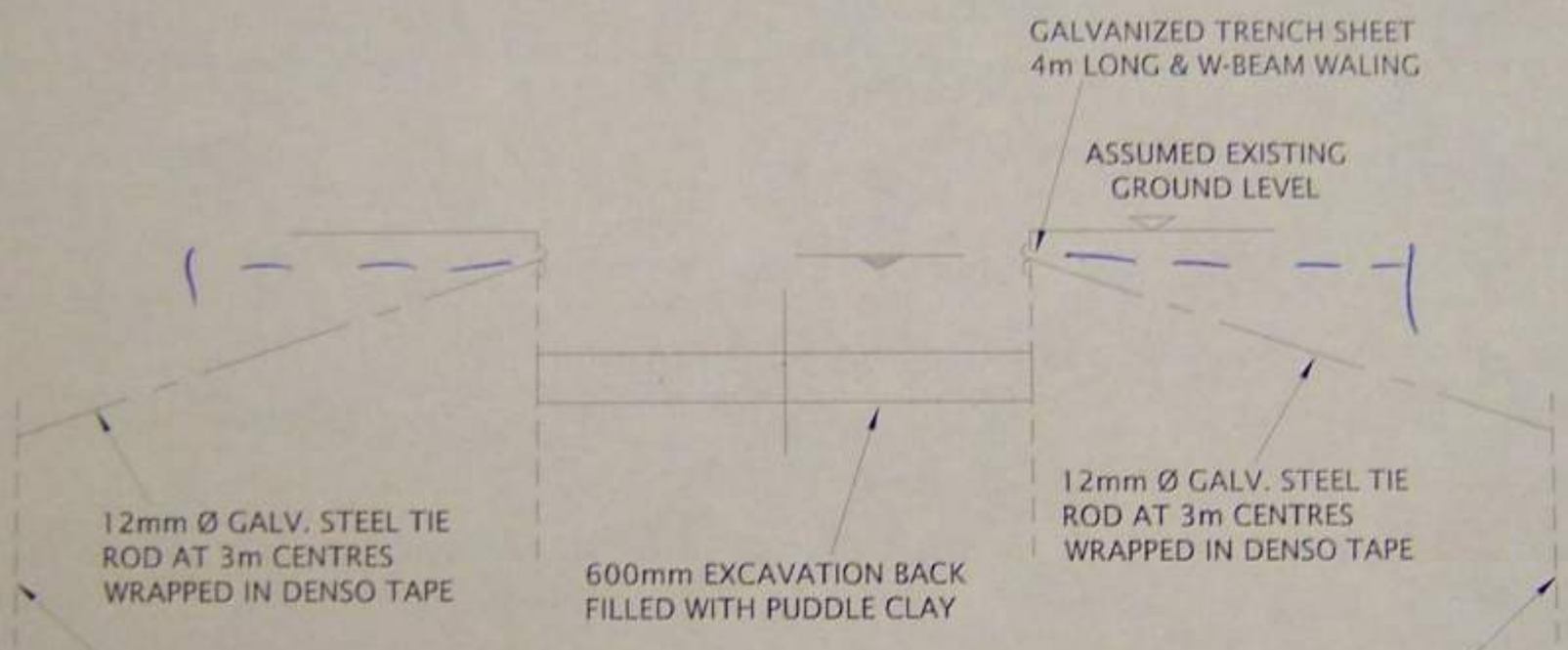
Brief Details of Previous Estimate

N/A

Comments re/Endorsements to Present Estimate

Signed Date

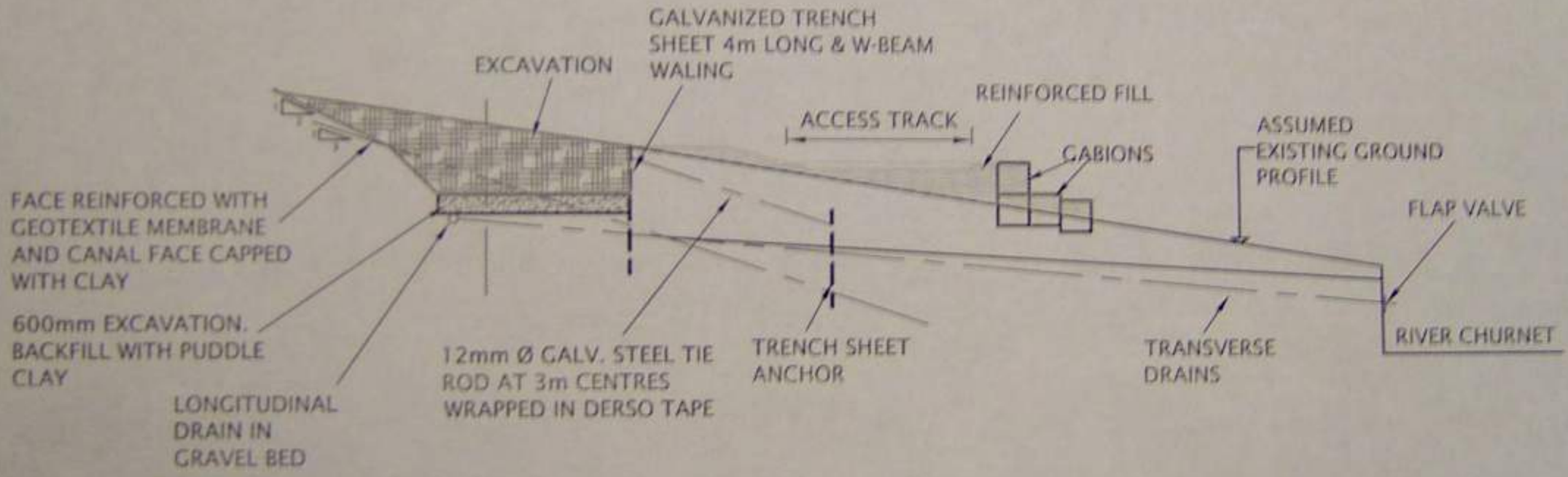
PRELIMINARY



TYPICAL VERTICAL SECTION (ROUTES 1, 2, & 4)

(SCALE 1:100)

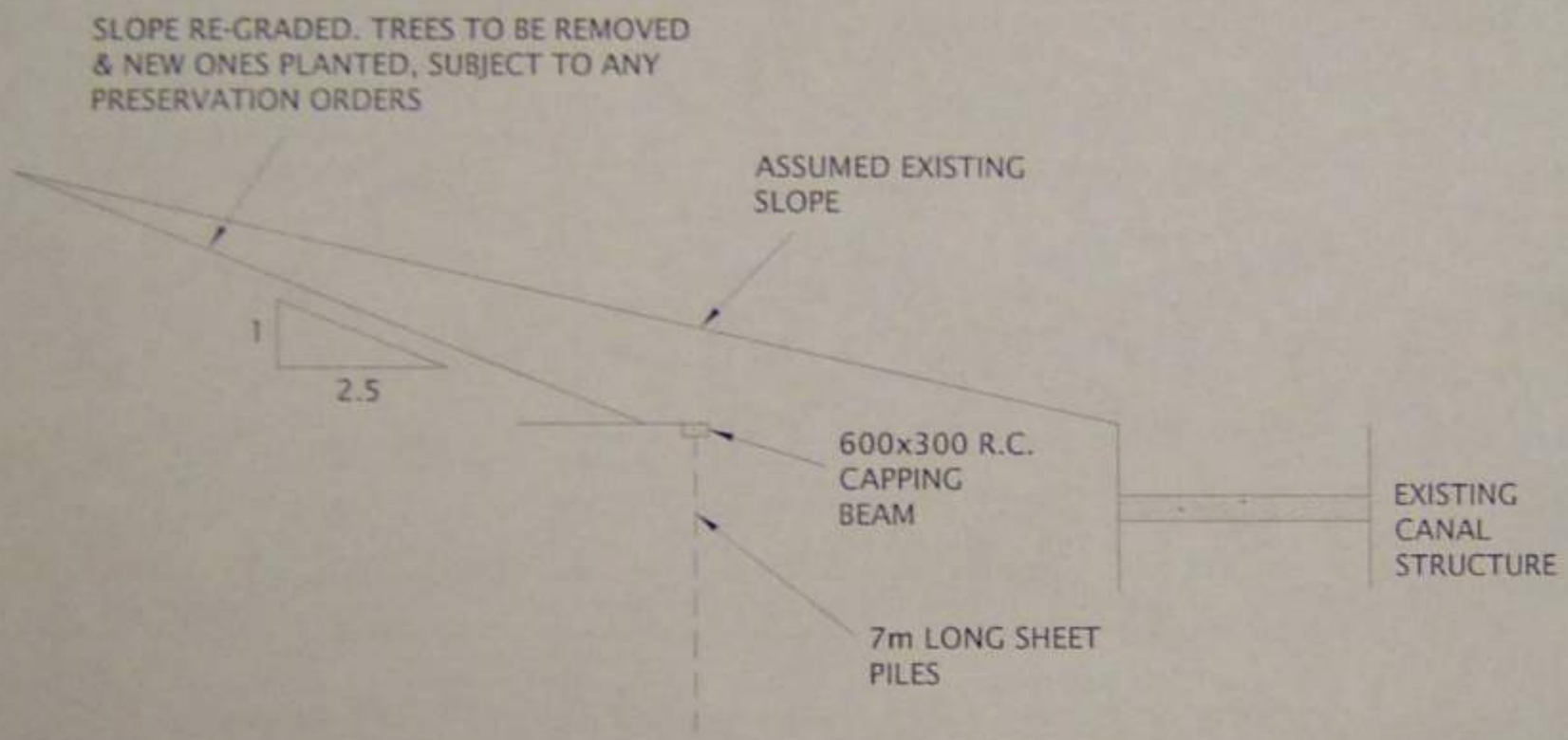
PRELIMINARY



VERTICAL SECTION - SOUTH OF RIVER CHURNET (EXISTING CANAL FEEDER IN PIPE) ROUTE 3

(SCALE 1:200)

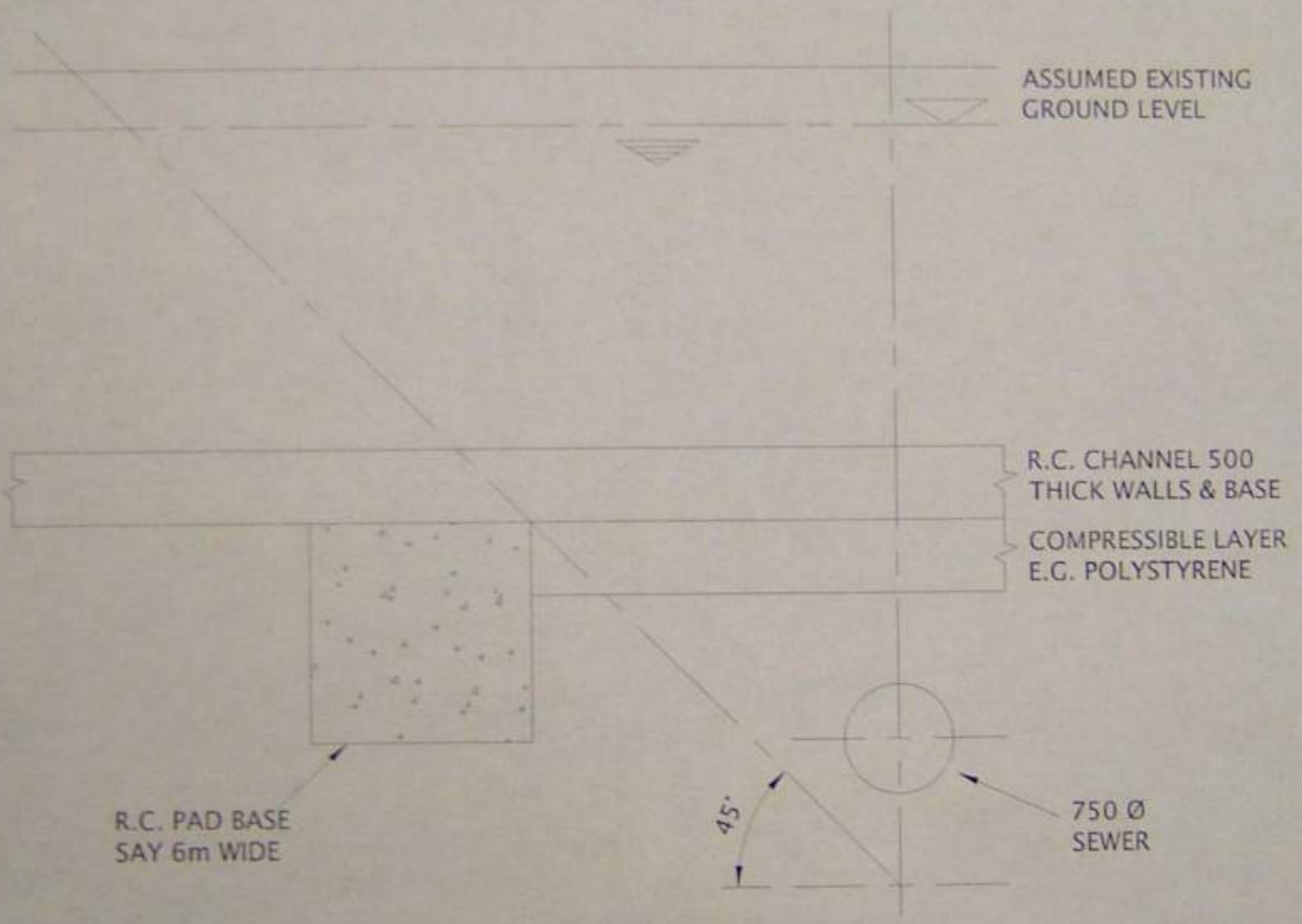
PRELIMINARY



ROUTE 5 - VERTICAL SECTION LOOKING WEST

(SCALE 1:200)

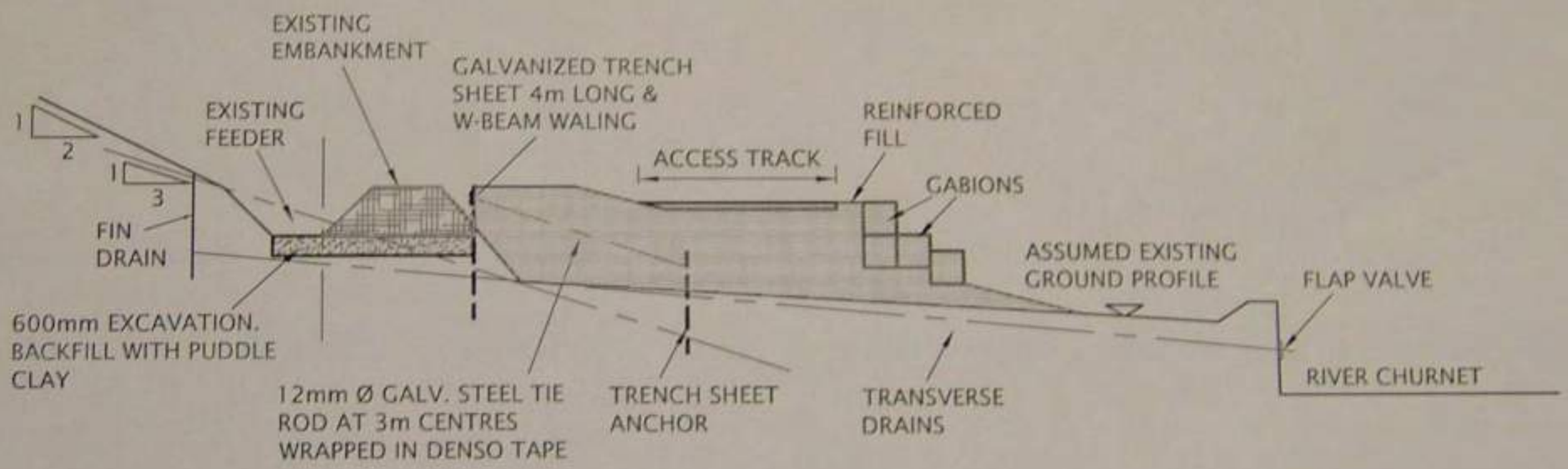
PRELIMINARY



PROPOSED CANAL CROSSING OVER EXISTING SEWER
LONGITUDINAL SECTION ALONG CANAL

(SCALE 1:50)

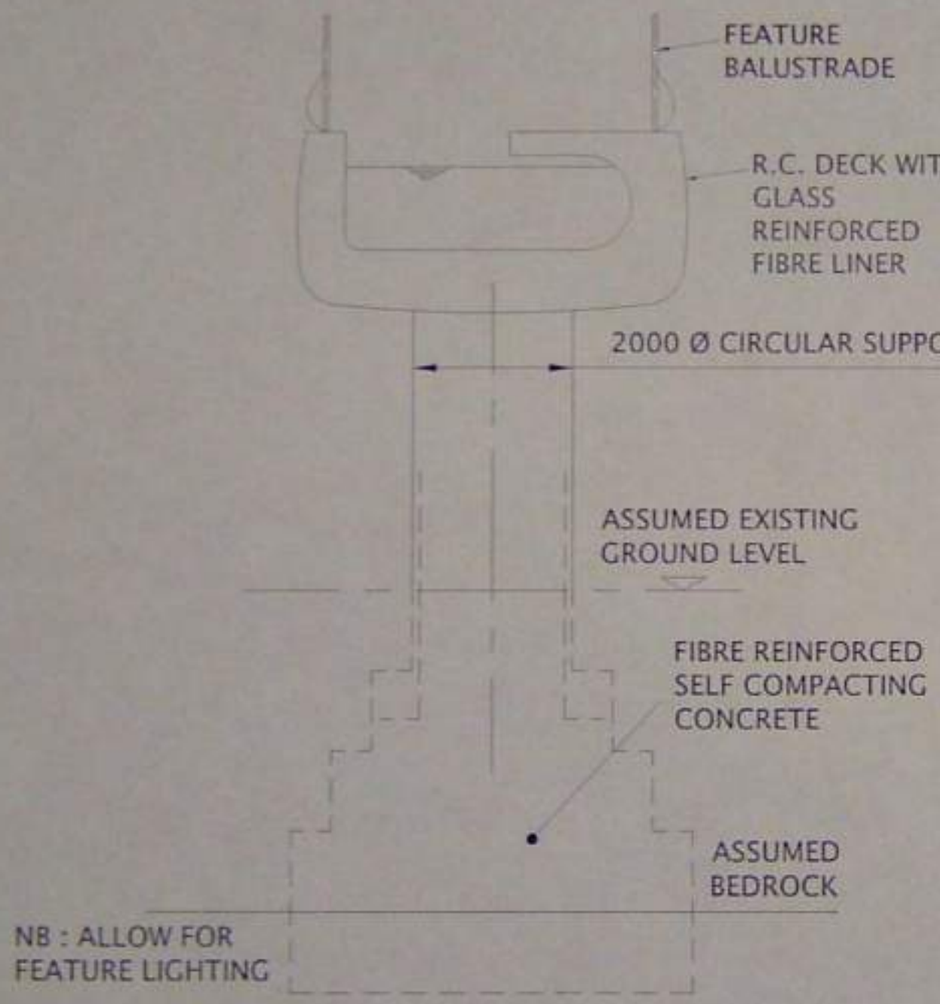
PRELIMINARY



VERTICAL SECTION - SOUTH OF RIVER CHURNET (EXISTING FEEDER IN OPEN CHANNEL) ROUTE 3

(SCALE 1:200)

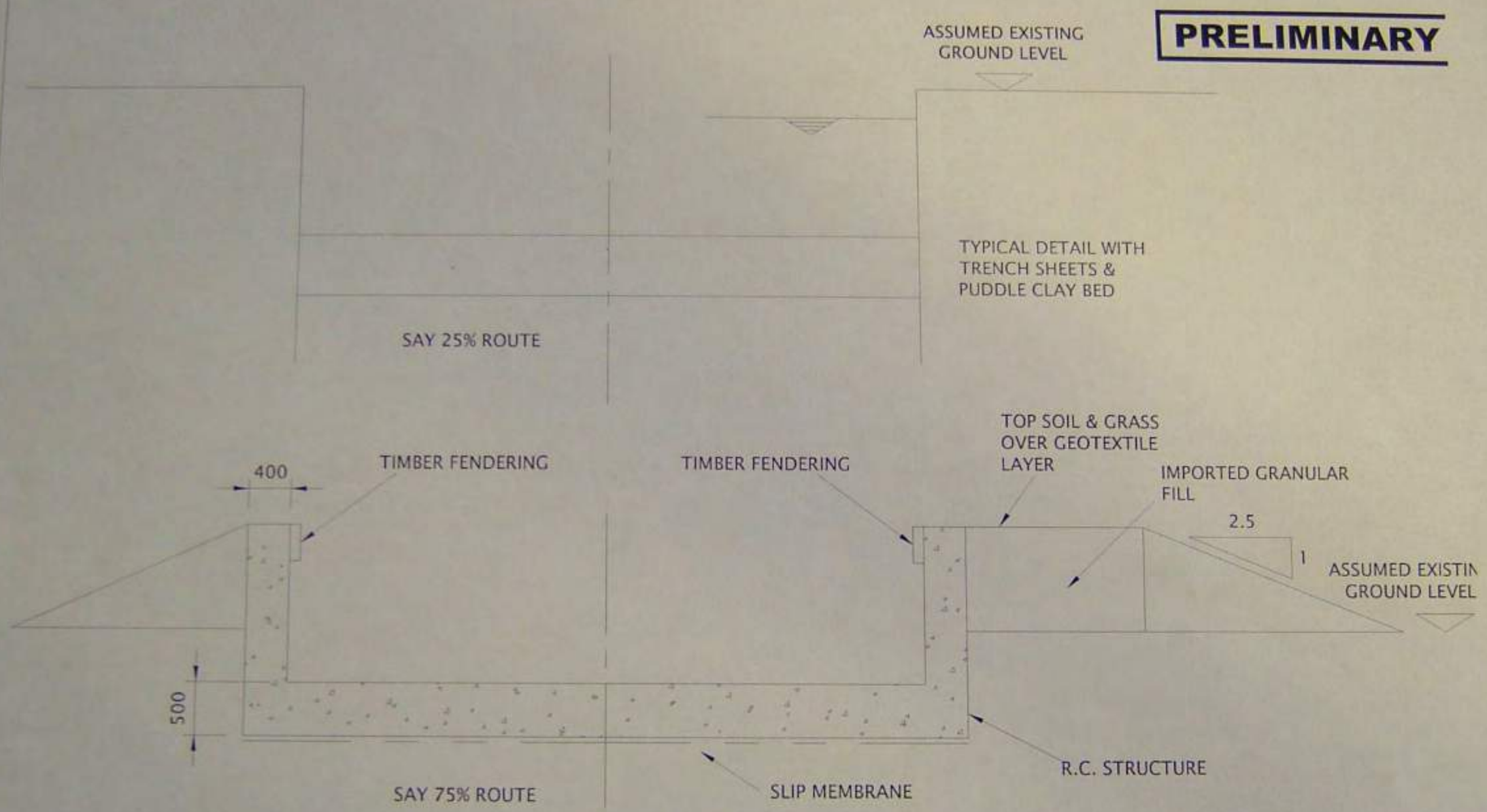
PRELIMINARY



ROUTE 2a PROPOSED NEW AQUEDUCT

(SCALE 1:100)

PRELIMINARY



FULL MOVEMENT JOINTS AT SAY 50m CENTRES, FULL CONTRACTION JOINTS AT SAY 15m CENTRES. N.B. LONGITUDINAL & TRANSVERSE DRAINS WILL BE NECESSARY TO DRAIN THE HARD SURFACES EACH SIDE OF THE PROPOSED CANAL

ROUTE 4

(SCALE 1:50)

APPENDIX 8

Consultation to Date

Leek End Week-end Questionnaire

Information Gathering and Background Research

Staffordshire Moorlands District Council

A meeting was held with John Prince, Forward Plans and Conservation Manager within the Planning Department at Staffordshire Moorlands District Council on 18 February 2004 to discuss the study, the Council's UDP and any planning allocations within the area . John Prince advised that SMDC would be likely to consider the scheme sympathetically, especially as it appears to compliment the Churnet Valley Railway plc's proposals for a terminus at the Cattle Market Site.

The Churnet Valley is a significant green corridor around the Southern part of Leek and is designated green belt. He advised that the River Churnet is liable to flooding and was concerned that creation of a canal basin located on the flood plain might exacerbate this.

A conversation with Arne Swithenbank, Parks & Countryside Manager at SMDC expressed concerns of the landscape impact of a canal basin within the country park setting near to the A53 though he also felt that the Council would generally be supportive of plans to build a new canal terminus at Leek. He also advised that significant water and gas services follow the line of the A53.

A letter was also sent by British Waterways to Jake Berryman, Corporate Director of the Council on 22 June 2004 to advise him of the study and to ensure that the study links to the council's long term strategies for the area particularly in relation to Barnfields Industrial Estate, redevelopment of the cattle market site and the reopening of the Churnet Valley Railway. A presentation of the key findings of the study to the Council was suggested at consultation draft stage.

In December 2004 an invitation to tender was prepared by the Council for the preparation of a Development Brief for the Cornhill Area Action Plan area. Consultants appointed will be required to liaise with British Waterways and ensure that the canal is given due consideration during the preparation of the brief.

Staffordshire County Council

Discussions with John Hooper and Peter Davenport, Highways Department, Staffordshire County Council (SCC) indicated that the Council is likely to resist any proposals for developing an existing junction or creating a new junction on the A53. However creation of a new access from an existing side road like Sunnyhills would probably be satisfactory from their point of view.

Highways also indicated that the idea of a future link to the Macclesfield Canal mentioned in the project brief involving the canal crossing the A53 would be very problematic. SCC would not want a lifting or swing bridge, because the road is a major artery serving Leek. Altering the vertical alignment would be difficult and survey information would be essential to progress this option.

Environment Agency

The Environment Agency confirmed that the Leek Arm study proposals are within or close to the River Churnet Flood plain. Input data can be supplied by the Environment Agency once the project reaches detailed design stage. A hydraulic analysis will also be necessary to assess affects.The Environment Agency has supplied a plan showing the areas at risk of flooding each side of the River Churnet.

Severn Trent Water
Existing services - STW provided detailed plans of sewers for all option locations. Detailed plans of water mains were also provided.

STW confirmed that, in principle, a new length of canal could pass over buried services provided no load was transferred onto the pipe. This could be achieved by building foundations of bridging structure, clear of 45 degree line from pipe.

STW consider that a canal running parallel would have no affect on their services if it was kept beyond 5 metres from the service.

In May 2004 STW confirmed that no installation of new services is planned for this area. STW confirmed that any diversion of major pipes as a result of the construction of a new length of canal would be undertaken by STW in terms of design and construction and they could provide costs when definitive proposals were known.

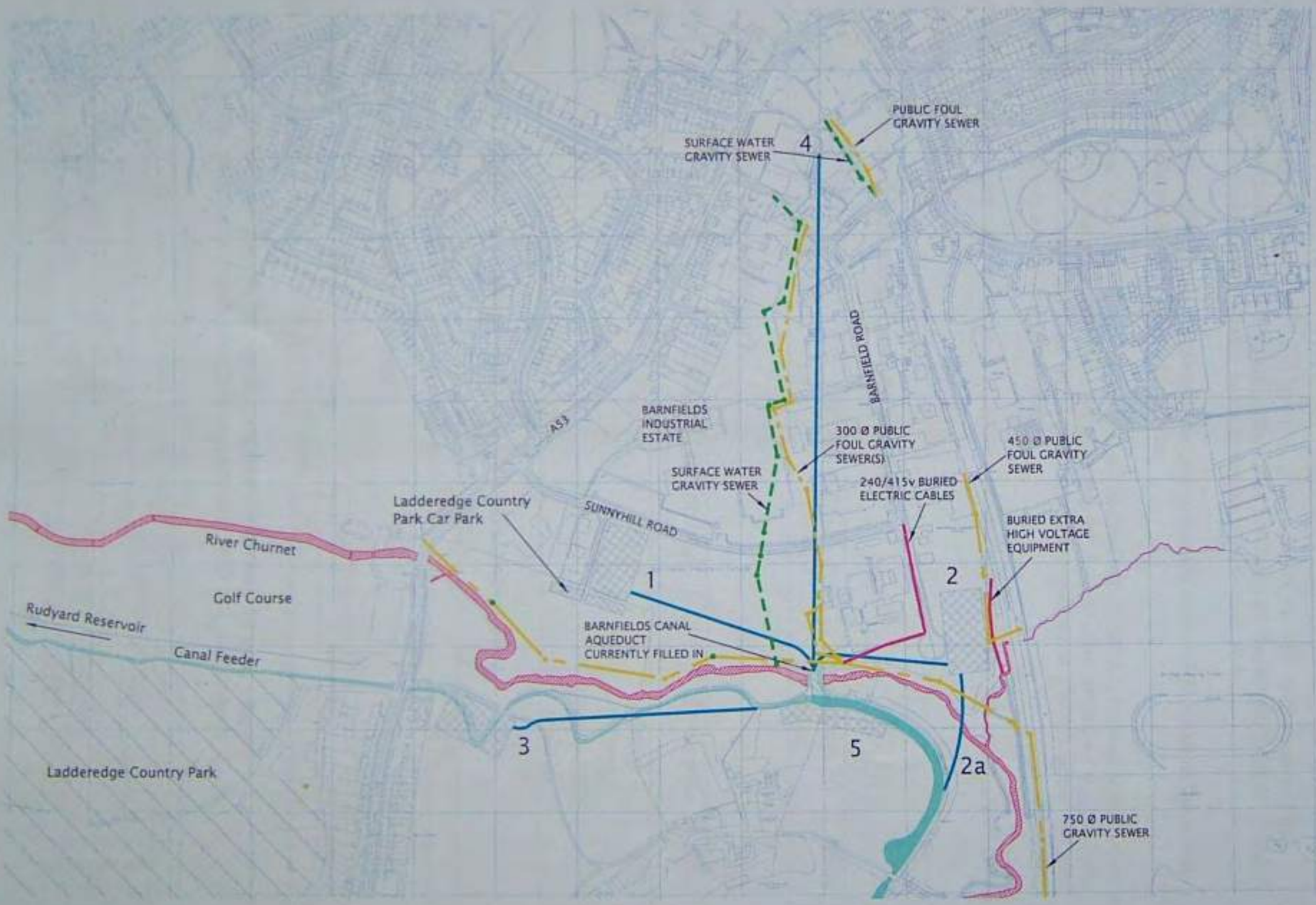
In August 2004, further information was received from Severn Trent indicating that an approxiately £6M project is planned to install a sewer pipe and rising main from the golf course west of the A53 to the corner of Sunnyhill Road, access road to the country park, along Sunnyhill Road and south along Barnfield Road to the turning circle then east to the railway embankment. Works to commence on site October 2004. The works would impact particularly on study options 1, 2 and 4.

Other Utilities
Services searches were carried out to determine the location of existing services within the study area. Information was received from British Telecom, Transco and Central Network.

A summary plan showing approximate route of services passing through the study area is attached.

Leek End Week End Questionnaire
A canal festival was held on 29 and 30th May 2004 to mark the 30th anniversary of the restoration of the Caldon Canal. A number of displays were on show at the festival and two display boards were prepared for the event to let visitors know of the corridor study. A short questionnaire was also prepared to gauge local and visitor support for enhanced facilities and possible mooring basin. A copy of the questionnaire and a summary of the responses are included within the appendices.

PRELIMINARY



Alternative locations for proposed canal basin

This Drawing to be read in conjunction with the risk register. For fuller details see individual suppliers plans

Highways, Transco, Severn Trent, BT & Central Network have equipment in Sunnyhill Road, Barnfield Road & A53

Record of Telephone Conversation

Project Title Caldon Canal Leek

Project No 212682 **File No.** 3.0

Between (for MMG)	Date	Time
SFR	05/06.08.04	

And (name)	Organisation	Phone No.
Robert Smith	Carl Bro	0113 307 3091

Subject

Proposed new sewer

Summary

Document number 74

MM confirmed receipt of Severn Trent letter on 4th August and copy of Carl Bro drawing 120479/02/6105. Severn Trent had confirmed at meeting in their offices on 17th May 2004 that no significant work was planned for this area.

RS reported:
Project costs in the order of £6m. Negotiated contract to be let in October 2004. Barnfield industrial estate is contaminated. Borehole at east end of Sunnyhill Road went through suspected former glue works site.

The scheme extends from the golf course west of the A53 to the corner of Sunnyhill Road and the Country Park service Road; along Sunnyhill Road; south along Barnfield Road to the turning circle then east to the railway embankment.

From the golf course to Sunnyhill Road it is a 1200 dia gravity sewer about 10m below ground. At Sunnyhill Road the sewer discharges into a shaft with submersible pumps. The sewer then becomes a 500mm dia rising main 1 to 2m deep going eastwards. A number of sites were considered for the pumping station. The Country Park was avoided, partly because rare orchids were found. The area near the scrap yard was avoided because of particular contamination issues.

MM asked if it was feasible to move the rising main north to avoid the basin for route 2. RS thought the Project was too far advanced for this to be done. RS reported that the existing 750mm dia east-west sewer may be kept. The north/south sewer would be diverted into the station, but the surface water drain kept.

MM requested ground and pipe invert levels at Sunnyhill Road and at the railway to allow MM to assess impact on canal routes 2 & 4. MM asked if they had had discussions with the Railway Society about the Works. RS said they hadn't.

MM asked if noise and odour might be a problem if a basin was located near the station. RS confirmed that the shaft is vented to the atmosphere, but didn't think odour would be significant. However, Kerrygold have apparently raised a planning objection about possible odour problems. RS thought noise would be about the same as present background levels. However, MM suggested that it might be audible at night and this would need to be investigated.

Action

SFR advised British Waterways by voice mail and e-mail on 05.08.04. Spoke with Kate Lynch am 05.08.04 and will send written commentary as soon as Carl Bro have provided level information. KL requested copy of drawing if possible. BW will issue an addendum to the text they have already issued to the Steering Committee. Andy Wilkinson BW met the Committee yesterday to discuss the text.

To	A	I	C	Sign	Date
SFR	*				
FBT		*			
MA		*			
Return to 212682/3					

Severn Trent Water

SEVERN TRENT WATER Ltd
Regis Road
Tettenhall
Wolverhampton
WV6 8RU

Tel 0121 722 4000
Fax 01902 793971

Direct Line 01902 793988
Contact Derek Lord
Your Ref
Our Ref WT/5612

3 August 2004

Mott MacDonald
Spring Bank House
33 Stamford Street
Altrincham
Cheshire
WA14 1ES

Dear Mr. Ray

Re British Waterways Caldon Canal Leek, proposed sewer works

With reference to your email dated 30 June 2004, I can confirm that Severn Trent Water does have proposals for sewer improvements in the vicinity of the Caldon Canal Leek Arm. I am pleased to enclose a copy of a drawing no 120479/02/6105 showing the location of the proposed works. I have highlighted the works in red.

Based on our original discussion regarding possible sites for a new canal terminous and sanitary station, it appears that there may be conflict between our proposals. If you would like to discuss our works in more detail, please contact our consultant, Carl Bro. The design engineer is Chris Bolton who can be contacted on 0113 307 3119.

For any other issues such as protection of sewers and water mains please contact myself.

Yours sincerely

Derek Lord – Assistant Manager, Network Development

NOTES

1. INFORMATION CONCERNING THE LOCATION OF SERVICES IS GIVEN FOR YOUR ASSISTANCE & IS INTENDED FOR GENERAL GUIDANCE ONLY. NO GUARANTEE IS GIVEN OR LIABILITY ACCEPTED AS TO THEIR ACCURACY. IT SHOULD NOT BE RELIED UPON IN THE EVENT OF EXCAVATIONS OR OTHER WORKS MADE NEAR SERVICES WHICH MAY EXIST AT VARIOUS DEPTHS & MAY DEVIATE FROM THE MARKED ROUTE. ALL EXISTING SERVICES ARE SHOWN APPROXIMATELY IN NUMBER ONLY. LOCATION IS TO BE CONFIRMED BY THE CONTRACTOR PRIOR TO COMMENCING EXCAVATION.

2. THE MATERIAL CONTAINED WITHIN THIS DRAWING HAS BEEN BASED UPON THE ORDNANCE SURVEY MAP BY SEVERN TRENT WATER LTD. BY PERMISSION OF ORDNANCE SURVEY ON BEHALF OF THE CONTROLLER OF HER MAJESTY'S STATIONERY OFFICE. © CROWN COPYRIGHT
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LEGEND

PROPOSED SEWER D/N 25m TOTAL WORKING WIDTH (EASEMENT)

RISING MAIN

780m PROPOSED 500 DIA. DI FOUL RISING MAIN TO BE SLEEVED THROUGH EXISTING 900 DIA. FOUL SEWER

760m PROPOSED 500 DIA. DI FOUL RISING MAIN OPEN CUT TRENCH CONSTRUCTION

PROPOSED 350 L/S PUMP STATION

DRIVE SHAFT

542m PROPOSED 1200 DIA. FOUL SEWER CONSTRUCTED USING TRENCHLESS TECHNOLOGIES

1150m PROPOSED 1210 DIA. FOUL SEWER OPEN CUT TRENCH CONSTRUCTION

1060m PROPOSED 750 DIA. FOUL SEWER OPEN CUT TRENCH CONSTRUCTION

M.H.1 M.H.2 M.H.3 M.H.4 M.H.5 M.H.6 M.H.7 M.H.8 M.H.9 M.H.10 M.H.11 M.H.12 M.H.13 M.H.14 M.H.15 M.H.16 M.H.17

RAILWAY TUNNEL

River Churnet

Canal Feeder

Longton Brook

REV	AMENDMENTS	BY	CHKD	APPD	DATE
0	FIRST ISSUE	ACM	DJS		24/1/05

CLIENT

Severn Trent Water

PROJECT

REAR OF WESTWOOD HALL FARM UID

TITLE

SCHEME OVERVIEW

Carl Bro

Grove House
Mansion Gate Drive
Leeds
LS7 4DN

Tel: 0113 262 0000
Fax: 0113 262 0737
enquiries@carlbro.com
www.carlbro.com

Bristol Dublin Edinburgh Glasgow Leeds London Peterborough Wrexham

DRAWING STATUS

FOR INFORMATION

DRAWN	CHECKED	DESIGNED
A. MOULD		
DATE	DATE	DATE
14.06.2004	24/1/05	24/1/05
SCALE	ORIGINAL DRAWING SIZE	
1:2500 @A0	841 x 1189 - A0	
DRAWING No.		REV.
120479/02/6105		0

HOW DO YOU SEE LEEK'S CANAL?

QUESTIONNAIRE RESPONSES

A canal festival was held at Leek on 29th and 30th May 2004 to mark the 30th anniversary of the restoration of the Caldon Canal. A short questionnaire was prepared for the event to gauge support for enhanced facilities and possible mooring basin at the end of the Leek Arm.

The Leek End weekend event was well attended. As part of display material on show at the event, a questionnaire was made available to all in attendance.

The short questionnaire, copy appended, comprised a mix of direct questions, ranked preferences on existing and future uses of the canal and included a section for further comments and suggestions and recording of any local issues, technical detail or historical information. A Visitors Book was also available to allow visitors to add further comments.

A total of 65 questionnaires were completed. Responses to the questionnaire are summarised below.

ABOUT YOU …

1. How far from the canal at Leek do you live?

0 - 1 mile	34%	1 - 5 miles	25%	5 – 20 miles	25%	More than 20 miles	16%

2. How have you arrived today?

Using your own boat	2%	By hire boat	0%	By trip boat	0%	By bicycle	2%
By public transport	0%	By car	63%	On foot	29%	Other (please give details below)	1%

3. Have you visited the Leek Arm of the Caldon Canal before?

Yes	68%	No	32%

4. How often do you visit the canal?

Most days	7%	Weekly	18%	Monthly	10%
Several times a year	20%	Once a year or less	33%		

5. If you do visit the canal, for what purpose / interest do you use it?
*Choose all that apply; mark your primary interest with a **1**, secondary **2**, etc.*

Boating	6	Exercising dog	7
Walking	1	Industrial heritage	5
Cycling	6	Fishing	8
Attractive scenery	3	Peace and tranquillity	2
Wildlife/ Bird Watching	4	Other (please give details below)	9

ABOUT THE CANAL …

6. Do you think the canal aqueduct should be restored to hold water again?

Yes	No	Don't know
91%	9%	

7. What type of amenities would you like to see at the end of the canal?
*Choose all you like; mark your first preference with a **1**, second **2**, etc.*

Seating	4	Pedestrian access / access for all	2
Vehicle access and car parking	3	Café	5
Signage / information / walk routes	1	Restaurant	8
Trip boat / Restaurant boat base	4	Pub	6
Hire boat base	7	Boat-building / repairs base	7
Leave the canal as it is	9	Other (please give details below)	10

8. What type of facilities do you think would be useful at the end of the canal to attract more boats to visit Leek?
*Choose all you like; mark your first preference with a **1**, second **2**, etc.*

Security	7	Signage / information / walk routes	3
Vehicle access and car parking	2	Service station (toilets, sanitary station, pump out, showers)	1
Visitor moorings on existing line of canal	5	Permanent moorings on existing line of canal	8
Visitor moorings in a new basin	4	Permanent moorings in a new basin	6
Leave the canal as it is	9	Other (please give details below)	0

9. If new amenities and facilities were created, would you visit:

More often	61%	Less often	0%	The same	26%	Don't know	8%
No response	5%						

10. Boaters: If new moorings were created, would you prefer to moor in:

Countryside setting, at outskirts of the town	26%	Closer to Leek town centre	20%
No response	54%		

11. If improved moorings were created would you stop at Leek to visit the town itself?

Yes	37%	No	0%	Don't know	8%
No response	55%				

12. If not, where would you stop for facilities, provisions, pub, eating out etc

Endon, Hollybush, Denford, Stone, Stoke Top Lock were all noted as current mooring sites.

How do you see Leek's Canal?

QUESTIONNAIRE

The Caldon Canal Society, The Inland Waterways Association and British Waterways are investigating ways of improving and developing the terminus of the canal at Leek to provide a new, positive destination and to renew the town's connection with its canal.

We would be very grateful if you could spare a few minutes to answer these questions to let us know what future you would like to see for the canal at Leek.

Once you have completed the questionnaire please hand it in at the Information Point in the marquee. Thank you for your time.

Please tick your answer to each question

ABOUT YOU …

1. How far from the canal at Leek do you live?

0 - 1 mile		1 - 5 miles		5 – 20 miles		More than 20 miles	

2. How have you arrived today?

Using your own boat		By hire boat		By trip boat		By bicycle	
By public transport		By car		On foot		Other (please give details below)	

3. Have you visited the Leek Arm of the Caldon Canal before?

Yes		No	

4. How often do you visit the canal?

Most days		Weekly		Monthly	
Several times a year		Once a year or less			

5. If you do visit the canal, for what purpose / interest do you use it?
*Choose all that apply; mark your primary interest with a **1**, secondary **2**, etc.*

Boating		Exercising dog	
Walking		Industrial heritage	
Cycling		Fishing	
Attractive scenery		Peace and tranquillity	
Wildlife/ Bird Watching		Other (please give details below)	

ABOUT THE CANAL …

6. Do you think the canal aqueduct should be restored to hold water again?

Yes	No	Don't know

7. What type of amenities would you like to see at the end of the canal?
*Choose all you like; mark your first preference with a **1**, second **2**, etc.*

Seating		Pedestrian access / access for all	
Vehicle access and car parking		Café	
Signage / information / walk routes		Restaurant	
Trip boat / Restaurant boat base		Pub	
Hire boat base		Boat-building / repairs base	
Leave the canal as it is		Other (please give details below)	

8. What type of facilities do you think would be useful at the end of the canal to attract more boats to visit Leek?
*Choose all you like; mark your first preference with a **1**, second **2**, etc.*

Security		Signage / information / walk routes	
Vehicle access and car parking		Service station (toilets, sanitary station, pump out, showers)	
Visitor moorings on existing line of canal		Permanent moorings on existing line of canal	
Visitor moorings in a new basin		Permanent moorings in a new basin	
Leave the canal as it is		Other (please give details below)	

9. If new amenities and facilities were created, would you visit:

More often		Less often		The same		Don't know	

10. Boaters: If new moorings were created, would you prefer to moor in:

Countryside setting, at outskirts of the town		Closer to Leek town centre	

11. If improved moorings were created would you stop at Leek to visit the town itself?

Yes		No		Don't know	

12. If not, where would you stop for facilities, provisions, pub, eating out etc

---

Please use the space below for any further comments or ideas. We are particularly interested in any specific local issues, historical information or technical detail and would be delighted to talk further with you – contact us at the Information Point in the Marquee.

Thank you for your time

APPENDIX 9

Economic Impact Analysis

Leek Arm - New Leek Terminus

Economic Impact Analysis

Route Option 1

Additional income
(At 2003 prices)

PRIVATE BOATS BASED ON THE CANAL

Cruising spend	*Spend while cruising by boats based at Leek assumed incurred outside the local area*		
Non-cruising spend	Number of boats	15	based on capacity of terminus basin
	Non-cruising trips per boat per year	6	BW Log Book Survey, 1993
	Duration of non-cruising trips (days)	1.5	BW Log Book Survey, 1993
	Displacement factor	*100%*	*zero displacement assumed - all expenditure new to Leek*
	Mean spend per head per day	£12.14	ex. Inland Waterway Day Visit Survey (pilot), 2003
	Av. number of people per boat	2.0	BW Log Book Survey 1993
	Visit-days per year	*270*	
	Total Non-cruising spend per year	**£3,278**	
Travel costs	*All travel to/from boats assumed by car;*		
	Travel costs for trips less than 20 miles assumed spent locally		
	% trips less than 20 miles	60%	BW boat ownership data
	Vehicle cost per mile (full car costs)	0.43	derived from RAC data
	Av. distance travelled (round trips less than 20 miles) (miles)	15	Kennet & Avon Boating Survey 1990
	Total visits to boat per year (cruising & non-crusing visits)	12.1	BW Log Book Survey 1993
	Total travel spend per year	**£707**	
Boat-related expenditure	Annual boat running costs (incl.mooring/licence fees)	£2,500	derived from Private Boating Price-Demand Study 1997 (BW/EA)
	Average length of boat ownership (years)	6.7	Private Boating Price-Demand Study 1997 (BW/EA)
	Average estimated purchase cost per boat	£18,250	Private Boating Price-Demand Study 1997 (BW/EA)
	Total annual boat running costs	£37,500	
	Total annual boat purchase costs	£40,858	
	Total boat sales / construction	**£40,858**	
	Total boat running costs	**£37,500**	
	Total boating expenditure	**£3,984**	
	Total annual expenditure - boats based on canal	**£82,343**	

VISITING POWERED BOATS

Boat movements per year	2,500	assumed
% private boats	70%	assumed
% hire boats	30%	assumed
Private boat days p.a.	1,750	*Assume each movement generates a 1-day visit to Leek*
Hire boat days p.a.	750	*Assume each movement generates a 1-day visit to Leek*
Av. crew per private boat	3.0	BW Log Book Survey 1993
Cruising spend per person per day	£8.50	ex. BW Log Book Survey, 1993
Total spend p.a. - private boats	£44,625	
Av. crew per hire boat	4.1	BW Hire Boat Survey 1990
Cruising spend per person per day	£13.29	BW Hire Boat Survey 1990
Total spend p.a. - hire boats	£40,858	
Total cruising spend p.a.	**£85,483**	

TRIP BOATS

Boat traffic

No.of boats	1	
Passengers per boat	50	Narrowboat trip boat operation
Occupancy Rate	70%	assumed
No.trips per year	450	assumes 25 week season-average 2 trip per day; 4 trips per weekend day
Total number of passengers carried	15750	
Displacement factor	*80%*	*assume 20% of visits would have taken place in any case*

Trip spend

Av.cost per trip	£4.32	Assume £1-50 trip spend plus £2-82 informal recreation spend
Total trip spend	**£54,432**	

DAY BOATS

Boat traffic

No. of additional boats	2	assumed operated in conjunction with trip boat
Average days spent on canal	115	assumed 5 days per week with 23 week season
Average craft occupancy	3	assumed
Displacement factor	*100%*	*zero displacement assumed*
Visits per year	*690*	

Canalside spend

Cruising spend per person per day	£12.14	ex. Inland Waterway Day Visit Survey (pilot), 2003
Boat hire cost per day	£40.00	assumed

Total spend

Boat movement	£8,377
Boat hire	£9,200
TOTAL SPEND	**£17,577**

CANOEING

Visits per year	322	average of 2 additional visits per day during season (23 weeks)
% day visits	80%	based on %age informal day visits to BW waterways
% holiday visits	20%	based on %age informal day visits to BW waterways
Day visits per year	258	
Holiday visits per year	64	
Displacement factor	*100%*	*zero displacement assumed*
People per visit	1.5	mix of 1 & 2-man craft assumed
Visitor spend per day visit	£2.82	as for infomal visitors
Visitor spend per holiday visit	£34.86	Star UK estimates, Staffordshire, 2002
Total spend	**£4,457**	

ANGLERS

Additional visits per km	400	approximates to density of vists on Leek Arm
Appox. length of new waterway created (km)	0.4	
Additonal visits per year	160	
Visitor spend per trip (incl. travel/permits)	£6.49	BW Survey of Individual Anglers, 1996
Total spend per year	**£1,038**	

INFORMAL VISITORS

Total additional visits per year	100,000	
% visitors on day visit	85%	BW Informal Visitor Survey 2002
No. additional day visits	85000	
No. additional holiday visits	15000	
Displacement factor	*27%*	BW Informal Visitor Survey 2001
Mean spend/person/day visit	£2.82	ex. Inland Waterway Day Visit Survey (pilot), 2003
Mean spend/person/holiday visit	£34.86	Star UK estimates, Staffordshire, 2002
Total additional day visit spend p.a.	£64,719	
Total additional holiday visit spend p.a.	£141,183	
TOTAL SPEND	**£205,902**	

SUMMARY **ROUTE OPTION 1**

(£,000s)

Direct spend	**Boats based on the canal - excl. sales / construction**	**£4**
	Boat based on the canal - sales / construction costs	**£78**
	Visiting boats	**£85**
	Trip boats	**£54**
	Day boats	**£18**
	Canoeing	**£4**
	Angling	**£1**
	Informal visitors	**£206**
	Total additional visitor spend	**£451**
Direct, indirct and induced spend	**Total captured direct and indirect visit spend**	**£587** Indirect & induced multiplier = 1.3
Retained income	**Total retained income**	**£235** Based on 60% leakage - Scottish Tourism study Rural model

EMPLOYMENT ESTIMATES

Direct , indirect & induced impact

Total employment generated @ 1 FTE per £31,400 tourist spend	**15**
Total employment generated @ 1 FTE per £62,800 spend on boat sales / construction	**2**
Total employment generated - FTEs	**17**

ADDITIONAL VISITS PER YEAR

(000S)

Boats based on the canal	**0.3**
Visiting boats	**7.5**
Trip boats	**15.8**
Day boats	**0.7**
Canoeing	**0.3**
Angling	**0.2**
Informal visitors	**100.0**
Total additional visits	**124.7**

J:\M&C\economic development\leek arm

22-Nov-06

Leek Arm - New Leek Terminus

Economic Impact Analysis

Route Option 2

Additional income
(At 2003 prices)

PRIVATE BOATS BASED ON THE CANAL

Cruising spend	*Spend while cruising by boats based at Leek assumed incurred outside the local area*		
Non-cruising spend	Number of boats	15	based on capacity of terminus basin
	Non-cruising trips per boat per year	6	BW Log Book Survey, 1993
	Duration of non-cruising trips (days)	1.5	BW Log Book Survey, 1993
	Displacement factor	*100%*	*zero displacement assumed - all expenditure new to Leek*
	Mean spend per head per day	£12.14	ex. Inland Waterway Day Visit Survey (pilot), 2003
	Av. number of people per boat	2.0	BW Log Book Survey 1993
	Visit-days per year	*270*	
	Total Non-cruising spend per year	**£3,278**	
Travel costs	*All travel to/from boats assumed by car;*		
	Travel costs for trips less than 20 miles assumed spent locally		
	% trips less than 20 miles	60%	BW boat ownership data
	Vehicle cost per mile (full car costs)	0.43	derived from RAC data
	Av. distance travelled (round trips less than 20 miles) (miles)	15	Kennet & Avon Boating Survey 1990
	Total visits to boat per year (cruising & non-crusing visits)	12.1	BW Log Book Survey 1993
	Total travel spend per year	**£707**	
Boat-related expenditure	Annual boat running costs (incl.mooring/licence fees)	£2,500	derived from Private Boating Price-Demand Study 1997 (BW/EA)
	Average length of boat ownership (years)	6.7	Private Boating Price-Demand Study 1997 (BW/EA)
	Average estimated purchase cost per boat	£18,250	Private Boating Price-Demand Study 1997 (BW/EA)
	Total annual boat running costs	£37,500	
	Total annual boat purchase costs	£40,858	
	Total boat sales / construction	**£40,858**	
	Total boat running costs	**£37,500**	
	Total boating expenditure	**£3,984**	
	Total annual expenditure - boats based on canal	**£82,343**	

VISITING POWERED BOATS

Boat movements per year	2,500	assumed
% private boats	70%	assumed
% hire boats	30%	assumed
Private boat days p.a.	1,750	*Assume each movement generates a 1-day visit to Leek*
Hire boat days p.a.	750	*Assume each movement generates a 1-day visit to Leek*
Av. crew per private boat	3.0	BW Log Book Survey 1993
Cruising spend per person per day	£8.50	ex. BW Log Book Survey, 1993
Total spend p.a. - private boats	£44,625	
Av. crew per hire boat	4.1	BW Hire Boat Survey 1990
Cruising spend per person per day	£13.29	BW Hire Boat Survey 1990
Total spend p.a. - hire boats	£40,858	
Total cruising spend p.a.	**£85,483**	

TRIP BOATS

Boat traffic

No.of boats	1	
Passengers per boat	50	Narrowboat trip boat operation
Occupancy Rate	70%	assumed
No.trips per year	450	assumes 25 week season-average 2 trip per day; 4 trips per weekend day
Total number of passengers carried	15750	
Displacement factor	*80%*	*assume 20% of visits would have taken place in any case*

Trip spend

Av.cost per trip	£4.32	Assume £1-50 trip spend plus £2-82 informal recreation spend
Total trip spend	**£54,432**	

DAY BOATS

Boat traffic

No. of additional boats	2	assumed operated in conjunction with trip boat
Average days spent on canal	115	assumed 5 days per week with 23 week season
Average craft occupancy	3	assumed
Displacement factor	*100%*	*zero displacement assumed*
Visits per year	*690*	

Canalside spend

Cruising spend per person per day	£12.14	ex. Inland Waterway Day Visit Survey (pilot), 2003
Boat hire cost per day	£40.00	assumed

Total spend

Boat movement	£8,377
Boat hire	£9,200
TOTAL SPEND	**£17,577**

CANOEING

Visits per year	322	average of 2 additional visits per day during season (23 weeks)
% day visits	80%	based on %age informal day visits to BW waterways
% holiday visits	20%	based on %age informal day visits to BW waterways
Day visits per year	258	
Holiday visits per year	64	
Displacement factor	*100%*	*zero displacement assumed*
People per visit	1.5	mix of 1 & 2-man craft assumed
Visitor spend per day visit	£2.82	as for infomal visitors
Visitor spend per holiday visit	£34.86	Star UK estimates, Staffordshire, 2002
Total spend	**£4,457**	

ANGLERS

Additional visits per km	400	approximates to density of vists on Leek Arm
Appox. length of new waterway created (km)	0.25	
Additonal visits per year	100	
Visitor spend per trip (incl. travel/permits)	£6.49	BW Survey of Individual Anglers, 1996
Total spend per year	**£649**	

INFORMAL VISITORS

Total additional visits per year	130,000	
% visitors on day visit	85%	BW Informal Visitor Survey 2002
No. additional day visits	110500	
No. additional holiday visits	19500	
Displacement factor	*27%*	BW Informal Visitor Survey 2001
Mean spend/person/day visit	£2.82	ex. Inland Waterway Day Visit Survey (pilot), 2003
Mean spend/person/holiday visit	£34.86	Star UK estimates, Staffordshire, 2002
Total additional day visit spend p.a.	£84,135	
Total additional holiday visit spend p.a.	£183,538	

TOTAL SPEND	**£267,673**

SUMMARY **ROUTE OPTION 2**

(£,000s)

Direct spend	**Boats based on the canal - excl. sales / construction**	**£4**
	Boat based on the canal - sales / construction costs	**£78**
	Visiting boats	**£85**
	Trip boats	**£54**
	Day boats	**£18**
	Canoeing	**£4**
	Angling	**£1**
	Informal visitors	**£268**
	Total additional visitor spend	**£513**
Direct, indirct and induced spend	**Total captured direct and indirect visit spend**	**£666** Indirect & induced multiplier = 1.3
Retained income	**Total retained income**	**£267** Based on 60% leakage - Scottish Tourism study Rural model

EMPLOYMENT ESTIMATES

Direct , indirect & induced impact

Total employment generated @ 1 FTE per £31,400 tourist spend	**18**
Total employment generated @ 1 FTE per £62,800 spend on boat sales / construction	**2**
Total employment generated - FTEs	**20**

ADDITIONAL VISITS PER YEAR

(000S)

Boats based on the canal	**0.3**
Visiting boats	**7.5**
Trip boats	**15.8**
Day boats	**0.7**
Canoeing	**0.3**
Angling	**0.1**
Informal visitors	**130.0**
Total additional visits	**154.6**

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22-Nov-06

Leek Arm - New Leek Terminus

Economic Impact Analysis

Route Option 3

Additional income
(At 2003 prices)

PRIVATE BOATS BASED ON THE CANAL

Cruising spend	*Spend while cruising by boats based at Leek assumed incurred outside the local area*		
Non-cruising spend	Number of boats	15	based on capacity of terminus basin
	Non-cruising trips per boat per year	6	BW Log Book Survey, 1993
	Duration of non-cruising trips (days)	1.5	BW Log Book Survey, 1993
	Displacement factor	*100%*	*zero displacement assumed - all expenditure new to Leek*
	Mean spend per head per day	£12.14	ex. Inland Waterway Day Visit Survey (pilot), 2003
	Av. number of people per boat	2.0	BW Log Book Survey 1993
	Visit-days per year	*270*	
	Total Non-cruising spend per year	**£3,278**	
Travel costs	*All travel to/from boats assumed by car;*		
	Travel costs for trips less than 20 miles assumed spent locally		
	% trips less than 20 miles	60%	BW boat ownership data
	Vehicle cost per mile (full car costs)	0.43	derived from RAC data
	Av. distance travelled (round trips less than 20 miles) (miles)	15	Kennet & Avon Boating Survey 1990
	Total visits to boat per year (cruising & non-crusing visits)	12.1	BW Log Book Survey 1993
	Total travel spend per year	**£707**	
Boat-related expenditure	Annual boat running costs (incl.mooring/licence fees)	£2,500	derived from Private Boating Price-Demand Study 1997 (BW/EA)
	Average length of boat ownership (years)	6.7	Private Boating Price-Demand Study 1997 (BW/EA)
	Average estimated purchase cost per boat	£18,250	Private Boating Price-Demand Study 1997 (BW/EA)
	Total annual boat running costs	£37,500	
	Total annual boat purchase costs	£40,858	
	Total boat sales / construction	**£40,858**	
	Total boat running costs	**£37,500**	
	Total boating expenditure	**£3,984**	
	Total annual expenditure - boats based on canal	**£82,343**	

VISITING POWERED BOATS

Boat movements per year	1,000	assumed
% private boats	70%	assumed
% hire boats	30%	assumed
Private boat days p.a.	700	*Assume each movement generates a 1-day visit to Leek*
Hire boat days p.a.	300	*Assume each movement generates a 1-day visit to Leek*
Av. crew per private boat	3.0	BW Log Book Survey 1993
Cruising spend per person per day	£8.50	ex. BW Log Book Survey, 1993
Total spend p.a. - private boats	£17,850	
Av. crew per hire boat	4.1	BW Hire Boat Survey 1990
Cruising spend per person per day	£13.29	BW Hire Boat Survey 1990
Total spend p.a. - hire boats	£16,343	
Total cruising spend p.a.	**£34,193**	

TRIP BOATS

Boat traffic

No.of boats	1	
Passengers per boat	50	Narrowboat trip boat operation
Occupancy Rate	70%	assumed
No.trips per year	225	assumes 25 week season-average 1 trip per day; 2 trips per weekend day
Total number of passengers carried	7875	
Displacement factor	*80%*	*assume 20% of visits would have taken place in any case*

Trip spend

Av.cost per trip	£4.32	Assume £1-50 trip spend plus £2-82 informal recreation spend
Total trip spend	**£27,216**	

DAY BOATS

Boat traffic

No. of additional boats	2	assumed operated in conjunction with trip boat
Average days spent on canal	115	assumed 5 days per week with 23 week season
Average craft occupancy	3	assumed
Displacement factor	*100%*	*zero displacement assumed*
Visits per year	*690*	

Canalside spend

Cruising spend per person per day	£12.14	ex. Inland Waterway Day Visit Survey (pilot), 2003
Boat hire cost per day	£40.00	assumed

Total spend

Boat movement	£8,377	
Boat hire	£9,200	
TOTAL SPEND	**£17,577**	

CANOEING

Visits per year	322	average of 2 additional visits per day during season (23 weeks)
% day visits	80%	based on %age informal day visits to BW waterways
% holiday visits	20%	based on %age informal day visits to BW waterways
Day visits per year	258	
Holiday visits per year	64	
Displacement factor	*100%*	*zero displacement assumed*
People per visit	1.5	mix of 1 & 2-man craft assumed
Visitor spend per day visit	£2.82	as for infomal visitors
Visitor spend per holiday visit	£34.86	Star UK estimates, Staffordshire, 2002
Total spend	**£4,457**	

ANGLERS

Additional visits per km	400	approximates to density of vists on Leek Arm
Appox. length of new waterway created (km)	0.5	
Additonal visits per year	200	
Visitor spend per trip (incl. travel/permits)	£6.49	BW Survey of Individual Anglers, 1996
Total spend per year	**£1,298**	

INFORMAL VISITORS

Total additional visits per year	50,000	
% visitors on day visit	85%	BW Informal Visitor Survey 2002
No. additional day visits	42500	
No. additional holiday visits	7500	
Displacement factor	*27%*	BW Informal Visitor Survey 2001
Mean spend/person/day visit	£2.82	ex. Inland Waterway Day Visit Survey (pilot), 2003
Mean spend/person/holiday visit	£34.86	Star UK estimates, Staffordshire, 2002
Total additional day visit spend p.a.	£32,360	
Total additional holiday visit spend p.a.	£70,592	

TOTAL SPEND	**£102,951**

SUMMARY **ROUTE OPTION 3**

(£,000s)

Direct spend	**Boats based on the canal - excl. sales / construction**	**£4**
	Boat based on the canal - sales / construction costs	**£78**
	Visiting boats	**£34**
	Trip boats	**£27**
	Day boats	**£18**
	Canoeing	**£4**
	Angling	**£1**
	Informal visitors	**£103**
	Total additional visitor spend	**£270**
Direct, indirct and induced spend	**Total captured direct and indirect visit spend**	**£351** Indirect & induced multiplier = 1.3
Retained income	**Total retained income**	**£140** Based on 60% leakage - Scottish Tourism study Rural model

EMPLOYMENT ESTIMATES

Direct , indirect & induced impact

Total employment generated @ 1 FTE per £31,400 tourist spend	**8**
Total employment generated @ 1 FTE per £62,800 spend on boat sales / construction	**2**
Total employment generated - FTEs	**10**

ADDITIONAL VISITS PER YEAR

(000S)

Boats based on the canal	**0.3**
Visiting boats	**3.0**
Trip boats	**7.9**
Day boats	**0.7**
Canoeing	**0.3**
Angling	**0.2**
Informal visitors	**50.0**
Total additional visits	**62.4**

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22-Nov-06

Leek Arm - New Leek Terminus

Economic Impact Analysis

Route Option 4

Additional income
(At 2003 prices)

PRIVATE BOATS BASED ON THE CANAL

Cruising spend	*Spend while cruising by boats based at Leek assumed incurred outside the local area*		
Non-cruising spend	Number of boats	15	based on capacity of terminus basin
	Non-cruising trips per boat per year	6	BW Log Book Survey, 1993
	Duration of non-cruising trips (days)	1.5	BW Log Book Survey, 1993
	Displacement factor	*100%*	*zero displacement assumed - all expenditure new to Leek*
	Mean spend per head per day	£12.14	ex. Inland Waterway Day Visit Survey (pilot), 2003
	Av. number of people per boat	2.0	BW Log Book Survey 1993
	Visit-days per year	*270*	
	Total Non-cruising spend per year	**£3,278**	
Travel costs	*All travel to/from boats assumed by car;* *Travel costs for trips less than 20 miles assumed spent locally*		
	% trips less than 20 miles	60%	BW boat ownership data
	Vehicle cost per mile (full car costs)	0.43	derived from RAC data
	Av. distance travelled (round trips less than 20 miles) (miles)	15	Kennet & Avon Boating Survey 1990
	Total visits to boat per year (cruising & non-crusing visits)	12.1	BW Log Book Survey 1993
	Total travel spend per year	**£707**	
Boat-related expenditure	Annual boat running costs (incl.mooring/licence fees)	£2,500	derived from Private Boating Price-Demand Study 1997 (BW/EA)
	Average length of boat ownership (years)	6.7	Private Boating Price-Demand Study 1997 (BW/EA)
	Average estimated purchase cost per boat	£18,250	Private Boating Price-Demand Study 1997 (BW/EA)
	Total annual boat running costs	£37,500	
	Total annual boat purchase costs	£40,858	
	Total boat sales / construction	**£40,858**	
	Total boat running costs	**£37,500**	
	Total boating expenditure	**£3,984**	
	Total annual expenditure - boats based on canal	**£82,343**	

VISITING POWERED BOATS

Boat movements per year	3,000	assumed
% private boats	70%	assumed
% hire boats	30%	assumed
Private boat days p.a.	2,100	*Assume each movement generates a 1-day visit to Leek*
Hire boat days p.a.	900	*Assume each movement generates a 1-day visit to Leek*
Av. crew per private boat	3.0	BW Log Book Survey 1993
Cruising spend per person per day	£8.50	ex. BW Log Book Survey, 1993
Total spend p.a. - private boats	£53,550	
Av. crew per hire boat	4.1	BW Hire Boat Survey 1990
Cruising spend per person per day	£13.29	BW Hire Boat Survey 1990
Total spend p.a. - hire boats	£49,029	
Total cruising spend p.a.	**£102,579**	

TRIP BOATS

Boat traffic

No.of boats	1	
Passengers per boat	50	Narrowboat trip boat operation
Occupancy Rate	70%	assumed
No.trips per year	450	assumes 25 week season-average 2 trip per day; 4 trips per weekend day
Total number of passengers carried	15750	
Displacement factor	*80%*	*assume 20% of visits would have taken place in any case*

Trip spend

Av.cost per trip	£4.32	Assume £1-50 trip spend plus £2-82 informal recreation spend
Total trip spend	**£54,432**	

DAY BOATS

Boat traffic

No. of additional boats	2	assumed operated in conjunction with trip boat
Average days spent on canal	115	assumed 5 days per week with 23 week season
Average craft occupancy	3	assumed
Displacement factor	*100%*	*zero displacement assumed*
Visits per year	*690*	

Canalside spend

Cruising spend per person per day	£12.14	ex. Inland Waterway Day Visit Survey (pilot), 2003
Boat hire cost per day	£40.00	assumed

Total spend

Boat movement	£8,377
Boat hire	£9,200
TOTAL SPEND	**£17,577**

CANOEING

Visits per year	322	average of 2 additional visits per day during season (23 weeks)
% day visits	80%	based on %age informal day visits to BW waterways
% holiday visits	20%	based on %age informal day visits to BW waterways
Day visits per year	258	
Holiday visits per year	64	
Displacement factor	*100%*	*zero displacement assumed*
People per visit	1.5	mix of 1 & 2-man craft assumed
Visitor spend per day visit	£2.82	as for infomal visitors
Visitor spend per holiday visit	£34.86	Star UK estimates, Staffordshire, 2002
Total spend	**£4,457**	

ANGLERS

Additional visits per km	400	approximates to density of vists on Leek Arm
Appox. length of new waterway created (km)	0.8	
Additonal visits per year	320	
Visitor spend per trip (incl. travel/permits)	£6.49	BW Survey of Individual Anglers, 1996
Total spend per year	**£2,076**	

INFORMAL VISITORS

Total additional visits per year	200,000	
% visitors on day visit	85%	BW Informal Visitor Survey 2002
No. additional day visits	170000	
No. additional holiday visits	30000	
Displacement factor	*27%*	BW Informal Visitor Survey 2001
Mean spend/person/day visit	£2.82	ex. Inland Waterway Day Visit Survey (pilot), 2003
Mean spend/person/holiday visit	£34.86	Star UK estimates, Staffordshire, 2002
Total additional day visit spend p.a.	£129,438	
Total additional holiday visit spend p.a.	£282,366	
TOTAL SPEND	**£411,804**	

SUMMARY **ROUTE OPTION 4**

(£,000s)

Direct spend	**Boats based on the canal - excl. sales / construction**	**£4**
	Boat based on the canal - sales / construction costs	**£78**
	Visiting boats	**£103**
	Trip boats	**£54**
	Day boats	**£18**
	Canoeing	**£4**
	Angling	**£2**
	Informal visitors	**£412**
	Total additional visitor spend	**£675**
Direct, indirct and induced spend	**Total captured direct and indirect visit spend**	**£878** Indirect & induced multiplier = 1.3
Retained income	**Total retained income**	**£351** Based on 60% leakage - Scottish Tourism study Rural model

EMPLOYMENT ESTIMATES

Direct , indirect & induced impact

Total employment generated @ 1 FTE per £31,400 tourist spend	**25**
Total employment generated @ 1 FTE per £62,800 spend on boat sales / construction	**2**
Total employment generated - FTEs	**26**

ADDITIONAL VISITS PER YEAR

(000S)

Boats based on the canal	**0.3**
Visiting boats	**9.0**
Trip boats	**15.8**
Day boats	**0.7**
Canoeing	**0.3**
Angling	**0.3**
Informal visitors	**200.0**
Total additional visits	**226.4**

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22-Nov-06

Leek Arm - New Leek Terminus

Economic Impact Analysis

Route Option 5

Additional income
(At 2003 prices)

PRIVATE BOATS BASED ON THE CANAL

Cruising spend	*Spend while cruising by boats based at Leek assumed incurred outside the local area*		
Non-cruising spend	Number of boats	0	based on capacity of terminus basin
	Non-cruising trips per boat per year	6	BW Log Book Survey, 1993
	Duration of non-cruising trips (days)	1.5	BW Log Book Survey, 1993
	Displacement factor	*100%*	*zero displacement assumed - all expenditure new to Leek*
	Mean spend per head per day	£12.14	ex. Inland Waterway Day Visit Survey (pilot), 2003
	Av. number of people per boat	2.0	BW Log Book Survey 1993
	Visit-days per year	*0*	
	Total Non-cruising spend per year	**£0**	
Travel costs	*All travel to/from boats assumed by car;*		
	Travel costs for trips less than 20 miles assumed spent locally		
	% trips less than 20 miles	60%	BW boat ownership data
	Vehicle cost per mile (full car costs)	0.43	derived from RAC data
	Av. distance travelled (round trips less than 20 miles) (miles)	15	Kennet & Avon Boating Survey 1990
	Total visits to boat per year (cruising & non-crusing visits)	12.1	BW Log Book Survey 1993
	Total travel spend per year	**£0**	
Boat-related expenditure	Annual boat running costs (incl.mooring/licence fees)	£2,500	derived from Private Boating Price-Demand Study 1997 (BW/EA)
	Average length of boat ownership (years)	6.7	Private Boating Price-Demand Study 1997 (BW/EA)
	Average estimated purchase cost per boat	£18,250	Private Boating Price-Demand Study 1997 (BW/EA)
	Total annual boat running costs	£0	
	Total annual boat purchase costs	£0	
	Total boat sales / construction	**£0**	
	Total boat running costs	**£0**	
	Total boating expenditure	**£0**	
	Total annual expenditure - boats based on canal	**£0**	

VISITING POWERED BOATS

Boat movements per year	1,000	assumed
% private boats	70%	assumed
% hire boats	30%	assumed
Private boat days p.a.	700	*Assume each movement generates a 1-day visit to Leek*
Hire boat days p.a.	300	*Assume each movement generates a 1-day visit to Leek*
Av. crew per private boat	3.0	BW Log Book Survey 1993
Cruising spend per person per day	£8.50	ex. BW Log Book Survey, 1993
Total spend p.a. - private boats	£17,850	
Av. crew per hire boat	4.1	BW Hire Boat Survey 1990
Cruising spend per person per day	£13.29	BW Hire Boat Survey 1990
Total spend p.a. - hire boats	£16,343	
Total cruising spend p.a.	**£34,193**	

TRIP BOATS

Boat traffic

No.of boats	1	
Passengers per boat	50	Narrowboat trip boat operation
Occupancy Rate	70%	assumed
No.trips per year	225	assumes 25 week season-average 1 trip per day; 2 trips per weekend day
Total number of passengers carried	7875	
Displacement factor	*80%*	*assume 20% of visits would have taken place in any case*

Trip spend

Av.cost per trip	£4.32	Assume £1-50 trip spend plus £2-82 informal recreation spend
Total trip spend	**£27,216**	

DAY BOATS

Boat traffic

No. of additional boats	2	assumed operated in conjunction with trip boat
Average days spent on canal	115	assumed 5 days per week with 23 week season
Average craft occupancy	3	assumed
Displacement factor	*100%*	*zero displacement assumed*
Visits per year	*690*	

Canalside spend

Cruising spend per person per day	£12.14	ex. Inland Waterway Day Visit Survey (pilot), 2003
Boat hire cost per day	£40.00	assumed

Total spend

Boat movement	£8,377
Boat hire	£9,200
TOTAL SPEND	**£17,577**

CANOEING

Visits per year	0	average of 2 additional visits per day during season (23 weeks)
% day visits	80%	based on %age informal day visits to BW waterways
% holiday visits	20%	based on %age informal day visits to BW waterways
Day visits per year	0	
Holiday visits per year	0	
Displacement factor	*100%*	*zero displacement assumed*
People per visit	1.5	mix of 1 & 2-man craft assumed
Visitor spend per day visit	£2.82	as for infomal visitors
Visitor spend per holiday visit	£34.86	Star UK estimates, Staffordshire, 2002
Total spend	**£0**	

ANGLERS

Additional visits per km	400	approximates to density of vists on Leek Arm
Appox. length of new waterway created (km)	0	
Additonal visits per year	-	
Visitor spend per trip (incl. travel/permits)	£6.49	BW Survey of Individual Anglers, 1996

Total spend per year	**£0**

INFORMAL VISITORS

Total additional visits per year	25,000	
% visitors on day visit	85%	BW Informal Visitor Survey 2002
No. additional day visits	21250	
No. additional holiday visits	3750	
Displacement factor	*27%*	BW Informal Visitor Survey 2001
Mean spend/person/day visit	£2.82	ex. Inland Waterway Day Visit Survey (pilot), 2003
Mean spend/person/holiday visit	£34.86	Star UK estimates, Staffordshire, 2002
Total additional day visit spend p.a.	£16,180	
Total additional holiday visit spend p.a.	£35,296	

TOTAL SPEND	**£51,476**

SUMMARY **ROUTE OPTION 5**

(£,000s)

Direct spend	**Boats based on the canal - excl. sales / construction**	**£0**
	Boat based on the canal - sales / construction costs	**£0**
	Visiting boats	**£34**
	Trip boats	**£27**
	Day boats	**£18**
	Canoeing	**£0**
	Angling	**£0**
	Informal visitors	**£51**
	Total additional visitor spend	**£130**
Direct, indirct and induced spend	**Total captured direct and indirect visit spend**	**£170** Indirect & induced multiplier = 1.3
Retained income	**Total retained income**	**£68** Based on 60% leakage - Scottish Tourism study Rural model

EMPLOYMENT ESTIMATES

Direct , indirect & induced impact

Total employment generated @ 1 FTE per £31,400 tourist spend	**5**
Total employment generated @ 1 FTE per £62,800 spend on boat sales / construction	**0**
Total employment generated - FTEs	**5**

ADDITIONAL VISITS PER YEAR

(000S)

Boats based on the canal	**0.0**
Visiting boats	**3.0**
Trip boats	**7.9**
Day boats	**0.7**
Canoeing	**0.0**
Angling	**0.0**
Informal visitors	**25.0**
Total additional visits	**36.6**

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22-Nov-06