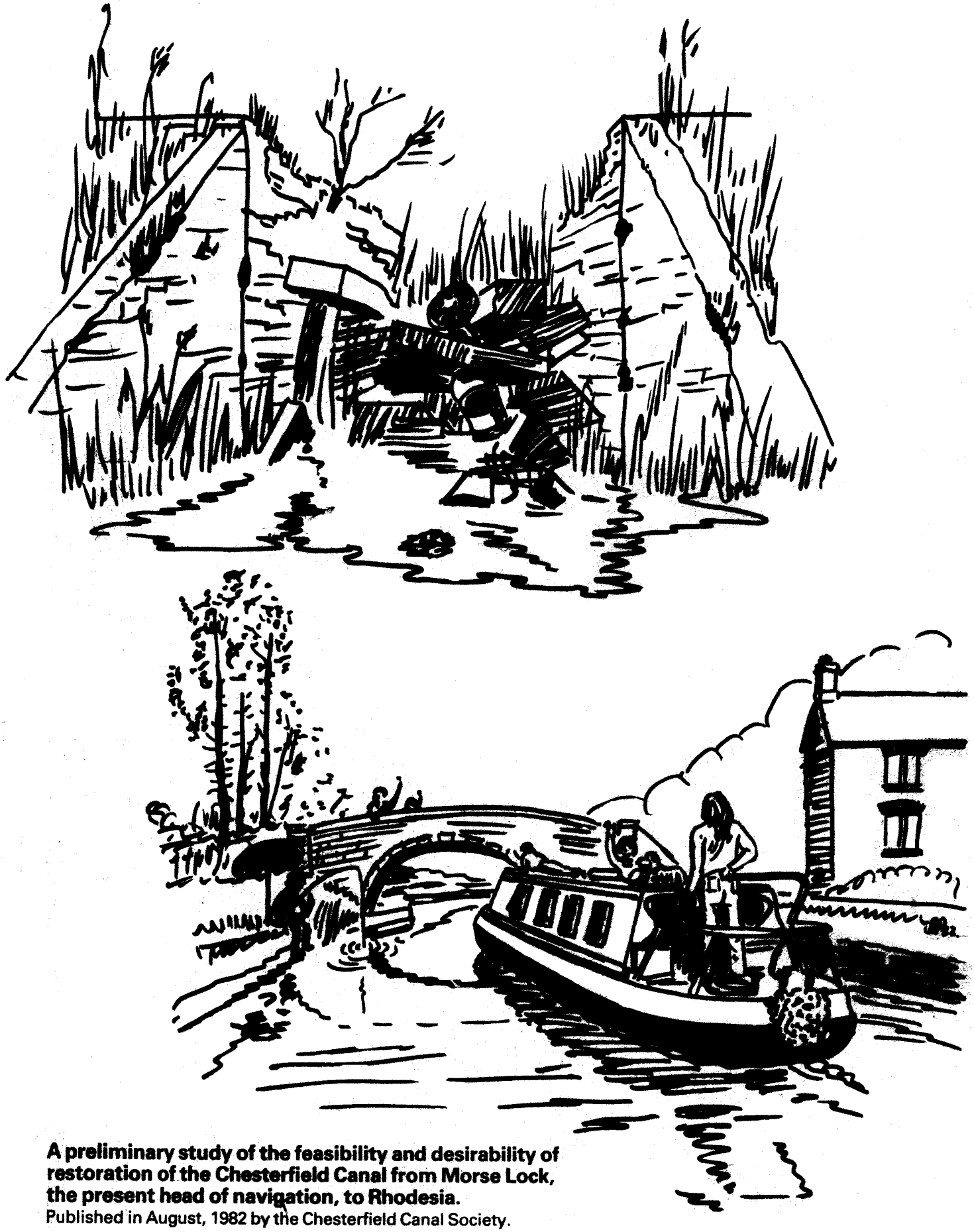
ROUTE TO RHODESIA



A preliminary study of the feasibility and desirability of restoration of the Chesterfield Canal from Morse Lock, the present head of navigation, to Rhodesia.

Published in August, 1982 by the Chesterfield Canal Society.

THE CHESTERFIELD CANAL - BACKGROUND

Completed in 1777, the Chesterfield Canal runs for a total of 46 miles from the Trent at West Stockwith to Chesterfield. As with all canals, by the early twentieth century, competition from the railways had made severe inroads into trade on the Chesterfield Canal. In l908, the collapse of a section of Norwood Tunnel caused its complete closure and divided the Canal in two. Commercial carrying on the Canal finally ceased in 1955 and its condition deteriorated. During the l9GOs, the Canal was gradually improved thank to the efforts of local enthusiasts and the British Waterways Board.

Today the Canal can be divided into three distinct parts. The 26 miles of Canal between West Stockwith and Worksop are fully navigable and used by pleasure boats. The present head of navigation is Morse Lea just to the west of Worksop. The next 6 miles up to the eastern portal of Norwood Tunnel are disused and contain 27 locks and three culverted bridges. Beyond Norwood Tunnel, much of the Canal has disappeared, although the whole of the towpath to Chesterfield remains as a public footpath.

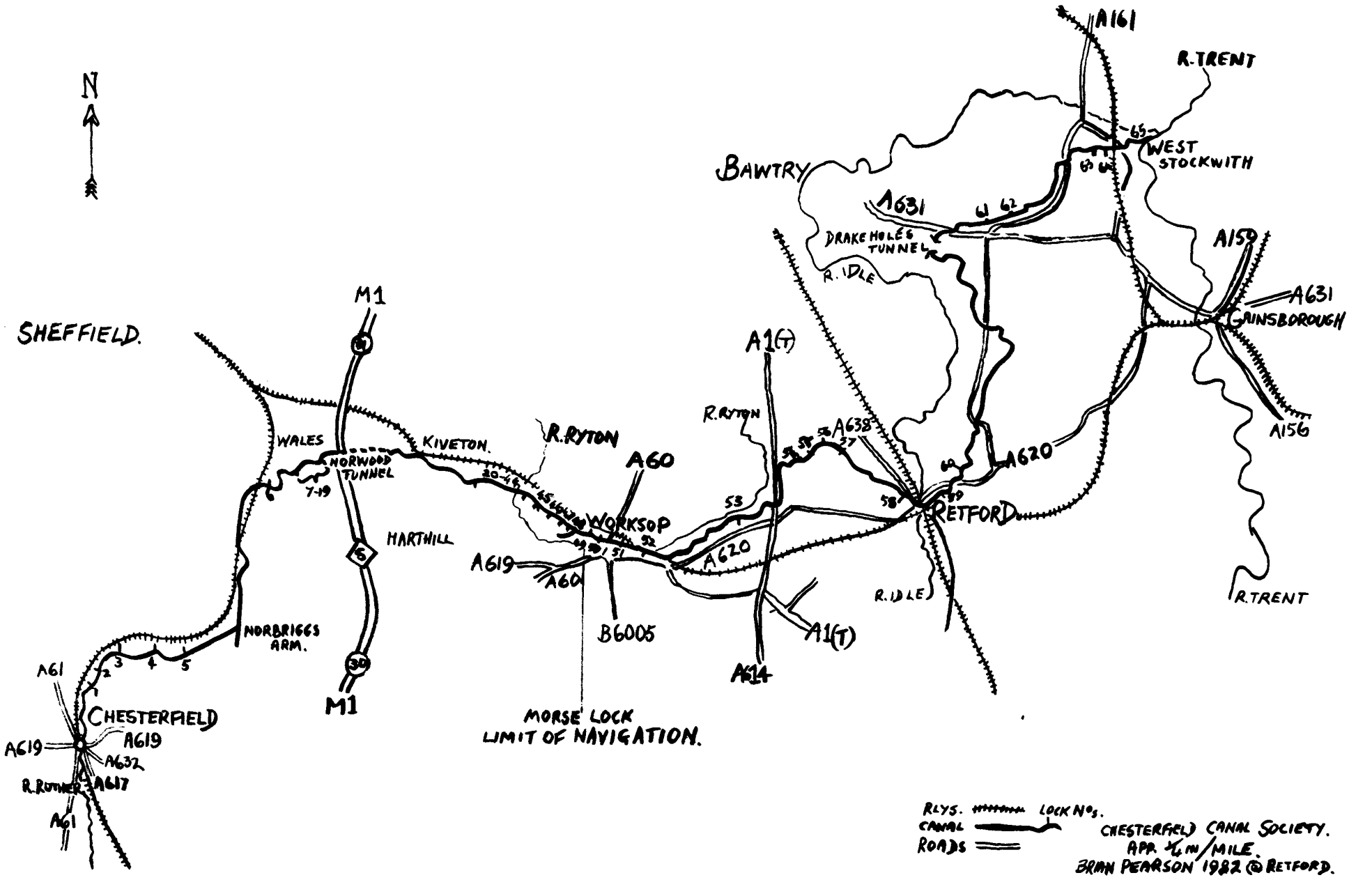
The Chesterfield Canal Society was born in 1976, its aims being:
to further the preservation, conservation and restoration of the Chesterfield Canal, and to stimulate public interest in, and the fullest appropriate use by the public of the whole Canal and its environs.
A principle objective of the Society is the restoration to full navigation of the 6 miles of Canal between Worksop and Norwood Tunnel. Under the 1968 Transport Act, this section of Canal is designated as ‘Remainder’ indicating that it, “is to be dealt with in the most economical manner possible (consistent, in the case of a waterway which is retained, with the requirements of public health and preservation of amenity and safety), whether by retaining and managing the waterway, by developing or eliminating it or by disposing of it”. These 6 miles act as a feeder for the 26 miles of navigable waterway and elimination is, therefore, out of the question.

INTRODUCTION

The restoration of the Canal between Worksop and Norwood, involving the rebuilding of 27 locks and the removal of three culverts under roads, ou1d be extremely costly. However, the Society believes the benefits to be gained from restoration would far out the cost and will continue

to actively campaign for this objective. The present economic climate appears to make restoration of the full 6 miles unrealistic in the short tern. The Society has, therefore, been investigating the possibility of a more limited restoration scheme as a first step.

Restoring the navigation as far as Rhodesia (Haggonfields) would be a relatively easy exercise, involving the rebuilding of only three locks and no major engineering problems. The Chesterfield Canal Society has thus resolved to press for the implementation of such a scheme as soon as possible. This report is intended to set out the main obstacles t. and cost implications of “Route to Rhodesia”. It has been prepared by the Society with the object of providing a basis for discussion.


N
SHEFFIELD.
M1
WALES
NORWOOD TUNNEL
KIVETON.
R.RYTON
A60
WORKSOP
HARTHILL
A619
A60
B6005
A620
A1(T)
A614
R.RYTON
A638
A620
RETFORD
R.IDLE
R.IDLE
A161
R.TRENT
BAWTRY
WEST STOCKWITH
A631
DRAKE HOLES TUNNEL
R.IDLE
A159
A631
GAINSBOROUGH
A156
R.TRENT
NORBRIGGS ARM.
A61
CHESTERFIELD
A619
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A617
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MORSE LOCK
LIMIT OF NAVIGATION.
RLYS.
CANAL
ROADS
LOCK Nos.
CHESTERFIELD CANAL SOCIETY.
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BRIAN PEARSON 1982 © RETFORD.

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BENEFITS OF RESTORATION

Before exploring the feasibility of “Route to Rhodesia”, it is necessary to consider the benefits to be derived from a restored canal. Many of the benefits sot out below bill only be fully realised once the Canal is navigable to Norwood.

Appearance.

The first obvious benefit is the improved appearance of both the Canal and the surrounding area. Disused canals have an air of dereliction and arc a magnet for unauthorised tipping. Towpaths become overgrown and weed chokes the channel. A canal well used by boaters, anglers, walkers, etc. deters vandals. Rubbish is less likely to accumulate and the regular passage of boats helps to prevent weed growth and silting. Towpaths are used by boaters and non-boaters alike.

Leisure and recreation.

The leisure and recreational potential of the Canal is increased. The tow path becomes a pleasant place for a stroll, perhaps even a picnic. Fishing becomes possible as does canoeing and use by other small boats. The Canal, rather than being ignored, is transformed into a feature which attracts people.

Trade and employment.

Greater use of a canal generates increased trade slid employment along the canal corridor. The more people attracted to a canal, the more money is spent in shops, pubs, etc. both along the bank and in nearby towns and. villages. New businesses connected with the waterway may become viable propositions as a result of the increase in trade.

History and Education.

Any canal, and in particular the Chesterfield Canal, is a place of historical and architectural interest. It can be very easily used as a practical tool of education. Whether used simply as the focus of an afternoon out for school children, or in a more imaginative way, perhaps by way of the construction of a field/study centre on the canal bank, waterways can be very important in helping to explain the industrial and social history of an area.

Safety.

Wherever water is present, so is danger. Children are naturally attracted to water and will always find ways to overcome obstacles barring their path. A canal which is weeded up and used as a rubbish dump creates considerably greater danger than one which is well maintained. If well used by boaters, anglers, walkers, etc., it is much more likely that someone will be on hand if an emergency does arise.

Fishing.

A silted and weedy canal renders fishing very difficult. Angling in this area is a very popular pastime and possibility of further opportunities for fishing would be greatly welcomed locally.

Wildlife.

The Canal has a wide variety of wildlife and has significant ecological interest. Recreational use of the waterway may bring ecological changes but this is not necessarily undesirable. The opportunity for study of the wild life and ecology of the Canal would be increased by making it more accessible through restoration.

Encouragement of boats.

For some time, it has been suggested that mooring facilities on the Chesterfield Canal are inadequate, and. that the construction of a marina at Worksop would overcome this problem and would, at the same time, encourage more use of the relatively little used western end of the Canal. Extending navigation above Worksop would increase the attraction of the Canal in general and the western end in particular. The construction of a marina would obviously become a more viable proposition.

Hire boat expansion.

The Chesterfield Canal presently supports a small hire boat firm based at West Stockwith. The 26 miles of navigable Canal up to Worksop, however, is rather short for a whole week’s cruising. Any increase in the length of the navigation would increase the attraction of a holiday on this Canal and n thus allow an expansion of the existing hire boat firm or perhaps even the possibility of a second hire firm on the Canal.

IDENTIFICATION OF MAJOR OBSTACLES TO RESTORATION AND THE ESTIMATED COST OF THEIR REMOVAL

The total length of Canal from the winding hole above Town Lock, Worksop, to the road bridge at Rhodesia is about ¾ mile .within this section, there are three locks — Morse, Street and Deep. Some work, particularly on Morse Lock, has been carried out on this section as part of a Manpower Services Commission scheme. However, the standard of workmanship, the materials used and the supervision of work were all unsatisfactory.

The estimates incorporate removal of rough cascades from chambers, concrete to bed of chambers, rebuilding of brickwork or stonework, repair work to by—washes, cills and lock sluices and the provision of new gates and paddle gear. In the case of Deep Lock, it is likely that the work required to the by—wash will be limited as it has been well maintained in view of the presence of the water outlet serving Shirley Aldred's factory.

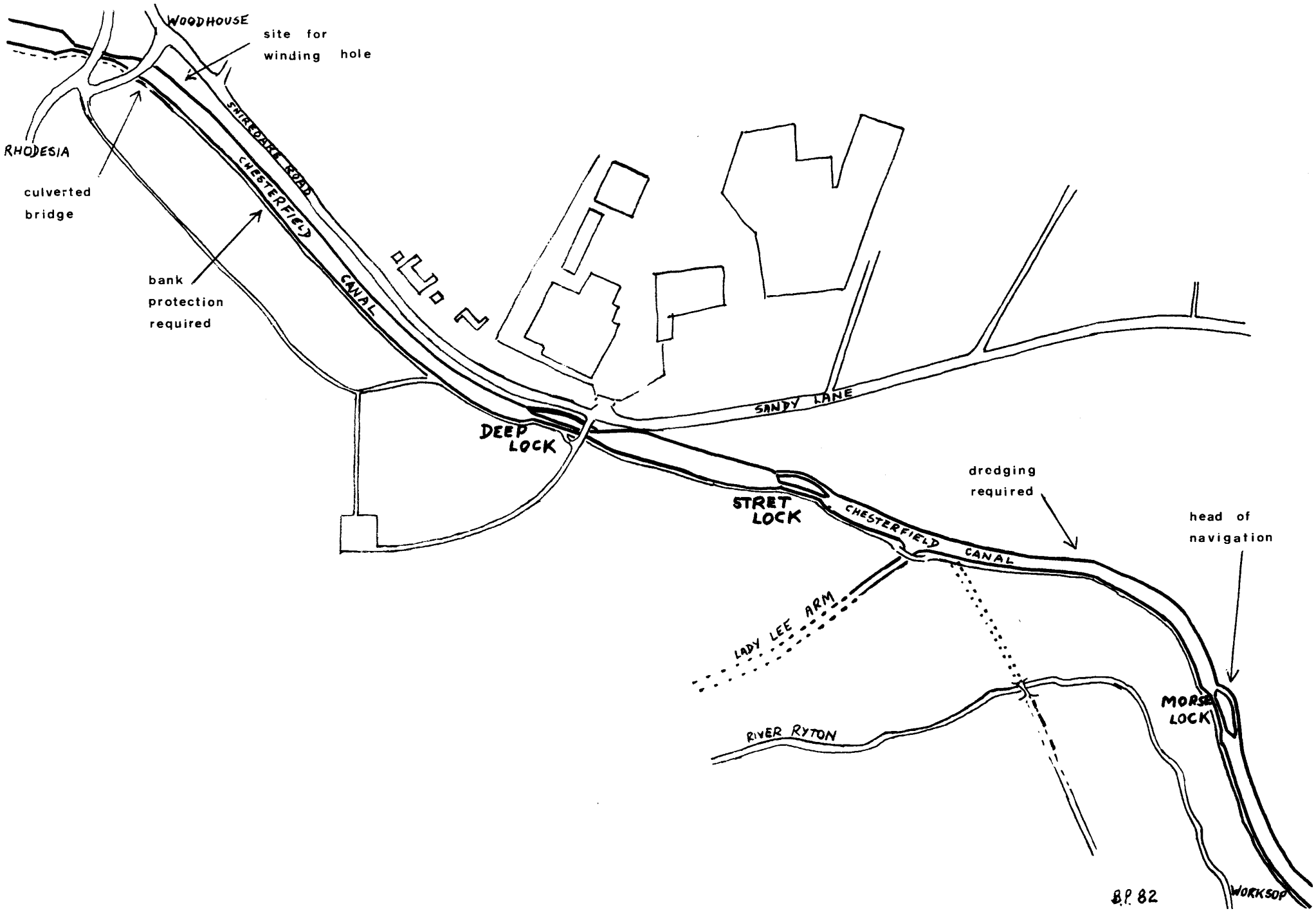
Dredging of the whole section of the Canal to some degree will be required. The estimates have been prepared on the basis that shore based dredging equipment can be used. to provide a depth of 3' 6". It has been assumed that dredgings can be disposed of close to the site of dredging operations.

For the last 200 yards of the Canal up to Rhodesia, the water level is markedly higher than the ground level of the adjoining farmland to the south. The condition of the bank may not be satisfactory for cruising purposes as there is some evidence of leakage. Provision for bank protection along this section of Canal has been included.

Finally, if craft are able to navigate as far as Rhodesia, a winding hole must be provided to enable boats to turn round. A winding hole to accommodate boats up to 70 feet in length can be constructed just before the road bridge is reached and the cost of this facility has been included in the estimates.

A full breakdown of the cost of restoration is set down as an appendix to this report. It must be stressed that the estimates have been prepared on the basis that much of the restoration work will be carried out by voluntary labour. The Society considers that the likelihood of restoration is small unless the ban by the British Waterways Board on the use of voluntary labour is lifted. However, it is accepted that the type and amount of work which can be accomplished by volunteers is limited. There must be close supervision of such work by employees of B.W.B., workmanship and materials must be of a standard acceptable to B.W.B. and all requirements relating to health and safety at work must be fully complied with.

It is clear that the Society must call upon help from outside its ranks to achieve its objective. Close co—operation with and involvement by the waterways Recovery Group and other waterway organisations will be essential. It may be possible to involve government job creation schemes to carry out specific restoration work although detailed consideration would need to be given to the organisation and supervision of any such scheme.


WOODHOUSE
site for winding hole
RHODESIA
culverted bridge
bank protection required
SHIREOAKS ROAD
CHESTERFIELD CANAL
SANDY LANE
DEEP LOCK
STRET LOCK
dredging required
CHESTERFIELD CANAL
head of navigation
LADY LEE ARM
RIVER RYTON
MORSE LOCK
WORKSOP
B.P. 82

WAYS IN WHICH THE COST OF RESTORATION TO RHODESIA CAN BE MET.

There are several ways in which finance can be raised to cover the capital cost of restoration. Direct contributions towards restoration may be available from the British Waterways Board although because of the 'Remainder' status of the Canal, the provisions of the Transport Act 1968 may prevent any financial help being given. In any event, it must be recognised that the Board has a large backlog of maintenance work on the canal system and is facing a severe financial crisis.

The local authorities involved (Bassetlaw District Council and Nottinghamshire County Council) may be willing to give financial aid for restoration. Although local authorities are also presently looking for economies, the improvement of the Canal would create a further water—based recreational facility and would increase the attraction of the Canal as a whole. The demand for additional recreational outlets is ever increasing and it can be argued that this part of North Nottinghamshire now has an unsatisfactory level of leisure opportunities. Amenity treatment of the length of Canal to Rhodesia and perhaps some development of the Sandhill lake and Dock Road areas could provide a broadly based recreational facility of great benefit to the people living in the Worksop area.

Grants may also be available from a number of other bodies such as the Countryside Commission and the Tourist Board. The availability of such grants requires detailed investigation.

Private industry is also looking for publicity and many firms are keen to be involved with schemes associated with environmental improvements. shell (U.K.) Limited, in conjunction with the Inland Waterways Association, has organised Restoration A Schemes and these may be repeated. Other national firms have run similar schemes.

There may be scope for directly involving local firms in "Route to Rhodesia". Financial aid may be given in the form of direct grants or in the form of sponsorship of a specific restoration project. For example, in return for maximum publicity, a local firm may be willing to pay for the cost of reconstructing a lock. A plaque erected at the side of the lock could acknowledge the help given.

The final method of raising money is by means of fund raising activities organised by the Canal Society itself. This could take the form of raffles, flag days, appeals, etc. It is likely that the money raised by this type of activity would represent only a very small proportion of the total required for restoration.

WAYS IN WHITCH THE INCREASED COST OF MAINTAINING THE CANAL FOLLOWING RESTORATION CAN BE MET

As mentioned in the introduction to this report,B.W.B. can carry out only limited maintenance. to the ‘Remainder’ section of the Canal, It is clear that the cost of maintenance of the channel and structures of a navigable canal is higher than that where a canal is disused, It would appear that this extra cost cannot legally be borne by B.W.B. (even if the necessary finances were available). The figure is too great to enable the Canal Society to meet this financial commitment and the only alternative, therefore, is that the cost is met by the appropriate local authorities.

In similar schemes elsewhere, it has been suggested that it is possible that the additional work required to allow navigation could be carried out by local authority staff. However, it would be impractical to try to split off this work from the routine maintenance to ‘Remainder’ standard carried out by B. .B. In any case, the Board’s staff have specialised knowledge of and equipment for canal maintenance. As such, it would seem appropriate that the increased level of maintenance work required to allow navigation should be carried out by B. even if it is paid for by the local authorities.

It is intended that the quality of the restoration work shall be of such a standard that routine maintenance of the Canal should be all that is needed for the first 15 to 20 years. It is likely that during these years, the cost of maintaining the Canal to cruising standard would be little more than that required for remainder standard.

CONCLUSION

The Chesterfield Canal Society is fully committed to restoration of the Canal between Worksop and Norwood Tunnel. The benefits of restoration are fully explored in a re published in 1978 by a working Party comprised of the British Waterways Board and the appropriate local authorities. The working Party concluded that the Canal should be developed for recreation but that restoration was not feasible in the short term owing to the financial constraints. Amongst the policy recommendations put forward by the working Party are:

1. no further ‘t should be permitted to the Canal which will significantly hinder the eventual restoration of the Canal to through navigation.
2. all feasible opportunities should be taken to remove existing obstacles to through navigation.
3. the local authorities and the B. should progress the development of the Chesterfield Canal for recreation and amenity as quickly as circumstances permit.

To comply with the third recommendation, a number of examples of low expenditure schemes are identified in the working Party Report. Unfortunately, the only scheme which has got off the ground is the introduction by the Canal Society of a trip boat on the summit pound at Kiveton Park. The Society accepts that restoration to Norwood is unrealistic in the immediate future. It is also appreciated that the development of isolated improvement schemes may be difficult. “Route to Rhodesia” would be a relatively easy first step to full restoration. It will provide invaluable experience for the larger task ahead and will focus public attention on the Canal and its recreational and leisure potential.

APPENDIX - RESTORATION COSTS

In order to try to arrive at a fair figure for the restoration costs of this length of Canal, two ways have been used to estimate costs for certain items;

1) By consultation with other waterways groups who are currently involved in water ways restoration projects, we have received estimates of the co of restoration which they are facing. It is assumed that all work is undertaken by voluntary labour • Plant used would be that of the Water ways Recovery Group or similar, used on the basis of payment for transport to and from the site, running and maintenance costs.

2. Where the above does not apply, current commercial rates were sought. Most non-voluntary work will involve services only available from British Waterways Board (e.g. piling, supply of lock gates and fittings).

From the beginning to the end of the period of restoration, two items on this project must be maintained without failure or interruption. They are:

1) The water supply which flows along this length of Canal to feed the cruising section must be maintained This may make one of the first tacks of restoration the re—instatement of the by—washes around the lock chambers,

2. where any risk whatsoever may arise to the restoration workers or the general public, safety works of whatever ma which may be necessary must be erected and maintained. This on the whole would mean the cordoning off of any dangerous works, by scaffolding poles or fencing, to keep out the general public, and the use of scaffolding arid planking to make the site safe for working.

Locks.

The three locks and two by—washes will, for the purpose of this report, require total stripping of their exterior courses of masonry until a sound base is reached. The removal of this waste and other accumulated rubbish from each chamber will require transporting to a tip. The walls, inverts and by—washes will require building in a suitable grade of brick or stone. Fitting of hollow quoins where necessary will be followed by the fitting of paddle gear and lock gates.

Dredging.

This section of Canal is, on the whole, quite fair with regard to depth, with the exception of the length (approximately 200 yards) between Morse Lock and the overspill weir to the rear of ‘John Shaw’ 1 Rope Works • This section would need extensive dredging. The rest of the length should be checked for depth and profile and dredged if necessary.

Bank protection.

The whole length up to Rhodesia would not require bank protection, but the section of towpath at the approach to Rhodesia will need to be protected either during .or part of restoration or at some tine within a few years of restoration. There are three ways of providing protection.

1. By digging a ‘slit trench’ along the towpath at a greater depth than the water level, and filling this trench with clay.

2. By piling with galvanised interlocking piles and tying those back to the bank.

3. By a combination of I, and 2., which would give the bank the protecting qualities of piling and would seal the bank against leakage.

Winding Hole.

At the very end of the section, there is a point where the Canal is already 66 feet wide. At this point, a further 10 feet could be dug out of the offside bank (adjoining Sandy Lane) and a small retaining wall built to make safe the bank supporting the road.

DETAILED COSTS AND CALCULATIONS

Locks.

Volume of waste to remove:

Morse and Stret Locks.		
Walls ((21 .5m x 3.69 x O.75m) x2) x2	238	cubic metres
Inverts and Rubbish in Chambers		
(21 .5m x 2.15m x O.92m) x 2	85	" "
By—washes		
25m x I .8m x O,15m	14	" "
Deep Lock.		
Walls (21 .5m x 3, xO.75m) x 2	119	" "
Invert and Rubbish in Chamber		
21.5m x 2.15m 2.15m	99	" "
TOTAL VOLUME TO REMOVE.	555	" "

At approximate density of 1500 kg. per cubic metre

TOTAL TONNAGE is 830 tonnes.

If all the above waste has to be transported to tipping site by 20 tonne lorry loads, the cost would be:
830 @ 20 tonne loads equals 42 lorry loads.

Hire of lorry for 5 trips per day @ £20 per load	£840
Tipping costs © £6 per load	£250
Plant Costs	
JCB/Hymac ex W.R.G. £24. per day - 10 days use	£240
Site dumpers 4 no. @ £10 ea. per day — 10 days use	£400
Tipping area near road access - contribution to farmer	£250
TOTAL	£1980

Rebuilding — cost of materials: bricks, cement, sand, etc. £3000
Lock gates — one for top, one pair for the bottom (with gate paddles) and all the necessary iron work.
Purchased from British Waterways Board - for each lock £14000

Dredging.

By using W.R.G. plant and tipping behind the dredger, the cost would be:

Transport of plant	£200
Running costs - 200 hours @ A per hour	£800
TOTAL	£1000

Bank Protection.

1. Slit trench and clay puddle

Cost of cutting slit trench —. .R.G. plant	£300
Cost of clay (delivered to site) - 1200 tonnes @ £5 per tonne	£6000
Cost of dumpers to handle clay — 40 hours © £2 per hour	£80
TOTAL	£6380

2. Galvanised piles
B.W.B. costs to carry out work
150 metre run @ £50 per metre ran £7500

3. Combination of 2. and 3.
£6380 plus £7500 £13880

Winding Hole.

Cost of plant to dig out to give required length
25 hours © £4 per hour £100

Tipper lorry to remove waste
5 trips © £20 per trip £100

Hire of shuttering to form bank retaining wall £300

Cost of 28 cub metres of ready mixed concrete £850
Steel reinforcement to above £100

TOTAL £1450

Other likely costs.
Permanent safety works - Hire of scaffolding, fencing, etc. £500
Provision of correct safe working facilities £500
Provision of safety equipment £200
Hospitality to visiting voluntary workers £500
Other £1000

TOTAL £2700

TOTALS
Locks £1980
£3000
£42000

£46980

Dredging £1000

Bank Protection – method 3. £13880

Winding Hole £1450

Other likely costs £2700

GRAND TOTAL £66010